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Entrepreneurial Intention, Self-efficacy and Optimism: An Experimental Approach

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Abstract

Many entrepreneurial researchers seek to define what factors affect the people's intention to become entrepreneurs. The aim of this study is to determine whether psychological factors such as optimism and self-efficacy influence entrepreneurial intention. 87 people were asked to answer 10 naturalistic-business scenarios including situations related to optimism and self-efficacy. The Entrepreneurial intention (EI) was assessed through Entrepreneurial Intention Scale (EIS) which contains eight statements. According to the results of studies, the level of two dimensions of Psychological capital (PsyCap), which are optimism and self-efficacy, impacts participants' intention to become an entrepreneur. More specifically, participants who have higher levels of optimism and self-efficacy showed higher scale of EI and vice versa. Also, entrepreneurs showed a higher level of EI compared with non-entrepreneurs. These findings provide evidence that not only financial resources play a significant role in starting your own business, psychological factors are important too.

Keywords: Entrepreneurial Intention, Psychological Capital, Self-efficacy and Optimism Entrepreneurship

Аңдатпа

Көптеген кәсіпкер зерттеушілер адамдардың кәсіпкер болу ниетіне қандай факторлар әсер ететінін анықтауға тырысады. Бұл зерттеудің мақсаты – оптимизм және өзіндік тиімділік сияқты психологиялық факторлардың кәсіпкерлік ниетке әсер ететінін анықтау. 87 адам 10 натуралистік-іскерлік сценарийге жауап беруді сұрады, оның ішінде оптимизм мен өзіндік тиімділікке байланысты жағдайлар. Кәсіпкерлік ниет (ЭИ) сегіз мәлімдемені қамтитын Кәсіпкерлік ниет шкаласы (EIS) арқылы бағаланды. Зерттеу нәтижелеріне сәйкес, Психологиялық капиталдың (PsyCap) екі өлшемінің деңгейі, яғни оптимизм және өзіндік тиімділік қатысушылардың кәсіпкер болу ниетіне әсер етеді. Нақтырақ айтқанда, оптимизм мен өзін-өзі тиімділік деңгейі жоғары қатысушылар ЭИ жоғары шкаласын көрсетті және керісінше. Сондай-ақ, кәсіпкерлер кәсіпкерлікпен айналыспайтындармен салыстырғанда ӨИ жоғары деңгейін көрсетті. Бұл тұжырымдар жеке бизнесіңізді ашуда тек қаржылық ресурстар ғана емес, психологиялық факторлар да маңызды екенін дәлелдейді.

Түйін сөздер: Кәсіпкерлік ниет, психологиялық капитал, өзіндік тиімділік және оптимизм, Кәсіпкерлік

Аннотация

Многие исследователи предпринимательства стремятся определить, какие факторы влияют на намерение людей стать предпринимателями. Целью данного исследования является определить, влияют ли психологические факторы, такие как оптимизм и самоэффективность, на предпринимательское намерение. 87 человек попросили ответить на 10 натуралистических бизнес-сценариев, включая ситуации, связанные с оптимизмом и самоэффективностью. Предпринимательское намерение (EI) оценивалось с помощью шкалы предпринимательского намерения (EIS), которая содержит восемь утверждений. Согласно результатам исследований, уровень двух измерений Психологического капитала (PsyCap) — оптимизма и самоэффективности — влияет на намерение участников стать предпринимателем. Точнее, участники с более высоким уровнем оптимизма и самоэффективности продемонстрировали более высокий уровень ЭИ и наоборот. Также предприниматели показали более высокий уровень EI по сравнению с непредпринимателями. Эти результаты свидетельствуют о том, что не только финансовые ресурсы играют значительную роль в открытии собственного бизнеса, важны и психологические факторы.

Ключевые слова: предпринимательское намерение, психологический капитал, самоэффективность и оптимизм, Предпринимательство

Introduction

Entrepreneurship is a multi-dimensional concept that includes owning a small business, being innovative, acting as a leader, or starting up a new company along with any of its uncertainties in order to earn a profit (Gedeon, 2010)[23]. It is an important aspect of market economies, because they can act as the wheels of the economic growth of the country. Entrepreneurship encourages employment and helps to decrease the level of unemployment, consequently it leads to acceleration of economic development of the country (Mohamed, 2020) [24]. Entrepreneurial intention is a key factor in entrepreneurship and entrepreneurship is a vital solution to the unemployment problem (Mahfud et al., 2019) [8]. Entrepreneurial orientation refers to the processes, practices, and decision-making styles of organizations that act entrepreneurially, it is important to address the dimensions of EO; innovativeness, risk-taking, and proactiveness (Covin & Slevin, 1989)[16]. The ability and tendency to take deliberated risks has been perceived as an essential characteristic for entrepreneurial success around the world (Carland et al., 1997; Rauch & Frese, 2000)[20]. Since risk taking is an inevitable part of entrepreneurial activity, it can be stated that risk-taking is a trait that differentiates an entrepreneur from a non-entrepreneur (Chatterjee & Dhanbad, 2015)[2]. Therefore, we consider risk taking as the most important aspect of entrepreneurship.

Risk taking (RT) is one of the components of the decision-making process where uncertainty exists and the positive or negative results/consequences of the situations (Brand et al., 2007)[11] – are already known (Bechara et al., 2005; Krain et al., 2006)[4]. Risk-taking propensity is one of the main characteristics of entrepreneurs that may play the important role in the decision of a person to enter the business sphere or not (Antoncic et al.,2012; Gantar et al.,2013)[9]. Hence, the propensity of a person to take risks is a key factor for firm creation and development.

Individual's psychological characteristics play an important role in the person's conversion from an employee to an entrepreneur, who is the founder of a business (Begley & Boyd, 1987)[16]. Psychological characteristics are one of the main factors that determine an individual's success in entrepreneurship (Chatterjee & Dhanbad, 2015)[2]. The major psychological dimensions associated with the entrepreneurship process are need for achievement, locus of control, risk-propensity, self-efficacy, tolerance for ambiguity, innovativeness, independence and autonomy and optimism (Bygrave & Hofer, 1991)[16]. In this context, PsyCap might be one of the key personal level qualities that stimulate the decision to engage in entrepreneurial activities.

Psychological Capital (PsyCap) is described as a positive psychological state of development, characterized by self-efficacy, hope, optimism and resilience (Luthans, 2002). Self-efficacy is defined as "one΄s conviction (or confidence) about his or her abilities to mobilize motivation, cognitive resources and courses of action needed to successfully execute a specific task within a given context" (Stajkovic & Luthans, 1998, p. 66)[20]. Specifically, it is the confidence in one's abilities to achieve and drive toward certain goals. (Luthans & Youssef, 2007)[11]. Additionally, it can be described that it is the self-assessment type that leads to social comparison of himself with others (Steyn & Mynhardt, 2007)[19]. Another group of authors point out that this construct turns out to be stable, even though considered a state (Avey, Luthans & Mhatre, 2008)[13]. Self-efficacy, as other dimensions of PsyCap, might be developed and managed (Luthans et al., 2006)[17]. Optimism associated with inner attribution that favorable events could happen (Jackson, 2009)[18]. Laguna (2006) stated that optimism is an important predictor of entrepreneurial intention. In this context, self-efficacy and optimism are key psychological factors which affect entrepreneurial intention. Therefore, our aim is to examine whether or not psychological factors, reflected as self efficacy and optimism, would influence a person's intention to become an entrepreneur.

Research objective: To examine whether or not psychological factors, reflected as self-efficacy and optimism would influence a person's intention to become an entrepreneur

Research question 1: Does self-efficacy influence a person's intention to become an entrepreneur?

Research question 2: Does optimism influence a person's intention to become an entrepreneur?

Literature Review

Entrepreneurship plays an important role in the development of the country's economy and is one of the sources of economic growth, job creation, and social goals (Linan et al., 2005)[4]. Entrepreneurial initiatives receive active support from the state in different countries, since the emergence of new firms in the market contributes to the development of innovation and increases the competitiveness of the economy. Therefore, entrepreneurial intention plays an important role in creating new business in the country (Mahfud et al., 2019)[18].

One of the most used definitions of entrepreneurship was proposed by (Croci, 2016)[1] and states that it is a distinct discipline that can operate independently and interdisciplinary. Other resources identify entrepreneurship as a "*practice that begins with action and creation of a new organization*" (Barot, 2015)[2]. In general, it is a key to success as it generates new job opportunities and economic development (Barot, 2015)[2].

In addition to that, it is also essential to differentiate employees and entrepreneurs. It seems that there is a difference between employees and entrepreneurs in psychological aspects, otherwise they would be only one group. The most recent Swiss-German studies have found that while the employee is a specialist in one field, an entrepreneur is a 'jack-of-all-trades' (Backes-Gellner, 2013)[3]. Entrepreneurs are expected to navigate and be involved in several spheres of business and are well versed in multiple entrepreneurial skills. On the other hand, employees who specialize have a very specific package of skills and their talents shine the most combined with other specialists.

More importantly, entrepreneurs are risk-takers (Hytti, 2005)[4]. When entering a new industry and creating new business from scratch, entrepreneurs face much higher risks of failing, and financial losses than employees who have lesser chances of causing huge resource reduction. Therefore, it can be concluded that, naturally, the first group should be optimistic. Pessimists tend to take lesser risks and avoid stressful situations. While optimists view risks as new opportunities (Coval J.D., 2005)[5].

The interest of many entrepreneurial researchers is primarily directed to the study of why some people become entrepreneurs and others do not. One of the first researchers who turned to the study of entrepreneurial intentions is Bird (1988)[16], according to which intentions are such a state of consciousness of an individual that directs his attention, experience and actions to achieve the set goals. Entrepreneurial intentions are aimed at creating a new firm or new values in an existing firm (Bird, 1988)[16]. Bird (1988) theorized a cause-effect relationship between entrepreneurial intention and action. Other researchers define entrepreneurial intentions as specific actions of an individual aimed at opening a new business. (Fini et al., 2009)[13]. As there are different definitions of entrepreneurial intention, different factors exist that impact this intention.

1.Psychological capital

PsyCap or Psychological Capital consists of four main parts: high self-efficacy, optimism, hope, and resiliency that can influence entrepreneurial intention (Carolyn Youssef-Morgan, 2018)[7]. As stated by Tang (2020)[6], *"A clear understanding of Psychological Capital will enable in improving individual as well as organizational performance"*. Today, more effort is put into building a high EQ (emoting quotient) and emotional intelligence rather than just developing hard skills and IQ (intelligence quotient). Thus, PsyCap (psychological capital) also enables creating clearer motivation and a supportive working environment.

According to the four components, different outcomes can be predicted. Statistically, levels of optimism have a correlation with changes in performance or behavior. However, when these four factors are taken into account in PsyCap, it is likely that fewer side effects will occur. Based on each of the four components, different outcomes can be predicted. For example, a person's level of optimism can be statistically associated with changes in performance or behavior.

Research has shown that high Psychological capital stages are associated with labor productivity and employee employment (Luthans, et al., 2007)[11]. As mentioned earlier, psychological capital has a significant impact on employee efficiency and effectiveness, work satisfaction and subjective well-being. Since a person as a subject is an integral system, the elements of which are interconnected, it can be expected that people with higher socio-psychological capital will show more productive attitudes and behavior in society (Luthans, et al., 2007)[11].

2.Optimism

In psychology, optimism is a positive expectation for the best possible outcome of a situation that can beneficially affect mental and physical health (Çavuş, 2014)[10]. Optimistic people tend to live a less stressful life and are more likely to successfully distance themselves from hopelessness and depression. Often the optimist is also defined as a general expectation of having a better future (Keser, 2007)[11]. In terms of psychological capital, optimism and personal well-being have a direct relationship which later results in more job satisfaction (CS Carver, 2003)[12]. Positive emotions are necessary especially for new players because new venture formation is a hard process and over half of all new enterprises will most likely fail (Ozaralli, 2016)[14]. Also, optimism is beneficial when a person decides to start a new venture because entrepreneurs *"downplay uncertainty or setbacks and focus on what is good in a situation"* (Giacomin, 2015)[2], which indicates that entrepreneurs who think positively are steadfast when facing different obstacles.

From this, it can be concluded that optimism is an essential feature for entrepreneurs as they should be able to deal with stressful situations, lead employees, and be able to manage during unfavorable situations. Another view is that risk taking is a factor that impacts entrepreneurial intention. Risk takers are optimistic because they have a positive outlook toward the future and do not focus on negative outcomes even if there is a risk (Macko, 2009)[18]. In addition, optimism is based on positive results and positive expectations, mainly in the view of (Collins, 2007)[19]. The root of positive results depends on the ability of entrepreneurs to make positive cognitive assessments. As a result, it increases stress management activity, showing positive aspects after positive cognitive assessments. Optimism is mainly a key tool that gives entrepreneurs confidence in the positive results and forecasts (Peterson, 2000)[20]. According to the writers, an optimistic person is very active in their work and has high motivation factors. In other words, optimism is a driver of venture creation.

Researchers who have studied Spanish students have found that optimism is a personality trait that has a positive effect on stress management. Clearly, this shows that people are free to think creatively, to envision entrepreneurs for their future business and lead them to the right goal (Ozaralli & Rivenburg, 2016)[14]. However, being extremely optimistic can lead to bad consequences and failure (Hmieleski, 2009)[15]. People with low optimism are less likely to be motivated because they believe that no matter how hard they try, they will fail. Furthermore, they mostly focus on negative information and expect negative outcomes (Hmieleski, 2009)[15]. Therefore, individuals who have low levels of optimism continue having a paid job instead of starting their own business.

In addition, moderate optimists establish moderately high, realistic objectives and try to reach them. These people are aware of a balance of positive and negative indicators in their surroundings, noticing both rewards and risks while making decisions. Individuals who are overly optimistic, on the other hand, tend to set unreasonably high goals which are almost unattainable (Hmieleski, 2009)[15]. It means that if a person has entrepreneurial intentions and is very optimistic, this combination of qualities could turn into a failure of venture.

3.Self-efficacy

Self-efficacy, often referred to as confidence, shows the people’s belief while they exhibit their performance. Generally, it can be said that people with higher levels of self-confidence find better and more solid reasoning for their motivation. During challenging times, they can improve their performance and motivate themselves against all odds. Psychologists agree that self-efficacy does not come from competences or one's capabilities, but rather from belief and hope in personal abilities (Ozkalp, 2009)[13]. Additionally, many researchers have concluded that confidence has a direct impact on better performance and higher job satisfaction.

Not to be confused, it should be mentioned that there is a significant difference between self-efficacy and locus of control. Since the internal locus of control assumes that an individual's reward depends on an individual's own behavior where the external locus of control says that rewards are from external factors (Rotter, 1966). Bandura (1977) proved that an individual can have a strong internal locus of control, however he may have low self-efficacy regarding exact problems.

Researchers have clearly understood that there is a link between self-efficacy and entrepreneurship. At the same time, this connection shows that it is a positive correction of people's desire for entrepreneurship (Hwang et al, 2016)[21]. In their research papers Moriano et al, (2012)[9] and Mat et al, (2015) emphasized that self-efficacy is a significant predictor of a person's intention to become an entrepreneur.

Self-efficacy is like a set of goals that are self-fulfilling. Entrepreneurs with these goals are people who are prone to act quickly and are psychologically able to overcome themselves (Erickson, 2002)[22]. The character of self-confident entrepreneurs, high ideas and excellent exchange of information. According to empirical evidence, the main way for entrepreneurs to motivate themselves is to stimulate innovative behavior by sharing their ideas and information with the environment (Ozkalp, 2009)[13]. Entrepreneurs with such qualities inspire innovative behavior and avoid stress and emotional fatigue. This makes a significant contribution to the entrepreneur's personal business. It is important that the entrepreneur's business is optimal, confident in himself and his goals, emotional behavior, and avoidance of pressure.

Self - efficacy is a very important explanatory variable in defining the entrepreneurial intention (Boyd & Vozikis, 1994)[16]. Accordingly, Wang et. al (2016) stated that self-efficacy has a direct effect on entrepreneurial intention. Boyd & Vozikis (1994) added that understanding the entrepreneurial intention would be easier if self-efficacy was included in the determination. Since one of the main reasons for not continuing the family entrepreneurship career was a lack of self-confidence.

Methodology

EXPERIMENT IN NATURALISTIC-BUSINESS SETTINGS

During the literature review, we assumed that self-efficacy and optimism have an impact on a person's intention to become an entrepreneur. However there was not enough data to support our assumption. Since there is a cause and effect relationship between self-efficacy and entrepreneurial intention; optimism and entrepreneurial intention, the experimental method was the best solution to gather data. Because experimental methods allow us to establish cause-effect relationships between variables. Additionally, the experimental method is cheaper and less time consuming than other methods. On the other hand, people act differently in real-life situations (Macko & Tyszka, 2009)[18]. Due to this fact, we decided to do an experiment in order to get more realistic answers.

There were 87 (eighty seven) participants in our study and people were asked to answer 10 naturalistic-business scenarios. Five of them include situations which help to measure the level of optimism, and five of them are skill-based scenarios which help to determine the level of self-efficacy. Risky managerial scenarios from Tyszka & Zales´kiewicz, (2006) considered different managerial problems: Taking out a new loan, signing a contract with a new advertising agency, paying a risky advance, continuing an unsuccessful business, starting a new business, and etc.

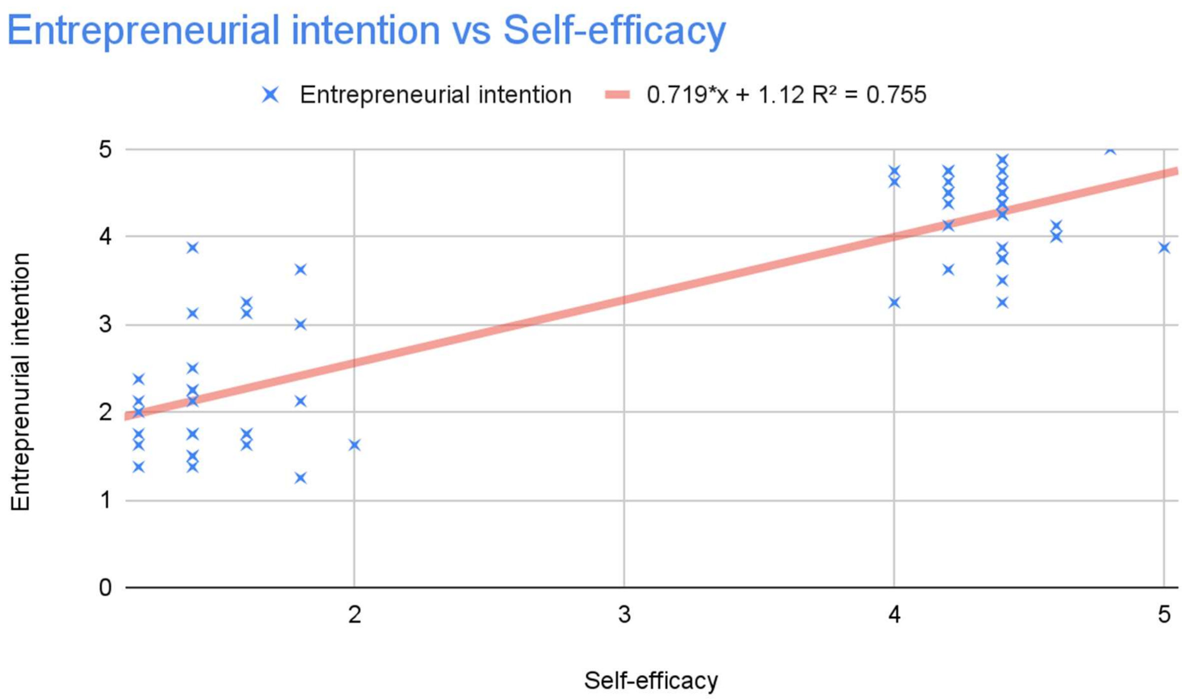
In each scenario, there is a certain dilemma that has to be solved and chosen through their level of risk. Self-efficacy can be measured by skill-based risky situations and optimism by chance-based risky situations regarding Macko & Tyszka, (2009). Scenarios that claimed to use participants' skills regarding the business, economy and entrepreneurship, refer to self-efficacy. For instance, one of the scenarios which describe the situation about loans was: "You have thoroughly studied the market of Kazakhstan and started a business, but there are not enough funds, what do you do?". In this scenario, saying that "you have thoroughly studied", means that the participant has the knowledge and enough skill regarding the business. On the other hand, the scenarios in which the subject has no control over the situation such as the market situation, or crisis refers to optimism. By this way, the skill-based risky scenarios which were related to self-efficacy and chance-based risky scenarios which were related to optimism are derived.

Also, we used Entrepreneurial Intention Scale (EIS) to measure to what extent participants have intention to become an entrepreneur. EIS is based on the methods and guidelines of Hinkin (1995) and DeVellis (2003) which contains questions to assess the intention of respondents to become self-employed. We used a five point Likert scale (from "Strongly disagree" to "Strongly agree") for answers in order to not cause fatigue of the participants and make it easier to analyze results. To test the influence of optimism and self-efficacy we run two linear regressions where dependent variable is entrepreneurial intention and independent variables are self-efficacy and optimism.

Analysis & Findings

In the first regression, where we tested the impact of self-efficacy on entrepreneurial intention, by looking at the sloped upward regression line, we see a positive relationship between self-efficacy and entrepreneurial intention. In the regression equation, the coefficient of self-efficacy is equal to 0.719 (Figure - 2.1). It means that when the self-efficacy level changes by 1 unit, the entrepreneurial intention level increases by 0.719 units. The next discussion point is R squared value. In our regression, it is 0.755, this value tells us that a 75.5 % change in the dependent variable can be explained by the independent variable. In our case, 75.5 % variance in entrepreneurial intention was caused by self-efficacy. Since these numbers are significant statistically ($p < 0.001$), we can conclude that self-efficacy has an impact on a person's intention to become an entrepreneur.

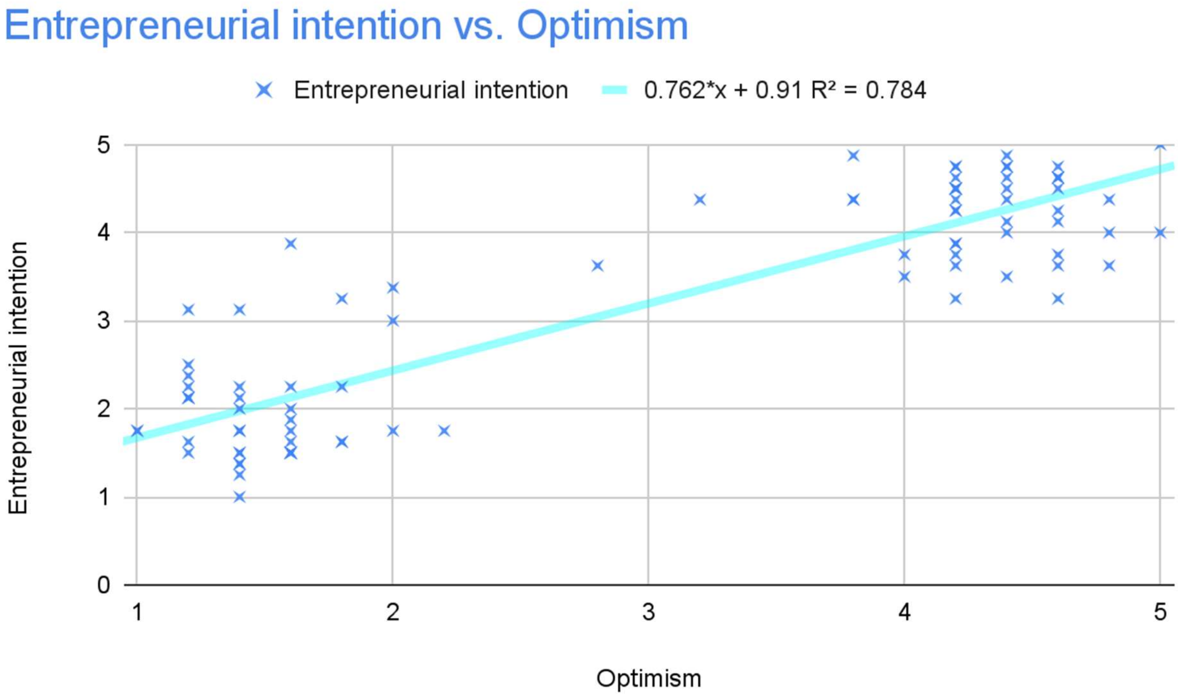
Figure - 2.1 The regression line between entrepreneurial intention and self-efficacy



Source: computed by author

The second regression was run between entrepreneurial intention and optimism to know the cause-effect relationship between two variables. We can say that optimism influences positively by looking at the sloped upward regression line (the same result as the previous regression). The coefficient of optimism tells us that the entrepreneurial intention level increases by 0.762 units when the optimism level changes by one unit (Figure - 2.2). The R squared value of the second regression is equal to 0.784 (Figure - 2.2). It means that 78.4 % of changes in entrepreneurial intention can be explained by optimism. By testing the significance, it is proved that p value is statistically significant (p-value is less than 0.001), so we can conclude that optimism has an impact on a person's intention to become an entrepreneur.

Figure - 2.2 The regression line between entrepreneurial intention and optimism



Source: computed by author

As it was covered in the literature review part, Bird's, (1988) Contexts of Entrepreneurial Intentionality show that after entrepreneurial intention, there is an action. It means the individual becomes an entrepreneur, if he has entrepreneurial intention and plus an action. Additionally, Jakopec et al, (2013) found that people who have higher potential usually have more entrepreneurial intentions. Because of this we wanted to analyze entrepreneurs and non-entrepreneurs' self-efficacy and optimism level.

The next interesting point that we have discovered during the analysis is there is a difference between entrepreneurs and non-entrepreneurs (who were employees, civil servants in our experiment) regarding self-efficacy and optimism. Firstly, we run a t-test to see if there is a difference between entrepreneurs' and non-entrepreneurs' self-efficacy. T score was 3.03E-57. Since it is less than the 0,05 significance level, we reject the null hypothesis and say that there is a difference between entrepreneurs and non-entrepreneurs' self-efficacy levels. Entrepreneurs are more likely to choose the skill-based risky options due to their self-efficacy. As it was mentioned before, people with higher levels of self-efficacy find better and more solid reasoning for their motivation. Therefore it is logically that non-entrepreneurs have less self-efficacy showing that they still can not find this motivation and intention to become self-employed. So, if non-entrepreneurs would have the same level of both items of PsyCap (optimism and self-efficacy) and the same results as entrepreneurs then it leads to the question “Why are they still working for someone and not doing business?”. Since there is a cause-effect relationship between entrepreneurial intention and entrepreneurship (action), we can conclude that self-efficacy has an impact on entrepreneurial intention.

Next, the t-test was calculated to test if there is a difference between entrepreneurs and non-entrepreneurs regarding their optimism level. T score was 9.00E-74, which is less than 0,05. As usual it means we reject the null hypothesis, and there is a difference between entrepreneurs' and non-entrepreneurs’ optimism level. In this study, we used regression analysis, t-test to see if there is an impact of self-efficacy and optimism on a person's intention to become an entrepreneur. The regression analysis gave a positive relationship between self-efficacy and entrepreneurial intention, also between optimism and entrepreneurial intention. The next t-test, which was done by two samples (entrepreneurs and non-entrepreneurs) concluded that there is a difference between the two groups.

These findings once again prove that the level of self-efficacy and optimism directly impacts entrepreneurial intention and each of them is differently related to entrepreneurial intention. To conclude, findings of this study correspond to other research papers' findings and validate other authors' claims that psychological resources such as self-efficacy and optimism are related to entrepreneurship.

Table 2.1. Regression analysis

Hypothesis	Regression Weights	Beta coefficient	R square	F	p-value	Hypothesis supported
H1	SE→EI	.719	.755	99.124	.001	Yes
H2	O→EI	.762	.784	476.913	.001	Yes

Note: $p<0.01$. SE: Self-efficacy, EI: Entrepreneurial Intention, O: Optimism

source: computed by author

Discussion & Conclusion

The main objective of the research paper was to examine whether or not psychological factors, reflected as social efficacy and optimism, would influence a person's intention to become an entrepreneur. To reach our goal, we first tried to understand and explain the main terms such as optimism, self-efficacy and entrepreneurial intention. Self-efficacy is the confidence in one's abilities to mobilize and move towards a set of goals (Luthans & Youssef, 2007)[11]. Here self-efficacy is shown clearly in skill-based risky situations. Optimism is related to internal attribution to positive events that could occur (Jackson, 2009)[13]. Therefore optimism is related to chance based risky situations.

Based on the findings of both studies, results have shown a positive relationship between entrepreneurial intention and optimism and self-efficacy. In the first experiment, both regression analysis proved that people with higher levels of entrepreneurial intention have a higher level of both optimism and self-efficacy. If it comes to discussions about optimism, findings of our study confirmed the statement of Hytti (2005)[4] that entrepreneurs are risk-takers. Participants with higher intention were optimistic when answering chance based risky (optimism) questions. This shows that they are not afraid to take risks and have positive outlooks toward the future. Also, in our study there were questions about failures, challenges and obstacles in business and people with high EI answered positively, showing that they can overcome these challenges. It leads to the conclusion that entrepreneurs who think positively are steadfast when facing different obstacles (Giacomin, 2015). They are focusing on what is good even in challenging situations (Giacomin, 2015) and viewing risks as new opportunities (Coval J.D, 2005)[5]. From all of these findings we can conclude that optimism has an impact on a person's intention to become an entrepreneur.

However, we should not forget that an overoptimistic view could result in failure because of setting unattainable goals (Hmieleski, 2009)[15]. We consider that the influence of different levels (low, medium and high) of optimism on entrepreneurial intention is another interesting topic for future research.

When it comes to self-efficacy, participants with high entrepreneurial intentions showed that they believe in the effectiveness of their own actions and expectation of success from their implementation. These people were optimistic answering skill based risky questions which indicates that they have a high level of both optimism and self-efficacy. It shows that self-efficacy is about belief and hope in personal abilities (Ozkalp, 2009)[13]. Also, it was mentioned that entrepreneurs avoid stress and emotional fatigue using different ways (Ozkalp, 2009)[13] that is why they are full of motivation. Therefore, in our study people with high EI were positive on skill based questions such as continuing existing but risky business due to the competitiveness. Based on these findings and other authors' claims we can agree that self - efficacy is a very important explanatory variable in defining the entrepreneurial intention Boyd & Vozikis, (1994) and it has a direct effect on entrepreneurial intention (Wang et. al ,2016)[21].

Moreover, entrepreneurs showed higher optimism and self-efficacy than non-entrepreneurs. It means low level of optimism and self-efficacy could be one of the factors that influence non-entrepreneurs to be not self-employed, while entrepreneurs had optimism and self-efficacy in the past to be entrepreneurs today. This verifies Backes-Gellner's view that in psychological aspects entrepreneurs and non-entrepreneurs are different. When a person has intention to become an entrepreneur, he or she directs his/her attention, experience and actions to achieve the set goals Bird, (1988)[16] while a non-entrepreneur or employee is a specialist in one field (Backes-Gellner, 2013)[3]. However, it could be that even if a person does not have an entrepreneurial intention, it does not always mean that he has a low level of optimism and self-efficacy. Maybe he just loves his/her job and is happy to be an employed worker, therefore he or she does not want to be an entrepreneur. But again, we are studying the influence of optimism and self-efficacy on EI, not in general. The results of t-test in the second study supported the first study proving that optimism and self-efficacy are factors that impact on a person's intention to become an entrepreneur. Also, entrepreneurs chose more riskier options and wanted to participate in the game rather than non-entrepreneurs. It supports the author's claim that entrepreneurs face much higher risks of failing, and financial losses than employees who have lesser chances of causing huge resource reduction, when entering a new industry and creating new business from scratch (Hytti, 2005)[4]. So, it showed that in skill-based and chance-based risky situations, entrepreneurs are more likely to choose more riskier options based on their skills (self-efficacy) and positive view of the future (optimism).

In conclusion, based on our research we could achieve our aim and get answers to research questions: psychological factors reflected self-efficacy and optimism have an impact on a person's intention to become an entrepreneur. Optimism influences a person's intention to become an entrepreneur because to start a business or new venture a person should have an optimistic outlook and be ready to take risks. Self-efficacy that shows the people's belief while they exhibit their performance also has a cause/effect relationship with entrepreneurial intention. Because if a person has intention to create a new venture it means he or she believes his or her own skills and their effectiveness.

The distinguishing feature of this study is that we considered both optimism and self-efficacy in the same sample, while other authors investigated these factors separately for the different sample. As future research directions for Entrepreneurial Intention, Optimism and Self-efficacy it could be suggested to include other items of Psychological Capital such as resiliency and hope.

Limitations of the study

Our study, like other research papers about entrepreneurship, is not without limitations. The sample size and gender of participants (more men than women) were limitations of this study. We suggest increasing the sample size and having an equal number of men and women in order to have more reliable results for further research. Also, it would be better to have a diverse sample of participants having different groups of people.

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Appendix 1

Entrepreneuring Intent Scale by Dave Valliere (2014)

Within the next 12 months I intend to…

1. Conduct practical experiments to discover solutions to customer problems
2. Develop a prototype of a product/service
3. Develop a value proposition
4. Test my value proposition in the market
5. Quit my current job, or substantially reduce hours so I can focus on a new business
6. Invest my own resources into my business
7. Open a business bank account
8. Purchase major equipment

APPENDIX 2

1. How old are you?
   1. 18-24
   2. 25-40
   3. 41-50
2. Gender (Male / Female) ?
   1. Male
   2. Female
3. Are you?
   1. Entrepreneur
   2. Emloyees
   3. Civil servants
4. In what field would you start a business researching the Kazakhstan market?
   1. Agriculture
   2. Medicine
   3. Livestock
   4. Own business
   5. Online business
5. I thoroughly studied the market of Kazakhstan and started a business, but due to lack of funds I take a loan
   1. Strongly disagree
   2. Disagree
   3. Neutral
   4. Agree
   5. Strongly agree
6. If there was only one way to make money, but I was not sure that your business would be 100% successful, I would take a loan
   1. Strongly disagree
   2. Disagree
   3. Neutral
   4. Agree
   5. Strongly agree
7. It is very convenient for me to start a business with a close acquaintance.
   1. Strongly disagree
   2. Disagree

3. Neutral
4. Agree
5. Strongly agree

8. It is very convenient to start a business with a close acquaintance, I earn 50% if we run our business, I will lose 50% of my investment, if the business does not run successfully. I start a business with a close acquaintance.

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

9. I have an electronics company. At the end of the year, I suffered a significant financial loss. If the market is good and I get a loan, I will earn a lot of money. This will not only cover last year's losses, but also improve the company's financial situation. However, in a crisis, an additional loan will bankrupt my company. I get a loan as a company director, this is the most effective way out of the impasse.

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

10. I am the owner of a company that produces soft drinks. The big advertising agency I work for has increased sales so far. But lately, I've noticed that sales haven't changed. I stop working with this agency and begin with the new advertising agency on the market which has not enough practice.

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

11. A housing construction company with 4 years of experience has started construction of new housing. I wanted to buy an apartment in the heart of the city in advance, because a square meter seemed to be cheaper. Although the company has completed several housing projects, it has little experience. Still, I will buy a house from this company.

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

12. Taxi Go has been on the market for 8 years. The first 5 years of the business were successful. But in recent years, thanks to new products in the taxi market, the company has lagged behind competitors. The owner of the company is about to retire. He wants to leave his business to me with some money. Enterprises need significant funding to introduce new technologies. If I continue to do this, I have a chance to make a good profit, but I am unlikely to be ahead of my competitors, because they are far ahead. But my decision is to continue my father's business, no matter how difficult the situation.

1. Strongly disagree
2. Disagree
3. Neutral

4. Agree
5. Strongly agree

13. I have a 5-year contract with an American oil company. Now the contract is coming to an end. I recently received an offer from a Chinese oil company. Unlike the Chinese company, Americans offer employees a bonus every 3 months, various events, vacation vouchers, five meals a day during working hours, and more. But the amount they offer is 50% less than the Chinese. Although the Chinese company pays a lot of money, it cannot serve the workers like the American company. But my decision will be to sign a contract with a Chinese company.

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

14. I have a large clothing store. However, due to the recent crisis, the number of buyers of clothes has decreased. Accordingly, my income decreased. I will start this business as I study how the food business can be successful even in times of crisis.

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

15. I work as a programmer for a large company. My salary is enough for me. A close friend invited me to work for his company. He said that he would give me twice as much salary + bonus as my current job. But since my friend is a startup, I doubt it will be a successful business. However, I believe that working with him is the best solution. So I quit my job and work with my friend.

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

16. I have a reputable company. I am thinking of investing in a new project. If successful, my company will double. And if I fail, I lose my reputation. But I really like that project, so I invest in a new risky project.

1. Strongly disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly agree

Un Essai d'étude sur le marché des changes FOREX et la croissance économique

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RESUME :
Le marché des changes FOREX est l'un des marchés les plus vastes au monde jouant un rôle crucial dans les échanges internationaux en utilisant comme outil la variation des taux de change avec les divers canaux de transmission des marchés des changes . Ainsi, cette étude consiste donc à analyser les impacts des variations des taux de change sur la croissance économique à travers les canaux de transmission. d'une part, et les impacts de la croissance sur le taux de change d'autre part .L'analyse de ces interactions complexes entre les taux de changes et la croissance économique s'avère très intéressante car elle permet de comprendre les mouvements des échanges de capitaux dans le monde et de voir les opportunités offertes par ces interactions afin de pouvoir retrouver le chemin de la croissance économique
C'est dans cette optique qu'on a choisi ce thème pour pouvoir étudier les stratégies de politique monétaire appropriées pour que notre pays qui traverse actuellement une situation économique en crise arrive à atteindre les objectifs de croissance.
Pour ce faire, les marchés de changes basés sur le FOREX sont choisis comme une des solutions envisagées pour pouvoir remédier à cette situation
Mots-clés : Marché des changes FOREX , Variation des taux de changes , canaux de transmission , croissance économique.

ABSTRACT:
The foreign exchange (FOREX) market is one of the largest markets in the world, playing a crucial role in international trade by utilizing exchange rate fluctuations through various transmission channels. Thus, this study aims to analyze the impacts of exchange rate variations on economic growth through transmission channels on one hand, and the impacts of growth on exchange rates on the other hand. Analyzing these complex interactions between exchange rates and economic growth is highly interesting as it allows understanding the movements of capital flows globally and identifying opportunities offered by these interactions to pave the way for economic growth.
It is with this perspective that we have chosen this theme to study appropriate monetary policy strategies so that our country, currently experiencing an economic crisis, can achieve its growth objectives. To do so, FOREX-based exchange markets are chosen as one of the envisioned solutions to remedy this situation.
Keywords: FOREX market; Exchange rate variations; Transmission channels; Economic growth.

INTRODUCTION.

La crise économique de l'année 2008 a eu des impacts significatifs sur l'économie de Madagascar entraînant une récession économique et une augmentation du chômage et une inflation .Cette crise économique a été aggravée par les chocs économiques notamment la pandémie de COVID-19 et les chocs climatiques lesquels ont amené le pays dans une situation économique de basse conjoncture. Dans ce contexte, il est primordial de chercher les politiques monétaires appropriées pour relancer la croissance économique à Madagascar

Devant cette situation, on se pose la question pour savoir si parmi les mesures de politique monétaire contemporaine actuelle dans le monde, pourrait-on choisir une politique monétaire efficace afin de résoudre les problèmes de notre marché en devises plus précisément le choix des techniques de politique de change indispensables tels que le FOREX comme instrument pour pouvoir rentabiliser notre marché de devises lequel constitue un des facteurs important pour avoir une croissance durable . Notons en passant que le compte courant de notre balance des paiements accuse un solde largement déficitaire depuis des années. Cette situation qui prévaut au niveau du compte courant préoccupe vraiment les économistes du pays compte du fait l'équilibre de ce compte courant figure parmi une des conditions pour la relance de la croissance économique d'un pays

PROBLEMATIQUE.

C'est dans ce contexte de difficultés économiques notamment en ce qui concerne les comptes extérieurs de Madagascar qu'on a choisi ce thème intitulé « Un essai d'étude sur le Marché des changes FOREX et son impact sur la Croissance économique de Madagascar »

Le présent article devrait donc répondre à la question suivante : Dans quelle mesure le Marché FOREX pourrait-il utilisé comme une stratégie de politique de change pour relancer la croissance économique à Madagascar en période de crise. ?

Afin de pouvoir répondre à cette question, on va commencer cet article par une présentation du contexte économique actuel de Madagascar avec ses défis économiques pour pouvoir étudier la politique de change appropriée dont le Marché des changes basé sur le FOREX. Ensuite, on analyse le cadre théorique qui fait une revue des fondements théoriques du marché des changes. A partir de cette revue des fondements théoriques, on va essayer de voir et d'analyser comment les mouvements de Taux de change peuvent-ils influencer les variables économiques-clés liés à la croissance ? La revue de littérature économique essaie de décrire les principaux auteurs qui ont écrit des livres sur la croissance économique.

Les études empiriques relatives au thème seront développées dans la partie réservée à la méthodologie utilisée par une analyse empirique des données macroéconomiques pour évaluer l'efficacité du marché des changes FOREX afin que Madagascar puisse retrouver le chemin d'une croissance économique durable. Cette méthodologie comporte aussi une analyse des résultats obtenus. Cette étude est clôturée par des discussions et des conclusions indispensables pour les décideurs politiques et économiques sur les mesures de politique de change à mettre en œuvre en l'occurrence le marché des changes FOREX pour relancer la croissance à Madagascar

CONTEXTE

La situation économique de Madagascar connaît une situation de basse conjoncture tant au niveau microéconomique que macroéconomique avec une faible demande agrégée accompagnée d'un faible niveau de consommation et la présence des agrégats macroéconomiques présentant des indicateurs économiques spécifiques au pays en période de crise tel que le déficit structurel du solde de la balance des paiements et de la balance des opérations courantes ces dernières années. Une volatilité des indicateurs économiques notamment le taux de change , Des problèmes au niveau de la situation des Avoirs extérieurs ainsi qu' un endettement élevé .Cependant, il est important de souligner ce déficit structurel au niveau de la balance du compte courant qui mesure l'activité productive d'un pays. Cette situation est due au déficit de la balance commerciale, au faible niveau du solde de la balance des revenus et des transferts. C'est à partir de la situation économique jugée difficile qui nous a amené à choisir le thème de l'article en espérant que l'ajustement de ce marché des changes du FOREX avec ses différents canaux de transmission pourraient relancer la croissance de Madagascar

CADRE THEORIQUE

Cette partie relative au cadre théorique concernant le thème « Un Essai d'étude sur le marché des changes FOREX et son impact sur la croissance économique » consiste à démontrer si le marché des changes FOREX fondé par Jean Jacques Cossette en 1957 pourrait relancer la croissance économique de Madagascar en cette période de crise.

Ainsi, on va voir dans cette première partie les fondements théoriques des marchés de change ainsi que différents canaux de transmission du marché des changes et dans une seconde partie la littérature relative à la croissance

1- LES FONDEMENTS THEORIQUES DES MARCHES DES CHANGES :

Ces fondements théoriques nous permettent de comprendre l'impact du marché des changes FOREX sur la croissance économique.

Par ailleurs, il est important de souligner que les marchés de changes FOREX donnent la possibilité aux participants comme les traders privés et institutionnels de participer aux marchés financiers mondiaux en jouant sur les fluctuations des paires de devises leur permettant de se procurer d'énormes profits étant donné que les coûts des transactions dans ces marchés de changes FOREX sont moins coûteux par rapport à ceux des marchés des changes traditionnels .

A- Les Fondements théoriques des marchés des changes :

- La Théorie du Commerce International :

Plusieurs auteurs ont été à l'origine de cette théorie relative au Commerce International dont les principaux économistes sont les suivants :

- Adam Smith pour la théorie des avantages absolus en 1776
- David Ricardo pour la théorie des avantages comparatifs en 1817
- Les Economistes El Heckscher (1919),Berti Ohlin (1933) et Paul Samuelson (1948) pour la théorie HOS
- Krugman pour la théorie du Commerce international basée sur les imperfections de la concurrence en 2009

- La Théorie de la Parité du Pouvoir d'Achat :

Cette théorie fondée par Gustav Cassel en 1918 a comme base d'évaluer les différences des taux d'inflation entre les pays lesquels devraient se refléter dans les taux de change. Si un pays connaît une inflation plus élevée que les pays partenaires commerciaux, sa monnaie se déprécie pour compenser cette différence afin de pouvoir maintenir la parité du pouvoir d'achat. Cette dépréciation de la monnaie permettra de rendre compétitive les exportations et d'atteindre les objectifs de croissance.

- La Théorie de Mundell- Fleming :

Cette théorie a été publiée par Mundell- Fleming en 1962 et 1963 laquelle est à l'origine du concept de la mobilité des capitaux. Cette publication figure parmi un des facteurs contribuant à la croissance selon les explications avancées par de nombreux économistes au fil des années. Selon cette théorie, les capitaux peuvent circuler librement entre les pays ce qui signifie que les taux d'intérêt sont déterminés par le marché mondial des capitaux.

5

Cette mobilité des capitaux consiste aussi à stabiliser les taux de change ainsi que les problèmes de déséquilibre économiques

- La Théorie du cycle de vie en matière des marchés de changes

Cette théorie fondée par Raymond Vernon en 1960 essaie de répondre à la question de savoir : comment les marchés de changes évoluent et se transforment au fil du temps. Cette théorie s'inspire de la théorie du cycle de vie des produits en Marketing. Elle comporte quatre principales phases dont : la phase d'expansion, la phase du Pic au sommet, la phase de contraction économique et la phase de creux ou de fond.

B- Impacts de la variation du Taux de change sur la Croissance :

Plusieurs auteurs ont été à l'origine de ce concept de variation du taux de change dont les principaux économistes sont les suivants :

- Caramozza dans le livre intitulé « Interaction des variations du taux de change et de l'inflation » en 1980
- Compa et Goldberg dans le livre intitulé « Exchange rate pass through into Import prices . A macro or micro phenomenon » en 2002
- Bailliu et Fuji dans le livre intitulé « Exchange rate pass through in industrialized countries. An empirical investigation » en 2004

Par définition, la spécificité du marchés des changes FOREX réside sur le fait que les variations des taux de change dans ces marchés influencent la croissance économique .On va donc étudier dans cette partie ces variations des taux de changes qui affectent la croissance économique à travers les Canaux de transmission des marchés de changes: les exportations et les importations, le tourisme, l'investissement Direct Etranger (IDE) et la confiance des investisseurs .

C- Relation inverse entre la croissance et le taux de change :

Voici une liste non exhaustive des canaux de transmission qui influencent en retour la relation entre la croissance économique et le taux de change: le flux de capitaux , la confiance des investisseurs , l'influence du taux d'intérêt et les Investissements étrangers, la balance commerce, les investissements directs étrangers, la stabilité macroéconomique et la politique monétaire et crédit. Au vu d'une forte croissance, les investisseurs font confiance à la situation du marché et entraîne une hausse de la demande en monnaie locale ce qui implique une hausse du taux de change.

2-LA LITTERATURE ECONOMIQUE RELATIVE A LA CROISSANCE

La croissance économique est un sujet complexe. Les théories et les facteurs qui influencent la croissance ont évolué dans le temps :

- Solow RM (1956) dans son livre intitulé « A contribution to the theory of economic growth » : Il propose un modèle de croissance économique exogène et analyse les déterminants du taux de croissance économique à long terme
- Romer PM (1986) dans son livre intitulé « Increasing returns andlong run growth" : Il propose un modèle de croissance endogène dans lequel la croissance économique est expliquée par l'accumulation des connaissances et du capital humain. Ce modèle met l'accent sur l'innovation technologique en tant que moteur de la croissance
- Barro RJ et Sala-i-Martin (1995) dans son livre intitulé « Economic growth » : ils proposent des théories couvrant à la fois les modèles de croissance exogène et endogène ainsi que les facteurs institutionnels et politiques

- Markiw et Romer (1992) dans son livre intitulé « A contribution to the empirics of economic growth » : ils font une étude empirique des déterminants de la croissance en examinant les rôles du capital physique, du capital humain et de la technologie dans la croissance
- Acemoglu et Robinson (2012) dans son livre intitulé « Why notions fail » : the origins of power, prosperity , and poverty : Ils explorent comment les institutions politiques et économiques parviennent à atteindre la croissanc.

Notons que les premières théories de la croissance ont vu le jour dans les années 1950 et 1960 par les économistes tels que Solow et Harrod-Domar selon lesquelles le rôle de l'investissement en capital et en technologie joue un rôle fondamental dans la croissance. Dans les années 1980, les économistes comme Barro et Markiw commencent à s'intéresser aux institutions et aux politiques économiques comme facteurs influençant la croissance. D'autres économistes comme Acemoglu et Robinson en 2012 ont souligné le rôle des institutions, l'entreprenariat et le développement des marchés dans la croissance.

METHODOLOGIE :

La méthodologie du présent article est basée sur une approche empirique et analytique. Elle comprend une analyse quantitative et qualitative des données économiques indispensables sur les relations empiriques entre le taux de change et la croissance économique telles que l'inflation, le commerce international, l'investissement, les exportations et les importations, l'endettement extérieur, le taux d'intérêt, les flux de capitaux etc . La méthodologie inclue également une revue de la littérature économique existante sur le sujet, ainsi que l'utilisation de modèles économétriques basées la méthode E-VIEWS 10 pour évaluer l'impact du marché des changes FOREX sur la croissance économique à Madagascar en période de crise.

La méthodologie à suivre pour l'élaboration de cette Méthodologie comprend plusieurs étapes dont la réalisation est indispensable afin de bien répondre et vérifier la question posée dans la problématique

1. Définition des variables :

   Dans cette étape, on va définir les variables-clé telles que le taux de change, le taux de croissance économique, le taux d'inflation, le taux d'intérêt, la balance commerciale, les réserves en devises, etc

   En ce qui concerne notre modélisation économétrique, on peut déjà identifier comme variables dépendantes le taux de croissance économique, le taux d'inflation, la balance commerciale, le taux d'intérêt et les flux de capitaux et comme variable indépendante le taux de change

   Pour approfondir cette recherche sur l'impact du marché des Changes FOREX sur la croissance économique à Madagascar, on a identifié plusieurs autres variables-clés telles que le commerce international, les flux de capitaux, les investissements étrangers, l'inflation

2- Choix de la méthodologie d'analyse

Afin de pouvoir analyser l'impact de la politique de change sur la croissance économique, on va utiliser des modèles économétriques à partir des données collectées. Le modèle VAR est ainsi utilisé pour permettre de modéliser les relations causales entre la variable dépendante et les diverses varioles indépendantes. Notons que le modèle VAR est un modèle économétrique qui représente des séries temporelles et étudie les relations de causalité entre elles Ces séries temporelles ne présentent pas des relations de cointégration entre les variables.. Le modèle VAR est utilisé lorsque plusieurs variables sont supposés interdépendantes et que l'on souhaite analyser les interactions entre elles.

3- Modélisation économétrique et analyse des résultats :

On utilise les données collectées relatives à l'économie malagasy auprès des départements et institutions concernés pour estimer les modèles économétriques par le modèle VAR qui étudie les relations de causalité entre la variable dépendante et les variables indépendantes. La modélisation du VAR consiste en premier lieu à étudier la stationnarité des séries temporelles. A ce titre, on utilise les tests de stationnarité ADF (Augmented Didkey Fuller) et PP (Philips Perron) pour analyser la stationnarité des séries temporelles et étudier l'équilibre à court terme des variables dépendantes et indépendantes .Les tests ADF et PP sont basés sur l'étude des hypothèses ayant comme spécificité la présence d'une racine unitaire. Si on pose comme hypothèse Ho présentant des séries temporelles non stationnaires avec la présence d'une racine unitaire..Si p-value des séries statistiques est inférieure à 0,05 on rejette Ho : les séries sont donc stationnaires. Si p-value des séries statistiques est supérieure à 0,05 : on accepte HO : les séries sont donc non stationnaires Pour notre étude p-value est inférieure à 0,05 donc nos séries temporelles sont stationnaires. Après avoir étudié la stationnarité des séries temporelles, on étudie la significativité des variables indépendantes à l'aide des tests de STUDENT .Supposons que Ci représente le coefficient de la variable Xi à tester. Si on pose comme hypothèse Ho : Ci = O (Variable non significative) ; H1 : Ci est différent de O (variable significative) Dans le cas pratique, on rejette Ho si l'indicateur statistique t-stat est supérieure à 1,90 .

Pour notre étude, après avoir effectué les tests statistiques, on a constaté que notre indicateur statistique t-stat est inférieur au seuil de 1,90 prévu par le test de Student .La relation causale entre la croissance économique (PIB) et le marché des changes FOREX (M3) n'existe donc pas pour le cas de notre étude si on se réfère à la matrice de la politique monétaire résultant du modèle VAR (en annexe) étant donné que la variable explicative le marché des changes FOREX (M3) n'est pas significative . Cependant si on se réfère toujours à cette même matrice de politique monétaire résultant du modèle VAR , il existe une relation causale entre le marché des changes FOREX (M3) et le marchéfinancier (IDE) d'une part , et le marché des changes FOREX (M3) et le taux de change (USD) d'autre part .De ce fait, on pourrait bien faire la combinaison de ces deux catégories de politique monétaire c'est-à-dire une combinaison linéaire entre le marché financier (IDE) et le taux de change (USD) laquelle est significative dont l'objectif est de parvenir à la croissance compte tenu du fait que si l'on arrive à la mise en place du marché financier à Madagascar avec une stabilisation du taux de change , on pourrait bien rentabiliser le marché financier étant donné que la stabilisation du taux de change rassure les investisseurs et attire les investissements

RESULTATS :

Notre étude a montré la relation linéaire entre l'ajustement du compte courant et la croissance en spécifiant que si la courbe relative à l'évolution du compte courant connaît une tendance haussière, la courbe du taux de croissance suit la même évolution et vice versa. Mais entre la croissance économique et le taux de pression fiscale, il n'existe pas de relation linéaire. La courbe du taux de pression fiscale reste stable et constante durant plusieurs années alors qu'on assiste à une volatilité du taux de croissance et du solde du compte courant. , Par ailleurs, il est à rappeler que diverses études ont montré que le compte courant de Madagascar composé de la balance commerciale et des services, les balances de transferts et des revenus est largement déficitaire ces dernières années. Les études ont démontré que si les stratégies de politique économique et monétaire ne changent pas, on assistera à une prévision de déficit structurel pour les années à venir. De ce fait, une politique d'accumulation des réserves en devises figure parmi une des politiques les plus sollicitées pour pouvoir améliorer le solde du compte courant de Madagascar et cette politique d'accumulation des réserves en devises doit avoir comme moteur le développement des marchés des changes FOREX à Madagascar .Cependant, cette politique d'accumulation des réserves par le marchés des changes FOREX consiste ainsi à la relance de la balance des opérations courantes par la relance des marchés financiers . Cette politique doit être combinée avec la politique d'accumulation des réserves ayant pour principal le rétablissement du solde de la balance des opérations courantes par la promotion des exportations, la relance de la balance des revenus par les investissements étrangers dont les investissements directs étrangers et les investissements de portefeuille.

C'est dans cette situation déplorable des investissements en portefeuille qui nous a amené à proposer la présente solution basée sur la mise en place des marchés FOREX .On a fait une projection pour les prochaines années et on a trouvé que si les stratégies de politique économique et monétaire de Madagascar ne changent pas, la situation des investissements étrangers sera un grand problème pour les décideurs de ce pays entraînant automatiquement un solde déficitaire structurel du compte courant. De ce fait, aucune mesure de politique économique et monétaire ne conduira le pays à un taux de croissance acceptable Avant de faire des recommandations appropriées relatives à ce thème de recherches, des études ont montré que Madagascar se trouve dans une situation économique de manque de ressources économiques et financières pour relancer sa croissance. Cette situation est caractérisée par le déficit structurel de son compte courant. Or, selon les théories d'équilibre du FMI relatives au PIB = C+I+G+X-M (C : Consommation ; I : Investissement ;G :Consommation publique et Investissement public X : Exportation ; M : Importation) . Il ressort de cet équilibre que, en ce qui concerne Madagascar, S (Epargne) est largement inférieur à I (Investissement) .De ce fait, Madagascar doit améliorer son Epargne si elle veut rendre positif le solde de son compte courant .L'amélioration de cet Epargne doit être réalisée par un accroissement des investissements étrangers afin de se procurer des devises étrangères. Aucune politique économique et politique monétaire ne soit possible pour notre cas si notre compte courant accuse toujours un solde déficitaire structurel.

DISCUSSIONS :

Ces résultats nous amènent à donner des justifications pour pouvoir répondre au thème du présent article ayant pour objectif de comprendre et de vérifier l'impact de la mise en place des marchés de changes FOREX sur la croissance économique à Madagascar en cette période de crise. Ainsi, la problématique du présent article consiste donc à démontrer l'impact de la variation des taux de changes (USD) sur la croissance économique(PIB) et d'apporter de ce fait des conclusions aux décideurs politiques et économiques pour pouvoir mettre le pays sur les rails de la croissance. De ce fait, on a utilisé une modélisation empirique basée sur données macroéconomiques collectées auprès des divers départements ministériels et institutions pour pouvoir effectuer cette étude sur une période allant jusqu'à 30 ans. Cette modélisation empirique a été choisie afin de pouvoir tester et vérifier les différentes approches et théories économiques relatives à la problématique de la recherche

Ceci étant, afin de pouvoir étudier les tests de causalité entre les marchés de change FOREX(M3) et la croissance économique (PIB), on a identifié comme variable dépendante le taux de croissance (PIB) et comme variable indépendante les divers canaux de transmission du taux de change.(M3)

Au vu des résultats, il a été démontré que la balance des opérations courantes de notre pays accusant des soldes négatifs depuis un certain nombre d'années ne nous permet pas d'établir une quelconque stratégie de politique de change. Cette balance des opérations courantes joue un rôle fondamental dans toute stratégie de

politique économique et monétaire étant donné qu'elle statue sur la capacité d'un pays à évaluer sa capacité productive compte tenu du fait que la balance des opérations courantes représentant le secteur extérieur comporte la balance commerciale, des services et des revenus.

Les marchés des changes FOREX constituent donc parmi une des solutions pour remédier à notre problème sur le déficit structurel de la balance des opérations courantes

CONCLUSION :

Sur la base de ces discussions théoriques, il est proposé les conclusions suivantes pour réaliser la relance de la croissance économique en période de crise à Madagascar par la mise en place des marchés des changes FOREX :

1. Rétablir le solde du compte courant: Il a été démontré que les réserves en devises constituent un facteur essentiel pour l'ajustement du compte courant. A cet effet, il est recommandé de pratiquer une politique monétaire basée sur l'accumulation des réserves en devises par la mise en place des marchés des changes FOREX laquelle contribue à l'accumulation des réserves en devises nous amenant ainsi à la stabilité du taux de change et .de maintenir la stabilité macroéconomique en contrôlant l'inflation .Ainsi, il est recommandé de pratiquer une politique de change flexible pour faire face aux divers chocs économiques tels que la crise du COVID . Cette politique de change flexible a comme avantage de procéder
à une stabilisation automatique du taux de change à travers cette opération d'accumulation de réserves en devises.

2- Renforcer la stabilité financière : Cette Politique consiste à la mise en place des marchés financiers à Madagascar compte tenu du fait que ce système financier nous permet d'attirer des investissements étrangers dans le secteur productif .La mise en place de ces marchés financiers nous aide à accumuler plus de réserves en devises provenant des investisseurs extérieurs, et de ce fait , elle constituera une des mesures pouvant faciliter la mise en place des marchés des changes FOREX . La stabilité du taux de change facilitera la rentabilisation des opérations effectuées dans ce marché étant donné que le taux de change stable rassure les investisseurs étrangers à effectuer des opérations d'investissements. .

2. Rentabiliser au maximum l'utilisation des divers canaux de transmission de taux de change prévus dans les marchés FOREX tels que le canal de transmission relatif aux Exportations , Importations, Tourisme, Investissements étrangers, investissements de portefeuille dont les investissements directs étrangers etc Il est conseillé aussi d'utiliser le canal de transmission relatif à la confiance des investisseurs afin de pouvoir rentabiliser les marchés financiers . Par ailleurs, il est recommandé de promouvoir les produits d'exportations compte tenu du fait que la dépendance de Madagascar à l'égard de quelques produits d'exportation expose le pays aux fluctuations des prix des matières premières sur les marchés internationaux. Il est donc proposé de promouvoir les exportations des produits par la diversification économique en développant d'autres secteurs, tels que l'agriculture, le tourisme, et les industries manufacturières. Cette mesure permet d'améliorer le solde du compte courant et d'avoir une croissance économique.

Au vu de ces propositions, on espère que les décideurs économiques pourraient prendre les dispositions nécessaires pour rendre le pays dans le chemin de la croissance

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Vector Autoregression Estimates
Date: 09/18/23 Time: 21:10
Sample (adjusted): 1988 2021
Included observations: 34 after adjustments
Standard errors in ( ) & t-statistics in [ ]

	DPIB	DIDE	DINFL	DM3	DMS	DUSD	DXS
DPIB(-1)	-0.971689	-0.007200	0.062601	0.008452	-0.013509	0.014446	-0.016161
	(0.37893)	(0.05675)	(0.04805)	(0.00533)	(0.01577)	(0.00799)	(0.01658)
	[-2.56433]	[-0.12686]	[1.30293]	[1.58554]	[-0.85643]	[1.80811]	[-0.97468]
DPIB(-2)	-0.001104	-0.008659	0.031997	0.003496	0.011683	0.015840	0.007098
	(0.30119)	(0.04511)	(0.03819)	(0.00424)	(0.01254)	(0.00635)	(0.01318)
	[-0.00366]	[-0.19194]	[0.83784]	[0.82496]	[0.93181]	[2.49422]	[0.53855]
DIDE(-1)	-0.297494	-0.120409	0.062086	-0.044061	0.087025	-0.128065	-0.014928
	(1.47501)	(0.22092)	(0.18703)	(0.02075)	(0.06140)	(0.03110)	(0.06454)
	[-0.20169]	[-0.54503]	[0.33196]	[-2.12337]	[1.41729]	[-4.11782]	[-0.23130]
DIDE(-2)	-2.580518	-0.005824	-0.001990	0.038065	-0.075159	0.002427	-0.035866
	(1.62132)	(0.24284)	(0.20558)	(0.02281)	(0.06749)	(0.03419)	(0.07095)
	[-1.59161]	[-0.02398]	[-0.00968]	[1.66885]	[-1.11357]	[0.07100]	[-0.50555]
DINFL(-1)	1.983860	0.281697	-0.072793	0.024504	0.095618	-0.008052	0.123968
	(1.76030)	(0.26365)	(0.22320)	(0.02476)	(0.07328)	(0.03712)	(0.07703)
	[1.12700]	[1.06844]	[-0.32613]	[0.98951]	[1.30485]	[-0.21693]	[1.60941]
DINFL(-2)	-0.361845	0.049521	0.049099	0.030009	0.012877	0.029599	0.030137
	(1.38953)	(0.20812)	(0.17619)	(0.01955)	(0.05784)	(0.02930)	(0.06080)
	[-0.26041]	[0.23794]	[0.27867]	[1.53513]	[0.22262]	[1.01028]	[0.49566]
DM3(-1)	-9.569366	-0.631955	-0.866156	0.249109	0.115070	0.194825	-0.521211
	(16.2100)	(2.42787)	(2.05536)	(0.22804)	(0.67480)	(0.34178)	(0.70931)
	[-0.59034]	[-0.26029]	[-0.42141]	[1.09237]	[0.17053]	[0.57003]	[-0.73482]
DM3(-2)	8.501519	-1.976016	0.503064	-0.130990	0.881100	0.000980	0.174512
	(18.4452)	(2.76266)	(2.33878)	(0.25949)	(0.76785)	(0.38891)	(0.80712)
	[0.46091]	[-0.71526]	[0.21510]	[-0.50480]	[1.14749]	[0.00252]	[0.21622]
DMS(-1)	-4.629083	1.711109	-0.000198	0.093475	-0.376821	0.362599	0.020267
	(9.61274)	(1.43976)	(1.21886)	(0.13523)	(0.40016)	(0.20268)	(0.42063)
	[-0.48156]	[1.18847]	[-0.00016]	[0.69121]	[-0.94166]	[1.78900]	[0.04818]
DMS(-2)	-5.341283	0.903800	0.780233	-0.000950	-0.233480	0.034994	-0.186902
	(6.42799)	(0.96276)	(0.81504)	(0.09043)	(0.26759)	(0.13553)	(0.28127)
	[-0.83094]	[0.93876]	[0.95729]	[-0.01051]	[-0.87253]	[0.25820]	[-0.66448]
DUSD(-1)	-3.886762	1.244838	0.986304	0.009224	-0.643891	0.173572	-0.351403
	(8.26966)	(1.23860)	(1.04856)	(0.11634)	(0.34425)	(0.17436)	(0.36186)
	[-0.47000]	[1.00504]	[0.94063]	[0.07929]	[-1.87039]	[0.99546]	[-0.97110]
DUSD(-2)	3.350929	2.486894	-2.374810	0.097597	-0.018548	-0.117677	0.140013
	(8.39028)	(1.25667)	(1.06385)	(0.11804)	(0.34928)	(0.17691)	(0.36714)
	[0.39938]	[1.97896]	[-2.23227]	[0.82685]	[-0.05310]	[-0.66519]	[0.38136]
DXS(-1)	5.236852	-1.091920	0.878372	-0.163562	0.109921	-0.240813	0.080177
	(7.73017)	(1.15780)	(0.98015)	(0.10875)	(0.32180)	(0.16299)	(0.33825)
	[0.67746]	[-0.94310]	[0.89616]	[-1.50404]	[0.34159]	[-1.47748]	[0.23703]
DXS(-2)	-15.26010	-2.786757	-2.116175	-0.184437	-0.795480	-0.305086	-0.772125
	(8.68708)	(1.30112)	(1.10149)	(0.12221)	(0.36163)	(0.18317)	(0.38013)
	[-1.75664]	[-2.14181]	[-1.92120]	[-1.50917]	[-2.19970]	[-1.66563]	[-2.03124]
C	1.768461	0.263374	0.194605	0.136115	0.056518	0.076768	0.187257
	(2.75777)	(0.41305)	(0.34967)	(0.03880)	(0.11480)	(0.05815)	(0.12067)
	[0.64126]	[0.63763]	[0.55653]	[3.50842]	[0.49231]	[1.32025]	[1.55177]

	DPIB	DIDE	DINFL	DM3	DMS	DUSD	DXS
R-squared	0.690658	0.530325	0.694866	0.547219	0.504430	0.667790	0.429356
Adj. R-squared	0.462722	0.184249	0.470030	0.213591	0.139274	0.423003	0.008881
Sum sq. resids	457.8944	10.27195	7.361676	0.090623	0.793503	0.203565	0.876742
S.E. equation	4.909145	0.735275	0.622460	0.069062	0.204361	0.103508	0.214812
F-statistic	3.030048	1.532395	3.090549	1.640209	1.381408	2.728051	1.021121
Log likelihood	-92.44864	-27.89586	-22.23267	52.52204	15.63628	38.76432	13.94045
Akaike AIC	6.320508	2.523286	2.190157	-2.207179	-0.037428	-1.397901	0.062326
Schwarz SC	6.993902	3.196680	2.863551	-1.533785	0.635966	-0.724507	0.735721
Mean dependent	0.134162	0.151260	-0.027947	0.147553	0.069638	0.085672	0.059196
S.D. dependent	6.697399	0.814087	0.855039	0.077879	0.220275	0.136266	0.215772

Determinant resid covariance (dof adj.)	1.42E-08
Determinant resid covariance	2.41E-10
Log likelihood	38.76441
Akaike information criterion	3.896211
Schwarz criterion	8.609971
Number of coefficients	105

RƏQƏMSAL İQTİSADİYYATIN BANK SİSTEMİNƏ TƏSİRİ

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Xülasə
Məqalədə rəqəmsal iqtisadiyyatın bank sisteminə təsiri araşdırılır. Bu üsulların mahiyyətini təşkil edən beş mərhələdən hər biri ətraflı öyrənilir.

Açar sözlər:risk, bank sistemi, müştəri,funksional, texnologiya.

İqtisadiyyatın rəqəmsallaşması və bank sisteminin bu dəyişikliklərə uyğunlaşması bir çox sahədə dəyişikliklərə səbəb ola bilər.

1. Texnologiyaların İstifadəsi: Rəqəmsallaşmanın ən nəzərdə tutulan tərəflərindən biri, bankların texnologiyalardan istifadə etməsi və xidmətlərini elektron platformalarda təklif etməsidir. Bu, bankların daha effektiv və sürətli olmasına və müştərilərinin iqtisadi fəaliyyətləri üzərində daha çox nəzarət etməsinə imkan verir.

Əlaqə: Texnologiya, insanların dünyanın hər yerində bir-biriləri ilə asanlıqla əlaqə qurmağını təmin edir. Mobil telefonlar, sosial media platformaları, e-poçt və anlık mesajlaşma tətbiqləri kimi vasitələr, insanların kommunikasiya etmə və məlumat mübadiləsi etmə üsullarını kökündən dəyişdirir.

Təhsil: Texnologiya, təhsil sahəsində inqilab yaratmışdır. Uzaktan təhsil sistemləri, e-öyrənmə platformaları, interaktiv dərs materialları və dijital kitabxanalar kimi alətlər, tələbələrə daha geniş bir öyrənmə təcrübəsi təmin edir və təhsilin çatışmazlığını artırır.

İş və Sənaye: İş dünyasında texnologiya, səmərəliliyi artırır, iş proseslərini optimallaşdırır və yeni iş modellərinin yaranmasına kömək edir. Avtomatlaşdırma, yapay intellekt, böyük məlumat təhlil və bulut hesablama kimi texnologiyalar, işlərin rekabet qabiliyyətini artırır və inovasiyanı təşvik edir.

Sağlamlıq Xidmətləri: Sağlamlıq sahəsində texnologiya, xəstələrə daha yaxşı qulluq təmin etmə və tibbi təşhis və müalicə proseslərini yaxşılaşdırma potensialına malikdir. Telemeditsina, digər tibbi qeydlər, sağlamlıq monitorinq cihazları və yapay intellekt tərəfindən dəstəklənən təşhis sistemləri, sağlamlıq xidmətlərinin çatışmazlığını və keyfiyyətini artırmağa kömək edə bilər.

Əyləncə və Mədəniyyət: Texnologiya, əyləncə və mədəniyyət sahəsində də əhəmiyyətli bir rol oynar. İnteraktiv video oyunlar, digər digər digər dijital kinolar və musiqi platformaları, sanal realiti təcrübələri və digər dijital media vasitələri, insanların əyləncəyə və incəsənətə daha asan girişini artırır və yaratıcılığı təşvik edir.

Bu sadəcə bir neçə nümunədir. Texnologiya həyatın təxminən hər sahəsində effektiv bir şəkildə istifadə olunur və daimi olaraq inkişaf edir, formalaşır və insan həyatını dəyişdirməyə davam edir.

2. Finansal İnklüzivlik: Rəqəmsallaşma, bank xidmətlərinə daha geniş bir əhəmiyyətə malik olmağa imkan verir. Bu, əsasən, mənzil olmayan ərazilərdə yaşayan və ya gələnək iqtisadiyyat sistemlərinə daxil olan insanlar üçün vacibdir. Rəqəmsal bankçılıq platformaları vasitəsilə, daha çox insan kredit, xidmət və investisiya imkanlarına çatmağa imkan verən texnologiyalardan istifadə edə bilərlər.

3. Risk İdarəsi: Rəqəmsal bankçılıq və iqtisadiyyat, daha yaxşı risk idarəetmətəcrübəsi yarada bilər. Banklar, rəqəmsal analitika və süni intellekt kimi texnologiyalardan istifadə edərək, kredit risklərinin qiymətləndirilməsi və nəzarəti üçün daha effektiv metodlar inkişaf etdirə bilərlər.

4. Məxfiliyin Qorunması: Rəqəmsal bankçılıq, məxfiliyin qorunmasını təmin etmək üçün yeni imkanlar da təqdim edir. Müştərilərin məlumatları artıq dahaeffektiv və təhlükəsiz şəkildə idarə olunur. Bu, məxfilik qorunmasında daha yaxşı bir təhlükəsizlik səviyyəsi deməkdir.

5. Əmtəənin İdarəsi: Rəqəmsal bankçılıq, əmtəənin idarəsinin dəyişdirilməsində
də böyük rol oynaya bilər. Ödənişlər, transferlər və digər maliyyə əməliyyatla
artıq daha sürətli, daha sərfəlidir və daha çox avtomatlaşdırılmışdır.

6.İş İcra Keyfiyyəti: Bank tərəfləri üçün rəqəmsal bankçılıq, iş icraproseslərini təkmilləşdirmək, işlərin effektivliyini artırmaq və maliyyə informasiyasının daha dəqiqliyi ilə təmin etmək imkanını verir.

Rəqəmsal iqtisadiyyatın bank sektorunda yaradacağı dəyişikliklərin nəticələrini və təsirlərini ifadə edir. Bu ifadə ilə nəzərdə tutulanlar aşağıdakılar olabilər:

Funksionallığın Artması: Rəqəmsal iqtisadiyyatın bank sektoruna təsiri nəticəsində, bankların funksionallığı artır. Bu, bankların daha sürətli və effektiv bir şəkildə əməliyyat icra etməsi, yeni xidmətlər təklif etməsi və müştərilərinə daha geniş bir məzmun sərgiləməsi deməkdir.

Effektivliyin Yaxşılaşması: Rəqəmsal bankçılıq texnologiyalarının bank sektoruna təsiri nəticəsində, iş prosesləri daha effektiv və sərfəli olur. Bu, bankların işəgötürmə məsrəflərini azaltmaq, daha yaxşı risk idarəetmək və müştərilərə daha yaxın olmaq deməkdir.

Müştərilərin Təcrübəsində İyələşmə: Rəqəmsal iqtisadiyyatın bank sektoruna təsiri, müştərilərin təcrübəsində dəyişikliklərə səbəb olur. Banklar, daha yaxşı xidmət təklif etmək üçün rəqəmsal texnologiyalardan faydalanır və müştərilərinin tələblərinə daha yaxşı cavab verir.

İnnovasiya və Rivalizasiyanın Artması: Rəqəmsal bankçılıq və iqtisadiyyat, sektorda innovasiyanın artmasına və rivallığın intensivləşməsinə səbəb olur. Banklar, yeni texnologiyalardan faydalanmaqla bir-birilərinə qarşı üstünlük qazanmağa çalışırlar.

Məxfiliyin Təminatı: Rəqəmsal iqtisadiyyatın bank sektoruna təsiri nəticəsində, müştərilərin məxfiliyi və məlumatların təhlükəsizliyi daha effektiv şəkildə təmin edilir.

Güclü Məxfilik Tədbirləri: Banklar, rəqəmsal bankçılıq sistemləri vasitəsilə müştərilərin məxfiliyini təmin etmək üçün güclü tədbirlər tətbiq edirlər. Bu, müştərilərin məlumatlarının qorunması üçün şifrləmə, ikili təsdiqləmə və digər təhlükəsizlik tədbirlərini içərir.

Məlumatların Daha Sərfəli İdarə Edilməsi: Rəqəmsal iqtisadiyyatın bank sistemində təsiri ilə banklar, müştəri məlumatlarını daha sərfəli idarə etmək üçün rəqəmsal prosedurlar və texnologiyalar tətbiq edirlər. Bu, məlumatların daha effektiv bir şəkildə yığılması, saxlanılması və idarə olunmasına imkan verir.

Yenilikçi Təhlükəsizlik Texnologiyaları: Banklar, rəqəmsal iqtisadiyyatın tətbiqi ilə yenilikçi təhlükəsizlik texnologiyalarından faydalanmaqda daha yaxşı imkanlar əldə edirlər. Bu, biometrik təsdiqləmə, sürətli şübhəli fəaliyyət aşkar etmə və məlumatların şifrələnməsi kimi texnologiyaları əhatə edir.Rəqəmsal iqtisadiyyat dövründə, təhlükəsizlik ciddi bir məsələdir və bu sahədə inkişaf etmiş texnologiyalar istifadə olunur. Bəzi yenilikçi təhlükəsizlik texnologiyaları:

1. Biometrik Təhlükəsizlik: Parmaxallı, üzərinə görə tanıma, iris və ya səslərə görə tanıma kimi biometrik məlumatlarla istifadəçiləri doğrulama. Bu, parollar və PIN-lər kimi əvəz edilə bilər və daha yüksək səviyyədə məxfiliyi təmin edir.

2. Yapay İntellekt və Maşın Öyrənmə: Yapay intellekt və maşın öyrənmə texnologiyaları, normal istifadəçi davranışını təhlükəsizlik qaydalarına uyğun olmayan hər hansı bir fəaliyyətə qarşı avtomatik olaraq sınamalara imkan verir.

3. Blockchain Təhlükəsizlik: Blok zəncir texnologiyası, məlumatlarınızı şifərləməyə və müdafiə etməyə imkan verən yenilikçi bir təhlükəsizlik metodikasıdır. Bu, məlumatların müqayisəli olaraq dəyişdirilməsini asanlaşdırır və məxfiliyi təmin edir.

4. Zəifliyin Təhlükəsizlik Tədbirləri: Şirkətlər artıq potensial zəiflikləri asanlaşdırmaq və aradan qaldırmaq üçün istifadə olunan proaktif təhlükəsizlik tədbirləri əldə edir. Bu, sürətli qarşılıq və səmərəlilik təmin edir.

5. Təhlükəsizliyin İzini Sürmə və Analitika: İT infrastrukturundakı hər hansı bir potensial təhlükəni aşkar etmək və aradan qaldırmaq üçün geniş analitik və izləmə texnologiyalarından istifadə olunur.

Bu texnologiyaların tətbiqi, bank sektorunda, müştərilərin məlumatlarını daha səmərəli və daha güvənlə təhlükəsizliyini təmin edir.

Məlumat Qorunması Standartları: Rəqəmsal iqtisadiyyat, məlumat qorunması standartlarının dəyişməsinə səbəb olmuşdur. Banklar, müştərilərin məlumatlarını qorumaq üçün daha sərt tələblərə əməl edirlər və bu, məxfiliyin daha effektiv bir şəkildə təmin edilməsini təmin edir.

Məlumat qorunması standartları, məlumatların təhlükəsizliyini təmin etmək üçün təyin olunmuş qaydalar və tədbirlərdir. Banklar kimi maliyyə müəssisələri üçün məlumat qorunması son dərəcə əhəmiyyətlidir. İşləyən bir qaydalar dəstinə malik olmaq onlara məxfiliyi və etibarlılığı təmin etmək üçün gərəkdir.

İstifadə olunan əsas məlumat qorunması standartlarından biri PCI DSS (Payment Card Industry Data Security Standard) dir. Bu standart, kredit kartı məlumatlarının emosional yollarla çıxarılmasını və saxlanılmasını yasaklayan qaydaları təyin edir. Banklar və digər maliyyə müəssisələri, PCI DSS standartlarına uyğunluğunu daim olaraq yoxlamaq və təmin etmək məcburiyyətindədirlər.

Bununla birlikdə, müştəri məlumatlarının ümumi təhlükəsizliyini təmin etmək üçün digər standartlar da var. Məsələn, ISO 27001, məlumat təhlükəsizliyi idarəetmə sistemlərinin qurulmasını və idarə olunmasını təmin edir. Banklar bu standartı izləyərək, məlumatlarını asanlaşdıran bir təhlükəsizlik sistemini təmin edir.

Əlavə olaraq, GDPR (General Data Protection Regulation) kimi məlumat qorunması qanunları da banklar üçün vacibdir. Bu qanunlar, müştərilərin şəxsi məlumatlarının saxlanılması, işlənməsi və göstərilməsi ilə bağlı bəzi məhdudiyyətləri təyin edir və bu da məlumatların təhlükəsizliyini təmin etmək üçün əhəmiyyətlidir.

Nəticədə, maliyyə sektorunda məlumat qorunması üçün əsaslı tədbirlər və standartlar mövcuddur və banklar bu standartlara sıxı sıxıya riayət etməlidirlər. Bu, müştərilərin məxfiliyi və etibarlılığı üçün əhəmiyyətlidir.

Təhlükəsizlik Təlimatları və Məxfilik Siyasətləri: Banklar, müştərilərin təhlükəsizlik və məxfilik prinsiplərinə uyğun olmaqları üçün təlimatlar və siyasətlər tətbiq edirlər. Bu, müştərilərin öz məlumatlarının və maliyyələrinin qorunmasını təmin etməyə kömək edir.Bu səbəblərlə, rəqəmsal iqtisadiyyatın bank sektoruna təsiri nəticəsində, müştərilərin məxfiliyi və məlumatların təhlükəsizliyi daha effektiv şəkildə təmin edilir.

Rəqəmsal iqtisadiyyatın bank sektoruna təsiri özündə bərəkətdir. Müştərilərin məxfiliyi və məlumatların təhlükəsizliyi kimi əsas məsələləri daha effektiv şəkildə təmin etmək üçün rəqəmsallaşma ciddi imkanlar yaradır. Beləliklə, bu sektorun digital transformasiyası ilə birlikdə müştərilər artıq bank xidmətlərinə daha rahat və təhlükəsiz şəkildə daxil ola bilirlər. Rəqəmsal platformalar, bank müştərilərinin məlumatlarına dair mühafizəni və idarəetməni gücləndirir və həm də hücuma məruz qalmalarını azaldır. Bu, mənfəətlərini, pul transferlərini və digər əməliyyatları həyata keçirmək üçün daha təhlükəsiz və təsirli bir üsul təmin edir.Rəqəmsal platformalar bank müştərilərinin məlumatlarının təhlükəsizliyini gücləndirir və hücuma məruz qalmalarını azaldır. Bu, müştərilərin məxfiliyini və gizliliyini qoruyan əsas bir tədbirdir. Əlavə olaraq, bu platformalar müştərilərə əməliyyatlarını həyata keçirmək üçün daha rahat və təhlükəsiz bir mühit təmin edir, buna əlavə olaraq pul transferləri kimi kritik əməliyyatları daha sürətli və effektiv şəkildə yerinə yetirir. Bu, bank müştəriləri üçün əhəmiyyətli bir rahatlıq və səmərəliliyi təmin edir.

Nəticə

Məlumdur ki, rəqəmsal iqtisadiyyatın bank sistemində təsiri çox böyükdür. Banklar artıq daha çox texnologiyadan istifadə edir və bank xidmətlərini daha rəqəmsal platformalarda təklif edirlər. Bu, onların effektivliyini və funksionallığını artırır.

Bu daha yaxşı risk idarəetmə texnologiyalarının inkişafına səbəb olur. Banklar, müştəri kredit tarixlərini və digər maliyyə məlumatlarını rəqəmsal analitika və süni intellekt vasitəsilə daha effektiv bir şəkildə qiymətləndirə bilirlər.

Məlumatların məxfiliyini və bank sistemlərinin təhlükəsizliyini təmin etmək üçün daha güclü tədbirlər tələb edir. Banklar, müştəri məlumatlarının qorunması üçün daha yaxşı təhlükəsizlik tədbirləri tətbiq edirlər.

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СРАВНЕНИЕ И АНАЛИЗ СЕБЕСТОИМОСТИ КОНДИТЕРСКИХ ФАБРИК КАЗАХСТАНА В СОВРЕМЕННЫХ УСЛОВИЯХ

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Аннотация. Получение качества производимой кондитерской продукции в Республики Казахстан с оптимальным уровнем цен данную продукцию позволяет активно способствовать развитию экономических процессов не только в отрасли, но и влиять на экономику страны. Основной проблемой формирования цены продукции является себестоимость, которая позволяет оценить необходимость работы компании на рынке. Минимизация расходов, в которую включают себестоимость является одним из главных факторов с помощью, которой возможно эффективно и качественно выпускать востребованную продукцию на рынке. В этой связи, исследование вопросов, связанных с себестоимостью и его составом является достаточно важными и современными для формирование эффективной системы управления затратами. В исследовании осуществляется изучение источников зарубежной литературы и исследователей, сравнение себестоимости и рыночной стоимости компаний, оценка и анализ себестоимости продаж кондитерских компаний, а также дается прогноз себестоимости продаж кондитерских компаний.
Ключевые слова: кондитерская фабрика, себестоимость продаж кондитерских компаний, кондитерские изделия, продажа кондитерских изделий, кондитерские фабрики Казахстана.

JEL Classification: E23, D24, R32

Введение

В настоящее время актуальной задачей является разработка продуктов питания массового потребления, к которым относятся шоколад и кондитерских изделий. Основной проблемой формирования цены продукции является себестоимость, которая позволяет оценить необходимость работы компании на рынке.

Целью исследования является анализ рынка продаж шоколада и шоколадных изделий, позволяющие изучить имеющие расходы, в частности себестоимость выпускаемой продукции, сделать прогноз себестоимости для определения направления дальнейших исследований.

В соответствии с целью исследования рассматривают следующие задачи:

– изучение источников зарубежной литературы и исследователей;
– сравнение себестоимости и рыночной стоимости между казахстанскими компаниями;
– оценка и анализ себестоимости продаж кондитерских компаний;
– прогноз себестоимости продаж кондитерских компаний.

Все расчеты выполняются на основе, имеющихся данных Казахстанской фондовой биржи (KASE) и финансовой информации кондитерских компаний, которая включает годовой отчет и аудиторскую отчетность за 2022 год.

Основная гипотеза темы исследования заключается в изучении и анализе себестоимости продаж кондитерских компаний, работающих на казахстанском рынке.

Обзор литературы

Здоровый образ жизни, широко пропагандируемый в нашем обществе, диктует спрос на изделия со сниженной калорийностью, в том числе за счет уменьшения или исключения сахара из их состава. Отечественный кондитерский рынок характеризуется довольно ограниченным числом продуктов, изготавливаемых без добавления этого сырьевого ингредиента [1].

Мотивация предпочтения кондитерских изделий складывается из восприятия, формируемого в процессе покупки и потребления. Это восприятие является прямым определяющим фактором повторного покупательского поведения потребителя. Также продукция должна отвечать запросам потребителей [2].

В ответ на потребительский спрос производители продуктов питания переориентировались на производство полезных для здоровья продуктов на органической основе, не жертвуя при этом вкусом, текстурой и стоимостью [3].

В этом отношении, помимо новых исследований в области производства и безопасности продуктов питания, большое значение имеют любые действия, которые необходимо предпринять с точки зрения влияния такого отношения потребителей на потребительское поведение [4].

Несколько предыдущих исследований показали, что, когда потребители решают сравнить новейшие технологические варианты с новейшими технологиями и обнаруживают, что новейшая технология имеет преимущества в ее использовании, их интерес к принятию технологии возрастает [5].

В этой связи большое влияние оказывают расходы на организацию данного вида произведенной продукции. Продовольственные товары по-прежнему являются нишей в онлайн-торговле, но ожидается, что она будет быстро расти [6].

Польза конфет для человеческого организма заключается в том, что они добавляют питательные вещества, минералы и другие витамины, поскольку эти конфеты сделаны из настоящего фруктового сока [7]. Не секрет, что продукты питания пополняют жизненный баланс организма человека, что позволяет сделать вывод о необходимости различных химических веществ.

По словам исследователей A.M. Durrani, P.K. Srivastava, S. Verma «Конфеты как пищевой материал представляют собой кондитерские изделия, имеющие сладкий вкус, поскольку содержат белый сахар, который примерно на 99,70% состоит из сахарозы» [8].

В нашем исследовании при громадных территориях Казахстана перемещение произведенной продукции и получение сырья и материалов играет огромную роль.

Поэтому нельзя не отметить, что «логистика, которая занимается обеспечением производства материалами, оборудованием, отслеживает выпускаемую продукцию, взаимодействует с готовой продукцией» [9].

Основная часть

В 2023 году казахстанские кондитеры достигли рекордного объема производства шоколада и кондитерских изделий из шоколада и сахара, составив 106,9 тыс. тонн [10]. Компания АО «ЛОТТЕ Рахат» занимает 25% рынка кондитерских изделий в денежном выражении и 18% в натуральном выражении [11]. АО «Баян Сулу» занимает 8,6% рынка кондитерских изделий в натуральном выражении. Более половины рынка занимает продукция иностранных товаропроизводителей [12].

Основными и крупными производителями являются АО «ЛОТТЕ Рахат» и АО «Баян Сулу». Однако, при приобретении независимости Казахстана, кроме этих компаний на рынке были Карагандинская кондитерская фабрика и Актюбинская кондитерская фабрика. Существующие кондитерские компании АО «ЛОТТЕ Рахат» и АО «Баян Сулу» уже имеют выпуски ценных бумаг на Казахстанской фондовой биржи (KASE). В таблице 1 показаны кондитерские компании, находящиеся на листинге KASE.

Суммарная рыночная стоимость акций АО «ЛОТТЕ Рахат» составляет 61,9 млрд. тенге, из-за того, что объем собственного капитала был на 01.10.23 года 61,2 млрд.тенге. Одновременно на стоимость акции влияет название бренда «Рахат», которое использовалось с советских времен с 1942 года, на базе ликероводочного завода на оборудовании, передислоцированного из Москвы и Харькова. Кроме того, в настоящее время компания имеет производственные мощности, кроме г.Алматы, также в г. Шымкент.

Суммарная рыночная стоимость акций конкурента АО «Баян Сулу» только 19,7 млрд.тенге, а собственный капитал на 01.10.23 года был 28,4 млрд.тенге.

Таблица 1- Кондитерские компании, находящиеся на листинге KASE

Компания	Суммарная рыночная стоимость акций компании, млрд. тенге	На 01.10.23		
		Собственный капитал, млрд.тенге	Объем продаж, млрд.тенге	Чистая прибыль, млрд. тенге
АО «ЛОТТЕ Рахат»	61,9 ($139,29 млн)	61,2	68,4	5,3
АО «Баян Сулу»	19,7 ($44,38 млн)	28,4	42,8	1,8
Примечание- составлено на основе источника [13]				

Чистая прибыль АО «ЛОТТЕ Рахат» превышает прибыль АО «Баян Сулу» почти в три раза, хотя объем продаж превосходит лишь в 1,6 раза. Фактически АО «ЛОТТЕ Рахат» имеет эффективность продаж лучшую систему, которая на 2,9 раза превышает возможность получения прибыли.

В то же время рыночная капитализация АО «ЛОТТЕ Рахат» превышает АО «Баян Сулу» в 3,1 раза. Вместе с тем, рассматривая себестоимость выпускаемой продукции, то видно, у кондитерских компаниях приблизительно имеется одинаковые расходы. Так на рисунке 1 показано сравнение расходов в себестоимости:

– сырье и материалы у АО «Баян Сулу» занимают 83%, а у АО «ЛОТТЕ Рахат» 80%;

– расходы по заработной платы у АО «Баян Сулу» занимают 9%, а у АО «ЛОТТЕ Рахат» 12%;

– расходы по амортизации одинаково 3%;

– расходы на коммунальные расходы также одинаково 2%.

Рисунок 1- Сравнение себестоимости кондитерских компаний

Примечание- составлено на основе источников [14,15]

В таблице 2- показано сравнение себестоимости продаж готовой продукции. Анализируя себестоимость продаж готовой продукции можно отметить, что рост АО «ЛОТТЕ Рахат» за период 2022/2021 произошел на 1,3 раза и себестоимость достигла 62,8 млрд. тенге, а у АО «Баян Сулу» рост составил 1,5 раза и себестоимость продаж готовой продукции составила 34,3 млрд. тенге.

Таблица 2- Сравнение себестоимости продаж готовой продукции, млн. тенге

АО «Баян Сулу»	2022	2021	АО «ЛОТТЕ Рахат»	2022	2021
Сырье и материалы	28 346	19 411	Материалы	53 683	38 353
Заработная плата и связанные расходы	3 120	2 150	Расходы по заработной плате и соответствующие налоги	8 305	6 462
Износ и амортизация	1 089	1 074	Износ и амортизация	1 839	1 534
Коммунальные и эксплуатационные расходы	599	576	Расходы на коммунальные услуги	1 077	979
Расходы на ремонт основных средств	707	532	Расходы на ремонт и техническое обслуживание	50	263
Прочее	8	15	Транспортные расходы	86	93
Готовая продукция и незавершенное производство	-1 767	-999	Прочее	187	140
Приобретение дочерней организации	2 204	-	Готовая продукция и незавершенное производство	-2 430	1 323
Себестоимость продаж готовой продукции	34 306	22 759	Себестоимость продаж готовой продукции	62 796	49 147
Примечание- составлено на основе источников [14,15]					

В 2020-2021 гг. одной из главных проблем производства шоколада и шоколадных изделий стало повышение цен на сырье, что также повлияло на спад продаж и качество готового продукта. В связи с ростом цен на какао-бобы, производители начали выпускать шоколад с заменителями какао-сырья, таким образом удешевляя готовый продукт [16].

Учитывая тренд развития компаний по прогнозу в целом можно отметить, что себестоимость продаж в среднем по АО «Баян Сулу» зависит на 84% от сырья и материалов, 9% фондом отплаты труда, 4% амортизации и прочих затрат. В итоге, уравнение по себестоимости продаж готовой продукции для АО «Баян Сулу» будет иметь следующий вид (уравнение 1):

$$y=0{,}84x1+0{,}09x2+0{,}04x3+0{,}02x4+0{,}02x5-0{,}05x6+0{,}06x7 \quad (1)$$

Одновременно себестоимость продаж в среднем по АО «ЛОТТЕ Рахат» зависит на 81,8% от сырья и материалов, 13% фондом отплаты труда, 3% амортизации и прочих затрат. В результате уравнение по себестоимости продаж готовой продукции для АО «ЛОТТЕ Рахат» будет иметь следующий вид (уравнение 2):

$$y=0{,}82x1+0{,}13x2+0{,}03x3+0{,}02x4+0{,}01x5 \quad (2)$$

Используя уравнения 1 и 2 сделаем прогноз роста компании по себестоимости продаж, которые показаны в таблице 3.

Таблица 3- Прогноз себестоимости продаж кондитерских компаний, млн. тенге

Состав затрат	АО «Баян Сулу»			АО «ЛОТТЕ Рахат»		
	2023	2024	2025	2023	2024	2025
Сырье и материалы	39 076	44 765	47 865	59 043	64 501	68 115
Заработная плата и связанные расходы	4 315	4 943	5 285	9 522	10 402	10 985
Износ и амортизация	1 837	2 104	2 250	2 185	2 387	2 520
Коммунальные и эксплуатационные расходы	995	1 140	1 219	1 339	1 462	1 544
Расходы на ремонт основных средств	1 024	1 173	1 254	124	135	143
Прочее	20	23	25	-	-	-
Готовая продукция и незавершенное производство	- 2 220	- 2 543	- 2 719	-	-	-
Приобретение дочерней организации	1 495	1 713	1 831	-	-	-
Себестоимость продаж готовой продукции	46 541	53 318	57 010	72 212	78 888	83 308
Примечание- составлено на основе источников [17]						

Прогноз роста себестоимости формируется на основе существующих трендов, поэтому для оценки прогноза за 2023 год использовались фактические данные за 9 месяцев. А 2024 года и 2025 год оценивался на основе полученной за последние годы динамике.

В итоге однозначно себестоимость продаж компаний будет расти, но в АО «Баян Сулу» будет увеличение проходить гораздо быстрее ведь за 2023 год уже виден рост до 46, 5 млрд. тенге. Рост себестоимости обусловлен экономическими проблемами:

– необходимостью роста уровня заработной платы и фонда оплаты труда;
– увеличением затрат на покупку сырья и материалов;
– ростом коммунальных и других расходов.

Заключение

В результате исследования проанализирован рынок продаж шоколада и шоколадных изделий, изучены имеющие расходы, в частности себестоимость выпускаемой продукции, сделан прогноз себестоимости для определения направления дальнейших исследований.

В соответствии с исследованием цели были рассмотрены задачи:

– дан обзор источников зарубежной литературы и исследователей;
– проведено сравнение себестоимости и рыночной стоимости между казахстанскими компаниями;
– проведен анализ себестоимости продаж кондитерских компаний;
– осуществлен прогноз себестоимости продаж кондитерских компаний.

Чтобы накормить миллиарды людей, которые будут жить в больших городах по всему миру в ближайшие десятилетия, академическому сообществу необходимо объединиться с практиками и эффективно управлять глобальной транспортировкой продуктов питания с использованием традиционных и новых видов транспорта, которые будут доступны всем благодаря цифровизации [17].

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Қазақстан Республикасы Курчатов қаласының жергілікті бюджетін қалыптастыру практикасы

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Қазақстан Республикасында облыстық маңызы бар қалалардың, яғни моноқалалардың әлеуметтік-экономикалық ортасы тікелей қаланы құраушы кәсіпорындар арқылы қалыптасады, оның даму деңгейі мен сапалық сипаттамалары халықтың өмір сүру деңгейіне айтарлықтай әсер етеді. Өз кезегінде облыстық маңызы бар қалалардың инженерлік, экономикалық, әлеуметтік инфрақұрылымды дамыту облыстық билік органдарының саясаты, аумақтың инвестициялық бизнес тартымдылығы және басқа да факторлар қаланы құраушы кәсіпорының жұмыс істеу ортасын, сыртқы жағдайларды қалыптастыруға айтарлықтай әсер етеді.

Осылайша, моноқалалардың, яғни облыстық маңызы бар қалалардың, жалпы облысты дамыту стратегиясының негізі қаланы құраушы кәсіпорындардың қызметіне байланысты. Нарықтық экономиканың қалыптасуы мен дамуы, кәсіпорындардың көпшілігінің меншік иелерінің ауысуы, сыртқы ортаның айтарлықтай өзгеруі моноқалалардың және олардың тұрғындарының үлкен қиындықтарды бастан кешіруне әкеледі. Бұл өз тарапында облыстық маңызы бар қалалардың **жергілікті бюджетінің** қалыптасуына айтарлықтай әсер етеді. Жаһандық қаржылық-экономикалық дағдарыстың дамуымен айтарлықтай жергілікті бюджеттің қалыптасуын нашарлатады.

Қаланы құраушы кәсіпорындардың болуы мен қызмет ету мәселесі жекелеген қалалар мен облыстар үшін ғана емес, жалпы Қазақстан экономикасы үшін де стратегиялық маңызға ие болды. Моноқалалар – қаладағы кәсіпорындары мен тұрғындары сыртқы ортаның қауіп-қатерін, мысалы, өнімге сұраныстың төмендеуін өз бетінше жеңе алмайтын елді мекендер қатарына жатады. Сондықтан, жергілікті бюджеттің кіріс бөлігін арттыру жұмыстары көп жағдайда жеміс бермейді.

Мұндай облыстық маңызы бар қалаларда экономикалық белсенді халықтың кемінде төрттен бір бөлігі жұмыс істейтін бір немесе бірнеше өнеркәсіптік кәсіпорындар бар. Өнеркәсіптік өнім көлемінің жартысынан астамын технологиялық өзара байланысы бар кәсіпорындар қамтамасыз етеді. Бұл ретте **жергілікті бюджетке** түсетін салық түсімдерінің кемінде **23%-ы** осындай кәсіпорындардан түседі.

Моноқалалардың қарапайым қалалардан басты айырмашылығы – қала мен кәсіпорынның (кәсіпорындар тобының) біртұтас ажырамас байланысы болып табылады, ол қала **бюджетін толықтыруға** ғана емес, сонымен бірге әлеуметтік жағдайға да жауапты, сонымен бірге бүкіл қала аудандарының өмір сүру жағдайларын қамтамасыз етеді.

Әдетте, кәсіпорынның әлеуметтік инфрақұрылымды ұстауға жұмсаған **шығындары** өнімнің өзіндік құнына қосылады, бұл түптеп келгенде оны бәсекеге қабілетсіз етеді. Ал мұндай кәсіпорынның қаржылық мәселесі бірте-бірте қаланың әлеуметтік-экономикалық мәселесіне айналады. Жергілікті бюджеттің артуы жайына қалады. Жаңа нарықтарға шығу, қаланы құраушы кәсіпорындарда өндірісті дамыту және жаңғырту үшін **қаржы ресурстары** қажет. Кейбір сарапшылар оларға **салық жеңілдіктерін** енгізуді ұсынып отыр, бұл біздің ойымызша тиімсіз және кәсіпорынның өндірісті қайта құрылымдаумен айналысуына ынталандырмайды, сонымен қатар моноқаланың **бюджетіне түсетін** ақшалай **түсімдердің** көлемін азайтады.

Мемлекеттік жеңілдікті несиелер беру, мемлекеттік банктік кепілдіктер беру, уәкілетті органдардың өкілеттіктерін және олардың пайдаланылуын бақылау бойынша қажетті шараларды **заңнамада бекіту** бағдарламалары әлдеқайда тиімді болуы мүмкін. Өкінішке орай, мемлекеттік қолдаудың мұндай түрі әрқашан **сапалы** түрде көрсетілмейді [2, 3].

Қазақстанның өнеркәсіптік әлеуетінің едәуір бөлігі моноқалаларда, яғни облыстық маңызы бар қалаларда шоғырланған. Атап айтсақ, Курчатов қаласы Абай облысының өнеркәсіптік өндірісінің жалпы көлемінде айтарлықтай үлесті (2020 жылы 33,2%, 2021 жылы 25,7%, 2022 жылы 29,8%, 2023 ж. 39,7%) алатын өнеркәсіп өндірісінің орталығы болып табылады [4]. Дәл осындай облыстық маңызы бар қалалардан Ақтөбе облысының Хромтау қаласында Қазақстандағы хром рудасының барлық көлемі және ТМД елдеріндегі хром кендерінің 96%-ы өндіріледі. Қостанай облысының Жітіқара қаласында хризотил асбест кендерін алу және байыту және осы негізде тауарлық асбест өндірумен айналысатын Қазақстандағы жалғыз асбест зауыты «Костанай Минералс» АҚ бар. Рудный қаласында орналасқан «Соколовско-Сарыбай тау-кен байыту өндірістік бірлестігі» АҚ (темір рудасын өндіру) жұмысының нәтижелері Қостанай облысының экономикасына үлкен ықпал етуде. Кәсіпорынның облыстың жалпы өнеркәсіп өніміндегі үлесі 57 пайызды, ал салықта 62,4 пайызды құрайды.

Курчатов қаласы, Қазақстан Республикасының шығыс бөлігінде, Ресеймен шекаралас жерде орналасқан моноқала болып табылады:

1. Атом өнеркәсібі: Курчатов қаласындағы негізгі шаруашылық субъектісі атом энергетикасы мен технологиялары саласындағы әзірлемелермен және зерттеулермен айналысатын Курчатов ядролық зерттеу орталығы болып табылады.

2. Экономикалық тәуелділік: Қала экономикасы атом өнеркәсібінің төңірегінде шоғырланғандықтан, оны осы саладағы қаржыландыру мен инвестицияға тәуелді етеді.

3. Инфрақұрылым және әлеуметтік сала: Қаланың инфрақұрылымы ядролық зерттеу орталығының жұмысшылары мен мамандарының қажеттіліктерін қанағаттандыруға бағытталған. Әлеуметтік сала да осы негізгі саланы қолдауға бағытталған.

4.Бірегейлігі мен ерекшелігі: Курчатов қаласы атом энергетикасы саласындағы ғылыми зерттеулер мен әзірлемелердің орталығы болып табылады, бұл оған ұлттық және халықаралық деңгейде ерекше мәртебе мен мән береді.

Моноқалалар экономикалық тұрақтылық пен дамуға байланысты қиындықтарға тап болады, өйткені олардың экономикасы бір салаға тәуелді. Мұндай қалалардың тұрақты дамуы үшін экономиканы әртараптандыруды дамыту, әртүрлі салаларға инвестиция салу және қала инфрақұрылымы мен әлеуметтік ортаның әртараптандырылған дамуына жағдай жасау маңызды.

Моноқалаларда шағын кәсіпкерліктің дамуын өндіріс пен тұтынушылық сұраныстың төмендігі және кәсіпкерлер арасында өтімді кепілдің жоқтығынан **қаржы-несие ресурстарының** қолжетімсіздігі тежеуде.

Моноқалалардың әлеуметтік дамуы:

1) **халық саны**: моноқалалар халқының жалпы саны 2021 жылы 1,53 млн адамды, 2024 жылы 1,934 млн адамды құрады. Моноқалаларда он жылдық кезеңдегі жалпы халық санының өсуіне қарамастан (6%-ға), оның 11-інде халық саны 11,6%-ға қысқарды. Нәтижесінде Арқалық – 36,3%-ға, Қаражал – 15,9%-ға, Абай – 13,9%-ға, Жаңатас – 12,8%-ға және Серебрянск – 13,6%-ға халық санының айтарлықтай төмендеуі байқалады. Моноқалалардан халықтың көші-қонының негізгі себептері жұмыссыздық пен өзін-өзі жұмыспен қамту

деңгейінің жоғарылығы, халықтың ақшалай табысының төмендігі, білім алуға ұмтылу болып табылады. Моноқалалардан еңбекке қабілетті халықтың көші-қонының тағы бір проблемасы халықтың қартаю үрдісіне айналды. Кейбір қалаларда еңбекке жарамды жастан асқан халықтың үлесі 22%-дан асады (Лисаковск, Риддер және т.б.).

2) жұмыспен қамту және жұмыссыздық: қазіргі уақытта моноқалалардың көпшілігінің проблемасы жұмыс тапшылығы және соның салдарынан жұмыссыздықтың жоғары деңгейі және өзін-өзі жұмыспен қамтыған халық үлесі болып табылады. Республикадағы деңгеймен салыстырғанда жұмыссыздықтың жоғары деңгейі (2020 жылы 7,2%) Арқалық (9,1%), Кентау (8,3%), Ақсу (7,3%) қалаларында байқалады. Сонымен қатар, моноқалалардың көпшілігінде экономикалық белсенді халықтың үштен бірінен астамы өзін-өзі жұмыспен қамтығандар санатына жатады. Өзін-өзі жұмыспен қамтыған халықтың жоғары көрсеткіші Қаратау (49,9%), Арқалық (49,5%), Жітіқара (47,5%), Жаңатас (37,6%) және Құлсары (30,8%) қалаларында байқалады. Еңбек нарығында сұраныс пен ұсыныс арасындағы сәйкессіздік әлі де бар. Еңбек нарығының ұсыныс жағында қазіргі уақытта негізінен жақын маңдағы ауылдардан көшіп келген бұрынғы ауыл тұрғындары бар. Көшіп келген ауыл тұрғындарының біліктілігі көбінесе өте төмен және еңбек нарығының талаптарына сәйкес келмейді. Осының нәтижесінде моноқалалар экономикасын дамытудың келешегі мен басымдықтарын негізге ала отырып, жаңа сапалық негізде адам ресурстарын ұдайы өндіру шараларын қабылдау қажеттілігі туындады.

3) халықтың өмір сүру деңгейі: еңбек нарығындағы проблемалардың тікелей салдары моноқалалардағы кедейліктің жоғары деңгейінің сақталуы болып табылады. Моноқалалардың көпшілігінің жан басына шаққандағы орташа табысы орташа облыстық көрсеткішке жетпейді. Мәселен, Арқалық, Кентау, Балқаш, Саран қалаларында жан басына шаққандағы ақшалай табыс орташа облыстық көрсеткіштің 80-85 пайызын, Курчатов қаласында 73 пайызды құрады. Моноқала тұрғындарының негізгі табыс көздері кәсіпорындар мен ұйымдардағы жалақы (негізінен бюджеттік), оның жалпы табыстағы үлесі 53-65%, зейнетақылар, шәкіртақылар, әртүрлі жәрдемақылар 20-30%-ға дейін құрайды, қосалқы шаруашылықтан түскен табыс – 10 -15 %, қалғаны туыстары мен жақындарының көмегі. Еліміздегі 27 моноқалалардың 7-і халықаралық маңызы бар, 14-і республикалық маңызы бар, 7-уі жергілікті облыстық маңызы бар моноқалалар.

Осыған байланысты индустриалды моноқалаларды дамытудың негізгі проблемаларын айқындау және өнеркәсіп және агроөнеркәсіптік кешен саласында айналысатын моноқалаларды дамыту стратегиясын әзірлеу облыстың дамуын қолдаудың басым міндеті болып табылады.

Осы жағдайға байланысты Қазақстандағы моноқалалар. жалпы өнеркәсіптік моноқалалардың SWOT талдауын қарастырайық (1-кесте).

SWOT талдау – ұйымның, жобаның немесе кез келген басқа жүйенің ағымдағы жағдайын және даму болашағын бағалау үшін қолданылатын стратегиялық талдау әдісі.

Кесте 1. Индустриалды моноқалалардың әлеуметтік-экономикалық дамуының стратегиялық талдауы (SWOT талдауы)

Көрсеткіштер	Күшті жақтары S	Әлсіз жақтары W
Өндірістік-экономикалық сала	1. Бәсекеге қабілетті өнім шығаратын ірі өнеркәсіптік кәсіпорындардың болуы; 2. Дамыған көлік инфрақұрылымы; 3. Инвестицияларды тарту үшін инфрақұрылымды дамыту.	1. Еңбек нарығының өнеркәсіп кәсіпорындарындағы жағдайға тікелей тәуелділігі, 2. Өңдеу салаларындағы өнім көлемінің төмендеуі; 3. Кәсіпорындарды баяу қайта құрылымдау.
	Мүмкіндіктер (O)	Қауіптер (T)
	1. Қаланы басқару тиімділігін арттыруға ықпал ететін инновациялық өндірістерді дамыту; 2. Экономиканы әртараптандыруды жүргізу; 3. Әртүрлі мамандықтар мен кәсіптік білімнің әртүрлі деңгейлеріндегі жұмысшыларға сұраныстың артуы; 4. Өндірісті ынталандыру, өндірілген тауарлардың бәсекеге қабілеттілігін арттыру, кәсіпкерлік ортаны дамыту үшін жағдай жасайтын нормативтік-құқықтық және заңнамалық базаны жетілдіру.	1. Елдің әлеуметтік-экономикалық дамуының жағымсыз факторларының қала экономикасына әсері; 2.Шикізат пен энергия ресурстарының құнын көтеру, кәсіпорындардың бәсекелестік артықшылықтарын төмендету; 3. «Көлеңкелі экономика» үлесін арттыру.
Әлеуметтік сала	Күшті жақтары S	Әлсіз жақтары W
	1. Демографиялық жағдайды жақсарту; 2. Спорт мекемелерінің жеткілікті дамыған инфрақұрылымы; 3. Жоғары оқу орындарының филиалдарының болуы.	1. Жұмыссыздық мәселесін шешудің тиімді жүйесінің болмауы; 2. Мәдени-демалыс инфрақұрылымы нашар дамыған; 3. Халыққа әлеуметтік қызмет көрсетудің төмен деңгейі.
	Мүмкіндіктер (O)	Қауіптер (T)
	1. Халықтың жоғары әлеуметтік белсенділігі; 2. Бәсекелестік пен бақылаудың қажетті деңгейін құру және қолдау арқылы шығындарды азайту және тұрғын үй-коммуналдық және көлік қызметтерінің сапасы мен қолжетімділігін арттыру. .	1. Халықтың мәдениет деңгейінің төмендеуі; 2. Жас кадрлардың көші-қоны; 3. Қаланың әлеуметтік даму деңгейі халықтың материалдық және қаржылық жағдайына және қала құраушы кәсіпорынның жұмысына байланысты

Экология	Күшті жақтары S	Әлсіз жақтары W
	1. Тазалау құрылыстарының тиімді жұмысы; 2. Қалдықтарды өңдеудің тиімді жүйелерінің болуы.	1. Кәріз жүйелерінің қуаттылығы жеткіліксіз; 2.Тау-кен өндіруші кәсіпорынның қызметіне байланысты зиянды шығарындыларға ұшыраған; 3. Қоршаған ортаның ластануы.
	Мүмкіндіктер (О)	Қауіптер (Т)
	1. Экологиялық теңгерімді жүйелерді құру және ұзақ мерзімді экологиялық бағдарланған қала құрылысына көшу; 2.Қалалық аумақтардың экологиялық және эстетикалық жағдайын жақсарту; 3.Қала құраушы кәсіпорынды экологиялық таза технологияларға көшіру.	1. Қоршаған ортаны ластайтын тау-кен өндіруші кәсіпорындардың қызметі салдарынан экологиялық жағдайдың нашарлауы

SWOT талдауына сүйене отырып, күшті жақтарды пайдалану стратегиясын қолданған жөн деген қорытынды жасауға болады. Сондықтан мұндай қалалардың негізгі миссиясы инновациялық өндіріс орталығы болу және бизнесті орналастыру үшін тартымды аумақ болу, бұл өз кезегінде халықтың өмір сүру деңгейін жақсартуға, бюджет пен халықтың кірісін арттыруға мүмкіндік береді. Моноқалалардағы қала құраушы кәсіпорындардың тағдыры туралы мәселелер басқа факторлармен қатар олардың бәсекеге қабілеттілігі тұрғысынан ғана емес, сонымен қатар әрбір кәсіпорынның ел экономикасы үшін маңызы, экономикалық қауіпсіздікті қамтамасыз етудегі рөлі тұрғысынан шешілуі тиіс. және мемлекеттің қорғаныс қабілетін сақтау.

Стратегияны іске асыру нәтижесінде индустриалды моноқалалар:

1. Халықтың өмір сүруі үшін ең жақсы экономикалық, әлеуметтік және экологиялық жағдайлары бар аумақтарға айналуы тиіс.
2. Жаңа инновациялық экономиканы жоғары деңгейде қамтамасыз ету үшін инновациялар мен технологияларды дамыту орталығы.
3. Туризм салаларын дамыту орталығы. Өнеркәсіптік моноқалаларды дамыту стратегиясына осы тәсілдерді практикалық қолдану өнеркәсіптік кластерлерді құру жобаларында орын алады.

Осы таптан Курчатов қаласының **жергілікті бюджетін қалыптастыру** кез келген басқа қалалар сияқты бірнеше негізгі қадамдар мен кезеңдерді қамтитын маңызды процесс болып табылады. Мұнда жергілікті бюджетті қалыптастыру тәжірибесіне жалпы шолу берілген:

1. Ақпаратты жинау және ағымдағы жағдайды талдау:

Қаржылық ағындарды бағалау: Өткен жылдардың кірістері мен шығыстарын талдау, олардың тұрақтылығы мен динамикасын бағалау.

Кірістерді болжау: Экономикалық жағдайға, салықтық және басқа да заңнамалық өзгерістерге негізделген кірістерді болжау.

Басымдық бағыттарын айқындау: Бюджет қаражаты бағытталатын негізгі бағыттар мен міндеттерді анықтау.

2. Бюджеттік басымдықтар мен стратегияларды әзірлеу:

Мүдделі тараптармен кеңесу және қатысу: басымдықтарды анықтау үшін қоғам, бизнес және басқа да мүдделі топтардың өкілдерін тарту.

Стратегиялық мақсаттарды тұжырымдау: Бюджет жетуі тиіс ұзақ мерзімді және қысқа мерзімді мақсаттарды анықтау.

3. Бюджеттің кіріс бөлігін анықтау:

Салық саясаты: Салық ставкаларын, жеңілдіктерді және бюджетке түсімдерді тартудың басқа да шараларын анықтау.

Субсидиялар мен гранттар: Орталық немесе халықаралық көздерден қосымша қаражат тарту.

4. Бюджеттің шығыс бөлігін айқындау:

Шығындар бағдарламалары: Әлеуметтік саясатқа, инфрақұрылымдық жобаларға, білім беру, денсаулық сақтау, мәдениет және басқа салаларға бөлінетін қаражатты анықтау.

Негізгі жобаларды қаржыландыру: Басым инвестициялық жобаларды қаржыландыруды жоспарлау.

5. Бюджетті бекіту және атқару:

Бюджетті бекіту: муниципалды деңгейде бекіту процедураларынан өту.

Орындалуын бақылау және мониторингі: Бюджеттің орындалуын бағалау, қажет болған жағдайда жоспарларды түзету.

6. Есеп беру және ашықтық:

Есеп беру: Бюджеттің атқарылуы және пайдаланылуы туралы есептерді халыққа жариялау.

Транспаренттілік: азаматтардың бюджет шығыстары мен кірістері туралы ақпаратқа қол жеткізуін қамтамасыз ету.

Бұл кезеңдерді жүзеге асыру жалпы даму мақсаттарына қол жеткізу және өмір сүру сапасын жақсарту үшін жергілікті билік органдары, бизнес қауымдастығы және қала тұрғындарының белсенді өзара іс-қимылын талап етеді.

Қала бюджетінің жобасы Қазақстан Республикасы Президентінің Қазақстан халқына Жолдауы негізінде, Қазақстан Республикасы Бюджет кодексінің нормаларына, облыстық мәслихат сессиясының «Қалалық бюджет туралы» шешіміне сәйкес әзірленеді. 2024-2026 жылдарға арналған облыстық бюджет», облыс әкімдігінің «2024-2026 жылдарға арналған облыстық бюджет туралы» Шығыс Қазақстан облыстық мәслихатының 2023 жылғы «2024-2026 жылдарға арналған облыстық бюджет туралы» шешімін іске асыру туралы» қаулысын қаланың 2024-2028 жылдарға арналған әлеуметтік-экономикалық дамуы және бюджеттік параметрлері негізінде қалыптасады.

I. Кіріс бөлігінің қалыптасуы:

Қалалық бюджет жобасын әзірлеу облыстың әлеуметтік-экономикалық даму болжамына сүйене отырып, Қазақстан Республикасының Бюджет және Салық кодекстеріне сәйкес жүзеге асырылады.

Есептеулер жүргізу үшін уәкілетті органдардың және мемлекеттік кірістер департаментінің деректері пайдаланылды, сонымен қатар соңғы жылдардағы түсімдердің динамикасына талдау жасалды, сондай-ақ ағымдағы жылы күтілетін түсімдерге баға беріледі;

2024 жылға арналған қала бюджетінің түсімдер бойынша жобасы 1 933 736,0 мың теңге сомасында көзделген.

2024 жылға арналған қала бюджетінің меншікті кірістері 1 933 736,0 мың теңге сомасында болжануда.

Әлеуметтік салық және жеке табыс салығы бойынша 2024 жылға арналған шегерім нормативтері 100% мөлшерінде белгіленді.

Көрсетілген шегерім нормативтеріне сәйкес төлем көзінен салық салынатын табыстардан жеке табыс салығының түсімдері 2024 жылға 820 000,0 мың теңге сомасында болжануда.

Әлеуметтік салық көлемі 680 000,0 мың теңге сомасында болжануда.

Кіріс бөлігін қалыптастыру кезінде 900 000,0 мың теңге сомасында нысаналы ағымдағы трансферттер ескерілді.

II. Шығындар:

Бюджеттік бағдарламалардың барлық әкімшілері толық көлемде қамтамасыз етілген: еңбекақы төлеу, коммуналдық қызметтерді төлеу, әлеуметтік төлемдер.

Кірістер мен шығыстардың болжамды көлемдеріне сүйене отырып, бюджет балансы қамтамасыз етіледі.

Қала бюджетінің шығыстары 1 933 736,0 мың теңге сомасында қарастырылған.

01 «Жалпы мемлекеттік көрсетілетін қызметтер» функционалдық тобы бойынша шығындар 315 932,0 мың теңге сомасында айқындалды.

Шығындар мемлекеттік органдардың қызметін қолдауға және ұстауға жоспарлануда.

02 «Қорғаныс» функционалдық тобы бойынша шығындар 6 891,0 мың теңге сомасында айқындалды, жалпы әскери қызметті өткеру шеңберіндегі іс-шараларға шығыстар қарастырылған.

03 «Қоғамдық тәртіп, қауіпсіздік, құқықтық, сот, қылмыстық-атқару қызметі» функционалдық тобы бойынша шығындар 3 500,0 мың теңге сомасында айқындалды. Жол қауіпсіздігін қамтамасыз ету үшін шығындар қарастырылған.

06 «Әлеуметтік көмек және әлеуметтік қамсыздандыру» функционалдық тобы бойынша шығындар 70 438,0 мың теңге сомасында айқындалды.

Шығыстар жұмыспен қамтуды үйлестіру және әлеуметтік бағдарламалар бөлімінің және халықты жұмыспен қамту орталығының іс-шараларына, ұстауға және күрделі шығындарға қарастырылған.

Қаражат қарастырылған:

- атаулы әлеуметтік көмек 2 227,0 мың теңге;
- тұрғын үй көмегі 696,0 мың теңге;
- азаматтардың жекелеген санаттарына 6 192,0 мың теңге сомасында әлеуметтік көмек;
- үйде тәрбиеленетін және оқытылатын мүгедек балаларды материалдық қамтамасыз етуге 266,0 мың теңге сомасында;
- мұқтаж азаматтарға үйде әлеуметтік көмек көрсету 6 837,0 мың теңге.
- мүгедектердің құқықтарын қамтамасыз ету және өмір сүру сапасын жақсарту, сондай-ақ оларды міндетті гигиеналық құралдармен қамтамасыз ету 12 000,0 мың теңге сомасында;
- оқуға қабылдау, жәрдемақыларды және басқа да әлеуметтік төлемдерді төлеу және жеткізу бойынша қызметтерге ақы 2,0 мың теңге сомасында.

07 «Тұрғын үй-коммуналдық шаруашылық» функционалдық тобы бойынша шығындар 75 534,0 мың теңге сомасында айқындалды, оның ішінде:

- мемлекеттік тұрғын үй қорын сақтауды ұйымдастыруға 2000,0 мың теңге тұрғын үй қорын ағымдағы жөндеуге;
- сумен жабдықтау және су бұру жүйесін пайдалану 12 500,0 мың теңге Курчатов қаласының нөсерлі канализациясын ұстауға;
- көшелерді жарықтандыруға 18 000 мың теңге көшелерді жарықтандыру желілерін ұстауға және олардың тұтынған электр энергиясы үшін төлемге;
- санитарлық тазалықты қамтамасыз ету 12 000,0 мың теңге қоғамдық орындарды тазалауға және күтіп ұстауға;
- жерлеу орындарын күтіп-ұстауға және баспанасыздарды жерлеуге 1 034 мың теңге;

- көшет отырғызуға, саябақ аумақтарын абаттандыруға, жасыл желектерді суаруға 30 000,0 мың теңге.

08 «Мәдениет, спорт, туризм және ақпараттық кеңістік» функционалдық тобы бойынша мәдениет, тілдерді дамыту, дене шынықтыру және спорт бөлімінің және ішкі саясат бөлімінің қызметін және қамтамасыз етуді қамтамасыз ететін 253 574,0 мың теңге сомасында шығындар белгіленді.

Қаражат қарастырылған:

- жалпықалалық мәдени іс-шараларды өткізуге 110 615,0 мың теңге сомасында;
- бұқаралық спортты дамытуға 23 435,0 мың теңге сомасында;
- қалалық кітапхананың жұмыс істеуін қамтамасыз етуге 18 974,0 мың теңге сомасында;
- мемлекеттік тілді дамытуға шығыстар 13 461,0 мың теңге;
- мемлекеттік ақпараттық саясатты бұқаралық ақпарат құралдары арқылы жүзеге асыруға 3000,0 мың теңге сомасында;
- жастар саясаты саласындағы іс-шараларды жүзеге асыруға 23 378,0 мың теңге сомасында;
- мәдениет мекемелері мен ұйымдарының күрделі шығындарына қалалық кітапханадағы кітап қорын жаңартуға 1 000,0 мың теңге сомасында.

10 «Ауыл, су, балық шаруашылығы, ерекше қорғалатын табиғи аумақтар, қоршаған ортаны және жануарлар дүниесін қорғау, жер қатынастары» функционалдық тобы бойынша шығыстар 37 614,0 мың теңге сомасында айқындалды, олар ауыл шаруашылығы бөлімінің қызметін қамтамасыз етуге және күтіп ұстауға бағытталған. жер қатынастары және кәсіпкерлік.

12 «Көлік және коммуникация» функционалдық тобы бойынша шығындар 74 205,0 мың теңге сомасында айқындалып, қала жолдарын қысқы және жазғы күтіп ұстауға, қала жолдарындағы шұңқырларды жөндеуге қаражат жұмсау жоспарлануда.

13 «Өзге» резерві функционалдық тобы бойынша қаланың жергілікті атқарушы органының 2024 жылға арналған шығындар 38 674,0 мың теңге сомасында айқындалды.

14 «Борышқа қызмет көрсету» функционалдық тобы бойынша облыстық бюджеттен берілген несиелер бойынша сыйақы төлеу бойынша жергілікті атқарушы органдардың борышына қызмет көрсету бойынша шығындар 3 334,0 мың теңге сомасында айқындалды.

15 «Трансферттер» функционалдық тобы бойынша шығындар 1 054 040,0 мың теңге сомасында айқындалды.

III. Бюджеттік кредиттер 0,0 теңге көлемінде айқындалды.

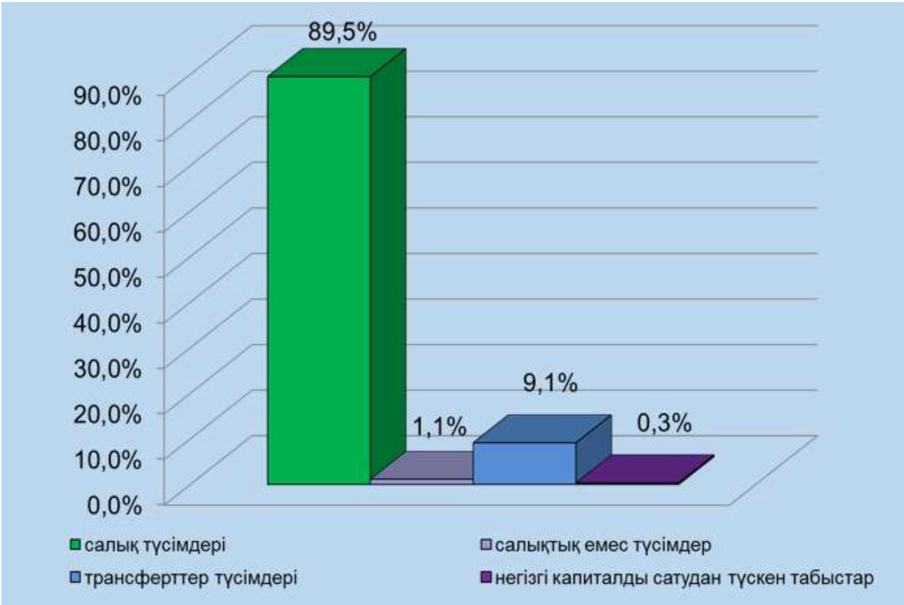
IV. Сомадағы қаржы активтерімен операциялар бойынша сальдо 0,0 теңгені құрайды.

V. Бюджет тапшылығы (профициті) 0,0 теңге сомасында.

VI. -0,0 теңге сомасында бюджет тапшылығын қаржыландыру (профицитін пайдалану).

2025 жылға қала бюджеті 2 089 496,0 мың теңге сомасында жоспарланған. Еңбекақыға, коммуналдық төлемдерге және әлеуметтік төлемдерге арналған шығындар толық көлемде жоспарланған.

2026 жылға қала бюджетінің меншікті кірістері 2 209 213,0 мың теңге сомасында жоспарланған.



1 сурет – Курчатов қаласының жергілікті бюджетінің кірістері
Дереккөз: Курчатов қаласының 2023 жылғы бюджеттің атқарылуы

Қазақстан Республикасы, Абай облысы, Курчатов қаласының жергілікті бюджетінің кірістері (1 сурет):

1. Салық түсімдері: жеке және заңды тұлғалардың табысына салынатын салықтар, мүлік салығы, жер салығы және қаланың кәсіпорындары мен тұрғындарынан алынатын басқа да жергілікті салықтар жатады.

2. Салықтық емес түсімдер: Бұл моноқалалық қызметтерге алымдар, лицензиялық алымдар, жер төлемдері және басқа да төлемдер сияқты салықтық емес түсімдер.

3. Трансферттер мен субсидиялар: Әртүрлі бағдарламалар мен жобаларды қаржыландыру үшін жергілікті бюджет Қазақстан Республикасының орталық мемлекеттік органдарынан трансферттер мен субсидиялар алуы мүмкін.

4. Басқа табыс көздері: Инвестициялық жобалардан, қалалық мүлікті жалға беруден, халықаралық немесе ұлттық бағдарламалар мен жобаларға қатысудан түскен кірістер де мүмкін.

Курчатов қаласының 2023 жылғы бюджеттің атқарылуынан 2023 қаржылық жыл негізінде Курчатов қаласы бойынша жергілікті бюджеттің жалпы кірісі - 2 666 068 800 тң құрады.

Курчатов қаласының 2023 жылға арналған жергілікті бюджетінің кіріс бөлігіне талдау жүргізу арқылы төмендегі бес кестеде құрылды.

А кесте. Курчатов қаласының 2023 жылға арналған жергілікті бюджетінің кіріс бөлігінің салықтық түсімдерден қалыптасуы.

Атауы	Барлық кірістер (мың теңге)
Салықтық түсімдер	**1 773 309,0**
Табыс салығы	925 040,8
Корпоративтік табыс салығы	135 943,8
Жеке табыс салығы	789 097,0
Әлеуметтік салық	627 007,2
Әлеуметтік салық	627 007,2
Меншікке салынатын салықтар	180 231,0
Мүлікке салынатын салықтар	95 414,0
Жер салығы	45 661,0
Көлік құралдарына салынатын салық	39 156,0
Тауарларға, жұмыстарға және көрсетілетін қызметтерге салынатын ішкі салықтар	37 699,0
Акциздер	1 290,0
Табиғи және басқа да ресурстарды пайдаланғаны үшін түсетін түсімдер	28 409,0
Кәсіпкерлік және кәсіби қызметті жүргізгені үшін алынатын алымдар	8 000,0
Заңдық маңызы бар әрекеттерді жасағаны және (немесе) оған уәкілеттігі бар мемлекеттік органдар немесе лауазымды адамдар құжаттар бергені үшін алынатын міндетті төлемдер	3 331,0
Мемлекеттік баж	3 331,0

Дереккөз: Курчатов қаласының 2023 жылғы бюджеттің атқарылуы

В кесте. Курчатов қаласының 2023 жылға арналған жергілікті бюджетінің кіріс бөлігінің салықтық емес түсімдерден қалыптасуы.

Атауы	Барлық кірістер (мың теңге)
Салықтық емес түсімдер	**21 121,0**
Мемлекеттік меншіктен түсетін кірістер	11 953,0
Мемлекет меншігіндегі мүлікті жалға беруден түсетін кірістер	9 440,0
Мемлекеттік бюджеттен берілген кредиттер бойынша сыйақылар	2 324,0
Мемлекет меншігінен түсетін басқа да кірістер	189,0
Басқа да салықтық емес түсімдер	9 168,0
Басқа да салықтық емес түсімдер	9 168,0

Дереккөз: Курчатов қаласының 2023 жылғы бюджеттің атқарылуы

С кесте. Курчатов қаласының 2023 жылға арналған жергілікті бюджетінің кіріс бөлігінің негізгі капиталды сатудан түсетін түсімдерден қалыптасуы.

Атауы	Барлық кірістер (мың теңге)
Негізгі капиталды сатудан түсетін түсімдер	**10 263,0**
Мемлекеттік мекемелерге бекітілген мемлекеттік мүлікті сату	6 108,0
Мемлекеттік мекемелерге бекітілген мемлекеттік мүлікті сату	6 108,0

Дереккөз: Курчатов қаласының 2023 жылғы бюджеттің атқарылуы

D кесте. Курчатов қаласының 2023 жылға арналған жергілікті бюджетінің кіріс бөлігінің жерді және материалдық емес активтерді сатудан түсетін түсімдерден қалыптасуы.

Атауы	Барлық кірістер (мың теңге)
Жерді және материалдық емес активтерді сату	**4 155,0**
Жерді сату	3 386,0
Материалдық емес активтерді сату	769,0

Дереккөз: Курчатов қаласының 2023 жылғы бюджеттің атқарылуы

E кесте. Курчатов қаласының 2023 жылға арналған жергілікті бюджетінің кіріс бөлігінің трансферт түсімдерден қалыптасуы.

Атауы	Барлық кірістер (мың теңге)
Трансферттердің түсімдері	**861 375,8**
Мемлекеттік басқарудың жоғары тұрған органдарынан түсетін трансферттер	861 375,8
Облыстық бюджеттен түсетін трансферттер	861 375,8

Дереккөз: Курчатов қаласының 2023 жылғы бюджеттің атқарылуы

Measuring de banking activity of German banks by function utility

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ABSTRACT

The accounting utility function of German banks measures risks of their decision making according to their positions on Edgeworth box. The banks analyzed are included in the Euro Stock 40 index and therefore their audited financial statements must meet fair value criteria. This proposed measure is a single indicator that is obtained objectively and allows stakeholders to contrast it with alternative information that they trust. The manuscript contrasts it with the Basel criteria and stock market indicators, to achieve consensus between the regulatory requirements of banking activity and stakeholders in the broadest possible sense. Concluding that the stability of the currency is the regulatory line of banking activity, and the price market follows the trend of banking capital structures. The proposed utility function is sensitive to these variations, it allows anticipating the market trend and, as it is a measure of dispersion, correcting the value of the variables the correlations between the analyzed variables improve.

Keywords: Accounting utility function, Edgeworth box, Price market, Basilea.

INTRODUCTION

Considering financial crisis began in 2007 and continuing regulations of financial sector activity in Europe since 2010 (ESRB, 2023, 2024), the manuscript analyzes banking activity from 2014 to 2023. The decisions makings in short-term requires units of measurement to verify the adjustments of the hypothesis statement to real situations. The strategy to overcome the financial crisis was the Basel agreements and their incorporation into the European space as a legislative package that includes Directive 2013/36/EU (CRD IV) and Regulation (EU) No. 575/2013 on prudential requirements for credit institutions and investment firms. Currently the Council of the European Union announces new rules to increase banks' resilience to economic crises. (CEU, 2024) and it say that financial sectors continue with adjustments.

The manuscript proposes alternative way to measure the banking activity. The accounting utility function obtained from positions banks in Edgeworth box. The adoption of utility criteria is carried out without empathy with the actor's situation in the accounting laboratory, Edgeworth box. So, the manuscript does not consider prior hypotheses about the behavior of agents in economics avoiding empathy with them. (Houthakker , 1950. Claramunt, M.M, 2023. Akbel`, 2024, Murakami, Y, 2024). The accounting utility function is independent of the researcher and objectively measures the positions of the banks in the accounting laboratory.

The accounting utility function measures retrospective behavior and contrasts it with external variables such as market prices and the Basel indicators, seeking to avoid their refutation. Additionally, this function is a dispersion measure and allows adjustment coefficient lineal correlations, dividing variables for this indicator. The prospective estimation of the agents' behaviors depends on the cause-effect of the scenarios represented in the Edgeworth table on the utility function.

ACCOUNTING LABORATORY.

The accounting method followed to analyze German banks requires obtaining consolidated variables by aggregations of accounts applying economic, financial, and monetary criteria.

Considering annual financial statements are synthesis of decisions making, the following expression is the accounting balance of dynamic banking activity:

RO – VAE = NFP – MS (1 Expression)

VEA + NFP = MS + RO (2 Expression)

Where:

RO = Result of Financial and Economic Operations, obtained from compensation by differences the consumes and sales of banking services, excluding accounting politics transactions as depreciations and amortizations.

VAE = Variations in Economic Assets, which are economic consumption not transformed into sales of banking services and are stored as inventories.

MS = Monetary Savings, banking deposits generated in a period, and that are not transformed into financial transactions.

NFP = Net Financial Positions, compensation financial transactions.

The commercial subject of banking activity is lending and borrowing of credits. Thus, the main variables are RO and NFP, and both VEA and MS are variables that slow down the dynamism of banking activity.

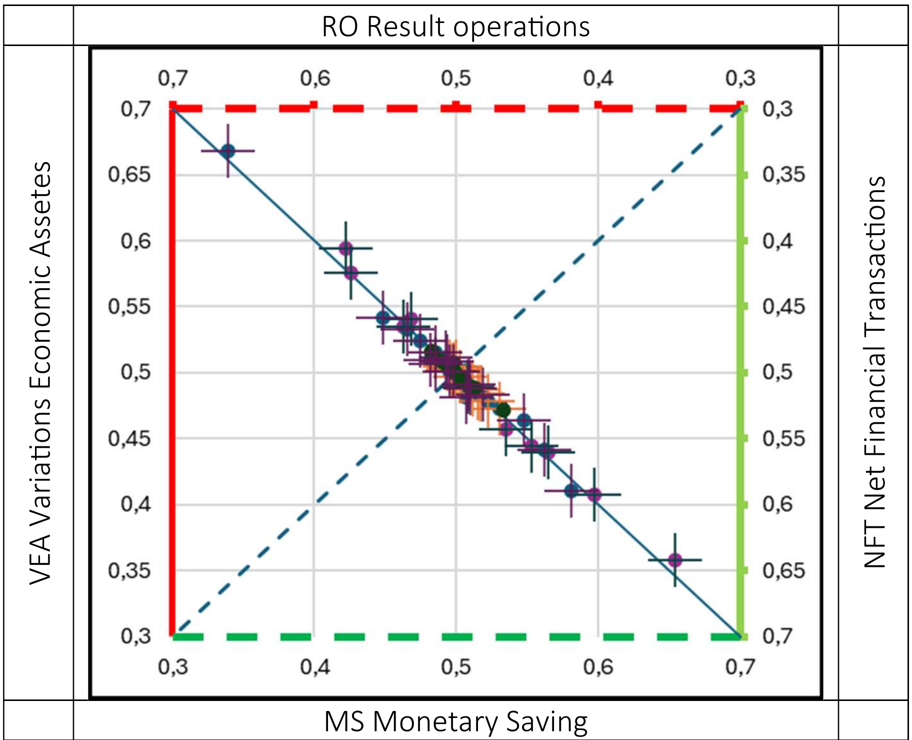

Figure 1. Edgeworth's box, Accounting Laboratory

The positions of figure 1 are expressions 2 of annual accounting equilibrium before several transformations. The first transformation is to add the economic, financial, and monetary accounting values of the Balance Sheet accounts and the annual Profit and Loss account. The second step is the generation of expression 2, which will possibly have negative values. The third step is to transform all the values of the variables in expression 2 into positive values, to subsequently obtain their relative values as accounting assets and liabilities in expression 2. These percentages are the Edgeworth axes in Figure 1. Finaly the expression for obtain positions on Edgeworth is as fallow:

Xei = (Xci + Xo)/S

Where:

Xo = Higher minus value of assets and liabilities in third steps of transformations, multiplied by minus 2 (-2).
Xci = Values of expression 2.
S = Sum assets or liabilities to obtain their t% on axes of Edgeworth box.
Xei = Values of axes Edgeworth as t% of assets (VAE, NFP) and liabilities (OR, MS).

The representation of Edgeworth positions on Cartesian axes is done using two indicators, represented on figure 2 where L(λ) and G(γ) are abscises and ordinates axes, respectively.

$$L(\lambda) = NFP / RO - VEA / MS \text{ (3 Expression)}$$

$$G(\gamma) = VES / RO - NFP / MS \text{ (4 Expression)}$$

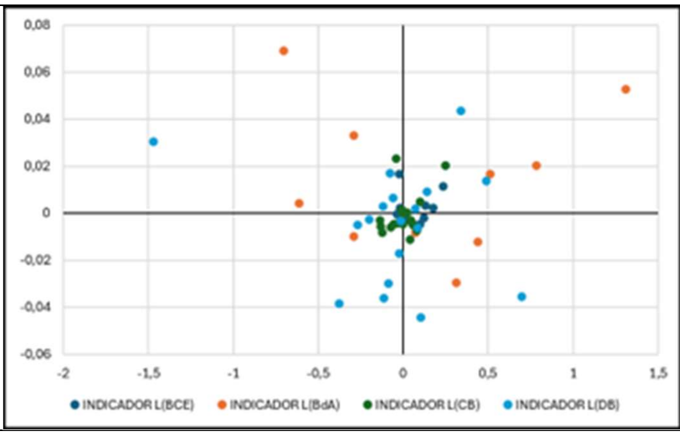

Figure 2. L and G indicators

The discontinued lines on the Edgeworth box are intermediate risk zones, the triangle with the NFP base is a risk-free zone, and the triangle with the VEA base there is an area with a high level of risk. The first quadrant of Figure 2 represents a low-risk area because both L and G are positive. Additionally, when L is greater than G there is an optimal application of monetary resources, banks develop their business matter and economic assets do not mainly serve as monetary warranty for bank deposit. So, L is a measure of efficiency and G measures the effectiveness of decision making. The positions on figure 2 are rotations positions of German Banks from Edgeworth box positions. To visually understand the significance of their risk figures 3a and 3b represent accounting equations of Commerzbank AG and Deutsche Bank AG, respectively. So, financial crisis 2007-2008 has its effects on 2009 for Commerzbank AG, as well as financial crisis 2010 has effect on 2011 ad 2012. These positions have high level of risk, and currently 2020 up to 2023 are positions the middle risks (4 quadrant). The Deutsche Bank adopts intermediate level of risk than Commerzbank in 2008 because its position is the second quadrant when Commerzbank is in first quadrant. The financial crisis 2010 have different effect because in 2011 Deutsche Bank have better position than Commerzbank. The last periods 2020 (2 quadrant), 2021 (3 quadrant), 2022 (3 quadrant) and 2023 (4 quadrant) on figure 3b have more higher risk positions than Commerzbank because their economic counterparts of clients develop different economic activities.

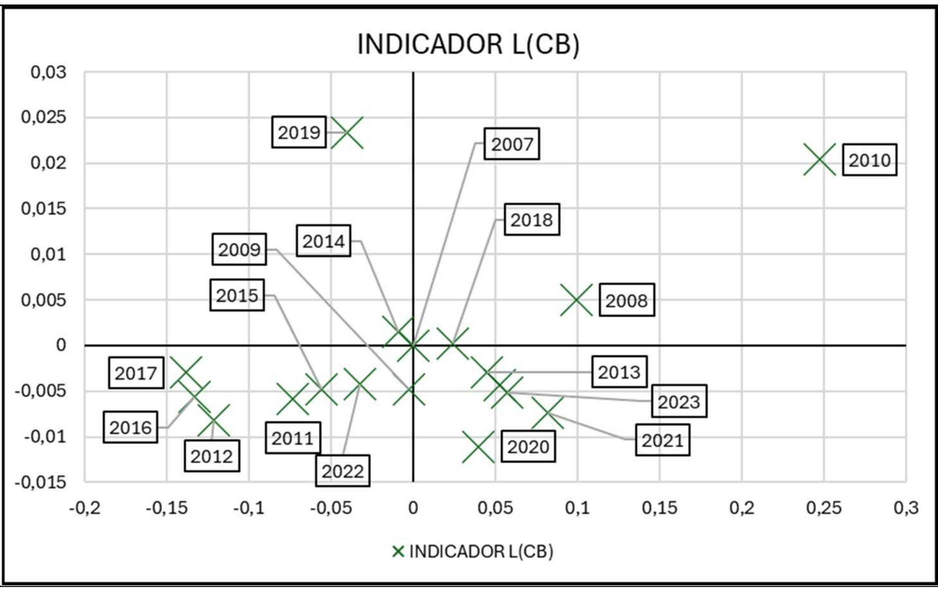

Figure 3a. L and G indicators of Commerzbank AG

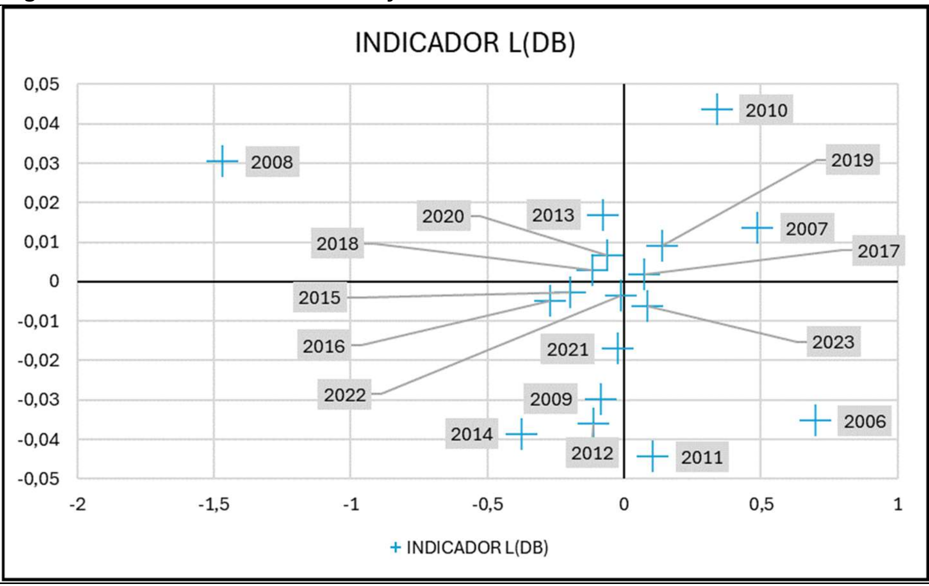

Figure 3b. L and G indicators of Deutsch Bank AG.

The measure of risk has been assessed by location of respective positions of German Banks. Nevertheless, their dispersion on Cartesian center have significance on efficiency and effectivity according to measure of L(λ) and G(γ). They allow positions to be transported from the Edgeworth box to Cartesian axes and each position must have a unique measurement to be contrasted with other variables measured in the same Cartesian space. This challenging question is addressed in the next section by obtaining an accounting utility function.

THE ACCOUNTING UTIILY FUNCTION

The accounting utility function measures the position of accounting equations in Edgeworth box considering their position on both Edgeworth and Cartesian spaces. The function of accounting utility is as follows:

U(Bank) = θ1*θ2 (5 Expression)

Θ1 = [Radian (90 – α) / Radian (90 + α)] * Position Module

Θ2 = Extension (L) / Extension (G)

The measure of Cartesian positions is θ1 and marks negative or positive value of accounting equations according to module of positions `(Mo). This dispersion is corrected by radian variations of the respective Mo. Thus, θ1 considers stresses and decision-making behavior. Second indicator of utility function is θ2 and contrasts efficiency and effectiveness on Cartesian space measure from Edgeworth box space. So, extension L and G are middle of axes of Edgeworth box space 2*(3-1/3) adding measure of L and G on Cartesian axes. The singular measure of banking positions are graphics on figures 4 and 5, respectively for Commerzbank and Deutsch Bank.

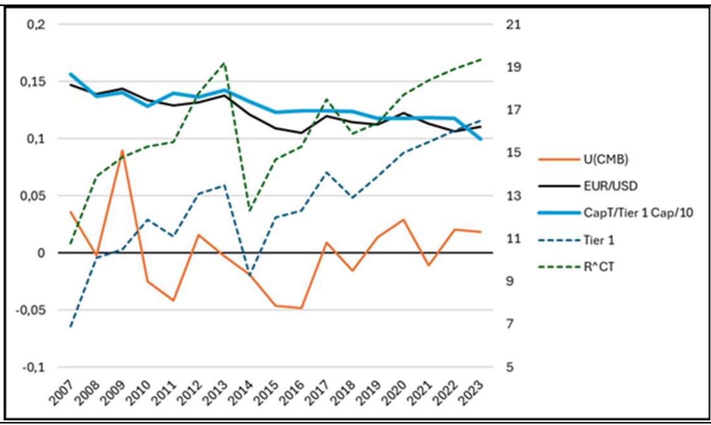

Figure 4. Utility function of Commerzbank

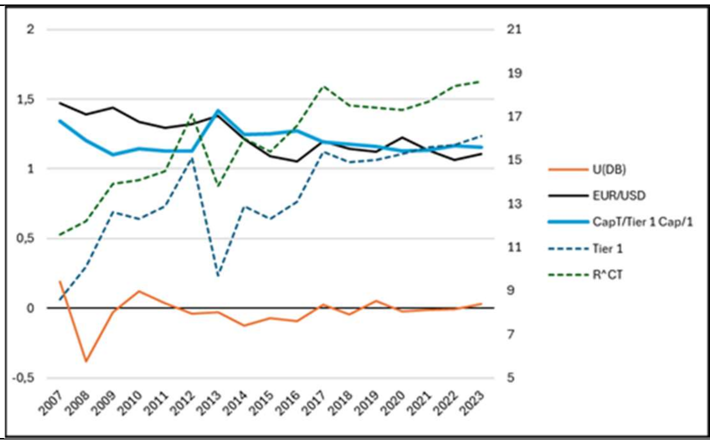

Figure 4. Utility function of Deutsch Bank.

The visual evolutions of the graphs contrast the behavior of the Banks with the Basel requirements. Continuous lines have their references on the primary y-axes and discontinuity lines have their references on secondary y-axes. A first visual perception shows currency change and relations of requirements capitals have same tendencies. When they decrease indicator Basile on financial sufficiency (Tier 1) and liquidity capital (R^CT) increase. The respective functions of accounting utilities have same evolutions of others indicator and show the adjustments of Banks to requirements of regulations Basile. The utilities functions measure respective positions of German Banks on respective Cartesian positions on figures 3s, respectively.

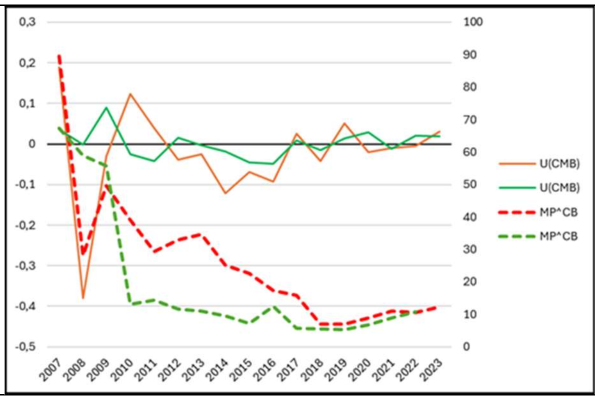

Figure 5. Utility function and Stock Markets

The activity of German Banks contrasted whit stock market variables (discontinued lines), green for Commerzbank and red for Deutsch Bank, have relation with respective evolutions on their accounting utilities functions. However, the development of Commerzbank's market price (MP) and the accounting utility variables are more closely related than those of Deutsche Bank, and both companies' profits announce the development of their respective market prices. So, when utilities take negative values market price decreases and utilities improve the market prices increase.

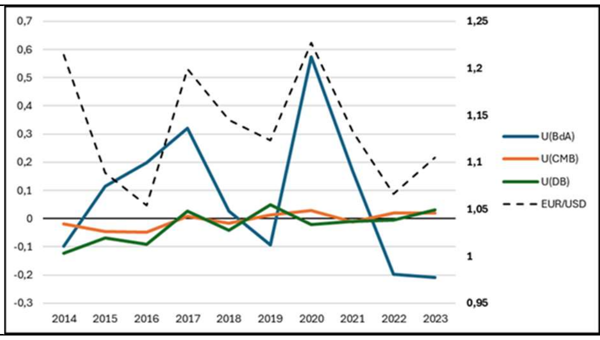

Figure 6. Central Banks

The manuscript defends the importance of the utility function and the graphs of the behavior of the Central Bank of Germany are adjusted to the evolution of the Euro/USD currency (discontinued line). Therefore, their financial accounting structures have much more relevance than the results of the activity because the liquidity of the trade in financial products is more relevant than the profits and losses of the baking activity. To understand the behaviors of central banks when their utilities are positive the risks of markets is assumed by commercial banks, and when Central Banks are negative utilities, they assume the risks of markets. These situations explain the evolutions of utilities on both commercial and Central Baks.

Finaly, the function of accounting utilities are measures of dispersion, and it allows the adjusting of the variables associated to behavior or commercial banks. The assumption of this effect is that division of variables associated with utilities allows obtain lineal correlations more adjusted as next tables present.

Table 1. Commerzbank and Basile criteria

<table>
<tr><th>Coef_corr /T_St</th><th>U(CMB)</th><th>U(DB)</th><th>EUR/USD</th><th>R^CT</th><th>Tier 1</th><th>CapT</th><th>Tier 1 Cap</th></tr>
<tr><td>U(CMB)</td><td>1|\\</td><td>0,18|\\</td><td>0,44|**</td><td>0,07|**</td><td>0,01|**</td><td>0,37|**</td><td>0,37|**</td></tr>
<tr><td>U(DB)</td><td>np</td><td>1,00|\\</td><td>0,05|**</td><td>0,07|**</td><td>0,07|**</td><td>0,08|**</td><td>0,12|**</td></tr>
<tr><td>EUR/USD</td><td>np</td><td>-0,77\0,12</td><td>1,00|\\</td><td>-0,41|**</td><td>-0,65|**</td><td>0,77|**</td><td>0,50|**</td></tr>
<tr><td>R^CT</td><td>np</td><td>-0,65\0,15</td><td>0,98|\0,15</td><td>1,00|\\</td><td>0,94|*</td><td>0,01|*</td><td>0,31|*</td></tr>
<tr><td>Tier 1</td><td>np</td><td>-0,64\0,16</td><td>0,98|\0,17</td><td>1,00|\0,12</td><td>1,00|\\</td><td>-0,24|*</td><td>0,13|*</td></tr>
<tr><td>CapT</td><td>np</td><td>-0,72\0,12</td><td>1,00|\0,12</td><td>0,99|\0,12</td><td>0,99|\0,12</td><td>1,00|\\</td><td>0,90|*</td></tr>
<tr><td>Tier 1 Cap</td><td>np</td><td>-0,72\0,13</td><td>1,00|\0,13</td><td>0,99|\0,13</td><td>0,99|\0,13</td><td>1,00|\0,10</td><td>1,00|\\</td></tr>
</table>

Table 2. Commerzbank and Stocks Market variables

<table>
<tr><th>Coef_corr /T_St</th><th>U(CMB)</th><th>U(DB)</th><th>EUR/USD</th><th>MP</th><th>PER</th><th>EY%</th><th>P/B</th></tr>
<tr><td>U(CMB)</td><td>1|\\</td><td>0,18|\\</td><td>0,44|**</td><td>0,34|**</td><td>0,18|**</td><td>-0,05|**</td><td>0,18|\\</td></tr>
<tr><td>U(DB)</td><td>np</td><td>1,00|\\</td><td>0,05|**</td><td>0,33|**</td><td>-0,40|**</td><td>0,54|**</td><td>0,42|\\</td></tr>
<tr><td>EUR/USD</td><td>np</td><td>-0,77\0,12</td><td>1,00|\\</td><td>0,63|**</td><td>0,39|**</td><td>-0,15|**</td><td>0,34|\\</td></tr>
<tr><td>MP</td><td>np</td><td>-0,95\0,21</td><td>0,83|\0,21</td><td>1,00|\\</td><td>-0,08|\\</td><td>0,13|*</td><td>0,78|\\</td></tr>
<tr><td>PER</td><td>np</td><td>-0,80\0,16</td><td>0,97|\0,16</td><td>0,84|\0,21</td><td>1,00|\\</td><td>-0,74|*</td><td>-0,02|\\</td></tr>
<tr><td>EY%</td><td>np</td><td>-0,24\0,36</td><td>0,54|\0,43</td><td>0,37|\0,21</td><td>0,36|\0,16</td><td>1,00|\\</td><td>-0,08|\\</td></tr>
<tr><td>P/Book</td><td>np</td><td>-0,51\0,13</td><td>0,93|\0,12</td><td>0,63|\0,21</td><td>0,89|\0,13</td><td>0,52|\0,42</td><td>1,00|\\</td></tr>
</table>

Table 3. Deutsch Bank and Basile criteria.

<table>
<tr><th>Coef_corr /T_ St</th><th>U(CMB)</th><th>U(DB)</th><th>EUR/USD</th><th>R^CT</th><th>Tier 1</th><th>CapT</th><th>Tier 1 Cap</th></tr>
<tr><td>U(DB)</td><td>1|\\</td><td>0,18|\\</td><td>0,05|**</td><td>0,11|**</td><td>0,11|**</td><td>0,20|**</td><td>0,19|**</td></tr>
<tr><td>U(CMB)</td><td>np</td><td>1,00|\\</td><td>0,44|**</td><td>-0,06|**</td><td>0,05|**</td><td>-0,30|**</td><td>-0,13|**</td></tr>
<tr><td>EUR/USD</td><td>np</td><td>0,67*</td><td>1,00|\\</td><td>-0,81|**</td><td>-0,70|**</td><td>-0,50|**</td><td>-0,46|**</td></tr>
<tr><td>R^CT</td><td>np</td><td>0,68*</td><td>0,99|*</td><td>1,00|\\</td><td>0,95|*</td><td>0,73|*</td><td>0,77|*</td></tr>
<tr><td>Tier 1</td><td>np</td><td>0,68*</td><td>0,99|*</td><td>1,00|*</td><td>1,00|\\</td><td>0,66|*</td><td>0,84|*</td></tr>
<tr><td>CapT</td><td>np</td><td>0,66*</td><td>1,00|*</td><td>1,00|*</td><td>1,00|*</td><td>1,00|\\</td><td>0,89|*</td></tr>
<tr><td>Tier 1 Cap</td><td>np</td><td>0,66*</td><td>0,99|*</td><td>1,00|*</td><td>1,00|*</td><td>1,00|*</td><td>1,00|\\</td></tr>
</table>

Table 4. Deutsh Bank and Stocks Market variables

Coef_corr /T_ St	U(DB)	U(CMB)	EUR/USD	MP	PER	EY%	P/Book
U(DB)	1|\\	0,18|\\	0,05|**	0,32|**	-0,05|**	0,08|**	0,39|**
U(CMB)	np	1,00|\\	0,44|**	0,32|**	-0,11|**	0,41|**	0,25|**
EUR/USD	np	*0,67**	1,00|\\	0,80|**	-0,02|**	0,09|**	0,78|**
MP	np	*0,56\0,19*	*0,82|\0,20*	1,00|\\	-0,14|\\	0,20|**	0,97|**
PER	np	*0,16***	*0,51|***	*0,55|\0,22*	1,00|\\	-0,74|**	-0,09|**
EY%	np	*0,76\0,15*	*0,92|\0,16*	*0,67|\0,30*	*0,21|\0,46*	1,00|\\	0,12|**
P/Book	np	*0,63\0,12*	*0,97|**	*0,94|\0,19*	*0,57|**	*0,84|\0,16*	1,00|\\

Conclusions.

The correlations are higher when the Basel variables are corrected by division than the market variables. On the other hand, the currency exchange variable obtains a higher value in both cases, indicating that interest rates do not intervene significantly in banking activity, but rather the profit adjustments of the Central Banks to the exchange rates.

Utility functions are objective measures and independent of the researcher because they are obtained from the positions adopted by the entities in an Edgeworth box. These positions are not obtained by empathy with the acting agent to hypothetically evaluate their decisions and are deduced from the accounting information in the financial statements.

The cause-effect relationship of utility function allows us to consider the construction of hypotheses that are more adjusted to the reality analyzed, as well as to begin to consider the possibility of accounting being a formal science.

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Technical Sciences

Analysis of new challenges in the field of assessing the higher education quality

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Annotation

Currently, universities are faced with the challenge of seizing new opportunities to remain competitive. The article conducts a systematic analysis of the literature, including domestic and foreign works, which evaluates approaches to assessing the quality of education taking into account the new challenges of digital transformation and points out gaps in research.
Key words: digital transformation, education, quality monitoring, quality assessment, Industry 4.0.

Introduction

Digital transformation is gradually penetrating almost all areas of our lives. Significant changes leading to the transition from third-generation Industry to Industry 4.0 involve the use of advanced technologies such as the Internet of Things, artificial intelligence, big data, automation and digitalization of various processes.

In such conditions, the quality of higher education has become one of the main topics of interest and discussion in society. With the emergence of new challenges and requirements for the quality of education, including those caused by global digitalization, the need has arisen for a more in-depth and objective assessment of its effectiveness.

1 Relevance

Industry 4.0 and the digitalization of higher education offer many opportunities to develop and improve educational processes. They stimulate changes in approaches to learning, open up new formats and resources for teaching students. However, the main thing is the ability to adapt to a rapidly changing world and use advanced technologies to achieve better results. Universities are shifting their focus to active participation and independent exploration by students to harness this potential. These processes are in constant interaction with each other and with the environment. As a result, new challenges arise, such as developing relevant training programs that meet the needs of students and the requirements of the modern labor market. As a part of the digitalization of education, issues of data security and confidentiality, the need to develop information literacy and copyright compliance also arise. Assessing the quality of education also requires a revision and a new approach taking into account these challenges.

Digitalization in higher education involves the integration of information technologies into the internal, external and activities of universities [1]. This concept can be considered as some kind of change that occurs when technologies are introduced into the system within a university [5]. Such a transformation leads to the emergence of new processes and new business models of the educational process or the improvement and adaptation of existing ones through the introduction of new technologies [7]. As a result, the ways of presenting educational services and processing and evaluating the results of educational activities will change [6].

Universities that try to keep up with the times and choose the way of transformation through digitalization offer educational services in new digital formats. In this way, a connection between physical and virtual processes is achieved, including in the field of assessing the quality of education [2]. When familiarizing yourself with the works [3, 4, 8], we can highlight some advantages of using digital transformation in a university: optimization of physical and digital resources; gaining greater competitive advantage; attractiveness for students.

2 Methods of research

Publications in journals and conference proceedings indexed in Elsevier Scopus were reviewed. June 11, 2024 after searching Elsevier Scopus with the search parameters «higher education AND quality» 62 260 documents were found (Fig. 1).

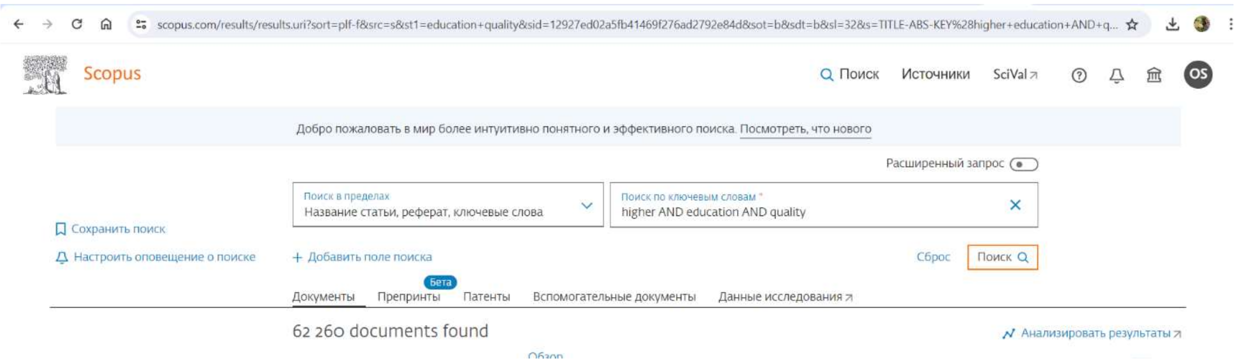

Figure 1 – Search parameters «higher education AND quality»

24 933 documents were found from 2020 till 2024 (Fig. 2).

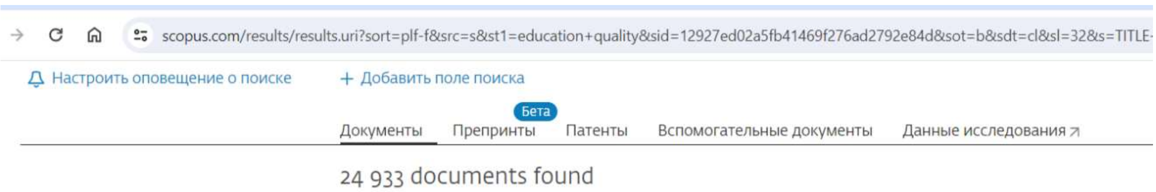

Figure 2 – Search parameters «from 2020 till 2024»

Search with parameters «Quality estimation or quality monitoring» 2 648 documents were found The distribution of works by countries is as follows (Fig. 3).

Страна	Документы
United States	476
China	468
United Kingdom	204
Russian Federation	194
Australia	140
Germany	119
Spain	111

Figure 3 – The distribution of works

Histogram is presented on Figure 4.

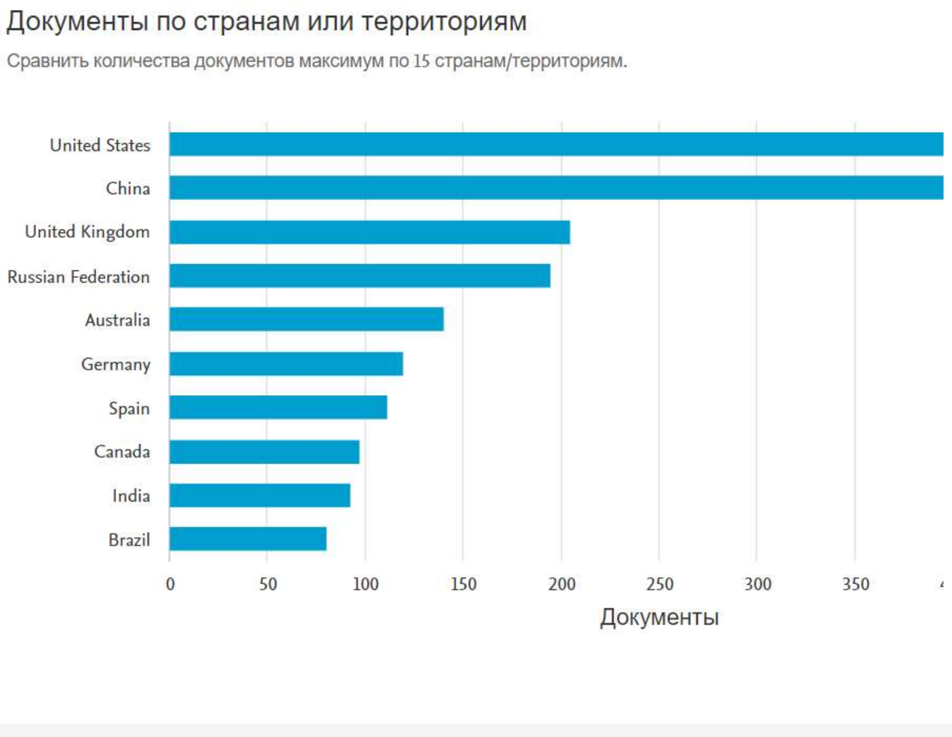

Figure 4 – Histogram of the distribution of works

As can be seen from the analysis, the main interest in this topic is observed in the USA (476), China (468), Great Britain (204), Russia (194) and Germany (140).

If we talk about the dynamics of the popularity of this topic over time, then there is an increase in interest from 2020 (488 publications) to 2022 (642 publications), which persisted until

2023. In 2024, interest in the topic did not fade away - 325 publications in six months.

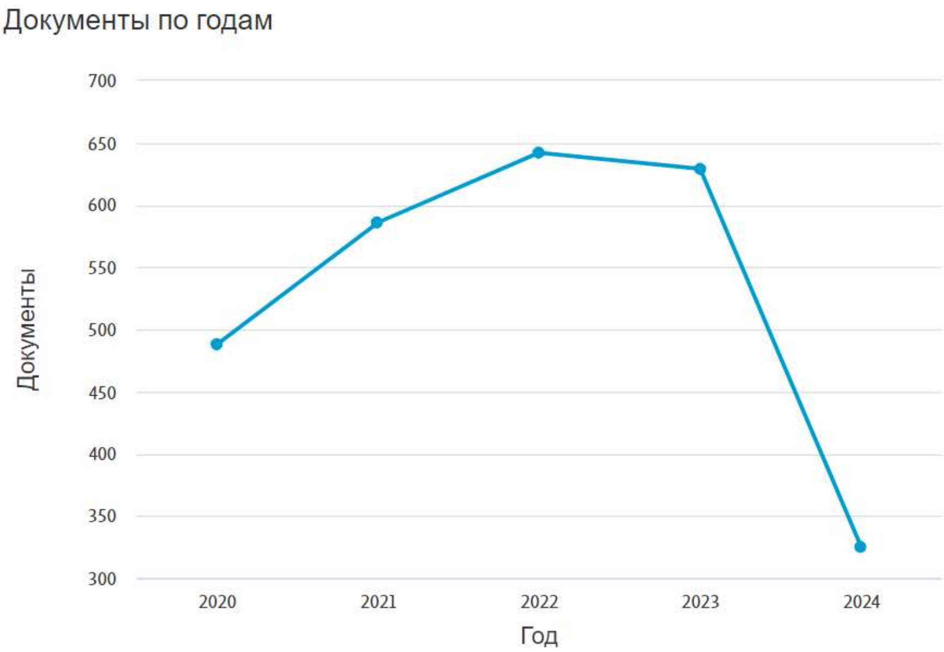

Figure 5 – The dynamics of the popularity of this topic

Organizations that have published the most research on the topic of the higher education quality assessing are Harvard Medical School, University of California, San Francisco and The University of Sydney.

Figure 6 – Distribution of works on organizations

80% publications are articles in scientific journals (Fig. 7).

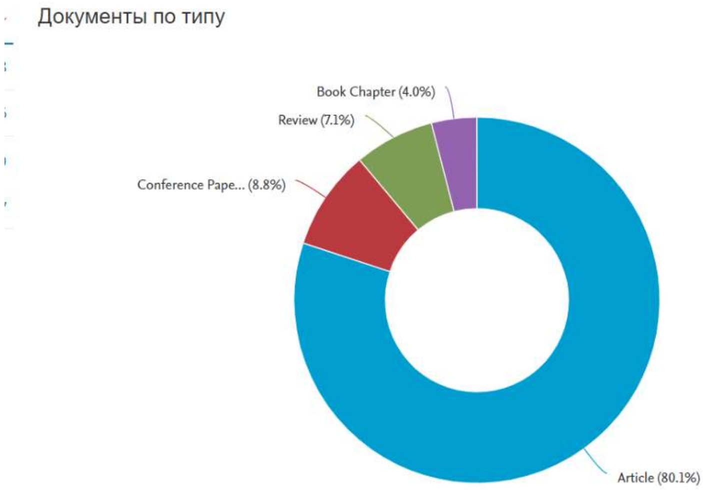

Figure 7 – Distribution on the type of publication

This indicator shows a sufficient scientific basis in the field of assessing the education quality.

3 Results

New socio-economic and value-semantic mechanisms of life ensure the university's transition to a mode of sustainable dynamic development. The program for improving the principles of functioning of the university is based on the theory and methods of organizational activity in value-oriented systems based on information technology, as they most fully correspond to the nature and nature of the scientific and educational process at the university.

A university as an object of management is a complex multicomponent system. At the same time, the most important feature is the multidirectional nature of activities, which determines very complex functional and organizational connections within the university. University management should be organized taking into account both the vertical administrative hierarchy and numerous thematic horizontals.

After analyzing the selected works, the following conclusions were made.

The main factors determining the directions of functioning and development of the university today are:

1) socio-economic transformations in the country, structural restructuring of the science of production, the formation of a market for intellectual labor and educational services,

2) reforms in the higher education system and its transition to a multi-level structure.

Conclusion

Thus, the correspondence of the content and education quality in the new socio-economic conditions should be based on sets of targets united by a global goal, corresponding indicators for achieving goals, as well as on the use of modern information technologies.

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Artificial intelligence system for controlling the capture of a humanoid robot

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Kazakhstan

Abstract

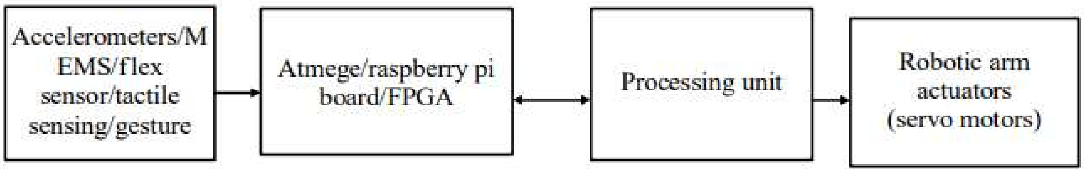
In this dissertation, a new approach to intelligent hand control was proposed, which can simulate the natural movement of a human hand. The implementation of such an intelligent hand can be used both in a humanoid and in personal robots. In this work, vision-based interaction methods (cameras) are used to track finger movements and obtain accurate and fast hand movements. Accuracy and efficiency play a key role in real-time motion-based applications. The Raspberry pi processor is used to control the entire installation to which the motion capture camera module is attached. To describe the hands in the video, the removal of the face, the definition of skin color is used. The mean shift algorithm is used to track finger movements. The relationship between the mechanical structure and the number of drives and degrees of freedom (DOF) is optimized to withstand the rigid dimensions and weight restrictions that are common applications of artificial hands for the consequences of humanoid robotics. The proposed arm structure has a structure similar to a natural arm, with articular fingers controlled by permanent arm motors (each finger has 4 degrees of freedom).

Keywords: hand gesture, open computer vision (open CV), human-computer interaction (HCI), degrees of freedom (DOF), artificial intelligence (AI)

INTRODUCTION

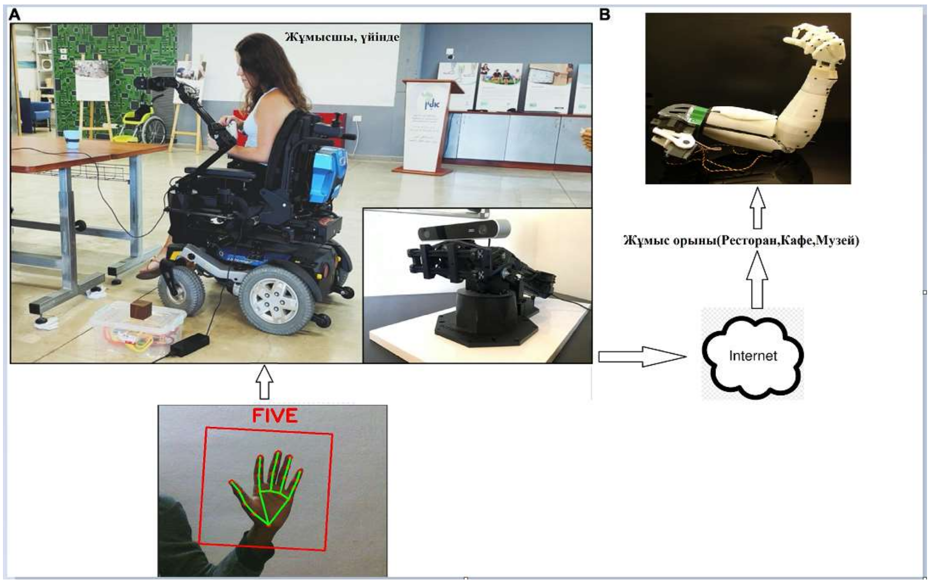
The flexibility and precision of the robotic arm depends on the choice of sensitive mechanism, drive and communication means. A brief overview of the anthropomorphic design of a robotic arm. (2014). In the literature, there are two approaches to developing a dexterous robotic arm (1) the anthropomorphic approach (2) the minimalist approach. This article uses the first approach, which is to give the hand as much human appearance and function as possible. Human-computer interface is a computer technology that focuses on people and interfaces with computers (James and Seb, 2007). Motion tracking becomes one of the main technologies and it is the process of tracking the movement of an object. This technology is embedded in human-computer interaction

Many studies have used algorithms for motion tracking and hand extraction from video. A cascade classifier based on Haar features is an effective face reduction method to remove the face from the video, and then skin color detection method is used to extract the brush region from the video (Fanwen and Zhiquan, 2013). An optical camera is used to capture video. Enhancement of image convexity and centroid defects was applied by shell and shell (2014). Fingertip points were found by ben-Israel and Moses (2007) using the starting point of convex defect points. It also describes the advantage of the average sliding algorithm for tracking finger movements. An effective motion control method using the inverse projection method was used by Wang et al. (2010). Humanoid robot - the best development in the field of robotics. This is because humanoid robots are expected to be much more productive than human hands. Brush design Zollo et al. b. suggested. (2007) and Townsendome (2000).



Picture. 1: Schematic diagram of manual control of the robot

Figure 1 shows the schematic diagram of hand movement control. The control signal can be received by / MEMS / Flex sensor / accelerometer movement and in turn processed by / FPGA processor. The control word of the processor is given to the executive device.



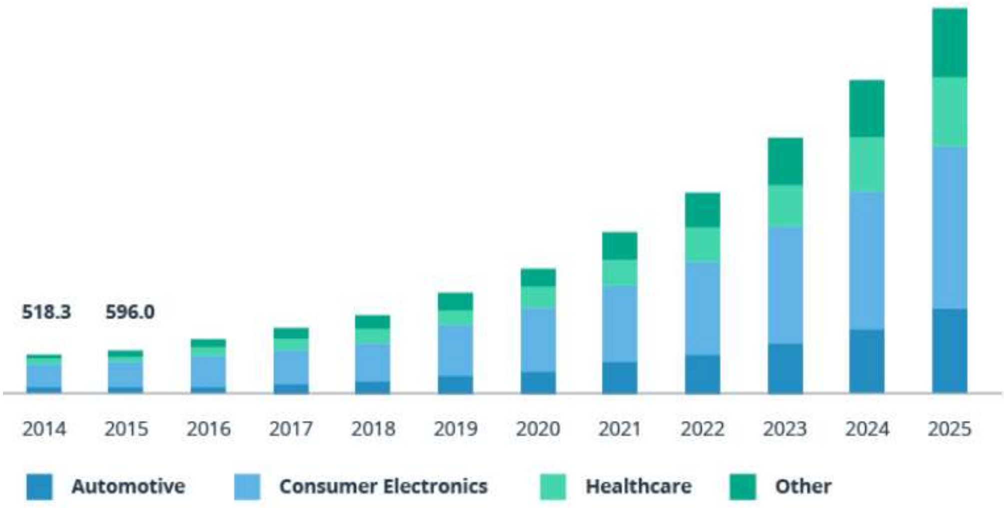
Hand tracking and gesture recognition using artificial intelligence: applications and issues .Click your fingers and your coffee maker will prepare a fresh cup for you. Wave your hand next to your smart TV and turn on the weather forecast today. Set an alarm in your child's bedroom with the touch of a smart watch. How cool would it be to be able to achieve something with a simple gesture? This is no longer true: hand motion control and gesture recognition technologies are penetrating many fields. But do we need such features? What is real-time hand gesture recognition (HGR)?

A gesture is a natural and intuitive way of communicating with people and the environment. Thus, it makes sense to use hand gestures as a method of human computer interaction (HCI). But there are many challenges, from the need to wave your hand in front of a smartphone's tiny screen to the complex machine learning algorithms required to recognize more than just a thumbs-up. Need to juice? Let's find out by starting with the definitions and moving on to the technical details.

The need for gesture recognition technology

The gesture recognition market is expected to reach $32.3 billion in 2025, and $9.8 billion in 2020. Not surprisingly, the leading manufacturers of products with a gesture interface are Intel, Apple, Microsoft and Google. Automotive, Healthcare and consumer electronics are the main industries driving the mass adoption of non-contact technologies.

Gesture recognition market in China, 2014-2025



Remember that hand tracking and gesture recognition are not the same thing. Both technologies are envisioned to use hands to allow human machine (HMI) interaction without touch, switching, or using controllers. Sometimes hand tracking and gesture recognition systems require the use of markers, gloves, or sensors, but an ideal system requires nothing more than a human hand.

Systems using gesture recognition technology can distinguish only certain gestures: thumbs up, hand wave, peace sign, stone sign, etc. hand tracking is more complex: it provides variability to the HMI as it tracks hand size, finger placement, and other characteristics. The number of possible interactions with digital objects is endless, but issues of overlap, occlusion, and interpretation arise. Although artificial intelligence in gesture recognition systems is trained to recognize only a limited number of gestures and is less flexible than hand motion tracking technology, it does not suffer from the same problems.

Why might people want to use gestures instead of touching a device? Desire for contactless sensing and hygiene considerations are the main factors determining the demand for contactless technology. Gesture recognition can also improve the ergonomics of consumer devices. Another market driver is the proliferation of biometric systems in many areas of people's lives, from cars to homes and shops.

It's no wonder people are reluctant to use touchscreens in public during the coronavirus pandemic. Additionally, it can be dangerous for drivers to tap the screen as it distracts them from the road. In other cases, tapping tiny icons or accidentally clicking the wrong field increases frustration and forces people to search for the best user experience. Real-time hand gesture recognition for computer interaction is the next step in technological evolution and is ideal for today's consumer landscape. In addition to using gestures that are not convenient for hardware, hand tracking can be used in Augmented and Virtual Reality environments, sign language recognition, games, and other situations.

The high cost of non-contact sensor devices is one of the main challenges of this technology, along with the difficulty of developing HGR software. In order to build a reliable hand positioning system, a hand motion tracking solution requires, among other things, the introduction of advanced machine learning algorithms and user-level deep learning.

Hand Tracking and Gesture Recognition Using Artificial Intelligence: How Does It Work?

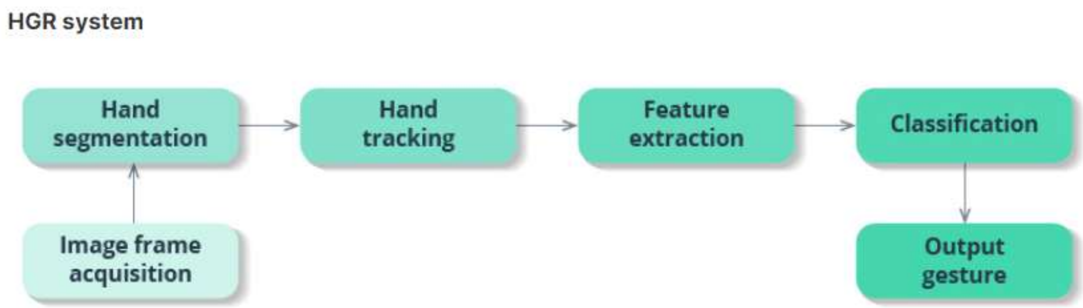
Gesture recognition gives the computer real-time data to execute user commands. In-device motion sensors can track and interpret movements using gestures as the primary source of data input. Most gesture recognition solutions include a combination of depth-sensing 3D cameras and infrared cameras along with Machine Learning systems. Machine learning algorithms are trained based on labeled deep hand images to recognize hand and finger positions.

Gesture recognition consists of three main levels:

Using the camera, the device recognizes hand or body movements, and a Machine Learning algorithm segments the image to identify the edges and location of the hand.

Control. The device tracks the movement frame by frame, captures every movement and provides real inputs for analysis.

Recognition. The system tries to find patterns based on the collected data. When the system finds a match and interprets a gesture, it performs the action associated with that gesture. Highlighting and classifying features in the diagram below implements the recognition functionality.



Many hand tracking solutions use eye-based systems, but this approach has many limitations. Users need to move their hands within a limited area, and these systems struggle when hands are stuck together or not fully visible. In sensor-based motion tracking, gesture recognition systems can recognize static and dynamic gestures in real time.

In sensor-based systems, depth sensors are used to align computer-generated images with actual images. Leap's motion sensors are also used in hand motion tracking to determine the number and three-dimensional position of fingers, find the center of the palm, and determine the orientation of the hand. The processed data includes fingertip angles, distance from the center of the palm, fingertip height, coordinates in 3D space, etc. explains about A hand gesture recognition system using image processing looks for patterns using algorithms trained on data from depth sensors and jumping movements:

1. The system separates the hand from the background using color and depth data. The hand model is further divided into hand, wrist, palm and fingers. The system ignores the hand and wrist because they do not provide information about the movement.

2.Furthermore, the system calculates the distance from the fingertips to the middle of the palm, the height of the fingertips, the shape of the palm, the position of the fingers, etc. receives information about

3. Finally, the system collects all the extracted objects into an object vector representing the motion. A hand gesture recognition solution using artificial intelligence matches the object vector with various gestures in the database and recognizes the user's gesture.

Depth sensors are critical to hand motion tracking technology, as they allow users to dispense with special wearables such as gloves and make HCI natural.

Intel recently released a suite of advanced research and monitoring technologies called RealSense, which provides the developer community with open source tools for a variety of languages and platforms. Intel realsense d455 depth camera with lidar, stereo depth, tracking and corded light features provides high level of motion recognition and large range for HMI. With such a camera, dynamic hand gesture recognition systems can be used in a variety of applications, from robotics and drones to 3D scanning and human tracking.

What to consider when designing gesture recognition technology

Real-time perception of hand gestures, while natural for humans, is a challenging task for computer vision. Hands often get in the way of each other when the camera sees them (think fists or handshakes) and high-contrast lines are lacking.

To develop the HTGR system, artificial intelligence algorithms are trained to recognize established data and predict unknown data based on the developed model. A hand tracking database is the first step in artificial intelligence training. Depth cameras are used to highlight a specific element from the background to create a training dataset. High-quality segmentation allows artificial intelligence to recognize left and right hands, individual fingers, etc. b. helps to distinguish. The higher the quality of the data sets and the more annotations they contain, the higher the accuracy of dynamic hand gesture recognition by computer vision.

At cvpr, Google also announced mediapipe, a new approach to hand perception—a cross-platform platform for building multimodal Machine Learning pipelines. With this new method, you can scale to multiple broadcasts in real-time, even on mobile devices.

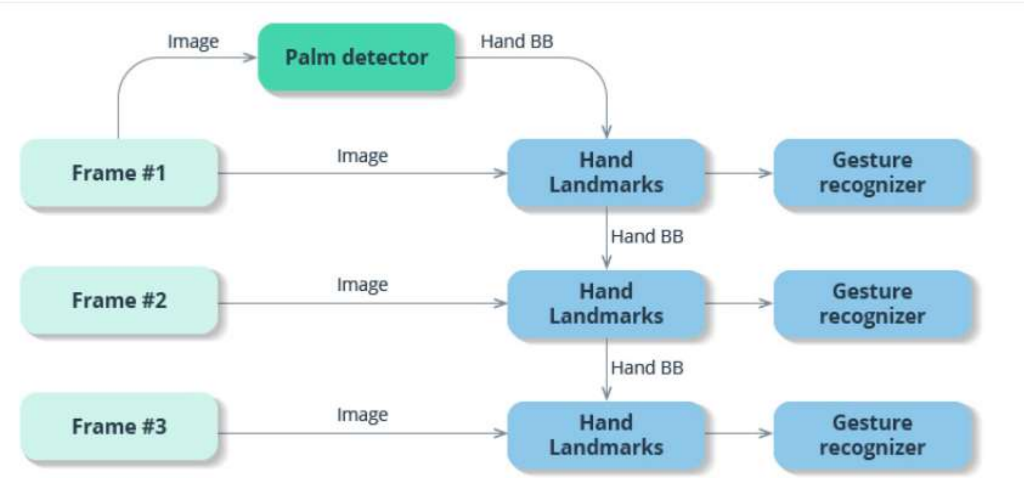
The Machine Learning pipeline of this hand tracking solution consists of several models:

Palm detector

Manual Guide

Gesture recognizer

HGR Machine Learning Pipeline



Because this hand tracking and gesture recognition pipeline is open, developers have a full set of prototyping and innovation tools on top of Google's model. A large dataset for training and help to increase the number of accurately recognized gestures and make the system more reliable.

Use of hand gesture recognition technology

In recent years, HGR technology has begun to permeate various fields as advances in computer vision, sensors, machine learning, and deep learning have made it more accessible and accurate. The four main industries actively implementing hand tracking and gesture recognition are automotive, healthcare, virtual reality, and consumer electronics.

In recent years, HGR technology has begun to permeate various fields as advances in computer vision, sensors, machine learning, and deep learning have made it more accessible and accurate. The four main industries actively implementing hand tracking and gesture recognition are automotive, healthcare, virtual reality, and consumer electronics.

Car

Sony DepthSensing Solutions' gesture recognition solution includes a time-of-flight function that measures the time it takes for a gesture to "move" from an infrared sensor to an object and back. Artificial intelligence is trained to distinguish basic movements from noise and work in any lighting conditions.

The BMW 7 Series is equipped with a built-in HDR system that recognizes five gestures and can control music and incoming calls, among other things. Less touch screen interaction makes driving safer and more comfortable.

Health care

Emergency rooms and operating theaters can be chaotic, with loud noises from staff and machines. In such cases, voice commands are less effective than gestures. Touch screens are also not an option, as there is a hard line between sterile and non-sterile. But during operations or other manipulations, information and images can be accessed using Microsoft's proven hgr technology. GestSure allows doctors to review MRI, CT and other images with simple gestures without removing them.

Virtual reality

In 2016, Leap Motion (acquired by Ultrahaptics in 2019) introduced updated hgr software, which allows users to control gestures in virtual reality in addition to controlling the computer. The Leap Motion controller is a USB device that monitors an area of approximately one meter with two IR cameras and three infrared LEDs. This controller is used for applications in medicine, automotive, and other industries.

Methodology.

Hand detection. Determination of global skin tone:Skin color detection is the process of finding skin-colored pixels in an image. By identifying areas of the skin, it is possible to find the presence of movements of faces, hands, arms. The camera module in the Raspberry pi is used to capture video. To extract skin tone from an image, you need to set a skin tone threshold. Then you need to convert it to YCBCR color space. YCBCR Convention:

C CR must be between 135-183
C CB should be between 120-154

Then a morphological operation was performed on the improvement process. We apply dilation to the probabilistic image with a 9×9 rectangular mask. After that, Erosion is applied with a small rectangular mask of size 5×5. Figure 3 shows skin tone with face extraction in the video.

Contour definition:A contour is a curve connecting all continuous points of the same color or intensity. A contour is a useful tool for object identification and recognition. Finding contours in OpenCV is like finding a white object on a black background. Objects to be found should be white, and the background should be black. Figure 4 shows the outline of the hand.

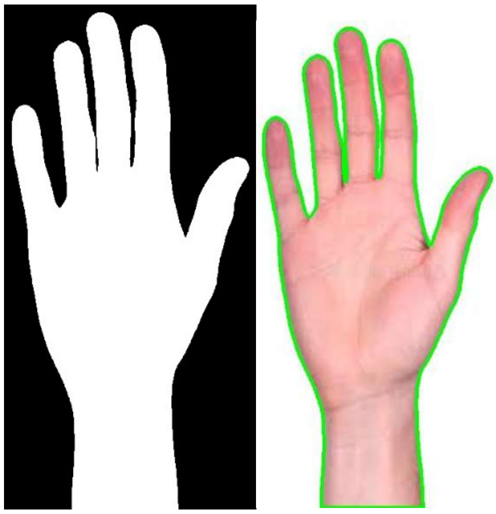


Figure 4: Determining the outline of the hand

The centroid part of the arm (Figure 5): To find the centroid of the arm, we use the image moments function. The image moment gives the average intensity of the image pixels. For a 2D continuous function f (x, y), the moment is given by:

(1)

$$M_{pq} = \int_{-\infty}^{\infty}\int_{-\infty}^{\infty} x^p y^q f(x, y)\, dx\, dy$$

The centroid is given by the relations Cx = M10/M00 and Cy = M01/M00. This can be done as follows:

$$C_x = \mathrm{Int}\left(\frac{M['m10']}{M['m00']}\right)$$

$$C_y = \mathrm{Int}\left(\frac{M['m10']}{M['m00']}\right)$$

Bumpdefects and convex hull:The space between the contour line and the actual object is called convex defects. When the camera focuses on our hand, the four points on our hand are described as follows:

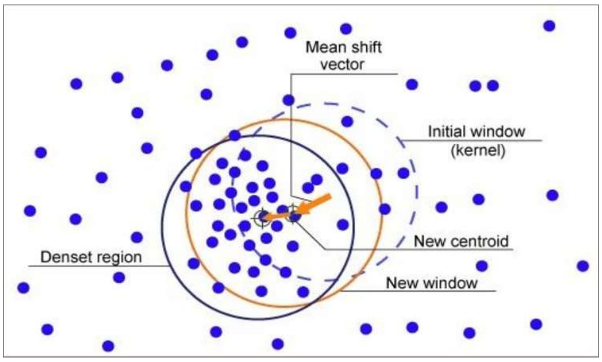
- The point on the circuit where the fault starts
- The fault termination point of the contour
- The furthest point of the convex hull inside the fault
- The distance between the farthest point and the convex hull

Convex body:

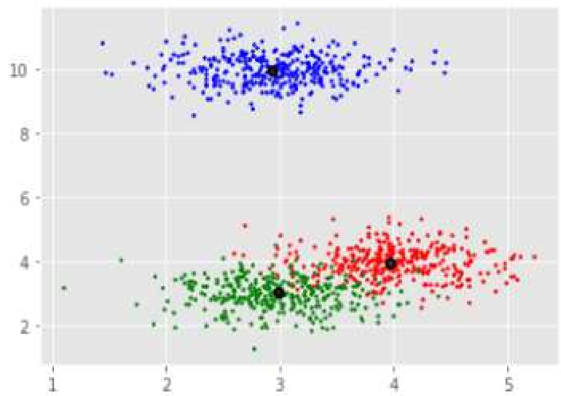
The convex hull of an endpoint is obtained from all possible convex combinations of its points. Each point in the convex combination is assigned a weight such that the coefficient is positive, and these weights are used to estimate the weighted average of the points. Figure 6 shows the convex hull of the hand and the defect points

Average shift (Mean shift) algorithm:

Mean shift is a non-parametric clustering algorithm that is often used for object tracking and image segmentation in computer vision applications. This is a method of finding the mode (peak) of the density function in a given set of samples. The mean shift algorithm works by iteratively moving the window through the data space until it approaches the mode.



The basic idea of the mean shift algorithm is to start with an initial window at a certain point in the data space, and then shift the window to the mean of the points within it. This new medium becomes the window center and the process is repeated until convergence. At each iteration, the window moves to the average of the points within it until the density of the function reaches its peak.



Data points	x	y
Data_point1	0.67	0.97
Data_point2	0.33	0.76
Data_point3	0.40	0.68
Data_point4	0.12	0.56
Data_point5	0.60	0.30
Data_point6	0.28	0.72

The mean shift algorithm has several advantages, such as the ability to handle free-form clusters, the ability to approximate multiple regimes of the density function, and robustness to noise. However, the main disadvantage of the mean shift algorithm is its high computational complexity, which makes it unsuitable for real-time applications with large data sets.

Mean shift is an unsupervised learning algorithm mainly used for clustering. It is widely used in real data analysis (for example, image segmentation) because it is non-parametric and does not require a predefined cluster shape in the space of objects.

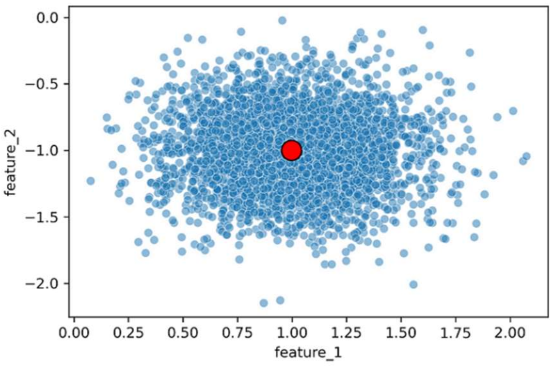
Simply put, "mean-shifting" is equivalent to "mean-shifting" iteratively. In the algorithm, each data point is incrementally shifted to a "regional mean" and the final destination of each point represents the cluster to which it belongs.

In this post, I will briefly explain how to understand this algorithm as well as how to implement it in Python. I hope this article is helpful!

What does this mean?

So, based on the above brief description of the moving average algorithm, you may have noticed that some terms are still unclear without further explanation. The first of them is the "average" we are talking about.

If we consider the following example dataset with two functions,



Midpoint of selected data set (red)

By calculating the mean of feature_1 and the mean of feature_2, we can easily find the "midpoint" of the entire data set (red in the graph above). Note that the "midpoint" here is defined as the arithmetic mean for feature_1 and feature_2, respectively, since it is calculated based on equal weights for all points,

$$M_A = \frac{1}{n}\sum_{i=1}^{n} x_i$$

Arithmetic mean

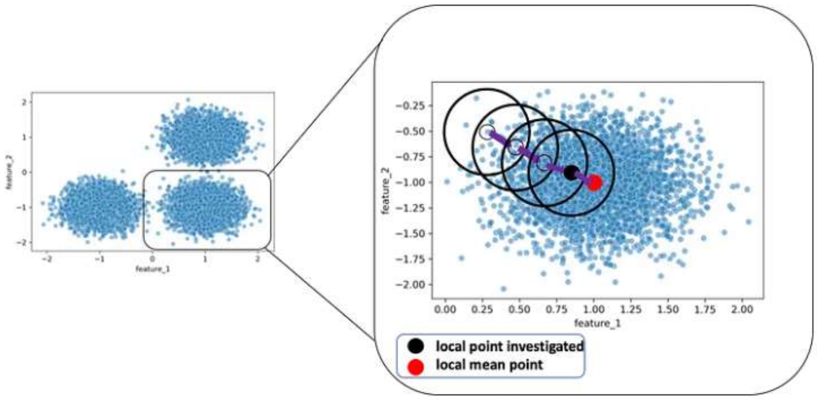
where M represents the mean, n is the sample size, and x_i is one feature of the data points (feature_1 or feature_2).

Sometimes it is not practical to give the same weight to everyone, we can also calculate the average weight,

$$M_W = \frac{\sum_{i=1}^{n} w_i x_i}{\sum_{i=1}^{n} w_i}$$

Weighted average value

where is the weight for w_i-x_i and it depends on the Euclidean distance between the points. The most commonly used weighting function in the moving average algorithm is the plane function,



N steps for average intersection point

You may have noticed that if this procedure were performed for each data point, the calculation would be very redundant. Thus, in practice, when these moving circles are superimposed, only the circle containing the most points is preserved.

The moving average algorithm proposed by Fukuna and Hostet (1975) involves a nonparametric estimation method. The algorithm has less computation and is useful for tracking the movement of the target area. Target regions are manually selected by Duan et al. (2011). In this thesis, the target area is used at the starting point of the bulge

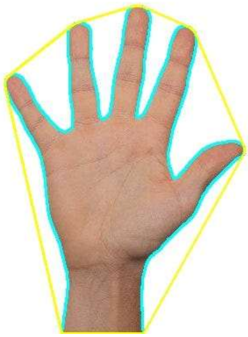


Figure 6: Body points and hand defect points

failure points. A total of five windows are selected. Mean shift is a scheme implemented in OpenCV that has the following steps:

- This algorithm calculates the histogram value of the object in the first frame of the video
- Reverse projectiontechnique is used. This method applies the original histogram to each new frame of the video
- It searches for a high-intensity region that corresponds to the object-observed region in the first frame

Calculate the average shift:A real-time application will have more background texture and less foreground data. Thus, it is difficult to calculate the prior accurately, so it is better to consider the prior approximately as α (ratio).

Through the followingUsing the above procedure and the equation below, we can estimate the foreground and background background, which is an important part of the intelligent hand:

$$q^T = \alpha q^F + (1-\alpha) q^B \Rightarrow q^F = \frac{q^T - (1-\alpha) q^B}{\alpha} (0 < \alpha < 1)$$

where, qT-Target area, qF-Foreground area, qB-Background data

Control algorithm:The three main steps of monitoring are:

- An approximation of the previous data is α
- Assessment of background data

- The next possible position can be obtained by moving average algorithm Figure 7 shows the target region of the previous region.

Movement calculation:The centroid of the hand is considered as the main point. Five windows are considered secondary points. The following method is used to determine which finger is in motion (Fig. 8):

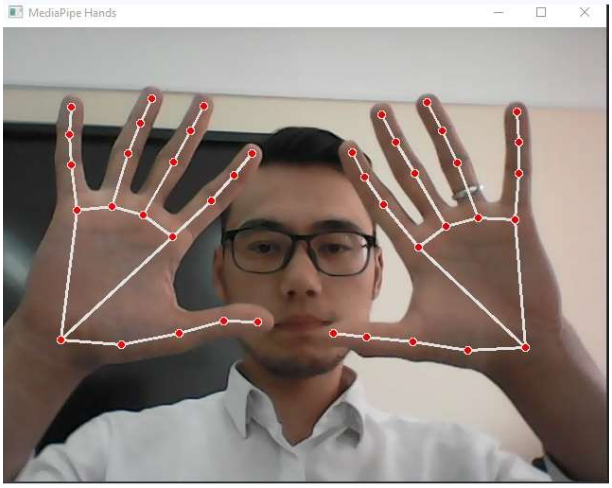


Figure 7: Illustration for the moving average algorithm

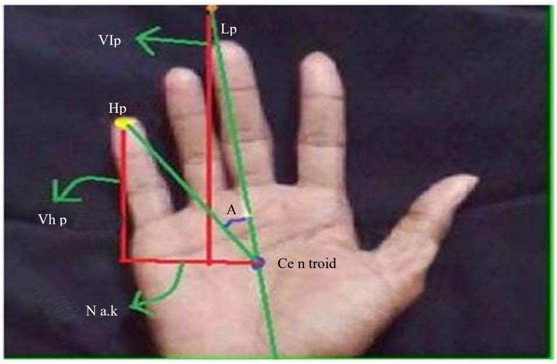


Figure 8: Geometric relationship between finger tip and centroid

- (xc, yc)-centroid point
- (x0, y0) is the line of intersection of the principal axis (lp) and the line (0, y).(points to)-(0, y0)
- (x, y) is hull point (hp)

Vertical distance:

Vhp = xc-x

Vlp = xc-x0, hence , x0 = 0, Vlp = xc

Horizontal distance:

Hhp = yc-y
Hlp = yc-y0

The angle between the main axis and the line joining the body point (fingertip) and the centroid of the palm, if Hlp and Vlp are negative or positive:

$$A = PI\text{-}atan\left(\frac{Vhp}{Hhp}\right)\text{-}atan\left(\frac{Vlp}{Hlp}\right)radians$$

(Hlp and Vlp signs are opposite):

$$A = \frac{PI}{2}\text{-}atan\left(\frac{Vhp}{Hhp}\right)radians$$

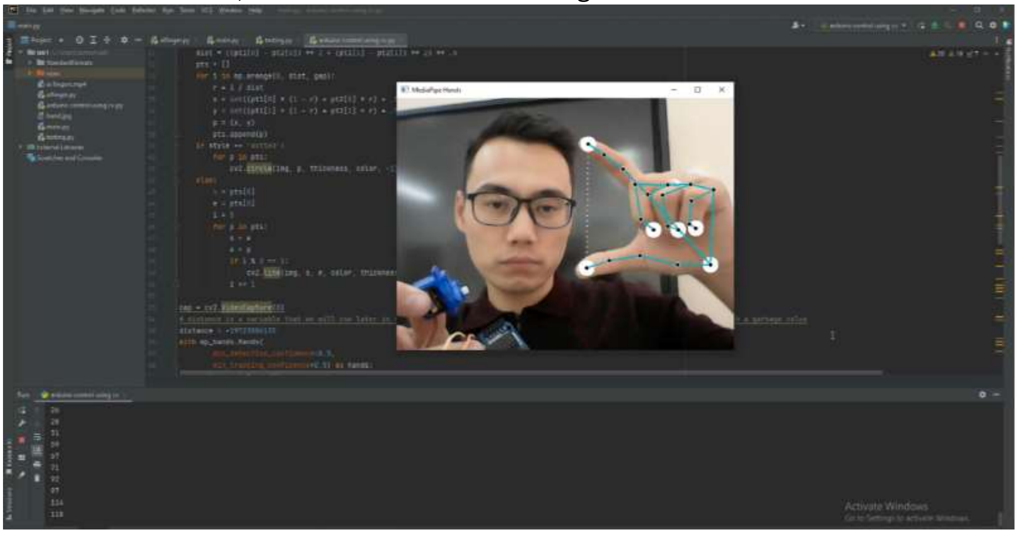
Now we can find the angle for the five fingers. Now let's assemble the five corners in ascending order.

Then we can identify each finger separately.

The distance between the main point and the secondary point is used to control the servo motor. If we use the maximum distance between them, then the servo motor will not rotate. If we use the minimum distance between them, then the servo motor rotates 90 degrees, and then the single tension cable connected to the robot finger pulls to bend the finger (Fig. 9).

RESULTS AND DISCUSSION

The first prototype was made on an Arduino controller. The prototype detects the hand using the laptop camera, and then, depending on the movement of the fingers on the hand, it activates the servo motor, as can be seen in the image below.



The main difference between a robot arm and a human arm is the number of degrees of freedom. Different methods are used for the communication between the robotic arm and the human

Human-Computer Interaction (HCI) plays an important role in bridging the gap between people and technology. Traditionally, this interaction has been based mainly on physical interfaces such as keyboards and mice. However, recent advances in technology have paved the way for more intuitive and natural forms of interaction. One such innovation is the control of hand movements using Arduino and servo motors. In this article, we'll delve into the world of Arduino gesture-based servo control, exploring its benefits, applications, and potential impact on the future of HCI.

Understanding Arduino Servo Controls Using Hand Gestures:

Arduino hand gesture servo control refers to the ability to control servo motors using hand gestures detected by sensors connected to the Arduino board. The Arduino board acts as a microcontroller that processes the sensor data and converts it into commands for the servo motors. By capturing hand movements and interpreting them as commands, this system provides an intuitive interface for hands-free control of physical objects.

Advantages of controlling an Arduino servo with hand gestures:

Natural and intuitive interaction: hand gestures are a natural form of communication deeply embedded in human behavior. Arduino's hand gesture servo controls take advantage of this familiarity, allowing users to interact with the technology in a natural and intuitive way. This can lead to an attractive and interesting user interface.

Hands-free control: Gesture control eliminates the need for physical contact with input devices, freeing users' hands for other tasks. This advantage is especially important in situations where manual dexterity or physical contact is limited, such as in medical facilities, clean rooms or manufacturing.

Increased accessibility: Hand gesture control offers an alternative input method that may benefit people with disabilities or limited mobility. This allows these people to independently interact with technologies that allow them to access and control various devices and systems.

Flexibility and Customization: The Arduino Hand Gesture Servo Control can be configured to detect and respond to specific hand gestures. The system's flexibility allows developers and users to define gestures that fit their needs and preferences. This customization allows you to create your own user interface.

Using Arduino Servo Controls with Hand Gestures:

Home Automation: Hand gesture control can be integrated with home automation systems, allowing users to control lighting, appliances and other devices with simple gestures. For example, by swiping to the left, you can turn off the light, and by swiping to the right, you can adjust the room temperature.

Robotics: Arduino Servo Controls with Hand Gestures can be applied to robotics, allowing users to control the robot's movements and actions using only hand gestures. This can be particularly useful in scenarios where direct physical manipulation of robots may not be possible or safe.

Virtual Reality (VR) and Augmented Reality (AR): Hand gesture control can increase the immersion and interactivity of virtual and augmented reality. By controlling hand movements, users can interact with virtual objects or control the virtual environment, giving these technologies a high level of realism and activity.

Control presentations and media: Gesture control can replace traditional remote controls or clickers to control presentations or media playback. Users can navigate through slides or control video playback by hovering, allowing you to create dynamic and engaging presentations.

Healthcare and Rehabilitation: Hand Gesture Control can be used in healthcare and rehabilitation settings. It can be used to control robotic prostheses, allowing amputees to make delicate movements and grasp objects with natural hand movements. In addition, it can be used in physical therapy to monitor and analyze patients' arm movements during rehabilitation exercises.

The Future of Arduino Hand Gesture Servo Control:

Arduino servo control is a growing field with great potential for growth and innovation. As technology advances, we can expect gesture recognition to improve

Latest results, based on Raspberry pi

The Raspberry Pi, a credit card-sized computer, has revolutionized the technology world by providing an affordable and versatile platform for enthusiasts, hobbyists and professionals alike. One of the main factors contributing to its popularity is its operating system (OS). In this article, we will look at the advantages of the Raspberry Pi and its operating system, highlighting how they have opened up new opportunities in various fields.

Advantages of Raspberry Pi:

A cost-effective solution: One of the main advantages of the Raspberry Pi is its affordability. Compared to traditional computers, the Raspberry Pi offers powerful computing capabilities at a fraction of the cost. This makes it an ideal choice for individuals and organizations with limited budgets.

Compact form factor: The compact size of the Raspberry Pi board makes it extremely portable and versatile. It can be easily integrated into a variety of projects, from Internet of Things and robotics devices to media centers and home automation systems. The small form factor offers creative and flexible placement options.

Low power consumption: Raspberry Pi is designed to be energy efficient, consuming significantly less power than traditional desktop computers. This feature is especially valuable in applications where energy efficiency is important, such as remote monitoring systems, weather stations, and autonomous projects.

Powerful computing capabilities: Despite its size, the Raspberry Pi has amazing processing power. The latest models have quad-core ARM processors capable of continuously managing complex applications. This allows users to develop and deploy many projects that require computing capabilities.

GPIO Pins for Pairing: The general purpose input / output (GPIO) pins on the Raspberry Pi board provide direct pairing with external devices and components. This feature allows users to connect sensors, actuators, displays and other peripherals, making it easier to create interactive projects and expand the functionality of the device.

Advantages of the Raspberry Pi operating system:

Raspbian (Now Raspberry Pi OS): The default Operating System for the Raspberry Pi, formerly known as Raspbian, has evolved over the years to provide an optimized and user-friendly interface. It is based on Debian Linux and offers an extensive repository of software packages, making it easy to install and configure applications according to specific needs.

Robot arm: Development of an anthropomorphic dexterous multi-fingered robotic hand. In the literature, various methods for precise grasping of a robot arm are described by Butterfab et al. (2001), Ramos et al. (1999) and Akazawa et al. (1996). It mimics the versatility and sensitivity of the human hand. The most important aspects to consider are their stability, reliability and cost. The main parts of the description of the robot arm are not the same as the human one. The mechanism of the robot arm depends entirely on the cost. Simplifying a robotic mechanism to resemble a human being at a low cost is the most difficult task. In our paper, the finger has four degrees of freedom (up, down, forward, backward). Each finger is controlled by a DC servo motor (Figure 10a-c).

Based on empirical analysis, we found that the best design of the arm is a single cable stretch design proposal with three independently actuated joints. Therefore, we used this method to simulate finger movements (Figure 9).

Target gestures in the air: agreement sign (OK), peace sign (PS), relax (HL), finger press (FS), thumb (TU), thumb (td), flip palm (TP), moving fingers (WF) .

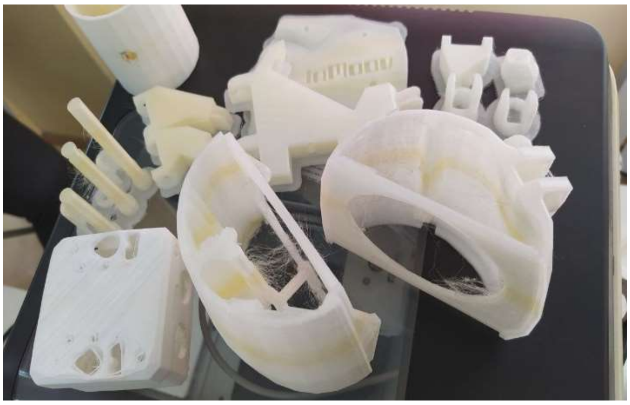
The Inmoov Robot Arm is a 3D printed open source Robot Arm that can be controlled with Arduino software. It has been widely adopted by DIY enthusiasts, hobbyists and manufacturers interested in robotics. This article discusses the pros and cons of the inmoov Robot Manipulator.

Advantages of the Inmoov Robot Manipulator

Cost-effectiveness: One of the biggest advantages of the inmoov Robot Manipulator is its cost-effectiveness. Since this is an open source project, the software and design are freely available and users can 3D print the parts. This makes it an affordable option for DIY enthusiasts and hobbyists.

Customizable: The inmoov Robot Manipulator is easily customizable. Users can modify the design according to their specific needs or add additional features. The open source of the project allows users to collaborate and share their changes with others, which can lead to further development and innovation.

3D details. A robotic arm is an important component of a robot that allows it to perform many tasks. The 3D detailed robot arm is designed to mimic the dexterity of a human hand, allowing it to manipulate objects with great precision. In this article, we discuss the design, functionality and scope of a 3D detailed Robot Manipulator.



Ease of assembly: The inmoov Robot Manipulator is designed to be easy to assemble, with detailed instructions available online. This makes it accessible to people with little or no experience in robotics. The simplicity of the assembly process makes it an attractive option for educational purposes.

Controls: The Inmoov robot arm can be controlled using Arduino software, which is open and easy to use. Users can program the arm to perform a variety of tasks, from basic movements to complex actions such as grasping and lifting objects.

Accessibility: The Inmoov Robot Manipulator is designed to be accessible to people with disabilities. It can be modified to include assistive technologies such as sensors or voice control, making it easier for people with mobility issues to control the hand.

Disadvantages of the Inmoov Robot Manipulator

Limitations in Functionality: Although the InMoov robotic arm is customizable, it has limitations in terms of functionality. It is primarily intended for simple tasks such as collecting items and may not be suitable for complex tasks.

Before you print all the parts, you need to print the CALIBRATOR to check that your parts match. If you're having a hard time putting these pieces together, setting the crop software's horizontal extension may solve the problem, this setting can vary by cutter and printer, but users report that setting -0.15 is recommended to start with.

Here is the parts list and number of prints needed for 1 right hand and wrist:
1x thumb
1x index
1x Force majeure
1x ring finger
1x Heart (little finger)
1x Bolt_Centrifuge
1x large forearm
1x small wrist
1x top surface
1x closed finger
1x robcap3
1x heist, part 2
1x robpart3
1x robpart4
1x robpart5
1x elbow gear (if you pump your biceps)

CONCLUSION

A moving average algorithm is used to track finger movements to produce instant and accurate results. Five windows for five finger tips are published to detect finger movements. Windows are published at the origin of the fault point. Movements are calculated using a mathematical operation. The centroid is found and it is taken as the main point, and the windows are considered as secondary points. Movement is determined by using the difference between the principal point and the secondary point. Depending on the distance values, each servomotor rotates. One voltage cable is attached with these motors to control the arm. This approach leads to high robustness in real-time applications. Further refinements are needed to address the issue of motion tracking speed and improve accuracy.

In conclusion, it can be said that the development of artificial intelligence systems to control humanoid robot hand gestures represents a significant advance in the field of robotics. This technology can change the way we interact with robots, making them more responsive and intuitive to our needs.

Using machine learning algorithms and computer vision techniques, researchers have been able to create artificial intelligence systems that can interpret hand gestures and translate them into robot commands. This allows for a natural and intuitive interaction with the robot, making it easier for users to control it.

One of the main advantages of this technology is its versatility. Hand gestures can be used to control a wide range of Robot functions, from capturing objects to adjusting parameters to even performing complex tasks. This makes it an ideal solution for a wide range of applications, from manufacturing and logistics to health and entertainment.

However, there are some potential problems and limitations with this technology. For example, the accuracy of an artificial intelligence system can be affected by lighting conditions, background noise, and other factors. There is also the risk of misinterpretation or misunderstanding, which can lead to mistakes or accidents.

Despite these challenges, the potential benefits of artificial intelligence systems for humanoid robot arm control are clear. As technology continues to evolve and improve, we can expect even more advanced and intuitive robotic systems in the future.

To realize the full potential of this technology, it is important to continue to invest in research and development, as well as in the education and training of those who use and work with these systems. By working together to address the challenges and limitations of this technology, we can create a future where Robots are an integral part of our daily lives, helping to improve productivity, efficiency and quality of life.

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Сандық бағдарламалы басқарылатын станоктардың артықшылығы мен кемшіліктерін салыстырып зерттеу

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Бүгінгі таңда механикалық өңдеумен айналысатын әрбір дерлік компанияда компьютерлік сандық бағдарламалық басқару (СББ) станоктары бар. СББ станоктары кәдімгі қолмен басқарылатын станоктармен бірдей функцияларды орындайды, бірақ бұл станоктардың атқарушы органдарының қозғалысы электронды түрде басқарылады. СББ станоктарының басты артықшылығы осында.

СББ фрезерлік станоктарды әртүрлі критерийлер бойынша жіктеуге болады: шпиндельдің орналасуы бойынша (тік немесе көлденең), басқарылатын осьтер саны немесе еркіндік дәрежесі бойынша (2, 3, 4 немесе 5 осьтер), орналасу дәлдігі және қайталану мүмкіндігі бойынша өңдеу, қолданылатын құралдар саны бойынша (бір – немесе көп құрал) және т.б.

Алғашқы СББ станоктары пайда болғаннан бастап соңғы өңдеу орталықтарын енгізуге дейін өңдеуді бағдарламалауға арналған әртүрлі тілдер пайда болды. Бүгінгі таңда G- және M-кодтарында бағдарламалау ең танымал. G- және M-код тілі Халықаралық стандарттау ұйымының (ISO) және Электроника өнеркәсібі қауымдастығының (EIA) ережелеріне негізделген. Ресми түрде бұл тіл американдық және еуропалық СББ станоктарын өндірушілер үшін стандарт болып саналады, сондықтан бұл станоктің маңыздылығы ерекше болып саналады.

СББ машиналарының артықшылықтары мен кемшіліктерін зерттеп көреміз

СББ машиналарының бірінші артықшылығы-операторлар шикізатты, материалдарды пайдалануды барынша арттыра алады және қалдықтарды азайтады. Білікті инженер СББ машинасы жасайтын үнемдеу үшін бірдей есептеулер жасай алады, бірақ әрбір есептеу мұқият талданған кезде, СББ машинасын есептеу тиімдірек болуы мүмкін. Осылайша, СББ машиналарын пайдалану компанияға шикізатты оңтайлы пайдалану арқылы кірісті арттыруға мүмкіндік береді.

Бөлшектердің сапасы

СББ машиналарының екінші артықшылығы-инженер машиналарды дұрыс бағдарламалағаннан кейін, олар үнемі бірдей бөлшектерді тұрақты сапада және қысқа мерзімде шығара алады. СББ машиналары өндіріс процестерін қысқарта алады, осылайша компания көбірек бөлшектер шығара алады, сонымен қатар көбірек тапсырыс ала алады.

Қауіпсіздік

СББ машиналарының тағы бір артықшылығы-қауіпсіздік. СББ машиналары барлық процестерді автоматтандыруға мүмкіндік береді, сондықтан операторларға қауіпті жабдықпен өзара әрекеттесудің қажеті жоқ. СББ машинасының айналасындағы қауіпсіз жұмыс ортасы компания үшін де, оператор үшін де тиімді. СББ машиналары компанияға білікті инженерлерге деген қажеттілікті азайтуға көмектеседі. Бір инженер бірнеше СББ машиналарын басқара алады. Аз білікті инженерлерді қолдана отырып, компания жалақы қорына шығындарды азайтады.

СББ машиналарының кемшіліктері

СББ машиналары бүкіл әлемде кеңінен қолданғанымен, барлық компаниялар назар аударуы кейбір кемшіліктері бар. СББ станоктарын жұмыс орнында қолданудың алғашқы негізгі кемшілігі-бастапқы инвестиция. СББ машиналары қолмен жұмыс істейтін машиналармен салыстырғанда өте қымбат. Алайда, СББ машиналары ұзақ мерзімді перспективада тиімді, өйткені олар өндіріс шығындарын азайтуға көмектеседі.

Тағы бір кемшілігі- СББ компаниясы машиналарына инвестиция салған кезде, бұл жұмыс орындарының қысқаруына әкеледі, өйткені компанияға барлық металл өңдеу процестерін аяқтау үшін аз операторлар қажет. Қорытындылай келе, Металл өңдеудің әртүрлі тапсырмаларын орындау кезінде СББ станоктарының жылдамдығы мен тиімділігіне байланысты СББ станоктарына инвестициялар ұсынылады және компаниялар бәсекеге қабілетті және тиімді болады.

Металды кесуге және өңдеуге арналған СББ машиналарының артықшылықтары мен кемшіліктері

Сандық бағдарламалық қамтамасыз ету жүйесі-бұл машинаны кіріктірілген компьютерлік бағдарлама арқылы басқаруға мүмкіндігін беретін технология. Оның негізінде G-code-аппараттық құрал мен ДК операторы арасындағы өзара әрекеттесуді орнататын арнайы бағдарламалау тілі. СББ машиналары-өнеркәсіптік өндіріс саласындағы маңызды жетістіктердің бірі. Өйткені, олар металл өңдеу үшін түбегейлі жаңа көкжиектерді ашады. Сандық бағдарламалық басқарумен оператор максималды еркіндікке ие болады. Ал машиналардың өзі жоғары дәлдікті көрсетеді. Нәтижесінде геометрия, өлшемдер, тегістік және кедір-бұдыр дәрежесі бойынша берілген параметрлерге толық сәйкес келетін әртүрлі бөлшектерді алуға болады.

Маңызды! СББ станоктарын өндіріске енгізу өнімді шығару жылдамдығын, оның сапасы мен тиімділігін едәуір арттыруға мүмкіндік береді.

Автоматтандырылған металл өңдеу жабдықтары көптеген операцияларды (бұру, бұрғылау, фрезерлеу және т.б.) жүзеге асыруда қолданылады. Мұндай машиналар бірқатар салаларда белсенді қолданылады: автомобиль, телекоммуникация, ғарыш, Ағаш өңдеу және басқа да салаларда. Ал қарапайым деңгейде-шағын өндірістерде және жеке шеберханаларда.

СББ металл өңдеу машиналарының негізгі артықшылықтары мен кемшіліктері

Кез келген басқа жабдық сияқты, СББ машиналарының да оң және теріс жақтары бар. Негізгі кемшіліктерге жоғары баға және білікті оператордың болуы қажеттілігі жатады. СББ машиналары автоматтандырылмаған аналогтарға қарағанда әлдеқайда қымбат. Ал мұндай жабдықты бағдарламалық басқару үшін білім қажет. Сонымен қатар, басқаруды тез үйренуге болады. Өйткені, оны игеру қиын емес. Енді айта кететін артықшылықтар туралы көп нәрсе бар.

СББ машиналары үнемдеуге көмектеседі

Металл өңдеу станоктары әртүрлі ОЖ (операциялық жүйелер) үйлесімді бағдарламалық қамтамасыз ету негізінде жұмыс істейді. Бұл жағдайда оператор жабдықты қашықтан басқара алады, бір уақытта 3-4 станокқа дейін қызмет көрсетеді. Бұл материалды өндіру және өңдеу процесін айтарлықтай жылдамдатып қана қоймайды, сонымен қатар қызметкерлердің санын үнемдеуге мүмкіндік береді. Ал Роботтар енгізілген жағдайда еңбекақы қорына шығындар одан да азаяды. Шығын материалдары мен кескіш құрал шығындарының төмендеуі де маңызды. Қарапайым машинада жұмыс істегенде адам факторы маңызды рөл атқарады. Оператор тәжірибенің жоқтығынан немесе шаршаудан

қателесуі мүмкін. Мұның салдары неке, кесу жиегінің мерзімінен бұрын тозуы, пластинаны дайындамаға кесу немесе ұшып кету болуы мүмкін.
СББ машинасын пайдалану кезінде мұндай жағдайлар іс жүзінде алынып тасталады. Өйткені, барлық параметрлер Бағдарламалық түрде орнатылады. Қосымша жабдықты үнемдеу маңызды аспект болып табылады. Өндіріс түрі мен мақсаттарына байланысты қол машиналары көбінесе конустық сызғыштарды, көшірме құрылғыларын және басқаларын қажет етеді. СББ машиналарына бұл ештеңе қажет емес: олардың барлығы кіріктірілген. Олар сондай-ақ пішінді құралды пайдалануды қажет етпейді. Күрделі геометриясы бар бөлшектерді жасау кезінде бір кескіш немесе кескіш жеткілікті.
Олар ең жоғары дәлдікті қамтамасыз етеді
Сандық басқарылатын жабдық бөлшектерді ерекше дәлдікпен өңдейді. Сонымен қатар, тіпті ең кішкентай және күрделі геометриямен. Сонымен қатар, ең тәжірибелі оператор да қол машинасында қол жеткізе алмайтын жоғары жылдамдықты қамтамасыз етеді.
Өнімділікті арттыру
Мұндай машиналардың өнімділігінің жоғары деңгейі мыналарға байланысты:
 * үзілістерді азайту; * машиналардың жүктемесін арттыру;
* бірнеше операцияларды біріктіру мүмкіндігі (мысалы, фрезерлік және токарлық);
* қызметкерлерге жүктемені азайту;
* бөлшектерді өңдеу уақытын дәл есептеу мүмкіндігі.
СББ жабдығында жасалатын барлық операцияларды бір базадан орындауға болатындығы маңызды. Бұл дайындамаларды қайта орнатудан бас тартуға мүмкіндік береді, бұл өңдеу дәлдігі мен өнімділігіне оң әсер етеді.
Өндірістік икемділікті қамтамасыз етеді
СББ құрылғыларының көмегімен сіз кез-келген түрдегі және геометриядағы бөлшектерді жасай аласыз. Бұл жағдайда өнімнің бір түрінен екіншісіне ауысу бағдарламалық жасақтамада сақталған қажетті бағдарламаны таңдау арқылы жүзеге асырылады. Сіз өндірілген бөлшектерді шексіз рет ауыстыра аласыз.
Қол станоктарында реттеу механикалық жолмен жүзеге асырылады. Бұл әртүрлі осьтер бойынша қозғалу жылдамдығына және олардың арақатынасына қатысты. Яғни, егер, мысалы, машина бастапқыда метрикалық жүйеде жұмыс істесе, онда бөлшектерді дюймдік өлшемдерде өңдеу мүмкін болмайды.
Әр бұрандаға арналған заманауи СББ машиналарының дизайны жиілікпен реттелетін немесе қадамдық қозғалтқышы бар өз жетегі бар. Осының арқасында күрделі геометриямен, қисық беттермен және жіптің стандартты емес түрлерімен бұйымдар жасауға болады.
Металдың әртүрлі түрлерімен жұмыс істеуге мүмкіндік береді
Металды өңдеуге және кесуге арналған СББ машиналары әртүрлі материалдармен жұмыс істеуге мүмкіндік береді: тот баспайтын болат, мыс, титан, алюминий және басқалар. Бұл сандық басқарылатын машиналарды мүмкіндігінше жан-жақты және әртүрлі өндіріс түрлеріне бағытталған етеді.

Қорытынды

СББ машиналарын пайдалану Металл өңдеудің ең тиімді әдісі болып табылады. Бұл процестерді толығымен автоматтандыруға, өнімділік пен өнімділікті арттыруға, шығындарды азайтуға, өндірістік икемділікті және фото үнемдеуді қамтамасыз етуге мүмкіндік береді. Сондай-ақ, СББ машиналарын енгізу алынған өнімдердің жоғары сапасын қамтамасыз етеді, қалдықтарды азайтады және жалпы өндіріс мүмкіндіктерін кеңейтеді.

Маңызды! СББ станоктарын өндіріске енгізу өнімді шығару жылдамдығын, оның сапасы мен тиімділігін едәуір арттыруға мүмкіндік береді.
Автоматтандырылған металл өңдеу жабдықтары көптеген операцияларды (бұру, бұрғылау, фрезерлеу және т.б.) жүзеге асыруда қолданылады. Мұндай машиналар бірқатар салаларда белсенді қолданылады: автомобиль, телекоммуникация, ғарыш, Ағаш өңдеу және басқа да салаларда. Ал қарапайым деңгейде-шағын өндірістерде және жеке шеберханаларда.

Medical Sciences

НАИБОЛЕЕ ЭФФЕКТИВНЫЕ МЕТОДЫ РЕАБИЛИТАЦИЙ БОЛЬНЫХ С АРТЕРИАЛЬНОЙ ГИПЕРТЕНЗИЕЙ

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Аннотация: Уровень заболеваемости, инвалидности и смертности вследствие этого заболевания связанные с сердечно-сосудистой системой (ССС) беспрерывно увеличивается каждый год. В патогенезе заболеваемости ССС ведущую роль занимает артериальная гипертензия. Исследования показывают, что между артериального давления и сердчено-сосудистыми осложнениями существуют связь. Наиболее эффективным способом является контроль артериального давления, индивидуально подобранная лекарственно-терапевтическая в комбинаций с безмедикаментозными методами лечения.

Ключевые слова: гипертония, физическая реабилитация, факторы риска сердечно-сосудистых осложнений.

В развитых странах более 18 миллионов человек по всему миру каждый год умирают от болезней ССС [1]. В Казахстане эта патология оказываеть сильное влияние на показатель средней продолжительности жизни, укорочивая данный показатель у мужчин на 8,6 года и у женщин на 10 лет. Ведущая форма патологий считается гипертоническая болезнь (ГБ), ишемическая болезнь сердца (ИБС) и цереброваскулярные болезни.

Результаты исследования за последние 15 лет в цивилизованных странах, указывает о высокой распространенности артериальной гипертензии, также эта патология является массивно распространенным болезнем и охватывает более 20% населения (людей старше 60 лет она достигает более 50%).

Гипертензия – это хроническое заболевание, поражающее различные системы организма, указывая повышение выше нормы артериального давления. Когда систолическое давление превышает 140 мм ртутного столба, а диастолическое давление выше 90 мм ртутного столба. ГБ представляет собой самым важным фактором риска основных сердечно-сосудистых заболеваний (ССЗ), например как инфаркт миокарда, мозговой инсульт. Эти болезни являются самыми распрастраненными по всему миру, до 15 млн человек болеют мозговым инсультом и каждый 3 погибают [2].

Категорий артериального давления	Диастолическое	Систолическое
Норма	<80	<120
Высокая норма	90-89	120-139
Гипертония 1 степени	90-99	140-159
Гипертония 2 степени	100-109	160-179
Гипертония 3 степени	≥110	≥180

Развитие ГБ в большенстве случаях начинается в зрелом возрасте, когда появляются условия для возникновения заболевания. В это входит психологические и эмоциональные нагрузки, малоподвижный образ жизни, несоблюдение правильного питание, имение плохих привычек как курение сигарет, употребление алкоголя и т.д. А также имеет большое влияние генетическое предрасположенность к болезни. Надо знать, что ГБ – это не только повышение артериального давления, но и комплексное изменения в органах и систем организма. По этой причине реабилитация больных с артериальной гипертензией (АГ) является актуальной темой в наше время.

Реабилитация больных при ГБ. Главная цель при ГБ – максимальное снижение риска развития ССЗ и сметри от них. Принципы снижения артериального давления:

- У пациентов с очень высоким АД снижение АД менее 140/90 мм ртутного столба в течении 4 недель, после до – 130/80 мм ртутного столба и при хорошей переносимости можно и до нормы 120/80 мм ртутного столба.
- Если у пациента плохая переносимость снижения АД то рекомендуется его снижение ступенчато:
  - Снижение АД на 10% от общего уровня за 2-4 недели;
  - Последующий перерыв для адаптации организма;
  - При ухудшении состоянии нужно перейти на предыдущую ступень на некоторое время.

Методы по изменению образа жизни советуются всем больным, также для тех пациентов которые получают медикаментозную терапию. Клинические исследования показывают что изменения образа жизни может уменьшить АД и считается равным с лекарственной монотерапией [4]. Основным недостатком является невозможность длительного соблюдения измененного образа жизни, что требует специальных мер. Что дает изменение образа жизни:

- снизить АД;

- уменьшить потребление и потребность антигипертензивных препаратах и максимально повысить их эффективность.

- также изменение образа жизни является первичной профилактикой АГ и снизить риск ССЗ.

Не лекарственные способы лечения включают в себя:

- отказ от курения;
- снижение массы тела;
- снижение употребления алкоголя и алкогольных напитков;
- постепенное увеличение аэробных физических нагрузок;
- уменьшение использования поваренной соли;

Отказ от курения. Курение вызывает резкое повышение АД и учащение частоты сердечных сокращений (ЧСС), которое сохраняется более 15 минут после выкуривания одной сигареты, которая приводит к стимуляции симпатической нервной системы на перефирических нервных окончаний и на центральном уровне [3]. По этой причине надо исследовать статус курильщика и дать необходимые рекомендации по отказу от курения больным с АГ.

- курение должно быть остановлено, ведь употребление табака является не только началом ГБ, но и серьезной причиной ССЗ;

- никотинзаместительная терапия (НЗТ) рекомендуется для курящих. В основном используется варениклин и бупропион, можно использовать по отдельности или в комбинации;

Снижение массы тела. Артериальная гипертензия тесно связана с лишним весом, во время снижения веса сопровождается с снижением артериального давления. Также сердечно-сосудисты риск значительно будет повышен при наличии избыточного веса.

Снижение употребление алкоголя. Регулярное потребление алкоголя повышает АД у пациентов с АГ получающих лечение. Но, умеренное потребление алкоголя, возможно, переход от умеренного к чрезмерному употреблению алкоголя повышает артериальное давление, также может и повысить риск заболевание инсульта. В исследовании национального института здоровья (PATH) популяционная оценка воздействия табака и здоровья изучалось влияние умеренного потребление алкоголя на уровень АД. В конце 6 месяца в основной группе АД было снижено на 1,2/0.7 мм ртутного столба по сравнению с контрольной группой. Мужчинам с гипертонической болезнью и употребляют алкоголь советуют ограничить его потребление до 20-30 гр в день, а женщинам до 10-20 гр в день. Потребление алкоголя в неделю не должна превышать 140 гр для мужчин а для женщин 80 гр [5].

Уменьшение использования поваренной соли. Доказана то что есть связь между потреблением соли и уровнем АД. Чрезмерное употребление соли может быть одной из причин резистентной артериальной гипертензии. Уменьшение потребление соли до 5 гр в день, умеренно на 1-2 мм ртутного столба влият на снижение систолического АД у людей с нормальным АД, а у пациентов с ГБ на 4-5 мм ртутного столба [6, 7, 8]. В целом для всех людей рекомендуется ежедневное употребление 5-7 гр соли. Также эффект от уменьшения потребления соли более заметно у людей негроидной расы, пожилых людей и у людей с сахарным диабетом.

Регулярные физические упражнения. Изучения показывают, что регулярные кардиотренировки и с малым весом силовые тренировки могут быть полезны как для профилактики, так и для лечения АГ [9]. Кардиотренировки легкой или средней интенсивности или же Аэробные тренировки такие как: ходьба, бег, езда на велосипеде, плавание и т. д. в течении 30 минут 5-7 раз в неделю. Силовые тренировки также могут способствовать снижению АД. Упражнения с силовыми нагрузками рекомендуются делать 2-3 раза в неделю [10].

Лекарственная терапия.

Терапия для ГБ используют 5 главных классов антигипертензивных препаратов:

1) Диуретики;
2) Антагонисты кальция;
3) Ингибиторы АПФ;
4) β-адреноблокаторы;
5) Блокаторы рецепторов ангиотензина.

Таблица

Дозы антигипертензивных препаратов

Препарат	Средняя доза, мг/сут.	Кратность приема
Диуретики		
Гидрохлортиазид	12,5-25	1
Индапапид	2,5	1
Бисопролол	2,5-10	1
Метопролол	50-100	2-3
Ингибиторы АПФ		
Каптоприл	25-100	2-3
Эналаприл	5-20	1-2
Беназеприл	5-20	1-2
Антогонисты Са2+		
Верапамил	80-240	2-4
Амлодипин	5-10	1
Дилтиазем	180-360	3-4
Нифедипин	30-60	3-4
Блокаторы рецепторов ангиотензина		
Валсартан	80-160	1
Лосартан	50-100	1-2
Ирберсартан	150-300	1
α1-адреноблокаторы		
Доксазозин	1-10	1
Празозин	1-10	2-3

Из преведенных 5 групп антигипертензивных препаратов не имееют каких-либо превосходство друг перед другом в снижения артериального давления. Однако при разных клинических случаи разные группы препаратов могут быть более эффективнее.

В настоящее время препараты выгоднее использовать комбинированно, то есть воздействия на различные звенья гипертонической болезни. Самыми эффективными и безопасными комбинаций препатов являются:

1) БРА + диуретики;
2) АПФ + диуретики;
3) АК + диуректики;
4) АК + β-АБ

Комбинаций из трех препаратов являются:

1) АПФ + АК + β-АБ
2) БРА + АК + β-АБ
3) БРА + диуретик + β-АБ

Даже на назначение медикаментозной терапии, относительно у 15-20% пациентов уровень артериального давления не удается снизить до целевого уровня, то есть артериальная гипертензия имеет характер резистентной. По этой причине увеличивается количество сосудистых заболевания, сосудисто мозговых болезней на 30-45%.

Лечение АГ необходимо начинать сразу, также скорость снижения артериального давления не должна превышать 25% за 2 часа. 24-48 ч после начала медикаментозной терапии АД достигается целевого уровня. Также используется препараты перорального и введения. Например: капотен – 6,5-50 мг под язык, клофелин – 0,075-0,15 мг под язык; клофелин 0,01% - 1 мл в/м, нитроглицерин 5-10 мкг/мин в/в капельно.

Профилактика артериалей гипертензии. В неё входят мероприятия напрпавленные на предупреждения обострения смертельных или же не смертельных осложений АГ. Диспансеризация пациентов С АГ также мониторнинг. Наблюдение ведется терапевтом пожизненно, 2-5 раз в год, но в зависимости с тяжестью болезни. Осмотры проводятся разными специалистами, например как: кардиологом, неврологом, эндокринологом, офтальмологом не реже одного раза в год.

Также больные с АГ должны проходить обязательные исследования: биохимический анализ крови, ЭКГ, ЭхоКГ, общеклинические анализы крови и мочи, также пробы Зимницкого.

Заключение

В наше время наиболее эффективным подходом является устранение или смягчение факторов риска, такие как: гиподинамия, здоровый образ жизни, не имееть вредных привычек, тщательное наблюдение за пациентами с ГБ или с наследственной предрасположенностью к ГБ. Профилактика может удлинить жизнь на более 10 лет жизни, также уменьшает вероятность заболевания инфаркта миокарда, инсульта и других ССЗ в 8 раз.

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THE RESULTS OF TREATMENT OF PREGNANT WOMEN WITH COMPLICATIONS OF CHOLELITHIASIS

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Relevance

Complications of cholelithiasis occupy the 2nd place after acute appendicitis among emergency surgical diseases of the abdominal cavity in pregnant women. Acute cholecystitis occurs in 1 case per 2000-5000 patients, up to 85% of acute pancreatitis in pregnant women (frequency 1 per 1500-4500 pregnant women) have biliary genesis. Pregnancy is a predisposing factor both to the development of gallstone disease and to the manifestation of its clinical symptoms and complications.

Purpose of the study

Analysis of the results of treatment of pregnant women with cholelithiasis complications.

Materials and methods

17 pregnant women with cholelithiasis complications were treated at the A.N. Syzganov National Research Medical Center in 2022-2023. The average age of the patients was 37.6 years (27-49 years).Patients were admitted from different regions of Kazakhstan, after a telemedicine consultation: Atyrau region – 6, Almaty – 5, Turkestan region and Shymkent – 2 each, Kyzylorda and Zhetysu regions – 1 each.

Patients were admitted at various gestation periods from 13 to 33 weeks of pregnancy: I trimester - 1, II trimester - 11 patients, the third trimester - 5 patients. Of all the treated patients, 6 (35.3%) were primiparous.

In addition to the standard complex of laboratory and instrumental studies, ultrasound of the hepatopancreatobiliary zone and magnetic resonance imaging (MRI) were performed to verify the diagnosis.

Results

All patients at the prehospital stage had a pain syndrome cholelithiasis. Mechanical jaundice occurred in 13 patients (76.5%): bilirubin levels ranged from 25.7 to 148.9 mmol/l. 3 of them (23.1%) had symptoms of remitting cholangitis with an increase in body temperature to subfebrile figures and periodic chills. An increase in C-reactive protein was observed in 8 patients: the level of CRP ranged from 5.7 to 188.6 mg/l.Aminotransferases (ALT, AST) were high in 10 patients (58.8%). A moderate increase in blood amylase upon admission was detected in 3 patients (17.6%).

Choledocholithiasis was diagnosed in 15 out of 17 patients on ultrasound, the informative value of ultrasound in the diagnosis of cholelithiasis complications was 100%. A picture of calculous cholecystitis occurred in 2 patients. It should be noted that ultrasound is not informative in regional medical organizations, before admission to them, only 5 out of 15 patients had choledocholithiasis (33.3%).

In 13 patients out of 15 (86.6%), gallbladder stones were combined with stones in choledochus, in 2 isolated choledocholithiasis was detected.

After diagnosis, all patients underwent surgical interventions. Two-stage minimally invasive surgical interventions were performed in 8 cases: 1 -endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic papillosphincterotomy (EPST) with choledocholithoextraction and stage 2 - laparoscopic cholecystectomy (LCE). Of the 8 patients who underwent the combined treatment, 5 were in the 2nd trimester of pregnancy, 3 in the third trimester. ERCP with EPST was performed in all cases under general anesthesia with a ventilator in the X-ray room, after a decrease in bilirubin and amylase indices, LCE was performed on days 3-6.

6 patients underwent only endoscopic intervention – ERCP and EPST with choledocholitextraction: 3 patients in the third trimester, 3 patients in the 2nd trimester. LCE in this group was not performed due to the absence of stones and the presence of sludge in the gallbladder in 2 cases and the threat of premature birth at 32 weeks gestation in one case. The last patient was recommended to undergo surgical treatment after delivery.

3 patients underwent only LCE due to the lack of indications for ERCP. There were no choledochal stones at admission in 2 patients, in 1 case, biliary sludge in the gallbladder, which did not require surgery, was found on a control ultrasound after ERCP with choledocholytic extraction.

Patients were discharged only after a decrease in bilirubin, liver enzymes, amylase, and inflammatory markers.

In one case, a complication was observed in the form of perforation of the duodenal diverticulum, extensive subcutaneous emphysema, acute post-catheterization pancreatitis. This complication was detected during surgery, choledochal stenting and conservative treatment were performed. The patient was discharged in a satisfactory condition.

Conclusion

The informative value of ultrasound in the diagnosis of cholelithiasis complications complications in pregnant women, conducted by experienced specialists, is comparable to MRI. In clinical forms of choledocholithiasis, the first stage is to perform endoscopic sphincterotomy with choledocholitextraction by an experienced endoscopist and the second stage is to perform LCE.Currently, LCE can be performed in any trimester of pregnancy, if indicated. In the treatment of complications of cholelithiasis in pregnant women, close interaction of surgeons, endoscopists, doctors of functional diagnostics, obstetricians and gynecologists and intensive care specialists is necessary.

Agricultural Sciences

Alazni ecological point. Determination of soil melioration indicators, irrigation regime, determination of water needs

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Based on the current situation, it is necessary to take into account the economical use of water resources, which will allow the most rational satisfaction of the needs of each sector of the national economy in terms of water needs, agriculture. significantly exceeds all other sectors of the national economy and the water management itself.
Approximately 70% of the world's water demand comes from the share of irrigation, therefore, the determination of water demand for agricultural crops depends a lot on the study and correct determination of soil properties of irrigation areas. The role of water is increasing both in the fields of agriculture, production, household utilities, as well as in the field of recreational and sports development. It participates in all biological processes and remains an irreplaceable mineral in human life and the existence and development of humanity in general. The role of water in our well-being is unquestionable, and the need and dependence on it is eternal.
Water resources are usable water, which means practically all water in the hydrosphere - rivers, lakes, canals, reservoirs, seas and oceans, groundwater and glaciers, ground water and

atmospheric water vapor. Researchers from different countries pay a lot of attention to the estimations of irrigated areas, its dynamics and, based on this, to forecasting for the long term.

The modern new technical means of agricultural crops are sprinkler, drip, subsoil irrigation methods. During drip irrigation, water is directly applied to the roots of the plant in the form of drops from the pipeline. At this time, idle losses of water have been minimized and a great economy of water has been achieved. In spite of all that has been mentioned, it is still necessary to determine the physical-water and aggregate characteristics of the soil for each area in order to determine the amount of water required for the plant (water demand), after which it will be possible to calculate the amount of water to be supplied for each hectare. quantity.

The main purpose of using irrigation systems is to provide agriculture with quality water in a timely manner in order to obtain programmed and ecologically harmless agricultural products with the maximum possible preservation of biosphere ecosystems. It takes into account the needs of agriculture for the purpose of reasonable distribution of water resources and obtaining ecologically clean agricultural products.

The content of carbonates in the soils of the Alazni pilot-improvement ecological point varies within 5-30%. Humus in the upper layers of the soil is within 25%.

Among the mentioned soils, the irrigation parameters of the soil were studied and determined on the brown, gray brown (chestnut) soils of the meadow, and the irrigation norm was determined.

Irrigation parameters of meadow brown soil

Table 1.

Sampling depth cm	Volumetric weight, g/cm3	maximum molecular weight Moisture, % by	Limited water capacity % by weight	Filtration coefficient	marginal water capacity 80% in %	marginal water capacity 80% in %
0-16	1.08	12.01	40,36	0.004300	32.29	
16-32	1,30	13.64	34,39	0.000700	27.51	
32-48	1.34	14.40	32.28	0.000610	25,83	
48-64	1.40	14,09	30.25	0.000036	24.20	
0-80	1.28	13.53	34.1	-	27,28	750

Irrigation indicators of gray brown (chestnut) soil Table 2

Sampling depth cm	Volumetric weight, g/cm3	maximum molecular weight Moisture, % by weight	Limited water capacity % by weight	Filtration coefficient	marginal water capacity 80% in %	marginal water capacity 80% in %
0-16	1.14	12.43	31,60	0.001065	25,28	
16-32	1,30	11.01	31.15	0.001130	24.92	
32-48	1.40	11.56	25,80	0.000655	20.64	
48-64	1.47	13,60	27.39	0.000619	21.91	650

Correct selection of irrigation mode, established irrigation and irrigation norms, deadlines, periods and water demand are important for perennial vegetable and field crops common in Sighnaghi municipality (Khornabuj).
As a result of summarizing the climatic and soil conditions of Sighnaghi municipality, the need for irrigation was determined. Prof. was used to evaluate water supply. c. Selianinov's method: [1

$$K = \frac{\sum P}{\sum t : 10}$$

Also: - ΣP the sum of atmospheric precipitations in the three months of summer;
$\sum t$– the sum of temperatures of three summer months.
c. Selianinov separates zones in Georgia according to the magnitude of the water balance coefficients:

- ✓ Dry, especially the irrigation zone, when the water balance
- ✓ at K<6;
- ✓ severe drought when the water balance ranges from 0.6 to 0.8;
- ✓ drought – 0.8–1.0;
- ✓ insufficiently moist - 1.0-1.2;
- ✓ moderately moist - 1.3-1.6;
- ✓ moist – 1.6–2.0;
- ✓ Wetlands - 2.0-2.4;
- ✓ Too humid – >2.4.

GT. The water balance treated by the Selianinov method was determined by the relationship

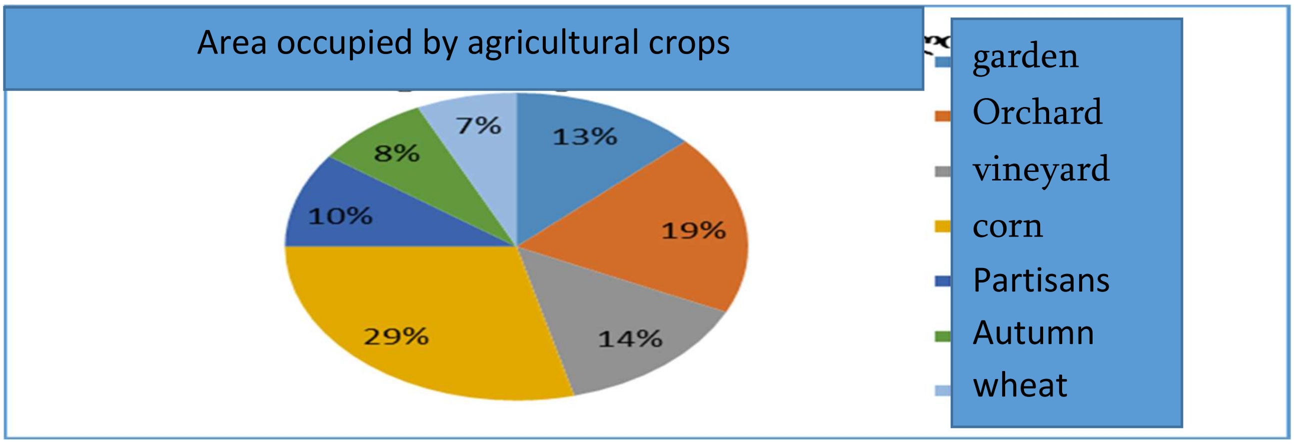
$$K = \frac{\sum P}{\sum t{:}10} = \frac{162}{2133{:}10} = \frac{162}{213{,}3} = 0{,}76$$

In order to determine the need for irrigation, we studied the volumetric weight, specific gravity, maximum molecular moisture of the soil, filtration coefficient, limit water capacity and its 80% of the soil of the mentioned municipality in the Agricultural Improvement Laboratory of the Agricultural Engineering Department of the Faculty of Agricultural Sciences and Biosystems Engineering of the Technical University of Georgia. Irrigation irrigation mode, hydromodule values and an uncompleted hydromodule schedule was built, after completing which, taking into account the relevant conditions, a water demand curve was built.

The area occupied by the agricultural fields of the experimental and improvement ecological point of Alazni is 720 hectares. The percentage of occupied area of each culture was determined by:

$$\alpha = \frac{\omega_1}{\omega}\%$$

where: α - the area occupied by each crop in %; where the sum of the percentages of the area occupied by agricultural crops is equal to 100%;
ω_1-area occupied by agricultural crops;
ω -Total area occupied by agricultural crops.
The total area of agricultural crops in the municipality is 720 ha, 100% of the area occupied by each crop (see diagram 1)



Irrigation rate is the amount of water that is supplied to 1 ha during one irrigation, m3/ha:

m=100Hα(r_max-r_(max 80%)) m3/ha

where: m - irrigation norm, m3/ha;

H - active soil layer of m;

α - volume mass of soil, g/cm3; r_max - limit water capacity of the soil by weight in percentage; r_(max. 80%)-the lower moisture supply in the soil before watering for the plant border.

In the laboratory of agricultural reclamation, we obtained the volume mass of the soil α=1.28 g/cm3. And the marginal moisture content of the soil r_zg = 34.1, the lower limit of the moisture supply in the soil before irrigation for the plant r_gz = 34.1*0.8=27.28

Irrigation norm for self-seeded crops (vegetable, garden, vineyard, corn, legumes, common wheat, perennial grass) was determined:

(vegetable) m1=100*0.5*1.28*(34.1-27.28)=436.48≈400; m^3/ha
(garden m2=100*0.8*1.28*(34.1-27.28)=698.368≈700; m^3/ha
(vineyard) m3=100*0.8*1.28*(34.1-27.28)=698.368≈700; m^3/ha
(corn)m4=100*0.7*1.28*(34.1-27.28)=611.072≈600; m^3/ha
(legume) m5=100*0.6*1.28*(34.1-27.28)=523.776≈500; m^3/ha
(average wheat) m6=100*0.7*1.28*(34.1-27.28)=611.072≈600; m^3/ha
(Multiple grass.) m7=100*0.7*1.28*(34.1-27.28)=611.072≈600; m^3/ha

ydromodule - is the amount of water needed to irrigate 1 hectare in a unit of time (l/s ha), which is calculated as:

q=1000m/(86 400t) α % l/s ha

where: q - hydromodule l/s ha;

m – irrigation norm, per m3/ha;

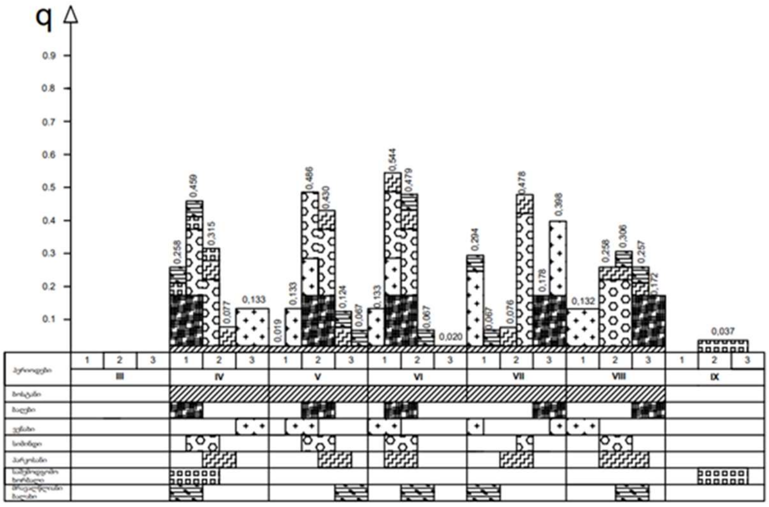
t - crop irrigation period per day;

α - area occupied by each crop in %; where S.S. The sum of the percentages of the area occupied by crops is equal to 100%; 86 400 - the number of seconds per day; 1000 - conversion factor, from m3 to liters.

The data obtained as a result of the calculation of the hydromodule are included in Table 1, and an uncompleted schedule of the module was constructed, where the same crop was irrigated on the same day. The graph is constructed by summarizing the hydromoduli of the mentioned crops (see Table 1 and Graph 1).

itial data Unassembled graph of hydromodule

Sas.-Tue. cultures		Space		Irrigation number	Irrigation periods		duration in days	Irrigation rate m3/ha	Irrigation rate m3/ha	The value of the hydromodule	
		ჰა	%		start	Graduation				1 hectare	per cent of the
1.	garden	90	0,13	1.	1-IV	30-IV	30	400	2 000	0,154	0,020
				2.	1-V	30-V				0,149	0,019
				3.	1-VI	30-VI				0,159	0,020
				4.	1-VII	30-VII					
				5.	1-VIII	30-VIII				0,149	0,019
2.	Orchard	140	0,19	1.	1-IV	10-IV	10	700	3 500	0,810	0,153
				2.	10-V	20-V					
				3.	1-VI	10-VI					
				4.	20-VII	30-VII					
				5.	20-III	30-VIII					
3.	vineyard	100	0,14	1.	20-IV	30-IV	10	700	4 200	0,810	0,113
				2.	1-V	10-V					
				3.	15-VI	25-VI					
				4.	1-VII	10-VII					
				5.	20-VII	30-VII					
				6.	5-VIII	20-VIII	15			0,540	0,075
4.	corn	210	0,29	1.	10-IV	20-IV	10	600	3 000	0,694	0,201
				2.	10-V	25-V	15			0,462	0,134
				3.	10-VI	25-VI					
				4.	10-VII	20-VII	10			0,694	0,201
				5.	5-VIII	20-VIII	15			0,462	0,134
5.	Partisans	70	0.10	1.	10-IV	20-IV	10	500	2 500	0,578	0,057
				2.	20-V	30-V					
				3.	1-VI	10-VI					
				4.	10-VII	20-VII					
				5.	1-VIII	10-VIII					
6.	Autum n	60	0,08	1.	10-IX	25-IX	15	600	1 200	0,462	0,037
				2.	1-IV	15-IV					
7.	wheat	50	0,07	1.	1-IV	10-IV	10	3 000	600	0,694	0,048
				2.	20-V	30-V					
				3.	15-VI	25-VI					
				4.	1-VII	10-VII					
				5.	20-III	30-VIII					
8.	all	720	100 %								

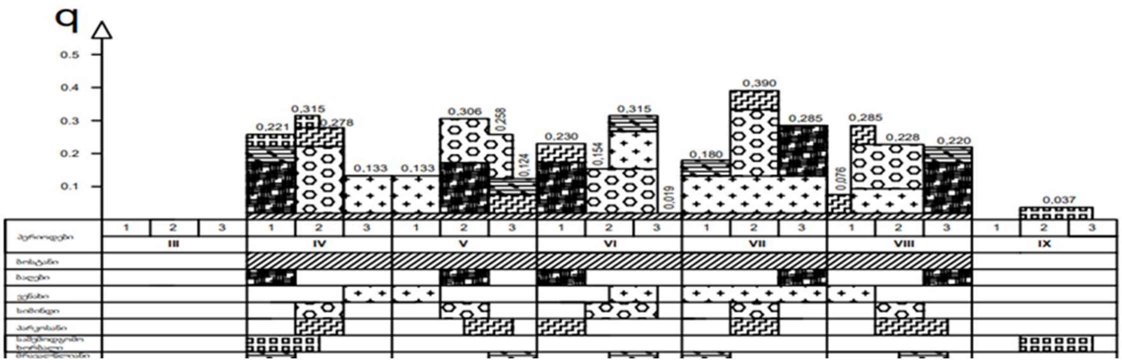


Graph 1 Unassembled graph of the hydromodule

Sas.-Tue. cultures		Space		Irrigation number	Irrigation periods		duration in days	Irrigation rate m3/ha	Irrigation rate m3/ha	The value of the hydromodule	
		ჰა	%		start	Graduation				1 hectare	per cent of the
1.	garden	90	0,13	6.	1-IV	30-IV	30	400	2 000	0,154	0,020
				7.	1-V	30-V				0,149	0,019
				8.	1-VI	30-VI				0,159	0,020
				9.	1-VII	30-VII					
				10	1-VIII	30-VIII				0,149	0,019
2.	Orchard	140	0,19	6.	1-IV	10-IV	10	700	3 500	0,810	0,153
				7.	10-V	20-V					
				8.	1-VI	10-VI					
				9.	20-VII	30-VII					
				10	20-III	30-VIII					
3.	vineyard	100	0,14	7.	20-IV	30-IV	10	700	4 200	0,810	0,113
				8.	1-V	10-V					
				9.	15-VI	25-VI					
				10.	1-VII	10-VII					
				11.	20-VII	30-VII					
				12.	5-VIII	20-VIII	15			0,540	0,075
4.	corn	210	0,29	6.	10-IV	20-IV	10	600	3 000	0,694	0,201
				7.	10-V	25-V	15			0,462	0,134
				8.	10-VI	25-VI					
				9.	10-VII	20-VII	10			0,694	0,201
				10.	5-VIII	20-VIII	15			0,462	0,134
5.	Partisans	70	0.10	6.	10-IV	20-IV	10	500	2 500	0,578	0,057
				7.	20-V	30-V					
				8.	1-VI	10-VI					
				9.	10-VII	20-VII					
				10.	1-VIII	10-VIII					
6.	Autumn	60	0,08	3.	10-IX	25-IX	15	600	1 200	0,462	0,037
				4.	1-IV	15-IV					
7.	wheat	50	0,07	6.	1-IV	10-IV	10	3 000	600	0,694	0,048
				7.	20-V	30-V					
				8.	15-VI	25-VI					
				9.	1-VII	10-VII					
				10.	20-III	30-VIII					
8.	all	720	100 %								

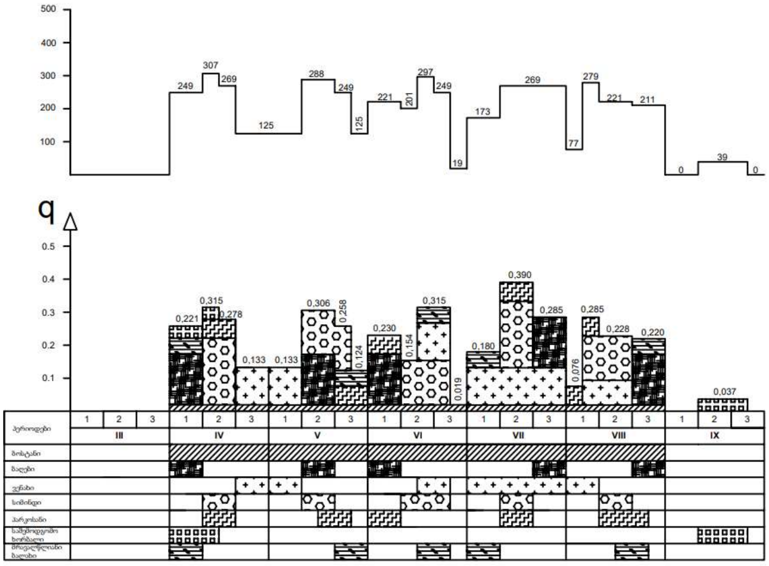
The raw hydromodule graph shows the amount of water available to the farm for each hectare per unit of time in l/s ha. The graph shows which crop was irrigated in which amount during which period of time. It is clear from the graph of the hydromodule that the water demand during the vegetation period is uneven. Since the irrigation network is calculated on the maximum consumption of water, the system works with partial load during a certain period of time, in order to prevent the unprofitability of the system, it is necessary to level and complete the graph of the hydromodule (lowering the ordinates) (see Table 2 and Gr. 2).

	Periods of water demand		Water demand, l/s	
	start	to finish	Q net, l/s	Q Br uto, l/s
1.	1-IV	10-IV	187	249
2.	10-IV	15-IV	230	307
3.	15-IV	20-IV	202	269
4.	20-IV	30-IV	94	125
5.	1-V	10-V	94	125
6.	10-V	20-V	216	288
7.	20-V	25-V	187	249
8.	25-V	30-V	94	125
9.	1-VI	10-VI	166	221
10.	10-VI	15-VI	151	201
11.	15-VI	20-VI	223	297
12.	20-VI	25-VI	187	249
13.	25-VI	30-VI	14	19
14.	1-VII	10-VII	130	173
15.	10-VII	30-VII	202	269
16.	1-VIII	5-VIII	58	77
17.	5-VIII	10-VIII	209	279
18.	10-VIII	20-VIII	166	221
19.	20-VIII	30-VIII	158	211
20.	10-IX	25-IX	29	39



Graph 2 Hydromodular composite graph

The determination of the amount of water required for the municipality in terms of Qnet and Qgross areas is presented in the form of a table and a water demand curve is constructed according to the mentioned data.



Graph 3. Hydromodule completed graph with water demand curve

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[6]

The role of "native" cultured yeast in the formation of quality indicators of wine

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Abstract
Georgian winemaking has a history of more than 8000 years. During this time, various winemaking technologies have been developed, and all of them have in common the fact that wine cannot be made without yeast.
At the end of the last century, foreign commercial dry yeast was widely used in Georgia for fermentation of grapes, and is still actively used due to the ease of use and storage. However, this fact is accompanied by a negative result: wines from different regions made from the same variety have lost their individuality and are monotonous. In addition, the cost of Georgian wines is also high, which presents significant challenges for wine companies from a commercial point of view. To solve this problem, with the help of scientists from Telavi University and the Free University of Brussels, in the quality-oriented "Shumi Winery", pure cultures were isolated from local wild yeasts for the wines of the three designations of origin, which are both cultural and part of the effect of the place of origin (terroir). These wines are made from Saperavi: Napareuli, Kindzmarauli, Mukuzani.
The purpose of the research is to compare the qualitative indicators of these three wines made on "native" cultural yeast with the properties of wines made on other yeasts.
As a result of the research, it was determined that the pure cultures isolated from the saffron of all three microzones fermented wines whose quality indicators are not inferior and, in some cases, even better than the corresponding indicators of wines made with other cultural yeasts.

Keywords: cultured yeast, origin, Saperavi, phenolic compounds, antioxidant;

Introduction: Georgian winemaking, according to the archaeological material found in the territories of Georgia, has a history of more than 8000 years. During this time, wine of various styles and types was continuously produced here from more than 500 aboriginal grape varieties. As an important economic sector, winemaking remains the most real sign of state and family strength.

Georgia, with its diverse nature, is a unique place for the development of viticulture and winemaking. Here, 10 different zones and 29 microzones are distinguished, where high-quality wines of protected designation of origin are made.

As a rule, from one variety of grapes, with the same technology, in different microzones, according to different territorial and climatic conditions, different types of wine should be produced. However, since the 90s of the last century, the dry commercial yeasts, which have been massively imported from abroad for the fermentation of grape must, seem to absorb the uniqueness characteristic of individual microzones and make the wines monotonous.

At the same time, the products become more expensive, because we buy yeasts, quite expensively, with foreign currency. These two factors pose significant challenges for quality-oriented companies.

Among Georgian wine companies, "Shumi Winery " is distinguished by the fact that it is focused on constantly improving the quality of produced products. With the participation of scientists from Telavi State University, one of the leading higher education institutions of Georgia, and the Free University of Brussels, an experiment was conducted in Shumi on Saperavi grapes: Dominant pure strains of *Saccharomyces cerevisiae* were isolated and microbiologically purified from wine lees produced by spontaneous fermentation on wild yeast from Saperavi grapes harvested in 3 different microzones. At the same time, they are cultural and present the effect of local terroir. The obtained strains were identified in Belgium by PCR-method at the DNA level. During this experiment, Giorgi Songhulashvili, a Georgian scientist working in Belgium, doctor of microbiology, gave us an important support.The company of "Shumi", based on its commercial interests, already last year started the production of wines made on "native" cultural yeast, which are really special. This is an innovation in Georgian winemaking - using one's own yeast for local wine. The scientists of Telavi University continued the experiment - the study of the quality indicators - chemical composition and taste properties - of the wines made from the appropriate local origin on these new Georgian yeasts from a scientific point of view.

Research objects and methods. The objects of the study were sweet wines of Saperavi grapes harvested in different microzones, as well as wines made on different yeasts with classic red technology. The world-proven methods accepted by the International Organization of Viticulture and Winemaking (OIV) were used for the research. Phenolic compounds were determined by Folin-Ciocalteu method, antioxidant - by DPPH method.

Laboratory studies of beverages were carried out at "Shumi Winery", LTB "Multitest" , LTB "Ghvintest" , Chromatographic Center near Shota Rustaveli State University of Batumi.

Beverages were organoleptically evaluated by competent tasters.

An experiment. Saperavi was chosen for the experiment because it is an ancient, popular Georgian grape variety, which has recently attracted the attention of the world as a variety with unique technological, commercial and medical values. It is known that the dye is rich in antioxidants, which reduce the risk of several diseases caused by free radicals. It is used as an antipyretic, anti-inflammatory, antibacterial, anti-fungal, anti-cancer and anti-diabetic agent.

Today, 11 protected designation of origin wines are produced from Saferavi in Georgia. Among them, 10 in the Kakheti zone - in the center of Georgian winemaking. In this zone, in the microzones of Napareuli, Kindzmarauli and Mukuzani, saperavi harvested in 2023 from the fields belonging to "Shumi" was selected for research. It is known that, according to the color, organoleptic and basic chemical indicators of Napareuli microzone, it gives us the highest quality dry red wine;

The dry red wine made from the Mukuzani microzone has the best sensory properties when it is aged in oak barrels. And Kindzmarauli is an outstanding microzone due to the special nature of the soil of the vineyards planted on the slope. Slate stones brought by the rivers allow the grapes to take on high sugar content and high-quality naturally semi-sweet red wine is made from the grapes grown here.

For the experiment, 10-10 kg of grapes harvested in each microzone were crushed, de-stemmed, distributed equally in four vessels and fermented with different yeasts:

One - with cultured yeast of the appropriate place of origin bred in "Shumi",

the second - spontaneously, on wild yeast,

and two more - with different commercial yeasts: XPURE and SO.FLAVOR. So, for fermentation, the durdo of Saperavi of different origin was distributed in 12 boiling vessels: 4 of Napareuli, 4 of Kindzmarauli, 4 of Mukuzani.

The boiling vessels were placed in the same climatic conditions, but isolated from each other.

The initial conditions for the Saperavi of the microzone of Napareuli were: sugar content - 27.6%, titratable acidity - 8.2, pH - 3.1; Mukuzani microzone - sugar content 19.1%, titratable acidity - 6.8g/l, pH - 3.3, Kindzmarauli microzone - sugar content - 22.1%, titratable acidity - 7.8g/l, pH - 3.2.

Fermented wines were removed from the pomace, then from the heavy sediment, and, finally, several times - from the light sediment, under intensive stirring of must and constant temperature control. Then at 14-15 ^{0}C it was delayed for 6 months.

Freshly distilled wines were subjected to physico-chemical analysis for the main characteristic values and, after giving sulfuric anhydride, were stored for 6 months in glass vessels.

After 6 months, the wines were again removed from the sediment and again analyzed for the main characteristic values. This time, research was conducted, additionally, to find out the content of other chemical components, such as: total phenols, total anthocyanins, monomeric anthocyanins, .The wines were tasted and organoleptically examined with the help of competent tasters.

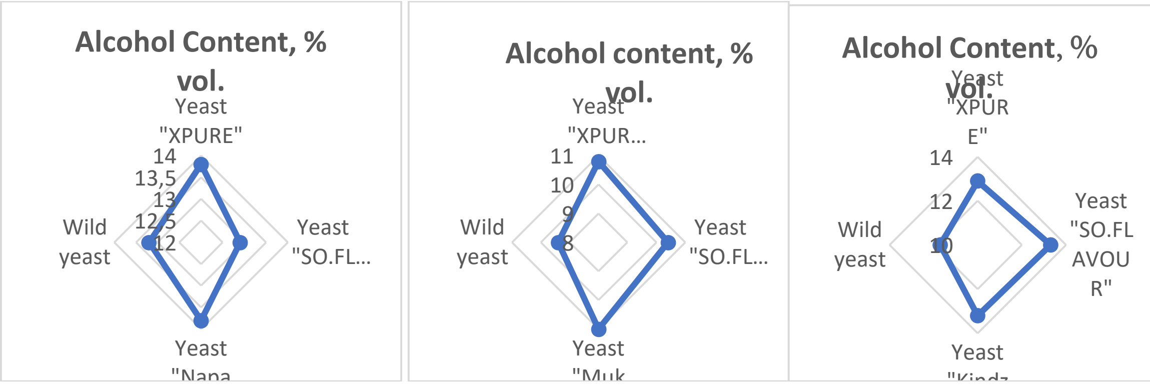
The results of the experiment and their judgment: Observing the fermentation of must and controlling the temperature allowed us to make the following conclusion:

From the samples of Napareuli, fermentation started the earliest with foreign yeasts; They were followed by a sample on their own yeast and, finally, after heating and adding a small amount of yeast feed, a must on wild yeast. In the post-fermentation period, the samples set on foreign and own sacred culture were actively fermented. It was difficult for must to ferment on wild yeast. It seems that the high concentration of sugars at the beginning of fermentation and the high concentration of alcohol at the end of fermentation inhibited the wild yeast and inhibited its activation process.

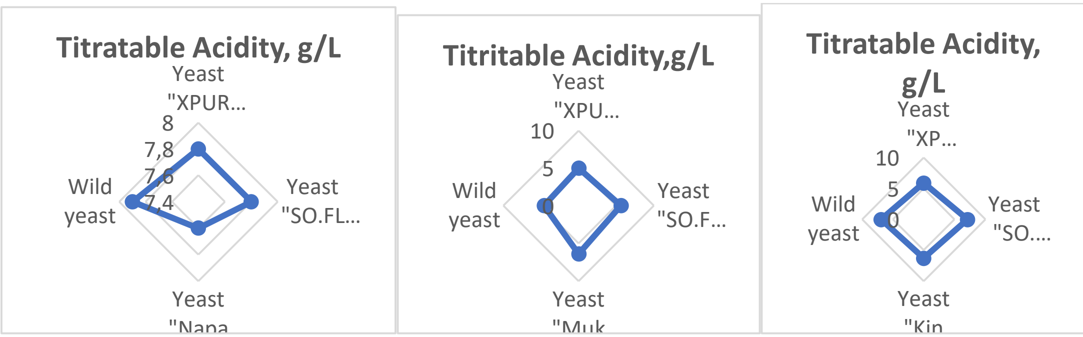
Mukuzani samples, which did not have high initial sugar content, did not need to start fermentation. Fermentation on cultured yeasts went equally well here. Fermentation from Kindzmarauli samples was initially started by must standing on his own sacred cultures. in other samples - relatively late. Fermentation was active and even with all three cultured yeasts, with less temperature fluctuations.

Thus, fresh, native pure cultures from all three microzones, as expected, fermented evenly over 7-9 days with less temperature variation between 22-25 ^{0}C. Where the wild yeast had a hard time in Napareuli, their own pure strains, as pure cultures, felt "wonderful".

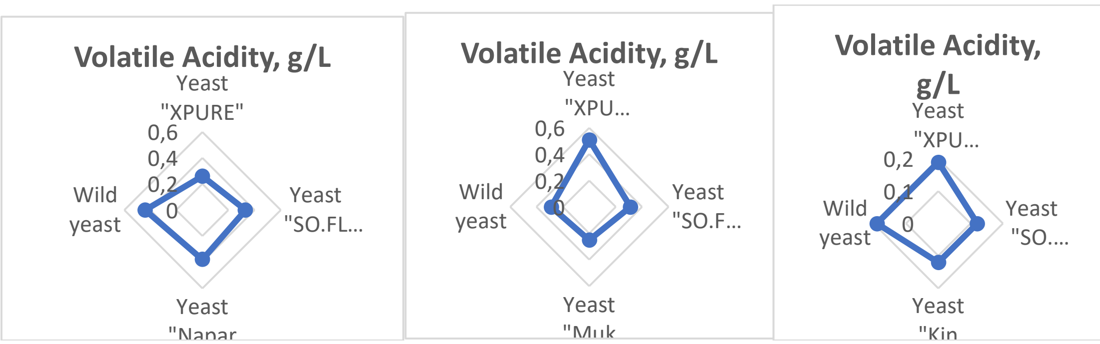
The results of the physico-chemical research of the main characteristics conducted in all 12 samples are given by means of diagrams and table, for the purpose of visible comparison.



1. **Diagrams:** alcohol content of Napareuli, Mukuzani and Kindzmarauli wines, vol.%.
   In all three cases made with their own sacred cultures
   The alcohols of the wines are not inferior to the alcohols of the wines made with other cultured yeasts, and in the case of Napareuli it is even more.

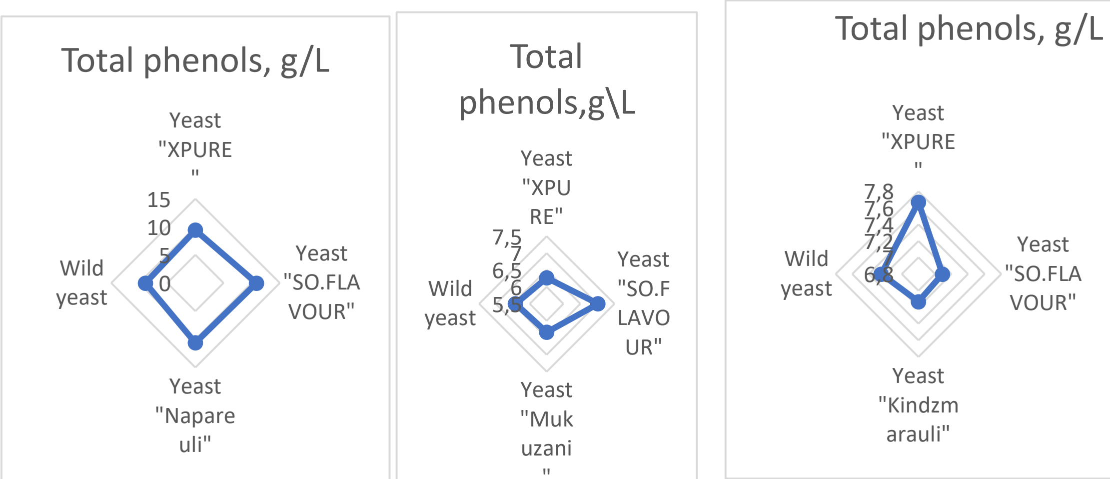


2. **Diagrams:**
   Titratable acidity content of Napareuli, Mukuzani and Kindzmarauli wines, g/l.
   The title of wines made with their own sacred cultures
   Acidity is in the best conditions for wine, the wine made with "Napareuli" yeast is especially good in the case of "Napareuli" after 6 months of delay. Therefore, this wine is very mild compared to other options.



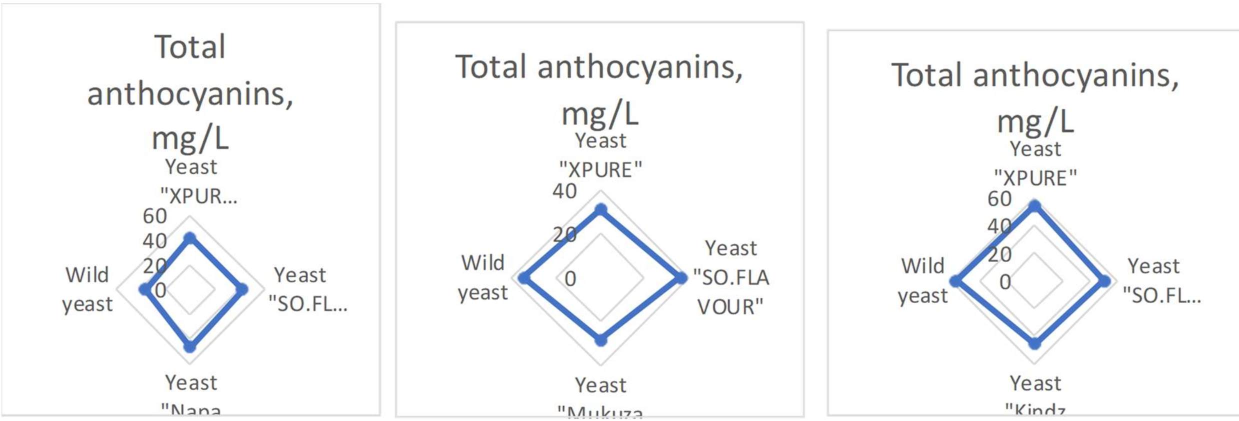
3. **Diagrams:**
   Volatile acidity content of Napareuli, Mukuzani and Kindzmarauli wines, g/l.
   Wines made from everyone, including their own yeast made wines have normal volatile acidity. In some cases, some wines made with foreign yeasts were found to be higher in this characteristic.

   After a delay of 6 months, the wine samples were tested on the content of phenolic compounds, total anthocyanins and monomeric anthocyanins. In this regard, we have such a picture:



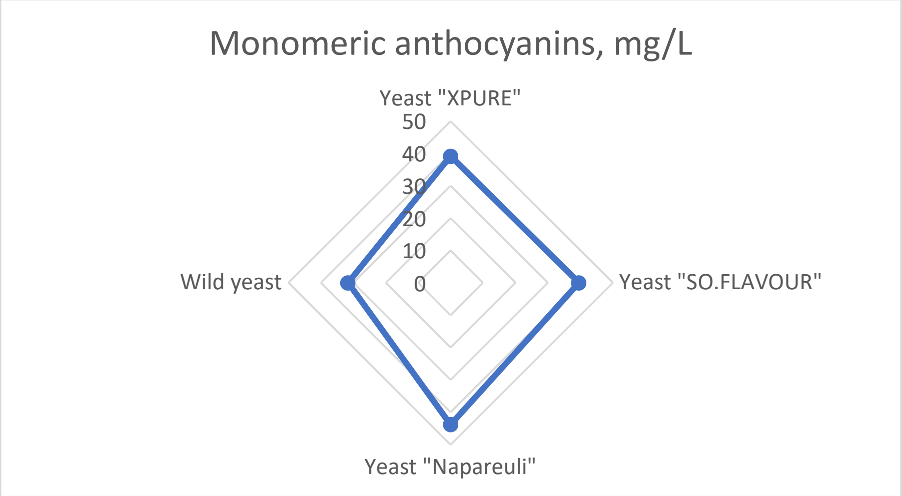
4. **Diagrams:** Napareuli, Mukuzani and Kindzmarauli wines
Content of total phenolic compounds, g/l.

The result of the study shows that the "native" yeast accumulated the most phenolic compounds in the Napareuli microzone. And in the case of all three microzones, the least amount of phenolic compounds was found in the wines made with wild yeast.
"Napareuli" wine made on its own yeast, which has a high content of alcohol and phenolic compounds, has a great aging potential.
Examination of total anthocyanins in the study wines yielded the following results:



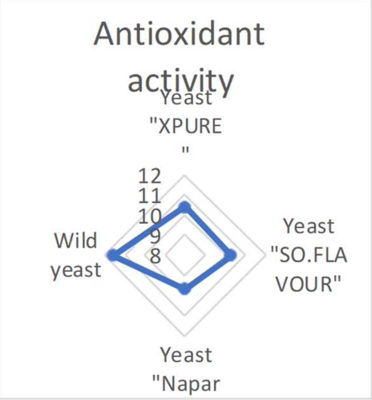
5. **Diagrams:** Napareuli, Mukuzani and Kindzmarauli wines
Total anthocyanins content, mg/l

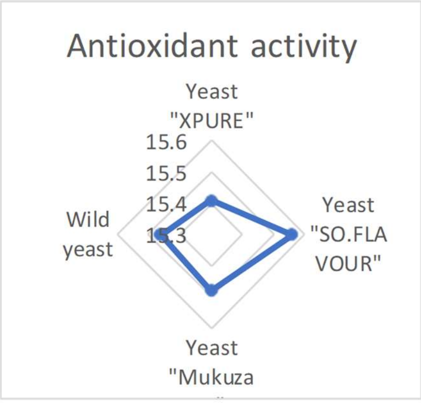
As we can see, the amount of total anthocyanins is high in all three
In wine made with sacred culture. This value is especially noticeable in the "Napareuli" made on its own yeast. This wine also has a high amount of monomeric anthocyanins.

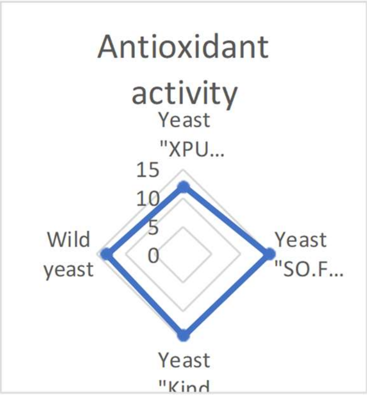


6. **Diagram**: the amount of monomeric anthocyanins in different "Napareuli" varieties in wines made with variant.

It is known that Saperavi wine has the ability to bind free radicals
High capacity, therefore, a study of the antioxidant properties of the produced wines was carried out depending on the dependence on the yeast. Quantities of wine required for 50% inhibition of 0.1 mM DPPH were determined.







7. **Diagrams**: Napareuli, Mukuzani and Kindzmarauli wines antioxidant activity, ml.
In terms of antioxidant properties, the local yeast of Napareuli gave us the best result, which is the smallest amount needed to inhibit 0.1mM DPPH free radicals by 50%.
The study of sensory properties of wines gave us the following results:
Wines produced within the same microzone differ from each other in color intensity, a complex of different fruit aromas, and a greater or lesser sensation of tannins in the taste.
Table 1. Sensory properties of wines made with different yeasts

A sample of wine/ Sensory indicators	color	aroma	taste
Napareuli			
Yeast "XPURE"	Pomegranate color	Cherry, black plum	Taste with moderate acidity, ripe and velvety tannins
Yeast "SO.FLAVOUR"	Dark cherry color	Blackberry, black mulberry	Extractive and velvety

Yeast "Napareuli"	Intense cherry color	Delicate aroma of cherry, blueberry	Saperavi varietal aroma, balanced taste
Wild yeast	cherry color	Black fruit aroma	A variety of tastes
Mukuzani			
Yeast "XPURE"	Intense ruby color	Ripe berries	Black pepper, rich, balanced
Yeast "SO.FLAVOUR"	Dark brown	Blackberry, black plum	Well balanced
Yeast "Mukuzani"	dark ruby	Blackberry, ripe berries	Harmonious, well
Wild yeast	ruby	Black currant berries	A variety of tastes
Kindzmarauli			
Yeast "XPURE"	dark ruby	Raspberries, ripe blackberries	Refined, with a pleasant finish
Yeast "SO.FLAVOUR"	Dark garnet color	Raspberry, cherry	Well balanced
Yeast "Kindzmarauli"	dark burgundy	Raspberry, black plum	Cheerful, lively, soft tannins
Wild yeast	ruby	Wild raspberry,	Hamonic, velvety

Thus, as a result of the research, it was determined that the pure cultures separated from the saffron of all three microzones successfully fermented the corresponding wines, the quality indicators of which, in many cases, are better than the corresponding indicators of the wines made with other cultural yeasts.

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Physical and Mathematical Sciences

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DEVELOPMENT AND ASSESSMENT OF FUNCTIONAL LITERACY OF STUDENTS IN MATHEMATICS LESSONS

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Abstract. The article discusses effective approaches to solving problems of calculating the percentage change in the price of goods in the school mathematics course as an urgent problem of the development of functional mathematical and financial literacy of students. The purpose and methods of the study are shown, as well as criteria for evaluating standard tasks and control tasks for applying mathematical knowledge and skills of students in real life are proposed. Using these approaches, there are ways to easily and quickly find solutions to problems with different levels of complexity.

The practice of getting used to solving such vital tasks contributes to the development of functional, mathematical and financial literacy of students. Future mathematics teachers and teachers of the country will be invited to use mathematics in the learning process as an auxiliary didactic material and an assessment tool within the framework of the topic of development and assessment of functional literacy.

Keywords: functional literacy, assessment, mathematical model, percentage calculation, product price, schematic record.

Introduction. Functional literacy reflects general educational competence at all levels of education, which is currently ensured by the introduction of state standards. In addition, functional literacy is mentioned in the country's educational development concept. It is emphasized that only functional literacy (knowledge of modern technologies, languages, etc.) allows a modern person to master the social and natural environment and become a citizen of the world in a broad sense [1,2].

The result of the development of functional literacy is mastery of a system of basic competencies that allows students to effectively use the acquired theoretical knowledge in practical situations and successfully apply it in the process of social adaptation. It is very important to increase the mental activity of students when solving practical problems, and preparation for international studies PISA rises to a new level through the understanding and application of mathematical concepts associated with functional literacy tasks in school practice [3]. People are faced with everyday life situations related to prices and interest rates for goods and services. In order not to incur financial losses, they must have a good understanding of the price and percentage of problems found in school mathematics [4].

Although solving "price" problems is discussed in a general education mathematics course, comprehensively effective methods for solving them are not considered. Due to such problems, the development of functional mathematical and financial literacy of many students within the framework of topics on the price of goods and services and interest rates is reduced. Therefore, the formation of cognitive and creative abilities of students by increasing and assessing functional mathematical and financial literacy in mathematics lessons is an urgent task for mathematics teachers [5].

Purpose of the study: to develop mathematical functional literacy, cognitive and creative abilities of students by studying effective methods of applying mathematical concepts of a school mathematics course to problems encountered in everyday life.

Materials and research methods. The conceptual approach of the study is based on identifying the features of structuring the educational process to achieve pedagogical goals in the development of students' mathematical literacy and the features of assessing their functional literacy throughout their studies [6]. The use of cause-and-effect analysis methods in the development of children's functional literacy during the period of physiological maturity helps to realize the goals of the study, which make it possible to determine the features of the development of mathematical, financial and scientific literacy. One of the best ways to solve "price" problems in a general education mathematics course is the modeling method. Using the modeling method helps students fully understand the situations of everyday life, develop scientific analysis skills, and develop creative thinking [7].

The use of comparative and deductive methods during the lesson allows us to determine the principles of methods for diagnosing and assessing the functional literacy of students.

Research methods: modeling method, comparative and deductive methods.

Results. The most common explanations for price changes were analyzed before solving the problems, and mathematical models and schematic notations were effectively presented to students for use in solving many complex "price" problems.

Let's look at the most important typical cases.

1. If the initial price of a product is equal to a monetary unit, then after increasing it by *a*%, its price is calculated according to formula (1).

$$K + K \cdot a \cdot 0{,}01 = K\,(1 + a \cdot 0{,}01) \tag{1}$$

Similarly, if the initial price decreases by *a*%, its price is calculated using formula (2).

$$K - K \cdot a \cdot 0{,}01 = K\,(1 - a \cdot 0{,}01) \tag{2}$$

2. Using formula (3), it is useful to calculate the price resulting from an increase in the initial price *K* by *a*%, and then a decrease by *b*%.

$$K \cdot (1 + a \cdot 0{,}01) \cdot (1 - b \cdot 0{,}01) \tag{3}$$

Similarly, if the initial price is first decreased by *a*% and then increased by *b*%, then the resulting final price is calculated using formula (4).

$$K \cdot (1 - a \cdot 0{,}01) \cdot (1 + b \cdot 0{,}01) \tag{4}$$

Discussion. In financial practice, to calculate interest, records are often used in the forms given in the diagrams. We call this type of record a standard form. In the standard form, the percentage by which the original price of an item has decreased or increased is not immediately visible. Therefore, many students do not take this situation into account and neglect to take notes. As a result, it becomes difficult for them to solve problems related to percentage changes in prices.

Before we begin solving problems, it is useful to complete a few preparatory tasks. Let's give some examples.

Task 1. Let the initial price of the product be *K* tenge, and the new price be *S* tenge. If the new price is calculated using the following formula $S = K \cdot (1 + a \cdot 0{,}01)$, then determine the change in the original price (decrease or increase) and the percentage of this change.

Preliminary explanatory work allows students to easily answer questions and receive an answer that the grade will increase by *a*%.

Task 2. The new price of the product is calculated using the following formula $S = K \cdot (1 - 12 \cdot 0{,}01)$. Find out by what percentage the price of the product increased or decreased?

Students should pay attention to the following situation: the minus sign in brackets indicates that the price of the product has decreased. If the multiplier is 0.01, then the number 12 represents the percentage change in price. Answer: 12% cheaper.

Task 3. The initial price of the product is *K*, the new price is *S*. Let the new price be determined by the following formula $S = K + 0{,}3 \cdot K$. Determine the percentage change (increase or decrease) in the original price.

To answer the questions of a problem, it is enough to present it in a standard form. To do this, the following equivalent transformations are made:

$$K + 0{,}3 \cdot K = K \cdot (1 + 0{,}3) = K \cdot (1 + 30 \cdot 0{,}01)$$

The resulting expression allows you to easily answer the questions asked in the problem.

Answer: The starting price has increased by 30%.

Of course, even if we say that capable students can determine the percentage change in the initial price from a given expression in the problem statement, knowledge of the algorithm for the above-mentioned actions is not superfluous, especially when the time to complete the task is limited, it will be possible to quickly find a solution to the problem.

Task 4. The price of the product first decreased by 5%, then increased by 5%. Determine whether the original price has changed, and if so, by what percentage.

It is better to first discuss the solution to the problem orally; especially impatient students immediately answer that "the starting price has not changed." And the best students will consider that it is necessary to reduce the initial price by 5%, and only after that increase the received price by 5%, i.e. taking into account the initial reduction. And they will come to the conclusion that the initial price will decrease and begin the necessary calculations to find the percentage of reduction.

Students perform calculations step by step using the following algorithm:

$$S = K \cdot (1 - 5 \cdot 0{,}01) \cdot (1 + 5 \cdot 0{,}01) = K \cdot (1 - 25 \cdot 0{,}0001) = K \cdot (1 - 0{,}25 \cdot 0{,}01)$$

The resulting standard form shows a reduction of 0.25% from the original price.

Answer: 0.25% cheaper.

Once you have an answer to a task question, for example, if in the task the price first increases by 5% and then decreases by 5%, you can discuss whether the result will change or not.

Students immediately come to the conclusion that the starting price will decrease by 0.25% regardless of the order of transformations.

Now let's look at word problems related to the prices of products.

Task 5. The price of a product increased by 25%, and then by another 30%. The price of the second product increased by 30% and became equal to the price of the first product. If before the price increase the second product cost 1,25 thousand tenge, what was the original price of the first product?

Students note the price of the first product in the amount of x tenge, draw up a transformation diagram and create an equation that balances the new prices of the first and second product.

$$x\cdot(1+25\cdot 0{,}01)\cdot(1+30\cdot 0{,}01)=1{,}25\cdot(1+30\cdot 0{,}01)$$
$$1{,}25x=1{,}25$$
$$x=1.$$

Answer: The original price of the first product is 1000 tenge.

The acquired knowledge and experience can be effectively used to solve assigned problems in order to assess the student's knowledge in the lesson. According to this criterion, the assessment is given on the basis of the written completion of the following tasks, accompanied by the originality of the situation and the dynamics of the analysis (Table 1).

Task 1. The selling price of the car increased by 17%. A year later it increased again by 27%. By what percentage did the price of the car increase from the original selling price [8]. (problem presented at the Mathematics Olympiad in 5th grade).

Task 2. If you increase the length and width of a rectangular parallelepiped by 20%, and decrease its height by 20%, then by what percentage will its volume increase [9]. (problem presented at the 6th grade Mathematical Olympiad). Assessment criteria is shown in the table 1.

Table 1.

Assessment criteria

	Answer	Assessment criteria
	Possible solutions to the problem: *Option 1:* Original price of car *K*: $S = K \cdot (1 + 17 \cdot 0{,}01) \cdot$ $\cdot (1 + 27 \cdot 0{,}01) = K \cdot 1{,}4859 = K \cdot (1 + 48{,}59 \cdot 0{,}01)$ *Answer:* The price of the car increased by 48.59%. *Option 2:* x is the original price of car, 17% = 0,17 and 27% = 0,27 (by definition of percent) If it increases by 17%, then the price of the car: $x + x \cdot 0{,}17 = 1{,}17x$ If after a year it increases again by 27%, then the price of the car is $1{,}17x + 1{,}17x \cdot 0{,}27 = 1{,}17x + 0{,}3759x = 1{,}4859x$ We subtract the original price of car x from 1,4859x, then: $1{,}4859x - x = 0{,}4859x$. In order to find the percentage increase in this original price: $\frac{0{,}4859x}{x} \cdot 100\% = 48{,}59\%$ *Answer*: The price of the car increased by 48,59%. *Option 3:* 17% = 0.17 and 27% = 0.27 (by definition of percent) If the new price of the car increases by 17%, then the price of the car $x + x \cdot 0{,}157 = 1{,}17x$, if it increases by 27%, then the price of the car: $x + x \cdot 0{,}27 = 1{,}27x$. To find out how much the price of a car has changed, we multiply the numerical factors, then $1{,}17 \cdot 1{,}27 = 1{,}4859$. The price of the car has increased by $(1{,}4859 - 1) \cdot 100\% = 48{,}59\%$. *Answer*: The price of the car increased by 48.59%.	2 points - if the correct answer and solution are indicated correctly; 1 point - if the expression according to the solution is composed correctly, but the calculation answer is incorrect due to arithmetic errors; 0 points - if the answer is incorrect or there is no answer at all.
	Possible solutions to the problem: *Option 1:* The volume of a parallelepiped is equal to the product of its three sides. $V = abc$. According to the problem conditions $V = a\,(1 + 20 \cdot 0{,}01) \cdot b(1 + 20 \cdot 0{,}01) \cdot c \cdot (1 + 20 \cdot 0{,}01\ ) =$ $= 1{,}152 \cdot a \cdot b \cdot c = abc \cdot (1 + 15{,}2 \cdot 0{,}01)$ *Answer*: The volume of the parallelepiped increased by 15.2%. *Option 2:* The volume of a parallelepiped is equal to the product of its three sides. $V = abc$. 20% = 0,2 (by definition of percent). If the length and width of a parallelepiped increase by 20%, then its length $a + a \cdot 0{,}2 = 1{,}2a$; width: $b + b \cdot 0{,}2 = 1{,}2b$ If the height decreases by 20%, then the height: $x - x \cdot 0{,}2 = 0{,}8x$. To find out how much the volume of the parallelepiped has changed, we multiply the numerical factors, then $1{,}2 \cdot 1{,}2 \cdot 0{,}8 = 1{,}152$. The volume of the parallelepiped increases by $(1{,}152 - 1) \cdot 100\% = 1{,}52\ \%$ *Answer*: The volume of the parallelepiped increased by 15.2%.	2 points - if the correct answer and solution are indicated correctly; 1 point - if the expression according to the solution is composed correctly, but the calculation answer is incorrect due to arithmetic errors; 0 points - if the answer is incorrect or there is no answer at all.

Conclusion. It is very effective to use the above formulas, standard forms and methods for constructing conversion schemes to calculate the percentage change in the price of a product. Using these methods, you can easily and quickly find solutions to problems of varying levels of complexity. The experience of getting used to solving such vital everyday problems contributes to the development of functional, mathematical and financial literacy of students. Future mathematics teachers and the country's teaching community can use it as an auxiliary didactic material and as an assessment tool as part of the development and assessment of functional literacy in the process of teaching mathematics.

I am sure that a student who has mastered effective methods for solving complex problems given to determine the percentage change of a product can solve many problems “about prices” and percentage changes that arise at mathematical Olympiads, when passing the United National Testing, as well as in test questions asked for this as the goals of a comprehensive assessment of competencies based on the international PISA study, which evaluates the academic achievements of 15-year-old students, will receive high marks.

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Pedagogical Sciences

КАСТОМИЗАЦИЯ СИСТЕМЫ ФОРМИРОВАНИЯ СЕТЕВОЙ КОММУНИКАТИВНОЙ КУЛЬТУРЫ, ЦИФРОВОГО ЭТИКЕТА ПРЕПОДАВАТЕЛЕЙ И СТУДЕНТОВ В «ONLINE COMMUNITY» ВУЗА

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Аннотация. В статье авторы актуализируют проблему развития цифрового образовательного пространства, акцентируя внимание на необходимости формирования сетевой коммуникативной культуры и цифрового этикета. Статья раскрывает основные направления, реализуемого авторами проекта по кастомизации системы формирования сетевой коммуникативной культуры и цифрового этикета преподавателей и студентов в «on-line community» высшего учебного заведения. Представлены аспекты развития цифрового этикета, систематизация существующих теорий и подходов в рамках взамиодействия людей в цифровом пространстве, условия формирования архитектуры виртуальной образовательной «on-line community» вуза. Рассмотрены условия, необходимые для эффективного сетевого коммуникативного взаимодействия. Раскрыты механизмы формирования сетевой коммуникативной культуры и цифрового этикета преподавателей и студентов вуза.

Ключевые слова: цифровизация, цифровая культура, цифровой этикет, сетевая коммуникативная культура, on-line community.

CUSTOMIZATION OF THE SYSTEM OF FORMATION OF A NETWORK COMMUNICATIVE CULTURE, DIGITAL ETIQUETTE OF TEACHERS AND STUDENTS IN THE "ONLINE COMMUNITY" OF THE UNIVERSITY

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Abstract. In the article, the authors actualize the problem of the development of the digital educational space, focusing on the need for the formation of a network communicative culture and digital etiquette. The article reveals the main directions of the project implemented by the authors to customize the system of formation of a network communicative culture and digital etiquette of teachers and students in the on-line community of a higher educational institution. The aspects of the development of digital etiquette, the systematization of existing theories and approaches within the framework of the interaction of people in the digital space, the conditions for the formation of the architecture of the virtual educational "on-line community" of the university are presented. The conditions necessary for effective network communication interaction are considered. The mechanisms of formation of a network communicative culture and digital etiquette of university teachers and students are revealed.

Keywords: digitalization, digital culture, digital etiquette, network communication culture, on-line community.

В эпоху стремительного развития информационно-коммуникационных технологий, цифровизация и формирование у общества цифровой культуры, и этики приобретают особую значимость. В современных условиях проблема трансформации образовательной среды высших учебных заведений связана с созданием «smart-университета» с его цифровой экосистемой, ориентированной на опережающую подготовку молодых специалистов, обладающих ключевыми компетенциями и навыками XXI века («hard skills», «digitals skills», «soft skills»).

Лидерство на рынке образовательных услуг в современном мире могут удержать только те высшие учебные заведения, которые, реализуя кастомизированный подход в преподавании и обучении студентов, готовят востребованных специалистов, соответствующих на выходе актуальным потребностям рынка труда.

Президент Республики Казахстан Касым-Жомарт Токаев в ежегодных выступлениях на заседаниях правительства РК, Высшего совета по реформам и в посланиях народу Казахстана, серьезный акцент уделяет проблемам решения вопросов, связанных с цифровизацией отечественного образования. Неоспоримыми условиями готовности нашего государства к глобальной цифровизации являются не только переход к цифровой экономике и использованию цифровых платформ, но и перевод учебных материалов в цифровой формат, переход к онлайн-экзаменам, изменение образовательных методик, и форм преподавания и обучения, применение технологий искусственного интеллекта, запуск специальной программы «Digital Nomad Residency» [1, 2, 3, 4].

На сегодняшний день не все высшие учебные заведения Республики Казахстан обладают необходимым уровнем готовности к кастомизации образования в условиях цифровой трансформации и «on-line community». В связи с этим ключевые тенденции реализации Концепции развития высшего образования и науки Республики Казахстан на 2023-2029 годы [5] связаны с кастомизацией цифровизации профессионально-педагогического образования.

Казахский педагогический университет имени Абая за 96 лет своего становления и развития, остается одним из лидеров педагогического образования в Центральной Азии, осуществляя качественную подготовку педагогов новой формации. По результатам международного рейтинга QS World University Rankings-2024, КазНПУ им.Абая занял позицию 681-690 [6].

Сотрудниками КазНПУ им. Абая с 2023 года по 2025 год реализуется проект «Кастомизация системы формирования сетевой коммуникативной культуры, цифрового этикета преподавателей и студентов в «online community» вуза». В рамках реализации проекта на данный момент разработана Концепция кастомизации системы формирования сетевой коммуникативной культуры и цифрового этикета преподавателей и студентов в «on-line community» [7], написан Трактат «Методология кастомизации системы формирования СКК и ЦЭ преподавателей и студентов в «on-line community» [8], открыта научно-образовательная лаборатория «Digital Projector» [9], проведен мониторинг вирта [10], разработана методология кастомизации системы формирования сетевой коммуникативной культуры (далее –СКК) и цифрового этикета (ЦЭ) преподавателей и студентов в «on-line community» [11].

Авторский коллектив Концепции [7] акцентирует внимание на необходимости формирования у преподавателей и студентов высших учебных заведений сетевой коммуникативной культуры и цифрового этикета в «on-line community», как новой виртуальной межличностной коммуникации в сетевых платформах.

Формирование цифрового этикета (цифровой этики) преподавателей и студентов в онлайн-сообществе университета представляет собой важный аспект современного образования [8, с.6]. Для преподавателей и студентов просто необходимо владеть цифровыми навыками, формированию которых способствуют ключевые аспекты развития цифрового этикета (рис. 1.).

Рисунок 1. Ключевые аспекты развития цифрового этикета.

Мы считаем, что кастомизации системы формирования сетевой коммуникативной культуры цифрового этикета преподавателей и студентов в «on-line community» - это не просто «культура» и «этикет», но и синтез таких понятий, как «безопасность», «коллаборация», «критическое мышление», «сотрудничество», «кастомизация», а также высокое профессиональное мастерство педагога в эффективном преподавании и обучении в цифровом пространстве [7, 8]. Следует отметить, что важно развивать цифровой этикет и у студентов в процессе обучения и взаимодействия в «on-line community» вуза.

Помощь в обосновании понимания и оценке взамиодействия людей в цифровом пространстве оказывают существующие теории и подходы [8]: теория социального взаимодействия (Social Presence Theory), теория Культуры и технологии (Cultural-Historical Activity Theory), теория Аффордансов (Affordance Theory), теория Трансформационного обучения (преобразующего обучения) (Transformative Learning Theory), подход культурной продукции (Cultural Production Approach), теория Сетевого общества (Network Society Theory), Концепция сетевой идентичности (Networked Identity Concept), теория Этики и интернета (Internet Ethics Theory), Медиа-экологический подход (Media Ecology) (Таблица 1.)

Таблица 1. Основные теории и подходы взаимодействия в цифровом пространстве

теория / подход	ключевые аспекты теории / подхода	область / предмет исследования	практическое применение
Теория социального взаимодействия (Social Presence Theory)	виртуальная присутственность, эффективность средств коммуникации, эмоциональное вовлечение, социальные интеракции, анонимность и личность, межгрупповые взаимодействия, восприятие социальной реальности	восприятие «социального присутствия» (вовлеченности) в онлайн-коммуникации	проектирование, анализ и оценка онлайн-платформ, социальных сетей, виртуальных классов и других виртуальных сред
Теория культуры и технологии (Cultural-Historical Activity Theory)	ЗБР, инструментальная и медиальная деятельность, совместная деятельность и коллективное действие, культурные инструменты и символы, история и развитие, комплексность и многоуровневость, деятельность в контексте социокультурных практик, роль образования, артефакты и медиа, критика и развитие	взаимодействие между культурой, индивидом и технологией в процессе деятельности	анализ человеческой деятельности в социокультурном контексте с учетом влияния интсрументов и технологий
Теория аффордансов (Affordance Theory)	возможности действий, учебные материалы, образовательное пространство, технологии в образовании, социокультурный контекст,	воздействие «аффордансов» (возможности и ограничения) на способы взаимодействия и коммуникации в	проектирование образовательных материалов, технологических решений и организация учебных пространств

	индивидуализация обучения,	цифровом пространстве	
Теория трансформационного обучения (преобразующего обучения) (Transformative Learning Theory)	процесс преобразования мышления и восприятия личности через обучение и взаимодействие	влияние онлайн-взаимодействия на изменения в мышлении и поведении участников	анализ воздействия онлайн-учебы и взаимодействия на личностные трансформации
Подход культурной продукции (Cultural Production Approach)	формирование культуры как активного процесса, где участники общества сами создают культурные практики, символы, значения; влияние цифровых и социальных медиа на процессы культурной продукции и потребления	роль индивидов и сообществ в создании культурного контента, влияющих на общественные нормы и ценности	анализ того, как пользователи сами создают контент и культуру в цифровых пространствах, формируя общие ценности и практики
Теория сетевого общества (Network Society Theory), Концепция сетевой идентичности (Networked Identity Concept)	информационные технологии и сети, глобализация и сетевые связи, децентрализация и гибкость, информационная экономика, интерактивность и участие, трансформация культуры, киберпространство и идентичность	влияние цифровых средств, сетевых технологий на способы взаимодействия, создания и распространения знаний, формирование личной и групповой идентичности в онлайн-пространстве	анализ воздействия сетевых технологий на формирование и выражение личной и социальной идентичности
Теория этики и интернета (Internet Ethics Theory)	этические вопросы, связанные с использованием интернета и цифровых технологий	влияние цифровых платформ на этические аспекты взаимодействия	анализ и разработка этических стандартов в онлайн-сообществах
Медиа-экологический подход (Media Ecology)	технологический детерминизм, воздействие среды на восприятие, медиа и сознание, экосистема медиа, эффекты медиа на культуру, переходы в медийных эпохах, социальные и этические последствия	анализ влияния взаимодействия медиа и культуры на образ жизни, общество	влияние изменений в медиа-среде на формирование новых культурных практик

Представленные в таблице 1 теории и подходы представляют собой «фреймворк для анализа сетевой коммуникативной культуры и цифрового этикета с различных ракурсов, отражая сложность взаимодействия в цифровой среде. Комбинирование этих подходов может быть полезным для полного понимания динамики сетевых обществ и развития цифровой коммуникативной культуры» [8, с.27].

Сетевые коммьюнити в образовании представляют собой онлайн-сообщества, где участники обмениваются знаниями, опытом и ресурсами. Эти сообщества играют важную роль в образовательном процессе, обеспечивая поддержку, обмен идеями, а также создание виртуальных пространств для обучения и общения [8, с.39]. Характерные признаки сетевых коммьюнити в образовании представлены на рисунке 2.

Рисунок 2. Характерные признаки сетевых коммьюнити в образовании.

Изучение и обобщение научно-теоретических работ, связанных с цифровизацией в сфере образования, можно заключить, что отсутствует единое терминологическое определение понятию «сетевая коммуникативная культура». В связи с этим, мы под «сетевой коммуникативной культурой» понимаем интегративное качество личности, характеризующееся совокупностью норм, ценностей, навыков анализа, синтеза, рефлексии и выбора конструктивной стратегии взаимодействия и предоставления эффективной обратной связи в процессе сетевой коммуникации. Исходя из этого, сетевая коммуникативная культура базируется на навыках открытости, гибкости, умении работать в сети, умения адаптироваться к новым технологиям и платформам, умения анализировать и оценивать информацию, а также способность к критическому мышлению, эффективной сетевой коммуникации [7, с.20]. Эффективность сетевого коммуникативного взаимодействия зависит не только от профессиональных, цифровых компетенций преподавателей, но и от качества цифровой образовательной среды высшего учебного заведения (от оснащения аудиторий информационно-коммуникативными технологиями до образовательных интернет платформ и лабораторий, оснащенных необходимыми ресурсами для создания и размещения качественного учебного видеоконтента). Качественно организованное цифровое образовательное пространство университета позволит студентам достигать поставленных целей в обучении, используя удобные методы и формы обучения в зависимости от индивидуальных потребностей. Для этого требуется повысить навыки цифровой грамотности, культуры и этикета преподавателей.

Следует отметить, что в век цифровых технологий способны внести существенные изменения в практику инновационного преподавания и обучения только те педагоги, которые искренне убеждены в необходимости использования современных цифровых форм и интерактивных методов обучения, используя со студентами активную коммуникацию сотрудничества, предоставляя им возможность осознанного и глубокого усвоения содержания изучаемого материала.

Вышеизложенное позволяет нам констатировать, что в целостном образовательном процессе вуза преподаватель должен обучать студентов, выстраивая субъект субъектное взаимодействие, основанное на сотрудничестве, коммуникации и обратной связи, в целом направленных на развитие процессов самопознания, самообучения и саморегуляции студентов (рис.3).

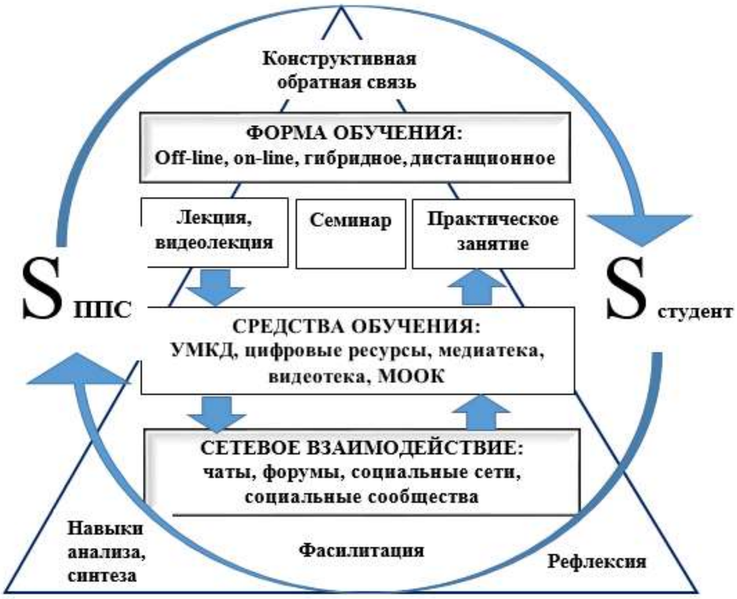

Рисунок 3. Структура предоставления эффективной обратной связи в процессе сетевой коммуникации.

Для формирования сетевой коммуникативной культуры и цифрового этикета преподавателей и студентов высших учебных заведений необходим комплекс взаимосвязанных элементов, создающих определенные условия для формирования архитектуры виртуальной образовательной «on-line community» вуза (рисунок 4).

Рисунок 4. Комплекс взаимосвязанных элементов в формировании сетевой коммуникативной культуры

Основой формирования сетевой коммуникативной культуры и цифрового этикета преподавателей и студентов в «on-line community» является повышение их квалификации через разнообразные формы (онлайн-курсы, МООК) и средства обучения (пособия, альбомы, методические разработки и рекомендации) (рис. 5).

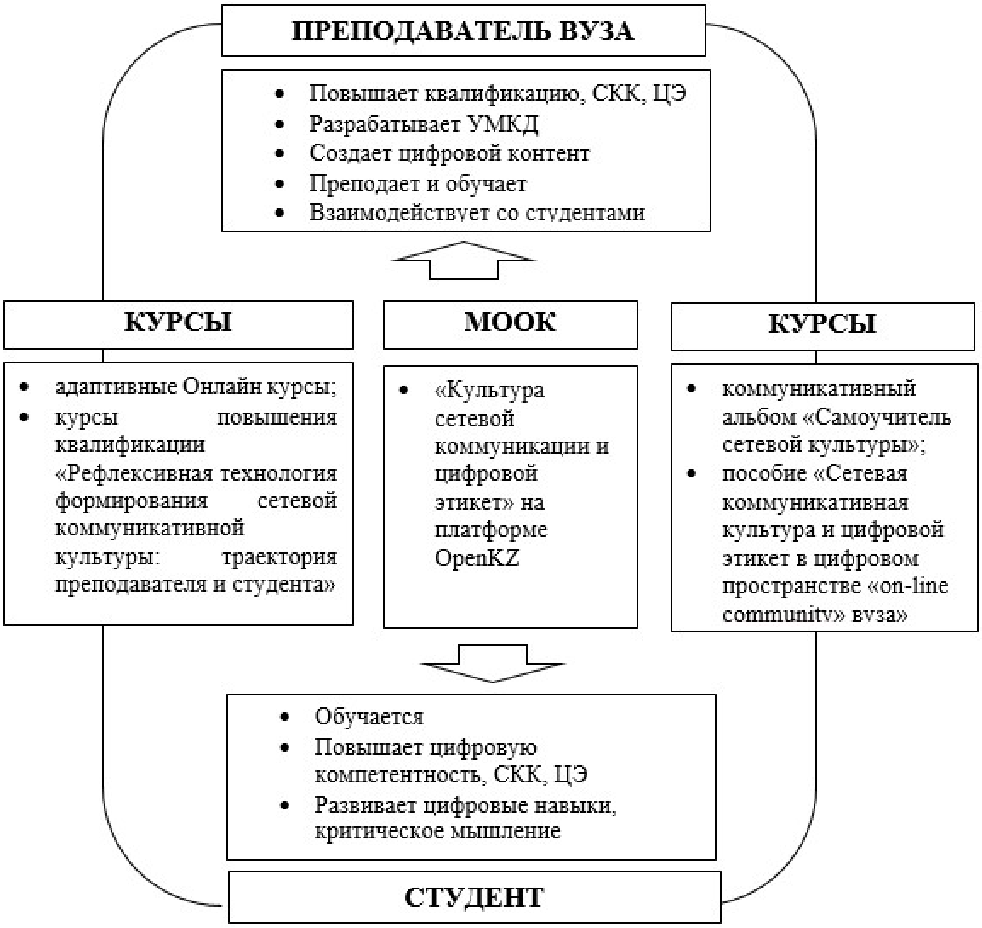

Рисунок 5. Механизм повышения СКК и ЦЭ преподавателей и студентов вуза

Однако, прежде чем повышать у преподавателей и студентов вуза СКК и ЦЭ, необходимо их сформировать. Учитывая, что в современных условиях обучение является студентоориенитрованным, то, соответственно, высшее учебное заведение обязано создать цифровую безопасную образовательную среду и инфраструктуру, позволяющую педагогам развивать процессы интеграции учебной и внеучебной деятельности студентов, используя инновационные информационно-коммуникационные технологии обучения. Это позволит развивать наряду с «hard skills» (профессиональными) навыками, «digitals skills» и «soft skills» (надпрофессиональные) компетенции, востребованные на современном рынке труда. Поэтому так важно высшим учебным заведениям создавать свою цифровую архитектуру «smart-университета» с его слаженной цифровой экосистемой, реализующей дуальное обучение и непрерывное образование. При таких условиях университет сможет подготовить выпускников, адаптированных к современным вызовам и, обладающих профессиональными и цифровыми компетенциями XXI века. Конечный результат подготовки высококвалифицированных специалистов зависит от компетенции, профессионализма и заинтересованности преподавателей. Ниже представлена структура механизма формирования СКК и ЦЭ (рис.5).

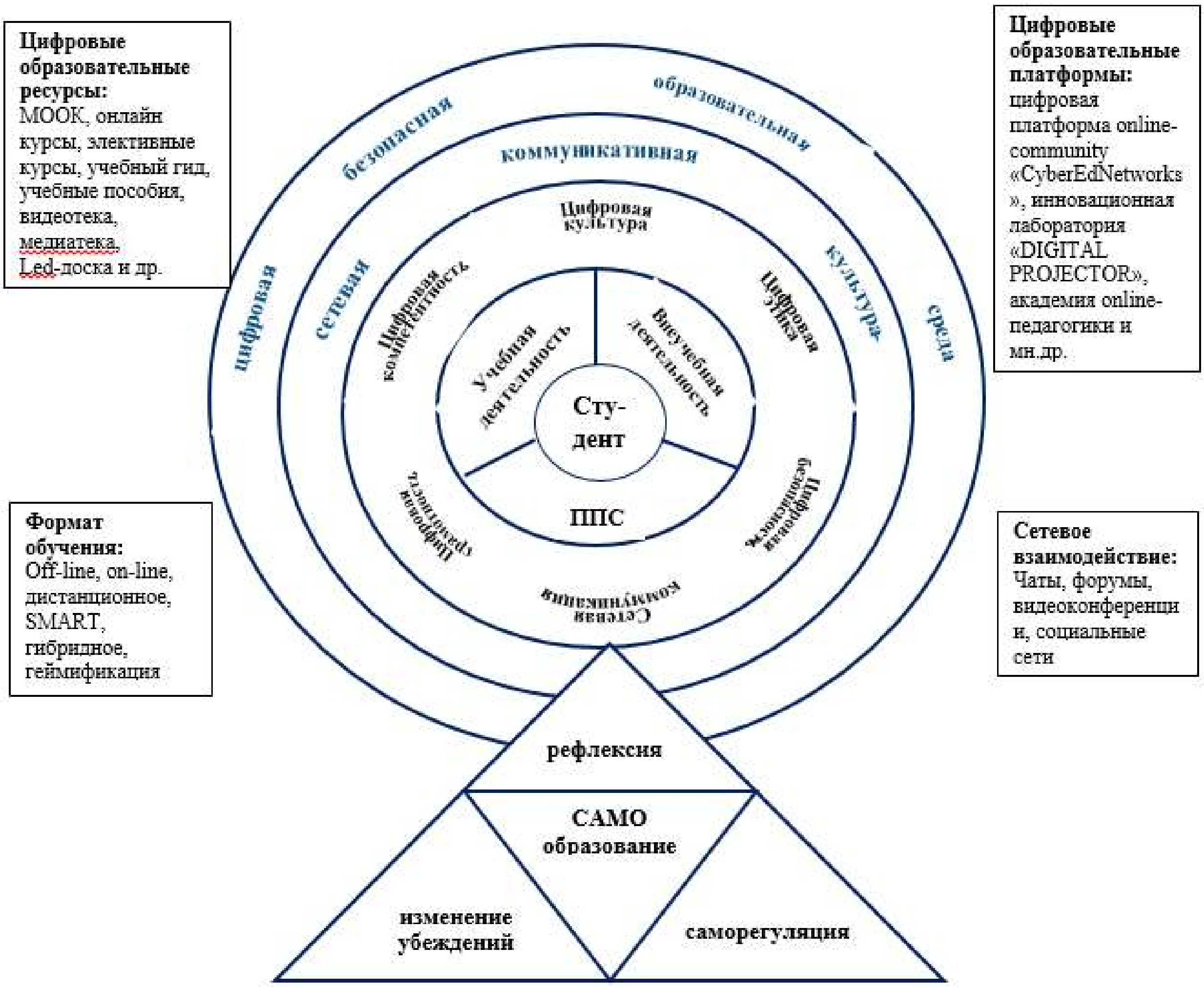

Рисунок 5. Структура механизма формирования СКК и ЦЭ.

Мы считаем, что кастомизация системы формирования сетевой коммуникативной культуры и цифрового этикета преподавателей, и студентов является фундаментом безопасного цифрового взаимодействия в «on-line community», обеспечивающим развитие цифрового этикета и формирование ценности к самообразованию и саморегуляции в образовательном пространстве. Образовательное пространство высшего учебного заведения должно содействовать кастомизации обучения, а субъекты образовательного процесса должны обладать сетевой коммуникативной культурой и цифровым этикетом [7].

В качестве примера, следует привести Санкт-Петербургский государственный университет (далее – СПбГУ), являющийся одним из ведущих классических университетов Российской Федерации с 300-летней историей своего развития и становления. СПбГУ не только является научно-образовательным центром мирового значения и занимает высокие позиции в международных рейтингах, но и с 2017 года участвует в реализации национальной программы «Цифровая экономика Российской Федерации», а с 2021 года стал единой экосистемой. Кастомизированный подход, реализуемый в СПбГУ позволяет разрабатывать современные уникальные и востребованные проекты, находящие интерес и отклик у партнеров – крупнейших коммерческих и государственных организаций, учреждений науки и образования. Кроме того, в СПбГУ задействована IT-клиника, реализуются образовательные программы с цифровым компонентом, где обучают студентов и магистрантов решать практические задачи, поступающие от внутренних и внешних заказчиков (партнеров, работодателей) [12]. Следует отметить, что в СПбГУ созданы все условия для подготовки востребованных специалистов, обладающих навыками XXI века.

Таким образом, мы считаем, что кастомизация сетевой коммуникативной культуры (СКК) и цифрового этикета (ЦЭ) преподавателей и студентов в «on-line community» высшего учебного заведения [7] актуальна в современных условиях и требует:

- создания портрета виртуальной личности преподавателя и студента, с выявленной системой критериев формирования и индикаторов, оценочных показателей сформированности СКК и ЦЭ преподавателей и студентов;
- разработки инновационной модели и методики формирования высокой СКК и ЦЭ преподавателей и студентов в цифровом пространстве «on-line community» вуза;
- разработки Дорожной карты по формированию СКК и ЦЭ преподавателей и студентов в «on-line community»;
- разработки Кодекса цифрового этикета.

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PLANNING FOR EFECTIVE USE OF ENGLISH IN THE CLASSROOM

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Abstract

This article deals with the essence of the methods how the teachers can use detailed lesson preparation to help children acquire English through their own effective use of English in the classroom.
Teaching a new language to primary children is challenging for all teachers. If you have the same mother tongue as your pupils, you have to maintain your own proficiency in English and also have the responsibility of using English with your children. In this paper one of the most significant issues for teachers is considered to be helping children learn and improve, which consists of the steps such as using the mother tongue, recasting, rephrasing what children say and correcting pupils.
Teachers should try to praise every effort and increase children's confidence and feeling of success. They always try to develop their own lesson plan to suit their classes and circumstances.

Key words: *Effective use of English, classroom, pupil, using the mother tongue, rephrasing, correcting, recasting.*

First of all, it is preferable to mention that we all start learning our first language by listening and absorbing the sounds around us. Children can acquire a second language the same way. The more English they hear, the more they learn. Our natural linguistic processes help us to adapt and acquire language as we mature.
As it is mentioned above, teaching a new language to primary children is challenging for all teachers. If you have the same mother tongue as your pupils, you have to maintain your own proficiency in English and also have the responsibility of using English with your children. But you have several advantages, because you come from the same society as your pupils and you know in what ways their first language can help them learn English. A new language in school is different from the other subjects children learn, but it is not just about learning facts and concepts. It is mainly about communicating, for example, being able to understand and use the language to do things.
All teachers should know that while using English they are showing children that this new language is another form of expression and it can be used to communicate like their own language. It can also be fun to open doors to other cultures and customs or convey your own attitude and beliefs about the different people who use this new language.
One of the most significant issue for teachers is helping children learn and improve, which consists of the following steps:

- Using the mother tongue
- Recasting
- Rephrasing what children say
- Correcting pupils

They can help their pupils understand what they say in English with their tone of voice or eye contact; by using gestures, facial expressions, pictures/diagrams, real things; and by using familiar context and topics, rephrasing what they say in as many ways as they can, occasional use of their mother tongue. Generally in teaching, we move from what is known to what is new. So on the very first day when you start to teach English you can explain to children in their mother tongue how you are going to use English during English lessons. Teachers have different approaches to how much mother tongue they use in their lessons:

-Some teachers try not to use mother tongue right from the start. They only use English even when they teach real beginners. Of course they allow their pupils to speak in their mother tongue. But the teacher recasts what the children say in English.

- Other teachers use mainly English and just give a word or explanation in mother tongue if some children really need to hear this or feel uneasy.

- If the teachers are good communicators, the children quickly get used to hearing only English and gradually learn to understand more and more.

- Some children may be slow to produce English themselves but listening to the teacher speaking English works in the end

One of the most effective techniques is to respond to all your pupils' questions and comments in English. In that way you are showing them

-that you are listening

-that you can do the same things in both languages

-how to say in English what they said in their own language

-that they should try and say more in English

The following boxes contain a list of questions and comments from pupils in their mother tongue and the answers the teachers gave in English. We have translated the questions into English.

Children speaking in mother tongue	Teacher repeating what children say in English
Teacher, can I ... can I go home now? (მასწავლებელო, შეიძლება სახლში წავიდე?)	1.Sorry? .. you want to go home? - Yes, OK.
Can I do this with Marta? (შეიძლება ეს მართასთან ერთად გავაკეთო?)	2. Yes, you ca n do it together, but you have to be quiet.
Can I go to the toilet now, please? (შეიძლება საპირფარეშოში გავიდე?)	3. OK, go to the toilet, but that's the last one today!
Look a bird, a bird. (შეხედეთ, ჩიტი, ჩიტი)	4. Yes, there is a bird.
Look at mine, teacher. (მასწავლებელო, ჩემს ნამუშევარს შეხედეთ)	5. Ok, Ann, I'll look at it later.

In the first example, the teacher recasts (repeats what children say in their mother tongue in English) what the pupil was saying as well as answering.
Recasting is a very important step in children's language development. It helps
- children to know they are understood
- children's acquisition of English because they hear what they said repeated in English
- to strengthen the idea that they can communicate in English as they do in their mother tongue.
Teachers have to develop the habit of recasting . So they may start by recasting single words into English, then short phrases, and so on. Here are two examples of recasting from the classes:

1.Children preparing to do some drawing
TEACHER: Right,you need your notebooks,your pencils, and what else?
(Child speaks in mother tongue. He feels he needs an eraser for mistakes.)
TEACH ER : An eraser-yes an eraser in case you make mistakes -an eraser.

2. Teacher reading the story of Elmer with her class
TEACH ER : When Elmer rejoined all the elephants ...
(Child speaks for a while about how all the grey elephants standing in lines look like an army.)
TEACH E R: Yes- it looks like an army of elephants - doesn't it? - all grey elephants.

Teachers should remember that recasting what children say in their mother tongue helps them acquire English and start using it.
When children start to use English in class, you should encourage them. If they make mistakes, one of the best techniques you can use is rephrasing. Changing what the child said in English into better English without any negative comment is very supportive. When you do this:
- you show that what they said was not perfect but that it doesn't matter
- you show that what the child is communicating is valuable
- you encourage the child to continue speaking by showing that they communicated successfully
- you are helping children improve as they hear the better version of what they were trying to say
- you are rephrasing for one child but usually other children are listening too.

Good teachers prefer rephrasing to tell the pupil he or she is wrong. Rephrasing is a means of correction. It is less threatening than direct correction. Teachers are more likely to use a direct correction of the form of language when their pupils are going to perform or display their work to a wider audience. The reasons for this are obvious to children as well. They naturally want to do well. Good correction techniques should mean that
- you use correction as a learning tool so that it helps your pupils to acquire English
- when you correct language, it is clear that you are not changing what a child is trying to say
- you are trying to help your pupils to make their meaning clearer.
Good teachers should make their list for correcting the errors. Whatever way they choose to correct
- children should not be made to feel silly or bad
- children should always know that you are helping them. If you correct by looking - questioningly- at the whole class, the child who has spoken must not feel that he/she has done something bad
- praise every effort
- they should try to increase children's confidence and feeling of success.
Every child who uses a new language shows a willingness to learn. This is wonderful. You want to encourage your pupils so always try to show your approval for their contributions: ... *really good, yes, good, much better, well done* ... . All the activities and lessons should be finished on a positive note: ... *that was well done -fantastic work - that was great - we'll continue tomorrow*.

There are many ways of organizing lessons and teachers know their own situation best. Many of them like to have a set plan that they follow to give a pattern to their lessons and help them plan efficiently. They always try to develop their own plan to suit their classes and circumstances.

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PLACE AND ROLE OF CONTENT STANDARDS IN AZERBAIJANI LANGUAGE LEARNING

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Summary: The main goal of educational reforms carried out in our country is to obtain perspectives on all stages and levels of education and to form a developed education system. One of the most important issues included in these innovations is the development of general education. Renovation measures starting from the primary education level, which is considered the main foundation of general education, are considered the first step for the development of education. Based on the research conducted in the field of education, we can say that the correct determination of the main part of this level is one of the important pedagogical problems. Therefore, the purpose, main task, teaching period, content, admission conditions, etc. of primary education in the world education space. such issues have been the subject of discussion at all times.
Key words: standard, learning outcomes, primary school students, new approach, knowledge

Proper organization of primary education lays the groundwork for successful organization of both secondary and post-secondary years of education. In the conditions of globalization, the processes of integration in the world education sphere, the need for the establishment of intercultural dialogues require that the educational environment be of better quality in each country, as well as the expectation of liberalization and establishment on a democratic basis, which is a process that needs to be started from the first stage.

One of the main issues in the organization of primary education is the formation of its content in accordance with its goals. Before analyzing the content of primary education, let's look at the interpretation of the concept of the content of education. The content of education is a very broad concept. It is formed as a result of teaching different subjects. When we say the content of education, we mean the system of knowledge, skills and habits necessary for students, which in turn should be based on life skills and should include the necessary information of science. The content of education includes the knowledge, skills and habits considered in the education system as a whole. The content of primary education is the system of knowledge, skills and habits that must be taught initially. First of all, we would like to point out that it would be correct to add speech development to the knowledge, skills and habits necessary for a person's education. It includes speaking, listening and understanding. By speech, we don't just mean verbal communication. Speech is of two types: written speech and oral speech. The formation of both speech skills is also envisaged in the content of primary education. In order to achieve this goal, it is necessary to create the content of primary education and organize it in the most optimal ways. It is necessary to achieve the perfect teaching of the curriculum and content standards in order to acquire certain speech skills for each age level.

The content of primary education differs in its general characteristics. So, the practical aspects of subjects are more noticeable here. Since the formation of students' reading, writing, arithmetic skills is based on direct experience, we can evaluate the content from a practical point of view. According to the curriculum conceptual document, a student who has completed primary education should have a number of skills. These skills should have a positive effect on their formation as a personality.

According to the curriculum conceptual document, a student who has completed primary education should have the following skills:

➢ To read age-appropriate artistic, scientific - mass and informative texts in the prescribed manner;
➢ To distinguish the main content of the text he reads and express his opinion on it;
➢ To use dictionaries, informative resources, computer equipment;
➢ To express one's thoughts clearly in oral and written form;
➢ To think logically, to put forward an idea, to express a reaction to another's opinion;
➢ To describe observed objects and events, distinguish them according to their characteristic features;
➢ Communicating, cooperating, working as part of a team;
➢ To observe simple cultural behavior, personal hygiene and necessary safety rules;
➢ To present in a simple form the initial knowledge gained about the moral and spiritual values, history, culture, art, and outstanding personalities of the Azerbaijani people, as well as the forces that are in the opposite position against their country;
➢ Demonstrate mastery of simple communication skills in a foreign language [1; p. 13].

In order to achieve the listed skills, the content of primary education needs to be properly defined. By the content of primary education, we also understand the subjects taught here and the subjects they cover. The list and justification of these subjects is reflected in the conceptual document "Concept of General Education in the Republic of Azerbaijan (National Curriculum)".

When talking about the content of primary education, we should also talk about the justification of the subjects taught here and their learning outcomes. Thus, teaching of a number of subjects at the primary education level is planned: Azerbaijani language, Mathematics, Life science, Music, Technology, etc.

One of the distinguishing features of the modern content is that the subjects to be taught at the primary education level are justified and their learning outcomes are given. The justification of the subjects expresses its necessity and degree of importance, taking into account the fact that the subject is not chosen by chance, that it is not an additional burden in the training process, and also takes into account the practical opportunities it shows for the development of students.

The justification of the subjects should include where to apply the knowledge and skills it will bring to the students, and the progress it will bring to the student practically. Of course, this justification determines the degree of importance of the taught subject in the students' lives. By referring to the standards set for the primary level of education, we can determine the knowledge and skills that students intended for this level should acquire.

When talking about content standards, first we need to analyze what content standards are and what the necessity of their application is related to. Content standards are defined for all levels of education and it is not a mistake to say that it is a state requirement for the level of knowledge and skills of students. Content standards are educational standards that are determined by the state, and the main goal here is to direct the work of knowledge and skills that the learner will acquire in the learning process in the right direction. Before each lesson, the teacher uses the standards as a guide to implement the content standards identified for the subject. Content standards help teachers clarify the content aspects of a subject. So, the teacher knows specifically what are the necessary knowledge and skills that the student should achieve during this lesson.

Content standards are composed of two parts:

1. Knowledge that the student will have;
2. The ability to apply the knowledge.

The knowledge and skills reflected in the content standards are themselves divided into different types. Let's take a look at the analysis of the knowledge and skill parts of the content standards of the subject of the Azerbaijani language at the elementary education level, according to our research work.

The knowledge portion of the content standards. It includes the knowledge that students will have in the learning process. There are four categories of knowledge:

1. Declarative knowledge;
2. Conceptual (or Contextual) knowledge;
3. Procedural knowledge;
4. Metacognitive knowledge. [7; p. 13].

Declarative knowledge. This type of knowledge is informative. Since declarative knowledge contains theoretical information of science, it is also called factual knowledge in some literature. Declarative knowledge helps students to know the fundamental part of scientific information. Sometimes we come across studies that try to justify the fact that fundamental information is not included here, justifying the personality-oriented characteristics of modern curricula. This is not considered a valid reasoning. So, without declarative knowledge, we cannot form other knowledge in students. For example, if the student does not know based on the facts what the part of speech that expresses the name of the object is, he cannot determine the name in that sentence. It is true that modern curricula do not focus on the theoretical knowledge of the subject, but on the application and vital importance of that knowledge. However, this does not mean that it is completely devoid of scientific theoretical information. The complicated information of the subject means the rules, definitions, axioms, theorems and other such complicated information which are memorized by the students without knowing their essence. The fact that the student has scientific information is an indicator of his declarative knowledge.

Let's examine the declarative knowledge that students will have according to the content standards of the mother tongue subject at the primary education level. I would like to point out that during current planning, the teacher makes an overview of a lesson and determines the knowledge and skills that students should acquire during that lesson. A teacher who determines learning outcomes through content standards must also be able to determine the type of knowledge reflected in each standard. Let's say that the class teacher plans to teach the topic "Magic bag" today.

One of the standards to be implemented on the designated school day of the subject, which is to be taught for six hours, is the standard "3.2.1. Distinguish between vowel sounds and consonant sounds." In order to implement this standard, the teacher must determine the level of students' knowledge of vowels and consonant sounds. That is, the student must know vowel and consonant sounds to distinguish between vowels and consonants in words. For this, the student must recognize 9 vowel sounds (a,ı,o,u,e,ə,i,ö,ü) and separate them in the word. The student's recognition of vowel sounds is informational knowledge. Thus, this content standard created a foundation for the student's acquisition of informational knowledge with its knowledge part.

Conceptual (or contextual) knowledge. The knowledge gained by students in the field of establishing connections between the obtained information, summarizing them, and defining principles is called conceptual knowledge. This is a type of knowledge that mainly helps students to identify cause-and-effect relationships. Explanation of declarative knowledge such as rules, laws and the like, "why?", "for what?" Conceptual knowledge evaluated as an answer to questions opens the way for the development of logical and critical thinking in students. This is the type of knowledge that the student draws conclusions based on his theoretical knowledge and forms his own concept of approach to this knowledge.

The conceptual type of knowledge formed as a result of the implementation of content standards leads to the development of cognitive processes such as analysis, composition, generalization. The sooner the formation of conceptual knowledge is started, the more memorization will be eliminated, and cognitive processes in students will begin to develop earlier. Determining ways of forming conceptual knowledge requires pedagogical skills from the teacher. The classroom teacher should pay equal attention to the development of all types of knowledge. For this, it must refer to content standards. During the lesson to the first grade, the teacher should not think that because the students are young, they should know only declarative knowledge and should not build their work in one direction. "Grandfather's gift" is one of the topics that can be used to form conceptual knowledge in the first grade during the teaching of the mother tongue. One of the standards of the realization of the subject serves the formation of conceptual knowledge. Thus, the student gets an inductive mental result and sorts the sequence according to the pictures. The class teacher should focus on the standards that serve to form conceptual knowledge in the content standards and should not forget that due to this type of knowledge, the basis of the ability to classify students on future topics is laid, which is important in learning and understanding the rules of the subject, especially in various fields of linguistics. is important.

Procedural knowledge. Procedural knowledge is the knowledge students have about how to do something. In other words, procedural knowledge is knowledge about the execution of tasks. Factual knowledge "what?", conceptual knowledge "how?" Procedural knowledge seeks answers to the questions "how?" related to the question. The end result of procedural knowledge is either factual or conceptual knowledge. Thus, the knowledge acquired by the student as a result of the application of procedural knowledge becomes a new type of knowledge. Procedural knowledge, distinguished by its applied nature, encourages the development of students' logical thinking, and forms mental skills such as searching, thinking, and analyzing. This type of knowledge, which includes processes, mainly includes the sequence, algorithm, techniques and methods during the execution of tasks. Procedural knowledge can become automatic after a period of time. For this, in the training process, it is necessary to work with students on a large number of tasks that contain procedural knowledge.

Procedural knowledge includes three categories:

1. Skills and algorithms;
2. Techniques and methods;
3. Criterion to carry out appropriate procedures on the spot.

The categories of skills and algorithms, techniques and methods of procedural knowledge are mainly formed in mother tongue classes. Procedural knowledge is very important in primary education. Thus, at this level of education, the foundation of application skills is laid in students. It is this foundation that is related to procedural knowledge. The etiquette developed in first and second grades is the first example of procedural knowledge. A small school student is familiar with letters, he already masters their writing technique and develops his writing skills in this direction.

If we look at the content standards of the subject of mother tongue, we will see that most of them contain procedural knowledge. The standard for the first lesson on "School Marketing" is an example of procedural knowledge. So here the student speaks the text based on the picture. The student describes what he sees and relates it to his personal life. Observation itself is a process. Based on the student's ability to observe, his procedural knowledge is formed.

Metacognitive knowledge. This type of knowledge is considered superior compared to others. Because this type of information is obtained by the student himself. There are three categories of metacognitive knowledge:

1) strategic knowledge;
2) knowledge about cognitive tasks;.
3) knowledge that the student has about himself.

Metacognitive knowledge is formed over a longer period of time than other types of knowledge. This type of knowledge, the foundation of which is laid at the elementary level, is mainly related to students' independent learning activity, search, generalization, analysis, and differentiation skills. The daily routine established in the elementary school forms the characteristic features of metacognitive knowledge. Thus, the knowledge that students have about how to read their lessons, at what hours and what to do, promotes the development of metacognitive knowledge. The student's self-evaluation, adequacy in his approach to his own unity promotes metacognitive knowledge. Teachers working with elementary school students should be especially careful. Sometimes, children's knowledge that they don't know is exaggerated and students are punished for their ignorance in such a way that children are afraid of not knowing something. Teachers should not forget that metacognitive knowledge is the knowledge students have about what they know and what they don't know. The highest type of knowledge is considered because if a student does not know something and tries to learn it and looks for ways, then the knowledge he gains rises to the highest level of cognition. Teachers sometimes unknowingly punish students for what they do not know, and do not give them the opportunity to investigate. A primary school teacher should keep this in focus during the teaching of the subject of the Azerbaijani language. In the words of John Locke, a child's brain is an unwritten white board. Whatever the teacher writes will remain. Therefore, the teacher should work so that the student himself also has a part on this board. Create opportunities for him. Let him write new knowledge on his white board. In our modern age, having metacognitive knowledge is a very important and difficult process. Sometimes due to the mistakes of teachers and sometimes parents, students are more accustomed to memorizing and learning specific ways. They do not look for new ways to solve a problem themselves, but rather try to test existing ways. "Teachers should try to listen to students' opinions and approaches. Sometimes, teachers only focus on teaching. It should not be forgotten that learning in the process of research, the acquisition of knowledge by the student himself, is remembered for a longer period of time.

When we talked about the feelings of the content standards, we emphasized that the activity is also reflected here. There are three types of activities performed by students in the learning process:

1) cognitive activity
2) communication activity
3) psychomotor activity

The training process is such a complex process that it is possible to comprehensively perform all types of student activity at the same time. During the performance of the activity, the class teacher should give students independence and should not leave out the principle of scaffolding. The teacher should help the student in the learning process, both as a guide and as a bridge. It is necessary to work as much as possible so that students can act freely, know their potential and have self-confidence.

Cognitive activity. This type of activity, as the name implies, serves the product of the student's thinking. Cognitive activity is mainly analyzing, solving, creating, matching, calculating, changing, etc. characterized as This type of activity, which has been established since primary school, is related to the student's perception of information and its understanding. Let's focus on examples of cognitive activity in the content standards for the primary education level.

The standards we have listed above are the most widely used standards in second grade textbooks. If we pay attention, we will see that cognitive activity is the type of activity that increases the student's mental activity and forms a deeper approach to the subject. Primary school teachers sometimes stimulate students' cognitive activity more, expect them to be higher. It should not be forgotten that cognitive activity is manifested at different levels according to each age period. It is necessary to work with students taking into account their cognitive potential.

Communication activity. Communication is an integral part of human activity. It is impossible to imagine the training process without communication. Children who take their first steps to school get to know their teachers in the process of communication, join the class and team in the process of communication. It is with the help of communication that the student presents his brain product and develops his thinking. Communication, which is based on the family, is already changing to a new form at school. Children enter scientific communication from domestic communication.

One of the pressing issues of our day, the process of educating citizens who are able to express their opinion, orator, takes its foundation from primary education. Class teachers should involve students in the communication process, and organize the training more dialogically. This is one of the requirements of student-oriented education. We regret to say that today many people are reluctant to join the communication process and engage in scientific discussions. The main reason for this is factors such as not joining the communication process from a young age, communication complex, inability to express one's opinion. In the content standards reflected in modern curricula, sufficient space is allocated to communication activities. When analyzing the textbooks of the second grade, we found that the following standards are used more often:

1.1.1. By asking questions, he clarifies the essence of the idea he is listening to.

1.1.2. Justifies his attitude about the idea he listened to.

1.2.1. He talks about what he observes, hears and reads.

2.2.4. He conveys the content of the text according to the plan he has drawn up.

Psychomotor activity. In the training process, it is necessary to form and develop not only speech and cognitive skills, but also physiological skills of the student who performs the learning activity. The student's physiological skills are formed and developed as a result of his psychomotor activity. Psychomotor activity is the activity that students perform while performing direct executive operations. This type of activity, like other types of student activity, is very important. Because this activity, based on practical skills, is important in the future life of the student. There are standards based on a number of psychomotor activities of students in the subject "Sham", which is included in the second grade textbook and is the thirteenth topic. Those standards are as follows:

2.1.3. Explains the meaning of phraseological expressions in the text.

3.1.5. Writes simple practical writings (letters, postcards, announcements) determined according to grade level.

1.2.3. Uses appropriate gestures and facial expressions depending on speech situations.

3.1.2. Copies text written in block letters.

If we pay attention to the action part, here we will see the implementation of physiological skills. Psychomotor activity is not only physical activity, but also physical activity related to cognition.

From our analysis, it can be concluded that the content standards necessary for both knowledge and performance of the activity are very important as a state requirement and act as a guiding compass in the training process. The teacher should use this compass as a basis in his work and correctly define the knowledge and activities that he should form the basis of each standard. Thanks to this, the teacher's activity becomes productive and efficient.

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Historical Sciences

Jafar Abu Timman's role in organizing the 1920 Iraqi uprising

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Abstract. The article is dedicated to the investigation of the 1920 uprising against the British occupation in Iraq and the activities of Jafar Abu Timman, who played an important role in organizing this uprising. This rebellion was actually a series of local,mostly Shi'ite, uprisings which occurred mainly in the Middle Euphrates, accompanied by minor events in the big cities, where some cooperation between Sunnis and Shi'ites was manifested. It was targeted against the British forces, which had occupied Iraq during the First World War and imposed a fairly centralized administration on the region. Although the rebellion lasted for several months, it had very important consequences. In the article, the causes, course, and result of the uprising were studied, and at the same time, the characteristics of the activities of Jafar Abu Timman, one of the personalities who had the mission of leadership in the course of the uprising were investigated and comprehensively analyzed.

Key words: Iraq, independence, British admistration, uprising, Shia population

After the First World War, Iraq, which was occupied by the British, was experiencing a complicated period in political and socio-economic life. Thus, the British who occupied Mesopotamia began to organize a colonial regime here. The initial goal was to ensure public order in those areas and to create a management structure that could solve this problem accordingly. All the power belonged to British officers who had traveled a long way in colonial administration, representatives of the Indian Political Department and the commander-in-chief of the British forces in Iraq who led them. In the conquered territories, the Ottoman administrative structure was replaced by a new administration based on the principle of direct control, and the country was divided into political districts headed by "officials" subordinated to the British Commander-in-Chief (later High Commissioner) in Iraq.

On the other hand, a tense picture was also noticeable in the socio-economic life of Iraq. The complex structure of the Iraqi population made the internal situation in the country even more complicated. Although the majority of the country's population was composed of Shiites living around Basra and Baghdad, the Sunni population had been prioritized by the Ottoman administration in the administrative, military, social and educational fields, and this situation was continuing under the British rule. Of course, this factor could not but worry the Shiites. On the other hand, the Kurds, one of the main ethnic groups in the country, lived mainly in rural areas as tribes, and there were constant conflicts between the tribes based on historical enmity. The inconsistency between the provinces and the center also made it difficult to establish a central government . The British soon realized that controlling Iraq was more difficult than invading it. In such a situation, the British authorities began to take steps to involve a part of the feudal nobles of Iraq in the administration. At the same time, the dependence of ordinary peasants and nomads on tribal sheikhs increased significantly with the introduction of the "Tribal Civil and Criminal Disputes Regulation Act" in 1919. Thus, tribal sheikhs were given the right to establish authority over related tribes, to turn lands considered common property into their personal property, as well as large salaries, financial assistance, and tax immunity. These measures of the occupying authority further aggravated the already complex situation in Iraq. Nationalist leaders were watchingwith concern as British officials tightened their control over the country's irrigation system, food distribution network, conscription system, and tax collection apparatus, thereby aligning these institutions with the interests of the empire and its allies. The actions of the British in Iraq resulted in the initiation of mass spontaneous demonstrations by causing dissatisfaction of most social classes and groups of the society. This movement intensified when Britain received the right to a mandate over Iraq at the San Remo conference in April 1920.

On the eve of the 1920 uprising, one of the most important aspects of the political process in Iraq was the agreement between the Shiite Mujahideen and the Sunni supporters of Sharif Hussein on joint action under the slogan of "creating an Arab-Islamic state" led by an Arab emir whose authority was to be limited by a legislative assembly. Thus, radically different parties reached an agreement to achieve a common goal. The members of the secret Iraqi political organization "Haras al-Istiqlal" with branches in Kazimiyyah, Najaf and Hilla, especially Jafar Abu Timman, one of the leaders of this organization, played a great role in the unification of Shiites and Sunnis. He participated in the organization of the Iraqi uprising of 1920, led the rebels operating in the middle Euphrates, collected funds to fight against the British and develop the Iraqi national movement. Jafar Abu Timman was in contact between Najaf, Karbala and Baghdad on the eve of the uprising, coordinating the activities of these cities against the British. Shia-Sunni joint religious ceremonies such as "Mawlud-i Nabi" were held in both Sunni and Shia mosques under the organization of the members of the "Istiqlal Guards" society headed by him. Addressing thousands of Shiites and Sunnis in mosques, khatibs and poets from both communities made speeches emphasizing the importance of uniting under the banner of Islam. According to his political views, he was in favor of the creation of a fully independent Iraqi state and its co-administration by both Sunni and Shia Muslims. In the summer of 1920, the conditions were ripe for an uprising against British colonial rule in Iraq. People's anger at the punishment of towns and villages that resisted the introduction of the new order, and the bombing of the riotous districts between Baghdad and Basra convinced the nationalist forces in the capital that the time was right for an uprising. At the same time, major religious scholars (ulama) in the theological and pilgrimage centers of Shia Najaf and Karbala also protested against the strengthening of British rule under the guise of constitutionalism. One of the most respected scholars in Najaf, Sayyid Muhammad Taqi al-Shirazi, issued a fatwa calling on all Muslims to join the struggle against foreign rule. Then the tribal chiefs around Najaf and Karbala immediately rallied to the call and expelled the British-Indian troops from several strategically important southern cities. The popular uprising brought together Sunnis and Shiites, elites and commoners, urban dwellers and tribes. An armed uprising began when tribal groups attacked from the desert to seize isolated British military posts located in the fertile plains south of Baghdad and destroy vital railway lines.

The uprising in Iraq, which was later called the "glorious Iraqi revolution", lasted from August to November 1920. British troops were expelled from most areas of Iraq. Only the cities of Baghdad, Basra and Mosul remained under their control. The rebels demanded the abolition of the British mandate and the convening of a Constituent Assembly on democratic grounds. Attempts by the British authorities to reach a compromise with the rebels through some concessions and retain full power in the country were rejected by the Mutiny Committee. After that, the British government sent additional troops to Iraq and brought their number to 150,000. In August, the British launched an offensive against the main centers of the rebellion, and by mid-November 1920 they were in control of the Central regions.

In October 1920, the High Commissioner of Iraq, Percy Cox, started negotiations with Nuri Said, Jafar al-Ashghari, Jamil al-Midfai, and Faisal al-Hashimi, leaders of the "The Covenant Society", which supported the establishment of a monarchy in Iraq under the British protectorate, and reached an agreement on the establishment of a temporary national government. After the formation of the national government, the new leadership started repression against the rebels and this factor further weakened the position of the rebels. In November, the British defeated the main forces of the rebels of south Euphrates, the stronghold of the resistance, the center of which is the holy Shiite city of Najaf. Thus, towards the end of November, the rebellion was completely suppressed.

The short-term suppression of the rebellion by the British was due to a number of factors. First of all, not all of the population supported revolutionary ideas. Many Sunni notables and ulema in Baghdad were reluctant to risk their safe and secure lives by participating in such an uncertain insurgency. The tribal sheikhs of the Kut al-Amara region refused to join the rebellion and acted against it. Britain, in turn, allowed some of the leaders opposed to the revolt to enjoy some of the privileges they had enjoyed under Ottoman rule in order to quell the nascent nationalist sentiments. On the other hand, the class antagonisms within the rebels split the liberal and radical wings of the independence movement. At the same time, long-standing rivalries between the tribes, the reluctance of the inhabitants of Baghdad, Basra and Mosul to join the rebellion, and the technological superiority of Britain localized the rebellion, and in late November the rebellion was suppressed.

After the rebellion, the British administration responded by creating a Consultative Council, changing the system of direct rule they had been using. The members of the council consisted entirely of wealthy Sunnis from the big cities, and the Shia community was not represented in political discussions. Jafar Abu Timman, who played an important role in organizing the uprising, fled to Iran after the uprising was suppressed. Although he returned to Iraq after Faisal I became the king of Iraq, he was forced to leave the country again in 1922 due to his continued demand for the country's liberation from British rule and democratization.

Although it was suppressed for a short time, the 1920 uprising remained an event in the history of Iraq that symbolizes the struggle for independence, the unity of the people, national solidarity, freedom and the spirit of patriotism that fought to protect national independence. The 1920 uprising was the first time Iraqis fought for their independence as a nation regardless of ethnicity or sect. Around 6,000 Iraqis and around 500 British and Indian soldiers died in the revolt.The revolt caused British officials to drastically reconsider their strategy in Iraq. The revolt cost the British government 40,000,000 pounds which twice the amount of the annual budget allotted for Iraq and a huge factor in reconsidering their strategy in Iraq. The new Colonial Secretary, Winston Churchill, decided a new colonial administration was need in Iraq as well as the British colonies in the Middle East so he called for a large conference in Cairo. In March 1921 at the Cairo Conference, British officials discussed the future of Iraq. The British now wanted to control Iraq through more indirect means, mainly by installing former officials friendly to the British government. They eventually decided to install Faysal ibn Husayn as King of Iraq.

Берел

Толқын Қайранбай
Магистрант

Кілтті сөздер: Берел, Алтай, қол өнері

1. Кіріспе

Адам баласының қажеттілігі екі нәрсе: біріншісі-материалдық қажеттілік, екіншісі-рухани қажеттілік. Материалдық қажеттілікке ең алдымен күн көріс болып есептелетін тамақтан бастап, киім баспана және тағы басқа болып әрі қарай жалғаса береді. Материалдық қажеттілікке жататынның бәрі де – адамның тіршілік етуіне тікелей керекті, оларсыз өмір сүру мүмкін емес нәрселер. Ал рухани қажеттіліктер адам санасына сезім мүшелері арқылы қабылданып, сол адамға ләззат сыйлайтын, сол адамның жанын рақаттандыратын жағымды дүниелер. Бірақ та сезім мүшелері арқылы қабылданғанның бәрі адам жанын рақаттандыра берді деуге болмайды, олардың ішіндегі ерекше әсем дүниелер ғана адам жанын шаттыққа бөлейді. Сонда ғана мына өмір мәнді, мағыналы, қызықты бола түседі. Бұл адамзаттың ілгері басуына, көркейіп, дамуына ең ықпал ететін фактор. Рухани қажеттілік адамның сипатын өсіреді.

Әсемдік, сұлулық табиғаттың өзінде. Ал адам өзі ләзатт аларлық әсемдікті сол сұлу табиғаттан үйреніп барып жасаған. Адам өз ой-қиялында, сана-танымында қайта жасап шығарған образды әсемдік – өзге адамдарды рақатқа кенелтетін, сұлулықты сезінуге тәрбиелейтін, эстетикалық талғамын өсіретін әсемдік өнер немесе өнер туындысы деп есептеледі. Ал сол өнерді жасаушы адамды өнер иесі немесе, ұлы Абайдың тілімен айтқанда, өнерпаз деп айтады.

Өнерді шартты түрде үшке бөлуге болар еді: 1) қол өнері, 2) сөз өнері, 3) музыка өнері. Сөз өнерінің материалы – тіл, музыка өнерінің материалы – әуен (мелодия), ал қол өнерінің материалы – толып жатқан әр түрлі заттар. Қол өнерінің, яғни негізгі тақырыбымның өз жайына ойысайын.

Қол өнері ертеде материалдық қажеттілікті қанағаттандыру үшін қару-жарақ, баспана, ыдыс-аяқ, киім-кешек жасап алу қажеттілігінен туындап, алғашқы тас құралдар, тас үңгірлер, тас ыдыстар, аң терісінен істелген қарабайыр киім нұсқалары дүниеге келді [1]. Уақыт өткен сайын, адамның ақыл ойы дамыған сайын өзі жасап шығарған алғашқы қарапайым дүниелерін үлкен кереметтерге айналдырды. (мәселен, «Әлемнің жеті кереметі» осыған мысал бола алады). Бір кездері тас үңгірлердің орнында көрген адамды, таңдай қақтыратын зәулім сарайлардың бой көтеруі, өз Отанымыздың жерінен табылған, сөйтіп бүкіл әлемді аузына қаратқан «Алтын адам» ескрткіші өнер атаулының тарихта қаншалықты шарықтап өскенін танытады [1,2].

1. Берел

Мақаламның тақырыбы «**Берел**» деп аталады. Бұл сөз - қазіргі Шығыс Қазақстан облысының жерінде ертеде өмір сүрген ата – бабаларымыздың көне қонысы, ескі мекені болған жер аты [3,4]. Қазақстан өзінше жеке мемлекет, тәуелсіз ел атанғаннан кейін, яғни 1997 – 1999 жылдары сол Берелдегі алып тас обаларға жүргізілген археологиялық қазбалар бойынша табылған тамаша өнер туындылары (негізінен ағаштан ойып жасалған әртүрлі бұйымдар) «Берел қорымы» болып аталып қалды [5]. Мен осы бір ғажайып өнер туындыларына іштей тәнті бола отырып, оның әсем сұлулығы мен ішкі динамикасын жазып шығуға талпыныс жасадым. Берел қазыналары, Берел өнерін кітап арқылы танып біліп, отандық көне ескерткіштеріміздің осындай інжу-маржандарын ел-жұртқа, керек болса әлемге мақтанышпен жария етсек деген ниетпен мақаламның тақырыбы етіп алып, ата-баба өнеріне өз әлімше өнер қосқым келді.

Мақаламның тақырыбын «Берел» деп алу себебіме, ең бірінші З.Самашев бастаған авторлар тобы 2000 жылы басып шығарған «Берел» атты кітапша (58бет) [18] өзгеше ықпал етті. Осы кітапты оқып танысудан кейін Отанымыздың тарихына, этнографиясына, археологиялық қазба мұраларына, жазу-сызуына қатысты деректамаларды сұрастырып, іздестіріп, жайтты қарастырдым деседе болады. Мысалы, «Қазақстан тарихы» (5 томдық) кітабының 1,2-томдары, «Дреднее искусство Алтая», «Көне түркі жазба ескерткіштерінің тілі» деген сияқты кітаптар түркі [8-9], оның ішінде қазақ халқы ежелгі дәуірлерден бастап мағыналы да мәнді тарихы, өнері бар, бүгінгі ұрпақ мақтаныш етерлік, тіпті үйренеріміз көп өнегелі халық екенімізді біліп, соны мақтаныш тұтып, осының негізінде көне өнеріміздің бір үлгісін мақала жұмысыма негіз еттім.

Сонымен «Берел» дегеніміз не? Берел – Шығыс Қазақстан облысындағы жер аты, яғни Алтай иау аймағы. Ақын Мағжан Жұмабайев «Қорқыт» атты өлеңінде былай деп жазыпты:

«Алтайға жер жүзінде тау жоқ жеткен,
Алтайға бетегедей алтын біткен. Бейіштей
алтын Алтай етегінде, Ертеде алаш елі мекен
еткен. Ол күндер көз жетпейтін ерте күн ғой,
Ерте күн – ертегідей ерте күн ғой.
Өткен күн – ұстатпайтын сұлу сағым, Жалғыз
– ақ желден жүйрік жетеді ой. Өткен күн
ертегімен таласқандай,
Уа бүние, ол күндерде алаш қандай?!

«Берел» кітабына кіріспе ретінде бұрынғы Казакстан Республикасының Білім жене ғылым министрі К.Е.Көшербаев былай деп жазыпты: *«Улы Алтай... Оның көне қойнауы қаншама жұмбақ сырларды ішіне бугіп жатыр. Ескі обалар, таңбалы тастар, киелі орындар, қоныс-тұрактар, керуен соқпақтары - «заманаларды жалгастырушы жіпте» алыста қалған ғасырлардың үнсіз куәгерлері. Біз оларды өткен дәуірлердің теңдесі жоқ, байлығы,әлемдік мәдениет контексінде өзіндік құндылықтарымызды іздестіріп шарқ ұрған бүгінгі тандағы рухани дамуымыздың жанды куш-қуаты ретінде бағалаймыз.*

Алтай - Еуразия Ұлы Даласының кіндігі. Ол өзінің танғажайып сұлу табиғатымен және көне жәдігерліктерімен ғана емес, аса терең, табиғи тамырлары бар мәдени-дүниетанымдық құндылқтарымен және халыктық достурлерімен де даңқты. Археолог ғалымдардын өз зерттеулеріне дәл осы Казак, Алтайынын, торін тандал алуы да кездейсоктык емес. Ықылым замандардан бері бұл өлке қайнаған этно-мәдени байланыстардың және көш-қон үрдістерінің ұйтқысы болғандығын есепсіз көне ескерткіштер бұлтартпай куәландырады.

Берелдегі археологтардың табысы — әлемдік денгейдегі жаңалық. Бугінгі таңда Берел — Отанымыздың теңдесі жоқ археологиялық құндылықтардың бірі. Мұны зерттеу қазақ этносының терең мәдени-тарихи қайнарларың ашуға мүмкіндік туғызып отыр».

«Берел» кітабынын 46-бетінде авторлар былай деп жазыпты [18]:

«Ұлы Даланың бір пұшпағы болған Алтай өңірінде аттары аңызға айналған скив-сақ және сармақ тайпалары мекендеген. Олар өздерінің ерліктерімен көзге түскен, ат құлағында ойнаған шеттерінен батыр жауынгерлер еді».

Осы келтірілген үш мысал ежелгі Алтай өнірінің, алтын кілті деп есептеуге болады.

1997-1999 жылдары Берелде Ә.Х.Марғұлан атындаты Археология институтының З.Самашевтін жетекшілігімен, құрамында еліміздің бірсыпыра ғылыми-зерттеу институттары, университеттері жене Шығыс Қазақстан облыстық тарихи-өлкетану мұражайының, сондай-ақ Францияның, Орталық Азиядағы археологиялық миссиясының мамандары мен Италияның Легабус атындағы ғылыми-зерттеу орталығын катыстыра отырып ұйымдастырылған халық-аралық экспедициясы қазба жұмыстарын жүргізді

[9-10].

Берел қорымындағы отыздан асқан обалар қатар-қатар тізбектеле орналасқан (1-ші сурет). Олардың жер бетіндегі аса алып пішіндері ежелгі көшпенділердің өз көсемдеріне ерекше ғибадатхана-кесене түрінде күрделі ғұрыптық жерлеу құрылысын тұрғызу мақсаты-мен осында әдейі әкеліп жерленгенін көрсетеді.

1-ші сурет: Берел қорымындағы отыздан асқан обалар

Сол замандағы ел билеуші көсемнің денесі бальзамдалып, ол жататын қабірдің ішіне тоң жүретіндей етіп айырықша жағдай жасалған. Осының нетижесінде Алтайдың ежелгі мәдени қазбалары - киімі, құрал-саймандары, ең бастысы - адамның дене мүшелері, жылқының еті мен сүйектерінің қалдықтары күні бүгінге дейін бүлінбей сақталған (2-ші сурет) (В.В.Радловтың 1865 жылы Үлкен Берелді зерттеуінен).

2-ші сурет: Алтайдың ежелгі мәдени қазбалары

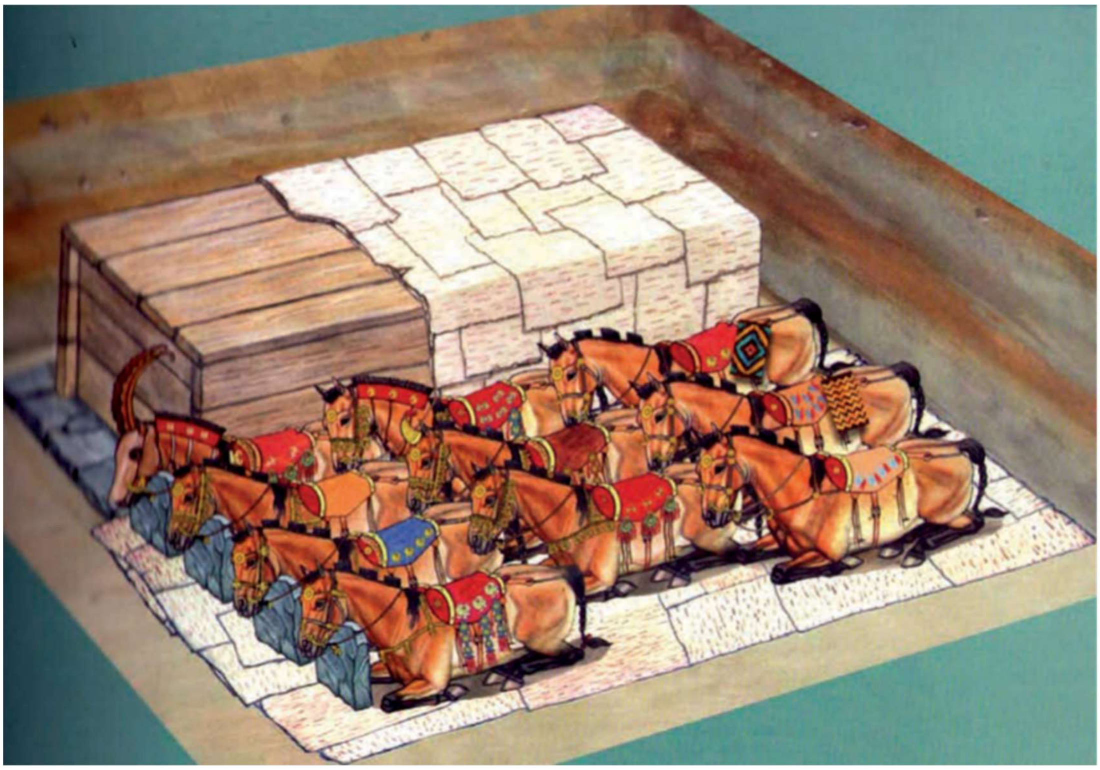
Берелдегі негізгі зерттеудің нысанасы – Үлкен оба (диаметрі – 30 м-ден астам, биіктігі 2 м-ден асады) [18]. Оба үйіндісінің табаны ірі және жалпақ тастардан тиянақты етіп төселіп жасалған; етегі ірі тақта тастармен дөңгелек қоршау етіп тігінен қаланған.

Оба астындағы қабірдің үсті бөрене-сырықтармен жабылған, ал көрдің түбіне қалың да жалпақ етіп самырсыннан шабылған тақтайлардың басын өзара киюластыра отырып уш катар етіп, ұзыншақ тік төртбурышты қима-таған орнатылған. Қима-тағанның беті де калың, жалпақ тақтайлармен екі қабат етіліп жабылған, онын аралары қайыңтозбен және карта жоңышқа бұтасымен нығыздалған. Қима-таған көрдің оң жағына орналастырылған, онын көлемі- 3,43х1,85х1,26 м. Қима-тағанның ішіне жасыл алевролит тастар төсіліп, онын үстіне астау-табыт койылған. Ол көп жылдык жуан самырсыннан тұтас күйінде ойылып жасалган. Астау-табыттың төрт бурышында оны қабірге көтеріп тусіру оңай болуы ушін құлық-тұтқалар ойылып жасалған. Қақпақтың төрт бурышында қоладан құйылып, сыртына алтын жалатылған төрт құс мүсіні орнатылган.

Осы обадағы астау-табытқа 35-40 жас шамасындағы жауынгер-көсем жерленіпті. Оның сән-салтанатпен койылғандығының бір белгісі – киімі көгілдір ақық моншақтармен, жұқа алтын жапырақшалармен ғажайып композиция құрай отырып әшекейленген.

Қайтыс болған көсемнің о дүниеге мініп баратын он үш аты өлтіріліп, қима-тағанның сыртына екі кабат етіп аяқтарын бүгіп орналастырылған. «Тоңдалған оба» (3-ші сурет) кереметінін аркасында аттардың жүн, терісі ғана емес, еті де, сол сияқты сән-салтанатты әбзелерді де түгел сақталған.

Он үш аттың төртеуінің басында таутекенің ағаштан жасалған мүйіздерімен әшекейленген тері маска болған. Масканың біреуі денесі мысық тұқымдас жыркыш тәрізді (тоқымамда көрсетілгендей), имек құс тұмсықты, теріден жасалған ирек мүйізі және қанаты бар ағаштан ойылған фантастикалық полиморфты құбыжық – барыс тектес грифонның көлемді мүсінімен безендірілген. «Ондағы әдемі ер-тұрмандар мен олардың әшекейлері – бүгінге дейін қазақ жерінен табылғандарының ең көнесі» делініпті. Жырткыш аңның терісінен жасалған және аша тұяқты жануарды грифонның талап жатканын көрсететін киіз аппликациялы бөстек ер-тұрманға ерекше көрік берген.



3-ші сурет: «Тоңдалған оба»

Ат әбзелдері барельефті және склупторлық әдістермен ойылған көптеген ағаш бұйымдармен безендірілген. Жапсырмалар, сулықтар, ілдіргілер және айылдың бөлшектері сияқты заттардың бәрінің бергі жағы жұқа алтын жапырақшалармен және қалайымен қапталып, арнаулы тесіктер арқылы былғарыға, қайысқа бекітілген. Ат әбзелдерінде кездесетін бейне-образдарға жергілікті жануарлардың өкілдері - бұғы, бұлан, құстар, таутекелер, арқарлар және мысық тұқымдас жыртқыштар кіреді. Бірақ та ежелгі көшпелілер дәстүрінде негізгі орынды қияли, табиғатта болмайтын фантастикалық, синкреттік, полиморфты тіршілік иесі алады. Олар әр түрлі жануардың белгісін өзіне біріктірген: денесі мысық тұқымдас жыртқыштікі болса, тұмсығы жыртқыш құстікі, өзінің спиралды ирек мүйізі бар грифон түрінде болып келеді.

Аңдардың айқасы Берел қорымында өте көп кездеседі. Олар: мысық тұқымдас жыртқыштың бұғыға немесе таутекеге шабуы; өз құйрығын өзі тістеп жатқан грифон; грифонның аузындағы аша тұяқты жануар басының көлемді бейнесі сияқты қысқартылған композициялық шешімдегі айкастың бір сәтін көрсеткен көріністер. Андар айқасы бейнелерінің мәні – жақсы мен жаманның, жарық пен түнектін, «космогондық жаратылудың жойқын жойылысы арқылы» жаңа өмірдің қайта өркендеуі, мәңгілік қозғалыс пен қарама-қайшылықтардың күрес символы сияқтылармен түсіндіріледі.

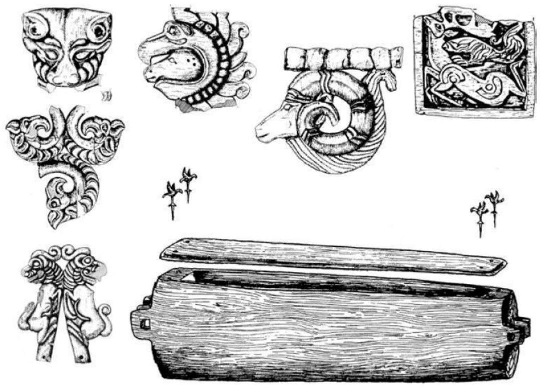
Аңдар айқасының динамикасы, экспрессивтігі көбінесе олардың денелерінің 180°-қа бұрылғандығымен беріледі (4-ші, 5-ші суреттер). Бұлшық еттері нүкте, үтір, жақша сияқты белгілермен ерекшеленіп көрсетілген. Қалыптан тыс үлкейтіліп берілген мүйіздері, аузын арандай ашқан, ақсиған тістері және жойқын күшті тырнағы бар жыртқыштарды бейнелеген.

Археологиялық деректер ертеде осында мекен еткен сақтар мен сарматтардың металл өңдеуші, құюшы, құрылысшы, құмырашы, зергер, ағаш шебері, асқан суретші болғанын да бұлжытпай дәлелдейді.

4-ші сурет: Аңдар айқасы

З.Самашев кітап соңында былай деп жазыпты: «*Ертедегі көшпелілер өнерінің үлгілері қазақ халқының бейнелеу, сәндік-қолданбалы өнерінің қайнар көзі, негізі болып табылады. Сабақтастығы тек қана заттық мәдени үлгілерінде ғана емес, көлік және еңбек* *құралдарында, күнделікті тұрмыс, қару-жарақ, сондай-ақ шаруашылығында, табиғи экологиялық жағдайларға бейімделу тәсілінде, жалпы алғанда, тіршілік ету жүйесінен де байқалады».*

Міне, менің мақаламның тақырыбы мен мазмұны болып берген, яғни маған қозғау салып, ықпал еткен «Берел» қорымының қысқаша сипаты осындай.

5-ші сурет: Аңдар айқасы

3. Қорытынды

Бұл тақырыпты алуыма, дәлірек айтқанда, мынадай жайттар себеп болды:

1) «Берел» қорымының отандық аса құнды мұра болғандықтан, жаныма өзгеше жақын әсер етті. Олай дейтін себебім, сақтар – әрідегі түркі халықтарынын, оның ішінде казақ халқының тарихта толық дәлелденген арғы ата-бабасы екені белгілі;

2) «Берел» қорымы уақыт жағынан көнелігі. Көнені, ескіні білу, оны меңгеріп, игілігімізге жарату- болашаққа, жаналыққа жол ашатынына белгі;

3) «Берел» қорымы адамзат ақыл-ойының аса биіктігі. Сонау көне заманның өзінде өлікті мумиялап, тоңазыту арқылы оны ұзақ уақыт сақтаудың жолын білген халыққа немесе тайпаға қалай бас имессің?!

4) «Берел» қорымының ең басты артықшылығы – ертедегі ата-бабаларымыздың қас шеберлігі. Бұған қиялдың күштілігі мен бірізге түскен айқын стильдің қосылуы өзіне еріксіз тарта берді.

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СОЦИАЛИЗАЦИЯ-ПРОЦЕСС ДИАЛЕКТИЧЕСКОГО ВЗАИМОДЕЙСТВИЯ ИНДИВИДА С СОЦИАЛЬНОЙ СРЕДОЙ

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Аннотация: Взаимодействие индивида с социальной средой является решающим процессом в его социализации. Этот процесс отражает диалектический характер взаимоотношений человека с обществом. Социализация предполагает не только усвоение социокультурных норм и ценностей, но и активное формирование личности в процессе взаимодействия с социальной средой. В рамках данной работы процесс социализации рассматривается как двустороннее взаимодействие, в результате которого социальные структуры и культурные нормы влияют на формирование личности, а также рассматриваются как процесс, предполагающий активное участие личности в создании своей социальной среды. Основываясь на теории социализации, учитывая диалектическое взаимодействие между человеком и обществом, будут рассмотрены различные аспекты этого процесса.
Ключевые слова: Индивид, социализация, взаимодействие, личность, общество, социокультурные нормы, культурные ценности, социальная среда, диалектическое взаимодействие

SOCIALIZATION IS THE PROCESS OF DIALECTICAL INTERACTION OF AN INDIVIDUAL WITH THE SOCIAL ENVIRONMENT

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Abstract: The interaction of an individual with the social environment is a crucial process in his socialization. This process reflects the dialectical nature of human relations with society. Socialization involves not only the assimilation of sociocultural norms and values, but also the active formation of personality in the process of interaction with the social environment. Within the framework of this work, the process of socialization is considered as a two-way interaction, as a result of which social structures and cultural norms influence the formation of personality, and is also considered as a process involving the active participation of an individual in creating his social environment. Based on the theory of socialization, taking into account the dialectical interaction between man and society, various aspects of this process will be considered.
Keywords:Individual, socialization, interaction, personality,society, sociocultural norms, cultural values, social environment, dialectical interaction.

ӘЛЕУМЕТТЕНУ- ЖЕКЕ АДАМНЫҢ ӘЛЕУМЕТТІК ОРТАМЕН ДИАЛЕКТИКАЛЫҚ ӨЗАРА ӘРЕКЕТТЕСУ ПРОЦЕСІ

Аңдатпа:Индивидтің әлеуметтік ортамен өзара әрекеттесуі оның әлеуметтенуіндегі шешуші процесс болып табылады. Бұл процесс адамның қоғаммен қарым-қатынасының диалектикалық сипатын көрсетеді. Әлеуметтену әлеуметтік-мәдени нормалар мен құндылықтарды игеруді ғана емес, сонымен бірге әлеуметтік ортамен өзара әрекеттесу процесінде тұлғаның белсенді қалыптасуын да қамтиды. Осы жұмыс аясында әлеуметтену процесі екі жақты өзара іс-қимыл ретінде қарастырылады, нәтижесінде әлеуметтік құрылымдар мен мәдени нормалар жеке тұлғаның қалыптасуына әсер етеді, сонымен қатар жеке тұлғаның өзінің әлеуметтік ортасын құруға белсенді қатысуын көздейтін процесс ретінде қарастырылады. Әлеуметтену теориясына сүйене отырып, индивид пен қоғам арасындағы диалектикалық өзара әрекеттесуді ескере отырып, бұл процестің әртүрлі аспектілері қарастырылатын болады.

Кілт сөздер: жеке тұлға, әлеуметтену, өзара әрекеттесу, тұлға, қоғам, әлеуметтік-мәдени нормалар, мәдени құндылықтар, әлеуметтік орта, диалектикалық өзара әрекеттесу

Кіріспе:

Әлеуметтену - әрбір адамның өміріндегі маңызды процестердің бірі. Бұл процесс индивидтің әлеуметтік ортамен өзара әрекеттесуін білдіреді, нәтижесінде оның жеке басы мен әлеуметтік дағдылары қалыптасады. Әлеуметтену адамның өмір бойы жүреді және оның қоғамға бейімделуі үшін өте маңызды.

Бұл жұмыстың мақсаты әлеуметтенуді индивид пен әлеуметтік ортаның диалектикалық өзара әрекеттесу процесі ретінде қарастыру болып табылады. Әлеуметтенуге диалектикалық көзқарас адам мен қоғамның өзара әрекеттесу процесінде олардың өзара ықпалы мен өзара тәуелділігін болжайды.

Бұл зерттеу әлеуметтенудің негізгі аспектілерін, соның ішінде әлеуметтік бірегейлікті қалыптастыруды, әлеуметтік-мәдени нормалар мен құндылықтарды игеруді, сондай-ақ әлеуметтік ортаға бейімделу процесін қарастырады. Жеке тұлғаны әлеуметтендіру үдерісіндегі отбасы, мектеп және т.б. сияқты қоғамдық институттардың рөліне ерекше назар аударылатын болады.

Осылайша, бұл жұмыс индивид пен әлеуметтік ортаның өзара әрекеттесу процесі ретінде әлеуметтенудің мәні мен ерекшеліктерін ашуға, сондай-ақ бұл процестің тұлғаның қалыптасуына және адамның әлеуметтік бейімделуіне әсерін ашуға бағытталған.

Негізгі бөлім

Әлеуметтену - бұл индивидтің әлеуметтік ортамен өзара әрекеттесетін және оның нормаларын, құндылықтарын және өмір салтын игеретін күрделі процесс. Бұл процесс диалектикалық болып табылады, өйткені ол жеке адам мен қоғам арасындағы өзара әрекеттесу мен өзара әсерді қамтиды.

Әлеуметтену процесінде индивид әртүрлі әлеуметтік құрылымдар мен институттарға тап болады, мысалы, отбасы, мектеп, жұмыс ортасы және т.б. Бұл құрылымдар оның жеке басының, әлеуметтік дағдыларының және мінез-құлқының қалыптасуына әсер етеді. Сонымен бірге, индивид өзінің әлеуметтік ортасын құруға белсенді қатысады және оған өзінің іс-әрекеті мен таңдауы арқылы әсер етеді.

Әлеуметтену адамның дүниеге келген кезінен басталады және адамның өмір бойы жалғасады. Өмірдің әртүрлі кезеңдерінде әлеуметтену әртүрлі жолдармен жүреді және өзіндік ерекшеліктерге ие. Мысалы, балалық шақта басты рөлді отбасы және жақын адамдар атқарады, жасөспірім кезінде достар мен мектеп маңызды рөл атқарады, ал ересек жаста кәсіби орта мен әлеуметтік желілер маңызды бола бастайды.

Бастапәлеуметтену- бұл индивид пен әлеуметтік ортаның үздіксіз өзара әрекеттесу процесі, оның нәтижесінде оның әлеуметтік болмысы қалыптасады, қоғамға бейімделеді және тұлға ретінде дамиды.

Тақырыптың өзектілігін негіздеу:

Әлеуметтену тақырыбы индивидтің әлеуметтік ортамен диалектикалық өзара әрекеттесу процесі ретінде қазіргі қоғамда бірқатар себептерге байланысты өзекті және маңызды болып табылады.

Біріншіден, ақпараттық технологиялар мен әлеуметтік желілердің қарқынды дамуы жағдайында адамдардың өзара қарым-қатынасы мен жаңа ұрпақтың әлеуметтенуінде өзгерістер орын алуда. Әлеуметтену үдерісін түсіну қазіргі заманғы технологиялардың тұлғаның қалыптасуына және қоғамдық қатынастарға әсерін тереңірек түсінуге мүмкіндік береді.

Екіншіден, жаһандану және көші-қон процестері жағдайында мигранттардың әлеуметтенуі қалай жүретінін және олардың жаңа әлеуметтік-мәдени ортаға бейімделуіне қандай факторлар әсер ететінін түсіну маңызды. Бұл тақырыпты зерттеу мигранттарды біріктіру және бейімдеу үшін тиімді стратегияларды әзірлеуге көмектеседі.

Үшіншіден, өзгермелі әлеуметтік-экономикалық жағдайлар мен білім берудің рөлі контекстінде қазіргі жағдайда әлеуметтену үдерісінде қандай өзгерістер болып жатқанын және білім беру мекемелерінің оқушылардың тұлғалық және әлеуметтік дағдыларының қалыптасуына қалай әсер ететінін зерделеу маңызды.

Осылайша, әлеуметтену тақырыбы қазіргі қоғамдағы тұлғаны қалыптастыру, әлеуметтік бейімделу және өзара әрекеттесу процестерін түсіну үшін өзекті және маңызды болып табылады.

Әлеуметтенудегі отбасының рөлі әлеуметтану мен психологиядағы ең маңызды зерттеу тақырыптарының бірі болып табылады. Отбасы- индивидтің әлеуметтену процесі басталатын бірінші және негізгі орын. Отбасылық ортаның адамның жеке басының қалыптасуына, әлеуметтік дағдыларына және құндылық бағдарларына қалай әсер ететінін зерттеу маңызды.

Рәлеуметтенудегі ол отбасының жағдайын әртүрлі көзқарастардан қарастыруға болады:

1. Әлеуметтік-мәдени нормалар мен құндылықтардың трансферті: Отбасы жеке тұлғаға негізгі нормаларды, құндылықтарды, мінез-құлық үлгілерін және мәдени дәстүрлерді беретін әлеуметтенудің негізгі агенті болып табылады. Отбасында нақты қандай мағыналар мен нормалар қалыптасатынын және олардың болашақта жеке тұлғаның әлеуметтенуіне қалай әсер ететінін зерттеу маңызды.

2. Мінез-құлықты модельдеудің рөлі: Отбасылық орта әлеуметтік дағдылар мен мінез-құлық үлгілерін қалыптастырудың үлгісі болып табылады. Бұл аспектіні зерттеу отбасында мінез-құлық пен қарым-қатынастың қандай түрлері басым болатынын және олардың отбасы мүшелерінің әлеуметтік дағдыларын дамытуға қалай әсер ететінін түсінуге мүмкіндік береді.

3. Психологиялық қолдау және тұрақтылық: Отбасы жеке тұлғаның психикалық денсаулығы мен әлеуметтенуі үшін маңызды психологиялық қолдау мен тұрақтылық сезімін қамтамасыз етеді. Осы аспектіні зерттеу жеке тұлғаның тұрақты психологиялық негізін қалыптастыруға отбасылық ортадағы қандай факторлар ықпал ететіндігін түсінуге мүмкіндік береді.

Жәнеәлеуметтену үдерісіндегі отбасының рөлін зерделеу жеке тұлғаның тұлғалық және әлеуметтік дағдыларын қалыптастыру тетіктерін тереңірек түсінуге, сондай-ақ қазіргі қоғамда табысты әлеуметтенуге ықпал ететін немесе кедергі келтіретін факторларды анықтауға мүмкіндік береді.

Әлеуметтенудің тұлғаның қалыптасуына және әлеуметтік бейімделуіне әсері осы процестің табыстылығын анықтайтын көптеген факторларды қамтиды. Олардың кейбірін қарастырайық:

1. Әлеуметтік-мәдени контекст : Әлеуметтену жүретін қоғамның негізгі құндылықтары, нормалары мен әдет-ғұрыптары тұлғаның қалыптасуына елеулі әсер етеді. Мәдени ерекшеліктер, діни нанымдар, дәстүрлер – осының бәрі жеке тұлғаның әлеуметтенуіне негіз болады.
2. Отбасы : Әлеуметтенудің негізгі агенті ретіндегі отбасының рөлі баға жетпес. Тәрбие, ата–аналар мен туыстардың мінез-құлқының үлгілері, отбасындағы атмосфера - осының бәрі жеке тұлға қабылдайтын негізгі ұстанымдар мен нормаларды анықтайды.
3. Білім беру мекемелері : Әлеуметтенуде мектеп және басқа да білім беру мекемелері маңызды рөл атқарады. Мұнда әлеуметтік дағдылар қалыптасады, қоғамның білімдері мен құндылықтары игеріледі.
4. Дін және дүниетаным : Сенім мен дүниетаным индивидтің жеке басының және көзқарастарының қалыптасуына, оның құндылық бағдарлары мен мінез-құлық стереотиптерін анықтай отырып, терең әсер етеді.
5. Бұқаралық ақпарат құралдары және интернет : Заманауи ақпараттық технологиялар жас ұрпақтың өмір салты мен құндылықтарын қалыптастыра отырып, әлеуметтенудің маңызды факторына айналды.
6. Әлеуметтік топ және достар : Қоршаған орта мен әлеуметтік топ индивидтің әлеуметтік дағдыларын, мінез-құлық үлгілерін және өмір салтын қалыптастыра отырып, оған күшті әсер етеді.
7. Этникалық және мәдени контекст : Әрбір этникалық топтың әлеуметтену үдерісіне және тұлғаның қалыптасуына әсер ететін өзіндік ерекшеліктері мен дәстүрлері болады.

Осы факторларды зерттеу әлеуметтену механизмдерін және оның тұлғаның қалыптасуына және жеке тұлғаның әлеуметтік бейімделуіне әсерін түсінуге көмектеседі.

Қазіргі қоғамдағы әлеуметтенудің мәселелері мен мәселелері әлеуметтану мен психология саласындағы зерттеулер үшін өзекті болып табылады. Олардың кейбіреулері мыналарды қамтиды:

1. Интернет және әлеуметтік желілер : Интернет пен әлеуметтік желілердің дамуымен өзара әрекеттесу мен әлеуметтенудің жаңа формалары пайда болады. Бұл қоғамдық қатынастар мен құндылықтардың өзгеруіне, сондай-ақ кибербуллингке, интернетке тәуелділікке және нақты әлеуметтік дағдыларды жоғалтуға байланысты мәселелерге әкелуі мүмкін.
2. Көші-қон және мәдени әртүрлілік : Көші-қон процестері әлеуметтену үшін қиындықтар туғызады, өйткені әртүрлі мәдени ортадағы адамдар жаңа әлеуметтік ортаға бейімделуде және мәдени бірегейлігін сақтауда қиындықтарға тап болуы мүмкін.
3. Пандемия және әлеуметтену : COVID-19 пандемиясы жағдайында әлеуметтену байланыс пен орын ауыстыру шектеулеріне байланысты шектеулі болды. Бұл адамдардың, әсіресе балалар мен жасөспірімдердің әлеуметтік дағдыларының дамуына және психологиялық жағдайына әсер етуі мүмкін.
4. Білім берудегі өзгерістер : Білім беру жүйесіндегі заманауи өзгерістер, мысалы, онлайн білім беруді арттыру және оқыту бағдарламасын өзгерту оқушылардың әлеуметтену үдерісіне әсер етуі мүмкін.
5. Технологиялық өзгерістер және жасанды интеллект : Технология мен жасанды интеллекттің дамуы әлеуметтену үшін жаңа қиындықтарды тудырады, өйткені ол адамдардың өзара әрекеттесу және қарым-қатынас жасау тәсілдерін өзгерте алады.

Осы проблемалар мен сын-қатерлерді зерделеу қазіргі қоғамдағы әлеуметтену үдерісіндегі өзгерістерді жақсырақ түсінуге және жеке тұлғалардың әлеуметтік ортаның өзгермелі жағдайларына тиімді бейімделу стратегияларын әзірлеуге мүмкіндік береді.

Қорытынды:

Әлеуметтену - бұл күрделі және көп қырлы процесс, оның барысында индивид әлеуметтік ортамен өзара әрекеттеседі және оның нормаларын, құндылықтарын және өмір салтын игереді. Бұл процесс диалектикалық болып табылады, өйткені ол жеке адам мен қоғам арасындағы өзара әрекеттесу мен өзара әсерді қамтиды.

Әлеуметтену нәтижесінде индивидтің әлеуметтік сәйкестігі, оның әлеуметтік дағдылары мен әлеуметтік ортаға бейімделу қабілеті қалыптасады. Дегенмен, әлеуметтену процесі қақтығыстар мен қайшылықтардың қайнар көзі болуы мүмкін, өйткені индивид өзінің сенімдері мен қалауларына сәйкес келмейтін әртүрлі әлеуметтік нормалар мен құндылықтарға тап болады.

Әлеуметтенудің маңызды аспектісі оның динамикасы мен өзгермелілігі болып табылады. Әлеуметтік орта үнемі өзгеріп отырады және индивид жаңаларына бейімделуі керек шарттар мен талаптарға сәйкес. Сонымен бірге, индивидтің өзі өзінің іс-әрекеті мен таңдауы арқылы оны өзгерте отырып, өзінің әлеуметтік ортасына әсер етеді.

Осылайша, әлеуметтену - бұл жеке тұлға мен қоғам арасындағы өзара әрекеттесу және өзара әсер ету процесі, нәтижесінде жеке тұлғаның әлеуметтік сәйкестігі мен бейімделу қабілеттері қалыптасады. Бұл үдеріс жеке тұлғаның дамуын және жалпы қоғамның қызметін түсінудің кілті болып табылады.

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Biological Sciences

ОӘЖ 001.11

ҚАЗАҚСТАНДАҒЫ БИОТЕХНОЛОГИЯ САЛАСЫНЫҢ ДАМУ ЖАҒДАЙЫ ЖӘНЕ ЖЕТІСТІКТЕРІ

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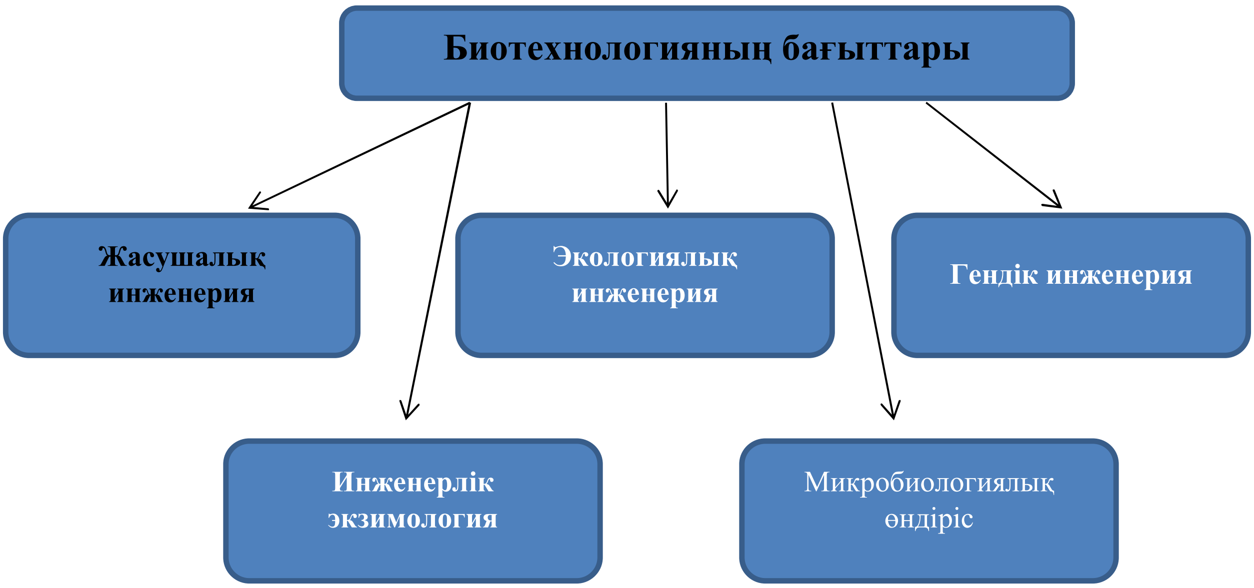
Ғылыми мақалада Қазақстандағы биотехнология саласының даму жағдайы және жетістіктері қарастырылған.

В научной статье рассматриваются состояние развития и достижения биотехнологической отрасли в Казахстане.

The scientific article examines the state of development and achievements of the biotechnology industry in Kazakhstan.

Бүгінгі таңда Қазақстандағы биотехнологиялық сала белсенді даму сатысында және одан әрі өсу үшін әлеуеті жоғары. Елімізде инновацияларды ынталандыру және жоғары технологияларды, оның ішінде биотехнология саласында дамыту бойынша айтарлықтай күш-жігер жұмсалуда [1].

Биотехнология саласы бірнеше бағыттарды қамтиды. Олар төмендегі сызбада келтірілгін (сызбанұсқа 1).



Сызбанұсқа 1. Биотехнологияның бағыттары

Қазақстанда биотехнологияларды дамытудың кейбір негізгі аспектілерін қарастырайық:

Мемлекеттік қолдау және инвестициялар: Қазақстан Үкіметі инновациялық компаниялар үшін түрлі мемлекеттік бағдарламалар, гранттар және салықтық жеңілдіктер арқылы биотехнологиялық саланы дамытуды белсенді қолдайды [2].

Білім және ғылыми зерттеулер: елде ғылыми қоғамдастық және биотехнология саласындағы жоғары білім дамыған. Жоғары оқу орындары мен ғылыми институттар осы саладағы іргелі және қолданбалы зерттеулерде белсенді жұмыс істейді.

Өнеркәсіптік қосымшалар: биотехнология ауыл шаруашылығы, медицина, фармацевтика, экология және тамақ өнеркәсібі сияқты әртүрлі салаларда қолданылады. Мысалы, ауыл шаруашылығында өнімділікті арттыру және өсімдіктерді қорғау үшін биологиялық препараттар мен генетикалық түрлендірілген организмдер әзірленуде.

Стартаптар мен инновациялар: соңғы жылдары Қазақстанда биотехнология саласында жұмыс істейтін стартаптар мен компаниялардың өсуі байқалады. Бұл компаниялар инвестицияларды белсенді түрде тартады және халықаралық жобаларға қатысады [3].

Халықаралық ынтымақтастық: Қазақстан биотехнология саласындағы халықаралық ұйымдармен және шетелдік компаниялармен белсенді ынтымақтасады, бұл білім мен тәжірибе алмасуға, сондай-ақ жаңа технологиялар мен инвестицияларды тартуға ықпал етеді.

Осыған орай биотехнология саласының өзіндік даму мақсаттары мен бағыттары бар (сызбанұсқа 2).

Сызбанұсқа 2. Биотехнологияның дамуының негізгі мақсаттары

Биотехнологияның негізгі объектісі - тірі жасушалар, атап айтқанда жануар, өсімдік текті жасушалар және микробтар немесе олардың биологиялық белсенді метаболиттері.

Сурет 1. Биотехнология саласындағы зерттеулер

Қазіргі заманғы биотехнологиялық әдістердің соншалықты күшті және толық зерттелмеген әлеуеті де бар, оларды кеңінен қолдану жағдайына байланысты қазақстандық биотехнолог ғалымдарда зерттеу жұмыстарын жүргізуде.

Қазақстандағы молекулалық биологиямен биотехнологияны негіздеген академик Айтхожин Мұрат Абенұлы. Қазақстандық ғалымдар биотехнологияның түрлі аспектілеріне, дамуына, жетістіктері бойынша өз үлестерін қосуда. Міне, олардың кейбіреулерін атап өтер болсақ:

Кенжебек Шәкіров: Микробиология және биотехнология саласында жұмыс істейтін қазақстандық ғалым. Ол экстремофильді микроорганизмдер және олардың әртүрлі биотехнологиялық процестерде әлеуетті қолданылуы туралы зерттеулерімен танымал.

Жәнібек Бердібеков: молекулалық биология мен генетикаға маманданған ғалым. Оның жұмысы биотехнологияны дамыту үшін маңызды болып табылатын әртүрлі биологиялық процестердің генетикалық негізін зерттеумен байланысты [4].

Айдын Айтбаев: Биотехнология және өсімдіктердің гендік инженериясы саласындағы зерттеулермен айналысатын қазақстандық ғалым. Оның жұмысы мәдени өсімдіктердің стресстік жағдайларға төзімділігін арттыруға және олардың агрономиялық сипаттамаларын жақсартуға бағытталған.

Александр Хмельницкий: Биотехнология және биомедицина саласындағы жұмыстарымен танымал. Ол биотехнологияны медицинада қолдануға қатысты көптеген ғылыми мақалалар мен патенттердің авторы.

Осылайша, Қазақстанның биотехнологиялық саласы даму перспективаларын көрсетеді және болашақта осы саладағы инновациялық процестерді тереңдету және қолданбалы мүмкіндіктерді кеңейту күтілуде.

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ENDEMIC RARE AND ENDANGERED USEFUL PLANTS OF EAST KAZAKHSTAN

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Abstract

The variety of natural conditions and the inaccessibility of the ridges East Kazakhstan has been conditioned by the rich species diversity of the flora, and occupies the first place among the regions of Kazakhstan in terms of plant resources. The rich composition and diversity in the nature of the use of useful plant species can serve as a basis for the conservation and reproduction of the plant gene pool. There are several dozen endangered plant species and a significant number of endemic plants. Study of endemic rare and endangered beneficial plants

It was conducted for the purpose of inventory of species diversity, further monitoring of their stocks, as well as to preserve the phytogen pool of the studied territory. The article presents new habitats of endemic, rare and endangered beneficial plants of the flora of East Kazakhstan.

Rhubarb compact (Rheum compactum L.) is a perennial herbaceous plant of the buckwheat family (Polygonaceae Juss.). Rare in Kazakhstan is a species with a declining population. We have discovered new habitats of the species on the town of Syntas and in the Umush gorge of the Kalbinsky ridge. On the mountain Syntas species is distributed in the altitude range of 1000-1300 m above sea level along the north-eastern, western and north-western logs, along slopes, deep gorges among shrubs or mixed shrub vegetation. 38 individuals were counted on an area of 2 hectares. shrubby and shrubby phytocenoses on the pass Umush of the Kalbinsky ridge at an altitude of 1200-1300 m above sea level, 20 individuals were counted on an area of 4 hectares.

On the Kalbinsky ridge, compact rhubarb is accompanied by species of shrubs – Rosa acicularis Lindley, R. spinosissima L., Lonicera tatarica L., Spiraea hypericifolia L., Spiraea media Franz Schmidt, Caragana arborescens Lam, Cotoneaster melanocarpa Lodd., from herbaceous – Paeonia hibrida Pallas., Trollius altaicus C.A. Mey., Campanula sibirica L., Polygonum alpinum All., Achillea millefolium L., Sedum hybridum L., Valeriana dubia Bunge., Hypericum perforatum L., Polygala hybrida DC, Galium verum L., Vicia cracca L., Veronica longifolia L., Veratrum lobelianum Bernh, Phlomis tuberosa L., Lilium martagon L., Patrinia intermedia L., Potentilla chrysantha Trev., Potentilla longifolia Willd. ex Schlecht., Clematis integrifolia L., Dictamnus angustifolius G.Don., Polemonium caeruleum L., etc.

Recently, the number of compact rhubarb has sharply increased It is decreasing due to the mass collection of leaf petioles for consumption in the form of jam. The species deserves to be included in the list of rare and endangered plant species of the Republic Kazakhstan and inclusion in the 3rd edition of the Red Book Kazakhstan.

Altai rhubarb (Rheum altaicum Losinsk.) is a perennial plant of the buckwheat family (Polygonaceae Juss.), a rare relict species of the late Neogene period, with declining numbers. It is listed in the Red Book of Kazakhstan. It differs from a similar type of compact rhubarb by dense (rather than soft) leaves of an ovoid-triangular (rather than rounded) shape and a lower stem height. We discovered Altai rhubarb on the northwestern rocky slope, the korums of the Burkhat pass of the Sarymsakty ridge of the South Altai. The altitude limit is approximately from 1982 m above sea level the sea. There are practically no other plant species on rocky placers. 6 specimens were counted on an area of 1 hectare. The range and number are decreasing due to the collection of leaf petioles and stems by the local population.

Hybrid peony (Paeonia hibrida Pall.) is a perennial herbaceous plant of the peony family (Paeoniaceae Rudolphi). A rare species. It is endemic to the south-east of Western Siberia and the mountains of Eastern Kazakhstan. The number and range is decreasing due to the collection of plants for bouquets, digging up roots for use for treatment purposes. The species is found

scattered, without forming thickets, in small mounds along the rocky gravelly slopes of gorges and on chernozem-like soils along the slopes among shrubs.

We found the species on the Umysh pass of the Kalbinsky ridge, at an altitude of 1318 m above sea level. On an area of about 3 hectares, 28 are counted individuals, plants are placed diffusely in the form of small groups by area. Here from shrubs grow: Rosa acicularis Lindley, R.spinosissima L., Lonicera tatarica L., Spiraea hypericifolia L., Spiraea media

Franz Schmidt, Caragana arborescens Lam, Cotoneaster melanocarpa Lodd., from herbs abundant: Hypericum perforatum L., Polygala hybrida DC, Galium verum L., Vicia cracca L., Campanula sibirica L., Veronica longifolia L., Phlomoides tuberosa L., Lilium martagon L., Patrinia intermedia L., Polygalaceae hybrida DC, Artemisia absinthium L., Achillea millefolium L., Potentilla chrysantha Trev., Potentilla longifolia Willd. ex Schlecht., Clematis integrifolia L., Dictamnus angustifolius G.Don., etc.

The dodging peony *(Paeonia anomala L.)* is a perennial herbaceous plant of the peony family (Paeoniaceae Rudolphi). A rare species in Kazakhstan, with a declining population.

The roots have a strong turpentine smell, contains starch, sugars, tannins. Dried roots are used as

a spice. In folk medicine, roots have long been used in the treatment of gastrointestinal diseases, malignant tumors, tuberculosis, and malaria. The peony is highly appreciated as an ornamental and honey-bearing plant. Useful properties of the dodging peony, as well as collecting flowers in bouquets was the first reason for their decline in numbers. Recently, the number of peony dodging has been sharply It is being reduced due to the mass collection in order to extract the valuable mushroom "yartsa gunbu" or "cordyceps Chinensis". Chinese cordyceps is extracted from the roots of the peony and smuggled to China for further use in folk medicine.

The most optimal ecological conditions are observed in forest phytocenoses, Paeonia anomala L. It is found in almost all forest clearings of the mountainous Western and Southern Altai among other coarse grasses. He is accompanied by: Aconitum leucostomum Worosch., Delphinium elatum L., Rhaponticum carthamoides (Willd.) Iljin., Thalictrum flavum L., Dactylis glomerata L., Lamium album L., Mount sibirica L., Chamaenerion angustifolium (L.) Scop., Orobus luteus L., Bupleurum aureum Fisch., B. multinerve DC., Galium boreale L., etc.

Siberian Altai (Sibiraea altaiensis (Laxm.) Schneid.) is a shrub of the Rosaceae family (Rosaceae Juss.). A rare species, endemic Altai, a tertiary relic, is listed in the Red Book.

The leaves are sometimes used as a substitute for tea, and in folk medicine in the treatment of fever, liver diseases (hepatitis) and the cardiovascular system. Sibirka is a spectacular ornamental plant. It is very attractive not only during the flowering period, but also in autumn, when the leaves turn bright crimson. It is protected in the Katon Karagai State National Park.

We found quite large thickets of Siberian Altai on the Sarymsakty ridge of the Southern Altai. The study of the first population of Siberian Altai was conducted in the thickets of Siberian Altai on the right bank of the Taldy Bulak river at an altitude of 1816 m above sea level.

The shrub layer is dense, well–developed. From shrubs – Sibiraea altaiensis, Pentaphylloides fruticosa (L.) O.Schwarz, Salix sajanensis Nas., Spiraea media Franz Schmidt. From a variety of grasses there are: Polygonum viviparum L., Geranium pratense L., G. divaricatum Ehrh., G. sibiricum L., Lamium album L., Galium verum L., G. boreale L., Myosotis palustris (L.) L., Thalictrum flavum L., Veronica longifolia L., Ligularia altaica DC, Alchemilla sibirica L., Papaver nudicaule L., Polygala hybrida DC., Valeriana dubia Bunge., Polemonium caeruleum L., Vicia tenuifolia Roth, Campanula glomerata L., Trollius altaicus C.A.Mey., Dracocephalum ruyschiana L., Dracocephalum integrifolium Bunge et al.

The second large population of Siberian Altai was found on the slopes of the southern and southeastern exposure of Mount Shubartos ridge Sarymsakty of the Southern Altai at an altitude of 1870 m above sea level.

edebur almond (Amygdalus ledebouriana Schlecht.) is a shrub of the Rosaceae family (Rosaceae Juss.). A rare, endemic species, listed in the Red Book of Kazakhstan. Earlier, we discovered and described new habitats of Ledebur almonds on the Naryn ridge of the Southern Altai. In 2019, habitats of this species were discovered in the eastern part of the Kalbinsky ridge in a gorge, 20 km from the village Shubarkayyn. The species forms continuous thickets with an area of about 1.5 hectares.

I just have a thick shrubby growth from the amygdala ledebouriana Schlecht., Rosa acicularis Lindl., Lonicera tatarica L., melanocarpic dogwood Lodd., Daphne altaiskaya Pal. Of the herbaceous, Saussurea elata Ledeb., Lavatera thuringiaca L. are most often found., Phlomoides tuberosa (L.) Moench., Artemisia absinthium L., A. vulgare L., Thalictrum collinum Wallr., Lilium pilosiusculum (Freyn) Miscz, Oregano L., Galium verum L., Medicago falcata L., Thermopsis lanceolata R. Br., Bell glomerulus L., St. John's wort L.

The high bitterness is Saussurea elata Ledeb. – a perennial herbaceous plant of the Asteraceae family (Asteraceae Dumort). It is endemic to a wide distribution. In 2019, the habitats of the species were discovered in the eastern part Kalbinsky ridge, 20 km from the village of Shubarkayyn. The species grows among a dense thicket of shrubs from Amygdalus ledebouriana Schlecht., Rosa acicularis Lindl., Lonicera tatarica L., Cotoneaster melanocarpa Lodd., Daphne altaica Pall. High bitterness is one of the promising sources for the creation of modern medicines, and therefore, the type It requires careful study of the chemical composition and biological activity of the raw materials.

Thus, finding new habitats of useful plants of this category is necessary to preserve natural populations of species, control their locations, and monitor the viability of species. In order to preserve valuable useful plants in natural populations, as well as continue to use them, it is necessary to continue the search for new habitats, prohibit the collection of species by the local population, carry out propaganda among the population about the protection of species, and apply the latest reproduction technologies.

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Pharmaceutical Sciences

ANALYSIS OF THE POST-COVID SYNDROME SYMPTOMS ACCORDING TO THE PATIENT SURVEY

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Abstract. In order to study the real picture of the disease and identify the symptoms of post-COVID syndrome, a survey was conducted among visitors to a medical institution, including those who underwent a rehabilitation program for recovery after the disease. It was determined which symptoms are most commonly encountered by patients.

Key words: post-COVID syndrome, rehabilitation, questionnaire

In Ukraine, almost 5 million people have been infected with COVID-19, and more than 105,000 of them have died. Post-COVID syndrome (PCS) is a complex of consequences of COVID-19 coronavirus infection manifesting in the form of pathological conditions and having a long course (fatigue, irritability, nervousness, insomnia, progression of chronic diseases) [1, 2]. According to the literature, a significant proportion of patients after recovering from acute COVID-19 infection have symptoms for a long time - up to 12 weeks or more [5]. Undoubtedly, these disorders have a negative long-term impact on health, so they require in-depth research in health care management and information on approaches to the PCS rehabilitation program [3, 4].

In order to study the process of the disease and identify the symptoms of ACLs, a survey was conducted among visitors to a health care facility (of regional significance) in Kharkiv and Kharkiv region, who visited the medical center with various symptoms after recovering. Using a Google form, 85 responses were received from respondents who had undergone a rehabilitation program after COVID-19.

It was found that the vast majority of respondents were women (67%). The age distribution of respondents is dominated by patients aged 45 to 60 years, and least of all by those under 20 years.

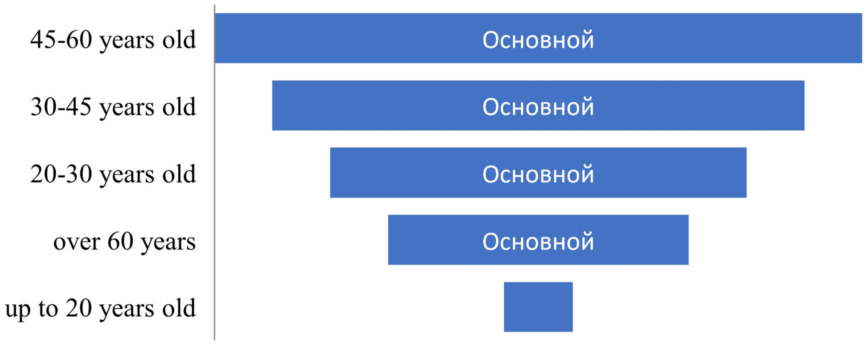

Fig. 1. The structure of the distribution of respondents by age

The ranking of respondents by types of activity is shown in fig. 2. These are mostly young people aged 30 to 45 (Fig. 1), who lead an active lifestyle. Employees of educational institutions make up the majority – 27 %. Employees of health care institutions and the service sector occupy the same importance – 13 % each.

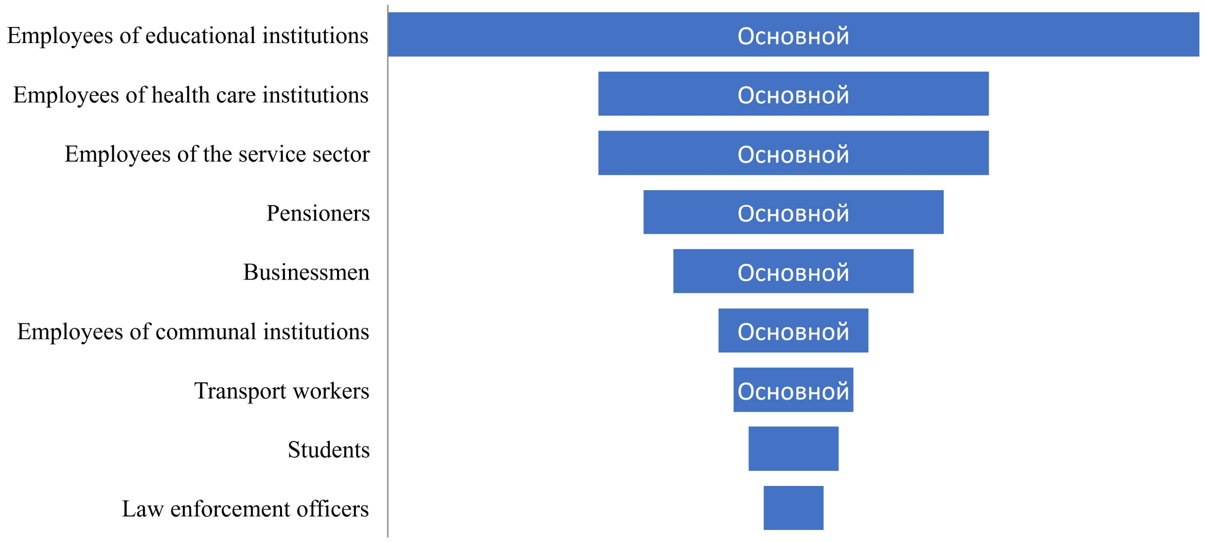

Fig. 2. Distribution of respondents by type of activity

The COVID-19 virus is mutating and Ukrainians are getting sick again [3, 4]. This is confirmed by the conducted survey – the majority of respondents (59.1 %) noted that since March 2020 they have been sick with the coronavirus disease at least once, a third of them – 2 times, and 4.5 % even 3 times or more (Fig. 3). Also, based on the results of the questionnaire, it can be concluded that half of the respondents had PCS after the illness (51.2 %).

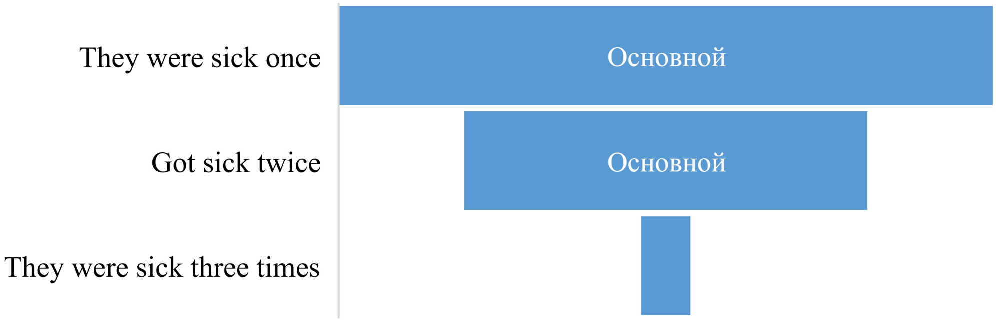

Fig. 3. Ratio of respondents by the number of times they were sick COVID-19

A third of respondents (34.1 %) claimed that the symptoms of loss of smell and taste only partially disappeared after recovery from the underlying disease of COVID-19. Then the following symptoms developed: rapid fatigue, loss of work capacity, irritability, insomnia, cognitive disorders and progression of chronic diseases (diabetes, cardiovascular diseases). In general, according to literary sources, more than 50 different diseases of organs and systems have been described in the post-epidemic period. In our case, the following was found (Fig. 4). It should be emphasized that the respondents were not able to accurately identify PCS, but the symptoms they reported indicated that their health did not recover quickly enough, and the complaints of the above symptoms continued for some time.

Half of the respondents immediately after the disease or a month after the disease developed symptoms of PCS, which were mainly manifested by chronic fatigue (59.0 %), muscle weakness (50.0 %), problems with sensory organs (45.5 %), headache (34.1 %) and cough (29.5 %) (Fig. 4).

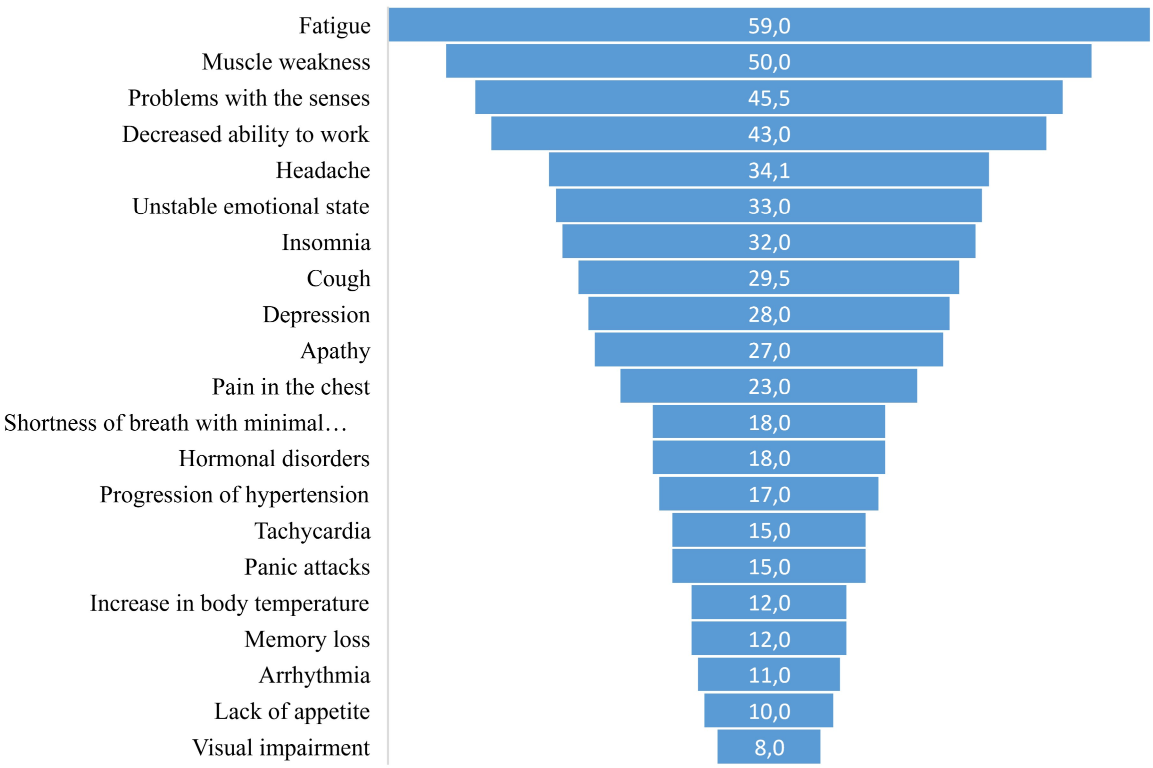

Fig. 4. The main negative manifestations of PCS according to respondents

According to the survey, 43.2 % of respondents treated themselves without going to a doctor or pharmacist and did not take any medical measures to alleviate their symptoms, which could lead to the development of PCS. Of those who sought medical care, 37.5 % used "Amixin IC" as an antiviral drug, which, among other things, is an immunomodulator and has proven to be quite effective in the treatment of viral hepatitis, herpes, cytomegalovirus infection, and influenza virus, whose symptoms are similar to those of COVID-19.

In March 2020, a global pandemic was announced. Many countries have taken unprecedented quarantine measures that have affected the global economy and people's lives. Lockdowns and mask regimes were introduced, borders were closed, and air travel between countries was interrupted. The vast majority of respondents (40.9 %) used a protective mask for 3-4 hours a day, one third (31.8 %) for about an hour, and the rest for 6 hours or more (mostly healthcare and service workers). The time spent using one mask also varied significantly. As a rule, the mask was changed every day (even several times a day), but, unfortunately, there were those who wore the same mask almost constantly. As a result, 35 % of respondents had facial skin problems (these are people who changed their masks no more than once a week).

Mass vaccination dramatically reduced mortality and eventually stopped the pandemic. Regarding the severity of the disease, a third of respondents (35.1 %) said that symptoms lasted 2 weeks, and respondents had not been vaccinated against the disease before. For those who received the full course, symptoms lasted a maximum of 1 week or even a few days.

Thus, after analyzing all the answers, we can conclude that most people have experienced such a problem as ACLs, but, unfortunately, most of them do not try to eliminate its symptoms and have not sought medical help. In addition, skin irritations and rashes due to wearing a mask are a hot topic, as respondents, according to the survey, have not adjusted their skin care routine and are somewhat dismissive of regular mask replacement.

CONCLUSIONS

The features of the course of PCS are considered according to 85 questionnaires of respondents who underwent rehabilitation after COVID-19 in a medical institution (of regional significance) in Kharkiv and Kharkiv region. Most people have faced such a problem as PCS, but unfortunately, most of them do not try to eliminate its symptoms and have not sought medical help. The age distribution of respondents is dominated by patients aged 45 to 60. Ranking the respondents by their occupation revealed that among the patients, educational workers make up the majority (27 %). Half of the respondents had symptoms of PCS immediately after the illness or a month after it, which were mainly manifested by chronic fatigue (59.0 %), muscle weakness (50.0 %), problems with the senses (45.5 %), headache (34.1 %), and cough (29.5 %). The vast majority of respondents (40.9 %) wore a protective mask for 3-4 hours a day, and 35 % of them developed skin irritation and rashes due to wearing the mask, as they had not adjusted their skin care routine and were somewhat negligent about changing their masks regularly. The results of the study suggest which medications and other measures can eliminate them or at least improve the patient's condition.

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Анотація. З метою вивчення реальної картини захворювання та виявлення симптомів постковідного синдрому було проведено опитування серед відвідувачів медичного закладу, в тому числі тих, хто проходив реабілітаційну програму відновлення після хвороби. Було визначено симптоми, з якими найчастіше стикаються пацієнти.

Ключові слова: постковідний синдром, реабілітація, опитування

Literature

Orhan Pamuk's novel "The Red-Haired Woman" within the framework of intertextuality theory

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Keywords: intertextuality, Orhan Pamuk, Post-structuralism, Sophocles' "Oedipus Rex" Ferdowsi.“Shahnameh“

Abstract: Intertextuality has become integral to postmodern literature. The term "intertextuality" was first introduced by Julia Kristeva, a poststructuralist theorist, in the latter half of the 20th century during the formation of poststructuralism. Post-structuralism posits that a text does not exist in isolation; rather, each text is intricately connected to others, forming a "global text."Since the 1960s, Julia Kristeva has continued to develop this theoretical framework. Roland Barthes expanded upon her research, while Michael Rifater proposed an alternative theory that integrates the reader into the concept, framing intertextuality as a product of reader perception.When analyzing intertextual relations within the novel "The Red-Haired Woman," one can discern traces of other texts interwoven into its fabric. The novel is distinguished by its diverse intertextual connections, which are not merely peripheral but fundamental to its narrative and thematic structure. "The Red-Haired Woman" blends classical myths, historical narratives, and religious texts.The narrative draws heavily from Sophocles' Greek tragedy "Oedipus the King" and Ferdowsi's monumental Eastern epic "Shahnameh." Orhan Pamuk reinterprets these narratives through a contemporary existential lens.The Oedipus myth centers on patricide and self-discovery, where Oedipus's unwitting killing of his father determines his tragic fate and identity. Similarly, patricide is a central theme in Ferdowsi's "Shahnameh," where Rostam's accidental slaying of his son, Sohrab, underscores the inexorable force of destiny."The Red-Haired Woman" engages in a dialogue with these texts, aiming to reconcile two distinct cultural and intellectual realms. The author employs this dialogue to explore a convergence of ideas, symbolizing the dichotomy between East and West in intellectual and cultural contexts.

Orhan Pamuk has emerged as an emblematic figure in modern literature, occupying a significant place in the annals of Turkish literary history. Renowned for his intricate narratives and profound exploration of cultural identity, Pamuk consistently delves into the complexities of human experience. His novel "The Red-Haired Woman," published in 2016, exemplifies this through its synthesis of mythological motifs, legends, religious texts, and symbolic artistic forms, all orchestrated within the framework of a father-son conflict."The Red-Haired Woman" is a quintessentially postmodernist work, employing various hallmarks of postmodern fiction. The narrative is heavily constructed through intertextual connections, a concept integral to postmodern literature. Intertextuality, a term and theoretical construct introduced by poststructuralist theorist Julia Kristeva in the latter half of the 20th century, posits that texts do not exist in isolation. Rather, they are inextricably linked to other pre-existing texts, collectively forming a "global text."Since the 1960s, Kristeva has been instrumental in developing this theoretical framework. Her insights were expanded upon by Roland Barthes, whose research furthered the understanding of intertextuality. Michael Riffaterre diverged from Kristeva's theory, integrating the reader's perception into the intertextual dynamic and presenting it as a subjective experience.The Russian literary theorist Mikhail Bakhtin significantly contributed to the evolution of the intertextual concept with his notion of "dialogism." Bakhtin's dialogism underscores the relational nature of words and texts, which are invariably in dialogue with one another, echoing and reshaping meanings across different contexts. According to Bakhtin, every literary expression is infused with the resonance of other voices and discourses, reflecting the inherently social nature of language. The meanings of words emerge from their interactions with various socio-linguistic environments, leading to a continuous interplay of interpretations and values.Julia Kristeva reinterpreted Bakhtin's dialogism, expanding its scope and introducing a nuanced dimension to the concept. She argued that intertextuality is a fundamental criterion of literariness. For Kristeva, texts are created at the intersection of other texts, each composed of a mosaic of quotations, transformed and absorbed from other works. She posits that discourse, as a product of dialogic interaction, manifests through the continuous exchange and transformation of texts, resulting in an ongoing process of recontextualization and meaning-making. This perspective positions the text as a dynamic entity, perpetually interacting with and reshaping fragments of prior narratives.Within this framework, intertextuality forms an autonomous structure, independent of a reader's ability to trace the origins of a text. This inherent anonymity bestows the text with its intertextual nature. Kristeva contends that texts inherently exist within a network of other texts, constantly referring readers to external sources.Roland Barthes, sharing Kristeva's views, articulated that a text is essentially a process of rewriting existing discourses. Barthes maintained that no text introduces entirely new ideas; rather, it perpetuates its presence through perpetual intertextual engagement, even after its creation. For Barthes, a text is never a finished product but a site of continuous interaction with other texts, thereby maintaining a dialogue with society and history through a network of quotations. He argued that textual production is an unceasing process, with each text embodying elements from various others, subject to semantic shifts and transformations in the creation of new narratives. Thus, all texts are inherently intertextual, forming an open structure that perpetuates itself, akin to a fabric being woven anew from existing threads.Barthes extended this idea by suggesting that the interpretation of texts is not confined to those preceding it but also includes subsequent texts, based on the principles proposed by Claude Lévi-Strauss. Barthes remarked, "According to Lévi-Strauss, the Freudian interpretation of the Oedipus myth becomes part of the Oedipus myth itself: we must read Sophocles as referencing Freud, and Freud as referencing Sophocles." This approach views texts as dynamic wholes, continually transmitting meaning across time, where different writings intermingle and engage in a complex interplay.In analyzing the intertextual relationships within "The Red-Haired Woman," one can discern traces of various other texts throughout its narrative. The novel is rich with intertextual connections, which are not merely peripheral elements but central to its narrative and thematic architecture. Pamuk's work intricately weaves together classical myths, historical accounts, and religious texts, creating a tapestry of intertextual references that form the core of the novel's structure and meaning.The novel is based on Sophocles' Greek tragedy "Oedipus the King" and the seminal Eastern epic "Shahnameh" by Firdous. In this work, Orhan Pamuk offers a reinterpretation of these narratives in the context of contemporary existential issues.The myth of Oedipus depicts a tale of patricide and self-discovery. At its core, Oedipus's fatal act of killing his father determines his destiny and identity.Similarly, the theme of patricide resonates in Firdous's "Shahnameh". In this epic, Rostam's unwitting slaying of his son, Zurab, unfolds as a tragedy of immense proportions, highlighting the inexorable force of fate."The Red-Haired Woman" engages in a dialogue with these texts, aiming to reconcile distinct cultural and intellectual concepts between East and West.Intertextuality in Pamuk's work can be categorized into two forms. Firstly, transforming an intertext into a secondary text involves the author challenging, obscuring, or surpassing the formal characteristics of the original, thereby creating a new narrative. Secondly, intertextuality manifests through constant exchanges, coexistence, quotations, allusions, and references between texts.Pamuk mirrors King Oedipus and "Shahnameh" in "The Red-Haired Woman". The novel intertwines various themes and motifs with its main and intertextual narratives: destiny, paternal search, abandonment, incestuous relationships, patricide, and motifs of curiosity. While the treatment of some motifs differs from their counterparts in the emulated texts, the central themes remain unchanged.

The protagonist of "The Red-Haired Woman", Jem, encounters Sophocles' "Oedipus Rex" for the first time while working at a bookstore, reading a summary entitled "Your Dreams, Your Life" by Sigmund Freud, a theorist of the Oedipus complex in psychoanalysis. This summary explores Oedipus's desire to kill his father. Similarly, Jem's own life parallels Oedipus in the context of an incestuous relationship.In "The Red-Haired Woman", Jem's first love affair is with the titular character, Guljihan, who happens to be the woman his father had an affair with years ago, unbeknownst to Jem. This mutual ignorance of their partners' true identities serves as a striking similarity between the two protagonists.

Regarding the theme of childbirth, while Oedipus knowingly fathers a child with his wife, not realizing she is his mother, Jem remains unaware of his own son's existence, paralleling themes present in "Shahnameh". In a similar vein to Rostam, Jem fathers a child from a fleeting encounter.Both "Oedipus the King" and Firdous's "Shahnameh" underscore the inevitability of fate in tragic narratives."The Red-Haired Woman" contemplates the factors influencing destiny: is one's fate predetermined at birth, shaped by their first love, paternal authority, or the influence of myth? Can individuals evade their destined paths?In "Oedipus Rex", the motif of fate affects individuals who become unwitting victims. Laios, Oedipus's father, strives desperately to avoid his fate but fails. Similarly, Oedipus himself is unable to escape his preordained destiny, despite his efforts to do so. Jocasta, Oedipus's mother, suffers dire consequences for attempting to elude her fate.

In "The Red-Haired Woman", the theme of fate intertwines with the novel's character relationships. Jem's destiny shifts when his father departs, prompting Jem to seek employment and a new paternal figure. This quest leads him to Master Mahmud, whom he deeply admires and idealizes as a father figure, constantly comparing him to his absent father. Jem's emotional connection with Mahmud is expressed as follows: "The first time I saw him, he was smoking a cigarette during lunch. Tall, handsome, and slender like my father, yet unlike my father's calm smile, he exuded an air of seriousness" (Pamuk, 2017, 13). Jem perceives Mahmud as a protective father figure, while Mahmud reciprocates by viewing Jem as his own son. Jem articulates this sentiment in the novel: "I was a child; he was my friend, but more than that, my father. I found a father in him" (Pamuk, 2016, 19).Mahmud, the secret of the master-disciple relationship lay in its resemblance to a father-son bond. Each master, akin to a father figure, bore the responsibility to love, protect, and impart wisdom to his apprentice. Conversely, the apprentice's duty was to diligently study the master's work, heed his teachings, and obey his guidance (Pamuki 2017, 20).Jem's lack of a father parallels that of Oedipus. Jem's quest for a surrogate father reflects his yearning to mature, rebel against his paternal figure, and thereby forge his own unique identity. Similar to the Oedipus myth, the journey involves first encountering the father, then rebelling and potentially causing his demise in order to assert oneself.In the novel's latter part, Jem transitions from the Western mythical narrative to the Eastern, embodying the heroism of Firdaus. Having played the son in the initial act, akin to Oedipus, he assumes the role of Rostom in the subsequent act, becoming an Eastern authoritarian father figure. This shift encapsulates the ambiguity in Jami and Enver's search for either Eastern or Western identities.Enver's relationship with his son mirrors that of Rostom and Zurab. Similar to Zurab, Enver discovers his father's existence much later in life, yet he also continues the lineage of the Oedipal narrative. Enver, like Jem, grows up without paternal guidance and grapples with fatherlessness for years. Tragically, Enver accidentally kills his father during their reunion, paralleling Oedipus's fate albeit under different circumstances. While Oedipus unknowingly killed his father, Enver's act, though accidental, mirrors the tragic outcome. Oedipus blinds himself as self-punishment for failing to see the truth, echoing Jem's metaphorical blindness in "The Red Woman" where he fails to acknowledge his son. Enver's remark during their confrontation underscores this conflict: "When I'm angry at you, I want to gouge your eyes out. The most unbearable thing about fathers is their constant scrutiny—I want to be angry. It's unbearable when they're always watching you" (Pamuki 2017, 204). Jem believes he can only assert his identity by figuratively blinding his father: "Do you know why? Because then I will preserve my identity, write my own words, and carve out my legend" (Pamuki 2017, 205). Jem's death scene poignantly parallels the Oedipus myth, as Enver unwittingly assumes the role of Oedipus after slaying his father.Enver occupies a middle ground between Western individualism and Eastern conformity, embodying a complex hybrid identity. The novel's protagonists adopt multiple masks and identities throughout their journeys.A parallel is drawn between Oedipus's father, Laios, and Jem's father figure, Aquinas. Both heroes' destinies hinge on the initial actions of their fathers, framing the narrative around themes of patricide.The theme of patricide, central to "Oedipus the King," is treated with nuanced differences in the novel. Jem's act of killing his father mirrors Oedipus's deed, yet with a crucial distinction: Oedipus commits the act unwittingly, whereas Jem's intention remains ambiguous. Jem often ponders whether his actions were truly accidental: "How accidental was the fall of the bucket?" (Pamuki 2017, 91).Both legends explore the intricate dynamics between fathers and sons, culminating tragically in death. "Oedipus the King" revolves around patricide, while "Rostom and Zurab" centers on filicide.Another similarity between Oedipus and Jem surfaces in their quests for truth. Both heroes embark on quests to uncover past sins. Oedipus relentlessly pursues the cause of Thebes' plight, gradually unraveling his own culpability in the process. Similarly, Jem's insatiable curiosity drives him to uncover the fate of Master Mahmud, whom he abandoned years ago. The lingering uncertainty over his role in Mahmud's fate torments Jem with remorse and guilt.The novel also parallels Teiresias and Aisha. Teiresias, the seer in "Oedipus," holds crucial knowledge about the protagonist's fate from the outset. Similarly, Jem's wife, Aisha, assumes the role of an informant, having studied "Oedipus Rex" with Jem for years. Aisha's revelation that Enver is Jem's son echoes Teiresias's prophecy, forewarning of potential patricide: "If this bastard is your son, he will kill you! Because he is a pro-Western rebel..." (Pamuk 2017, 196). Aisha, like Teiresias, becomes the harbinger of truth in the narrative. Guljihan assumes a role akin to Tahmine and Jocaste, contributing to the Oedipal complexities in Jem's life as his father's lover.The novel's postmodern style is further enriched by narrative shifts. Enver unexpectedly emerges as the novel's author, guided by his mother, a red-haired woman, injecting a postmodern twist into the story. The characters fluidly transition between roles, embodying both Eastern and Western cultural identities and mythic archetypes."The Red Woman" intricately weaves references to "Oedipus the King" and "The Shahnameh," alongside divergent mythic elements, illustrating the power of intertextuality in literature. Through this interplay, the novel constructs a multi-layered narrative that resonates on numerous levels.

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Political Studies

THE IMPACT OF OIL PRICES ON THE POST SOVIET COUNTRIES ECONOMY AFTER 2010

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Abstract: Since 2010, fluctuations in oil prices on the global market have significantly impacted the Russian economy. Russia's economy is heavily reliant on the export of natural resources, particularly oil and gas. The changes in oil prices during these years have led to substantial shifts in the country's economic performance. From 2010 to mid-2014, oil prices on the global market were at high levels, with the price per barrel averaging around 100 USD. These high prices provided a substantial revenue source for Russia's state budget and supported the country's economic growth (Baumeister, C. and Kilian, L.,2016). During this period, taxes and duties from oil made up a large portion of the state budget. These revenues were directed towards infrastructure projects, public services, and social expenditures, creating stability in the economy. As a result of high oil prices, foreign investments in the country increased, financial markets stabilized, and the ruble strengthened. From mid-2014 onwards, oil prices began to decline sharply, falling to as low as 30 USD per barrel by early 2016. During this period, the decrease in oil prices significantly reduced Russia's export revenues and dealt a substantial blow to the state budget. The budget deficit increased, leading to an economic crisis.

Kazakhstan, Turkmenistan, Azerbaijan and Uzbekistan have a high degree of export specialization in the energy sector.

The Azerbaijani economy is very sensitive to oil prices, given that oil exports exceed 90% of the total exports. This is the reason why Azerbaijan feels a stronger effect compared to the rest of the oil exporters in the CCA region. The growth rate in Azerbaijan fell by 1.5% in 2015. Azerbaijan economy gears GDP growth at 3% in 2015 and projected at 2.8% in 2016 (Aleksandrova, S.,2016).

Kazakhstan's13 fuel export is above 60% of the total exports. Economic conditions aggravated with a sharp decline in oil prices and decrease in trade with the Russian Federation. Kazakhstan economy development recovered gradually from the oil price external shock, The Kazakhstan government succeeded to neutralize the GDP drop down by the increase of public investments and the transfer of assets of the National Fund to the state budget. Uzbekistan's economy grew by 7% in 2015, but it is lower when compared to 8.1% in 2014 (Aleksandrova, S., 2016).

The reduction in oil revenues and the decrease in capital inflows resulted in a significant depreciation of the ruble. This depreciation increased import prices and led to a rise in inflation levels. In connection with the Ukraine crisis, the sanctions imposed by Western countries also negatively impacted the Russian economy, alongside the decline in oil prices. Although oil prices somewhat recovered after 2016, they did not return to previous levels (Russian Federal State Statistics Service, 2024). Russia's oil revenues gradually increased, but the necessity for the country to diversify its economy became apparent. The Russian government began taking steps to diversify the economy. To reduce dependence on oil, investments were increased in the agriculture, industry, and technology sectors.

As it was mentioned by the researchers and in literature materials, Russia is one of the world's leading producers and exporters of oil and natural gas. Oil and gas sector products accounted for more than 65% of Russian exports before the fall in mineral prices in 2015, and made up more than half of Russian export in 2017–2018 (Balashova, S., & Serletis, A.,2020). Balashova and colleagues noted that Russia's main competitors in the global oil and refined oil market are Saudi Arabia and other OPEC countries, note that the United States has taken the lead in this market. Among studies on the impact of oil prices on macroeconomic and financial indicators in Russia, it is worth to mention papers on the impact of oil prices on the Russian stock market (Balashova, 2018; Hayo & Kutan, 2005; Korhonen & Peresetsky, 2016; Peresetsky, 2011).

As a result of the partial recovery in oil prices and the economic reforms implemented by the government, economic indicators gradually improved. Public debt decreased and the ruble stabilized. In recent years, oil prices have been subject to certain fluctuations, with geopolitical factors influencing these changes. Russia remains a major player in the oil market, but it is striving to reduce its economy's reliance on oil (Gurvich, E. and Prilepskiy, I., 2015). Changes in the global energy market, particularly the rise of renewable energy sources, could impact the long-term prices of oil. The Russian government continues to pursue strategies to reduce dependence on oil revenues and increase investments in other sectors of the economy. Since 2010, changes in oil prices have had a significant impact on the Russian economy. These fluctuations have provided important lessons for the country's economic policies and the need for future economic diversification. The Russian government has intensified its efforts to reduce dependence on oil revenues through diversification initiatives; however, the oil sector still remains a crucial element of the country's economy (Kudrin, A. and Gurvich, E., 2014).

Keywords: oil sector, government strategy, foreign investments

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Sociological Sciences

Standard of living as a criterion of socio-economic stratification of Kazakhstani society

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The formation of a market economy in the post-Soviet republics is accompanied by a transformation of the main elements of the social system and a transition to a new socio-economic system. The global economic crisis in the countries that emerged on the territory of the former USSR led to a significant decline in production volumes in all sectors, a low level of capital accumulation, aging production potential, a long period of time for the formation of new forms of ownership and market institutions, high levels of inflation and unemployment, low levels of efficiency functioning of the economy [1].

The consequence of the economic crisis and market transformations was a decrease in the standard of living of the population and increased social differentiation of society. The relevance of the work carried out by the author in 1994-2024. The research lies in the fact that its subject determines the content of one of the most important aspects of the transformation of modern society in a post-Soviet state, which is the Republic of Kazakhstan. Analysis of the content and direction of social differentiation of Kazakhstani society, changes in the standard of living of the population represents an economic and social problem, the scientific solution of which provides a systematic understanding of the entirety of the ongoing social transformations.

The development of post-Soviet republics, which includes the Republic of Kazakhstan, is characterized by certain patterns, first of all, such as: the formation of a national economy and social infrastructure of a sovereign state; priority development of market relations based on various forms of ownership; changing the role and mechanism of government regulation; changing the territorial organization of productive forces and reforming the structure of the national economy, oriented towards integration into the world community; a significant increase in the role of services; formation and development of small and medium-sized businesses; changes in the quantitative and qualitative characteristics of the labor market; global economic crisis; the presence of significant differences in the technological level of production and the low competitiveness of finished products on the world market; bankruptcy of many large enterprises; formation of market infrastructure; population migration outside and within the country [2].

An integral part of these transformations is the differentiation of the population by standard of living and the transformation of the social structure of Kazakhstani society. The study of this topic indicates that in the post-Soviet period there have been significant changes in the level and quality of life of the population, disproportions in the standard of living of individual social groups and segments of the population, regions of the country, urban and rural populations [3].

Processes of social stratification and differentiation are actively occurring, social mobility is increasing, class-forming criteria characteristic of a transition economy are emerging and operating, new social formations are emerging, the proportion of poor and low-income segments of the population is increasing, processes of marginalization are developing, and negative trends in socio-demographic processes have emerged.

Determining the content of these processes becomes a necessary condition for understanding the current stage of social development, developing and implementing effective economic and social policies in the country, aimed at improving the standard of living of the population. The dynamics and scale of ongoing changes and imbalances in the standard of living of the population determine the scientific significance of further development of the concept of the standard of living of the population, social differentiation and stratification of Kazakhstani society [4].

Among the significant factors determining the relevance of this problem is the presence of various economic and sociological approaches to the study of the research topic. A generalization of the available literature and a comparative analysis of theoretical directions related to the study of various aspects of the problem make it possible to identify and clarify the most significant characteristics of this socio-economic phenomenon.

Systematization and theoretical analysis of diverse sources, research and analysis of the influence of economic and social transformations, modern factors of globalization on the standard of living of the population of the Republic of Kazakhstan serve as the basis for identifying the main trends in social differentiation and stratification of modern Kazakh society. The development of this problem is based on the study and generalization of a large amount of statistical and sociological material provided by the relevant information services, as well as sociological research conducted by the author in the process of completing his dissertation work.

The scientific significance of the problem under study is also determined by the fact that currently the social differentiation of society and the standard of living of the population are a criterion for the effectiveness of economic and social policies, a factor influencing the political preferences and orientations of various groups and strata. The changes in the standard of living taking place in the post-Soviet republics and the strengthening of social differentiation still indicate a weak dependence of the political preferences of various social communities and the standard of living of the population and minor changes in the political mentality of the population of the Republic of Kazakhstan [5].

These issues were actively studied during the Soviet period, are being studied in Russian and foreign scientific literature, and in recent years in Kazakhstan, since they are essential for understanding and predicting modern social processes. Analysis of the problem of disproportions in the standard of living of the population and social differentiation constitutes a relatively independent area of theoretical research and requires an integrated approach based on the synthesis of economic, sociological, political science and other knowledge [6].

It is worth highlighting the works whose authors develop the methodological foundations for studying the standard of living, determine the relationship of the category “standard of living” in the system of other socio-economic categories, analyze the criteria and system of indicators for measuring the standard of living of the population. This direction in the scientific literature is represented by the works of L.I. Abalkin, V.G. Alekseeva, V.N. Bobkov, V.I. Begin, V.S. Vishnevsky, Z.T. Golenkova, G.V. Dymnov, T.I. Zaslavskaya, M.S. Kagan, A.I. Levin, V.F. Mayer, A. V.Margolis, P.S.Maslovsky-Mstislavsky, L.S.Meshanilova, M.A.Mozhina, M.V.Pokrovskaya, N.V.Pochekina, N.M.Rabkina, V.V.Radaev, A. S.Revaikin, N.M.Rimashevskaya, V.M.Rutgaiser, M.N.Rutkevich, R.V.Ryvkina, R.F.Starkov, L.I.Timurova, Zh.T.Toshchenko, N.P. Fedorenko.

Developing the problem of studying disproportions in the standard of living of the population of Kazakhstan involves the use and analysis of reference materials and publications. The initial sources for work on the dissertation were official statistics of the Republic of Kazakhstan: population censuses, annual statistical collections, household survey materials, reference materials, reports on human development (UN Development Program), materials from sociological surveys of the population and others [7].

Overcoming disparities in the standard of living of the population presupposes the need to manage social processes, assess the ongoing economic and social policies from the point of view of changing living standards and reducing poverty in the country. Various aspects of managing social processes and the interaction of different levels of government in this process are studied by sociologists, economists, political scientists, philosophers, lawyers, and psychologists.

In general, many scientific works have been devoted to the study of the standard of living of the population, social stratification and differentiation of society according to the level of material well-being, and the management of social processes, reflecting the high level of development of these issues, mainly abroad.

However, in the Republic of Kazakhstan, issues related to changes in the standard of living of the population, differentiation of Kazakh society in terms of living standards under the influence of economic and social transformations carried out in the republic in the process of forming a market economy require further development. A mechanism for overcoming disproportions in the standard of living of the main social strata of the population and managing this process requires its development. All these questions are reflected in the dissertation.

The problem of the research is to develop effective mechanisms to overcome the existing and growing disparities in the standard of living of the population of the Republic of Kazakhstan [8].

In 2022-2024 elements of the mechanism for overcoming disproportions in living standards were studied, 540 people were interviewed, representatively reflecting the social structure of the population of the republic. In 2024, the features of social stratification and social mobility of Kazakh society were studied, 401 respondents were interviewed. In 2022-2023 Social tension in Kazakhstan and the factors determining it were studied; 632 people were interviewed.

The standard of living of the population is a socio-economic category that determines the achieved level of consumption and accumulation of material and spiritual goods in their quantitative assessment. This assessment requires the development of a system of indicators of living standards and methods for measuring them.

Social and economic transformations in Kazakhstan over the past decade have led to a sharp decline in the standard of living of a significant part of the population, deep differentiation in income levels and increased social tension. About 60% of the republic's population have per capita incomes below the subsistence level. The current situation in the republic requires the development of a set of measures to improve the economy and social protection of the population [9].

During the transition period, the following social structure of the population developed in Kazakhstan: 6.0-8.0% are the political, economic and intellectual elite of the republic; 11.0% emerging middle class; the remaining 4/5 of the population are close to and below the poverty line. Given the inability of the state to provide effective social assistance to the majority of the population and the weakness of the official sector of the economy, the importance of the shadow sector as a social shock absorber increases.

There are direct and inverse connections between the standard of living and social tension. On the one hand, a decline in the living standards of the population causes an escalation of social tension, on the other hand, an increase in social tension causes an outflow of capital abroad, a deterioration in the investment climate, an increase in the crime situation and, as a result, a deterioration in people's living conditions [10].

The central link in managing social processes in Kazakh society is the mechanism for regulating the existing imbalances in the standard of living of various population groups. This mechanism is based on an integrated approach to eliminating imbalances, which includes, along with the use of certain forceful measures, changing general economic conditions, improving legislation, using the positive aspects of the informal sector, forming new value orientations of public consciousness, etc.

The country's quantitative resources are decreasing, discontent is growing, and the simultaneous increase in property differentiation appears to be a contradiction in the process of ongoing reforms, which can lead to social conflicts in society. During global social transformations, when there is a leap from the “changed old” to the “emerging new” face of society, the social structure of society changes and the processes of social mobility in all countries are unique, since they occur under the influence of a system of factors (economic, demographic, political, national-ethnic) [11, 24-25 p.].

According to the Committee on Statistics in the Republic of Kazakhstan in 2022 37.0% (2010 - 34.6; 2015 - 43.0%; 2018 - 43.4%; 2019 - 38.5 %; 2020 - 36.4%) of the country's population is below the poverty line. The poverty threshold in the Republic of Kazakhstan is the subsistence minimum, calculated taking into account the per capita count of the population. For those who belong to this layer, the nutritional structure is shifted towards low-quality, low-calorie food products, the possibilities of purchasing clothing are limited, there is practically no opportunity to purchase durable items, and the level of dissatisfaction with life is high; increased social differentiation led to an increase in the share of marginalized people in society - the declassed layer [11, 67-p.].

It includes those who, for various reasons, either did not gain (youth) or lost the opportunity to regain their previous social status. The latter include Kazakh migrants from Mongolia who arrived in Kazakhstan in excess of the established quota, unemployed people of pre-retirement age who have lost the opportunity to return to their previous profession, and persons without a specific place of residence.

A stable sign of upward social mobility in Kazakhstan is corporatism, based on collectivity, sister-in-law, fraternity and kinship. Social structures are often formed from links agreed upon by mutual trust. From the moment of “getting into the cage” (team, group), which moves only “in conjunction”, regardless of the direction of mobility, and being assigned to it, a system of rewards begins to operate.

The study of social mobility is methodologically quite a complex task. Firstly, the population is wary of sociological surveys and in most cases does not report accurate and frank data about their income and property. Only those categories of the population that have low incomes are partially open to the provision of such information [12].

Secondly, information on income and expenses determined by budget surveys of households is also problematic and reliable due to the discrepancy between the indicated incomes and their real amounts (due to untimely cash payments, barter transactions and wages in kind, an increase in the share of income from additional employment, most often unregistered). Thirdly, the Kazakh elite is small in number and, as a rule, is not covered by the procedure of a mass survey based on a sample of the population as a whole. Tax returns are submitted only by government employees; their reliability seems doubtful to us.

Based on the interpretation of the concept of “standard of living” proposed in the work and the analysis of indicators for measuring the standard of living used by different authors, the statistical system of different countries, the author defines the principles and requirements for the system of indicators of the standard of living. It seems appropriate to use a system of indicators combined into six blocks (modules): summary indicators, socio-demographic indicators, level and structure of income, level of consumption of material goods and services, social standards, social differentiation of the population [13].

Depending on the purpose and objectives of the study of the standard of living of the population, various methods can be used: statistical, questionnaire and expert surveys, study of households with additional income estimates, normative method, comparison method, factor analysis and monitoring.

Based on the analysis of the concepts of social stratification and the use of a multidimensional hierarchical approach, a stratification model of Kazakhstani society has been developed, in which, according to accepted stratification criteria (property status and income, position in the power structure, self-identification and social status), social strata are identified: elite (all-Kazakhstan, regional, corporate), middle class, poor.

In the structure of Kazakhstani society, the elite makes up approximately 6-8% of the population and is defined by us as a combination of political, economic and intellectual elites. The main factor determining an individual's position in the elite is the sphere of social activity [14, 81-82 p.].

The elite is characterized by vertical mobility and horizontal mobility (from one elite group to another, more often from economic and scientific to political). In the Republic of Kazakhstan, the middle class is at the nascent stage; the characteristic features of the middle class (economic independence; strong professional orientation, identification with the social function performed; high citizenship and political independence) have not yet been formed.

If we identify average income groups with the middle class, then its share in the social structure of society is about 11.0%. The formation of an economically active middle class in Kazakhstan can be ensured by implementing targeted state policies [14, 193-p.].

In the Republic of Kazakhstan, poverty became the subject of research during the transition period, as it gave poverty other parameters in terms of scale, qualitative structure of the population and territory. The qualitative composition of the poor population reflects the development of downward mobility. We have identified ten groups within the poor part of the population: large families; agricultural workers in depressed rural areas; low-skilled workers; residents of environmental disaster zones; employees of budgetary organizations; students; deprived categories of citizens deprived of social status; unemployed, “new poor”.

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