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MALLEABLE WORKFORCE IN PUBLIC OFFICE

Abstract: *The work values of people provide information about the employees' reactions to other's individuals, events or objects and may also guide behavior.*

This study assessed the work values among the employees of the DPWH CEBU as perceived by the management staff and by the rank and file employees in order to design a human resource development program for the office. It utilized the descriptive method of research with the use of standardized instrument. The statistical treatments used were simple percentage, average, and simple linear regression.

There were no significant differences between the perceptions of the management staff and those of the rank-and-file employees regarding the degree of importance they attached to work values.

Based on the findings of the study, the researcher concluded that generally the DPWH CEBU employees evidently manifested a definite sense of direction in the performance of job assignments through the importance which they attached to work values.

Key words: *malleable, workforce, work values.*

Language: *English*

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INTRODUCTION

In this trend of globalization, we have no choice but to work with different people in the organization that is why it is very essential that each individual is equipped with the appropriate working values and has fully developed his attitude towards changes.

People are the most important among the resources of any organization, whether public or private. Without people, the delivery of basic services is impossible. Without them, the construction and development of infrastructure cannot take place. So important are the people in organizations that social scientists have focused on the behavior, attributes, values, and attitudes of people in organizations. In a public infrastructure department, the professionalism and work attitude of employees has an influence on how customers evaluate service quality, and it can make or break the image of an organization (Huang, 2004). Work values dictate work behavior, set the goals for individuals, and calibrate choices over work hours (Chung et al., 2008). Huang (2005) suggested that in an organization and work environment, the alignment of the members' work values and attitude with an organization can better internalize those values and generate a higher emotional commitment to the organization. Meanwhile, the alignment of the values of individuals and the values of the organization can help individuals identify with the organization. It encourages dedication to the organization and organizational behavior (Dutton et al., 1994).

It is inevitable that members of the workforce will face many challenges in their fields. Finding and keeping jobs, and finding fulfilment in the workplace will not be easy. Competition in the world of work does not only require excellent skills, but also proper attitude and values for work. It is the researcher's aim to equip the workforce of Public Works and Highways

not only of those which concern their fields of specialization , but also of moral principles and values that will help them become a better member of the workforce.

MATERALS AND METHODS

Descriptive method of research was used in this study. Questionnaires were used as instruments of data collection on the information on work values among the employees of the DPWH CEBU.

The process involved the use of a standardized instrument – Super's Work Values Inventory for data collection. The data were tabulated, presented analysed and interpreted.

The respondents of the study included 3 district engineers, 3 assistant district engineers, 27 section chiefs, they comprise the management staff and 115 from the rank-and file employees from DPWH Cebu.

The Work Values Inventory by Donald E. Super. The instrument is composed of 45 statements representing 15 work values. The statements represent values which people often seek in their jobs or as a result of their jobs. However, to preclude bias among the respondents as they accomplish the instrument, the researcher will not identify the value represented by each statement. Each of the 45 statements corresponds to numeric scales with the following qualitative equivalents.

5 – Very Important (VI) means that the value represented by the statement is meaningful to the respondents and therefore influences their attitude toward work in all cases.4 – Important (I) means that the value represented by the statement is meaningful to the respondents and therefore influences their attitudes toward work in the majority of cases.3 – Moderately Important (MI) means that the value represented by the statement is meaningful to the respondents and therefore influences their attitude toward work in half of the cases.

2 – Little Importance (LI) means that the value represented by the statement is less meaningful to the respondents and therefore influences their attitude toward work in few cases.1 – Unimportant (U) means that the value represented by the statement is meaningless to the respondents and therefore does not influence their attitude toward work.

The respondents were instructed to encircle the numeral which represents their assessment of the importance of each value.

RESULTS AND DISCUSSIONS

This portion of the paper presents the data gathered in this research, together with its interpretation, analysis and discussions.

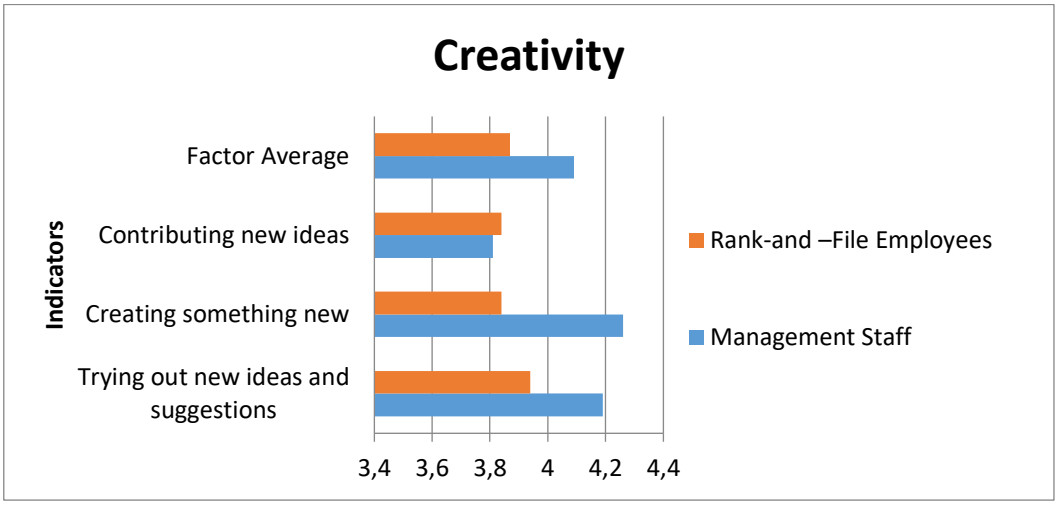
Importance Attached to Creativity

As indicated by the factor average of 3.98 based on the group average of 4.09 from the management staff and the group average of 3.87 from the rank-and-file employees, creativity was important for DPWH CEBU employees.

Specifically, as indicated by the item average of 4.06 based on the weighted mean of 3.94 from the rank-and-file employees, trying out new ideas and suggestions was important for the respondents. This finding reveals that innovativeness was meaningful to them and that this value influenced their attitude toward work in the majority of cases. Thus, they needed to work on innovations suggested to them by the various sectors that they served

As revealed by the item average of 4.05 creating something new was important for the DPWH employees. However, while the management regarded this value as Very Important, as revealed by the weighted mean of 4.26, the rank-and-file employees considered this value Important, as indicated by the Item average of 3.84. The difference in the responses of the two groups could be attributed to their differences in aspirations and opportunities. Knowing that their positions could facilitate the creation of new things, the management staff found this value very important and therefore influential other attitudes toward work. In the case of the rank-and-file employees, there were opportunities for creativity, but these opportunities were of a lesser degree than those which were available to the management staff.

The contribution of new ideas was important to the employees, as indicated by the item average of 3.82 based on the weighted mean of 3.81 from the management staff and the weighted mean of 3.84 from the rank-and-file employees. This finding indicates that the opportunity to introduce new concepts could influence the employees' attitudes toward work in the majority of cases.



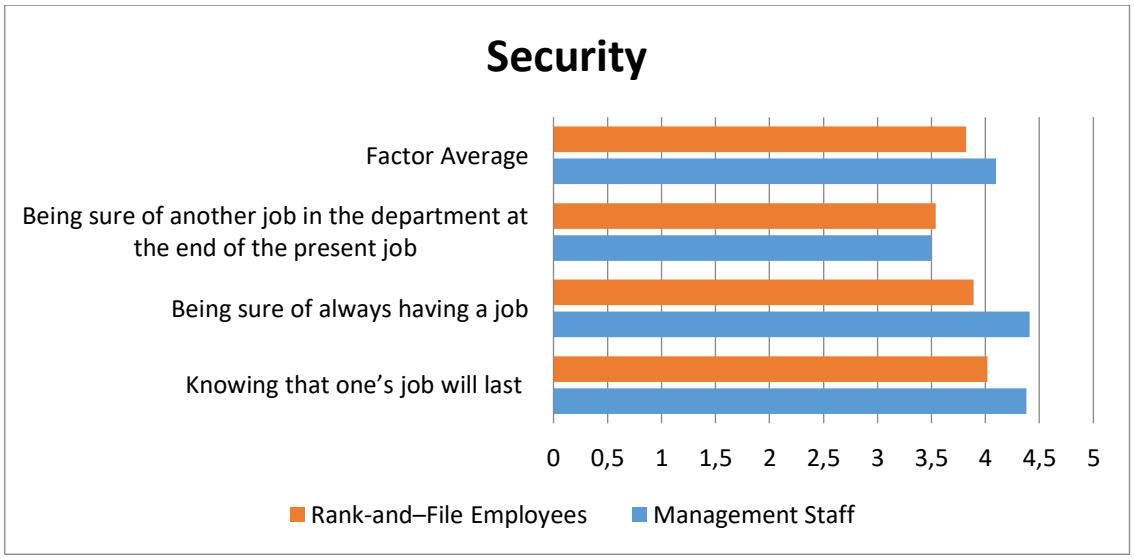
Graph 1

Graph 2 contains data regarding the importance attached to the value of security by the DPWH CEBU employees. As indicated by the factor average of 3.96 based on the group average 4.10 from the management staff and the group average of 4.2 from the rank-and-file employees, the DPWH CEBU employees regarded Security as an important value.

Specifically, as indicated by the item average of 4.20, knowing that one's job would last was Important to the respondents. The weighted mean of 4.38 from the management staff denotes their perception that this value was Very Important to them, while the weighted mean of 4.02 from the rank-and-file employees indicates their perception that this value was Important. Form this finding it could be inferred that in the majority of cases, the DPWH CEBU employees regarded as significant the assurance that they would be able to maintain their jobs.

As revealed by the item average of 4.15 being sure of always having a job was important to the DPWH CEBU employees. The management staff regarded this value as important as indicated by the item average of 4.41, while the rank and file employees considered this value important as revealed by the weighted mean of 3.89. The responses of the two groups could be attributed to the fact that the management staff members were holding sensitive positions and could therefore be regarded as co-terminus with the administration.

As revealed by the item average of 3.52 based on the weighted mean of 3.50 from the management staff and the weighted mean of 3.54 from the rank-and-file employees, the respondents regarded being sure of another job in the department at the end of the present job Important. Thus, in the majority of cases, DPWH CEBU employees were considered with permanence on the job and the assurance of security of tenure.

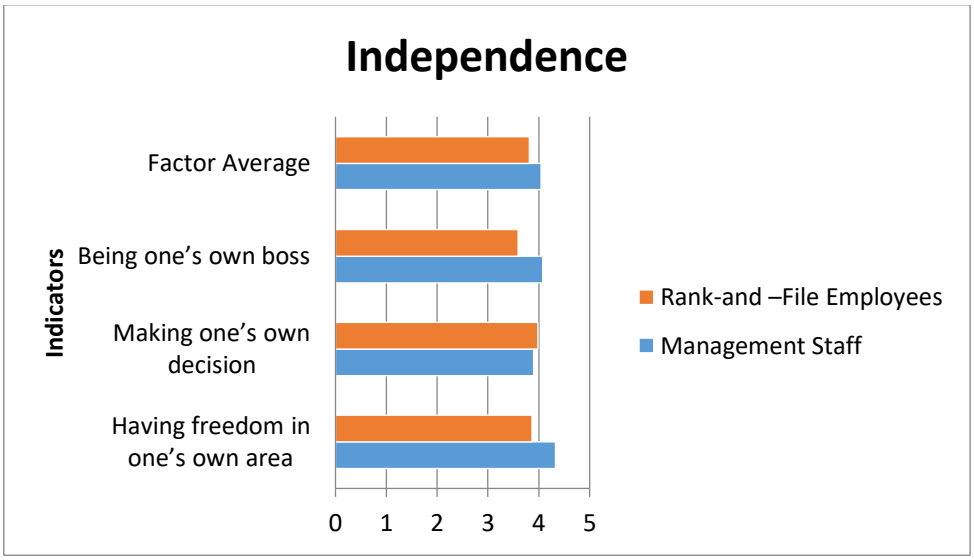


Graph 2

Graph 3 presents data regarding the importance attached to independence by the DPWH CEBU employees. As revealed by group average of 4.04 from the management staff and the group average of 3.81 from the rank-and-file employees. Independence was important to the respondents. Specifically, they regarded having freedom in their own area as Important as indicated by the item average of 4.10. The weighted mean of 4.33 from the management staff denotes that they regarded this value as Very Important while the weighted mean of 3.87 from the rank-and-file employees discloses that they considered this value Important. The difference in the perceptions of the two groups could be ascribed to the fact that the management staff needed to experience autonomy in decision-making.

As revealed by the item average of 3.94 based on the weighted mean of 3.90 from the management staff and the weighted mean of 3.98 from the rank-and-file employees, making one's own decision was Important for DPWH CEBU employees. This finding reveals that in the majority of cases, autonomy in decision-making was significant to the respondents and was influential in their formation of positive attitudes toward work.

Being one's own boss was Important to the DPWH employees, as indicated by the item average of 3.83 based on the weighted mean of 4.08 from the management staff and the weighted mean of 3.59 from the rank-and-file employees. This finding reveals that in the majority of cases, the DPWH CEBU employees regarded autonomy as desirable and significant in their performance of assigned tasks.



Graph 3

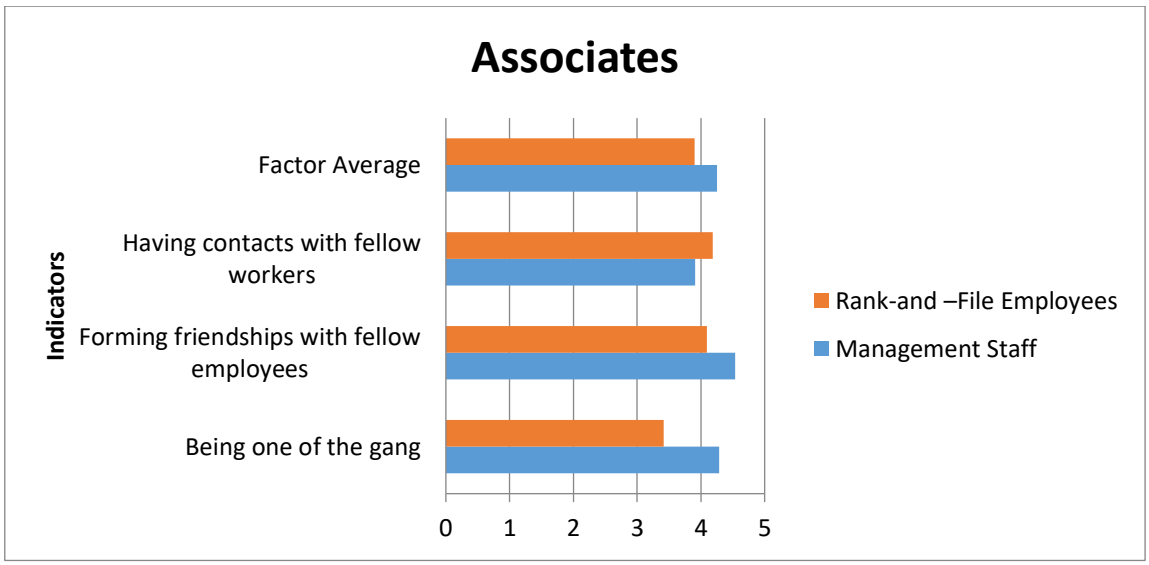
Graph 4 presents data regarding the importance attached by DPWH CEBU employees to Associates on the job. As indicated by the factor average of 4.07, the response regarded Associates as Important. The group average of 4.25, from the management staff denotes that as far as they were concerned, Associates were Very Important, for the rank-and-file employees, Associates were important, as revealed by the group average of 3.90.

Specifically, being one of the gang was Important to the respondents, as indicated by the item average of 3.85. However, while the management staff regarded this value as Very Important, as indicated by the weighted mean of 4.29, the rank-and-file employees regarded this value as important, as revealed by the weighted mean of 3.42. The difference in the responses of the two groups could be ascribed to the fact that the management staff could no longer feel a sense of belongingness with the other employees because of their position. The rank-and-file employees felt more a sense of belongingness to the group; therefore they attributed a lesser degree of importance to being one of the gang.

Forming friendships with fellow employees was Very Important to the employees, was revealed by the item average of 4.31. The weighted mean of 4.54 from the management staff reveals that this value was Very Important to them. However the weighted mean of 4.09 from the rank-and-file employees reveals that they regarded this value as important. The difference in the ratings assigned to this value by the two groups could be attributed to the fact that forming friendships with co-employees was easier in the ranks than in higher places in the organization. For this reason, the

yearning for friendship prompted the management staff to signify that this value was meaningful to them in all cases.

As indicated by the item average of 4.05 based on the weighted mean of 3.91 from the management staff and the weighted mean of 4.19 from the rank – and-file employees, having contacts with fellow workers was Important. This finding reveals that in majority of cases, the respondents regarded as meaningful their employment of companionship with their co-workers.



Graph 4

CONCLUSION

Based on the findings of the study, the researcher concluded that generally the DPWH CEBU employees evidently manifested a definite sense of direction in their performance of job assignments through the importance which they attached to work values like Creativity, Security, Independence and Associates in their work.

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FORMATION OF EFFECTIVE SYSTEM OF THE MECHANISM OF FINANCING OF THE SMALL BUSINESS IN THE UZBEKISTAN

Abstract: *One of the major directions promoting development of business, perfection of the financial mechanism which purpose is creation of favorable financial and economic conditions for a sustainable development of subjects of small business is. The financial mechanism of development of small business, construction of optimum structure of support of enterprise activity in the Uzbekistan and increase of efficiency of their use, both budgetary, and off-budget forms of financing of small business through mechanisms of activization of its development is extremely actual. In article the financial mechanism for acceleration of development of small business is considered.*

Key words: *crediting, commercial banks, financing of small business, crediting methods, financial mechanisms of crediting, subjects of small business, the investment.*

Language: *English*

Citation: Bozorov, I. S., & Haitov, A. B. (2019). Formation of effective system of the mechanism of financing of the small business in the Uzbekistan. *ISJ Theoretical & Applied Science, 06 (74),* 207-210.

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Introduction.

Formation of effective system of financing of small-scale business by crediting perfection leave in the category paramount.

Perfection of techniques of crediting of commercial banks taking into account foreign experience, working out of new models and methods of crediting of subjects of small business taking into account features of the processes occurring in economy of the Uzbekistan, will allow, appreciably to solve a problem of financing of small business by means of the optimum financial mechanism.

Despite positive tendencies to growth of the most important economic indicators, the majority of small enterprises investments which would allow restoring financial stability of subjects of small-scale business at their effective utilization are extremely necessary that in turn would raise their appeal to commercial banks in crediting sphere.

In development of small business has put a number of Decrees of the President of the Uzbekistan and the Republic's Governmental orders where in development of small business the system approach now is from the state to the decision of problems of small-scale business. Research of the financial mechanism of development of small business is based on studying of internal possibilities of subjects of small-scale business, features of the modern mechanism of support of small business taking into account foreign experience, the characteristic of features of modern development of small business in regions of the Uzbekistan both applied methods and models of financing of the given sphere of economy in the conditions of investment appeal.

Foreign experience of Japan, South Korea, Taiwan shows, how it is necessary for the state to influence activization to small-scale business development.

For example, Japan managed to catch up and overtake many developed countries thanks to loan by this country of achievements of scientific and technical progress with support by financial resources of introduction of innovations.

The number of scientists in the Japan occupied with scientific workings out, by means of specially

created state system of stimulation increases on the average by 7 % a year.

In the South Korea the special fund for rendering of financial and technological support to those national firms which undertook introduction of new high technology processes is created.

Besides, means of the given fund go on working out of new technologies and development of basic researches. «Special loans of support» practice the country, intended for working out and development of new technological processes, release of the new high-quality goods and introduction of the new industrial equipment.

In the Taiwan company "Acer", taking the soft loan in the financial fund created by the state, for 25 years has turned to one of the main manufacturers of portable computers.

Such widespread forms in foreign countries as subcontract, etc., it is expedient to use a franchise, leasing more actively.

Development of small business in the Uzbekistan tends growth, both in service spheres, and in spheres of production of goods and thus it is expedient to improve an operational administration small business, both on state, and at regional level. Perfection of effective mechanisms of financial support of innovative small enterprises, both on state, and on regional levels is important.

For the decision of problems it is necessary to create, first of all, the optimum financial mechanism of development of small business. It is required to improve methodological base, including for decision-making on activization of activity of subjects of small-scale business, to develop effective models and techniques of financing of small business in republic regions.

Effective support of small business is necessary and with a view of increase of competitiveness of its goods and production on the threshold of the introduction of the Uzbekistan into the World Trade Organization.

Questions of maintenance with financial resources, in particular long-term, remain actual but, for subjects of small-scale business and private business. In particular, it is possible to note cases of absence of liquid maintenance in demanded volumes, opacities of business dealing, the big level of initial expenses.

In 2016 year by subjects of small-scale business and private business it is made an industrial output for the 50654.4 billion Uzbek sum (Uzbek currency) (45.3% from industrial output total amount) that in comparison with 2015 year it is more for 16.4%. Last years the quantity of subjects of small-scale business increases

In the basic industries, in particular, food, easy, the industries of building materials, mechanical engineering and processing of metals, chemical and petrochemical, pharmaceutical that serves one of major factors of steady growth of a share of small-scale business and private business in the industry, and as high rates of increase of the industrial goods made by them.

According to the Decree of the President of the Republic of Uzbekistan from April, 7th, 2014 UP-4609 “About additional measures on the further perfection of an investment climate and the business environment in the Republic of Uzbekistan», in labor-consuming industries, such as food, easy, the industry of building materials, limiting mid-annual number of workers for small enterprises is increased to 200 persons that creates conditions for increase in quantity of subjects of the small-scale business which is carrying out activity in these branches.

In 2016 year in a regional cut the greatest indicator of a share of small-scale business and private business in the industry has made in the city of Tashkent – 71.0%. In the Namangan area this indicator, accordingly, has made 69.4% and in the Samarkand area of 60.1%. In the Dzhizak, Andizhan, Khorezm, Syr-Darya, Bukhara, Fergana and Surkhan-Darya areas this indicator is noted at the average level, in the range of 45-60%. On a low level this indicator in the Tashkent area was 34.0%, in the Kashkadariya area of 27.0%, in the Republic of Karakalpakstan was 26.6% and Navoi area was 20.8%.

Investments into sphere of small-scale business and private business very important and the major indicator of active economic activities of subjects of small-scale business in economy branches is the volume of the mastered investments.

Thanks to the favorable conditions created in the country, subjects of small-scale business and private business in 2016 year in economy had been brought investments on 19482.8 billion Uzbek sum, that on 18.7 % above an indicator of 2015 year.

The share of small-scale business and private business in total amount of investments into 2016 year has made 39.1 % that on 23.7 above an indicator of 2000 year.

Growth of a share of small-scale business and private business in total amount of the investments entered into national economy is connected with increase in the involved long-term credits at the investment purposes of the enterprises mastering new kinds of production. Therefore in structure of sources of financing of investments in fixed capital the small-scale business enterprises, the greatest share is necessary on own sources and bank’s credits.

Research methods.

As methodological base of research system and functional approaches, scientific abstraction, general scientific methods of the analysis and synthesis, comparison and generalization were used.

Information base.

As information base of research Republic of the Uzbekistan laws, other standard and legal certificates of Republic of the Uzbekistan, Internet resources have served.

Discussion.

The problem connected with research of the economic maintenance and features of process of formation of financial resources of subjects of business, with revealing of specificity of formation of sources of financing of development of subjects of business is important, especially with disclosing of the maintenance of the financial mechanism of development of subjects of business. But it is necessary to reveal that business urged to solve first of all social and economic functions taking into account ordering of sources of financing of development of subjects of business, with allocation of internal sources (means for formation of the initial capital and for activity development) and external sources (means, mobilization in the financial market, and the means of the state financial support given to subjects of business on возмездной and a gratuitous basis).

In 2016 year of an expense for technological, marketing and organizational innovations of 45.9% (1180.0 billion Uzbek sum), 12.5% (314.9 billion Uzbek sum) at the expense of the foreign capital, 6.1% (157.3 billion Uzbek sum) at the expense of credits of commercial banks and 35.7% (919.1 billion Uzbek sum) at the expense of other means were financed at the expense of own means.

The innovations mastered in 2016 year, have made 20.85% (2221.5 billion Uzbek sum) from total amount of innovative products, works and services.

This indicator makes 80% (709 billion Uzbek sum) in the Andizhan area and 54.5% (42.1 billion Uzbek sum in Bukhara area. In the Republic of the Karakalpakstan and Syr-Darya area the majority of innovative products (97% and 76.4 % accordingly) were necessary on a share of innovations mastered in 2014-2015 years.

To soft loans do not seem too high against inflation in 7-12% annually however real cost of credits considerably increases for the account of such factors as time expenses and informal payments at their reception, inadequacy of an estimation of mortgaging property, short duration of terms of repayment (till 3 years), and that is especially important for enterprises small-scale business rise of the prices for some types of service, materials and the equipment at purchase for the clearing settlement.

The conducted research of possibilities of mobilization of financial resources for development of subjects of business has shown that, despite perspectives of leasing, its development in the country it is not enough.

Financing is given to subjects of business, including carrying out activity not less than 1 year under leasing subjects, and, depending on the leasing company, a leasing product, type of the equipment, the client and the sum of an initial payment for the term from 1 year till 5 years. The franchise market while strongly differs from the markets of the developed countries in spite of the fact that essential growth of a franchise is during the last years observed.

It is necessary to expand access of subjects of small-scale business to credit resources of commercial banks and cash, and also to stimulate development of alternative sources of financing of business.

In long-term prospect, it is necessary to introduce additional mechanisms of stimulation of growth of small-scale business among which funds of warranting of credits small-scale business, and to provide development of not bank financial organizations, such as the credit unions and the micro financial organizations, and also the investment and venture companies as alternative sources of resources for private sector growth.

The methodical approach to calculation of indicators of credit status of the enterprises, allowing instead of retrospective estimation of a condition of the finance of the enterprise on need to consider characteristics of the general economic environment of activity of the new enterprise.

Except banks, to subjects of business give loans not bank financial organizations which supplement the bank offer of financial services for the enterprises.

In foreign the countries the present are developed and following types of not bank financial institutions function: regional and state funds of support of business; the private financial organizations; not bank deposit credit organizations; credit consumer co-operative societies of citizens; credit consumer co-operative societies; agricultural credit consumer co-operative societies; consumer societies.

The state support to business is carried out according to the Republic of the Uzbekistan's Law. Necessity of strengthening of the state financial support of development of subjects of business is caused by such factors, as vulnerability of small enterprises, especially during the starting period, constantly increasing requirement of subjects of business for financial resources and the limited access to them, specific, inherent in small enterprises, possibilities to solve a problem of social and economic development of the country.

Thus questions of maintenance with financial resources, in particular long-term, remain actual for subjects of small-scale business and private business.

In particular, it is possible to note cases of absence of liquid maintenance in demanded volumes, opacities of business dealing, the big level of initial expenses. Development of the market of bank services of small business restrains that commercial banks underestimate degree of heterogeneity of sector of small-scale business both private business and a

variety of its segments. In particular, at formation of a grocery number such important characteristics of segments of small-scale business, as are not to the full considered: a risk profile, specificity of activity, model of behavior of clients, demographic characteristics, a stage of life cycle of the subject of business, educational level of managers, priority information channels, an involvement into business - communities (chambers, associations), etc.

One of the major directions promoting development of business, perfection of the financial mechanism which purpose is creation of favorable financial and economic conditions for a sustainable development of subjects of business is.

Conclusion.

It is necessary to specify structure of the factors constraining development of financing of business and influencing efficiency of the mechanism of the state financial support of subjects of business. Efficiency of application of this or that form of stimulation depends on conditions of financial support by the state.

For creation of the financial organization investments, including and state are required. For support of subjects of business it is necessary to form more accurate programs, to choose concrete forms, methods and support tools according to the purposes of programs, so to spend more flexible in relation to the enterprises the fiscal policy, preferential financing, application of other economic levers of influence on dynamics and efficiency of their development. Experience of development of financing shows that this kind of activity can be economic and be carried out on self-support principles.

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NEW DIRECTIONS IN THE DEVELOPMENT OF TOURISM IN THE REPUBLIC OF UZBEKISTAN

Abstract: *This article discusses the new directions of tourism in Uzbekistan, in particular, gastronomic, youth, tourism, geotourism, agrotourism and eco-tourism. On the basis of decrees and resolutions, the main objectives of the development of the tourism industry and its modernization are analyzed within the framework of priority areas in the context of the implementation of the Action Strategy in 2017-2021 in the Republic of Uzbekistan.*

Key words: *Gastronomic tourism, zierat tourism, youth tourism, ecotourism, agrotourism, cycle tourism, ethnographic village, the Great Silk Road brand.*

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Introduction

During the years of independence, Uzbekistan made a significant breakthrough in the tourism industry, coupled with the preservation and enhancement of the historical and cultural heritage of the people, the revival of national traditions and customs, the restoration and arrangement of sights. In order to create a modern, highly efficient and competitive tourist complex in the republic, a solid regulatory and legal framework is formed, the basis of which is the Law "On Tourism" adopted on August 20, 1999 [1]. The presence of Uzbekistan is evidenced by the presence of more than seven thousand objects of material cultural heritage of different eras and civilizations, including the historical centers of Bukhara, Khiva, Samarkand and Shahrisabz included in the UNESCO World Heritage List [2]. World famous historical monuments, modern cities, the unique nature of Uzbekistan, the unique national cuisine, as well as the unsurpassed hospitality of our people attract travelers.

Materials and Methods

In recent years, tourism in Uzbekistan has been developing dynamically, the Decree of the President "On additional measures to accelerate the development of tourism in the Republic of Uzbekistan" dated January 5, 2019 and the Presidential Decree dated January 5, 201 No. PP-4095 "On measures to ensure accelerated development of the tourist area determine the main strategic directions of the tourism sector and serve as an important guide in this direction.[3] Cities and villages are being transformed, infrastructure is developing, hundreds of hotels, recreation areas, campgrounds and motels have been built, all this annually attracts about 3 million foreign visitors from more than 70 countries.[4]

To date, the domestic tourism industry offers foreign visitors and domestic lovers of long-distance travel new tourism destinations, which include gastronomic, pilgrim (ziyorat), youth tourism, ethnographic and geo-tourism, as part of the comprehensive concept of "ecotourism". In addition, medical tourism, hiking, archaeological tourism, agrotourism, as well as mountaineering and rafting have been developed in Uzbekistan.

Uzbekistan with its diverse landscapes is a great place for ecotourism. The presence in the republic of reserves, national parks, nurseries, biosphere reserve make ecotourism a very promising direction. The territory of Uzbekistan is divided into 14 ecotourism regions. Each district is distinguished by its ecotourism, opportunities and development prospects in Uzbekistan, in particular, such areas as Amudarya, Ustyurt, the Aral Sea and Aral Sea regions, Kyzylkum, Syrdarya, Zarafshan, Aidarkul, Chirchik, Fergana, Turkestan, Kashkadarya and Surkhandarya. Ecotours in these areas can be carried out in the form of hiking, and walking on camels and horses, as well as on airplanes and helicopters. Tourists will be able

to see unique landscapes, rare animals and plants, as well as have the opportunity to feel the touch of other nation, their traditions and customs and immerse themselves in an unusual way of life in harmony with the environment[5].

Ugam-Chatkal National Park is the largest and most protected natural protection area among tourists. It was created in 1990 in the gorges of the Chatkal range. Its territory is little changed by human activity and is designed to preserve the mountain ecosystems of this region. The Chatkalsky Biosphere Reserve is located in the southern part of Ugam Chatkalsky National Park, Nurata Reserve extends south-west of Tashkent on the northern slopes of the Nuratau Range, where walnut-fruit forests are protected. Another similar reserve was created in 1975 just east of Samarkand, the Zarafshan reserve. On the territory of the reserve stretch of bush and floodplain meadows. On the territory of Zaaminsky, Bakhmal, and Farish districts there are ample opportunities for the development of ecotourism.

In the mountainous region of Jizzakh region of Uzbekistan is located Zaamin district, the center of which is the town of Zaamin. In order to preserve unique natural resources and historical monuments in 1960, a reserve was established in Zaaminsky district with an area of 10,500 acres[6]. The park also includes mountain ranges, steep and deep ravines, and hills. One of the brightest attractions of the Zaamin reserve is considered to be high red stones of bizarre shape and gigantic sizes, located on a glade in Kyzyl-Ataksai. Zaamin people call this nature wonder “kyrkkyz”, which means “forty virgins”.

On the territory of the Zaamin nature reserve there is a recreation area for visitors. It includes the Zaamin Sanatorium and dozens of nearby boarding houses, guest houses and children's camps.

Tourists staying here can visit many interesting places. One of them, Boboengok, is an ancient walnut, whose estimated age is 700 years. The tree grows on the territory of Zaamin National Park. In the village of Pishogor, not far from the Zaamin nature reserve, there is the Pishagar cave, an amazing place where everyday objects from the times of the primitive communal system were discovered. The walls of the cave are decorated with ancient drawings [6]

Interesting will also be an excursion to the spring "Sherbulok". It looks like a grotto with stone stairs and arches. Jets of ice cold water are beaten out of a bas-relief in the form of a lion's head.

In the areas adjacent to the reserve Zaamin, there are also monuments of antiquity - the dilapidated memorials of Kurgantepe, Aktepe, Turtkultepe (former caravanserai), Kultepe, Khuzhai Sarob-ota, Kyk Tunle - Ota and the ancient fortress of Myk (6th-11th centuries) [7] where ancient coins and jewelery are still found. Currently, Zaamin Reserve is actively preparing for the influx of tourists, developing its potential and improving its infrastructure.

Today, the Zaamin brand has become an indispensable attribute of local products at international tourism fairs, attracting entrepreneurs to the region and to Uzbekistan in general. Thanks to the popularity of Zaamin district, a new type of tourism, ecotourism, has emerged and is developing, and the well-being of the local population is increasing

Since 2010, the UNDP project “Support to the Local Government System: Citizen Participation and Partnership” has been implemented in close cooperation with local authorities and citizens in Zaamin to increase tourist potential of the region, focusing on ensuring the sustainability of cultural and historical flavor, thereby contributing to the fact that local residents are the main beneficiaries of ongoing initiatives.

A number of tourism businesses were created and modernized in the district, including 12 guest houses, 2 tourist centers and one hotel, information centers inside natural and archaeological zones and a 350-meter ski track in the popular resort area. All these facilities are managed and operated by local residents, which provides them with employment and income. [8]

10 information boards and 20 roadside signs were installed. 80 local tourism specialists were trained, and Zaaminsky District was the first district in Uzbekistan to create its own brand, website and Facebook page [6].

This place is ideal for ecological, cultural and educational tourism and active recreation.

Ecological tourism is not only a trip, but also an opportunity to get acquainted with the lifestyle of the locals. In this regard, the projects in this area pay special attention to the protection of nature, the study of the lifestyle of the local population, traditions and customs, and samples of oral folk art. It should be emphasized that this type of tourism is becoming increasingly popular today - according to forecasts of the World Tourism Organization, it is among the five main strategic directions of tourism development until 2020 and it is estimated that the share of ecological tourism in the total world tourism industry has reached more than 10% in recent years, and its growth rate is 2-3 times higher than the corresponding rate in the entire tourism industry [9].

The problem of the development of the gerontological direction of social tourism has become particularly relevant in connection with the events taking place in the modern world. We are talking about the following content points:

- steady trend of population aging and increase in life expectancy. According to European statistics, for the period from 1950 to 2000 people began to live for 20 years longer, and by 2025 the average life expectancy is expected to increase by another 10 years [10]

- increasing the proportion and role of older people in modern society. By the time of retirement,

modern older people are able to continue to lead active lives, including traveling and getting new impressions of rest.

- unstable socio-economic situation of the elderly. It is known that in the modern world gerontological consumption of services remains at an extremely low level: the bulk of the personal consumption fund is spent on food. The gerontological group does not receive educational, medical, cultural services, and the consumption of tourist services remains beyond financial affordability. The cost of travel packages for many retirees, especially those who do not continue to work, is of great importance.

Currently, researchers are raising the question of the need to create strategies and travel programs that will be aimed at increasing the physical activity of older people with disabilities, preserving their health and physical functions [11].

In Uzbekistan, the gerontological direction of social tourism is underdeveloped. However, it is necessary to work out the entire social tourism system, first of all - a consolidated approach to the development and implementation of tourism programs for the elderly, combining the efforts of the state and business. In our country there is a great potential for the development of gerontological tourism, especially now there is a tendency of growth in the flow of tourists of elderly people traveling to Uzbekistan from neighboring countries arriving for the purpose of treatment or rehabilitation. The reason for this is mainly the low cost of medical services provided in Uzbekistan. Dental and wellness tours to the territory of our country become most popular among tourists.

In addition, Uzbektourism NC is working on a health-improving medical tourism plan, since quite a few people want to come to Uzbekistan only to relax, but also to improve their health, combining pleasant time with treatment both at the bases of health resort complexes. [12] Uzbekistan is a country with a unique and rich nature, it is often referred to as “Uzbek Switzerland”. Places like Zaamin, Chimgan, Beldersay, Nevich, Aydarkul, Kitab, Gissar, Ugam, Chatkal, Chinabad, Mersian, Aktash and many others allow the country to compete with Switzerland for tourists.

Rich vegetation, healing mountain air, water bodies, ecologically unspoiled industrial environment, a measured rhythm of life — everything that is so successfully monetized in Europe is represented in sufficient quantity in the country. Uzbekistan is one of the few countries in the world where almost the entire spectrum of a health resort complex is present. For example, in the sanatorium “Botanica” there are thermal, chloride-hydrocarbonate and sodium mineral waters - that’s why thousands of tourists come to Austria every year [13].

In the Jizzak region, therapeutic mud from Lake Balykli is actively used, in the Tashkent region there is a well with a depth of 240 meters, the mineral slightly alkaline water from which, by its composition and healing properties, is not inferior to the waters of the famous Yessentuki resort[14].

In Uzbekistan, health tourism has many resources that contribute to the development of the industry, a huge potential associated with the presence of a large number of unique natural sites, original methods of harmonious human health.

Medical tourism is also significant in that it is not only able to increase the income of the national economy, but also has the ability to stimulate the development of other industries, develop the infrastructure of resorts and health resorts, helping to strengthen the health of the population. It is from this point of view that the formation of a modern system of medical tourism in the country is becoming more and more urgent, but a number of factors impede the further development of medical tourism, for example:

- the absence of a state program for the development of health and fitness complexes;

- personnel engaged in the implementation of medical services do not have special knowledge and responsible attitude towards their clients;

- the lack of an effective system of informing the public about the possibilities of Uzbek resorts and health complexes, etc.

The development of medical tourism in Uzbekistan requires an integrated approach: legal support, licensing of medical institutions, creating a single base of all health resorts in the country, increasing the level of service, creating centers for training personnel, etc.

Sanatoriums in our country now can also offer various medical services for foreign tourists (diagnosis and treatment, prevention of chronic diseases, psycho-emotional relief, rehabilitation, treatment of all kinds of addictions, etc.) But this direction of medical tourism is also experiencing great difficulties due to the lack of information about clinics, doctors, prices, etc.

In Uzbekistan, there are two types of resorts: balneal, which are based on local mineral springs and mountain climate using clean mountain air and a favorable climate for treatment. The services of medical institutions can become sought-after not only by citizens of neighboring countries, the endless valleys of our region, protected natural territories - all this attracts foreign tourists.

Among the still underdeveloped types of tourism in Uzbekistan can be identified mountain tourism. In the period from March to November, the mountainous areas of Uzbekistan attract lovers of hiking, and from April to September - cycling.

The country's most popular hiking routes pass through the protected areas of the Chimgan mountains and the Gissar and Turkestan ranges surrounding the

Samarkand, the Matcha and Fan mountains. Routes are divided into three categories of complexity - the easiest, the first level, for lovers who at least know how to ride a bike. For them, walks to Charvak are organized, along the reservoir ring, these are 80 kilometers of breathtaking views, to the Fergana Valley - a circle from Kokand, through cities - Namangan, Andijan, Kuva, Fergana, Rishtan, Margilan, crossing the Kamchik pass. And of course, the foothills, not far from Tashkent - cycling tours to ancient villages, petroglyphs and waterfalls. One of the routes is via Nurata, along Kyzyl Kum, in the direction of Khiva. In Nurata there is one of the most ancient, if not the most ancient, irrigation system of wells, the fortress of Alexander the Great and sacred places of pilgrimage that the Randonners must visit. The descent to the Sarmysh gorge, famous for its most interesting petroglyphs art gallery, the largest in the world. The tour can be combined with the historical excursion along the Great Silk Road, - the cities of Samarkand, Bukhara, Khiva. To do this, be sure to go on a trip qualified guides who will tell and show the beauty and historical sites of these ancient cities. In addition, cyclists drive through the villages, where they get acquainted with the lifestyle of local residents. For extreme Samarkand there is a route along the ridges of the Aktau ridge.

The first step in organizing trips related to geotourism was the initiative of the State Committee on Geology and Mineral Resources, which proposed incorporating the Kitab State Geological Reserve into the UNESCO Global Geoparks Network, as well as expanding the register of ecotourism sites, including geoparks, to increase the flow of foreign travelers [15].

As globalization processes grow in the world, consumers are increasingly seeking unforgettable impressions. Gastronomy is an important element of local culture and identity, and it has significant potential to increase the supply in the tourism market by focusing on the promotion and improvement of national cuisine.

The Republic of Uzbekistan has the potential to develop gastro tourism, with its unique national cuisine, its tradition of hospitality. Uzbek cuisine is perhaps one of the richest in the East. Located on the caravan routes of the Great Silk Road, for centuries, Uzbekistan has absorbed the most interesting and unusual dishes from different countries. Traders exchanged the most secret secrets of those or other recipes. Thus, the dishes of other nations penetrated the Uzbek cuisine and practically became national. Each dish has its own traditional rituals and ways of cooking. Of course, the most famous and favorite dish of Uzbekistan, as everyone knows, is pilaf. In addition, dishes there is a huge list of other equally exotic dishes. By developing gastronomic tourism in Uzbekistan, one can attract many tourists from different countries of the world. Uzbekistan can also share its national cuisine with guests of our republic.

It should be noted that each region of the Republic of Uzbekistan has its own peculiarity in the preparation of national dishes, for example, pilaf, which is considered the most exquisite dish. Pilaf - the most famous dish of Uzbekistan. At the Osh Bayrami festival, which has been held annually since 2013 by Uzbektourism NC, the following types of pilaf are prepared: “To'y oshi” (Wedding pilaf), “Karavan osh” (“Pilaf Karavan”), “Choyxona palov” (“Tchaikhana pilaf”), “Toshkentcha osh” (“Tashkent pilaf”), “Xorazmcha palov” (“Khorezm pilaf”), “Bayram oshi”(Holiday pilaf), “Namangancha devzira osh” (“Namangan devzira pilaf”), “Samarqand oshi” (“Samarkand pilaf”), “Asaka Palov” (“Asaka Pilaf”).

In accordance with the decisions of the Committee for the Safeguarding of the Intangible Cultural Heritage of December 1, 2016, the culture and traditions associated with the Uzbek pilaf are included in the UNESCO UNESCO Intangible Cultural Heritage [16].

For foreign tourists, gastronomic tourism is interesting because, while studying and tasting dishes, a tourist not only eats all sorts of products prepared using special technologies, but also gets acquainted with the culture and history of this region. Most tourists come to Uzbekistan to see the world famous cities - Samarkand, Bukhara, Khiva. Gastronomic tourism can be combined with educational tours.

The development of gastronomic tourism has a positive impact on local economies, employment and heritage; covers approximately 30% of travel expenses during the tour; creates unique opportunities to promote the national brand of Uzbekistan. It should be noted that Uzbekistan won the first place in the nomination “Gastronomic tourism” according to the National Geographic Traveler magazine in the National Geographic Traveler Awards 2018 competition. Our country won 34% of the vote, overtaking Italy and Azerbaijan, who scored 21% and 17%, respectively [17].

Uzbekistan has favorable conditions for the development of pilgrim tourism. Many famous figures in the Islamic world lived and worked on our land. However, in our country there are historical monuments that are expensive for representatives and other denominations. According to international studies, the number of tourists traveling in the world in the direction of ziyorat tourism is increasing annually. In particular, in 2017 the number of Muslim tourists amounted to 131 million people, and the income from Muslim tourism reached 142 billion US dollars. This shows that pilgrim tourism is one of the fastest growing segments of the global tourism industry. It is expected that by 2020 the number of Muslim tourists in the world will reach 160 million people. The turnover from this type of tourism by 2026 will be $ 300 billion [13].

Today, for the development of tourism ziyorat it is necessary:

The introduction of a visa-free regime in Uzbekistan for a period of 30 days for citizens of 64 countries, including Indonesia, Malaysia, Turkey and the United Arab Emirates;

- introduction of a pilgrim visa ("Pilgrim visa") issued for up to 2 months to foreign citizens who come to make pilgrimage and study the cultural, historical, religious and spiritual heritage, traditions of Uzbekistan.

Uzbekistan is among the ten most attractive destinations for ziyorat tourism among the member countries of the Organization of Islamic Cooperation (OIC) according to the Global Muslim Travel Index 2019 (GMTI) [19]. This report is prepared on an annual basis by the Singapore-based company Crescent Rating and Mastercard. GMTI is based on factors such as climate, security, economy, religion, transport infrastructure and services in countries.

On July 15, 2018, a new procedure for visa-free transit entry, temporary stay and departure from the Republic of Uzbekistan was introduced in Uzbekistan. Citizens of 101 states received visa-free entry, in particular Australia, Austria, Germany, Estonia, Jamaica, Kuwait, Saudi Arabia, the United States and others. In addition, in recent years, the liberalization of the visa regime for citizens of foreign countries and the introduction of a visa-free regime (increased the attractiveness of Uzbekistan in the global tourism market [20].

For pilgrim tourism, the mere presence of historical monuments connected with religion is not enough. To attract tourists, you need to launch a good advertisement, establish a convenient visa regime, create comfortable conditions at airports and hotels for prayers.

On the basis of these recommendations, the conditions necessary for prayers are created at international airports. In our country, according to the Malaysian standard MS 2610: 2015 "Muslim friendly hospitality services. Requirements" developed draft standard"O'z DSt: 2018. Tourist services. Muslim hospitality. Requirements" [21]

Today, the State Committee for the Development of Tourism is developing issues of the development of pilgrim tourism in the city of Tashkent, maps of visits to 15 registered religious organizations. Preparing a map of places of halal food for travel agencies and guests of Indonesia and Malaysia, national canteens, restaurants, family leisure places [22]

In Uzbekistan, one of the most important sites of pilgrimage tourism is the Imam Bukhari complex in Payarik district of the Samarkand region. According to the decree of the President of our country "On measures to organize the Imam Al-Bukhari International Research Center under the Cabinet of Ministers of the Republic of Uzbekistan" dated March 27, 2017, a tourist center is being built near the complex [23]

In the future, one large four-storey, 6 medium-storey three-storey and 20 small two-storey hotels, a supermarket, a large shopping mall, an amphitheater, a dekhan market for ablution, souvenir shops, a teahouse, a restaurant, a parking lot, a mini-bank and other infrastructure facilities will be available for use.

In Uzbekistan, in the framework of the tourism sea, you can visit such objects as the religious center Khast-Imam (Hazrati Imam Complex) in Tashkent. The Barakkhan madrasah, part of the Hazrati Imam complex, is a repository of one of the most valuable relics of Islam - the Koran Caliph Osman.

In Samarkand, the famous necropolis of Shahi Zinda is located, where the cousin of the Prophet Muhammad - Kusam ibn Abbas and the mausoleum of Hoji Doniyar are buried. Khoja Doniyar is believed to be the Koranic and Old Testament biblical prophet Daniel, whose remains were brought to Samarkand by Timur from the city of Susa. A mausoleum was built over the burial site, rebuilt at the beginning of the 20th century. The mausoleum is a crypt about 18 meters long. The mausoleum is an object of pilgrimage, both local residents and visitors from all over the world.

In November 1996, the Patriarch of All Russia Alexy II arrived at the tomb of St. Daniel. During this visit, he performed a joint prayer with Jewish and Muslim clerics [24]. During the tour you can visit the Gur-Emir Mausoleum (XIV-XV cc.) - Timurid dynastic tomb; Rukhabad Mausoleum ("Resident of the Spirit") (XIV-XV centuries) - the tomb of Sheikh Burkhaniddin Sagardzha (head of Muslims in Beijing), buried according to his will in Samarkand; Registan Square: Ulugbek Madrasah (XVth Century), Sherdor Madrasa (XVIIth Century) and Tilla Kori Madrasa (XVIIth Century) - Medieval Masterpiece architecture and the main symbol of Samarkand; Bibi Khonim Mosque (XIV century), conceived by Timur as the largest mosque in Central Asia; The Mausoleum of Imam al Moturiy, a IXth century scholar, theologian and philosopher, founder of the Moturidi movement in Kalam (Muslim theology), a fiqh expert (Muslim jurisprudence).

Bukhara is another city for Ziyorat tours. Bukhara is called Sacred because there is an unprecedented number of mosques and tombs of Muslim saints. In the Bukhara region there are seven burials of the great Sufis of the Naqshbandiya brotherhood, one of the most influential Sufi brotherhoods in Uzbekistan. Of particular interest are also Minaret Kalyan, Abdulazizkhan madrasah, Magokki Attori Mosque, Kosh-Madrasah, Khalifa-Khudaydad Complex.

Thus, the sea tourism in Uzbekistan is perceived as an important part of the tourism industry, in connection with which the state and local authorities are actively involved in the development of new projects.

The development of youth tourism is an important tourism industry in Uzbekistan. Tourism contributes to the convergence of the young generation from different countries, for this the country must introduce such routes that will be convenient and accessible to young people, as well as carry out work on the introduction of the so-called silkvisa (silk visa) which provides special conditions for tourism in countries through IDT. With this visa, tourists can visit more than one country, but several at once.

Particular attention today is paid to organizing youth travel. Thus, in order to enhance the feeling of patriotism among young people, industrial tours were organized for more than 5.5 thousand people to large industrial complexes, industrial complexes, free economic zones [25]. And it is also planned to introduce a single calendar of events of youth tourism and the creation of youth hostels. The possibility of introducing the post of deputy chairman on the development of youth tourism, innovation and improvement of educational services in the field of tourism is being considered. Additional tourism products are agro-tourism, ethnographic, rural, green, rural tourism - all these are synonymous with one kind of tourism, taking place in any rural area (village, village, farm, manor, private house), where tourists, cities, get acquainted with everyday life and customs of the local population, live in rural houses, participate in rural work. During festivals and holidays (especially Navruz), tourists can see various competitions, participate in various cultural events.

The greatest interest for rural tourism is in the old settlements with a simple architecture using the traditions of the past, whose residents follow any traditions from the folklore. At the same time, clean rural food, clean air, the opportunity to participate in any small rural activities contribute to the strengthening of both physical and mental health.

Since Uzbekistan is for the most part an agrarian country, rural tourism, as a new kind of recreation, can play a large role in the tourist segment of Uzbekistan, using both incoming and internal tourist traffic. Favorable environmental and climatic conditions, necessary infrastructure, a unique ethnographic culture with traditional hospitality - all of this is present in our country and can be used for agrotourism.

Almost all regions of Uzbekistan have the necessary resources for the development of rural tourism. These are a variety of natural conditions, from foothill and mountain landscapes to steppe and desert territories, where there are rural settlements everywhere with adjacent rural lands - fields, gardens, vineyards, pastures. And in the immediate vicinity of these villages, various nature monuments, memorial places of worship, architectural and archaeological monuments can be used as additional environmental and cultural and educational sites to visit and see them. Very often, rural tourism is associated with ecological tourism and sometimes it is difficult to separate one type of tourism from another. From this interweaving and interaction, rural and eco-tourism only benefit

In Uzbekistan, rural tourism is well developed in the Jizzakh and Navoi regions, in the northern slopes of the Nurata Range. Some of the attractions of this region include separate petroglyphs, the highland lake Fazilman, as well as a huge specimen of biota eastern in the village of Mejrum. After visiting guest houses in the villages of the northern slopes of the Nurata Range, tourists usually go to the yurt camps located in the immediate vicinity of Lake Aydarkul [26] Here they can familiarize themselves with the nature of the Aydar-Arnasay lake system, as well as get in touch with the sands of the Kyzylkum desert, closely approaching the camp. A camel ride through the sand dunes of these territories towards the village of Dungelek will pleasantly complement the general impressions. Familiarity with the life of desert people and their traditional way of life can also be included in the program of these tours.

In many countries, to attract tourists, ethno-villages are organized - this is a specially equipped place (complex) for the development of ethnic tourism. Ethnic villages are different in their purpose, functions and specificity. The following objectives for creating an ethnic village can be distinguished: the preservation of valuable, unique and typical architectural structures that are traditional for the area; demonstration of planning and spatial-organizational ethnic traditions; demonstration of the main economic and commercial characteristics of the ethnic group; holding traditional folk holidays; organization of ethnocultural tourism.

The purpose of such a tourism facility is to acquaint tourists with the customs and traditions of the people as they were in past centuries, before the arrival of technical progress. For example, located in Russia, Kaluga region, a unique project "ETNOMIR" on a territory of about 90 hectares since 2008, a reduced model of a diverse planet of people is created. In the future, “ETNOMIR” includes 52 ethno-yards, each of which represents the culture of a certain ethnic group and includes harmoniously placed ethnic buildings: an ethnogotel, craft workshops, a museum, a traditional restaurant, a souvenir shop and other buildings that convey the flavor of traditional life. The keeper of traditions necessarily lives in such an ethnodvor, he can reliably acquaint with the priceless culture of his people, expressed through life and holidays, through crafts, folklore and mythology, architecture and history, traditions of folk cuisine, health procedures. Ethnological scientists from different countries take part in the creation of ethno-yards. The basic principle of "ETNOMIR" is the general equality of cultures, regardless of the level of economic development or the international status of

the host country of culture. Completed appearance of the project will acquire by 2020 [27].

Today ETNOMIR is a tourist cluster and cultural and educational center, where every visitor has the opportunity to "live" the experience of different nations through tangible and intangible heritage, to understand their cultural codes.

ETNOMIR is the largest ethnographic park-museum of Russia, which represents on its territory the beauty and diversity of the cultures of the peoples of the whole world through architecture, national cuisine, handicrafts, traditions and everyday life of different countries.

The most unique and popular ethnic objects of ETNOMIR are the ethno-hotels, in which the authentic atmosphere of the hut, mud hut, yurt, Indian palace, Himalayan and Nepalese houses, Central Asian dwellings (yurts, Khovli etc)

In Uzbekistan attempts are being made to create ethnographic villages like ETNOMIR, unfortunately temporary. Since 2001, the Baysun District of the Surkhandarya Region has been included in the UNESCO Masterpiece List of the Oral and Intangible Heritage of Mankind.

The first open folklore festival "Baysun Spring" with the participation of folk performers from Uzbekistan, Tajikistan and Kyrgyzstan was held in May 2002 [28] Also in 2002, with the support of UNESCO, the Baysuntog Park was built, which includes an ethnographic museum, a special folk village with tandoor squares, vineyards and gardens, an adobe street of artisans and traditional yurts typical of Baysun. April 28-29, 2019, the Baysun Bahori Festival will be held, in the Baysun Mountains an ethnic village will again spread out, where folk groups, bakhshi poets, narrators-akyns from all over southern Uzbekistan, as well as from neighboring republics of Tajikistan and Kyrgyzstan will gather [29]. Tourists will be able to get acquainted with the national dishes of our country, folk games, art and culture.

By the end of 2015, the ethnographic village was established near Bukhara. Ethno-village is located a few kilometers from Bukhara and is included in a study tour of Uzbekistan [30]

Here you can stay for a day or two, during which it will be possible to familiarize yourself with the life and work of the villagers - farmers and livestock breeders; only farm workers will be replaced by specially trained actors who will not hesitate to receive constant attention from a large number of visiting strangers. It should be noted that on February 9, 2019, an information tour of Shahrisabz was conducted, where tourists were provided with routes reflecting the 3 main types of tourist destinations developing in Kashkadarya, such as the "Mountains of Gissar", "Oasis" and the "Desert Rose" [30].

All three directions are divided into separate districts of the Kashkadarya region and include various types of tourism - extreme, mountain, pilgrim, ethnic, ecological, business and others.

Among the attractions of the region, the participants of the event were shown such places as ethno-villages "Silon" and "Kul", caves "Mukanna" and "Amir Temur", waterfalls "Suvtushar" and "Baital dumi", eco-places in the ravine " Munavvara "and" Kaljai-Sharon ", pilgrimage sites" Hazrati Bashir "and" Kazrati Sulton Ota "," Alexander the Great's Residence "in Dehkanabad district, yurt camps and rest homes.

Developing ethnographic villages, tourists are offered a rare opportunity to blend in with the rural oriental reality, where people are always welcome. Live in rural guest houses and yurts. The hosts can offer guests a variety of national dishes. Together with the hospitable hosts, tourists can do their homework — bake tandoor cakes, cook food, weave carpets, embroider, or assist in harvesting fruits and vegetables.

Forming a system of ethnic villages in Uzbekistan can be considered as an infrastructure of a new type of tourism for the country - ethnocultural tourism. Tourism, the purpose of which is the introduction to the ethnocultural heritage, is promising for our country. The country has a rich and diverse ethnocultural heritage, a unique combination of various ethnocultural complexes

Among the underdeveloped areas of tourism in Uzbekistan is MICE-tourism. MICE-tourism plays a significant role in the national economy and has a direct and indirect impact on the development of tourism, transport, communications, financial sector, culture, health and trade of the country.

In 2017, the share of business tourism in the global tourism industry was 22.5% or $ 1,230. 6 billion. According to forecasts of the world tourism and travel Council (WTTC) by 2025, the global business tourism market will be estimated at $ 1.67 trillion. According to the data, about 50% of airlines 'revenues, 60% of hotels' revenues and more than 70% of car rental companies ' revenues are created by servicing this category of tourists. 55-60% of hotel rooms in the countries are booked by MICE-tourism participants. Daily expenses of delegates of various business meetings, congresses, symposia exceed $ 345., while the average tourist spends an average of $ 100-200 per day[31].

The study of foreign experience in the organization of MICE-tourism shows that the subjects of the business tourism market are specialized MICE - and event agencies, Congress bureaus, exhibition centers and various venues for corporate events. They operate in public and private form. Despite this, the state periodically supports and coordinates this type of activity through the creation of special units or public-private partnerships.

In particular, the state bodies for tourism or local government (municipality) of Georgia, Russia,

Belarus, Germany have established specialized mice-tourism organizations. Thus, in 2016, the National tourism administration of Georgia established a Convention and exhibition Bureau for the development of MICE-tourism, including the attraction of incentive tours, conferences, exhibitions and similar international events. The functions of the Bureau also include the dissemination of information about the possibilities of business tourism in Georgia abroad.

In Azerbaijan, Turkey, Cyprus, institutions intended for the organization of MICE-tourism, deviate in the order of public-private partnership. For example, the Congress Bureau of Azerbaijan was established in 2013 and is a non-profit, private public, partially funded by the Ministry of culture and tourism of Azerbaijan [32]. The Bureau acts as the main national organization, whose activities are aimed at strengthening the image of Azerbaijan as a place for holding world-class mass events by providing valuable information and assistance, as well as representing the interests of its partners – local representatives of the industry.

For the organization and maintenance of corporate travel and numerous events in the field of MICE-tourism requires the creation of the necessary infrastructure. It includes available facilities for exhibitions and congresses, specialized business hotels (four-star), business aviation, international payment systems, modern information technology, high quality service, developed transport logistics, availability of historical attractions, natural resources, direct flights and Convention Bureau. For example, business hotels are equipped with everything necessary for productive work and recreation. This comfortable rooms, and equipped with all necessary conference rooms. One of the main requirements for business hotels – they should be conveniently located (in the city center).

All institutions specialized in organizing and conducting MICE-tourism disseminate information about MICE-events through websites, social sets, video/teleconferences, as well as event - mobile applications. On the one hand, it allows to balance MICE-expenses and to guarantee participation in events of busy top managers. Large corporations are now developing and implementing their own event applications to keep in touch with shareholders and sponsors. On the other hand, it helps to raise awareness about the event and get feedback, comments and feedback on the results of its implementation

At the same time, currently in Uzbekistan the level of development of MICE-tourism remains in an unsatisfactory state, which is caused by the following factors:

- at the present time, there is no special state and private organization in this area, as well as the concept of development of MICE-tourism in the country. The study shows that some travel agencies in Central Asia in the Internet resources place advertising information about the organization of MICE-events on the territory of Uzbekistan;

- lack of necessary infrastructure (premises for events, logistics, accommodation facilities, availability of international services, etc.) in the regions for the MICE-tourism industry.

Conclusion

Based on the above, and given that MICE-tourism is one of the promising directions for solving the seasonality factor in the tourism sector of Uzbekistan, it is advisable to Develop the concept of MICE-tourism for 2019-2030 together with state bodies, local khokimiyats and non-governmental institutions, with the definition of specific goals and taking into account the creation of a positive image, increasing the popularity of regions, attracting investment, exporting goods, developing tourism in the country. The document should include the following measures creation by the decision of the State Committee on tourism of a special unit in the structure of the Committee. At the same time to transform sue " Center of tourism services "under the State Committee for tourism development in sue"Center MICE-tourism"[24].

- based on the experience of the Association of Georgia in the sue "MICE-tourism Center" large hotels, transport companies, travel agencies and other institutions as members. This measure allows to organize and conduct MICE-events in a timely and high-quality manner.

- development by each Ministry and Department of the mice program-events of international and local importance. When developing the theme it is necessary to take into account the factor of seasonality in tourism (to carry out activities in the off-season period);

- development of MICE-events in the regions of the country creation of a list of free areas, hotels on the basis of the feasibility of these MICE-events to ensure their business;

- in order to effectively use the premises to develop and take a decision of the government to hold MICE-events in the palaces of the international forums of Tashkent and Samarkand " saroyi Symposium»

and others (currently they do not hold regular events of international and national importance);

- for training and retraining of professional personnel in the field of MICE-tourism organization in the training and consulting center of tourism at the State Committee on tourism special courses with the provision of a certificate.

Along with the cultivation of a tolerant, respectful attitude towards the “other”, to a different culture, which is especially important in the situation of multi-ethnic Uzbekistan, ethnic villages help

preserve diverse cultural traditions, enhance ethnic identity, and create an image of the regions that can attract tourists from both Uzbekistan from abroad Thus, making conclusions it should be noted that:

- currently Uzbekistan has created its own model of development of the tourism industry, taking into account all the national advantages of Uzbekistan
- A number of laws and decrees promoting the development of tourism have been adopted in the republic
- A number of activities and special programs are being carried out to create favorable conditions for tourists
- develop different areas of tourism in order to attract tourists from both the CIS and non-CIS countries
- measures are being taken to preserve the richest historical and cultural heritage
- in Uzbekistan it is possible to develop new directions of tourism, such as gastronomic, pilgrim, youth, ecological tourism.

To achieve greater attraction of tourists should consider the following suggestions and recommendations:

- effective use of tourism potential, the development of new tourist areas, the creation of national parks, museums, centers for the development of folk crafts and crafts, the expansion of the sales network for the sale of souvenir production and tourist goods.
- cancellation of obligatory hotel accommodation and hotel registration within 3 days
- use the active participation not only of state support of tourism but also of the private sec
- Further promotion of the Silk Road brand
- increase in the number of ethnographic villages, for in-depth familiarization of tourists with traditions and customs, lifestyle, and national cuisine of the local population
- the development of extreme tourism, the presence of mountains, rocky areas, deserts in Uzbekistan - all this attracts lovers of outdoor activities, especially mountaineering, climbing, skiing and safaris.
- Inclusion of pilgrimage tours not only from the cities of Samarkand, Bukhara and Khiva, but also from other cities and regions of Uzbekistan, as well as active advertising in the form of banners, booklets, books giving a detailed description of the holy sites.
- raise the question of the need to develop and introduce in the territory of Uzbekistan a unified state system of benefits for travel packages for citizens over 60 years' old

Thus, the intensive development of the tourism industry in Uzbekistan, including respect for the historical and cultural heritage, the creation of infrastructure that fully meets international standards, the strengthening of international relations has turned our region into one of the most visited countries in the world.

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THE ROLE OF PHYSICS SUBJECT IN TEACHING COLLEGE STUDENTS

Abstract: *The article discusses the role of physics and mathematics in colleges. And also some examples of solving physical problems of an applied nature are given. Disclosed interdisciplinary communication subject of mathematics and physics.*

Key words: *training, information technology, interactive learning, interdisciplinary communication.*

Language: *Russian*

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РОЛЬ ПРЕДМЕТА ФИЗИКИ ПРИ ОБУЧЕНИИ СТУДЕНТОВ КОЛЛЕДЖА

Аннотация: *В статье рассмотрена роль физики и математики в колледжах. А также приведены некоторые примеры решения физических задач прикладного характера. Раскрыты межпредметные связи предмета математики и физики.*

Ключевые слова: *профессиональная подготовка, информационные технологии, интерактивное обучение, межпредметный связь.*

Introduction

Перед вузами и колледжами Кыргызстана в данное время ставятся новые задачи, направленные на формирование у студентов системного мышления, творческой активности и самостоятельности. В колледжах по подготовке будущих специалистов основными функциями являются не усвоение готовых знаний, которые получены во время лекционных и практических занятиях по физике, а развитие у студентов способностей к овладению методами научного познания, дающими возможность самостоятельно получить знания и творческое использование на основе знакомых методов профессиональной деятельности. Изучение предмета физики в колледжах способствует не только повышению естественно-математического уровня подготовки студентов, но также формирует у них творческое мышление. В своей будущей профессиональной деятельности студенты столкнуться с необходимостью решить проблемные ситуации, которые требуют своеобразный подход. "Проблемная ситуация - это особый вид мыслительного воздействия объекта и субъекта, который характеризуется таким психологическим состоянием, возникающим у субъекта (учащегося) при выполнении задания, которое требует найти (освоить) новые, ранее неизвестные субъекту знания и способы действия". Проблемная ситуация заранее конструируется преподавателем, в основе ее лежит учебная проблема. При ее реализации обучаемый вынужден самостоятельно

добывать новые знания [1]. Продуктивное решение таких проблем будет недопустимо без конкретного опыта творческого труда.

Materials and Methods

В настоящее время совершенствование преподавания фундаментальных дисциплин является одним из важнейших направлений развития Кыргызской Республики [4]. Инновационное производство является актуальной для одной из важнейших отраслей экономики Кыргызстана – отрасли выработки электрической энергии. В «Стратегия развития образования в Кыргызской Республике на 2012-2020 годы» определены актуальные проблемы среднего профессионального образования и приоритетные направления политики. Среди актуальных проблем среднего профессионального образования необходимо выделить следующие [6]:

1) Несоответствие результатов среднего профессионального образования (СПО) требованиям, предъявляемым рынком труда. Существующие квалификационные требования в СПО устарели и поэтому выпускники не обладают навыками и знаниями, востребованными на рынке труда. Низкое качество программ СПО объясняется недостаточностью систематического взаимодействия между учреждениями СПО, частным сектором (бизнес) и рынком труда. Учебные программы СПО больше ориентированы на теорию, а не на практические компетенции.

2) Неконкурентоспособные выпускники системы СПО по ряду специальностей и профессий. Профессии и специальности в СПО не анализируются регулярно с точки зрения перспективных требований развивающегося рынка труда. Поэтому, в дополнение к слабой подготовке выпускников система, в силу негибкости, сталкивается с проблемой переизбытка или недостатка определенных профессий.

Исходя вышеперечисленных проблем нами поставлена цель – подготовка специалистов, способных реализовать профессиональную деятельность в сфере производства и в быту, учитывая процесс преподавания предмета физики. Изучение физики в колледжах дает возможность формированию у студентов фундаментальные физические знания, т.е. развитие технические способности и технические мышления, которые обеспечивает плодотворное решение технических задач.

После окончания школы ученики поступают в вузы и колледжи, имеющие свои требования и организации учебного процесса. В период первого семестра многие студенты проходит благополучно, привыкая к новой атмосфере общества. Для преподавателей фундаментальных дисциплин, т.е. физики и математики, важно развивать творческое мышление. Для осуществления данной деятельности в процессе обучения можно применять некоторые методы и технологии преподавания. Для повышения полученных знаний в колледжах, очень важно опираться на ранее полученные знания, т.е. должен реализоваться принцип преемственности. При этом сравнивается знании по физике общеобразовательной школы и колледжа, которое способствует формированию основных законов физики [2].

Основной задачей университетов и колледжей является профессиональная подготовка студентов, но творческая составляющая в этом процессе необходима. Аналогичное развитие с помощью предмета физики позволяет достигать следующие результаты:

- развивается аналитические способности, совершенствуются логические процессы;
- для нахождения новых решений старых задач создаются основа;
- развивается критическое мышление;
- создается более комфортная обстановка в процессе обучения предмета физики.

Для этого необходимо совершенствовать преподавания физики в колледжах, т.е. надо использовать инновационные педагогические технологии в процессе преподавания физики.

Под инновациями в образовании понимается процесс совершенствования педагогических технологий, совокупности методов, приемов и средств обучения. Основную задачу педагогической деятельностью является создании на занятиях по физике такой образовательной среды, которое дает возможность самореализации студентов, повышению их уровня знаний, формированию коммуникативных навыков, творческого мышления, познавательной активности.

Применение активных и интерактивных методов обучения повышает интерес к знаниям. В практике можно использовать такие педагогические технологии обучения как [3]:

• технология проблемного обучения - стимулировать студентов к самостоятельному получению знаний, необходимых для решения проблемы прикладного характера;

• информационно-коммуникационные технологии применяются на занятиях при объяснении нового материала, при закреплении, для контроля знаний, при выполнении домашнего задания, при подготовке к экзаменам;

• личностно-ориентированные технологии;

• технология проектного обучения - индивидуальная или коллективная деятельность по отбору, распределению и классификация материала по конкретной теме, в результате которой разрабатывается научный проект.

Мотивирование студентов к активной мыслительной деятельности является мотивирование - совершенствование организации учебного процесса и предложить студентам нетрадиционные формы занятия[5]:

• урок-семинар - при изучении темы "Тепловые двигатели проводится урок-семинар, группа предварительно на подгруппы и объясняется общий план подготовки (определение, устройство, принцип действия, применение, влияние на окружающую среду) по разным типам двигателей. Заданий такого характера студенты выполняют с удовольствием, показывают свои активности, и урок - семинар проходит оживленно и более интересным;

• урок защиты проектных работ - для развития навыков проектной деятельности студентам предлагается мини-сочинения: «Для чего нужна изучать физику?», «Физика в быту», «Оптические явления», «Оптические приборы», «Использование электродвигателей постоянного тока»;

• урок-соревнование - проведение занятий по теме «Законы постоянного электрического тока», в котором студенты будут соревноваться по числу набранных балов по итогу занятия.

• урок-экскурсия - это важный прием не только повышающий эффективность усвоение материала в целом, но и проявляет интерес студентов к фундаментальным наукам;

• виртуальные интерактивные лабораторные работы предоставляет уникальную возможность визуализации моделей физических явлений и процессов. Интерактивность открывает перед студентами большие возможности, делая их не только наблюдателями, но и активными участниками проводимых экспериментов.

Важной формой развития интереса студентов к физике и их творческих способностей является решение физических задач прикладного характера. Для укрепления знаний необходимо не физические задачи, а наоборот, решить физические задачи прикладного характера нужны знании. Основными компонентами специалиста (электроснабжение, техническое обслуживание и ремонт автомобильных транспорта) является решение задач, т.е. принять оптимальных решений поставленной цели в заданных условиях. Поэтому в вузах и колледжах Кыргызстана процесс преподавания физики должен быть направлен на решение физических задач, используя математические аппараты. Реализация в учебный процесс задач прикладного характера способствует укреплению знаний по физике и математике.

В русле вышеизложенных, необходимо осуществлять межпредметные связи «математика-физика» необходимо соблюдать чувство меры: уроки математики не должны превращаться в уроки физики с применением математики, нельзя перейти черту границ этих предметов и загромождать текст прикладной задачи такими техническими и статистическими данными, которые порождают у учащихся дополнительные трудности.

На уровне знаний раскрываются межпредметные связи по направлению математика и физика» и в следующей задаче.

Задача 1: Элемент замыкается спиралью один раз сопротивлением R_1, другой раз сопротивлением R_2. В том и другом случае количество тепла, выделяющегося в спиралях за одно и то же время, оказывается одинаковым. Каково внутреннее сопротивление r?

Решение.

I - этап (формализация). Построим математическую модель явления. По условию задачи имеем: $Q_1 = Q_2$, где Q_1 - количество тепла, выделяющегося в первой спирали, Q_2 - количество тепла, выделяющегося во второй спирали. Поскольку $Q_1 = I_1^2 R_1 t$, а $Q_2 = I_2^2 R_2 t$, получим: $I_1^2 R_1 t = I_2^2 R_2 t \Rightarrow I_1^2 R_1 = I_2^2 R_2$. Применяя, закон Ома для полной цепи, имеем: $E = I_1(R_1 + r)$, $E = I_2(R_2 + r)$, тогда $I_1(R_1 + r) = I_2(R_2 + r)$, где I_1, I_2 - ток в цепи.

Переходим к системе двух уравнении с тремя неизвестными I_1, I_2, r.

$$\begin{cases} I_1^2 R_1 = I_2^2 R_2 \\ I_1 (R_1 + r) = I_2 (R_2 + r) \end{cases}$$

Математическая модель исходной задачи получена – это система двух уравнений с тремя неизвестными.

II этап. Решение задачи в рамках построенной модели. Найдём решение системы.

Для этого запишем уравнения в другом виде:

$$\begin{cases} \frac{I_1}{I_2} = \sqrt{\frac{R_2}{R_1}} \\ \frac{I_1}{I_2} = \frac{R_2 + r}{R_1 + r} \end{cases}$$

Приравнивая $\sqrt{\frac{R_2}{R_1}}$ и $\frac{R_2+r}{R_1+r}$, получим: $\sqrt{\frac{R_2}{R_1}} = \frac{R_2+r}{R_1+r}$. Возводя в квадрат обе части, имеем:

$$\frac{R_2}{R_1} = \frac{R_2^2+2R_2r+r^2}{R_1^2+2R_1r+r^2} \Rightarrow$$

$$R_2R_1^2+2R_2R_1r+R_2r^2 = R_1R_2^2+2R_2R_1r+R_1r^2,$$

$$r^2(R_2-R_1) = R_2R_1(R_2-R_1)$$

$\Rightarrow r^2 = R_2R_1$, и, наконец, $r = \sqrt{R_2R_1}$. Решение получено.

III этап – интерпретация. Переведём полученный результат решения математической задачи (системы двух уравнений с тремя неизвестными) на язык исходной задачи. Внутреннее сопротивление r элемента равно $r = \sqrt{R_2R_1}$. Математическое решение получено, естественно, при условии $R_2 - R_1 \neq 0$. Если $R_2 - R_1 = 0$, т.е. $R_2 = R_1$ из системы получаем $I_1 = I_2$ и $\frac{R_2+r}{R_1+r} = 1$, т.е. $R_2 + r = R_1 + r \Rightarrow R_2 = R_1$, т.е. в другой раз спираль включена с тем же сопротивлением R_1.

Межпредметные связи на уровне знаний в этой задаче раскрыты посредством использования теоретических положений курса физики (закона Ома для полной цепи и т.д.). Эти положения совместно математического аппарата (способа решения системы двух уравнений с тремя неизвестными) приводят к искомому результату.

Ценность такого рода задач в формировании и развитии математического мышления заключается в том, что выявление практической значимости изучаемой математической теории на таких задачах служит мощным стимулом для активизации мыслительных действий студента по совершенствованию математических знаний и самостоятельному, сознательному их приобретению. Мы уверены и наш опыт работы подтверждает это, что решение подобного рода задач является пусть весьма скромным, но творческим актом, поскольку решение задачи предполагает изобретение специально ведущего к поставленной цели рассуждения. Именно этот творческий, исследовательский характер данной задачи более чем что-либо другое привлекает к себе ученика, желающего испытать свой силы и развить укрепляющийся интеллект. В самом деле – как решать систему двух уравнений с тремя неизвестными? Для ответа необходимо проявить нестандартность, не шаблонность мышления, интуицию (конечно, основанную на знании и подкрепленную этим знанием). Догадаться, что можно преобразовать каждое уравнение системы так, чтобы в левых частях получить одно и то же отношение I1 к I2, - это дано не каждому ученику и «озарение» снизу идет не на каждого. Но тот учащийся, который изведал благородную радость творческого достижения, никогда не пожалеет усилий, чтобы вновь ее испытать. Это творческое достижение является для студента стимулом для всё новых и новых напряжений мысли. Именно напряженная, интенсивная мыслительная деятельность учащегося и приводит к положительным результатам в его математическом развитии.

Межпредметные связи могут быть осуществлены не только на уровне знаний, но и на уровне видов деятельности. В математике используются различные виды деятельности в процессе обучения. Например, употребляется вид деятельности составить текстовую задачу по заданному уравнению. Аналогичный вид деятельности может быть применён и в процессе обучения физике.

Межпредметный связь между математикой и физикой на уровне видов деятельности может быть реализована посредством методов научного познания. И в математике, и в физике используются такие методы как наблюдение, сравнение, аналогия, индукция, дедукция, анализ, синтез, обобщение, конкретизация, абстрагирование, специализация.

Как пример, приведём задачу, демонстрирующую реализацию межпредметных связей на уровне деятельности, посредством метода аналогии.

Задача 2: (физическая) Во сколько раз минимально можно уменьшить ёмкость батареи, состоящей из двух параллельно соединённых конденсаторов, при замене параллельного соединения на последовательное соединение?

Решение. Рассмотрим эту задачу как прикладную и найдём её решение по трехэтапной схеме.

I этап. Обозначим через C_1 и C_2 - ёмкости отдельных конденсаторов, $C_{пар}$ - ёмкость батареи при параллельном соединении конденсаторов, $C_{пос}$ - ёмкость батареи при последовательном соединении. Из курса физики известно, что $C_{пар} = C_1 + C_2$; $C_{пос} = \frac{C_1C_2}{C_1+C_2}$. Составим отношение $\frac{C_{пар}}{C_{пос}} = \frac{(C_1+C_2)^2}{C_1C_2}$. Требуется узнать, при каких значениях C_1 и C_2 значение отношения $\frac{C_{пар}}{C_{пос}}$ будет наименьшим. Математическая модель построена.

II этап. Решим задачу в рамках построенной модели. В курсе математики используется неравенство $a+\frac{1}{a}\geq 2$, где $a>0$. Минимальное значение равно 2. Воспользуемся методом аналогии и преобразуем отношение $\frac{C_{нар}}{C_{пос}}$ к виду:

$$\frac{C_{нар}}{C_{пос}}=\frac{(C_1+C_2)^2}{C_1C_2}=\frac{C_1^2+2C_1C_2+C_2^2}{C_1C_2}=\frac{C_1}{C_2}+\frac{C_2}{C_1}+2\geq 4\cdot$$

Наименьшее значение $\frac{C_{нар}}{C_{пос}}$ равно 4. Видим, что оно достигается при $C_1=C_2$.

III этап (интерпретация). Переведём полученный результат на язык исходной задачи. Поскольку наименьшее значение $\frac{C_{нар}}{C_{пос}}$=4, достигается при $C_1=C_2$ (ёмкости конденсаторов одинаковы), то при замене параллельного соединения на последовательное соединение можно минимально уменьшить ёмкость батареи в 4 раза.

В этой задаче использование аналогии между математическими величинами и величинами физическими существенно помогло получить требуемый результат. Обнаружение сходства разных явлений, пусть даже и совсем неглубокого, способствует активизации мышления, ибо прежние знания (о математических величинах: (a + 1/a)>2, где a >0) выступают в новом свете применительно к физическим величинам (C_1/C_2+ C_2/C_1>2).

Умение находить аналогии между утверждениями - это доказательство аналогии. Если замечается аналогии теорий – это высшая инстанция научного познания. Так что действительно, среди ценностей интеллекта одно из важнейших мест занимает умение находить и применять аналогии. В рассмотренной задаче, проводя умозаключение по аналогии, учащийся совершает сложный мыслительный процесс, в котором в единстве и взаимопроникновении применяются приёмы анализа и синтеза. Здесь математические объекты и объекты физические запечатлеваются в сознании ученика не изолированно друг от друга, а в тесной связи друг с другом, в единстве. Таким образом прикладные задачи могут быть с успехом использованы в качестве средства формирования и развития математического мышления учащихся.

Conclusion

Подводя итог исследованию развития математического мышления при реализации межпредметных связей в процессе решения прикладных задач, приходим к выводам:

1. Прикладные задачи, решаемые на основе использования межпредметных связей, способствуют более глубокому пониманию учащимися идеи материальности мира;

2. В процессе нахождения решения прикладной задачи с использованием межпредметных связей формируется и активно развиваются такие качества, как математическое мышление, которое способствует к обобщению, абстрагированию, умение анализировать, синтезировать, строить суждения и умозаключения, схематизировать, что приводит к развитию гибкости и глубины мышления, его оригинальности и рациональности.

3. Использование в учебном процессе прикладных задач с установлением при их решении межпредметных связей способствует более глубокому усвоению учащимися, как математики, так и смежных дисциплин (физики и др.).

4. Прикладные задачи приучают школьников видеть в задачах пространство их учебных действий, источник информации об их способностях, ситуацию, в которой можно ощутить приятное и весьма вдохновляющее чувство собственной компетенции, что вполне согласуется с требованиями гуманизации математического образования.

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ECOLOGICAL CONDITION OF SOILS AT THE STAGE OF ECONOMIC DEVELOPMENT OF KYRGYZSTAN

Abstract: *The research paper looks at the basins of northern flank of the Alai mountain ridge and geographical principles of glacial flow distribution. Glacial flow is estimated on the basis of genetic division of flow hydrograph. Glacial flow changes are revealed by physiographic conditions.*

Key words: *mountain, valleys, climate, hygrophilous vegetation, river.*

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Introduction

The Alai mountain ridge is situated in the South of Osh and Batken regions and covered by the Alai mountain system. This high-mountain ridge, having latitudinal strike and bounding the Fergana basin from the South, separates the Fergana and Alai valleys. One of the highest passes of Kyrgyzstan - Taldyk at a height of 3615 metres above the sea level (m.a.s.l.), is situated on the Eastern part of the Alai mountain ridge. The main prongs are Kollektor ridge, Kichi-Alai ridge, Ak-Ter ridge and the ridge named after academician Adyshev.

The length of the mountain ridge is about 350 kms., maximal width - 35-40 kms., average height - 4450 m.a.s.l. High altitudes are fixed on the Western part, where the ridge is covered by eternal snows and glaciers. The maximal height of the Alai mountain ridge is 5539 m.a.s.l. (Tamdykul peak).

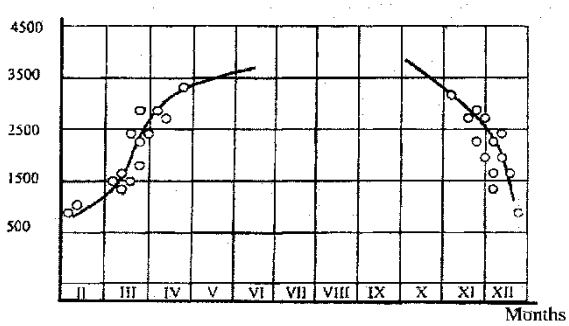
The distinctive feature of Northern side of the Alai mountain ridge from other ridges of Tien Shan is that humid air masses are coming parallel to the Alai mountain ridge, like sliding without interception downhill, not going up. As a result of heightening, an arid climate occurs on the Northern side; it creates adverse conditions for growth of hydrophilous vegetation.

Depending on the relief form and the height of the locality the date of ascertainment of a hard snow mantle between the date of failure (50% of provision) is 76 days at the height of 1500 metres to 178 days at the height of 3155 metres, and the changeability of dates of a hard snow mantle failure is rather intensive, as during the vegetation period there is less precipitation.

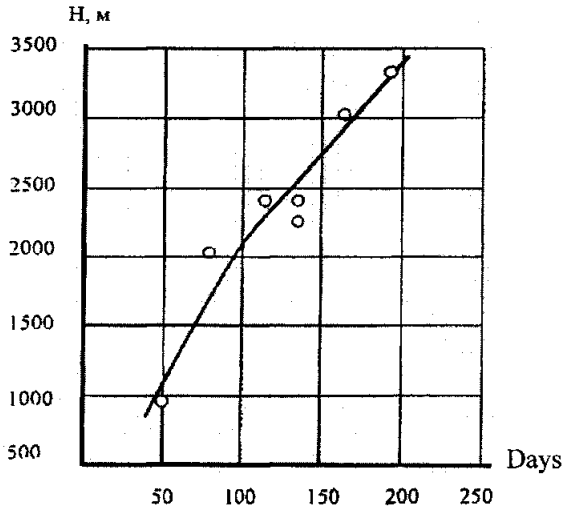
Materials and Methods

The number of days with snow mantle depends upon the height of the locality (see Pic. 1, 2), and the snow mantle depends on density. The thermal conductivity of the water and water reserve in the snow mantle change depending on the density, that is of great agricultural significance; it is also important for flow accounting, etc.

The rivers flowing down from the northern flank of the Alai mountain ridge belong to glacier and snow supply with ground recharge. This basin due to the catchment area equals to 15% of the whole territory of the republic. The most large rivers of the basin are the River Kurshab, the Ak-Bura river, the Aravan-Sai, the Isfairam-Sai and Shahimardan. For these rivers a summer heavy flow is characteristic. It is formed of melting high mountain snow and ice. Degree of icing of river basins depends on condition of their damping, characteristics of height and morph metric peculiarities.



Pic. 1. Relation of destruction dates and establishment of snow cover to height.



Pic. 2. Relation of days with snow cover to height.

On the flanks of the Alai mountain ridge the largest sources of icing are located in the basins of the rivers of Sokh, the Isfairam-Sai and the Ak-Bura River. In the basins of rivers area of icing fluctuates from 3 to 9%.

To learn constituent elements of water balance we have divided the whole river flow into surface and underground constituents, and water discharge on evaporation and holard damping.

In the surface flow we have identified snow and ice constituents. We have used genetic partition of flow hydrograph as a major method. There has been partition of river flow hydrograph, on which balance accounts have been done.

Conclusion

On 10 rivers of the region under consideration, where we have data on river flows (Table), we have made 40 hydrographs. Analysis of these data showed us that a hard snow mantle failure on

the Alai mountain ridge at glacial height average of 3500-4000 m. takes place during the third decade of July.

At partition of flow hydrographs we have used data for the years 25%, 50%, 75% of provision, as the assessment made by A. A. Ergeshov, I. D. Tsigelnaya, M. A. Muzakeev (1992)/108, I.V. Pylev (1980) show that at such samplings for identification of constituents the error in accounts is not more than 9%.

Snow flow on the northern flanks of the Alai mountain ridge is not big - from 32 to 179 mm., and in average it makes 70-75 mm. It is connected with small snow mantle. In relative values, snow flow of is 11% in the basins of the Isfairam-Sai river and up to 39% in the basins of the river Karakol.

Ice constituent of the river flow is formed high in the mountains. Degree of icing depends on spreading surface and morphometric peculiarities; it tends to spread from West to East. The area of icing in the basins of the river Sokh is 4-6%, river Aravan-Sai - 9%, Ak-Bura - 2-4%. Glacial flow part changes from 15 up to 44%. In the ranges of the mountain river outgo the glacial flow part is 25%, and at ranges of glacier tongues this part comes up to 75%.

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SECTION 21. Pedagogy. Psychology. Innovations in the field of education.

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EDUCATION MANAGEMENT BY MEANS OF PEDAGOGICAL TECHNOLOGIES

Abstract: *The article analyzes the role and importance of education management through the use of modern technologies in our country.*

Key words: *innovative technologies, education, management, education, teaching and educational processes.*

Language: *Russian*

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УПРАВЛЕНИЕ ОБРАЗОВАНИЕМ ПОСРЕДСТВОМ ПЕДАГОГИЧЕСКИХ ТЕХНОЛОГИЙ

Аннотация: *В статье анализируется роль и важность управления образованием посредством использования современных технологий в нашей стране.*

Ключевые слова: *инновационные технологии, образования, управления, воспитания, учебно-воспитательные процессы.*

Introduction

Появление высокоразвитых технологий в XX1 веке и в результате их усложнённости делают жизненно важным обеспечение безопасности жизни. Уместно обратить внимание на неотложные задачи, выдвинутые Президентом Республики Узбекистан Ш.М.Мирзиёевымв его обращениях к Олий Мажлису. В частности, в своем обращении к Олий Мажлисуот 28 декабря 2018 года президент призвал продвигать инновационные образовательные технологии в процессе высшего образования на более высокий уровень [1, 136].

Процесс высшего образования предполагает использование инновационных технологий, их высокий уровень интенсификации, реализацию соответствующих мер, а также создание инновационных подходов, научных разработок и современных технологий от каждого члена нашего общества. Как сказал наш уважаемый глава государства: «Создание инновационной среды в мировозрениях наших людей является нашим главным приоритетом. Без инноваций не будет ни в одной области ни развитие ни конкуренции. Если мы не будем широко пропагандировать изменения в этой области народу, если у нас не будут человеческих навыков, то мы не сможем внести свой вклад в беспрецедентные достижения науки и техники.

Materials and Methods

Сегодня современные инновационные технологии в управлении высшим образованием являются одной из наиболее широко используемых технологий. А это является непосредственным выражением государственной политики в сфере управления высшим образованием в соответствии с Законом Республики Узбекистан «Об образовании» и «Национальной программой подготовки кадров».

Развитие профессионального и высшего образования все больше объединяет их цели и задачи.

Современные инновационные технологии в управлении высшим образованием должны обеспечить единую государственную политику в области образования и воспитания гармонично развитого поколения, обеспечить своевременное и творческое решение созревших проблем и обеспечить, чтобы эффективность работы всех образовательных учреждений отвечали их современным требованиям.

Вместе с тем это является задачей всех правительственных и общественных организаций, это, естественно, сложный процесс, прежде всего требующий всестороннего пересмотра содержания деятельности учреждений непрерывного образования. Все это имеет особое значение в управлении и развитии высшего образования. Для этого управление и развитие образования могут быть организованы в установленном порядке за счет юридических и физических лиц, в том числе за счет добровольных взносов иностранных юридических и физических лиц.

Министерство высшего и среднего специального образования управляет и руководит всеми университетами, профессиональными колледжами, лицеями и учебными заведениями. Разрабатывает и утверждает учебные планы и программы для высшего и профессионального образования.

Управление высшим образованием заранее планируется сверху вниз в сочетании с процессами работы во всех сферах образования, определяя содержание работы всех учебных заведений. В процессе управления широко используются различные инновационные методы. Правильное внедрение инновационных технологий в учебно-воспитательные процессы может привести учителя к работе в качестве основного организатора или консультанта в этом процессе. Это создает формирование большой самостоятельности, креативности и воли у студентов, а проведенные занятиясоздают для студентов выразить свои отношения к важным жизненным достижениям и проблемам молодёжи и требуют их самостоятельного осмысления [2].

.В современных инновационных процессах происходящие в текущем периоде нужны люди которые способны самостоятельно и свободно мыслить, принимать необходимые решения, владеть новой информацией для решения проблем в системе образования, самостоятельно оценивать эту информацию. В связи с этим роль и значение высшего образования в процессе управления инновационными технологиями неизмеримы. Инновация (по английский innovation) - это означает нововведение, новшество.

Инновационные технологии - это педагогический процесс, а также введение инновации и изменения в творческую деятельностьмежду учителем и учеником, а при его реализации используются интерактивные методы, поскольку управленческую роли в образовании играет учитель.

К интерактивным методам относятся «Семинар соревнования», технология «Знакомство», технология “Ступеньки”, технология «Мозговой штурм», технология «Круговорот», технология «Кластер», технология «Бумеранг», технология «3х4», технология «Резюме», «Технология проблем», «Технология лабиринта», «Методы блиц-опроса», технология «Техника ФГМУ», технология «Скарабея», технология «Веер», технология «Диалог», технология «Спор», технология «Сценарий» и другие [3].

Например, организация урока по технологии “Семинар соревнования” широко используется в образовании на протяжении многих лет. Этот метод повышает интерес и активность студентов. Для того, тобы подготовиться к этому методу заранее предупреждают студентов, и тема объявляется заранее. Студенческая группа подразделяется на две подгруппы. Каждый из них должен подготовить вопрос по теме. В начале семинара студенты будут ознакомлены с условиями конкурса. Здесь даются определённые баллы не только за ответы, но из за правильность и точность вопросов, а также за дополнения и поправки. Всемстудентам группы могут быть предоставлены минусовые баллы за активное участие, например, могут использоваться метод вычитания балловот +3 до -3 за неправильные ответы и вопросы. Набранные баллы во время соревнования, могут быть записаны на доске. В конце семинара группу победителей можно поощрять дополнительными баллами. Педагог, как руководитель учебного процесса, должен внимательно и бдительно слушать ответы, и оценивать каждого студента. Этот метод учит твёрже закреплять знания, повышать речевую культуру, правильно сформулировать вопросы и выражать свои мысли. И самое главное, он учит студентов самостоятельно приобретать знания, искать новости и творческий подходить к предмету. Рассматриваемая тема подробно анализируется и связывается с жизненно важными процессами. Наилучшие результаты могут быть достигнуты, если первые формы этой инновационной технологии используются в университете.

Conclusion

Метод работа в малых группах. При этом методе студенты группы подразделяются на несколько групп, в каждой группе могут быть 4-5

студентов. Назначается руководитель каждой группы. Им заранее дается задание. Группа студентов вместе готовятся к семинару и они должны постараться полностью осветить свои вопросы. Другие группы задают вопросы основному докладчику, студенты группы помогают ответить на вопросы.После защиты основного спикера оппоненты должны быть в состоянии объяснить вопрос более подробно [3]. Студенты третьей и четвертой группывыразив свое мнение, должны оценивать и комментировать работу группы, проводившую исследование. Для того, чтобы работать таким образом, при создании групп важно, чтобы учащиеся в группах имели равные знания. При руководстве группы следует выбрать хорошо успевающего студента. После окончания такого конкурса инновационных технологий, можно проводитьи другие виды соревнований по разделу.

В это связи целесообразно организовать дидактические игры с инновационными технологиями.

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RECOGNITION OF BODY PART USING NEURAL NETWORKS

Abstract: *This work belongs to the training of neural networks for solving problems related with computer vision. The first chapter discusses the general concepts of neural networks and their structure. The second chapter reviews the models of convolutional neural networks and the ways of learning them. The third chapter describes the project architecture, implementation and testing.*

Key words: *machine learning, computer vision, convolutional neural networks, recognition of images*

Language: *English*

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Introduction

Recently, tasks related to computer vision are very popular. With the help of machine learning you can detect, explore, recognize any object or help the robot to navigate in the area. Every year the number of tasks in this sphere grows and new opportunities in the field of computer vision are opening up. Pattern recognition is a scientific discipline whose goal is to identify objects according to several criteria or classes [1].

Where could this come in handy? Now there are several interesting examples of these solutions. On December 5, 2016, Amazon opens its first store without AmazonGo sellers and by 2019 opens 4 such stores [2]. Shops are operating with the following technologies: computer vision, various sensors and deep learning. Also more uses can be found in video games of the virtual reality. Players will not have to keep gamepads constantly in their hands, it will be enough to use only hands to play without gamepads.

This solution also can be used in unmanned vehicles. Every unmanned vehicle has a video camera that helps to identify obstacles such as pedestrians or cyclists. People can warn the car with any gestures. This can save the life of a passenger or other people.

Accordingly, the goal is to study and learn neural networks and their application for solving problems of searching for human joints. To achieve this goal, we formulate the following tasks [3]:

1) Study the problem of pattern recognition;
2) Study of the features of the applications of neural networks;
3) Search and data processing for training;
4) Training and optimization of models;
5) Evaluation of the results.

The aim of the article

The aim of the current work is the implementation of neural networks that can predict the coordinates of human joints. Neural networks can be used in unmanned vehicles to provide protection to passengers and pedestrians. And before this aim, the following tasks were set: analyze the use of neural networks in the field of computer vision, collect the necessary data for training, implement and train neural networks using the Python language, implement a simple application to visualize the results.

Stack of used technologies

Today there are many different languages for working with neural networks, such as: Python, C ++, R, Java and others, as well as various libraries and frameworks, for example, Coffee, Keras, Tenserflow, Theano, Caffe.

The first advantage of Python and R is an uncomplicated syntax, it is “elegant” on the one hand, and “mathematical” on the other, its semantics have a special correspondence to many common mathematical ideas. And languages like C ++ and Java are designed for maximum performance, but with a complex syntax for understanding and writing.

The second advantage of Python is the prevalence among developers. Since it is the most common language, this implies the availability of many different libraries and machine learning tools, which are mostly oriented towards working with Python. Tenserflow, Keras - one of the most popular libraries and frameworks, numpy, matlotlib, jupyter notebook - one of the most popular tools for work.

Tenserflow is the most common open source library for numerical calculations using data flow graphs [4]. This library is cross-platform, so it can work on a GPU, CPU, and also on TPU tensor processors. But one of the main advantages is that there are many implemented architectures for various neural networks.

Keras is a framework written in Python that can work on top of Tensorflow, Teano, and other libraries for working with neural networks. It was implemented to improve interaction speed with neural networks. The ability to move from idea to result with the least possible delay is the key to conducting good research [5].

As we are trying to achieve maximum precision and convenience, Python has been chosen. Tenserflow, Keras, numpy, matplotlib, jupyter notebook are also used in the solution.

To implement the client-user application, the Qt graphical framework for the Python programming language was chosen.

Project Architecture

To implement the project, it was decided to use two consecutive neural networks. The task of the first neural network is to specify the bounding box for the people in the image. The task of the second neural network is to predict the coordinates of the joints for people in the bounding boxes.

Model overview for the first convolutional neural network

The task of the first neural network is to classify people in the image. To solve this problem, there are many models, so we consider them and choose the best in our opinion. We will consider the model in chronological order.

Regions Convolutional Neural Networks (R-CNN)

In 2014, a small team at the University of California at Berkeley publishes a neural network that can detect objects in an image [6]. Object detection is the task of searching for various objects and their classification. For example, to recognize a cat or a dog in an image. The purpose of R-CNN is to take images and correctly predict bounding box of the objects. A bounding box is a rectangle that bounds the shape of a more complex geometric model and is determined by the coordinates of the upper left and right lower points.

1. An arbitrary resolution image is supplied to the R-CNN input. The original image is divided into rectangles of different sizes with the help of SelectiveSearch, and they are called object candidates. 2000 candidates are predicted for each image.

2. Each candidate is given for a resolution of 224x224.

3. Next, using their own implementation or the implementation of Krizhevsky CNN, determine the weights of features of the 4096-dimensional vector for each candidate.

4. Using the classifier (SVM) recognize the object by signs.

5. Using the regressor, we predict bounding box of the objects.

SelectiveSearch - an algorithm for determining the similar regions. It is a hierarchical grouping of similar areas based on compatibility of shape, color, structure, and size. In other words, this algorithm is for clustering intersected regions in an image [7].

Fast R-CNN

The usual R-CNN had 2 big problems. 2000 candidates were predicted for each image and each candidate was processed by a neural network. Accordingly, the first problem was the speed of learning and testing. The second is that it was necessary to train CNN, the classifier (SVM), which recognizes the object, and the regression model, in order to narrow the bounding box for the image.

Problem solving was proposed in 2015 by Ross Hirschik, who participated in the development of R-CNN, and named the model Fast R-CNN [8].

The author solves the first problem. He is not applying CNN for each candidate, just apply only to the original image, and then use the RolPooling layer to see if one of the 2000 areas is suitable for the object. PolPooling receives data in the form of a C x H x W map from the last CNN convolutional layer, as well as the height(h) and the width(w) of the challenger. They are compared, and a decision is made whether the applicant is suitable for the object — if so, it is inserted into the layer of the ROl pool.

The second problem was solved by the fact that the regressor, the classifier and CNN were combined into one model and trained together.

Faster R-CNN

In spite of all the advantages of Fast R-CNN, there were still some minor problems, and they were connected with the candidates. In 2016, under the leadership of Juan Sun, the main researcher at Microsoft Research, and his team, a new model Faster R-CNN was proposed. The idea of the new model was to use the predicted areas for several candidates at once, instead of one candidate. In this model, this approach was implemented and it turned out to be quite successful, which made it possible to increase accuracy.

YOLO

YOLO or You only look once is a model for detecting an object, which is very different from the previously considered models. In YOLO, one convolutional network predicts bounding boxes and class probabilities for each box. How YOLO works - we take an image and divide it into an SxS grid, we divide each cell block into M parts. For each part, the neural network predicts the probability class and the offset values for the bounding box. A box having a class probability above the threshold value is selected and used to determine the position of the object in the image. The class probability is calculated as follows (1):

$$P = P(obj) \cdot IOU \qquad (1)$$

where P(obj) - the probability that the bounding box contains an object, IOU - the ratio of the region of overlap of the predicted and true bounding rectangles to the region of the union of these rectangles

SSD

Further development of the YOLO idea was developed in the SSD model, that using the same principle of object detection all over image that is reflected in its name - Single Shot Detector. The SSD model is the first deep network for detecting objects that does not use signs consisting of bounding boxes. It leads to a significant increase in performance and detection of objects with higher accuracy. In this model, they abandoned the use of bounding boxes, which resulted in an increase in the speed of the SSD. Improving accuracy occurs by using a small convolutional filter to predict the class of an object and a convolutional filter to correct the position of bounding boxes with different aspect ratios and sizes. These convolutional filters are applied to several feature maps, both in the early and in the later layers of the network, which makes it possible to detect objects of various sizes.

YOLOv2

YOLOv2 is the second version of YOLO, the purpose of which is to significantly improve accuracy while accelerating. One of the main differences is that a normalization layer is added to each convolutional layer. This method lies in the fact that some layers of the neural network are fed to the input data, pre-processed and having zero expectation and unit variance. Another major difference is that we replace all fully connected layers with convolution layers, which allows us to process large images and facilitates the training of the classifier.

Model YOLOv2 with a resolution of 416x416 was chosen to implement the first neural network. Since the ratio of accuracy to learning speed of this model is maximum. This is demonstrated in the article "YOLO9000: Better, Faster, Stronger", which compared the accuracy and speed of training models that were trained on PASCAL VOC 2007 data [10]. Consider the HC1 architecture in more detail (Figure 1). The neural network consists of 6 convolutional, 6 pooling layers, 8 batch normalization layers and 3 convolutional layers at the end. All convolutional layers, except the last, have the leaky ReLU activation function, and the last layer has a linear activation function. Pooling layers are max-pooling layers with the choice of the maximum element.

Source	Train?	Layer description	Output size
		input	(?, 416, 416, 3)
Init	Yep!	conv 3x3p1_1 +bnorm leaky	(?, 416, 416, 16)
Load	Yep!	maxp 2x2p0_2	(?, 208, 208, 16)
Init	Yep!	conv 3x3p1_1 +bnorm leaky	(?, 208, 208, 32)
Load	Yep!	maxp 2x2p0_2	(?, 104, 104, 32)
Init	Yep!	conv 3x3p1_1 +bnorm leaky	(?, 104, 104, 64)
Load	Yep!	maxp 2x2p0_2	(?, 52, 52, 64)
Init	Yep!	conv 3x3p1_1 +bnorm leaky	(?, 52, 52, 128)
Load	Yep!	maxp 2x2p0_2	(?, 26, 26, 128)
Init	Yep!	conv 3x3p1_1 +bnorm leaky	(?, 26, 26, 256)
Load	Yep!	maxp 2x2p0_2	(?, 13, 13, 256)
Init	Yep!	conv 3x3p1_1 +bnorm leaky	(?, 13, 13, 512)
Load	Yep!	maxp 2x2p0_1	(?, 13, 13, 512)
Init	Yep!	conv 3x3p1_1 +bnorm leaky	(?, 13, 13, 1024)
Init	Yep!	conv 3x3p1_1 +bnorm leaky	(?, 13, 13, 1024)
Init	Yep!	conv 1x1p0_1 linear	(?, 13, 13, 30)

Fig. 1 First neural network architecture

Model overview for the second convolutional neural network

The task of the second neural network is to predict the coordinates of the joints based on the results of the first neural network. Changing the number of different layers and functions of activations, the model is presented below (Figure 2). At the entrance, the neural network receives an image with a resolution of 224x224. Our model consists of: 5 convolutional layers with 2 convolution cores 11x11 and 3 3x3 cores, 3 max-pooling layers with a 2x2 pool core, 4 fully connected layers with the number of neurons 4096, 4096, 1000, 28. Each convolutional and max-pooling layers have activation function ReLU, batch normalization layer. Each fully connected layer contains the activation function tanh, batch normalization layer and dropout layer with a value of 0.3 so that the model is not overfitting.

The last layer contains 28 neurons, each of which contains the position of x or y relative to the center. The value of the neuron in the output layer takes the value [-0.5;0.5].

Layer (type)	Output Shape	Param #
conv2d_1 (Conv2D)	(None, 54, 54, 96)	34944
activation_1 (Activation)	(None, 54, 54, 96)	0
max_pooling2d_1 (MaxPooling2	(None, 27, 27, 96)	0
batch_normalization_1 (Batch	(None, 27, 27, 96)	384
conv2d_2 (Conv2D)	(None, 17, 17, 256)	2973952
activation_2 (Activation)	(None, 17, 17, 256)	0
max_pooling2d_2 (MaxPooling2	(None, 8, 8, 256)	0
batch_normalization_2 (Batch	(None, 8, 8, 256)	1024
conv2d_3 (Conv2D)	(None, 6, 6, 384)	885120
activation_3 (Activation)	(None, 6, 6, 384)	0
batch_normalization_3 (Batch	(None, 6, 6, 384)	1536
conv2d_4 (Conv2D)	(None, 4, 4, 384)	1327488
activation_4 (Activation)	(None, 4, 4, 384)	0
batch_normalization_4 (Batch	(None, 4, 4, 384)	1536
conv2d_5 (Conv2D)	(None, 2, 2, 256)	884992
activation_5 (Activation)	(None, 2, 2, 256)	0
max_pooling2d_3 (MaxPooling2	(None, 1, 1, 256)	0
batch_normalization_5 (Batch	(None, 1, 1, 256)	1024
flatten_1 (Flatten)	(None, 256)	0
dense_1 (Dense)	(None, 4096)	1052672
activation_6 (Activation)	(None, 4096)	0
dropout_1 (Dropout)	(None, 4096)	0
batch_normalization_6 (Batch	(None, 4096)	16384
dense_2 (Dense)	(None, 4096)	16781312
activation_7 (Activation)	(None, 4096)	0
dropout_2 (Dropout)	(None, 4096)	0
batch_normalization_7 (Batch	(None, 4096)	16384
dense_3 (Dense)	(None, 1000)	4097000
activation_8 (Activation)	(None, 1000)	0
dropout_3 (Dropout)	(None, 1000)	0
batch_normalization_8 (Batch	(None, 1000)	4000
dense_4 (Dense)	(None, 28)	28028
activation_9 (Activation)	(None, 28)	0

Total params: 28,107,780
Trainable params: 28,086,644
Non-trainable params: 21,136

Fig. 2 Second neural network architecture

Neural network training

The first neural network was trained on 2000 images containing less than 4 people. All bounding rectangles were selected manually. The number of learning epochs is set to 100. The number of epochs shows how many times a neural network will be trained on training data. As a function of the losses selected (2):

$$\sum_{i=1}^{N}\sum_{j=1}^{M} L_{i.j} \cdot \left(\left(x_i - x_j\right)^2 + \left(y_i - y_j\right)^2 + \left(h_i - h_j\right)^2 + \left(w_i - w_j\right)^2\right) \quad (2)$$

where i=1..N - number of predicted boxes, j=1..M – number of results boxes, x_i and y_i - coordinates of the upper left point of the bounding box, h_i – height of the bounding box, w_i - width of the bounding box, $L_{i.j}$ - confidence coefficient, which is determined by IoU, if IoU>=0.5 then $L_{i.j}$ = 1, else $L_{i.j}$ = 0. IoU = intersection area divided by total area.

Adam was chosen as the optimizer for the first neural network, because we need an optimizer that is more adapted to a large amount of data with a lot of noise and more adapted to work with deep neural networks. The model was trained for 12 hours and after every 6 epochs it was tested on the tested data. The mAP metric was used as the accuracy metric. If the value of IoU> = 0.5 for the predicted rectangle and the correct result, then we assume that the neural network predicted the correct result [9]. The graph of dependence of the mAP metric is presented below (Figure 3).

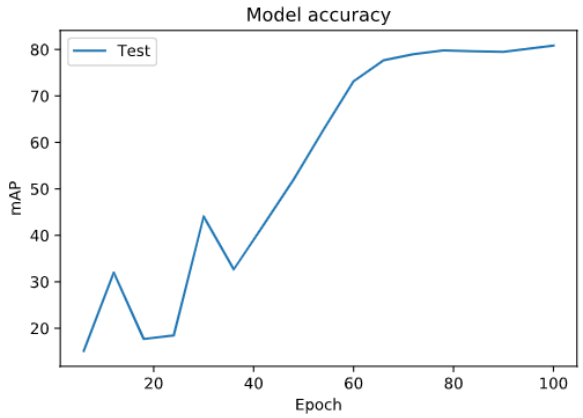

Fig. 3 Graph of the dependence of the mAP metric on the number of epochs

The result for the image that was not included in the training and the test data is presented below (Figure 4).

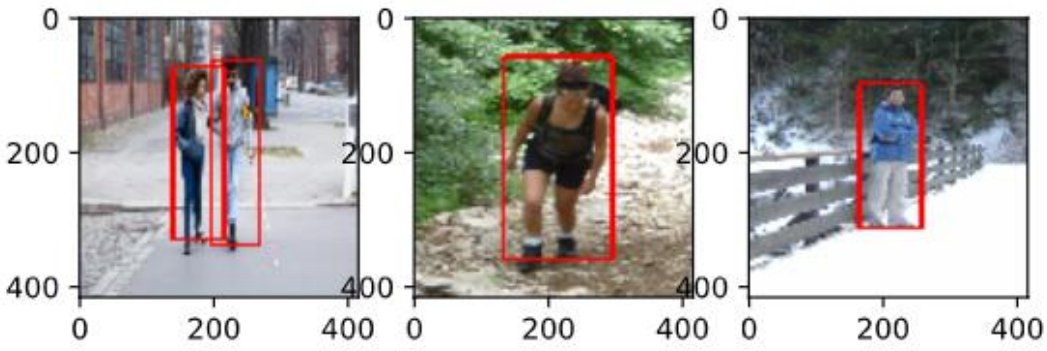

Fig. 4 The result of the first neural network

The second model was trained on LSP data (Leeds Sports Pose Dataset), which includes images of people involved in sports and the coordinates of the joints marked on them. The data were broken down in relation to 80/20 for training and test data. The number of epochs is set to 50.

Adam was chosen as an optimizer. Since he showed himself well when learning the first neural

network. The MSE metric (3) was chosen as the estimation and loss function metric:

$$MSE = \frac{\sum_{i=1}^{n}(x_i - y_i)^2}{n} \quad (3)$$

where x_i - neural network result, y_i - true result.

The neural network has been trained for about 60 hours. During the training, it was possible to achieve 60% accuracy, which is explained by the fact that 28 parameters predict a neural network and rather complex training and training data (Figure 5).

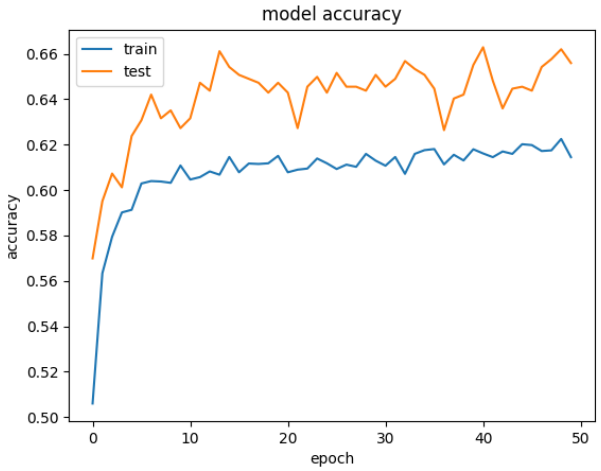

Fig. 5 Graph of the dependence of the accuracy metric on the number of epochs

For convenient use of neural networks, a window application has been written that has a convenient and simple interface (Figure 6). The windowing application was written in python and using the Qt graphical framework.

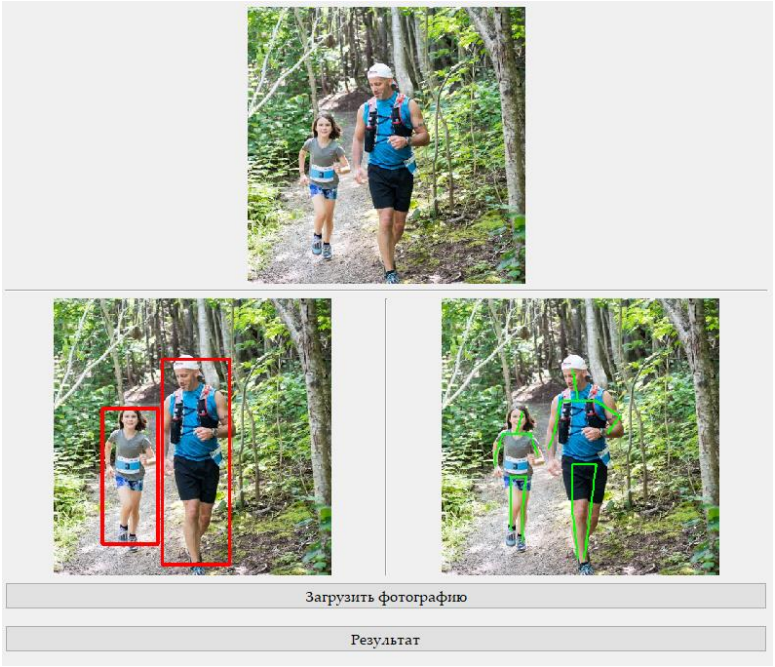

Fig. 6 Result of work window application

Conclusion

Two neural networks were trained, each responsible for its own task. The result of which is marked up people in the images, which can be useful in use in unmanned vehicles. As a continuation of the work, it is possible to come up with a more complex architecture for the second neural network to increase accuracy. And in the future, to organize the prediction of the position of a person in 3D using several pictures from 2D.

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SECTION 12. Geology. Anthropology. Archaeology.

THE URBAN CULTURE OF KESH OASIS IN TEMURIDS PERIOD

Abstract: *This article describes the development of urban culture of Kesh oasis in the period of Amir Timur and Timurids. The author described monuments of the period of Amir Timur and Timurids on the basis of comparison and analysis of archaeological and written sources in details.*

Key words: *Kesh, Timurids, Shakhrisabz, M.E. Masson, G.A.Pugachenkova, Qarakhanids, Bab Barknan, Hafiz-e Abru, Nasaf, Termez, SH.S.Kamoliddinov, X-XIII centuries, Amir Timur, Ruy González de Clavijo, Boburname, V.V. Barthold, Aksaray, Transoxiana, Z.M.Babur.*

Language: *English*

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Introduction

The history of the Kesh (Shakhrisabz) is widely covered in the sources in the history of the Timurids era and according to which Amir Temur's state activity lies. At the same time, the name "Shakhrisabz" is also included zin the "Kesh" toponym. As Shakhrisabz was the homeland of Amir Temur, his life went directly to that city until his birth from power to power and transferring his capital to Samarkand. In the following years, Amir Temur attached great importance to the prosperity of Shakhrisabz. According to Hafiz Abru's words, when Amir Temur started building the city walls, there were remnants of old defensive walls [1, P. 74].

Materials and methods

M.E.Masson and G. Pugachenkova suggested that the construction of the city walls was carried out on the order of Amir Temur in 1378/79. [2, P. 30-32.] This is supported by a group of other experts who archaeologically investigate the walls [3, P. 26-27]. According to Kamoliddinov, the walls of the city could have built in the XI – XII centuries during the Karakhanids. One of the gates of the Kesh Book was named Bob Barnon, which was located in the south-western part of the city and settled down the road from Nasaf to Termez. On this road, there is Barnon near the city. The name of the town gates called the village is a very large village. According to Kamoliddinov, Barnon was a large village in the present-day Shakhrisabz, which was originally a "cradle of Kesh", and then formed on the basis of Shahrisabz Keshi [4, P. 21-23]. Located on the vast commercial route, this village gradually began to turn into a major trade and crafting center, and in the XI – XII centuries it built the jome Mosque at the same time, it was the construction of mazar buildings in major cities of Movarounnakhr. Because of a number of religious festivals, mosques in the city were tightened to pray at the same time as the entire city's population was in need of such facilities. Kesh-Shakhrisabz is also a big city, and there is also a campus. M.E.Masson and G.Pugachenkova say that the Kesh-Shakhrisabz Mountaineer was located in the nineteenth-century mosque, near the Book Gate (opposite of Oqsaroy), about half a kilometer north of Balandtepa. In the 1980's, the remains of the Zoroastrian Temple were found in Balandtepa, but there are no medieval layers here [5, P. 51-52].

Z.I.Usmanova, who conducted archeological excavations in the city for many years, wrote that Shakhrisabz was founded during the Mongolian rule [6, P. 208-215]. Therefore, the results obtained by Z.I.Usmanova in the city of Shakhrisabz should be further analyzed. According to the researcher, the Kesh-Shakhrisabz defense walls are built on the cultural layers of archeological materials of the X – XII centuries. The cultural layers of this era were found under the city walls around the Kalping Gate in the east, the crossroads between the towers near the

Kushxona Gate on the west, the present-day Blue Kumbak Mosque, and many other places. “Thus, cuttings and cleansing in the western, northern and eastern defensive walls of Shakhrisabz are almost identical. The first wall was built horizontally, with a thick layer of 7-15 cm, laying on the cultural layers of archeological material of the X – XII centuries. This wall does not have materials of the later period, and there is no ruin of a more ancient building than the laminated wall, and the laminated wall can be considered a wall built by Temur in 1378/79” [7, P. 213]. Z.I.Usmanova's conclusion came from the walls of Shahrisabz between 1361/62 The founding of the coins minted in the New Palace by Hayri Pulat in the 62nd year was the basis

Archaeological materials dating back to the X – XIII centuries were found inside the Shakhrisabz fortifications [8, P. 106]. According to M. M. Masson, Amir Temur may have used the remains of the old city walls as the walls of the Shakhrisabz hole were built in Samarkand [9, P. 12]. The coin minted in 1361/62, suggests that Shakhrisabz may have fallen in the period of repair of the damaged wall during the Mongol era, thus promoting a new idea. It is also possible that the method of construction of the walls of the Horezmshahs' epochs during the rebuilding of the Kesh-Shakhrisabz wall during the time of Amir Temur was a layered item. It is noteworthy that in the Amir Temur period, no single layer of defense was used in Samarkand and other towns, and therefore, the layers were not typical for the time of Amir Temur and the Temurids.

Spanish envoy Rui Gonzalez de Clavijo makes the following statement. The surrounding area is surrounded by a stronghold and a deep chute. There are bridges in front of the entrance to the city [10, P. 146-147]. The following statement in “Baburnama” is a good example of what we have to say: “Again Cache is the epicenter. It is in the south of Samarkand and it is the 9th floor. A mountain fell between Samarkand and Cache. The pit is called the roar, and the rocks are filled with the stones of the mountains. Shakhrisabz also praises the frozen spices and the city and its roots and tombs. Temurbek's cousin, for the sake of Keshd, made a great deal of effort and fortunes in the city and the capital, and built high buildings in Kesh. It is a huge roof for the devon to give himself, and two smaller roofs for the Devon Suror, again on the right side and at the side of the tawhachi princes, who know the dome. Again, the prize will make small hands in the hallway of the monastery, so that the hands of the prize cannot be diminished, and in the higher white world they give little sign. Said, that, Kisro mountain is greater. It is also a cave and a mausoleum. Jahangir Mirzo and some of his descendants are here” [11, P. 61].

In 1365, Amir Temur started building strong walls and buildings to upgrade Kesh's defense capabilities. V.Barartold wrote: “Temur first builds fortifications in Shakhrisabz and Karshi in the Kashkadarya Valley”. After the death of Amir Temur and his father Shamsiddin Kulol in 1371, he buried the corpse in Kesh and built a tomb on the grave [12, P. 460].

Khafiz Abru said that all the buildings in Samarkand and Shahrisabz were built of clay and wood. Baked bricks have almost not been used. According to G.Pugachenkova, Amir Temur in 1378 plans to build a Kesh Fortress with a wall and carry it out. The width of the wall is 8-9 meters and its height is 11-12 meters. The walls are smashed and the water is poured over, cooked and boiled. Each 50 meters of the wall is equipped with a protective barrier. The outer wall of the wall is stored in a deep slab filled with water [13, P. 60].

At the end of the XIV century, in the middle of the XV century in the central part of Kesh, there were mosques, madrasahs, caravanserais, housewives, baths and other charitable facilities. Some of them died, others died without being saved.

During the first period of Amir Temur's reign, he intends to transform Kesh into a state capital and attach great importance to its prosperity. It is famous for the world famous Aksaroy. The roof of this magnificent palace built with the skill of Iranian architects is filled with golden ornaments and ornamental motifs. Sahibkiran paid special attention to Kesh and made it a spiritual center of Central Asia. Therefore, this city was given the title Qubbat al-ilm al adab (Dome of Science and Adab) [14, P. 60].

The most beautiful monument of the nearest monument to us is Askaroy, a fusunkor. G. Pugachenkova, speaking of Shakhrisabz in the 15th century, wrote that Shahrizabz, a 15th century Orientalist, cursed or cursed the heart. Indeed, the monuments built during Amir Temur's era in Shakhrisabz have been fulfilled on the highest level with its architectural design, at the time when Amir Temur and Temurids did not stay in the buildings built in Samarkand and Herat [15, P. 61].

The Aqsaroy began to be built in the north-eastern part of Shakhrisabz River. Its construction dates from 1379 to 1380, and continued in 1404. The height of the tallow is 74 meters, and the two sides are raised in a separate burcu, the top is covered with wood, arched. The palace complex consisted of a large stage and a garden linking it. The remaining part of the roof that has survived to our days on the Aksaroy is 38 meters (38 gas).

According to G.Pugachenkova, the tailings of the Aksaroy roof were 1.5 times higher than the current one. The ornaments of the Aksaroy are of different color and are unique. In the interior and exterior of the castle buildings, they were imprinted with bricks, embellishments and paradise. Those who constructed the Aqsaroy and other buildings were representatives of the Kashkadarya architectural school, as well as masters of Khorezmian and Iranian

hands. The architect of the architects was Muhammad Yusuf Tabrizi, the flower master. Various entries have been written along with the syllabic designs of the tallest arch and roof of the oval [15, P. 61]. Aksaroy is the home of Amir Temur's headquarters in Shakhrisabz. That is why when he came to Cache, he accepted the people here, spent various councils and rested there. According to legends, Aksaroy, a 74-meter-long skeleton, had an ammunition. This hopper is supplied by lead tubes from the Tokturga ridge. The water flooded the fountains and enjoyed those who were traveling under the sun's rays. Zakhiriddin Muhammad Babur's Amir Temur wrote that Ches had made a great deal of effort and skill on the city and the capital city, and high buildings were built in Kesh [16, P. 61]. It is clear that Shakhrisabz has built the administrative and central government building in Shakhrisabz. This building was an Aqsaroy. However, after the reign of Movarounnahr, Akkara started to build. Thus, it is possible to assume that Amir Temur had the desire to move the capital of the state to Kesh anytime. But that desire did not succeed, and it was difficult to answer. Perhaps it is possible that the entire Oskar site has not yet been completed. After all, Gavrilo, who had seen Aksaroy, also wrote that the construction is in progress. Or, what could be the purpose of building an administrative building in the Kesh? Babur's statement that he “made a great deal of effort and opportunities in the capital city” corresponds with the time when the Aqsaroy was built in the 80-90s of the 14th century, not in the era of the reign of the Amir Temur. Amir Temur never published his plans. Perhaps, after the movement in China, Kesh-Aqsaroy will be chosen as his residence. The fact that Amir Temur frequently lived in Cesar in the 90s also has a meaning in the construction of a machel near the grave of Shamsiddin Kulol.

At the present time, there are two columns separated from each other by the great tower. The two beams are 22.5 meters long and the largest in Central Asia. The height of both stadiums is 38 meters today. The width of each arch was 40 meters, its height was 74 meters (some sources were 50 meters). Or the height of the tallest is 16 to 18 floors. The structure was made of sticky bricks with gypsum, clay, and wooden materials. The brick walls are shaped and shaped. The brick-shaped shapes revealed the appearance of the building blocks. The top of the roof is covered with metal on the towers that are made of bricks. The walls of the tiny wall are decorated with ornamental patterns, glazed and colored – purple, blue emerald, green, golden-yellow, milk-and-white, golden-colored ceramic tiles and tiles have created a unique miracle in the sunlight. The name of the palace is called Aksaroy, which is also associated with glossy, colored, golden, silver-colored ceramic tiles and adhesives that have been exposed to blue light during the night sky. The inscription on the oval roof covers the year 798 AD. It is dated 1395 – 1396. Thus, the work of decorations may have been completed this year [17, P. 56-57]. The second city after Samarkand, which Shakhrisabzian had always had, was the young Shakhrisabz. Located in the foothills of the city, it is a geographically beautiful country with a favorable environment for agriculture. There are many different gardens around it. There are many caravansaries and shopping malls around the city and its surroundings, since a branch of the Great Silk Road passes through. In general, Amir Temur renovates Shakhrisabz's infrastructure and turns it into a prosperous and beautiful city. Shams-ad-Din, near the Kulol grave, buried his father and his own loved ones and built beautiful mosques and mosques there. Particularly, the construction of the world-renowned, unique monument will further enhance the status of Shakhrisabz. According to Aqsaroy, Clavijo was the most magnificent of the buildings built by Sohibqiron, built over twenty years. The Clavijo calls Aksaroy the palace in his diary. According to the Spanish envoy, the width of the courtyard in the building was about 300 steps (about 215 m) [10, P. 147]. It is only the fact that the building itself is a great building of its own time. The entrance to the palace was much wider and higher than the mosque's mosque in Samarkand. The courtyard is surrounded by a pond in the middle of which is surrounded by marble and inner marble stones, and with scarves and tiles. The yard is the largest, the main building. It is accessible through a gated door. At the top of the door, the lace of the lion and the sun was painted on the roof of the building, giving it a unique color. Inside the building, the first place is the luxurious lobby of the king. On the second floor, mainly the hostels of Amir Temur and his family and loved ones. According to the keyboard, these rooms are decorated with such a high taste that it is very difficult to describe it.

At the same time, the palace complex included several pools and pools. They are surrounded by gardens of various fruit and shade trees. In this paradise place sometimes were organized with the participation of Amir Temur. Sohibkiron has been sitting, talking, and resting with his relatives and guests from faraway countries.

Conclusion

Archaeological research in recent years has not only confirmed the accuracy of the information provided in written sources, but also enriched them in some way. Part of the pool in the courtyard of the aforementioned Palace was opened. The coastline and the interior of the pool are very sophisticated with colorful parchin and tiles. Despite the fact that it has long been in the water for more than a decade, and has been living underground for more than 500 years, these fragments and tiles have preserved its color and quality as before. We see that underground communications on water have been carried out on a high level of engineering experience, ie an

underground water metering system that uses excess water outside the palace. In summary, during the great era of the great statesman Amir Temur, trade and cultural relations between the West and the East will rise to the highest level. New, bright days are beginning in Central Asia, especially in Central Asia. Political stability raises society's development to the top. This is evident in the construction of the city. This is particularly evident in the creation of a new infrastructure in Samarkand and Shahrisabz. Architecture and construction, as well as local craftsmanship, have always been rich with innovation and offer a broader access to integration. As a result, new techniques and technologies are created in production and construction. These innovations are reflected in unique palaces, mosques, madrasas, palaces and mausoleums built in Samarkand and Shakhrisabz.

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A SEPARATION OF THE REPUBLIC OF UZBEKISTAN INTO AGROTOURISTIC REGIONS AND USE OF THEM AS A TOURISTIC AIMS

Abstract: *The article involves the separation of the territory of the Republic of Uzbekistan into agrarian areas for the development of agrotourism. The results of research are directed to define the landscape complexes of agroindustrial potential in different geographical regionalization. A separation of agrotouristic areas requires a variety of factors in the territory of Uzbekistan. Regionalization principles on agrotouristic territories, peculiarities and indicators of agrotourism were described in the article.*

Key words: *method, agrotourism, regional, landscape, indicator, map, principle, diversity, touristic aim.*

Language: *English*

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Actuality.

Regionalization is a universal method of regulating and systematizing the territorial systems which widely used in geography. It plays an important role to solve many geographic problems. L.N Babushkin, N.A.Kogay (1964), P.Baratov (1996), Sh.S.Zokirov, I.Muminov (2004) held a research on the various sphere of the geography in Uzbekistan , as well as A. Soliev, R. Mahamadaliyev (2004), T.Djumaev (2004), I.A.Hasanov (2006), A.N.Nigmatov, N. Shamuratova (2007) conducted the research on tourist zoning.

We have used the results of these regionalization (zoning) trends to separate the territory of Uzbekistan into agrarian regions. In particular, it is important to take into account the territorial differences of the separated landscape complexes in determining of the agroindustrial potentialin different geographical regionalization. We can see that no special studies have been conducted in Uzbekistan for the allocation of agrarian districts. That is why we have analyzed the researches performed on the general zoning of tourism and some of its trends [6; pp.53-54]. For example, E.A. Kotlyarov have based the following indexes such as the health resort and recreational establishments development that representing the specialization of the region in the implementation of recreational zoning , the interaction of production lines with tourist-health-improving enterprises of the given territory and the employment of the population in these farms [2; pp.238]. It was used four-tier taxonomic system units: republic (province, region), district, recreational area, and recreational micro district. Yu.S.Putrik, V.V. Sveshnikov divided the region into zones and districts on touristic zoning [3; pp. 3-13].

According to N. Shamuratov's research, the ecotourism zoning of the territory of Uzbekistan is

based on the availability of ecotouristic resources and the possibility of using it in ecotourism [4; pp.70-80].

A separation of agrotouristic areas requires a variety of factors (natural, economic, ecological-physiological, historical, agrarian economy, etc.). Such regionalization involves the identification of the potential and opportunity for use in different regions, and which describes the purposeful organization of agrotourism in them. By means of assessment the agrotouristic capacity of regions, a system of the districts with different characteristics will be separated [1; pp.24].

Material and methods.

The natural and anthropogenic complex was taken as a basis for agrotouristic regionalization of the republic. The existing landscape maps serve as an information base. These allow for the identification of natural components and structures with restrictive or effective indicators.

In agrotouristic regionalization, it is important to take into account the following characteristics of the regions to attracting tourists: 1) diversity of agro landscapes and their level of repetition; 2) the attractiveness, of agrotouristic resources, rare, possibility of earning income; 3) cultural, agrarian and ethnographic values (historical and architectural monuments, centers of agriculture and craftsmanship, presence of ethnographic specific addresses, etc.); 4) availability of public and individually-used natural and agrolandscape areas, and their adaptability and convenience to conduct the holiday for agrotourists.

Taking into account the above-mentioned factors, the separation of the agrotouristic regions can be based on the following principles [5; pp.13-15]:

1. The priority of anthropogenic cultured level of geocomplexes. This principle is important for the territorial organization of agrotourism. Cultural landscapes are anthropogenic landscapes, which is built on the basis of natural resource use and it is directed to satisfy their own needs. Cultural landscape consists of a region; it is similar to natural conditions and resources and which has been used for many years in a particular branch of the economy (for example, in agriculture). Their main peculiarities are measured by fertility and productivity of land and index of economic efficiency of productions. Thus, cultural landscapes are main factors for agrotourism.

2. Complexity - the need to combine the agronomic tourism with other tourism types. It involves the agrotourism, which it consists of historical, pilgrimage, spiritual and ecological tourism. To separate the districts, it is essential to combine the agro tourism with some tourism and it will contribute to its popularity and effectiveness. For example, it is significant to combine the agro tourism with historical tourism in areas with a lot of historical and archaeological monuments and ecological tourism, which natural resources are rich in determined areas.

3. An existence of travel opportunities. Agrotouristic resources, which attractive objects for tourists and existence of usage opportunities are accounted fully to define the agrotouristic districts.

4. Service availability. To use from agrotouristic opportunities of the region in effective organization – to accept the agrotourists, to put into place, to organize the restoration and existence of service maintenance for agrotourism are the main factors.

5. The diversity of cultures and their uniqueness. The village life, lifestyle, unique public ceremonies, holidays and festivals determine the uniqueness of the regions and become attraction factor as an integral part of the agrotouristic districts capacity.

We have used the methods of territorial analysis, cartographic, comparative-geographical, analysis of field research, expeditionary, statistical, and typological.

Results and discussion.

In our research, the following peculiarity and indicators were used as a base to separate the agrotouristic districts:

- an existence of specific agrotouristic potential and capacities of each district;
- an availability of specific agrotouristic objects and their impact to the agrotouristic specialization;
- a compliance of agrotourism with local agricultural production specifics; an aesthetic peculiarities of the regions (attractive objects, landscapes and their comfortable to observe);
- an availability of agrotouristic routes with other touristic routes and soon.

As a result of research of the above mentioned indicators and features, 15 of agrotouristic districts have been separated in the territory of Uzbekistan (see picture). They are allocated to the Ustyurt, Aral Sea, Lower Amudarya, Kyzylkum, Lower Zarafshan, Middle Zarafshan, Nurota, Kashkadarya, Gissar-Zarafshan, Baysun-Bobotogh, Surkhon-Sherobod, Mirzachul, Chirchik-Akhangaran, West Tanshan and Fergana agrotouristic districts. Each agrotouristic district is characterized by the potential and the availability of its own agrarian resources, the availability of conditions for the formation and development of agrotourism, and agricultural specialization [9; pp. 37-38]. It is important to separate the agrotouristic objects in the system of separated districts by methodically [8; pp. 224-226]. For this purpose, the conditions and resources of the agrolandscape plots, which have a set of criteria to allow for a certain type of rest, that the agroturistic specialization is clearly visible in the plots. These sites are also suitable to calculating recreational capacity of the territories [10; pp. 235-236].

The map on the scale of 1:1000000 of agrotouristic districts and Uzbekistan geocomplexes have been created on the basis of generalization according to agrotouristic data and mapping of them. Agrotouristic districts are presented in different colors, displayed in figures and their names are given in the map legend. Also, the map has a brief description on natural geocomplexes and agrotouristic districts.

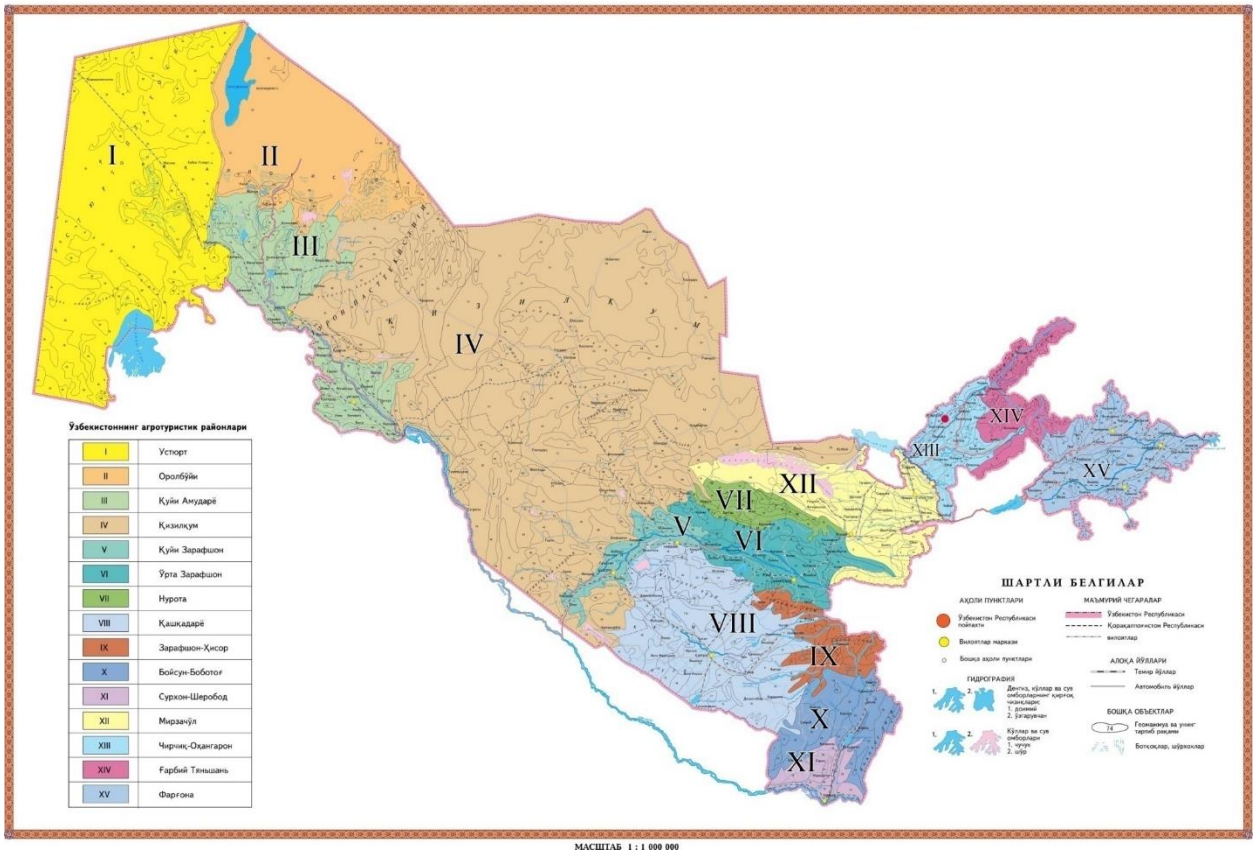
This map can be used for the organization of touristic routes to visit and monitor the agrotouristic facilities located on the territory of our Republic, as well as in the direction of educational institutions, tourist organizations and firms, hotels and tourists can uses for their activities and interests, as well as advertising the agrotouristic potential and capacities.

1. Despite the widespread development of agro-tourism, its scientific and theoretical foundations have not been sufficiently developed. The development of agrotourism is based on certain principles. In this regard, taking into account the various views and ideas of foreign scientists and specialists, the basic principles of agrotourism are defined.

2. In the mountains, very favorable complexes are the foothill plains, favorable complexes are low mountains and adyrs, medium-high mountains are not favorable, high mountains are unfavorable.

3. On the territory of Uzbekistan, according to the principles and indicators of anthropogenic development, complexity, and tourism opportunities, 15 agrotouristic areas were identified. A 1: 1000000 scale map was created to use of agrotourism.

Conclusions.



Picture -1. The map of agrotouristic districts of Uzbekistan

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OPTIMAL THEORETICAL APPROACHES OF COST REDUCTION IN EMERGING MARKETS

Abstract: *In conditions of free competition, the price of products produced by enterprises (firms) is automatically leveled. It is affected by the laws of market pricing. At the same time, every entrepreneur seeks to obtain the highest possible profit. And here, in addition to the factors of increasing the volume of production, promoting it to unfilled markets, there is the problem of reducing the cost of production and sale of these products, reducing production costs. In the traditional view, the most important ways to reduce costs include the saving of all types of resources consumed in production — labor and material. Thus, a significant share in the structure of production costs is labor remuneration; therefore, the task of reducing the labor intensity of output, increasing productivity of labor, reducing the number of administrative staff is urgent.*

Key words: *economic sectors, cost reduction, cost management, innovative way of cost cutting.*

Language: *English*

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INTRODUCTION

Reducing the complexity of products, productivity growth can be achieved in various ways. The most effective of these are the mechanization and automation of production, the development and use of advanced, high-performance technologies, the replacement and modernization of outdated equipment. However, some measures to improve the applied technology and technology will not give adequate returns without improving the organization of production and labor. Often, enterprises acquire or rent expensive equipment without being prepared for its use. As a result, the utilization rate of such equipment is very low; the funds spent on the acquisition do not bring the expected result.

According to Forbes, 8 out of 10 small businesses fail within the first 18 months. While most entrepreneurs focus on increasing sales, lowering expenses is equally important when trying to achieve or maintain profitability [1]. So, it means only way of cost cutting is provide competitiveness of the entrepreneurships.

Asaolu and Nassar (2007) define cost reduction as the term used for planned and positive approach to

the improvement of efficiency. It can be viewed in many ways, such as increasing productivity, and elimination of waste. Lucey (1996) refers to cost reduction as concept which has the aim of reducing cost from a previously accepted norm or standard without reducing the effectiveness or performance of the project or services.

Dury (1985) defines control as the means of ascertaining that the activity of an organization follows. The standard plan and that its goal is accomplished. Sikka (2003) discussed that cost control system consists of ways and methods that are used to control the operating cost of a job and ensure that cost does not go beyond certain amount. Manufacturing cost reduction actually measures the company's performance against targeted cost, production, profit and employee's performance[2].

RESULTS

Proper organization is important for raising labor productivity: preparing the workplace, fully loading it, applying advanced methods and techniques of work, etc. Material resources take up to 3/5 in the cost structure of production. Therefore, it is clear the importance of saving these resources, their rational use. The use of resource-saving technological processes comes to the fore here. It is important to increase the demands and the widespread use of input control over the quality of raw materials and supplies, components and semi-finished products supplied by suppliers.

It is known that the larger the batch of purchased raw materials and materials, the greater the average annual stock and the greater the costs associated with the storage of these raw materials and materials (rent for storage facilities, losses during long-term storage, losses associated with inflation, etc.). However, the purchase of raw materials and materials in large batches has its advantages. The costs associated with placing an order for goods being purchased are reduced, the acceptance of these goods, control over the passage of bills, etc. Thus, the problem arises of the optimal volume of raw materials and materials procurement. In combination with traditional ways of reducing production costs, the newly emerged factors will allow the complex to bring production costs to the optimum level [3].

According to theories for developing cost plans are as follows:

- established by the tactical plan, the size of the profit, as well as the level of profitability of production or tasks to reduce production costs;
- indicators of production and sales of products;
- the effectiveness of measures in the section of the tactical innovation plan;
- progressive norms and standards of the relevant section of the tactical plan;
- rooms too much and not to lose energy, knowing the fact that additional energy means additional production cost[4].

The production of any product requires the expenditure of economic resources, which, due to their relative rarity, have certain prices. The quantity of any product that the firm seeks to offer in the market depends on the prices (costs) to reduce expenditures and the efficiency of using the resources necessary for its production, on the one hand, and on the price at which the goods will be sold in the market, on the other.

According to the World economic approaches energy resources are the main factor of the overall economic sector. From this point of view we trend following factors.

1. Using Passive Energy-Saving Measures

Organized program of passive energy-saving measures that reduce environmental control and manufacturing systems' workforce and workplace: double-pane Windows: Double-pane windows are better insulators than old-school, single-pane windows. Energy efficient engine consumption: Solar panel energy system and low cost electricity frequency interference system as a main factor of saving expenditure of the company.

2. Reduce Paper Use

As a reducing energy and water usage, cutting down paper waste is good for the company's low level line and the environment. Print and copy double-sided by default, secure electronic file exchange services, tighten margins and shrink fonts on printed reports.

3. Encouraging Telecommuting

For thousands of employers, telecommuting has tremendous cost-cutting potential. Unfortunately, that potential remains largely untapped due to unaffected using way from computer and internet services.

4. Using High-Tech Alternatives to Legacy Systems

If we look around facility there are many legacy technologies. That's likely to depend on what your company does, as is your ability to address the problem. Established manufacturing and light industrial companies are often saddled with dozens of old machines and systems that they lack the capital or will to replace.

5. Buying gently

Nowhere in company bylaws does it say that you must buy only shiny new equipment. In accordance with the profitability of the companies it is strictly supported by management. Office technology, such as printers and copiers, personal technology, such as refurbished smartphones, tablets, and laptops.

6. Social Media Advertising

Traditional advertising methods are extremely expensive. According to Advertisement Age, a prime-time broadcast TV commercial's average cost for the new emerging business getting huge amount of money.

7. Supporting Word-of-Mouth Marketing

As for my own experience in the UK there a lot of oral adverts in the street for attracting there services and goods foe contributing saving money of the company. Organic social media conversation is but one form of word-of-mouth marketing, a cost-effective and potentially powerful form of outreach that essentially outsources part of your marketing department to your customers.

8. Using Freelancers and Contract Labor for Non-core Work (self-employed-Pay as you earn)

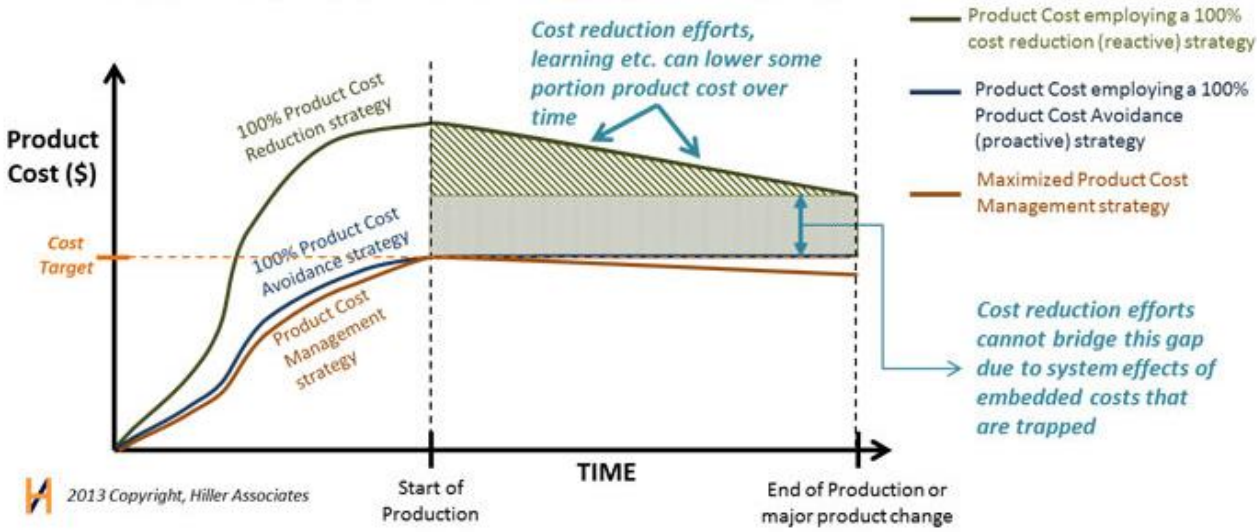

Figure 1. Maximizing profit with product cost management [5]

For reducing cost in business above factors really predominant and relevant implementation for economic development. Figure 1 shows that product cost changes in particular time of period. Cure states that cost reduction efforts able to lower the cost. While targeted cost remains stable in beginning of the project up to end.

Cost reduction strategies in manufacturing

The questions below can be used to evaluate the effectiveness of efforts to reduce production costs.

Rental payments:

- Company revise the terms of the current rental agreement;
- Company move to another building or premises;
- Company sublease a part of its area;
- More profitable for a company to buy out a rented premises.

Communal payments:

- Company introduce tighter control over energy consumption;
- Company introduces more economical processes;
- Company switch to new terms of payment for utilities.

Repair and maintenance of equipment:

- Company postpones for a long or at least a short time some work on the current maintenance of equipment;
- Profitable for a company to abandon contractor services and repair equipment on its own;
- Cheaper for a company to hire a specialized organization

Integration and disintegration:

- can the company reduce costs through vertical integration with suppliers or customers or through horizontal integration with other manufacturers;
- can a company reduce costs by expanding its business to other parts of the production cycle, refusing to cooperate with related companies.

Reducing the cost of advertising products:

- Company reviews its advertising budget;
- Bring additional income that exceeds the cost of it;
- Evidence that an increase in advertising costs is combined with an increase in sales;
- Possibility to pay for advertising services through barter transactions [6]

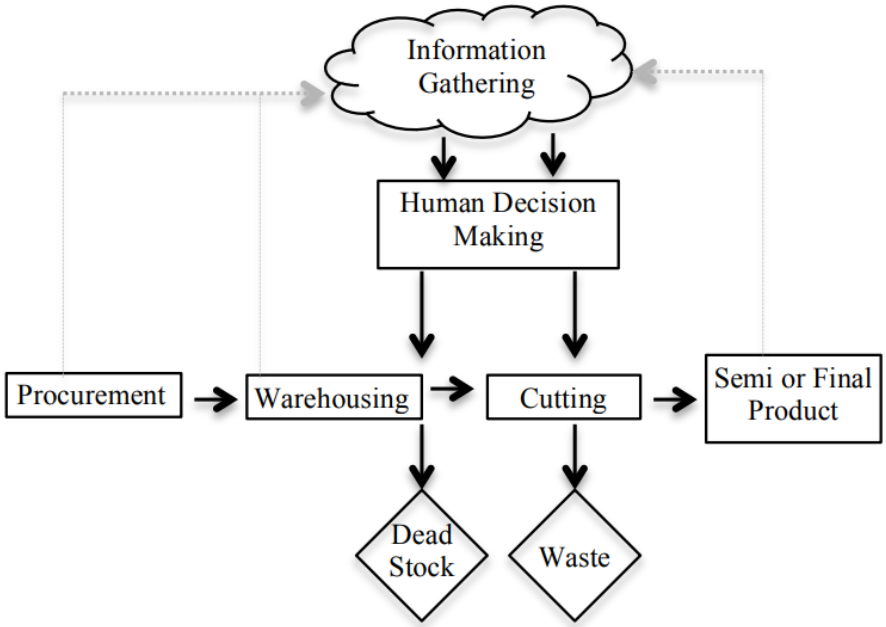

Figure 2. Traditional Supply Chain Model [7]

If changes in the value of costs in the analyzed period are not reflected in the above factors, then they are attributed to the rest. These include, for example, a change in the size or termination of various kinds of obligatory payments, a change in the value of the costs included in the cost of production, etc. Identified as a result of the analysis of factors of cost reduction and reserves must be summarized in the final conclusions, to determine the total impact of all factors on reducing the total cost per unit of output [8].

DISCUSSION

Reducing the cost of raw materials

To reduce the cost of purchasing raw materials and materials, the Company can do the following:

- Revise in their favor the terms of contracts with existing suppliers;
- Find new suppliers;
- Example: a company can replace imported materials with similar products of domestic production; establish direct relations with material manufacturers, or reduce the number of intermediaries; conclude contracts with suppliers offering the most favorable conditions;
- Use less expensive components where possible. The company may even make design changes to the products in order to be able to switch to new materials.

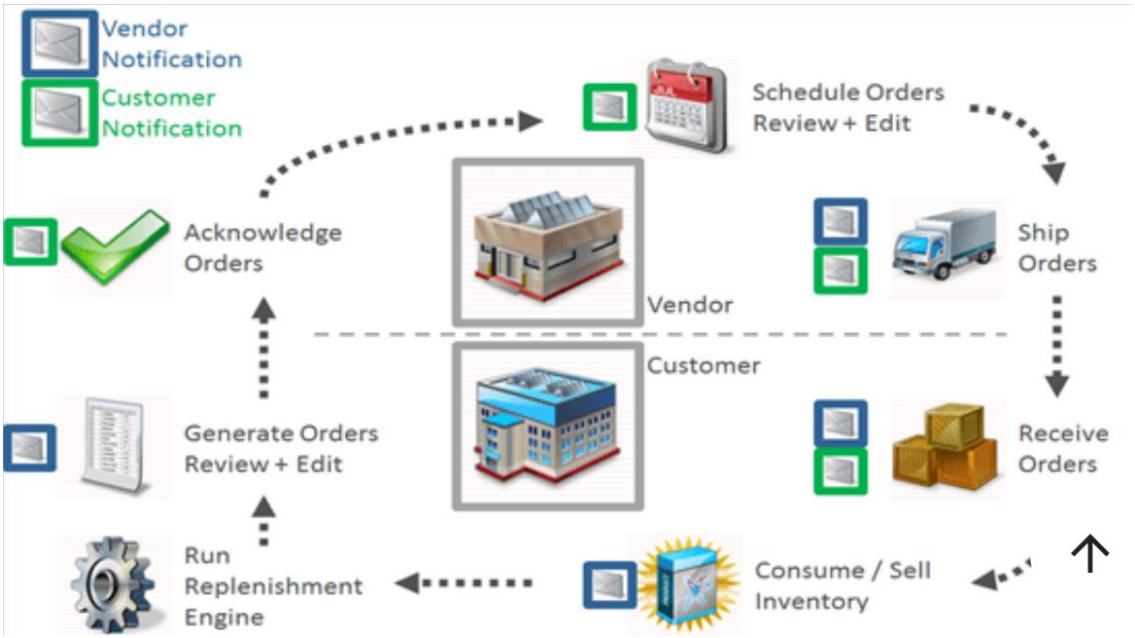

Figure 3. Reducing operating and administrative costs [9]

Additional cost reduction measures. Company reduce costs by following:

- For research and development work
- Maintaining a wide range of products
- Market research, advertising and promotion of goods or services
- Maintaining a wide range of clients
- Maintaining a certain quality of services
- Careful selection of raw materials with certain technical characteristics
- Staff development
- Mechanization of the production process
- Maintaining the flexibility of the production process
- Support for distribution channels of manufactured products

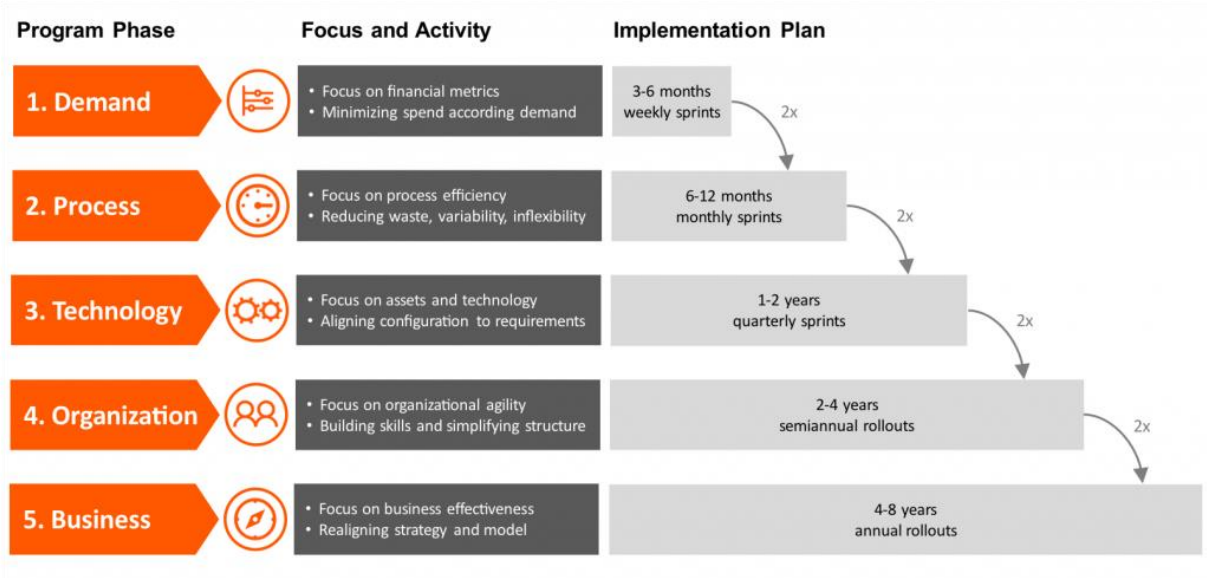

Figure 4. Reducing operating and administrative costs [10]

Freelancers and self-employed contractors are easier to hire and cheaper to keep employed than traditional employees, provided you have an enforceable freelance contract to set expectations and mitigate risk on both sides of the relationship.

According to the figure 5 6D process leads people systematically from initiation through improvement to the institutionalization of cost reductions.

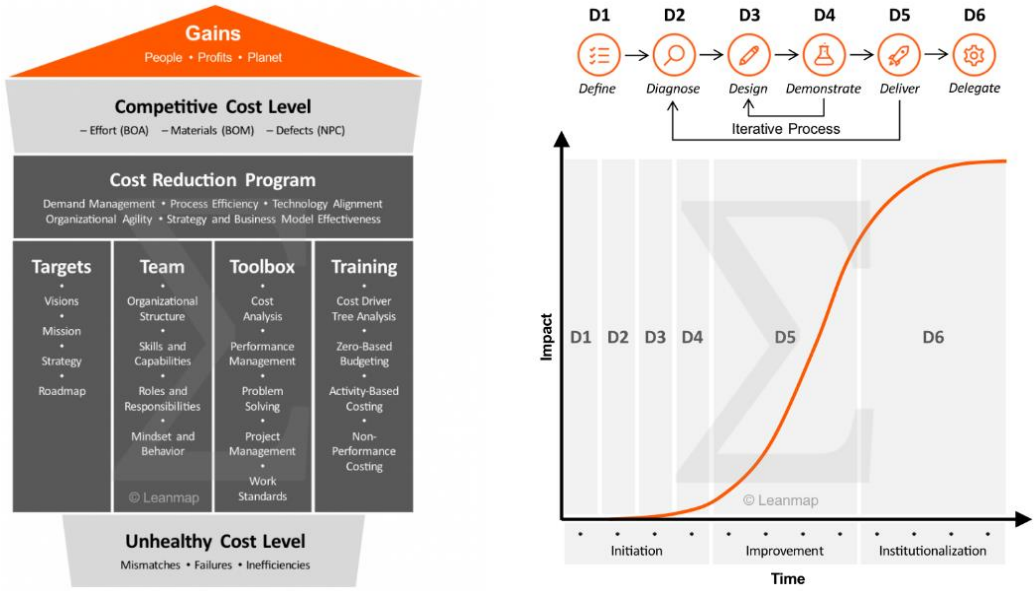

Figure 5. Cost reduction programs

D1 – Define: the first step delivers the project charter, specifying problem, approach, and sponsorship;

D2 – Diagnose: the second step delivers the current state analysis, specifying baseline and improvement potential;

D3 – Design: the third steps delivers the future state design, including target and implementation plan;

D4 – Demo: the fourth step confirms assumptions during the pilot run, while optimizing design parameters;

D5 – Deliver: the fifth step delivers the impact, while establishing ownership and accountability for results;

D6 – Delegate: the sixth step establishes standards, while training people in the new way of working [11].

Governmental management support

Can a company benefit from any state entrepreneurship support program by:

Lobbying for relevant local and federal legislation benefits and subsidies [12].

Another factor for saving business cost is cost saving instrument versus impact business period. Figure 6 explains beginning of the business influenced by good management system for saving money in various methods. Curve changes while cost savings reducing by negative production impact and finally achievement of 5-10percent of cost reduction in business.

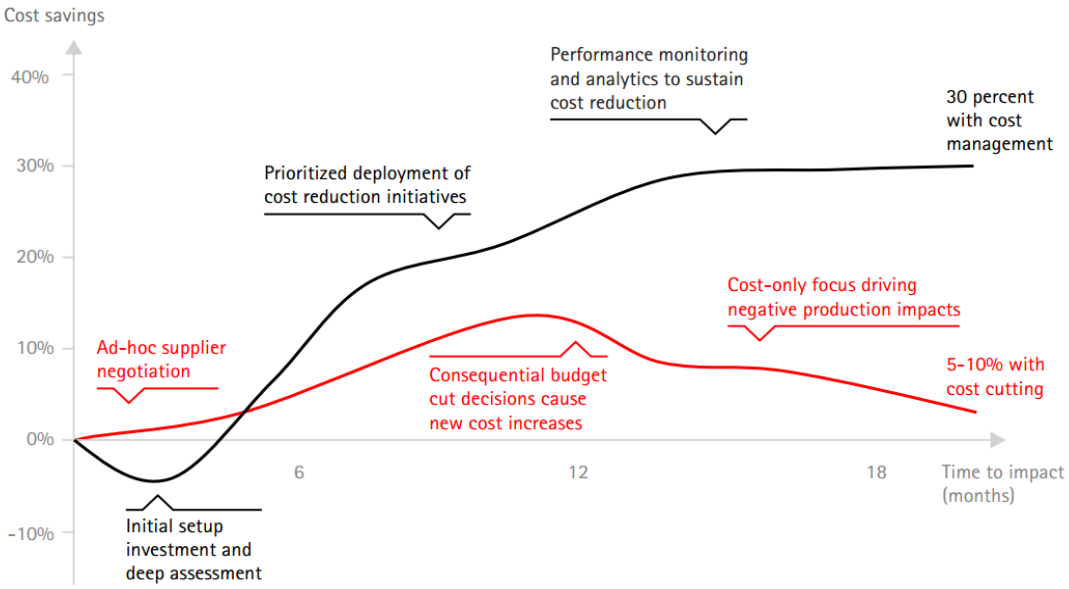

Figure 6. Cost management versus cost cutting [13]

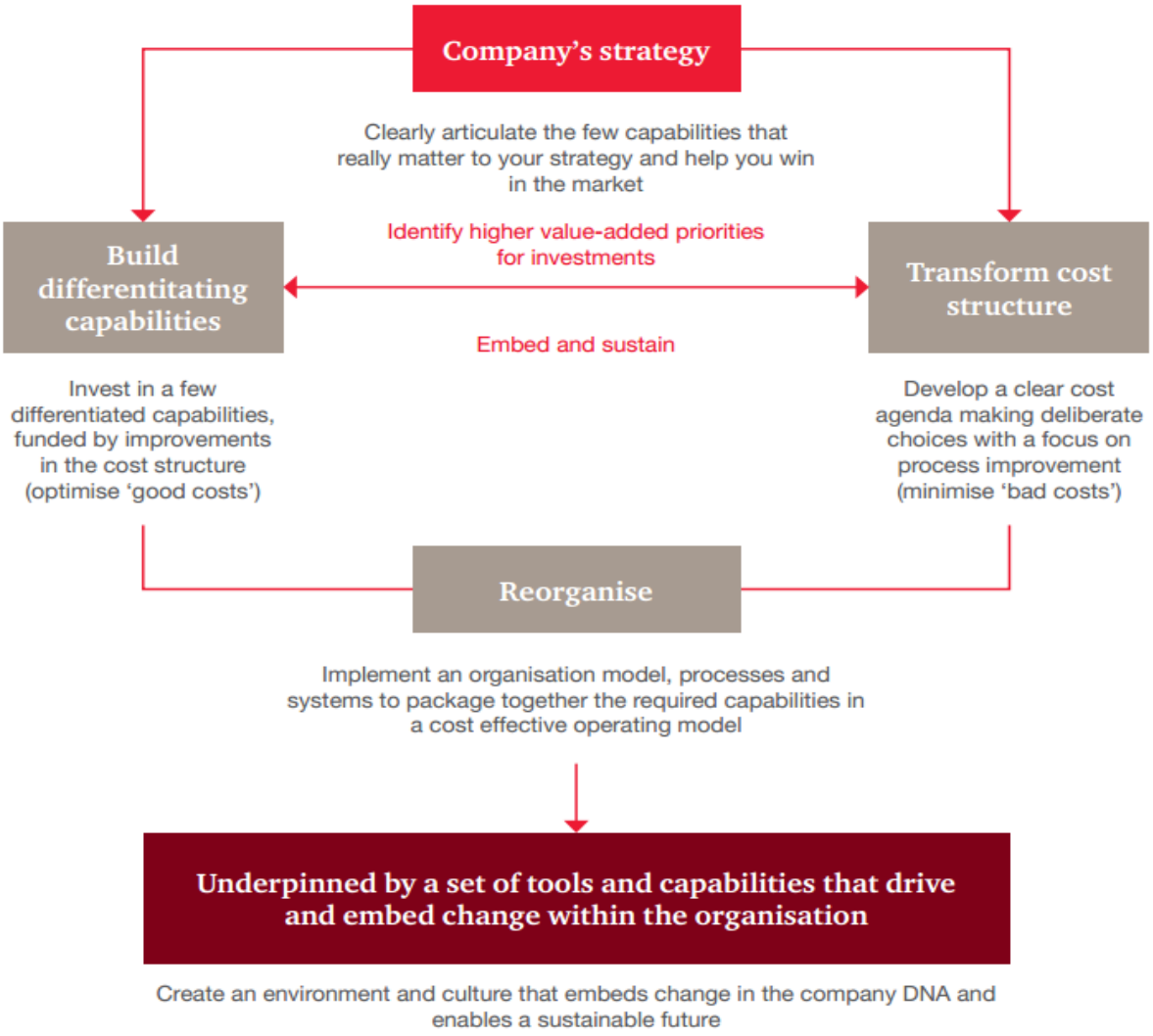

Figure 7. Cost reduction capability [14]

As PWC studied cost reduction mainly must be targeted by optimization of VAT priorities. By the company business strategy pushes transforms of cost structure and differentiae capabilities. Reorganizing business mainly responsible for the cost benefit is final stage as given figure7.

As for the theoretical approaches in above will affects following problems in companies in Uzbekistan.

- Focus on urgent problems and forget the rest
- It's not my problem
- It's "every man for himself"
- Unregistered and confused calculations
- Uninvolved administrative expenditures

Cost cutting methodology pushes forward following ways of solving them.

- Some easy savings
- Stay on time and on budget with involved in charge
- Avoid Leverage and Interest Charges Wherever Possible
- Weekly effective workstation reports
- Improve employees' IT knowledge and English proficiency
- Standardize equipment and software

FINDINGS

As a result of our research we can come to following achievements:

a) Well organizing workstation in all sphere of the economy

b) Razing competitiveness in manufacturing goods and involving services

c) Reducing bureaucratic barriers by the way of electronic governance

d) Advancement of export oriented goods in all economic sectors.

Table 1. Innovations in cost reduction

N	**Modern Manufacturing**	**Features**
1	Lean Six Sigma System	clear direction of quality costs sustaine competitive advantage
2	Lean Process Principles	flow value and perfection of the process
3	Just-In-Time Production	production based on the forecast and actual demand
4	Total Quality Management	manufacturing process control, delivery, customer service, quality management

In accordance with the research objectivities Estonian researcher Stan Mărăscu Klein examined above cost reduction innovative development goal has been offered for sustainable economic saves in Uzbek business market. As table 1 states modern manufacturing systems where main cost of the business can be cut down:

Lean Six Sigma is improving quality and efficiency of processes based on a strong project and quantitative approach with clear target setting. For long-term success and sustainability of excellence inspirations, techniques must be supported by an organizational philosophy that complete context of transactions.

The principles of Lean Six Sigma:

- Thinking long-term emphasis on providing value to industrial society
- Make the correct process leads to desired results
- Developing staff and partners
- Solving the fundamental problems of the system as a key learning-improvement

Lean production is a production philosophy that reduces the time between customer order and manufacturing, delivering the required product by eliminating waste. Lean production uses less of everything compared with mass production or mass, half the manufacturing space, half the investment of equipment, design half hours a new product.

Principles of Lean process

- Perfect quality first
- Minimize losses by eliminating activities that do not add value
- Long-term relationships with customers and suppliers
- Focuses on the evolution and change and technological level

Just in time method (JIT)

Just in Time (JIT) is based on the idea that production activity must be calculated and designed with great precision so that inventories are minimized. It is a process-oriented and applied primarily to manufacturing firms, should occur only what sells and just in time.

The principle of method:

Reduction or elimination of stoks minimun raw materials, parts, subassemblies, finished products lead to lower overall costs, regardless of production volume Implementation method J.I.T. requires achieving the following fundamental actions:

- Location rational organizational links in order to reduce costs of operations that do not create value
- Reduce training time, made to achieve a timely change of series
- Achieve maximum reliability of the machines to reduce parking costs due to their accidental falls

Total Quality Management (TQM)

TQM - is a complex process that causes a continuous quality improvement of product/services to meet customer requirements in the context of increasing labor productivity and profit industrial organization. By introducing the notion of total quality optics has changed throughout the organization in quality:

- Replacing the periodic verification of product quality preventive control
- Introduction of quality at the micro level, method «zero defects"
- Quality should be provided and certified the rules recognized/valid international [15].

CONCLUSION

In the conditions of the world economic crisis, methods of cost cutting are gaining great popularity in economic sectors. Anti-crisis managers offer various ways to overcome is cost optimization by reducing the cost of a product or service in regions. When the amount received from the proceeds is equal to the sum of fixed and variable costs, the enterprise is at the break-even point of production. Of course, staying at the break-even point is better than being below it. But we need to strive for the best, and we will strive to overcome the break-even point in a positive direction. Transition economies like Uzbekistan also implementing new approaches of reducing production costs for further development of economic sectors.

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SECTION 4. Computer science, computer engineering and automation.

QR – Issue QR – Article

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BUILDING A CONTAINER BASED APPLICATION AND SHIPPING IT TO GOOGLE CLOUD PLATFORM

Abstract: *This article describes the process of building a container based application (concert ticket search service), deploying it into Google Kubernetes Engine, creating Cloud SQL instance and setting up a Virtual Private Cloud. We will cover in detail the steps how to build a small size docker image and push it to a docker registry. Also, we will compare image sizes with different build approaches on our application. After that we will focus on setting up a Cloud SQL for PostgreSQL and we will not forget to mention some limitations. And finally, we will describe what is VPC, how it can be basically configured and how to work with it.*

Key words: *google cloud platform, docker, kubernetes, cloud sql.*

Language: *English*

Citation: Romanov, O. D., & Sabinin, O. Y. (2019). Building a container based application and shipping it to google cloud platform. *ISJ Theoretical & Applied Science, 06 (74),* 257-262.

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Introduction

The cloud services receive more and more attention every day. And that's explainable:

- it provides different computing resources on-demand and self-service, requiring users to use simple interface to get the processing power, storage, and network they need;
- it is geographically wide, meaning that user can access the resources from any place;
- provider keeps huge pool of these resources and just gives some to the users, giving the win-win offer for customer and themselves;
- these resources are elastic;
- payment system is dedicated only for charging resources that are used;

It was also the definition of cloud.

In this article we are going to build an application and ship it to the GCP. Also, we will mention the advantages and disadvantages of different steps of developing such application.

Concert ticket search service

We will use an application written in Go as an example. It's purpose is to find concert ticket which are stored in database. From bird's-eye it does the following:

- it has a TCP connection with other service which sends messages;
- it parses the message and tries to select some records from database;
- it completes some logic on extracted data and sends back information to another service.

We have to keep in mind that this particular application does not expose any ports. Instead, it establishes the connection with another service and works with.

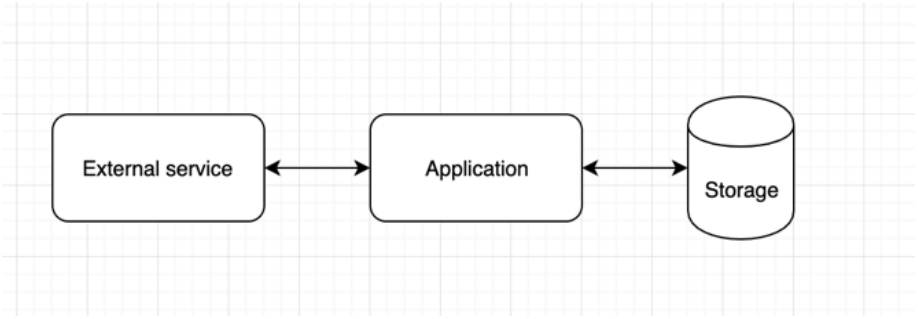

Figure 1 - Example service interactions.

As a conclusion, our application example:

- does not have any ports to be exposed;
- requires ability to connect to database;
- requires ability to connect to external service.

Building and pushing docker image

First of all, we have to put our application into Docker container. To do this we have to write a Dockerfile with required steps to do during build stage.

It is very important to keep built images compact. There is more efficient space usage on docker registry if image has small size. That also means that machine (which runs the container) will not have so much space usage. The way to minimize image size is to keep only required files inside that image.

For example, we can copy all the directory with source code and build it then. At first glance everything is ok: we can run our application and it works. But what if we keep only binary file with application? We don't need keep our source files and some source files which were fetched as dependencies.

Let's get deep into the details of the Dockerfile mentioned on figure 2.

```
1  FROM golang:latest as builder
2
3  WORKDIR /application
4  ADD . .
5  RUN go build -o server ./cmd/server/server.go
6
7  FROM golang:latest
8  WORKDIR /application
9  COPY --from=builder /application/server ./server
10
11 CMD ["./server"]
```

Figure 2 – Dockerfile.

This technique is called multi-stage builds [1]. In this example we are defining two stages of the build. During docker image building each stage get processed. Each stage can get some files from previous stages.

On the first stage we are copying all the source files of our application and building it. On the 5th line of our Dockerfile we assume that resulting image would have all the source files and resulting binary. But since we are using multi-stage builds we can do elegant move: we are copying only application binary file from the previous step.

Let's now compare the sizes of both images. First of all let's build them with the following tags: fat-application (for image with source files and binary) and small-application (for image only with binary file).

Image size inspection is mentioned on the figure 3.

```
(base) MacBookPro-ORomanov:~ ORomanov$ docker image inspect fat-application --format='{{.Size}}'
798374840
(base) MacBookPro-ORomanov:~ ORomanov$ docker image inspect small-application --format='{{.Size}}'
782278454
```

Figure 3 – Image size inspection.

As a result we received the following numbers:

Table 1. Image size comparison

Image	Size, bytes
fat-application	798374840
small-application	782278454

The difference is almost 16 megabytes! That is very important especially if you expect that your image will be used as a base for someone else.

Our image can be pushed to any desired docker registry now via docker push command.

Creating Cloud SQL instance

We need to have a storage for our example application as it was mentioned before. This article is dedicated to the usage of Google Cloud Platform and there is fully-managed database service, Cloud SQL [2]. Currently Cloud SQL can be used with MySQL or PostgreSQL. We will use PostgreSQL one in this article.

First of all we have to create one instance, it can be done with the help of Cloud Platform Console, a web user interface as shown on figure 4.

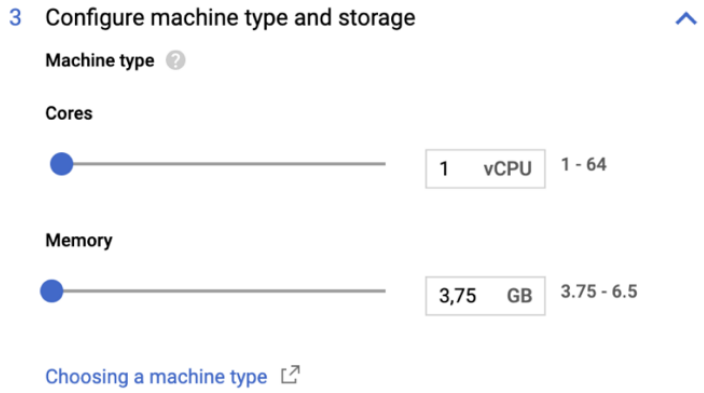

Figure 4 – Example of Cloud SQL instance configuration.

There are some parameters for creation, such as number of vCPU, number of memory, permanent storage type, its capacity and etc. We will create an instance with the smallest possible configuration.

Now we have instance with Public IP address. We can connect from anywhere we need. But firstly we have to set up a whitelist (add addresses for establishing connection with them). It can be done on editing page of instance. Also Cloud SQL for PostgreSQL gives an ability to set different database flags.

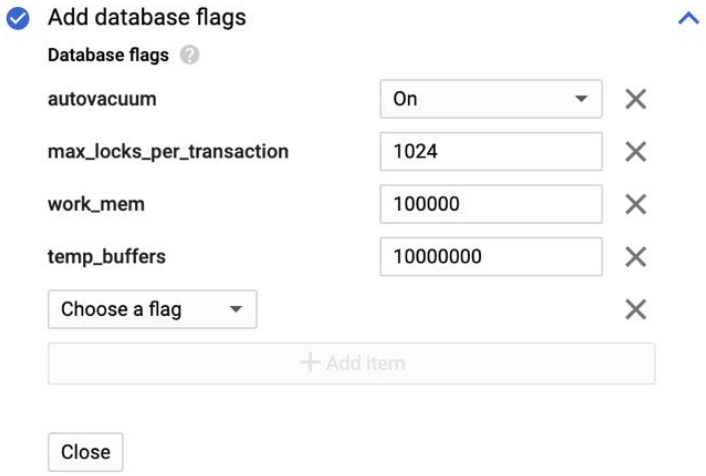

Figure 5 – PostgreSQL flags

But Cloud SQL for PostgreSQL is different from typical PostgreSQL. Here are some limitations, which may cause troubles: not all of the database flags are supported, also there are only some of PostgreSQL extensions [3].

Now we can execute DDL script to create some objects which are required for our example application. And later we can connect to it.

Deploying the application

In our GCP project we can create a Google Kubernetes Engine cluster. We are going to do it via Cloud Platform Console as shown on figure 6.

Figure 6 – Just creating instance

We can execute different kubectl commands to work with Kubernetes cluster manager [4].

First of all we have to create a namespace to place our application resources in there. To do so we have to apply the configuration shown on figure 7.

```
apiVersion: v1
kind: Namespace
metadata:
  name: example-namespace
```

Figure 7 – Just creating instance

Since now we can work with Kubernetes cluster and place resources in example-namespace namespace

Let's now create a deployment configuration shown on figure 8 and examine its lines.

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: application
  namespace: example-namespace
  labels:
    project: article
spec:
  replicas: 1
  selector:
    matchLabels:
      project: article
  template:
    metadata:
      labels:
        project: article
    spec:
      containers:
        - image: olerom/bot:latest
          name: bot
          resources:
            requests:
              memory: 100Mi
              cpu: 1
            limits:
              memory: 100Mi
              cpu: 1
```

Figure 8 – Deployment configuration

Deployment represents a desired state of a pod (which is a container or a group of containers). That means that we have to describe this state in configuration and apply it. After that the deployment

controller will provide declarative updates for this pod [5].

Let's get deeper in the provided configuration. The first line is the entrance point and definition of Kubernetes API version. After that we are defining object type and in this case it is deployment. It's time to define metadata of the deployment: its name, namespace and also some labels (key - value pairs). The next thing to do is to describe deployment specification:

- only one pod will be ran since replicas field is set to 1;
- we are defining labels in selector field to let deployment to know which pods it should control;
- finally, pod templates are defined.

The Pod specification determines how each Pod should look like: what applications should run inside its containers, which volumes the Pods should mount, its labels, and more [6].

Also we have defined the requested and limited resources. In our example we have requested 1 vCPU and 100Mi of memory [7]. And our requested values are equal to the limit ones.

After applying with the help of kubectl command this configuration our example application will be started [8]. It will do all the business logic including interaction with external service and a database that is placed in Cloud SQL.

Virtual Private Cloud

As we have mentioned before, our Cloud SQL instance has Public IP. And the way our application can connect to is the following:

- add application IP address to the instance's whitelist;
- connect to the instance via internet.

But let's get into details and image what can be bad here:

- since we are connecting through the internet there may be some unwanted network latencies;
- public IP of the instance is exposed to the public internet, which may be a potential vulnerability.

GCP allows us to use Virtual Private Cloud (VPC) which can solve mentioned disadvantages [9].

VPC creation is shown on figure 9. We are doing it via Cloud Platform Console. We have to setup a subnet by mentioning some information such as used GCP region, address range for a subnet, enabling or disabling logger and a route mode.

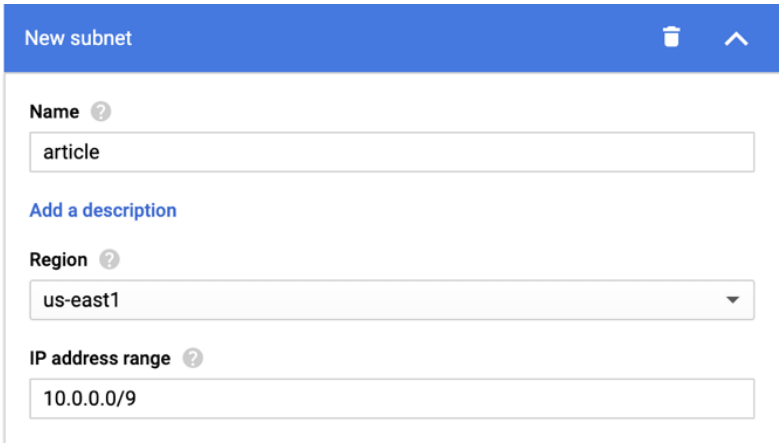

Figure 9 – VPC creation

By doing these steps we have created a VPC network. Now we can enable its support on our kubernetes cluster and Cloud SQL instance.

But it is also important to mention the noticeable limitation: once Cloud SQL instance enables private IP usage with VPC it cannot be disabled.

Let's get a summary over VPC usage:

- both GKE and Cloud SQL supports just created VPC network;
- our example application connects to the PostgreSQL via VPC;
- the connection from our application to Cloud SQL instance is secured;
- nothing is exposed to the public internet from Cloud SQL instance;
- there is a variety of abilities to setup different rules to be used later [10].

Conclusion

We have shown the way to build a small size docker image of our example application. Also we have compared the actual size of both images: fat-application and small-application. We've made a conclusion that difference is important and may be essential in some cases.

After that we have setup a PostgreSQL instance in Cloud SQL, showing that it is fully managed and ready-to-use. But we have also mentioned some limitations and disadvantages of this solution.

Next thing to do was kubernetes cluster creation in GKE. We have created the cluster and the

namespace. After that we have provided the deployment which controls the required pod with some labels. We have also mentioned the resource limits and requests and did not forget to use them in configuration.

Finally, we have described how VPC can be created and used in our application. Although, we have shown a limitation of its usage with Cloud SQL.

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PREVENTION OF SOCIAL COST IN OCCUPATIONAL HEALTH AND SAFETY IS SUSTAINABLE DEVELOPMENT FOR THE CONSTRUCTION INDUSTRY

Abstract: *World construction industry has suffered human and economic losses as for the not enough organized health and safety regulation in the construction industry. The purpose of this study is to clarify safety enforcement and it's cause and effects in social point of view in construction industry. This research demonstrates the feasibility of social relationship with companies and workers in world class approaches. Especially, studies objects are taken from almost all over the regions make clear understanding of social benefits by countries. The next point offers a solution for changing routes of migrants influenced social cost of the construction projects badly while safety regulation is strongly applicable. Aspects of social losses studies briefly in the next paragraph. In this paper, a novel method of survey is presented. Outcomes of the research provide insight into prevention of accidents and injures for saving financial lost, time of the project, health of the workers, reputation of the companies and keep away from being disability and fatal death on site Thus the paper concludes by providing a set of recommendations and strategies to contractors for improving their safety performance socially protection of the all construction members.*

Key words: *health and safety, regulation, social affairs, international work force, health care, cost effects, construction companies, major countries.*

Language: *English*

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INTRODUCTION

Dynamic development of construction sector in the world can influence both the positive and the negative morale of employees. The work environment plays an important role in employee productivity and profitability. Most industries have an unsafe working environment and in most cases are unhealthy. This study focuses on the work environment in a medical facility and its impact on healthcare professionals like construction sector members. Over the past century there has been a dramatic increase in insecure health facilities such as inadequate furniture, poorly designed workplaces, inadequate ventilation, excessive noise, inadequate lighting, inadequate management support, poor workplaces, poor communication, and inadequate fire safety measures in emergency situations and lack of personal protective equipment are mainly cost cut factors of the construction project.

The nadir of the global financial crisis is now ten years behind us, and there is a certain return to "economic normalcy" as recovery across the developed world appears to be building momentum, credit conditions have improved considerably, and the massive pullback in construction activity has turned the corner, albeit at varying speeds across regions. This suggests that the expansion phase of the construction cycle is well established and that we thus can expect relatively strong prospects over the next few years from a business cycle perspective [1].

Healthcare workers are an important issue for prone to occupational diseases such as heat stress, deafness, ergonomic disorders and suffocation. The performance and productivity of health workers can be reduced because of a poorly planned workplace

environment as it can affect work morale and lead to reduced job motivation and dissatisfaction. As a result, management makes work safety difficult for employees almost all construction industries of the world. Ensuring health, performance and good regulation saves social issues as well human factor plays the most predominant role while there are true ergonomics.

As for the World Health Organization Human factors and ergonomics are scientific disciplines concerned with: "the understanding of the interactions among humans and other elements of a system, and the profession that applies theoretical principles, data and methods to design in order to optimize human well-being and overall system performance" [2].

The term 'social costs' refers to costs incurred due to the execution of a construction project that cannot be classified as either direct or indirect costs incurred by the parties engaged in the contractual agreement (Allouche et al., 2000). Incurring a cost is defined as 'the act of using resources for a specific purpose' (AWWA, 2000). If we realize that construction projects as a team work process with various contractors.

The contractor is obligated to fulfill the project's objectives in accordance with the contract documents, drawings and specifications. Within these limitations, his goals are to complete the project for the lowest cost, within the tightest time limits, and at the highest profit (Heiber, 1996).

In the last few years there has been a growing interest in traditional view of effectiveness and efficiency in construction industry. In contrast time, cost and quality, the new paradigm shown in Figure 1 uses broader terms and takes wider views of time (life cycle assessment), cost (construction and social costs; minimal resource consumption) and quality (human satisfaction; minimal environmental impact). Due to modernized innovation technologies help to any project management organize work conditions scientifically and obtain expected results. Self-assessment and construction site strong monitoring on safety regulations provide human factor life expectancy with no injures on construction site.

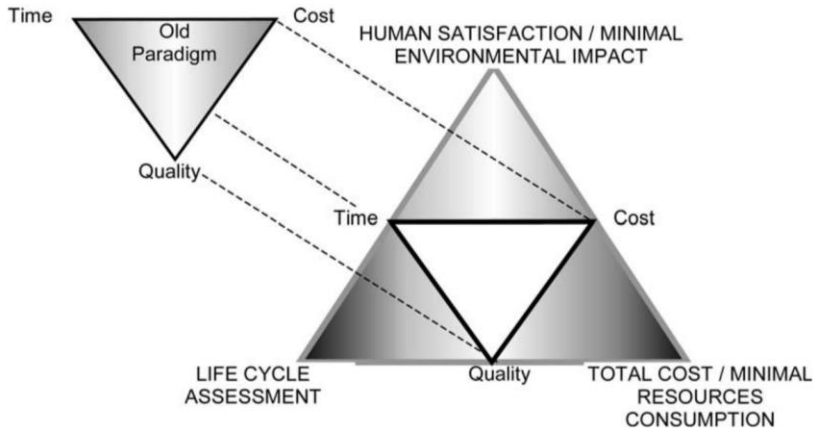

Figure 1. The new paradigm for sustainable construction (Modified after Vanegas et al., 1996) [3].

PURPOSE

The major objective of this study was to investigate analyzing of social cost theories, clarify role of social benefits and protection of workers in construction sector, regional study of the importance of social care of employees. The aim of this study is to shine new light on these debates through an examination of cost reduction via social relationships between companies and workers. The objectives of this research are to determine whether foreign workers in various types of working conditions and find out social effects of poor health and safety regulation. This case study seeks to examine the changing nature of workers knowledge, experience and behavior on site. This study seeks to obtain data which will help to these research gaps among government, companies and members of the construction projects. This study therefore set out to assess the effect of social cost, and the effect of life expectancy of human factor.

METHOD AND MATERIALS

We started by investigating our next research by clear clarification of ground theory methods of the social cost in construction. In this study has been long established in social care to present detailed analysis of relevance and urgency of log run perspectives of poor working conditions. Qualitative methods offer an effective way of primary source data as a result of 100 members of the construction projects of Uzbekistan gave detail approach of social interests should be key factor in construction site as for the human factor includes everyone.

RESULTS

The results show that over the last five years there have been some dramatic changes in the construction market. Businesses across many parts of the world were faced with unprecedented challenges arising from a number of factors. These included rising prices of raw materials, limited availability of funding, corporate failures arising from the inappropriate management of risks, government spending cuts and falling consumer spending coupled with new accounting standards and safety regulatory requirements. Such factors have affected how companies in construction operate modern building business. The overall measurement results are summarized in medium term a number of overarching factors are likely to impact on demand for construction and transform the construction sector even further. It is anticipated that global construction market will increase by 4.3% per annum; from USD 8,663 billion in 2012 to USD 15,030 billion in 2025. This is an increase of over 70% with professional labor force [4].

The previous sections have shown that taking a human factors approach means that when safety incidents occur, it is important to have a non-punitive culture. Instead of blaming individuals for events, the systems approach focuses on:

- building systems to reduce potential risks and prevent future errors;
- building system defenses to reduce of errors resulting in patient harm.

According to the (Safe System of Work Policy, Northumbra University Newcastle) social relations can be involved any of the following activities in construction work:

Construction	Upkeep
Alteration	Redecoration
Conversion	Maintenance
Fitting out	Decommissioning
Commissioning	Demolition
Renovation	Dismantling
Repair	Upkeep

The results thus obtained are compatible with detail theoretical approaches relation to the social issues which may be a taking in account of construction sectors are:

Building	Aqueduct
Cable	Sewer
Railway line or siding	Sewage works
Tramway line	Gas holder
Dock	Road
Harbour	Airfield ·
Inland navigation	River works
Tunnel	Drainage works
Shaft	Earthworks
Bridge	Lagoon

The method is an effective way to improve social effects of good organized work conditions are directed to reduce cost benefits and time factor. If we see at following figure it clear states that where social losses can be occurred during the working period.

Relevance of social costs

Social costs represent losses incurred by society due to occurrence of construction site accidents. Social costs are defined as any items that will result in the utilization of national resources. Social costs are not based on the contractor's point of view like what were discussed in the previous sections, but are based on the society's point of view. This point will be further discussed below. The following are examples of social costs (Ngai and Tang, 1999):

(a) The productive years of the injured worker. To evaluate the loss of the productive years of a worker, The ordinance establishes the compensation of an injured worker for the case of permanent total incapacity and the case of permanent partial incapacity, with reference to earnings, age and the extent of loss of earning capacity of the injured worker.

(b)Families and relative losses. This refers to the opportunity costs of housewives' work and relatives' work to take care of the injured workers.

(c)Fire Department and rescuer services. Costs are incurred by society to provide rescue services such as the ambulance transportation and first-aid services. Besides, fire-engines services and the wages of the related staff are also social costs.

(d)Losses due to the medical expenses and hospitalization. The losses incurred by the society are the actual expenses.

(e) The Police Force. When a construction site accident is reported to the police, the latter will tackle the case and carry out immediate actions. The police also maintains discipline on site and assists factory inspectors from the Labor Department in investigating the accident. This is also a cost to the society.

(f)The Social Welfare Department. This includes the administration /personnel costs of the Social Welfare Department to provide assistance to the injured worker.

(g)The Labor Department. This includes the costs for regular site inspection for prevention of accidents and the costs for investigation and reporting if accidents occur.

(h) The Court. When a serious or a fatal accident happens, the Court will carryout an investigation to find out the reasons for the injury or the death of the worker, especially when there is any argument between the employer and the family of the employee. This is another cost to society [5].

We have introduced a new approach to completely working process on dangerous process while human factor work every day in construction industry. This chain only able to solve current

available problems like accident rate is a main purpose of the project management well-being Health and Safety regulation implementation. Following figure represents detail relationship where social benefits lye on.

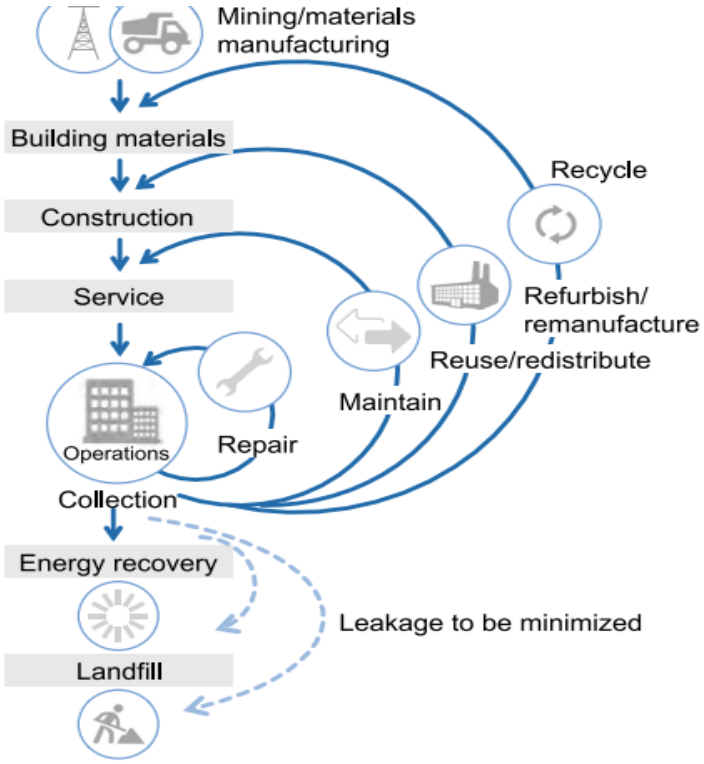

Figure 2. Circular Social principles in the Construction Value chain [6]

Source: *Elen MacArthur Foundation; World Economic Forum; The Boston Consulting Grouping.*

A similar approach is used for the next part of world countries social protection charges by countries. It means most regions already understood cause and effect of the poor safety in construction industry.

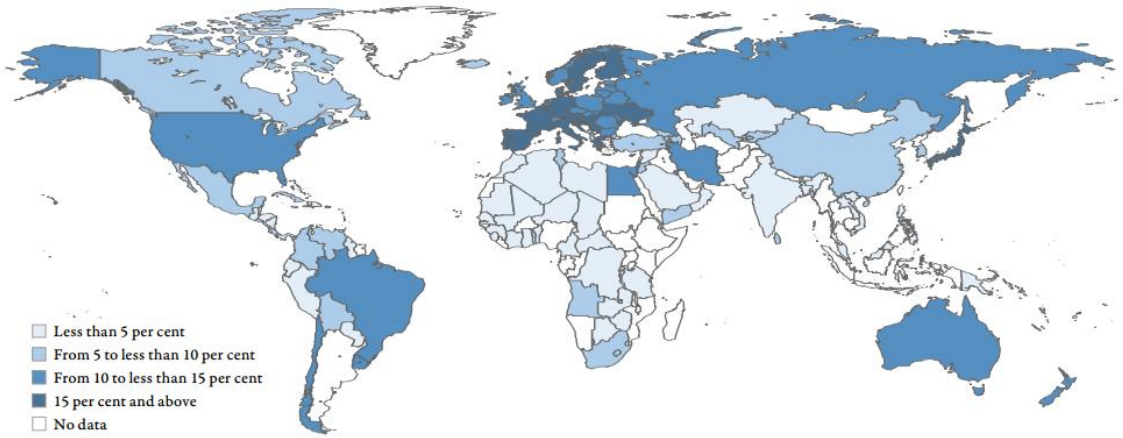

Figure 3. Public social protection expenditure, excluding health, latest available year (percentage of GDP) [7]

Source: *World Social Protection Report 2017–19: Universal social protection to achieve the Sustainable Development Goals, page 2.*

Dark blue countries are highly work conditions protected regions. While lack of social protection leaves people vulnerable to poverty, inequality and social exclusion across the life cycle, thereby constituting a major obstacle to economic and social development. But, the next factor which is the SDGs call for universal social protection. In particular, countries have a responsibility to guarantee at least a basic level of social security – a social protection floor – for all, as part of their social protection systems. While many countries have al-ready achieved universal protection, more efforts are needed to extend coverage and ensure adequate benefits.

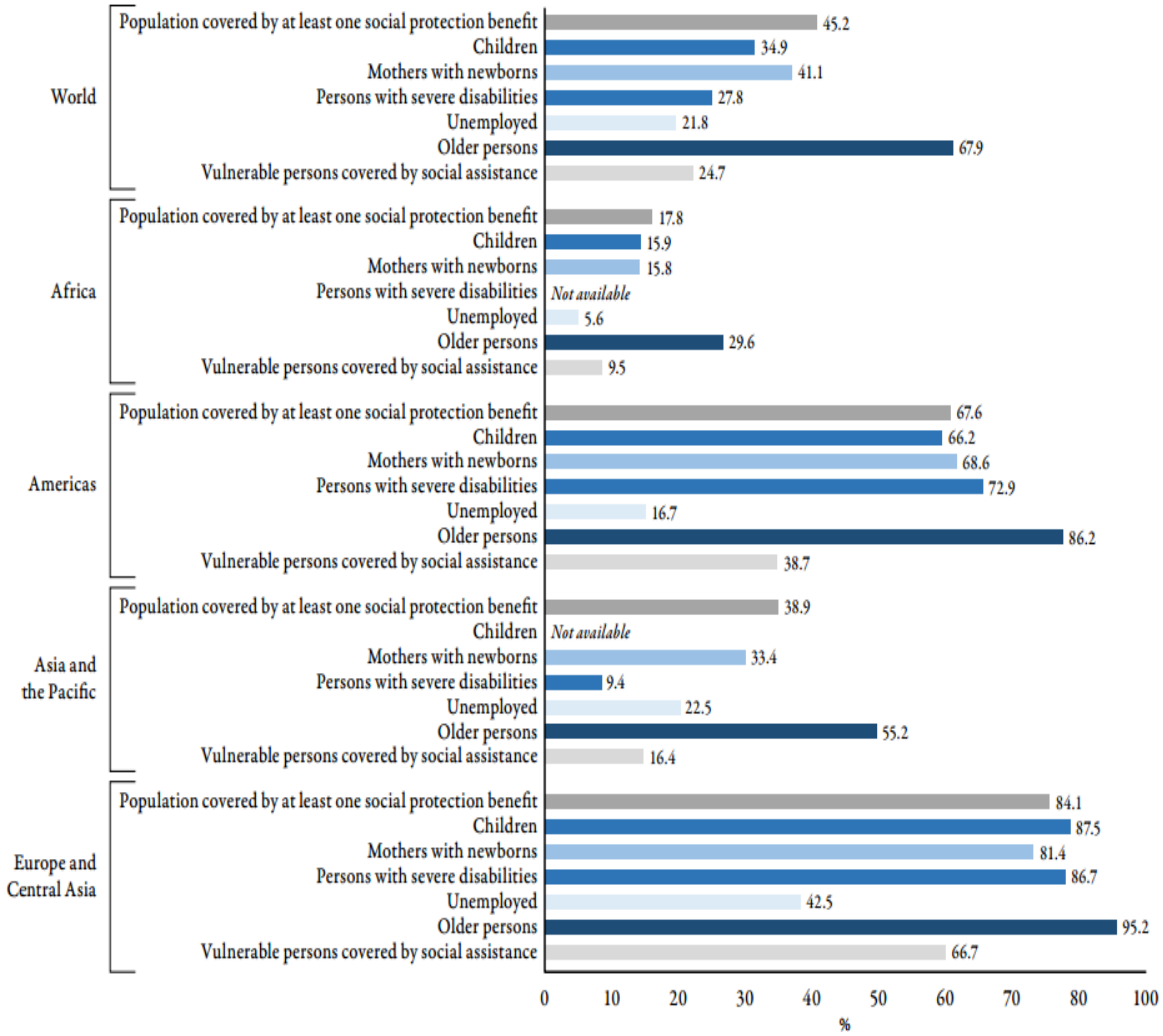

Figure 4. Effective social protection coverage, global and regional estimates by population group (percentage) [8]

Sources: *ILO, World Social Protection Database, based on the Social Security Inquiry (SSI); ILOSTAT; national sources.*

There is a good match between Social Protection Legislation and Act by government implemented it must not left every single sectors of the human factor where at work or not. But from the figure 4 we can analyze main targets are older and disable persons. It means some amount of this data even if minority is disabled workers government or company's burden benefits to their employees.

The next part of the research studies labor shortages appear to be an increasingly common feature of global construction recent years in the world.

Skills shortage: Amsterdam, Bangalore, Beijing, Bogotá, Dublin, Hong Kong, Jakarta, Johannesburg, Kampala, Kigali, Kuala Lumpur, London, Melbourne, Munich, New York City, Northern Ireland, San Francisco, Seattle, Seoul, Singapore, Sydney, Tokyo, Toronto, UK, Central UK, North UK, South Zurich (58.7%).

In balance: Preliminaries and margins are two other drivers of overall construction costs. Brisbane, Buenos, Aires Dar ES Salaam, Doha, Ho Chi, Minh City, Istanbul, Madrid, Moscow, Nairobi, Paris, Perth, Santiago, Scotland, Shanghai, UAE, Warsaw (34.8%)

Surplus: Houston, Muscat, São Paulo (6.5%) [8].

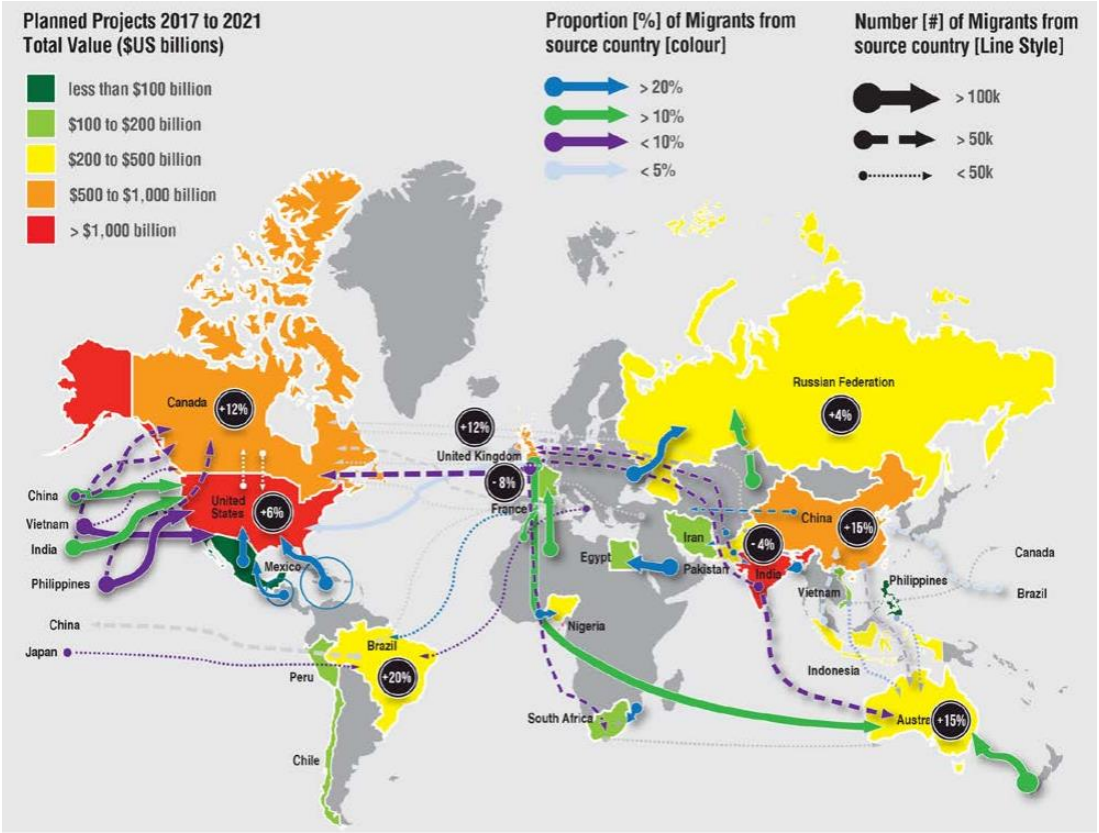

Figure 5. Mapping change in international migration flows to global construction hotspots (demand) and migrants' countries of origin (2010 - 2015) [9]

Source: *Global Trends: Emerging Construction Labor Markets, Build Force Canada, March 2017, page 16.*

Simple statistical analysis was used to the United States and India lead the way globally, each with well over a trillion dollars (USD) in planned energy and infrastructure projects. Canada, China and the United Kingdom follow, with aggregate project values upwards of $500 billion. Australia, Russia, France and Brazil round out the top countries, with projects valued at more than $250 billion. This project-based analysis is consistent with other outlooks. The Global Construction 2030 report, published by Global Construction Perspectives and Oxford Economics, projects that growth in global construction will rise by $8 trillion, growing by 85 percent to 2030. According to the report, China, the United States and India are expected to account for more than half (57%) of anticipated growth. The primary growth drivers cited by the report are population growth, demographic shifts and the related needs to build or replace power and civil infrastructure [10].

One possible solution to this problem is calculating globally workers are not trained well or lack of education about Health and Safety work policy. In our previous researches state clear clarification about workers types and conditions while major accidents happen with same objectives.

Analyzing quantities methods (such as propagation of uncertainty and least squares parameter fitting) can be derived analytically in explicit form when the relevant variables are normally distributed. In this research our variables are cost dynamics and construction life cycle. However, many other distributions are bell-shaped (such as the cost, construction life *t*-, health and safety distributions).

The probability density of the normal distribution is

$$f(x|\mu,\sigma) = \frac{1}{\sqrt{2}\pi\sigma} e^{-\frac{(x-\mu)^2}{\sqrt{2\pi\sigma^2}}}$$

where

μ – is the mean or expectation of the distribution (and also its median and mode),

σ – is the standard deviation, and

e^2- is the variance.

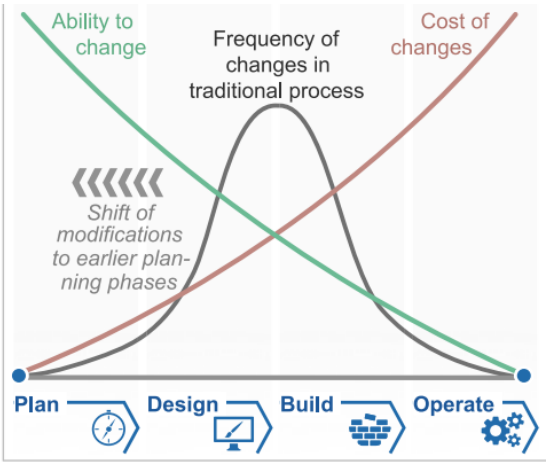

Figure 6. Cost of changes in the Construction life cycle [11]

Source: *World Economic Forum; Shaping the Future of Construction: A Breakthrough in Mindset and Technology, May 2019, page 26.*

It is relationship of well-organized project management against accident rate for cost reduction with social benefits in construction. So operational management pushes forward all-time low level of accident and traditional working conditions which causes accident and to become illness, disable or fatality of the workers during the working hours.

The black curve is the standard normal distribution fig.6. But there are many cases where the data tends to be around a central value with no bias left or right, and it gets close to a "Normal Distribution" changes in traditional process and 68% of values are within 1 standard deviation of the mean, 95% of values are within 2 standard deviations of the mean, 99,7% of values are within 3 standard deviations of the mean. It means planning, design, and build and operation phase of the construction work normally distributed.

It is clear to find out the standard deviation, because we can say that any value is:

1. *likely* to be within 1 standard deviation (68 out of 100 should be)
2. *very likely* to be within 2 standard deviations (95 out of 100 should be)
3. *almost certainly* within 3 standard deviations (997 out of 1000 should be)

The next factor is detail cause and effects of the health and safety in construction industry. These four relationships are really connected with one other. If we say social factor only solution with human factor in construction process, so:

Table 1. Social effects of poor health and safety regulation

EMPLOYER	**INDUSTRY**
• Payment for sickness • Poor productivity of ill worker • Investigating cases • Temporary replacement of worker • Permanent replacement of worker • Reduced productivity of new worker Retraining • Occupational physician cost • Increased insurance • Civil claims, prosecution, blames, • Preparing defense for civil claims Administration from different actions	• Continuous recruiting new workers • Loss of skilled workers • Every day new site induction • Responsibility • Managing workers out • Assessing risk • Making adjustments • Rescheduling work • Increased surveillance • Affects white, blue-collar worker • Extra responsibilities; • First aid arrangements
INDIVIDUAL	**SOCIETY**

- Pay for treatment
- Pay for drugs
- Lost wages
- Reduced bonuses
- Time off
- Time, cost and civil claims
- Get lower paid job
- Can no longer work
- Costs in retirement
- GP costs
- NHS costs
- Prescription subsidies
- Disability benefit
- Emergency benefit
- Accident benefit
- Forever disable
- Legal aid for child claims
- Early pensions

RAISING AWARENESS OF HEALTH AND SAFETY IN CONSTRUCTION INDUSTRY OF UZBEKISTAN

On this research we held a survey among 100 respondents about social benefits of good Health and Safety. Questions and outcomes are as followings:

The most surprising aspect of the data is in the ”*Occupation of the work”* .

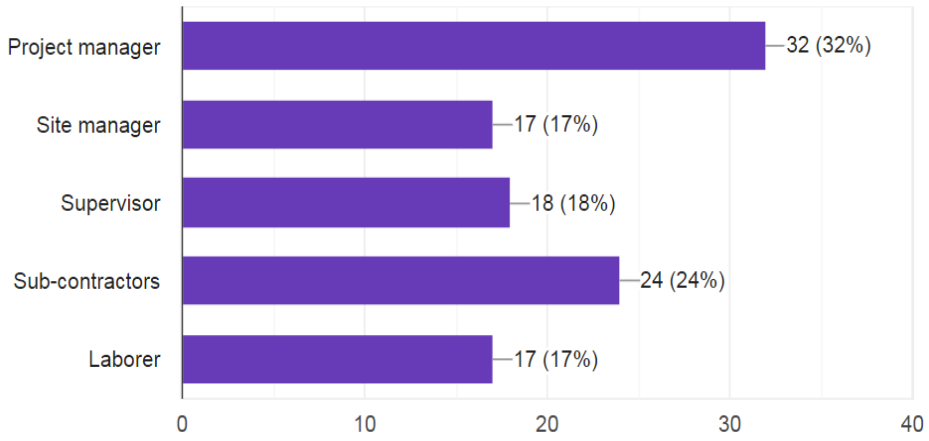

Figure 7.

About 32 % respondents are project managers and 24 % sub-contractors. Almost two thirds of responses focused on the need to raise awareness of health and safety – among employers, workers and the managers. Opinion was split on the most effective method of awareness rising with many suggesting that several methods should be deployed at once.

After collection, the samples were shipped back of share of respondents *“Sector of the construction”*.

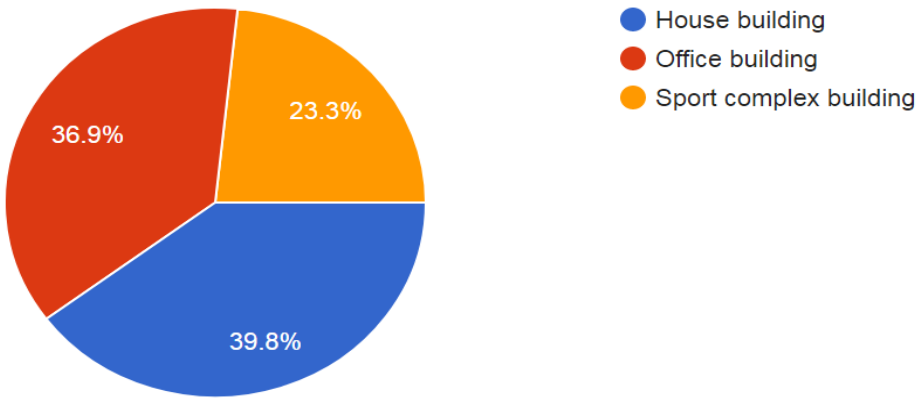

Figure 8.

We can see from the figure 8 that main respondents of current survey were housing sector with 39.8% and even in low level of 23.3% played main role for out outcomes.

In the follow-up phase of the study, participants were asked *"Experienced management system reduces social cost of the project"* .

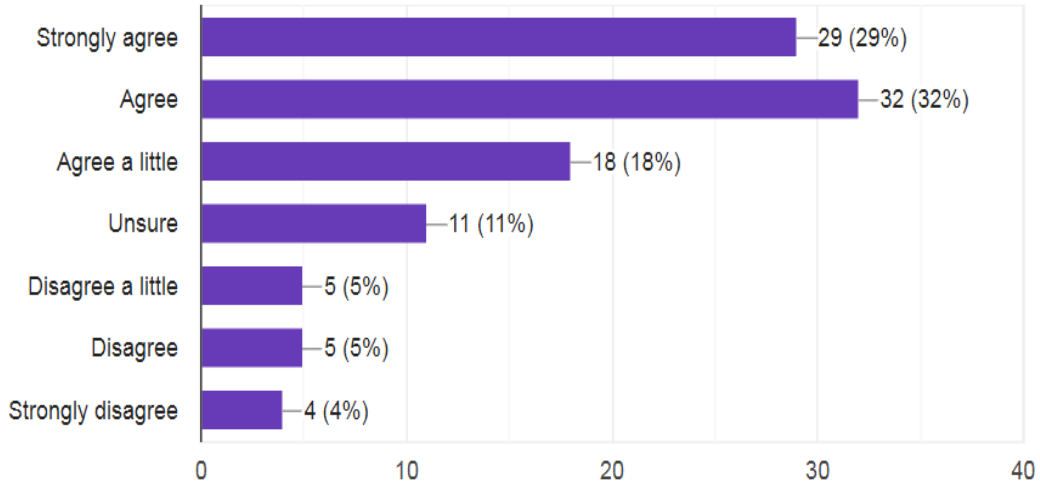

Figure 9.

In this question major respondents agree with the statement with 32% and 29% of the next applicants were strongly agree that social benefits really cause of well-being organizational management system. Outcome hypothesis are local construction members supports modern Health and Safety regulations relevant problem solver. They believe that this regulation if applicable dynamic cost reduction with human factor.

Management Issues

One third of responses suggested that ensuring health and safety was a boardroom issue would be a key factor in making further progress. The most important issues were felt to be:

- covering health and safety in company annual reports;
- indicating publicly which Director holds responsibility for health and safety;
- including health and safety on the agendas of Board meetings;
- clarifying the position on corporate responsibility in accordance with the world experiences [12]

Finally, questions were asked as to the role of *"Companies in the construction sector consider their health and safety performance is education and training of the workers for the social success".*

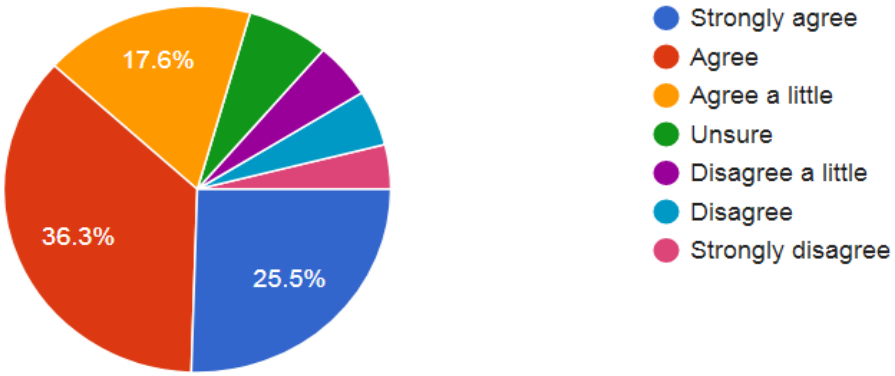

Figure 10.

Results of the next questions were with 36.5% of respondents majority of the solutions agree that education and training in construction site effects to social relations of the project.

Enforcement Action

Enforcement issues were mentioned in over a third of responses. The most popular suggestions were:

- more inspections;
- increased funding for regulators;
- stiffer penalties;
- more energetic enforcement of existing legislation (some made the point that this would be easier to achieve if the legislation was clearer); and
- greater attention to the recording and reporting of incidents (for example through a National Safety Audit requiring companies to produce audited annual reports on their health and safety performance and plans).

DISCUSSION

This paper is a modest contribution to the ongoing discussions about how working conditions effects social relationships of workers on construction site. According to the results of the survey we can discuss following approaches:

The main concern of the paper was prevention of social cost in health and safety in construction is sustainable development for each construction company. Our current research shows that theoretical approaches of the social benefits and losses at site. Particular attention is paid to the role of the international regulations for social protection of the laborer at work by sector including construction. In some cases it is unacceptable issue that main human factor damages and loses caused with migrant workers worldwide and not enough qualified worker at specific field. The main migration anyway US markets attract most workers in the world. There for lots of accidents and injuries in US construction sites [13].

The originality of our solution lies in the fact that survey question in construction sector of Uzbekistan is dramatically interesting. Our results describe for the first time the represented in directly asked from individual construction work personals in Health and Safety regulations for social causes. This paper presents a pilot study to find the answer to our current research. It shows that international standards of occupational Health and Safety regulations are really compulsory to implement not only construction but also anywhere with high level of hazard and risk. Well-being professional management system like Project managers, Site managers, Foreman managers and supervisor, safety inspectors with constant monitoring reduced almost all hazard and accident rate even in “ZERO RATE” level in accordance with the top world construction companies results, experiences and achievements.

CONCLUSION

In conclusion, it is evident that this study has shown obligatory to obey any regulation and legislation within the construction site. This research was concerned with all-time strong monitoring and inspecting should be organized and well prepared however, the results should be applicable also to all industry sectors. While hiring a traders requested work experience and feedback from the previous of the former construction managers. And basic education and qualified Health and safety site induction, weekly training services and special organized site CSCS checking system of electronic monitoring on site can be only solution for each workers of the all projects. While we all human being we must understand all chance and potential working against to reduce accidents and hazard work conditions in our hand. This study set out to determine effective and modern ways, methods should be implemented by government immediate reforms of Uzbekistan. From the outcomes we can offer followings:

These findings suggest that in general and specific goals of the guidelines in construction reducing social cost in site are:

- agency and field work with outsourcing style trader offering;
- service programs, continuing education materials, and tools related to social work safety;
- workers’ rights;
- technology that enhances social worker safety;
- licensing, regulation and CSCS card
- development, refinement, and integration of best practices in promoting social worker safety [14]

The present study was designed to determine the effect of assessing past incidents should be considered as a social benefit cut for preventing any accident at workstation the following factors:

Type of incident (for example, verbal threat/ abuse, intimidation, attempted or actual physical assault, property damage, stalking); staff, clients, and witnesses involved in or witnessing the incident; weaknesses/breaches of protocol or gaps in protocol or policies that facilitated/contributed to, or did not deter, the incident (procedural, environmental, errors in assessment or misunderstanding of the safety protocol); orientation and training needs of staff for risk reduction and safety promotion and assessment of current safety measures and policies and gaps in protocols/procedures. [15].

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GIF (Australia)	= 0.564	ESJI (KZ)	= 8.716	IBI (India)	= 4.260
JIF	= 1.500	SJIF (Morocco)	= 5.667	OAJI (USA)	= 0.350

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QR – Issue QR – Article

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EXPLORING PHYSICAL ACTIVITY AND HEALTH MANAGEMENT SYSTEM ARE IMPROVEMENT OF LIFE QUALITY IN UZBEKISTAN

Abstract: *In this article basis of economic methods and it's offered to improve the management process of the national system of the mass involvement of all segments of the population, especially children and young people, in sports activities. In the educational system, the mass character can be solved with an integrated approach, effective interaction of all structural bodies of management, as well as through the social club structure. Today, the key issue of mass physical activity remains unresolved - how to attract, how to shape the population's need for regular physical activity. In addition, in world practice, there is practically no effective system for managing the process of mass involvement of all segments of the population in regular sports activities.*

Key words: *physical activity, health management, economic prosperity, management, competition, reforms.*

Language: *English*

Citation: Akhmatova, K. (2019). Exploring physical activity and health management system are improvement of life quality in Uzbekistan. *ISJ Theoretical & Applied Science, 06 (74),* 274-283.

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PURPOSE

Main objectivity of the study is improving the management of the national system of continuous involvement of population into physical activity for raising human capital and engaging mass sports for targeting economic growth in the country through effective management methods.

INTRODUCTION

Socialization on and through sport is responsible for the role of sport in any society. It is obvious that this role can be developed if the society has the economic resources necessary for investments in sport (for coaching, sport fields, clubs, players etc.) and the willingness to invest in it. High life standards create variety into the family life style, sport practicing at any age being an indicator of the quality of life. Our investment in children`s formal, informal and non-formal education has an obvious importance. We have to stress here not only on the formal-institutional approach but also on the values induced by family, other scholar activities etc. Among the values directly and indirectly cultivated through sport activities we can consider the following ones: fair-play, the capacity to organize and coordinate activities, knowledge of and following the rules (Baciu, A., 2006).

Milteer & Gilsburg (2012) underlined the fact that play enhances physical health by building active, healthy bodies. Also, physical activity beginning in early childhood prevents obesity and may be included as an important strategy in addressing the obesity epidemic. Play contributes to healthy brain development, as the authors stated, because through physical activity children engage and interact with the world around them from a very early age. In the academic environment, play foster school engagement, and enhances children's learning readiness, learning behaviors, and problem-solving skills. Also is essential to developing social and emotional ties. In a study conducted in Australia, aiming swimming clubs for teens, the coaches and parents both agreed that sports contribute to quality of life by developing personal discipline, setting goals, and striving to reach them and sacrifice for delayed benefits (Light, 2010:389) [1].

As Coakley (2011) underlined, it is widely spread the idea that sport contribute to young people development due to the fact that induces a general well-being state and other positive outputs for those who are practicing sport. Sport promoters consider that sport inevitably leads to multiple forms of development including facilitating socialization/socialization, community revitalization

through human bonding enhancement and commitment in relationship with others. (Giulianotti, 2004). Coming from this perspective sport is seen, according to Giulianotti (2004), as a problem-solving activity meant to improve the quality of life for individuals and communities. As we already stated, there are many benefits of sport practicing but, in what concerns adolescents and young people, sport promoters consider three major categories of positive outputs as following: personal development, positive influence upon at-risk populations (for instance juvenile delinquents, children at risk of social exclusion) and fostering social capital that leads to successful civic engagement (Coalter, 2007) [2].

Coakley (2011:308) highlighted the following outputs that sport participation can deliver: creates motor-specific skills convertible into physical capital, improves general physical health, enhance self-esteem and self-confidence inducing a positive body image, forms well shaped characters by encouraging discipline and team work. If we take into consideration that socialization can be defined as a complex process through which individuals, in their interactions with others, accumulate skills, knowledge, values, norms, attitudes and desirable behaviors for their existence into the society frame, we can understand the socialization role of sport. Activities structured around generally accepted values, alternative activities conducted by adults in controlled environments, teaching them self-control, authority recognition, conformation to rules, positive adult role models, are some of the expected outcomes of sport, for at-risk populations of teens (Coakley, 2011:308). [3]

METHODS

In this article it is used ground theoretical approach and secondary source data analysis of various international sources.

RESULTS

In developed countries, modern conveniences and technology have contributed to increasing physical inactivity among adults. For example, World Health Organization (WHO) reported in 2008, 31% of adults exhibit a sedentary lifestyle, and have a 20-30% increased risk of mortality compared to active people. Therefore, increasing the level of physical activity to help them become more active, and hence reduce the burden of chronic diseases and improve health- related quality of life (HRQL) is considered important [4].

The key to healthy physical activity is awareness of its result in the present and honestly following it with deep respect and constant feedback. Before you rush into battle and act, you must learn to act, for which it is important to first know your purpose and learn to be at ease.

Before embarking on bodily movement training, a person needs to curb his main muscular organ, the tongue. Only after attaining peace in consciousness and language can a person acquire peace and true movement in the body. Lack of physical activity is the fourth largest risk factor for death in the world. Insufficient physical activity is one of the main risk factors for development non-communicable diseases such as cardiovascular diseases, cancer and diabetes. Physical activity is important health benefits and contributes prevention of no communicable diseases. Every third adult in the world is not active enough.

Physical activity is any body movement made by skeletal muscle which requires energy consumption, including activity during operation, games, homework, travel and recreational occupations. Intensity of various forms of physical activity varies between people. In order to physical activity brought benefits to the heart and respiratory system it is necessary that each session lasts at least 10 minutes. Regular physical activity of moderate intensity, such as walking, cycling or playing sports, has significant health benefits:

- improved muscle condition as well heart and respiratory system;
- improving bone health and functional health;
- reducing the risk of developing hypertension, ischemic heart disease, stroke, diabetes, breast cancer glands and colon as well as depression;
- reduced risk of falls and fractures neck thigh and spine; and
- basis of energy metabolism and maintain normal weight.

DISCUSSION

Physical activity (PA) is an essential biological stimulus for the development and maintenance of healthy structures and functions of the human body. Longstanding lack of sufficient PA leads to weaknesses and degeneration of structures and aberrations in metabolism that lead to and appear as functional deficiencies and diseases in a variety of organ systems [5].

Physical activity : is defined as body movement produced by muscle action that increases energy expenditure. It is an encompassing term that includes physical “exercise”.

Physical exercise: is a more specific term and implies planned, structured, repetitive and purposeful physical activity, often with the goal of improving or maintaining one’s physical fitness. For example, gardening or walking up stairs in one’s home may not be classed as structured “exercise”, but it is certainly physical activity.

Physical fitness: is a physiological state of well-being that provides the foundation for the tasks of daily living, a degree of protection against chronic disease and a basis for participation in sport. In essence, physical fitness describes a set of attributes relating to how well one performs physical activity.

Health: is a reflection of one's overall physical, mental and social well-being. It is much more than simply an absence of disease. Health, as we all know, is a characteristic that is not stable in time and can vary along a continuum from near death (ill health) to optimal physiologic functioning (high level wellness) (see Figure 1).

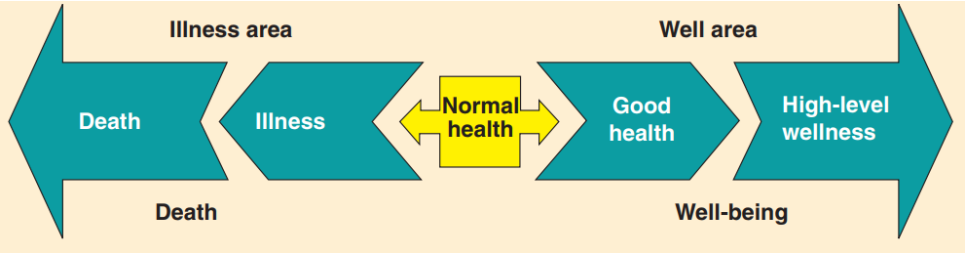

Figure 1. The health and wellness continuum [6]

Source: *Dr. Begoña Merino Merino, Elena González Briones, Salud Pública , Physical activity and health in children and adolescents, A guide for all adults involved in educating young people Important concepts of Physical Activity and Physical Fitness, p 11.*

Causes of insufficient physical activity Decreased levels of physical activity are partly due with passivity during leisure and sedentary lifestyle at work and at home. Increasing use "Passive" modes of transport also contributes to prevalence of inadequate physical activity. A number of environmental factors that associated with urbanization may prevent levels of physical activity of people.

How to increase levels of physical activity?

To increase levels of physical activity you need take action both at the level of society as a whole and at individual level.

Policies aimed at increasing levels of physical activity include:

- Ensuring that all people have access to forms active movement, including walking and driving cycling and ensuring their safety;
- Policy workplace policies promoting physical activity;
- Creating safe sites and premises in schools;
- Formation of high-quality physical education to support the development of behavior patterns in children;
- Creation of sports and recreational facilities

Table 1. Classification of physical activity intensity using % heart rate reserve and rating of perceived exertion [7].

Intensity descriptor	RELATIVE INTENSITY	
	% Heart rate reserve (%HRR)	Rating of perceived exertion (RPE)*
Very light	< 20	< 10
Light	20-39	10-11
Moderate	40-59	12-13
Vigorous	60-84	14-16
Very vigorous	>85	17-19

Source: *American College of Sports Medicine Position Stand.The recommended quantity and quality of exercise for developing and maintaining cardiorespiratory and muscular fitness, and flexibility in healthy adults. Med Sci Sports Exerc 1998, 30(6):975-991.*

As for the division of the sport activity in this concern we can see above table 1 that, intensity description of activity available among people. It means relative intensity by percentage and ranking of the perceived exertion during physical activity.

Table 2. Comparison of physical activity recommendations in different countries [8]

Countries	Children 6-17 years of age	Adults 18-64 years of age	Older adults 65 years of age or older	References
USA	60 or more minutes of physical activity each day	At least 150 min a week or 75 min of vigorousactivity each week	For 150 min each week or 75 min of vigorous activity each week	(Department of Health and Human Services 2008)
Canada	At least 60 min of moderate- to vigorous- intensity physical activity daily	At least 150 min of moderate-to vigorous-intensity physical activity per week, in bouts of 10 min or more	At least 150 min of moderate- to vigorous-intensity physical activity per week, in bouts of 10 min or more	(Tremblay, Warburton et al. 2011)
UK	For 60 minutes each day	At least 30 min of at least moderate- intensityphysical activity aday, on 5 or more days a week.	In addition to adults, strength and balance activities two days per week	(Fiona Bull, Stuart Biddle et al. 2010)
Australia	At least 60 min of moderate to vigorous intensity physical activity every day	Accumulate 150 to 300 min of moderate intensity physical activity or 75 to 150 min of vigorous intensity physical activity each week	At least 30 min of moderate intensity physical activity on most, preferably all, days.	(Australian Government 2014)
NZ	60 min or more of moderate to vigorous physical activity	30 min of moderate intensity physical activity on most if not all days of the week	30 min of moderate intensity; or for 15 minutes vigorous intensity	(Ministry of Health 2001)

***Source**: USA: The United States of America, UK: United Kingdom of Great Britain and Northern Ireland, and NZ: New Zealand*

If we compare physical activity recommendations among major countries it would come above statement. In this concern US, UK and Canada which G7 countries which human and social capital are main goal of living style with sport events. It is indicated in ages and time period of recommended issues.

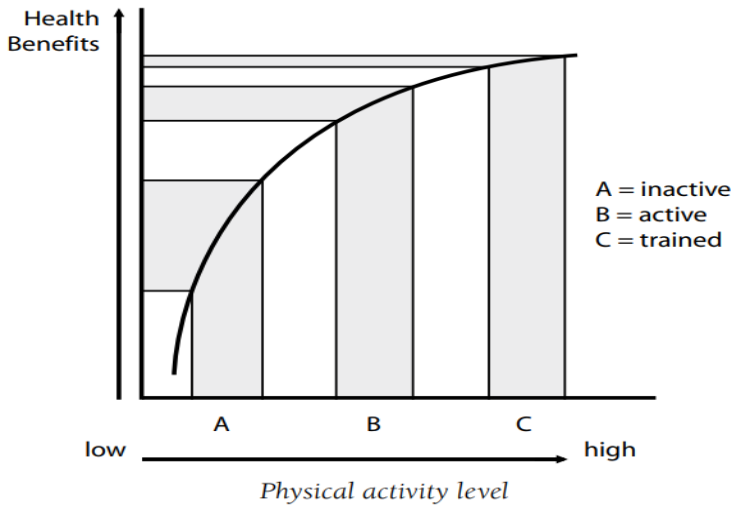

Figure 2. Dose-response for Physical Activity and health [9]

***Source:** Steps To Health A European Framework To Promote Physical Activity For Health, WHO Regional Office for Europe Scherfigsvej 8, DK-2100 Copenhagen, Denmark, p 9.*

As shown in the figure 2 dose-response curve above, most health benefits from a given increase in physical activity are achieved through moderate increases in physical activity for inactive persons (section A). Promotional efforts should focus on regular moderate-intensity lifestyle activities. Additional health benefits are achieved by practising more and profitably diverse activity.

Unfortunately, the old approaches, as well as the lack of scientifically based management methodologies, had a negative impact on the system's target tasks associated with the mass involvement of students in sports activity. As a result, the expected social results later turned into routine statistical measures.

In the country, in order to rectify the situation in the field of mass sports, the task is to improve the management and organization of work on mass coverage of all segments of the population with sports activity. In our opinion, such a statement of the problem is of a more fundamental nature and implies economic and administrative and managerial changes in the methods of mass involvement of the population, since the existing management approaches have not become sufficiently effective.

In addition to information about the current prevalence of physical activity behaviors overall and among subgroups, public health monitoring systems also provide information about changes, if any, over time (Figure 3). National estimates of changes in prevalence over time provide information about the overall impact of the multiple factors that influence physical activity behaviors. Data from the National Health Interview Survey suggest that from 1998 through 2015 the prevalence of individuals who report doing no leisure-time moderate-to-vigorous physical activity has declined from about 40 percent to 30 percent.29 The decline has occurred for both women and men.

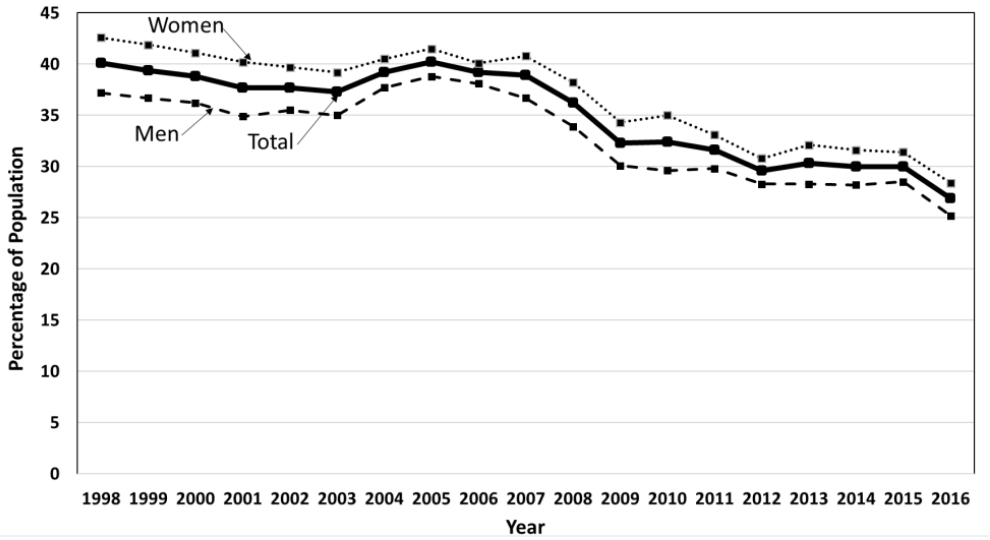

Figure3. Prevalence of Adults Who Engage in No Leisure-time Moderate-to-Vigorous Physical Activity, by Sex and Year, 1998 to 2015 [10]

Source: *Otto SJ, Korfage IJ, Polinder S, et al. Association of change in physical activity and body weight with quality of life and mortality in colorectal cancer: a systematic review and meta-analysis. Support Care Cancer. 2015;23(5):1237-1250. doi:10.1007/s00520-014-2480-0.*

A commensurate response may be the application of modern methods of socio-economic management decisions in a continuous national system of competitions, which as a way will motivate the interests of the individual, the team and the state to achieve the target results.

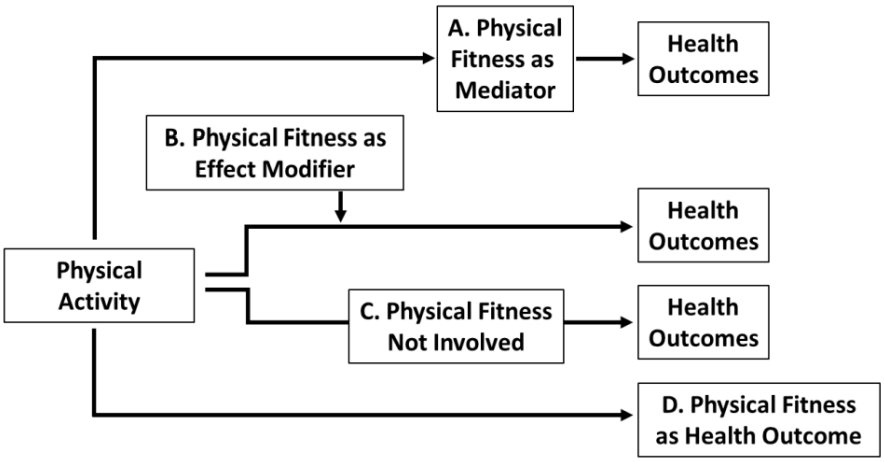

Figure 2. The Role of Physical Fitness along Various Pathways between Physical Activity and Health Outcomes, Observational Studies.

Pathway A: Physical fitness may serve as an intermediate variable along the pathway between physical activity and health outcomes. Synonyms for intermediate variable include contingent variable, intervening (causal) variable, and mediator variable.

Pathway B: Physical fitness may serve as an effect modifier. Synonyms for effect modifier include moderator variable or antecedent moderator.40 Effect modifiers operate outside of the causal chain to influence the effect of the exposure variable on the outcome.

Pathway C: Physical activity may be associated with health outcomes through pathways that do not involve physical fitness.

Pathway D: Physical fitness may be considered as an outcome itself. Individuals who are more physically fit are better able "to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies"—in other words, the definition of fitness suggested above [11].

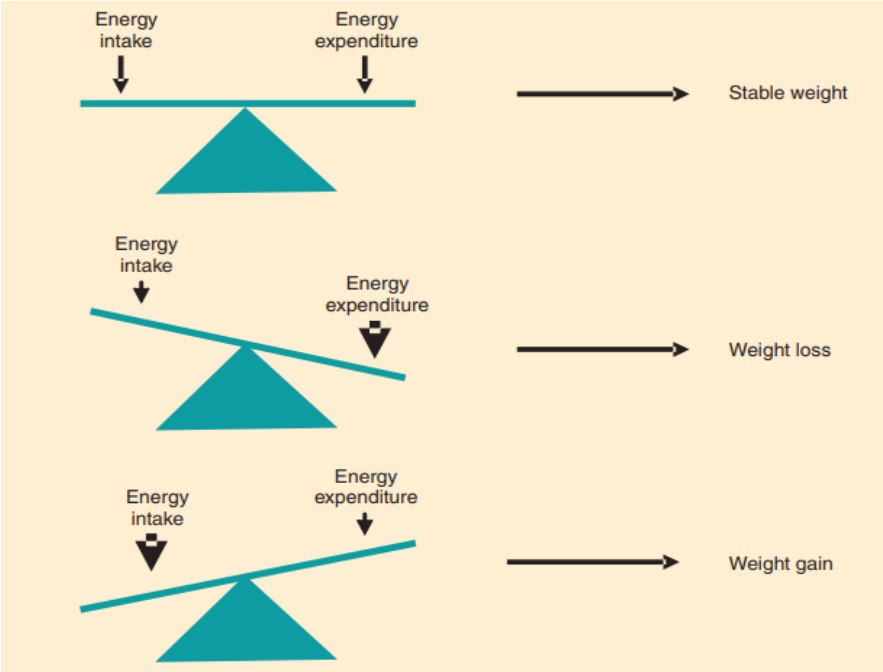

Figure 3. Changes in body weight are determined by a balance of energy intake (food calories) and energy expenditure (calories burned).

Source: *Dr. Begoña Merino Merino, Elena González Briones, Salud Pública , Physical activity and health in children and adolescents, A guide for all adults involved in educating young people Important concepts of Physical Activity and Physical Fitness, p 29.*

In the vast majority of cases environmental factors, lifestyle Physical Activity and Health in Children and Adolescents princes and cultural environment are the significant factors that influence obesity. While changes in the diets of children have undoubtedly contributed to increasing global levels of pediatric overweight and obesity, most experts now believe that decreased physical activity is the major contributor.

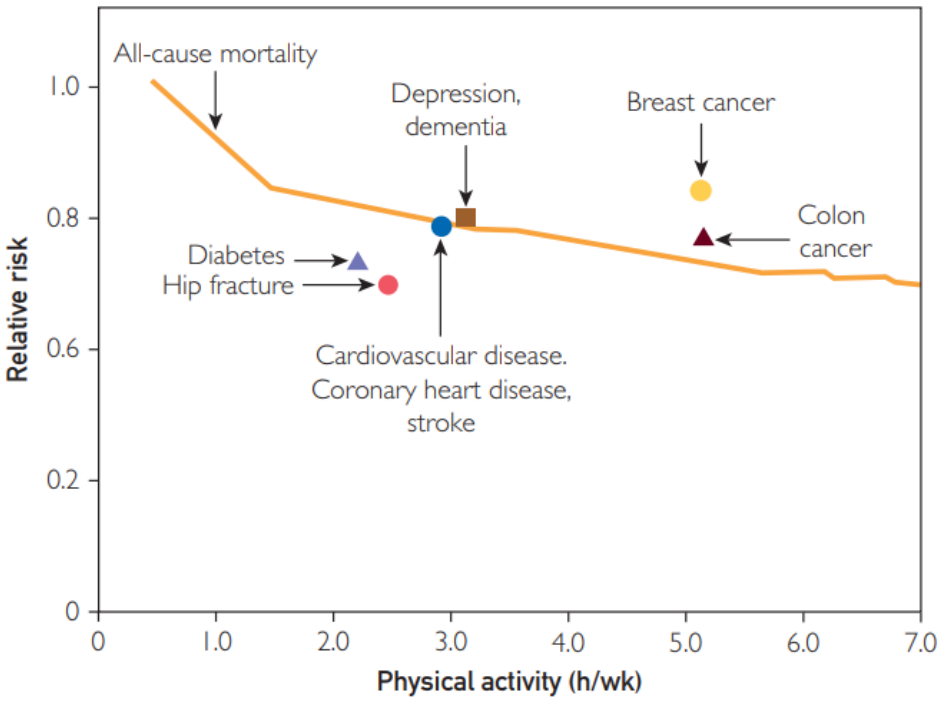

Figure 4. Associations of moderate to vigorous physical activity with key Health events, including all-cause mortality [12]

Source: *Khan KM, Thompson AM, Blair SN, et al. Sports and exercise as contributors to the health of nations. Lancet. 2012;380(9836):59-64*

The regulatory impact of the state on mass sports in the new conditions should be carried out systematically on social as well as economic management bases. Management methods developed on these bases will eliminate the repetition of past mistakes in this field. Today, the management of the mass process should not only consist in the approval of a set of sports events, but in the improvement of managerial methods of influence on the involvement of all segments of the population, especially students in sports activity. Due to this, managed processes will be more flexible and adaptive; there will be a wide possibility of effective control and increasing the level of self-regulation.

The functional orientation and the phased sequence of the national system shows that with proper selection of management tools, as well as with the implementation of the target tasks of each link of the national system, it is possible to organizationally cover all segments of the population, as well as students of the country, with sports activity. At the same time, it is necessary to develop such management forms and methods so that each successive model structure solves specific and clearly formulated tasks in the mass health cycle.

At the beginning of 2000, in accordance with the socio-political tasks and conditions of this period, administrative-management methods and stage-by-stage organizational requirements for solving the problem of the mass involvement of millions of students in sports activities were developed in the country.

Analysis of the mechanisms of mass sports management revealed a number of constraints that impede the implementation of the targets of the national model of the sports movement where there was no system of self-organization and self-control, in addition, a template approach was used in organizational management methods in various seasons.

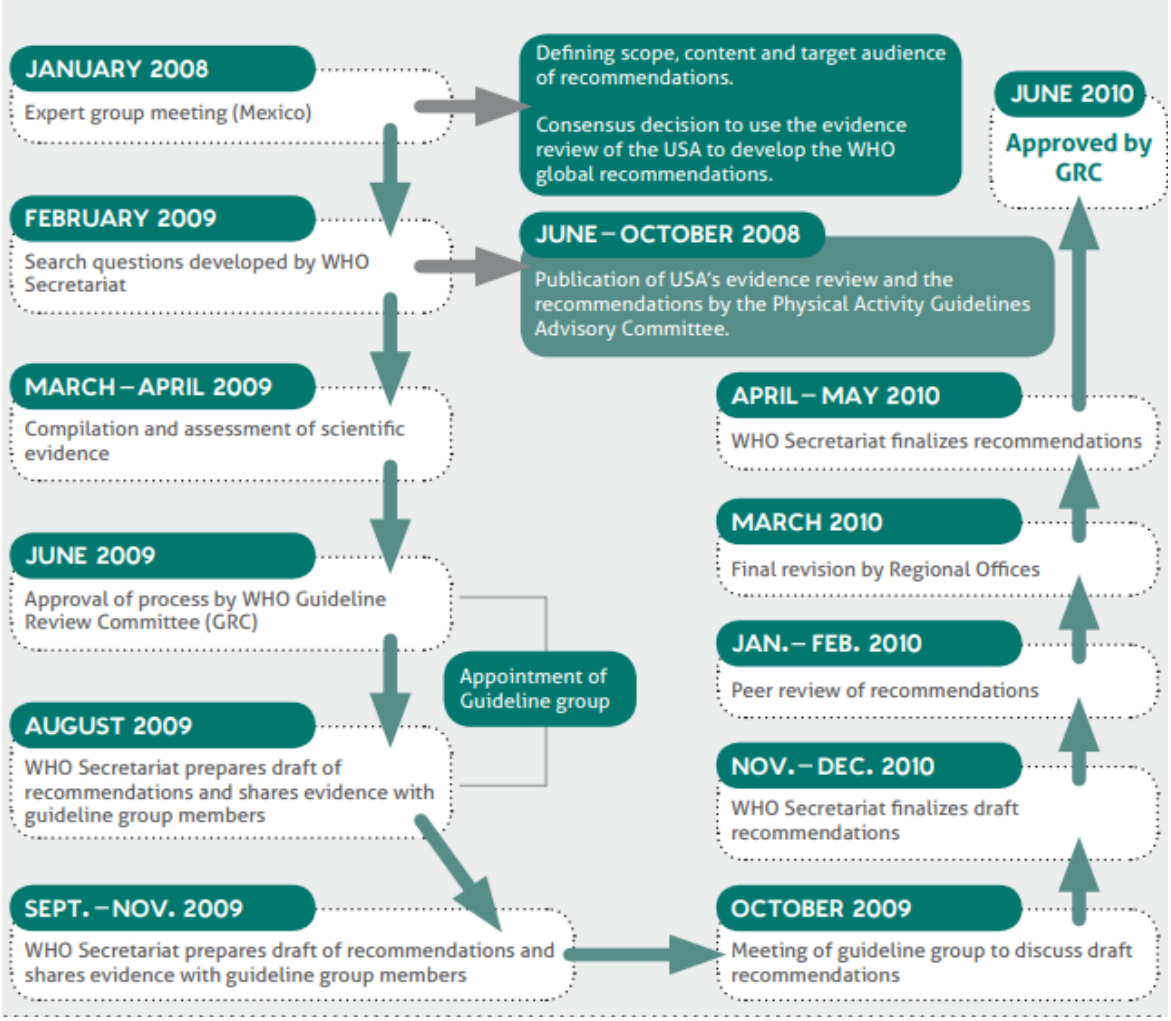

Figure 5. Development of the global recommendations on physical activity for health [13]

Source: *Global recommendations on physical activity for health. WHO Library Cataloguing-in-Publication Data, ISBN 978 92 4 159 997 9 (NLM classification: QT 255), p 14.*

As a result, the main social task of the national competitive model the system-consistent and continuous involvement of population from all sectors and institutions of the country in mass sports. As a main goal of health resource should be implemented in requested time period as shown figure 5. It is recommended activities and engaging months for who would like to raise effectiveness in the economy. In macro level it will come to us social capital of the country periodically contributes national economy, society and family with sport management.

Current intentions and reforms in this concern in Uzbekistan

It must be admitted that the management of mass sports movement in educational institutions by means of influencing the motivational sphere is urgently needed, and therefore the use of such mechanisms is increasingly becoming a decisive socio-economic factor of management efficiency.

In management, dissatisfaction with the existing state of affairs is resolved either by improving the existing methods of activity or by developing new ones. In the field of physical education, such a strategy was clearly manifested in the resolution of the President of the Republic of Uzbekistan PP-3031 of 03.06.17 [14]. "On measures for the further development of physical culture and mass sports".

In Uzbekistan, much attention is paid to the development of mass sports as a factor in the reproduction of human capital, therefore, work in this area was associated with the organization and implementation of a competitive system nationwide [8], through which it was planned to continuously involve more than seven million students in physical activity.

Despite the importance of developing students' sustainable need for competitive activity, as well as improving management methods and organizational conditions, the key to raising the level of physical development of students is the interest not only of physical education teachers, but of the entire team of the educational institution. This, in our opinion, is the

central aspect of the economic management methods of the social and sports structure of mass involvement of students in sports activities [15].

We believe that the result of physical education can be achieved only with the interest in achieving it, from the teaching staff of the educational institution. In an educational institution, on the basis of an economic method of management, it is necessary to create interest, first of all, using factors not only moral, but also material motivation. Unfortunately, material motivation in the field is practically not used.

The process of formation of interest and involvement in daily sports and physical activities is not a one-time, but a multi-stage and long-term cyclical process. One of the obligatory signs of interest in sports activity of objects of management is the emotional attractiveness to competitions [16].

In the country, a formed system of sports competitions today represents a socially determined orderliness in planning, organizing and holding sports events, with the aim of stimulating the development of mass sports, the growth of sports achievements, and the improvement of people's physical abilities. This system should be improved on the basis of taking into account the interests and financial capabilities of people of different ages and the level of their sports readiness [17].

In view of the above, it is in educational institutions that the need to apply economic management methods arises, since only with the direct and active participation of the entire team of an educational institution, students can be massively involved in motor and competitive activity, and they also form a responsible attitude for their own health.

Therefore, in Uzbekistan, the process of basic formation of skills to a healthy image was built in schools, where there are teachers in physical culture, coaches in sports, a proper sports base, and the possibility of organizing extracurricular activities for the continuous involvement of students in competitive activities.

FINDINGS

Improving the national competition system based on international cooperation and standards are socio-economic management system for population of the Uzbekistan. It will improve the involvement of generation in educational institutions to physical activity through sport competition, which is a tool for the production and accumulation of the health resource of the population, and health acts. As the main source of future generation of capital - qualitatively renewable physical and intellectual resources like “Barkamol Avlod”.

CONCLUSION

We believe that for the implementation of tasks related to the systematic organization of the continuous involvement of students in mass sports based on modern socio-economic management methods, it is advisable in an educational institution to create a structure for managing the school continuous stage of competitive activity. In this case, the proposed structure will be the organization of physical culture and sports activities will act as a sports council or club. Taking into account the interests, abilities and motives for physical education and sports influences government economy and human development index with professional organizational methods. Competitive movement and approach regarding physical activity and health management system pushes economy forward with long life expectancy in Uzbekistan. Healthy generation can generate new idea, innovation and manatee huge projects, transfer technology and prospective economic growth in Uzbekistan.

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SECTION 29. Literature. Folklore. Translation Studies.

A METAMORHOSIS OF A DECENT VIRTUE INTO FOLK VALUE

Abstract: *The article is devoted to generosity which is considered as the part of national identity of Uzbeks. Throughout the centuries it has been handed down from generation to generation. The author believes that it became as national character of Uzbeks because they were brought up almost 10 centuries according to didactic literature and oral folk tradition which were watered with generosity, hospitality philanthropy.*

Key words: *generosity, hospitality philanthropy, open-handedness, benevolence, didactic poetry, proverbs.*

Language: *English*

Citation: Makhsudova, N. A. (2019). A metamorphosis of a decent virtue into folk value. *ISJ Theoretical & Applied Science, 06 (74),* 284-287.

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INTRODUCTION

Today, generosity is being considered as the first mark of a good person. Generosity expresses itself in various forms; for example, *hospitality*, *kindness*, *giving material aid* or *offering help by giving time or skill* (that we call now charity). When we picture national identity of Uzbeks, the first two notions that spring to our mind are hospitality and generosity. They have been inherited to Uzbeks from their ancestors. To put another way, these inherent virtues are in their blood.

MATERIALS AND METHODS

Uzbeks like all other Turkic peoples trace their historical roots to their nomadic ancestors of the 6th century, who commanded a huge territory from northwestern Mongolia to an area close to the Caspian Sea. Their descendants of the 8th century left us funeral inscriptions chiseled onto large stones. The author of one of these inscriptions, Bilga Kagan (d.734), not eloquently eulogizes his younger brother Kul Tegin's life (d. 731), but also gives information about his own life. The words of Bilga Kaghan express a high notion of his obligations towards his people. For example, he states: "*for the sake of the Turk people, I didn't sleep at night, I didn't rest by day*." Other lines describe his generosity:

"*Having been seated (i.e. elected) as Kaghan, I gathered all the poor and destitute people together. I made the poor people wealthy and the few people numerous*," and then he humbly adds: "*or, is there any falsehood in these words of mine*?" [1, p. 52-54]. Giving reasons for his many campaigns, he states: In order to nourish the people, I, with the great armies, went on campaigns twelve times…….Since I had fortune…..may Heaven be gracious!- I brought the people to life who were going to perish, and nourished them, I furnished the naked people with clothes and made the poor people rich the few people numerous [2, p. 268]. Similar words can be found in Central Asian Turkic epic songs. On a hero's return from his campaigns, he distributes all the booty among his people. For example, the Kazakh epic Qaradon closes with the words: " *He (= Qaradon) gave everything to his people and he made the poor equal to the rich*". Like in the Kul Tegin inscription, a favorite phrase in the epic songs, symbolizing generosity is: "…. *And he (the hero) gave clothes to those without clothes and horses to those without horses*" [1, p.52-54] Unlike in the Old English epic song Beowulf of the 8th century where we hear of a king who gathered great treasure but "was unable to extend generosity and concern for his people's welfare". The Central Asian Turkic-nomadic tradition of generosity leaves us no doubt about a hero's or a leader's obligation [3, p. 10].

It is noteworthy that to be generous an absolute obligation for the hero of the Central Asian Turkic heroic epics. For instance, in the Uzbek epic Ravshan, the singer (dastanchi) Ergash Jumanbul ogli (1868-1930) describes the generosity of the hero Hasanxon: "Now the hero Hasanxon had the treasuries of the Padishah Qoraxon emptied, then he let the people

gather, had the hungry fed and clothed those without clothes". Similarly, in the Uzbek epic Nurali, the hero Gorogli gives a feast upon the safe return of his comrades: "He informed the Turkmen people an osh/feast will be given now. How many sheep, how many cattle they slaughtered, all hungry were full, and naked were dressed" [3, p. 9]. Such feast could go on for several days. Likewise, feast giving and proceeding of it for forty days is traditional ending in many Uzbek fairy tales.

This priceless tradition of generosity didn't cease to exist then, but it proceeded in the next centuries. For instance, samanid rulers and affluent samanids competed with each other to pay yearly kharaj (Tax on agrarian land owned by non-Muslim) of folk [4, p. 9]. Likewise, great folk hero across the Asia Tamerlane outscore others in the competition on generosity. His following statements prove abovementioned thought: "*I donated a lot to help poor people and to build mosque, madrassah, hospice, caravanserai (caravan site) along the roadsides in order for travelers to rest and recover from the day's journey. I checked out every problematic issue thoroughly and I put all my effort to solve it impartially" [5, p. 54]*.

In regard with benevolence not only rulers but ordinary people also gained recognition and popularity among folk. For instance, according to sources a prominent savant, the founder of the Naqshbandiya Order Muhammad ibn Muhammad Bahouddin Naqshbandi al-Bukhari used to donate all his earnings to beggars and orphans. Another representative and successor of Naqshbandiya Order Khwaja Ahrar, who was one of the richest men of Central Asia in 9th century used to spend most of his money on the needy. Most of his wealth was invested in *Waqf* (religious endowments) and was used for the poverty-stricken people. Furthermore, historians contend that when Umar Shaykh Mirzo demanded from residents of Tashkent to gather the amount of money equaled to 250000 dinars, Khwaja Ahrar payed all sum of money by himself. Apart from it, he gave away 70000 dinars to tax collectors. What is more, many madrassahs in Tashkent, Kabul and Samarkand were built under his sponsorship.

There are a number of reasons for formation such kind of formidable conduct and behavior in Uzbeks

Firstly, many aspects of the code of conduct as well as customs and traditions still practiced today is rooted in the pre Islamic nomadic Turkic culture. Then it was strengthened by Islam and Islamic perceptions of adab "good behavior". Islam was introduced into Central Asia by the Arabs in the second half of the seventh century. The religion soon took root in the great cities of the region and then more gradually spread out to the remoter areas. Within relatively short period an institutional infrastructure was set in place. And the written word was Islamicized too as the Arabic script came to replace the various writing systems that has been used previously for local languages. Many Arabic words were adopted, extending existing vocabularies in new directions. Within Arabic words, proverbs which origin trace back to Arab language began to be used by common people.

From the eighth century onwards the Mavarranahr saw a remarkable economic, scientific and cultural development. World-known scholars as Imam al-Bukhari, Ibn Sina, Beruniy and Khorazmiy lived and worked in this period. Arabic was the language of composition for many Turkish scholars, notably in the field of religious and philological studies. From ninth and tenth centuries the science and learning developed at an increasing pace in Mavarranahr. In early medieval centuries in Mavarannahr the science developed in two directions:

1. Rational science which comprised mathematics, natural sciences, logics and metaphysics [6,p. 44].

2. Humanitarian science which included methods, fundamentals of Arabic, language of Koran and norms of Islam as well as hadith studies;

It is known Koran and hadiths of Prophet Muhammad had a significant place in the life of people of Central Asia as well as they were the ultimate source of legal authority for many centuries. Besides their legislative and theological value, Koran and hadiths of Prophet Muhammad have also served as a source of spiritual guidance for them. Being considered not only religious sources but also the reflection of the complexity of moral virtues which is regarded as universal value, hadiths and quotations of Koran spread among the people of Central Asia. In the medieval centuries Mavaraunnahr was the center of excellence for studies of the Holy Koran and Hadith. As the result of it, many world-known scholars in Islamic theology such as Imam Bukhari, Imam Termizi, Imam Maturidi, Abu Laith Samarqandi were brought up in Mavarannahr.

After converting to Islam radical changes occurred in the social life of people of Central Asia and of course, these changes were reflected in the literature. Thus, masterpiece works of literature were created under the influence of Islamic culture as well as fiction of regional traditions.

Generosity is considered one of the good qualities of a person in Islam. Islam encourages the concept of generosity so much so that it is embedded in one of the five pillars of Islam, the obligatory charity known as Zakaat. In Arabic, the term zakaat literally means purification of the heart however; it is also the payment, from surplus money, of an obligatory charity designed by God to provide for all the needy members of the community. It is a fixed calculable amount.

There is also another form of generosity in Islam called *sadaqa*. Linguistically, *sadaqa* means truthfulness, and some scholars have described it as the heart being truthful to its Creator. Anything given

generously - freely to others - with the intention of pleasing God is *sadaqa*. *Sadaqa* can be as simple as a smile, helping an elderly person with their groceries or removing objects from the road or path.

Generosity can be viewed as a wise investment in the future. Generosity or *sadaqa* may pave the way to Paradise because with every generous act comes great reward from God. However, being generous does not only mean giving freely from what you have in abundance. Generosity does not lie in giving away something that is no longer useful but in giving freely from the things we love or need.

Another reason why Uzbeks are so generous and hospitable is that for many centuries they have been grown up and brought up by reading literature and oral folk tradition in which such invaluable moral features exalted. If we take a glimpse at literature of this nation in ancient and medieval centuries, we can surely notice that it was based on a cannon of wisdom literature, generally called didactic literature. We can refer to such kind of literature Yusuf Has Hajib's unique "Qutadgu Bilig", a long didactic poem and the oldest monument of Islamic Turkic literature, written in 1069/1070; Makhmud Yugnakiy's "Hibatul haqayiq", Alisher Navoiy's "Mahbubul-qulub", "Hayrat-ul abror", works of Munis, Khorasmi and etc.

The most admired and desired qualities which had earned unequivocal admiration of Central Asian thinkers were generosity and magnanimity. Therefore, generosity praised a lot and shown as an example of virtuous conduct in abovementioned books. Not surprisingly benevolence, generosity and magnanimity were first and foremost features that ennoble Turkic ruler (king, prince or kagan). It was mentioned in Qutadgu bilig by Yusuf Has Hajib: "*The prince should be generous, yet keep a humble and quiet demeanor. It is through generosity that the prince acquires a good name, and it is through his name that the world becomes secure*". At the end of his work, Yusuf Has Hajib summarizes his thoughts in an address to his readers: "..I have briefly expounded the various modes of proper conduct, so you (who read and understand), may gain a firm foundation for your life" [7, p. 77].

Another masterpiece of Central Asian Turkic literature which offers many pieces of advice bearing on all kinds of conduct is Hibatul haqayiq (A Gift of Truths). It was composed by Ahmad binni Makhmud Yugnakiy who came from the village of Yugnak, near Samarkand (some say Fergana or Turkistan) in the late twelfth or early thirteenth century. The work of Ahmad Yugnakiy is devoted to morality that adorns a person. Prominent among them is generosity: "if thou must praise, do praise the generous man" and generosity, both the great and small will praise". Ahmad exhorted reader to shun stinginess. The following Uzbek proverb conveys it this way: "If a generous person finds something, everyone eats it, If a stingy one find something, he will cover it up and eat it alone. Ahmad Yugnakiy also felt that the person wealthy enough to be generous had to guard against the sin of pride: "No one like arrogance, neither populace nor God himself", he wrote. The proper counterparts to wealth, power and position, Ahmad Yugnaki believed, could be only kamtarlik (modesty) or humility [8, p. 20-21].

Morality that saturated with ideology of benevolence, generosity, kindness, magnanimity place consequential role in the works of Alisher Navoi who is reputed as the founder of Uzbek literature. The fifth chapter of his book Mahbub –ul-qulub (Wonders of good people) is devoted to open-handedness and generosity. According to him *benevolence is great virtue and crown on the affluent person's head. The jewels that embellish the crown can be imagined as generosity. If God makes you rich, you shouldn't be greedy-on the contrary share the wealth. God wants us to be generous, gracious, kind-hearted and compassionate [9, p. 64]*. To top it off, there are lot of information that proves he himself was cultivated and generous person. During 1480 he built a number of madrasahs, 40 robots (the place where Karavan could have a little rest), 17 mosques, 10 honaqohs, 9 bath-houses, 9 bridges, 20 pools in Herat and in other parts of the country for his own money (from his own account). When time allowed, he was patron of scholarship and arts.

Next source that contributed to shape Uzbek national identity is proverbs and sayings. It is obvious that proverbs and sayings have been widely used among the folks because of its didactic content. Certainly many proverbs exhibit either direct didactic tendency as items of advice *Put your best foot forward* or indirect didactic tendency as potential advice summarizing past experience as in *First come first served*. Others can be used with didactic intentions under appropriate conditions, for instance *Little pitchers have big ears* as advice about danger of exposing children to adult talk generally rather than as specific warning that children are listening [10, p. 35]. Therefore, it is not said in vain that proverbs contain wisdom, truth, morals and traditional views.

Currently, there are a lot of dictionaries of Uzbek proverbs. But we barrowed materials for analysis from "Ozbek xalq maqollari" (Uzbek folk proverbs) compiled by T. Mirzayev, A. Musakulov and B. Sarimsoqov (2003) and "Ma'nolar maxzani" (The treasure of meanings) by Sh Shomqsudov and Sh Shorahmedov (2001). According to analysis of two sources 147 proverbs devoted to generosity and greediness are found. In all of them generosity, open-handedness, benevolence is emphasized as exemplary conduct, whereas stinginess is reputed as a repugnant vice:

Nothing grows on stingy man's land;
It is better to ask for bread from mendicant than corn from greedy man;
Generous man be praised

Greedy man be neglected;
He who is noble has high authority among people;
The symbol of mountain is rock
The sign of wealthy man is generosity;
Good things come to those who are generous;

CONCLUSION

Regrettably, none of abovementioned literature and oral folk tradition could have appeared on the pages of Uzbek schoolbooks during the Soviet period. Any education in ethics, whether in a religious or secular context, was strictly controlled by communist ideology. The former Soviet colonial rulers systematically tried to impose everywhere their own "value system" which totally contradicted not only that of the Uzbeks but also that of the Central Asian Turkic peoples.

In the case of the Uzbeks, they quietly resisted. They continued to teach their children the values of their ancestors in the privacy of their own homes. The teachers were elders, grandmothers, grandfathers and parents. Using folktales, proverbs, and the general knowledge they had of books of wisdom, they taught their children and grandchildren the values listed above. Some were courageous Uzbek writers at the forefront in the transmission of Uzbek culture and values. They used every chance they could detect in the system to have their works pass from censorship to publication. Often they had to pay with their lives for their courage and national commitment. One should also mention numerous Uzbek scholars, who played an important role in the transmission of the past knowledge and, like all the elders, contributed to the process of sustaining and reviving Uzbek traditional values.

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SECTION 7. Mechanics and machine construction.

QR – Issue QR – Article

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DRAWING TECHNOLOGIES OF NICHROME WIRE

Abstract: *The processes descriptions of drawing of nichrome wire with the diameters of 0.3 and 0.4 mm on the special equipment of Chinese and Italian productions were given in the article.*

Key words: *drawing, wire, a die, a machine.*

Language: *English*

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Introduction

Metal wire is obtained by drawing. Drawing consists in multiple pulling of a workpiece through working holes of dies for achieving of a required wire diameter [1 – 10]. Essence of drawing is based on simultaneous reducing of a cross section and elongation of the workpiece. The different drawing processes are used depending on material and the diameter of processed wire. Reducing of the diameter can cause to break of wire. Therefore, at this stage of

drawing it is necessary to choose material of the die and processing modes. Drawing of metal wire is carried out on the special equipment installed in the line: drawing machines, baths for washing, straightening devices and etc. Features of cold drawing of nichrome wire on the various technological equipment were subject to consideration.

Technological part

The wire drawing process was carried out on the automated lines consisting of the drawing machines of Chinese (Jiangyin Sanheng Machine) and Italian (Italmec) productions and the other equipment. Strip plate with the diameter of 1 mm, made of NiCr 60/15 and NiCr 80/20 alloys was subjected to drawing. NiCr 60/15 is heat-resistant material that is used in various corrosive environments. NiCr 80/20 has high physical and mechanical properties. These alloys have the following chemical compositions (in percentage): Ni – 59/75, Cr – 16.5/20, Fe – 22/1, C – 0.15/0.15, Si – 1.25/1.25, Mn – 2/1, Cu – 0.5/- (in the numerator – NiCr 60/15, in the denominator – NiCr 80/20 and so on). Elongation of nichrome wire in the diameters range from 0.2 mm to 1 mm is 18 – 45%. Strength limits of NiCr 60/15 and NiCr 80/20 alloys are 600 and 650 MPa, respectively. The main physical properties of alloys are: density (g/cm^3) – 8.2/8.3, electrical resistance at 20°C ($\Omega\ mm^2/m$) – 1.11/1.08, the melting temperature (°C) – 1390/1400.

Wire shall have the diameters of 0.4 mm (NiCr 60/15) and 0.3 mm (NiCr 80/20) after drawing. The tolerances for the wire diameters sizes should be 0.01/0.024 mm. The tolerance on the weight of wire after drawing shall be 2.7...3.3/0.2...5.5 kg. Finished wire must be wound on coils.

The equipment for implementation of the drawing process of nichrome wire of the different diameters is presented in the Fig. 1 – 11.

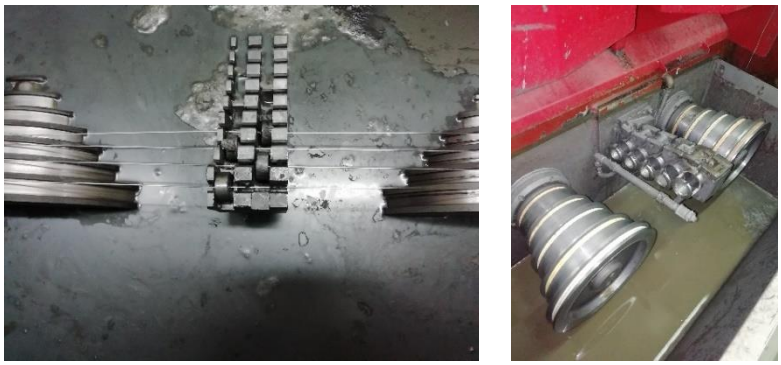
Wire drawing was performed with additional processing (steam, water) and without it. The workpiece is wound on the vertically arranged coil. The workpiece is moved from the coil to the equipment of Chinese production through a roller of a looper. A signal is sent to a control panel and drawing stops on the machine in case of the loop formation. The workpiece is pulled through seats with the installed dies and wound on the driving and driven drums. The several dies with the different diameters of the working holes are installed in the device. Wire drawing occurs in the special bath, which is filled with liquid. Plastically deformed nichrome wire is wound on the horizontally arranged coil through the range of the guide and bypass rollers. This technology does not allow to remove internal stresses in wire material. Therefore, wire breaks are possible, which are eliminated by welding on the special welding machine.

Figure 1 – The coil with strip plate for drawing of wire on the machine of Chinese production.

A ***B***

Figure 2 – The loopers: *A* – the drawing machine of Chinese production; *B* – the drawing machine of Italian production.

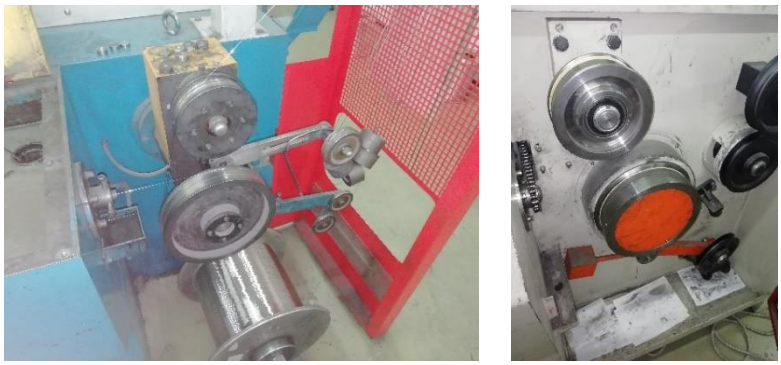
Figure 3 – The guide roller of the drawing machine of Italian production.



A ***B***

Figure 4 – The driving and driven drums, the seats for the dies: *A* – the drawing machine of Chinese production; *B* – the drawing machine of Italian production.

Figure 5 – The die for installation in the seats of the drawing machine of Italian production.



A ***B***

Figure 6 – The guide and bypass mechanisms: *A* – the drawing machine of Chinese production; *B* – the drawing machine of Italian production.

Figure 7 – The laser device for measuring of the diameter and the oval of wire.

A ***B***

Figure 8 – The baths for wire processing with hot water and steam (*A*) and processing with cold water and air under high pressure (*B*) on the drawing machine of Italian production.

Figure 9 – The straightening mechanism.

A ***B***

Figure 10 – The control panels of the machines: *A* – the drawing machine of Chinese production; *B* – the drawing machine of Italian production.

Figure 11 – The welding machine.

Additional processing of wire with hot and cold water, steam and air under high pressure in the special baths is feature of drawing on the equipment of Italian production. Control of a geometric shape of processed nichrome wire is carried out on the special laser device. Possible warping of wire after drawing is eliminated on the straightening mechanism.

Conclusion

Drawing of nichrome wire from the diameter of 1 mm to the diameters of 0.3 – 0.4 mm should be carried out in liquid environment on the special automated equipment. The more stringent requirements are imposed on the final sizes of wire, taking into account the lower strength limit of NiCr 60/15 alloy. Additional processing of wire in the special baths provides reducing of internal stresses in deformed material and achieving of the required physical and mechanical properties.

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