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QR – Issue QR – Article

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THEORETICAL METHODOLOGICAL FUNDAMENTALS IMPROVING PEDAGOGICAL TERMS OF IMPLEMENTATION OF AUTHOR TECHNOLOGIES

Abstract: *The article discusses the identification of theoretical foundations of comparative pedagogical studies of education systems in Uzbekistan and foreign countries, analyzes overseas theories. Research in the field of comparative pedagogy aimed at studying the state, models and trends in the development of pedagogical theory and practice of upbringing and Education in different countries of the world and in different historical era, the definition of forms, ways and borders of the transfer of international experience in pedagogical and school practices predicting future models of education. Currently, the reform of secondary education in Uzbekistan implements more individual ideas and democratization of education, as well as a distinctive feature of Uzbek schools, is legally approved by the right to transition of students from one school to another depending on their abilities.*

Key words: *Comparative pedagogy, Internationalization, science, education, training, development, comparative education, school education.*

Language: *English*

Citation: Alimdjanova, D. N., & Berdiev, D. V. (2022). Theoretical methodological fundamentals improving pedagogical terms of implementation of author technologies. *ISJ Theoretical & Applied Science, 02 (106),* 201-205.

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Introduction

It is very important to reform the national education system, to unite it to the global network, practice modern education, and analyze the processes in the field of education abroad.

The development of all sectors of the society requires constant analysis of the processes that occur abroad, the interrelation of their interdependence. This task is resolved by pedagogical sciences - comparative pedagogy, which studies its state, samples and trends.

In the development of education systems compared to different countries and the countries of the world. A large component of pedagogy. If objective reality is characterized by a clear specific feature of pedagogical activity, the scientific direction is divided and develops and requires forms of scientific approaches, generalization of teaching methods and knowledge.

The theoretical level of pedagogical knowledge in the muse of comparative pedagogy is the theory that describes universal reality in different countries of the world. This is based on fundamental theories that include the basic concepts of the pedagogy of education, education, teaching and development. At the Empirical level, comparative pedagogy studies educational practices in different countries around the world.

Analysis of the relevant literature

Development of technology is a professional work that requires knowledge of patterns from different areas of science, designer skills, painstaking experimental verification.

To understand the difficulties and difficulties of the conditions that the teacher to overcome the teacher in the development of author technology, we give nine

stages or "the components of any pedagogical technology", allocated by V. P. Webalko:

1. Analysis of future student activities.
2. Determination of the content of learning at each stage of learning.
3. Check the degree of load of students and the calculation of the required time at a given method of building a learning process.
4. The choice of organizational forms of training most favorable to implement the intended pedagogical process.
5. Preparation of materials (texts, situations) to implement the motivated component of the pedagogical process.
6. Development of a system of exercises aimed at mastering items with specified quality indicators.
7. Development of materials (tests) for objective control over the quality of learning knowledge and actions, respectively, learning and criteria for assessing the degree of absorption.
8. Development of the structure and content of training sessions aimed at an effective solution of educational and educational tasks, planning classes and home independent work of students.
9. Approbation of the project in practice and verify the completion of the pedagogical process.

Analysis and results

Each teacher brings something individual to the pedagogical process. Therefore, there are a large number of copyright technologies. In the development of copyright technologies in recent years, the following pedagogical trends are traced:

- an increase in the heuristic possibilities of traditionally used forms of training, an increase in the specific gravity of creative tasks, tasks, problem situations;
- a flexible combination, integration of various forms of learning;
- an increase in the specific gravity of independent work of students;
- Improving the technique of pedagogical cooperation;
- strengthening flexible combination of promising and operational control over academic activities in almost all forms of training;
- compaction of information, the presentation of the material by large blocks, especially theoretical;
- strengthening and interdisciplinary relations in the concepts, theories, practical skills and students' skills;
- strengthening the humanistic and humanitarian component of the author technology;
- Flexible combination and interconnection of advanced domestic and foreign pedagogical experience.

Author's pedagogical technology is a systemic aggregate and procedure for the functioning of well-known techniques and methods used to achieve pedagogical objectives, which are structured and around some kind of most significant author's idea.

Since the author's pedagogical technology is related to the learning process - the activities of the teacher and students, its structure, means, methods, the structure of the author's pedagogical technology include:

a) Conceptual basis (description of ideas, hypotheses, technology principles, support for the previous scientific concept).

Most teachers, when developing their own, more flexible author technology, are not based on some one, but into several didactic (pedagogical) concepts, building them in view of the specifics and priorities of the tasks of learning, education and development of the individual.

b) meaningful part (general and specific learning goals, the content of educational material);

c) procedural part (technological process: organization of the educational process, methods and forms of educational activities of students, the activities of the teacher to manage the process of mastering the material, methods and forms of work in the teacher, diagnosis of the educational process).

The following distinguishing quality copyright qualities can be distinguished:

- innovation (the presence of original copyright ideas and hypotheses relative to the restructuring of the pedagogical process);
- alternativeness (the difference between any of the main components of the pedagogical process, goals, content, methods, means, etc. from traditional);
- conceptuality of the pedagogical process (awareness and use in the author's technology of philosophical, psychological, socio-pedagogical and other scientific grounds;
- systematicity and complexity of the pedagogical process;
- social and pedagogical feasibility (compliance of the objectives of the educational institution by social order);
- availability of signs or results that determine the reality and efficiency of the Authority technology.

One of their main requirements imposed on copyright pedagogical technologies is a guarantee of a sufficiently high level of learning quality. In addition, the author's pedagogical technology must meet the following requirements:

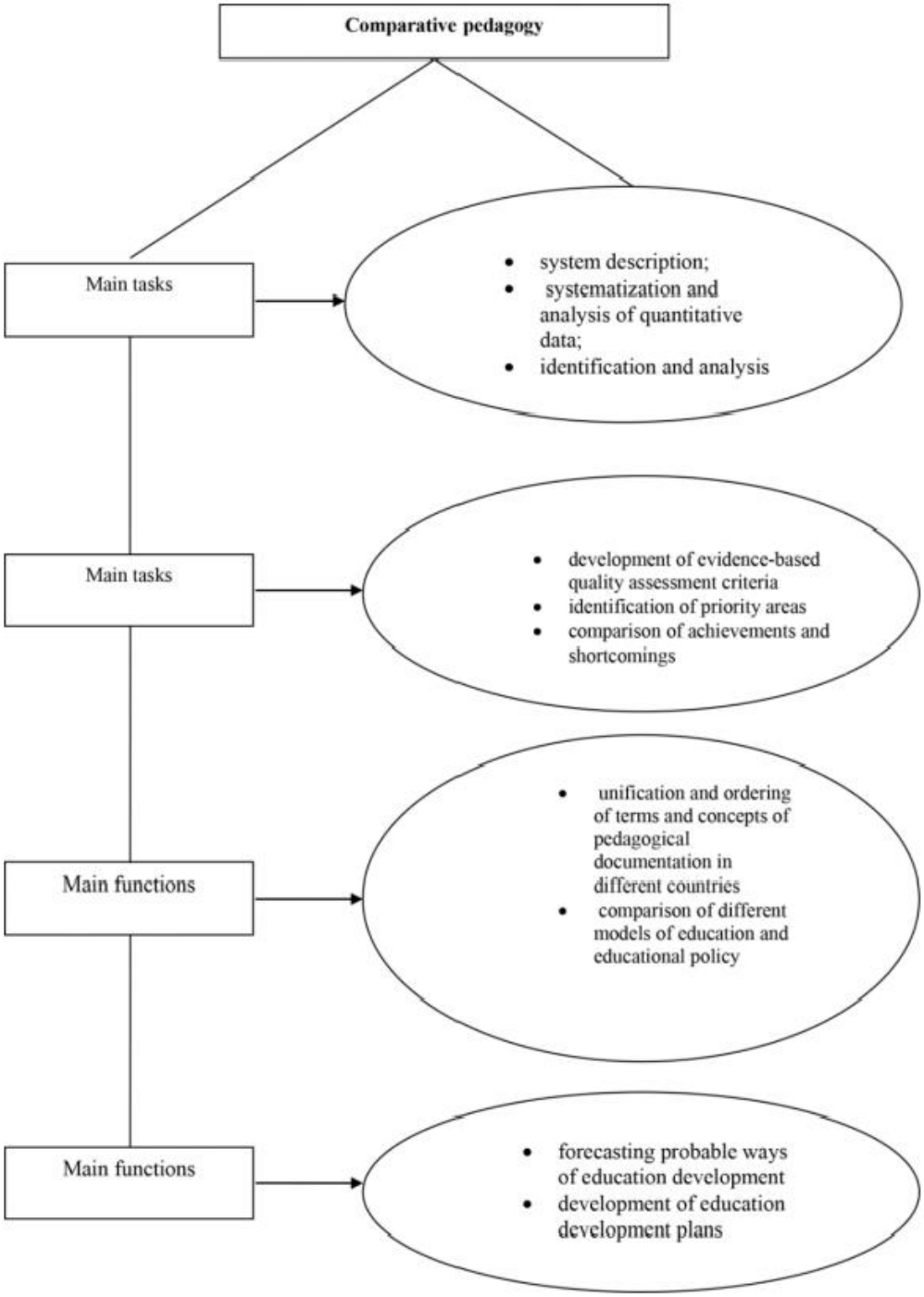
- Scientific base (support for a certain scientific concept of assimilation of experience, scientific substantiation of the process of achieving educational purposes);
- Systemity (the presence of all signs of the system: the logic of the process, the relationship of all its parts, integrity);
- controllability (the possibility of goaling, planning, designing the learning process, phased diagnosis, varying by means and methods in order to correct the results);

- reproducibility (the possibility of applying author technology in other educational institutions, other subjects).

Each author and the performer brings something individual to the pedagogical process. Therefore, in addition to the above pedagogical teaching technologies listed above, there are a large number of copyright.

Any author technology relies on well-known techniques, methods, structures and organize them around some kind of most significant author's idea. We will illustrate this on the example of the author's learning technology V. F. Shatalova.

Figure 1. Tasks and functions of comparative education



Training technologies V. F. Shatalova:

- The presentation of the theoretical material is carried out in a rapid pace and large blocks;
- use on the board when explaining the reference signals (schemes, symbol patterns, individual words);
- Detailed explanation by the teacher of the algorithm for solving a certain type of learning task; written, frontal repetition of material on supporting abstracts;
- fast, review repetition for 5 minutes significant by volume of educational material;
- general, frontal solution in conjunction with students of typical tasks;
- Check by a chain (a student who first decided the task, checks the teacher, and each of the following is the previous student);
- relay testing (students should reproduce solutions to a certain number of typical tasks on the topic under study); Active mutual assistance (with a student who missed classes, someone from class students, well-learning the appropriate topic);
- a lesson of open thoughts (any student can make a small message, a report associated with the topic studied);
- A paired interconnect (students who receive for their answers "excellent" interview their comrades on the same issue).

1. Comparative pedagogy is subject to integration processes in education, a sign of which is development of research cooperation in the form of international associations for comparative education. Purpose of scientific associations:

• holding international congresses, conferences, colloquiums;

• publication of international journals, development of research partnerships;

• intellectual support for international initiatives such as science days, congresses, seminars, and various events;

• development of new means of scientific communication using information technologies.

2. New trends in the development of comparative research content— the breadth of research field: from study of pedagogical process in a particular educational institution to thematic global studies on the world history of education and different countries' pedagogical theories. The main trend in development of modern comparative pedagogical research is connection with other sciences: philosophy, anthropology, psychology, sociology, history, ethnology, economics, cultural studies, etc.

At the same time, philosophical positions of modern scientists are characterized by diversity (positivism, Marxism, postmodernism). Various research methods are used — natural science, sociology, and Humanities. Change in methodology takes place in direction of transition from "single methodology" (study of one country-nation) to "General methodology" (study of a country-nation in the context of entire world space).

Research is related to the processes of modernization of socio-economic and sociocultural development. This is especially evident in the European region. And now, in the conditions of formed modernization, it is extremely important for the Republic of Uzbekistan.

"These purposes are the driving force of each project, and all efforts of its participants are bent on their achievement. The formulation of purposes should devote special efforts because success of all implementation half depends on carefulness of performance of this part of work. At first the most common goals are determined, and then they are more detailed, until going down on the level of most specific objectives, facing each participant of work.

In this case, work on the project will turn into step-by-step achievement of goals from the lowest to the highest, if there is not to regret time and efforts to goal-setting".

The analysis of the research made it possible to conclude that value is not blind copying, but creative use of foreign experience in the practice of Uzbek schools and pedagogy, which is why research on comparative pedagogy is so important.

Comparative pedagogy, accumulating knowledge about the development trends of foreign educational systems, allows you to better understand priorities of domestic education, guide and predict their development. It provides a holistic view of modern education problems and shows how they can be resolved.

Conclusions and suggestions

Pedagogical conditions of interaction of legislative regulation and reform of education are: scientific concept almost of reforms, which provide the prediction of education system development and personality; peculiarities and actual practice; creating a flexible model of education as pedagogic interpretation of legal norms and relations.

Thus, the study of education system development of the Republic of Uzbekistan that if changes in the education system meet the needs of personal development the changed socioeconomic conditions, they are created for the effective influence of education system on functioning of various society institutions, since content and methods of work of all educational institutions most accurately meet with interests of society as a whole.

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QR – Issue QR – Article

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ROLE OF THE TRAINER IN THE PSYCHOLOGICAL TRAINING OF THE ATHLETE IN OUT-SCHOOL WORK ON PHYSICAL EDUCATION AND SPORT

Abstract: *The article examines the ways of psychological understanding and the relationship between an athlete and a coach. The influence of the role of the athletics coach during the period of psychological preparation of schoolchildren-athletes in out-of-school work.*

Key words: *athletics, extracurricular work, psychological preparation, schoolchildren, physical culture.*
Language: *Russian*
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РОЛЬ ТРЕНЕРА В ПСИХОЛОГИЧЕСКОЙ ПОДГОТОВКЕ ЛЕГКОАТЛЕТА ВО ВНЕШКОЛЬНОЙ РАБОТЕ ПО ФИЗИЧЕСКОЙ КУЛЬТУРЕ И СПОРТУ

Аннотация: *В статье рассматриваются пути психологического взаимопонимания и отношения между спортсменом и тренером. Влияние роли тренера по легкой атлетики в период психологической подготовки школьников-легкоатлетов во внешкольной работе.*

Ключевые слова: *легкая атлетика, внешкольная работа, психологическая подготовка, школьники, физическая культура.*

Введение

Легкая атлетика - один из самых популярных и развитых видов спорта в мире, поскольку этим видом спорта занимаются миллионы детей и взрослых. Соревновательная деятельность в легкой атлетике характеризуется высоким уровнем конкуренции на международной спортивной арене, что стимулирует специалистов к постоянной оптимизации системы подготовки и усовершенствованию ее отдельных компонентов.

Как показывает практика, дети активно занимающиеся легкой атлетикой, лучше своих сверстников овладевают обучением в общеобразовательной школе. Кроме того, активно занимаясь легкой атлетикой на свежем воздухе, у учащихся повышается устойчивость к простудным заболеваниям [1, с. 800; 2, с. 405; 3, с. 74].

Подготовка легкоатлета предполагает сложный многолетний процесс, а сочетание интегральной подготовленности позволяет спортсмену показать свои достижения. Психологическая подготовка является важным звеном в реализации интегральной подготовленности, ведь психоэмоциональное состояние юного спортсмена оказывает положительное или негативное влияние на спортивный результат во время тренировочных занятий и спортивных соревнований.

Целью исследования являлось исследование процесса психологической подготовки спортсменов, занимающихся в спортивной секции по легкой атлетике и разработать методику

коррекции психологических состояний во время тренировки и выступления на соревнованиях.

Задачи исследования:

1. Проанализировать теоретические особенности психологической подготовки молодых легкоатлетов.
2. Обосновать роль тренера в психологической подготовке легкоатлета.
3. Экспериментально исследовать психологическую подготовку юных легкоатлетов и разработать методику коррекции психологических состояний во время тренировки и выступления на соревнованиях.

Проблемой исследования различных психологических составляющих в спортивной деятельности занимались такие ученые, как Бабушкина Г. Д., Костюкевич В.М. (2007г.), Ильин Э. П.(2008), Кулик Н.А. (2016г) и другие. Учителям физической культуры, тренерам необходимо учитывать особенности психологической совместимости учащихся при комплектовании спортивных групп, особенно это касается командных видов спорта, которые будут существенно способствовать подготовке и выступлению на соревнованиях [4, с. 48; 5, с. 8; 6, с. 205].

Анализ литературных источников по исследованию теоретических проблем психологии человека его поведения, развития личности, мотивации, взаимных отношений и т.п. свидетельствует о том, что соревнования по легкой атлетике предъявляют к спортсменам высокие требования как физической, так и психологической подготовки [7, с. 57; 8, с. 12; 9, с. 382]. Тренировочный и соревновательный процесс требует от спортсмена проявления морально-волевых качеств, выполняя большую физическую нагрузку, которая сопровождается психологическим напряжением.

В спортивной практике наблюдается влияние уровня напряженности спортсмена перед стартом на конечный результат. По данным спортивных психологов состояние психической напряженности, то есть неблагоприятное психическое состояние, возникает у спортсмена в процессе тяжелой и ответственной деятельности именно в период ожидания старта. Поэтому исследование специальной психологической подготовки легкоатлета очень важно. Особое внимание следует уделить выявлению психологических показателей, от которых зависит общее психологическое настроение в день соревнований, а также исследовать влияние и значение тренера в тренировочном процессе психологической подготовки легкоатлетов.

Выполняя вторую задачу исследования, раскрыли психологическое значение подготовки юных легкоатлетов. Работая над второй задачей выяснили, что во внешкольной работе по физическому воспитанию в специализированных учебных заведениях на уровне районов, областных городов не предусмотрены должности спортивного психолога, кроме должности медсестры в ДЮСШ, но задачи данных направлений совершенно разные потому роль психолога есть как спортивного психолога в процессе секционных занятий отводится на тренера и очень важна.

Психологическая подготовка юных легкоатлетов начинается с изучения личности как уникальных носителей иерархии мотивов, выражающихся через идеалы и убеждения [10, с. 7054; 11, с. 872]. Все свойства психики тренер может развивать и совершенствовать, получая огромный потенциал роста общих и специализированных качеств личности и нуждается в системном подходе. Тренер во внешкольной работе обращает внимание не только на психологические тесты, но и на поведение легкоат летел во время тренировок. Особое внимание тренер уделяет в критические моменты при участии в спортивных соревнованиях, когда спортсмену необходима психологическая поддержка. Именно тренер изучает свойства юного 640 организма и помогает ему психологической поддержкой перенести значительные нагрузки во время тренировочных и соревновательных выступлений [12, с. 1324; 13, с. 51; 14, с. 43].

В преддверии и во время соревнований тренер выбирает и использует психологические методы воздействия индивидуально к каждому спортсмену. Чем больше информации о спортсмене получил тренер в учебно-тренировочном процессе изучения его возможностей, тем качественнее будут выбраны психологические методы помочь с целью адаптации спортсмена ко всей спортивной деятельности и соответственно тем лучше будет спортивный результат. Учитывая вышесказанное, можно утверждать, что на плечи тренера ложится работа не только тренерская но и психолога так как для успешной психологической подготовки тренер должен следовать следующим советам:

- психологическое обеспечение должно осуществляться постоянно;
- в зависимости от этапа подготовки содержание психологического обеспечения разрабатывать на «упреждение» таким образом адаптировать спортсмена к переходу на следующий этап;
- должны быть услуги спортивного психолога;
- при невозможности иметь спортивного психолога его роль отводится тренеру [15, с. 250; 16, с. 80].

В целях организации психологической подготовки юных легкоатлетов была разработана

программа оптимизации психического состояния на основе аудиовизуальных средств массовой информации. Предложено было ознакомить тренеров и спортсменов с возможностью регулирования психических состояний с помощью аудиовизуальных средств, с целью помочь достичь оптимального психического состояния. Программа включала в себя следующие аудиовизуальные средства:

- художественные и мультфильмы;
- картинки с изображением пейзажей и олимпийских легкоатлетических манежей;
- музыкальные произведения разного рода;
- видео для отдыха;
- мотивационные спортивные видеоролики, направленные на повышение уровня эмоционального возбуждения. Все средства, которые были использованы, имели два типа воздействия: активизирующий (поднятие морали и настроения) и расслабляющий (восстановление организма и снятие усталости). При отборе аудиовизуальных средств массовой информации большое внимание уделялось мотивационным компонентам (выиграть, преодолеть трудности спортивной деятельности, самосовершенствования, достичь высоких результатов, организовать благоприятный психологический климат в коллективе).

Тренер вводил психологическую работу через индивидуальные и групповые тематические беседы с юными спортсменами. При необходимости просматривался весь анимационный фильм, или отдельные его фрагменты, связанные с темой разговора. Желательно привлекать к таким беседам и родителям. В процессе изучения педагогических условий воспитания физических качеств учащихся основной школы в процессе внеклассных занятий велосипедным спортом доказана важность создания единого педагогического сопровождения «Школа-секция», где важное значение в воспитании физических качеств имеет совместная работа тренера с родителями [17, с. 143].

Для снятия эмоционального стресса, тревожности и усталости, расслабления и выздоровления тренер использовал по возможности аудио, видео для релаксации. Фото, видео в дежурстве с ритмической музыкой. То есть использовалась музыка, которая стимулировала деятельность центральной нервной системы, способствуя увеличению частоты сердечных сокращений, подъему настроения, настройке на активные тренировки и соревнования. Выбранные аудиовизуальные носители по рекомендациям психологов использовались несколько два, три раза в неделю. Такой подход позволил сформировать состояние оповещения перед тренировочными и соревновательными мероприятиями, а также снять эмоциональное напряжение и улучшить восстановление после тренировки [18, с. 105].

Выбор направленности психологических средств зависел от индивидуальных особенностей юных легкоатлетов, их запросов и проблем микроклимата группы с которыми они сталкивались. Учитывая специфику обучения в легкой атлетике, а также особенности и принципы восприятия тренировки, целесообразно использовать аудиовизуальные средства, например просмотр видео техники упражнения, самостоятельное прослушивание аудио записей. Такой подход позволил повысить уровень восприятия, служит средством разнообразия учебного процесса и является эффективным средством психологической подготовки.

В результате реализуемой работы у спортсменов повысилась уверенность в себе и своих силах, они показали высокий уровень готовности к предстоящим соревнованиям, свое стремление сделать все, что в их силах, для победы в соревнованиях;

- юные легкоатлеты стали более адекватно оценивать свои силы по сравнению с соперниками, стали меньше их бояться, научились верить в то, что они могут побеждать;
- состязательная личностная тревожность у легкоатлетов значительно снизилась, спортсмены стали более спокойно и уверенно относиться к предстоящим соревнованиям;
- кроме того, у большинства спортсменов значительно снизился уровень стресса, возникающий непосредственно перед важными соревнованиями.

Выводы.

По результатам проведенного исследования можно сделать следующие выводы:

1. Анализ литературных источников с разных сторон подготовки спортсменов легкоатлетов свидетельствует о значительном влиянии на спортивный результат как во время соревнований, так и во время тренировки, имеет уровень психологической подготовленности.
2. Психологическая подготовка юного легкоатлета зависит от профессиональной компетентности тренера в области знаний по общей и спортивной психологии.
3. Экспериментально исследовано, что юные легкоатлеты имеют недостаточный уровень развития специальной психологической подготовки, большинство юных легкоатлетов испытывают тревожность и стресс до и во время выступления на соревнованиях. Использование предложенной методики способствовало смягчить соревновательную тревожность, стали более спокойно снизился уровень стресса перед важными соревнованиями, у спортсменов

повысилась уверенность в себе и своих силах, они показали высокий уровень готовности к предстоящим соревнованиям, стали более адекватно оценивать свои силы по сравнению с соперниками. Научились верить в то, что они могут побеждать.

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THE HISTORY OF THE SCIENTIFIC HERITAGE OF ABU NASR AL-IYADI AND THE FORMATION OF THE IDEOLOGICAL SCHOOL «DAR AL-IYADIYA»

Abstract: *This article provides information about Abu Nasr al-Iyadi, a Hanafi scholar who lived and worked in Samarkand in the 9th century, and the Iyad dynasty. The article also provides a brief account of the "Dar al-Juzjaniya" and "Dar al-Iyadiya" schools that existed during the time of Abu Nasr al-Iyadi. For example, as a result of "Dar al-Juzjaniya"'s focus on ray', Abu Akhmad al-Iyadi approved ashab al-hadith and founded his own school, "Dar al-Iyadiya". The article also briefly describes that he was criticized by his mentor Abu Mansur al-Maturidi.*

Key words: *Samanids, Maweraannahr, Iyadiya, Samarkand, kazi(judge), fe'l (action), istita'at (opportunity), Koran, ayat (verse), surah, iman (faith), ray' (thought).*

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Introduction

Abu Nasr al-Iyadi, a scholar who played a significant role in the the spread of the Hanafi creed in Mawaraunnahr, is a representative of the Dar al-Juzjaniya school of that time. However, many sources mistakenly associate the Dar al-Iyadiya school with his name. In fact, a number of scholars worked at Dar al-Juzjaniya before Abu Nasr al-Iyadi. In particular, Abu Sulayman Musa ibn Sulayman al Juzjani (d.816) was a student of Abu Yusuf and Muhammad ibn al-Hasan al-Shaybani who were famous faqihs (a muslim theologian versed in the religious law of Islam) of his time. He narrated Abu Hanifa's works: "al-Fiqh al-Akbar" and "ar-Risala ala Usman al Batti" from these teachers. He also narrated Muhammad al-Shaybani's "al-Asl" (al-Mabsut), and that copy is considered to be the most reliable one. Because of his piety, Khaliph Ma'mun rejected his offer of a judge on the reason that he was quick to anger [2, p. 104]. He was one of the first teachers of Dar al-Juzjaniya school.

Furthermore, Abu Bakr Ahmad ibn Ishaq ibn Subayh al-Juzjani (d.864) and Abu Bakr al-Juzjani were also disciples of Muhammad al Shaybani. But he received his basic education from Abu Sulayman al-Juzjani. He perfectly knew verses in al fiqh and kalam (word of God). He was the main mentor of Abu Nasr al-Iyadi and Abu Mansur al Maturidi. His works "al-Farq wat tamyiz" and "Kitab at-tawba" were well-known sources of his time [8, p. 1/356]. Abul Muin al-Nasafi gave high marks to his scientific heritage, saying: "Anyone who reads the workd of Abu Bakr al-Juzjani will admit that he was a great scholar" [7, p. 269]. Although the sources do not give exact information about the year of his birth, it is assumed that he lived until the middle of the ninth century, depending on the time he taught Maturidi [7, p. 269]. Returning to the protagonist of our article, the full name of Abu Nasr al-Iyadi is Ahmad ibn-Abbas ibn al_Husayn ibn Jalala ibn Ghalib ibn Jabir ibn Nawfal ibn Iyad ibn Yahya ibn Qays ibn Sa'd ibn Ubada al-Ansari (Sa'd ibn Ubada al-Ansari of the Companions, the leader of the Hazraj tribe in Madinah) [8, p. 1/356] al-Faqih as-Samarkandi. Abu Nasr al-Iyadi studied the science of fiqh from abu Bakr Ahmad ibn Ishaq al-

Juzjani. Abu Nasr's two sons, Abu Bakr al-Iyadi and Abu Ahmad al-Iyadi, learned fiqh from their father. Abu Nasr al-Iyadi worked with Abu Bakr al-Juzjani as the head teachers at Dar al-Juzjaniya school.

A historian Al-Idrisi, in his book "History of Samarkand", states of Abu Nasr al-Iyadi, noting that he was a great scholar. He died as a martyr, brutally killed by enemies in the land of Turks during Nasr ibn Ahmad ibn Ismail ibn Asad ibn Saman's reign [1, p. 101].

Abu al-Muin al-Nasafi, a well-known representative of the teachings of Moturidiya, described this scholar as follows: "Abu Nasr al-Iyadi was steadfast in his struggle for Islam. He was one of the most courageous, humble man of his time. Abu Nasr was, in regard to knowledge, an ocean unattainable depth, and he was the Imam of all in teaching usul and furu (direction)". He had a book which dealt with the topic of "as-sifat" (God's attributes) and it is explicitly reported that he disputed therein with the doctrines of the Mu'tazila and al-Najjar, as well as the evidence for the authenticity of the Ahl as-Sunnah wa'l-Jama'ah, show how great a scholar he was [8, p. 1/356-357].

If one is to believe a transmission from al-Hakim as_Samarkandi, Abu Nasr al-Iyadi was able to silence, by means of only a few words, every heretic and disputant, who wished to provoke him with deliberately misinterpreted Quranic verses. He is supposed to have left behind forty students which seems precise and the most prominent of them was Abu Mansur al-Moturidi [8, p. 1/356]. Abu Nasr al-Iyadi (d.889) was recognized as the strongest representative of Dar al-Juzjaniya after the death of Abu Bakr al-Juzjani. He was very intelligent and patient and from the age of twenty he was the head of the priest un the field of education. In the science of usul and furu, he is recognized as "The Imam of his time" [9, p. 42; 6, p. 160]. In Samarkand, he argued with a number of representatives of the opposition and successfully defended the Hanafi creed [8, p. 1/356-357].

It is noteworthy that all scholars who worked in Dar al-Juzjaniya were far from official positions and lived and worked among the common people on the outskirts of Samarkand. Abu Nasr, unlike his teachers, had a very close relationship with the Samanids Emir Nasr ibn Ahmad. As a result, at the age of twenty, he was appointed head of education and a judge in Samarkand [2, p. 106]. Abu Nasr's aspirations for a position indicate that he was influenced by Samanids politics. Because in 876 the Samanids were freed from the subordination of the Taharids state. Although the Samanids were directly subordinate to the Abbasids, they had become an independent state in their internal affairs. The first emir of the state, Nasr ibn Ahmad, lived a prious life and attached great importance to education and scientific travel to strengthen power. He made good use of Abu Nasr's courage in doing so [6, p. 160]. Abu Nasr al-Iyadi was directly considered one of the most important teachers of Imam Maturidi. Another narration about Maturidi in Abul Muin's book "Tabsirat al-Adilla" shows that he had a great scientific position in the Islamic world. The book states that if Abu Mansur al-Moturidi missed or delayed his teacher Abu Nasr al-Iyadi's lesson for some reason, he would not even say a word until Moturidi was present at that lesson as an expression of his boundless respect and love for his student. If he saw Maturidi coming to class, even though he was far away, he would look at him with astonishment and recite verse 68 of Surah al-Qasas from the Quran [10, p. 84]. The meaning of verse: "Whoever comes with good deed will be rewarded with what is better…".

As noted in the sources that in order to enforce the laws issued by the Samanid emirs, Qazi (judge) Abu Nasr al-Iyadi on Friday rode a horse with new clothes and announced these laws to the people. It is clear that Abu Nasr had a close relationship with the Emir of the Samanids. As for the Dar al-Iyadiya school of creed, there is no information in the sources about how this school was organized. However, most researchers have speculated that it was formed in the tenth century [9, p. 44; 1, p. 108]. It is khown that Dar al-Iyadiya school of creed was founded in Samarkand by Abu Ahmad al-Iyadi, a son of Abu Nasr al-Iyadi. The followers of Iyadiya, who emerged among the Hanafi during the time of Abu Mansur al-Maturidi, strongly opposed the interpretation of mutashabih (allegorical) verses and the fact that the mind is the main aspect of it [2, p. 108].

In this way, they separate themselves from the Ahl al-Ra'y, which has been preserved since Abu Hanifa, and support the Ahl al-Hadith. Those who supported the ideas of the Ahl al-Hadith were the followers of Iyadiyya, the most famous of whom was Abu Ahmad al-Iyadi [9, p. 44].

Abu Ahmad al-Iyadi was taught by Imam Maturidi in Dar al-Juzjaniya and was risen to the rank of a famous faqih. Abu al-Muin al Nasafi, in his book "Tabrisat al-Adilla", praises Abu Ahmad who was the student of Moturidi. Nasafi said that Abu Hafs al-Ajali al-Bukhari, a scholar with the title of "Sadr al-Fuqaha" in Mawaraunnahr and Khorasan, said: "Another proof is that Abu Hanifa's direction is the right path that this mazhab (religious direction), was believed by Abu Ahmad al-Iyadi. Because Abu Ahmad al-Iyadi could not believe in a false mazhab" [8, p. 1/357]. Al_Hakim as-Samarkandi highly respected Abu Nasr al-Iyadi, a father of Abu Ahmad al-Iyadi, and praised him to the heavens. As an example of this, Abu al-Muin al-Nasafi, in his book "Tabrisat al-Adilla", al-Hakim as-Samarkandi praised Abu Nasr al-Iyadi as follows: "Al Shaykh Abul Qasim al-Hakim al Samarkandi narrates:" When representatives of various heretical directions came to Nasr al-Iyadi to prove their erroneous beliefs, of course, they were defeated by Iyadis strong arguments and proofs" [8, p. 1/356].

Ibn Zakariyya, in contrast to al-Hakim as-Samarkandi, also expressed warm thoughts about Abu ahmad al-Iyadi and recognized him as a mujtahid (a person who has been certified as capable of interpreting religious law) scholar in matters of worship [6, p. 160-161]. Thus Abu Ahmad, who was criticized in Dar al-Juzjaniya, formed a school named Dar al-Iyadiya in opposition to this school. However, Abu Ahmad did not imagine that he would be presecuted by his mentor Abu Mansur al-Moturidi, the main representative of Dar al-Juzjaniya.

A Turkish researcher, Ahmet Ak concludes yhat the representatives of Dar al-Iyadiya had a strong relationship with the Samanids Emir. Abu Ahmad al-Iyadi and al-Hakim as-Samarkandi are considered to be some of the leaders of this school. According to Ahmet Ak, al-Hakim as-samarkandi wrote the book "Al Sawad al-Azam" at the request of the Samanid Emir, in which he omitted the name of Maturidi, although he provided information that Mawaraunnahr scholars. Ahmet Ak concludes that al-Hakim as-Samarkandi did not recognize Moturidi [2, p. 110].

According to our opinion, al-Hakim as-Samarkandi's indifference to the activities of Abu Mansur al-Maturidi is unfounded. Abul Muin al-Nasafi al Hakim as-Samarkandi narrated that after Maturidi's death, he ordered the following words of praise to be inscribed on his tomb: "It is the tomb of great man, who embraced the knowledge of their breath, has put a lot of effort into disseminating knowledge, the legacy he left has been much praised, reaped many fruits from the tree of his life" [8, p. 1/358].

In our view, there was scientific fanaticism here, and there was no great ideological competition among all the Hanafi scholars. Their main rivals were the Mutazilites, the Najjaris and Murjis. In addition to Abu Ahmad, Abu Nasr al-Iyadi also had a son named Abu Bakr al-Iyadi. He was also a member of the Iyadi dynasty and was a brother of Abu Ahmad al-Iyadi [6, p. 160-161]. His famous work was "Al-Masoil al Ashriya" (The ten matters) [10, p. 251a-252b]. He was promoted to official positions by Adid ad-dawla and died after Moturidi [6, p. 18b-19a], before Abu Salama as-Samarkandi, in 971[10, p. 251b]. He was a contemporary of Maturidi and one of the famous scholars of Samarkand and he was highly respected among the local population [6, p. 161b].

According to ibn Zakariya's book "Sharh Jumal Usul ad-din", the faqih Abdissamad ibn Ahmad al-Arbinjani narrated that when Abu Mansur al-Maturidi died, Abu Bakr al-Iyadi said: "In teaching religious knowledge and hukms(rulings), the scholars of this ummah are like the previous prophets". In the past, when the time of a prophet came to an end and problems arose that needed to be solved, and there were no scholars left to explain them, just a new prophet was sent, new scholars will replace the faqihs who have died in each century, or the Day of Judgement will begin. For Allah does not deprive His servants of guidance" [6, p. 18b-19a].

According to another narration by Muhammad ibn Ibrahim al-Hasari in his book "Hawi fil fatawa", when Abu Bakr al-Iyadi was asked how a person could understand that he was a member of the "Ahl as-Sunnah" wal-Jamaah, Abu Bakr replied: "Whoever's knowledge is in accordance with the knowledge of the Ahl as-Sunnah wa'l Jamaah, the book mof Allah, the Sunnah of his Messenger, and the sayings of salaf faqihs, he will be in the Ahl as-Sunnah wal-Jamaah mazhab" [10, p. 252b-252a].

The above narrations indicate that Abu Bakr al-Iyadi had a good reputation among the Hanafis of Samarkand. That's why Ibn Zakariya recognized Abu Bakr al-Iyadi as "the standard-bearer of the Ahl as-Sunnah wa'l-Jamaah" [6, p. 160b]. His words of condolence also indicate that Abu Bakr al-Iyadi and Abu Mansur al-Maturidi had a special place in the Samarkand school.

Abu Bakr al-Iyadi wrote his book "al-Masoil al-Ashriya al-Iyadiya", which contained his views, shortly before his death, and proclaimed it among the people so that the local population would stay away from the Mutalizites' beliefs [8, p. 1/357]. In his book, Abu Bakr al-Iyadi explains the following ten doctrinal issues [10, p. 252a-251b]:

1. It is Allah Who creates the deeds of His slaves. Their actions are due to Allah's will.

2. Allah is the Eternal Creator. His knowledge and qualities are eternal. These qualities are neither Allah Himself nor anyone else.

3. Allah cannot be seen in the Hereafter without understanding and protection. But Allah bestows His beauty on whomever He wills in any form He wills.

4. The Quran is the word of Allah, and it is neither a creature nor a mundas (created then)

5. The condition of the believers who have committed a grave sin is the will of Allah. If Allah wills, He will forgive them by His grace, and if He wills, He will punish them according to their sins. Any believer who receives his punishment will eventually enter Paradise.

6. Whether it is useful(aslah) or useless for the slaves, Allah is able to do whatever He wills in whatever form He wills. Allah is not responsible for His deeds, form the slaves are responsible.

7. It is true that Muhammad (peace and blessings of Allah be upon him) interceded for believers who had committed grave sins.

8. The torment in the grave is real.

9. They say Allah answers all prayers of His slaves and that if his prayer is good for him, He gives it in the world or gives what he wishes in Paradise.

10. As far as destiny is concerned, whether it is good or bad, it is from Allah. (It is that Allah who appreciates all human actions, good or bad. According to Maturidites, the behavior of the slave is the Creator, and the executor is the slave).

According to Hasiri, these ten issues were recognized as the main tenets of the Samarkand Hanafi at that time, and those who did not believe in them were considered to call "Sahib ash-sharr val bid'at" (heretics and sinners). However, during the time of Abu Bakr al-Iyadi, this book and work did not retain its importance as the main source among the scholars of the Ahl as-Sunnah waa'l-Jamaah. His contemporary, Abu Mansur al-Maturidi, wrote his book "Kitab at-Tawhid" in more detail on the above ten issues and other religious issues. Thus, the image of Abu Mansur al-Maturidi and his works served as a key factor in the struggle against various currents in the IX-X centuries. However, during Matiridi's lifetime, his teachings were not recognized as a separate school, but his ideological views were recognized as part of Hanafi teachings.

In conclusion, Abu Nasr al-Iyadi played a major role in the formation of the Hanafi creed and emergence of the Maturidiyya doctrine in Mawaraunnahr. When sources refer to the history of the Maturidian school of theology, the Iyadiya dynasty is mentioned with special reverence.

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ANALYSIS OF THE STABILITY OF INDUSTRIAL DEVELOPMENT OF THE SAMARKAND REGION AND THE DYNAMICS OF FACTORS INFLUENCING IT

Abstract: *This article provides an econometric analysis of the development trend of industrial potential and the stability of the dynamics of the factors influencing it for Samarkand region and districts. At the same time, the dynamics of the impact of the time factor on the main factors affecting the industry were analyzed.*

Key words: *Econometrics, trend model, industry, regional analysis, elasticity.*
Language: *English*
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Introduction

The traditional development of the region is explained by the growth of the gross domestic product (GDP) of the region. The economic development of a region is the process of managing various resources available to local authorities and all components of society, and creating new jobs, forming a partnership model to stimulate the development of economic activity in the region. An indicator of development success is the insignificance of income inequality between economic growth, economic structure and population, between regions and sectors[1].

In other words, the development of regional economic development is usually directed at the expense of economic growth efforts. Economic growth is associated with an increase in the production of goods and services. The main determinant of regional economic growth is the demand for these goods and services in other regions for local resources to produce regional goods, as this creates employment opportunities in the region [2].

Indeed, if external demand for a unique product in a certain region is high, this will lead to the development of the creation or production of this product in this region. As a result, an increase in the volume of added value in industry in the region and the creation of new jobs will lead to the growth of the region's economy and an increase in the standard of living.

On the other hand, one of the important factors determining the success of regional development is the planning process, because economic development cannot be solved with the help of a single market mechanism. Planning can be described as an ongoing process involving decisions about the use of various alternative resources to achieve specific goals in the future [3].

Regional development planning cannot be carried out by one or more network enterprises. This is due to the fact that they do not have a database of not only other network enterprises, but also their own network enterprises. Planning for regional development requires a large database and its processing, as well as scientific approaches.

RESEARCH METHODOLOGY

On the analysis of factors determining industrial development, Z. Maroof, S. Hussain, M. Jawad, M. Nazlar [4] and G.A. Fuentes Barrera, X.G. Durany, J.R. Pons, J.G. Guerrero Erazolar [5] studied global trends in industrial development.

M. Shamsuzzaman, A. Shamsuzzoha, A. Maged, S. Haridy, H. Bashir, A. Karim [6], A. Montazeri, M.H. Ansarizadeh and M.M. Arefilar [7] has studied the methods of statistical observation of industrial

production processes and the improvement of data-based statistical approaches for monitoring and analysis.

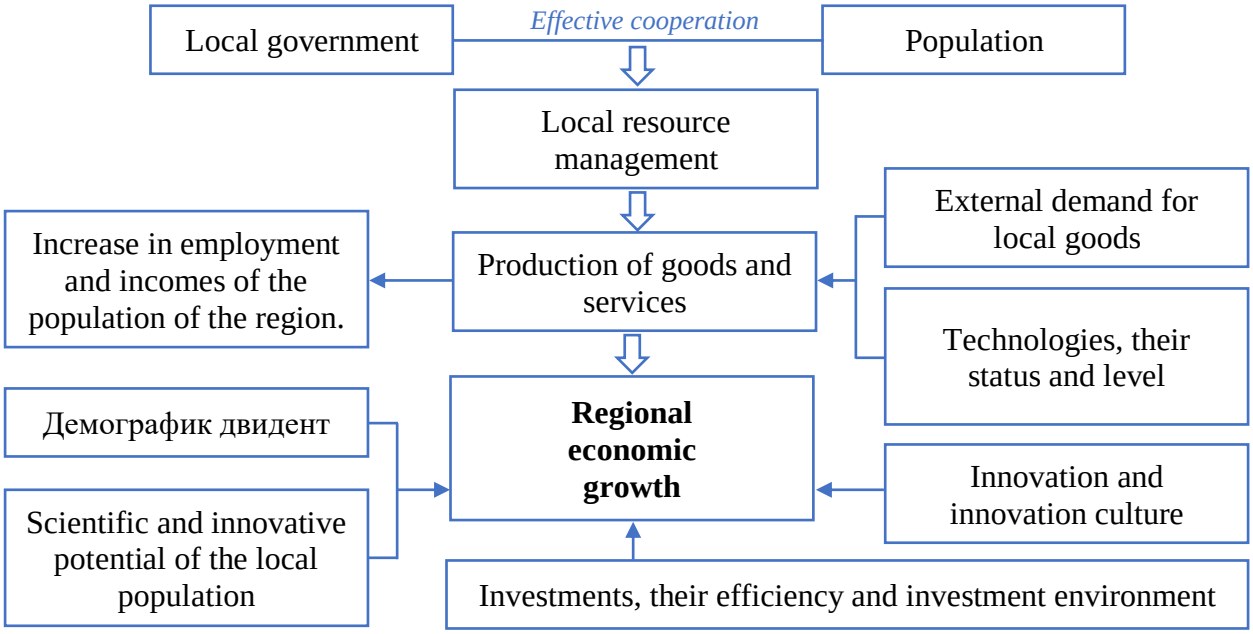
According to some classical economists, notably Adam Smith, David Ricardo, Thomas Robert Malthus and John Stuart Mill, as well as neoclassical economists Robert Solow and Trevor Swan, four factors influence economic growth [8].

1. Population.
2. The number of fixed assets.
3. Land area and natural resources.
4. The level of technology used.

Local resources and their management, as well as factors influencing them, are important for economic growth and sustainable development of the territory as a whole. However, the efficiency of management and use of local resources also often depends on the effective interaction of local government and the population of the territory (investor).

Thus, the factors influencing the economic growth of the region, such as effective cooperation between local government and the population, demographic dividends, scientific and innovative potential of the local population, external demand for local goods, technologies and their status, the level of innovation and innovative culture. , investments, their efficiency and the dependence of factors on the investment environment can be expressed in the form of a mathematical model (function 1.1) and in the form of an economic model (Scheme-1) as follows.

$$HIO' = f(MHASH, DD, MAIIS, MNTT, THD, IIM) \qquad (1.1)$$



Scheme-1. Structural model of the influence of factors on the economic growth of the region

Studies show that if the economic growth (G) of a region is equal to the additional change (ΔGRP) in the gross regional product (GRP),

$$G = GRP_2 - GRP_1 \quad \rightarrow \quad G = \Delta GRP \qquad (1.2)$$

In this case, it is appropriate to analyze the growing regional industry, which is playing an increasingly important role in the creation of *GRP* or net value added. In particular, in 2020, the GDP of the Samarkand region will reach 43834.7 billion soums, of which the gross added value of industries amounted to 42,926.4 billion soums. The share of industry (including construction) was 24.6%. However, in 2010 this figure was only 12%. This shows that the role of industry in the economic growth of the region is increasing. Therefore, an econometric analysis of the sustainability of the industrial potential development trend and the dynamics of the factors influencing it is important for understanding the industrial potential of the region and developing promising strategies for its further development. However, modeling the above factors affecting production potential is not possible. This is due to the fact that the statistical database on some factors, such as fixed assets, innovations, external demand for local goods, is not fully formed. Therefore, using the available statistical data, it is advisable to analyze the processes in the industry using econometric models based on the real situation.

First of all, it is necessary to analyze the stability of the dynamics of factors; in particular, it is necessary to analyze the dynamics of the elasticity coefficients associated with investments included in the regional industry, and investments in the region as a whole, respectively, and the total resources employed in the industry. For this, the following general elasticity function is used.

$$E = \frac{\Delta I\%}{\Delta I_j\%} \qquad (1.3)$$

The general function $\frac{\Delta I\%}{\Delta I_j\%}$ for calculating the elasticity of labor resources in this industry relative to total labor resources can be given as follows.

$$E_{L_j}^{L} = \frac{\Delta L}{\Delta L_j} \cdot \frac{L_j}{L} \qquad (1.4)$$

here:

$E_{L_j}^{L}$ - coefficient of elasticity of labor resources in industry in relation to total labor resources;

L - the number of labor resources employed in the industry;

L_j - the total number of labor resources;

ΔL - change in the number of labor resources employed in industry;

ΔL_j - the volume of general labor resources has changed.

The general function for determining the coefficient of elasticity of investments in regional industry in relation to the total volume of utilized investments can be presented as follows.

$$E_{K_j}^{K} = \frac{\Delta K}{\Delta K_j} \cdot \frac{K_j}{K} \qquad (1.5)$$

here:

$E_{K_j}^{K}$ - coefficient of elasticity of investments in industry in relation to the total volume of utilized investments;

K - the amount of investment in industry;

K_j - the total amount of utilized investments;

ΔK - difference in investment in industry;

ΔK_j - difference in total investment.

RESULTS AND DISCUSSION

In 2020, 5820.4 billion soums were allocated for the development of the region's industry, which is 39.7% of the total investment. Also, the volume of investments in industry in 2020 increased 4.5 times compared to 2019, 10.6 times compared to 2015 and 23.0 times compared to 2010. In addition, 171.1 thousand labor resources work at the industrial enterprises of the region, which is only 8.0% of the total labor resources. However, the number of labor force employed in industry in 2020 increased 1.02 times compared to 2019, 1.05 times compared to 2015 and 1.18 times compared to 2010 (Table 1).

Table 1. Some economic indicators of Samarkand region (2020)

№	Region	Total investment (billion soums)	Investment in industry (billion soums)	Total labour resources (thousand)	Labor force in the industry (thousand)
1	Samarkand city	6254,1	2313,4	299,7	46,3
2	Kattakurgan city	396,1	117,1	49,8	5,7
3	Aqdaryo	643,2	89,3	87,7	4,7
4	Bulungur	426,0	34,9	102,6	6,5
5	Jomboy	519,6	254,3	94,7	6,0
6	Ishtikhan	352,6	287,1	139,1	8,0
7	Kattakurgan	249,6	26,9	149,4	9,5
8	Kushrabat	960,8	617,2	72,5	7,2
9	Narpai	290,9	74,3	116,8	6,6
10	Payariq	472,1	1,2	136,1	7,4
11	Pastdargam	785,5	128,3	193,5	11,5
12	Pakhtachi	430,1	300,7	79,4	4,6
13	Samarkand	1165,4	272,4	138,1	15,8
14	Nurobod	457,3	166,5	82,7	2,9
15	Urgut	754,5	792,0	278,0	24,7
16	Tailak	498,6	344,6	110,3	3,7
Total:		**14656,4**	**5820,4**	**2130,4**	**171,1**

Using functions (1.4) and (1.5), based on the data in Table 1, it is possible to find elasticity coefficients of changes in investment in the industry of districts (cities) of the region, depending on the change in total investment in the region (city), as well as changes in the labor force employed in the industry of the district (city), depending on the change in the total labor force in the region (city) (table 2).

Table 2. Dynamics of elasticity coefficients

№	Regions	2012		2014		2016		2018		2020	
		$E^K_{K_j}$	$E^L_{L_j}$	$E^K_{K_j}$	$E^L_{L_j}$	$E^K_{K_j}$	$E^L_{L_j}$	$E^K_{K_j}$	$E^L_{L_j}$	$E^K_{K_j}$	$E^L_{L_j}$
1	Samarkand city	0,029	0,003	0,023	0,163	0,037	0,496	0,097	0,191	0,081	0,140
2	Kattakurgan city	0,012	0,002	0,246	0,053	0,011	0,138	0,065	0,132	0,011	0,286
3	Aqdaryo	0,060	0,004	0,256	0,006	0,039	0,021	0,088	0,012	0,582	0,006
4	Bulungur	0,017	0,008	0,018	0,008	0,376	0,021	0,016	0,009	0,006	0,011
5	Jomboy	0,648	0,018	0,214	0,003	0,018	0,048	0,085	0,004	0,176	0,022
6	Ishtikhan	0,093	0,006	2,413	0,004	0,094	0,015	0,056	0,006	0,290	0,005
7	Kattakurgan	0,001	0,004	0,011	0,006	0,245	0,010	0,008	0,017	0,008	0,007
8	Kushrabat	0,004	0,019	0,300	0,002	1,102	0,024	5,691	0,048	0,062	0,001
9	Narpai	0,000	0,006	0,098	0,005	0,025	0,005	0,004	0,028	0,020	0,001
10	Payariq	0,027	0,005	0,126	0,002	0,313	0,013	0,005	0,020	0,000	0,108
11	Pastdargam	0,127	0,000	0,341	0,010	0,131	0,011	0,095	0,017	0,018	0,181
12	Pakhtachi	0,003	0,007	0,488	0,001	0,038	0,009	0,032	0,009	0,231	0,093
13	Samarkand	0,686	0,000	3,972	0,036	0,966	0,189	0,064	0,112	0,050	0,049
14	Nurobod	0,003	0,001	0,015	0,005	0,167	0,039	0,006	0,004	0,037	0,030
15	Urgut	0,428	0,013	0,065	0,068	0,094	0,054	0,490	0,083	16,330	0,034
16	Tailak	0,065	0,000	0,414	0,000	0,195	0,003	0,016	0,003	0,699	0,003
Total:		**0,068**	**0,007**	**0,064**	**0,000**	**0,217**	**0,003**	**0,068**	**0,003**	**0,130**	**0,017**

According to the analysis, the dependence of the change in investment in the industry of the district (city) on the change in the total volume of investment in the district (city) is elastic in Urgut (2020 $E^K_{K_j} = 16{,}3$), Koshrabat (2018 $E^K_{K_j} = 5{,}7$; 2016 $E^K_{K_j} = 1{,}1$), Ishtikhan (2014 $E^K_{K_j} = 2{,}4$) and Samarkand (2014 $E^K_{K_j} = 3{,}9$), and the rest of the districts (cities) turned out to be inelastic ($E^K_{K_j} < 1$). The analysis also showed that the dependence of changes in labor resources employed in the industry of districts (cities) on changes in total labor resources in the district (city) is inelastic ($E^K_{K_j} < 1$) in all districts (cities).

In 2011-2020, investments in the industry of the Urgut district of the region were recognized as elastic compared to the total volume of investments, while the labor force employed in the industry of the city of Samarkand was elastic compared to the total labor force.

In conclusion, it can be noted that over the past period, the inflow of investments into the industry of the Urgut district of the region has increased and the number of new workplaces in industry of Samarkand has increased. This is evidenced by the growing share of both districts (cities) in the total volume of industrial production created in the region. In particular, in 2020, the city of Samarkand will account for 44.0%, and the Urgut district - 8.5% of the industrial production of the region, which is the highest indicator in comparison with other districts (cities) of the region.

In general, the number of industrial enterprises in the Samarkand region has been growing in recent years. In particular, in 2020, 33,250 enterprises and organizations (excluding farms and farms) were registered in the region, of which 6,348 or 19.1% are industrial enterprises (Appendices 1-4).

It should be noted that if the production potential is mainly the volume of industrial production, then it is advisable to conduct an econometric analysis of the stability of the dynamics of the factors influencing it.

Usually, the dynamics of indicators is studied on the basis of dynamic models, that is, dynamic models show the change in indicators over time.

After all, training based on dynamic models is not only scientific and theoretical, but also has important practical significance. [9]

When determining the trend in the dynamics of economic series, in most cases high level polynomials

$$\hat{y}(t) = \left[a_0 + \sum_{i=1}^{k} a_t t^i \right]^u \qquad 2.3.6$$

$$(i = -1, 0, 1, \ldots, \mathrm{k}), \quad (u = -1, 1)$$

and exponential functions are used.[10]

$$\hat{y}(t) = \left[e^{a_0 + \sum_{i=1}^{k} a_t t^i} \right]^u \qquad 2.3.7$$

$$(i = -1, 0, 1, \ldots, \mathrm{k}), \quad (u = -1, 1)$$

Using the highest levels of the polynomial often results in a reduction in the mean square error. But at such moments, the equation remains unfulfilled. The alignment parameters are estimated using the least squares method. In order to estimate the parameters of the exponential function, it is necessary to take the logarithm of the value of the initial rows.

$$\begin{cases} \mathrm{n} \ln a_0 + a_1 \sum \ln t = \sum \ln y \\ a_0 \sum \ln t + a_1 \sum \ln t^2 = \sum \ln y \ln t \end{cases} \qquad 2.3.8$$

It is desirable to use an exponential trend equation to express changes over time, in particular growth. An exponential trend is inherent in processes developing in an environment that does not impose any restrictions on the growth of powers.[11]

$$\hat{Y} = a_0 e^{a_1 t} \cdot \varepsilon \qquad 2.3.9$$

where: $\hat{Y}$ is the expected value of the forecast, t is the time factor, $e = 2{,}718$ is the base of the natural logarithm, ε is a random variable (residual value).

Based on the above formulas and data, it is possible to construct exponential equations for the dynamics of the dynamics of factors affecting the regional (urban) industrial production of the region

Table 3. Exponential trend model of the dynamics of factors influencing the district (city) industry of the Samarkand region

№	Regions	Investments in industry	Labor force in the industry	Number of industrial enterprises
1	Samarkand city	$\hat{Y} = 45{,}43e^{0{,}265t}$	$\hat{Y} = 49{,}768e^{0{,}00417t}$	$\hat{Y} = 357{,}08e^{0{,}142t}$
2	Kattakurgan city	$\hat{Y} = 2{,}981e^{0{,}199t}$	$\hat{Y} = 5{,}208e^{0{,}0111t}$	$\hat{Y} = 39{,}264e^{0{,}146t}$
3	Aqdaryo	$\hat{Y} = 4{,}0141e^{0{,}268t}$	$\hat{Y} = 4{,}748e^{0{,}00973t}$	$\hat{Y} = 32{,}447e^{0{,}177t}$
4	Bulungur	$\hat{Y} = 5{,}058e^{0{,}179t}$	$\hat{Y} = 5{,}41e^{0{,}0193t}$	$\hat{Y} = 40{,}322e^{0{,}153t}$
5	Jomboy	$\hat{Y} = 15{,}514e^{0{,}126t}$	$\hat{Y} = 3{,}83e^{0{,}0237t}$	$\hat{Y} = 40{,}656e^{0{,}14t}$
6	Ishtikhan	$\hat{Y} = 2{,}72e^{0{,}295t}$	$\hat{Y} = 4{,}748e^{0{,}0379t}$	$\hat{Y} = 44{,}011e^{0{,}176t}$
7	Kattakurgan	$\hat{Y} = 1{,}006e^{0{,}196t}$	$\hat{Y} = 7{,}294e^{0{,}0235t}$	$\hat{Y} = 55{,}039e^{0{,}143t}$
8	Kushrabat	$\hat{Y} = 6{,}41e^{0{,}193t}$	$\hat{Y} = 4{,}337e^{0{,}0376t}$	$\hat{Y} = 35{,}582e^{0{,}582t}$
9	Narpai	$\hat{Y} = 0{,}911e^{0{,}247t}$	$\hat{Y} = 3{,}958e^{0{,}0345t}$	$\hat{Y} = 42{,}9e^{0{,}146t}$
10	Payariq	$\hat{Y} = 9{,}143e^{-0{,}0453t}$	$\hat{Y} = 4{,}04e^{0{,}0392t}$	$\hat{Y} = 55{,}831e^{0{,}153t}$
11	Pastdargam	$\hat{Y} = 4{,}981e^{0{,}24t}$	$\hat{Y} = 10{,}14e^{0{,}0184t}$	$\hat{Y} = 92{,}6321e^{0{,}145t}$
12	Pakhtachi	$\hat{Y} = 5{,}92e^{0{,}217t}$	$\hat{Y} = 2{,}79e^{0{,}0322t}$	$\hat{Y} = 33{,}409e^{0{,}131t}$
13	Samarkand	$\hat{Y} = 19{,}296e^{0{,}214t}$	$\hat{Y} = 14{,}21e^{0{,}014t}$	$\hat{Y} = 78{,}902e^{0{,}141t}$
14	Nurobod	$\hat{Y} = 2{,}158e^{0{,}255t}$	$\hat{Y} = 3{,}164e^{0{,}00883t}$	$\hat{Y} = 36{,}604e^{0{,}133t}$
15	Urgut	$\hat{Y} = 28{,}493e^{0{,}264t}$	$\hat{Y} = 18{,}794e^{0{,}0256t}$	$\hat{Y} = 76{,}303e^{0{,}179t}$
16	Tailak	$\hat{Y} = 9{,}559e^{0{,}179t}$	$\hat{Y} = 2{,}615e^{0{,}0288t}$	$\hat{Y} = 45{,}235e^{0{,}147t}$

Exponential trend models that reflect the change in the dynamics of investment in industry and the number of labor resources employed in industry under the influence of time, which are the main factors affecting the regional (urban) industry of the Samarkand region, were estimated by approximation error ($\overline{A}$), coefficient of determination (R^2), Fisher's test (F), Student's test (t_i), standard error (S_y) and Durbin-Watson test (DW).

Table 4. Results of evaluation of exponential trend models

№	Модел	$\overline{A}$	R^2	F	$t_{a_0}; t_{a_1}$	S_y	DW
1	$\hat{Y} = 45{,}43e^{0{,}265t}$	5,91	0,796	35,123	5,9265; 12,5805	0,4691	1,89
2	$\hat{Y} = 49{,}768e^{0{,}00417t}$	2,07	0,0218	0,2003	0,4475; 61,7859	0,09779	0,65
3	$\hat{Y} = 357{,}08e^{0{,}142t}$	0,87	0,971	300,0246	17,3212; 105,6611	0,08603	1,13
4	$\hat{Y} = 2{,}981e^{0{,}199t}$	27,08	0,399	5,964	2,4421; 1,9737	0,8557	2,94
5	$\hat{Y} = 5{,}208e^{0{,}0111t}$	2,83	0,255	3,082	1,7556; 38,6512	0,06602	1,01
6	$\hat{Y} = 39{,}264e^{0{,}146t}$	1,98	0,947	162,0013	12,728; 47,2477	0,1201	1,05
7	$\hat{Y} = 4{,}0141e^{0{,}268t}$	20,41	0,62	14,6865	3,8323; 2,9306	0,7334	3,04
8	$\hat{Y} = 4{,}748e^{0{,}00973t}$	3,99	0,14	1,461	1,2087; 28,5318	0,08443	1,11
9	$\hat{Y} = 32{,}447e^{0{,}177t}$	1,3	0,985	610,4468	24,7072; 71,7754	0,07497	1,04
10	$\hat{Y} = 5{,}058e^{0{,}179t}$	21,23	0,432	6,8581	2,6188; 3,492	0,7178	2,66
11	$\hat{Y} = 5{,}41e^{0{,}0193t}$	1,51	0,773	30,6875	5,5396; 71,558	0,03649	1,74
12	$\hat{Y} = 40{,}322e^{0{,}153t}$	1,68	0,965	249,8999	15,8082; 56,4486	0,1013	0,95
13	$\hat{Y} = 15{,}514e^{0{,}126t}$	14,84	0,28	3,5005	1,871; 6,0036	0,7062	0,98
14	$\hat{Y} = 3{,}83e^{0{,}0237t}$	7,78	0,26	3,1549	1,7762; 14,8188	0,1401	1,57
15	$\hat{Y} = 40{,}656e^{0{,}14t}$	1,95	0,936	131,9402	11,4865; 44,7446	0,1281	1,02
16	$\hat{Y} = 2{,}72e^{0{,}295t}$	75,99	0,402	6,0496	2,4596; 1,2288	1,2591	1,5
17	$\hat{Y} = 4{,}748e^{0{,}0379t}$	3,56	0,702	21,2146	4,6059; 27,8816	0,08639	1,37
18	$\hat{Y} = 44{,}011e^{0{,}176t}$	1,55	0,975	357,2587	18,9013; 60,0318	0,09749	1,07
19	$\hat{Y} = 1{,}006e^{0{,}196t}$	26,35	0,453	7,4401	2,7276; 0,01134	0,7537	2,47
20	$\hat{Y} = 7{,}294e^{0{,}0235t}$	0,89	0,908	89,2807	9,4488; 117,9246	0,02606	2,87
21	$\hat{Y} = 55{,}039e^{0{,}143t}$	1,89	0,955	189,2923	13,7584; 56,7766	0,1092	1,59
22	$\hat{Y} = 6{,}41e^{0{,}193t}$	83,35	0,111	1,119	1,0578; 1,4997	1,9157	1,97
23	$\hat{Y} = 4{,}337e^{0{,}0376t}$	5,22	0,595	13,2378	3,6384; 20,932	0,1084	0,59

24	$\hat{Y} = 35{,}582e^{0{,}582t}$	2,05	0,939	139,5935	11,815; 51,0729	0,1083	0,83
25	$\hat{Y} = 0{,}911e^{0{,}247t}$	262,26	0,407	6,1793	2,4858; 0,1385	1,0428	2,37
26	$\hat{Y} = 3{,}958e^{0{,}0345t}$	6,33	0,489	8,6078	2,9339; 17,27	0,1232	1,51
27	$\hat{Y} = 42{,}9e^{0{,}146t}$	1,1	0,983	523,4128	22,8782; 87,0317	0,06679	1,19
28	$\hat{Y} = 9{,}143e^{-0{,}0453t}$	546,99	0,0174	0,1591	0,3989; 2,87	1,1924	1,86
29	$\hat{Y} = 4{,}04e^{0{,}0392t}$	6,89	0,49	8,6489	2,9409; 15,432	0,133	0,66
30	$\hat{Y} = 55{,}831e^{0{,}153t}$	1,17	0,98	439,0926	20,9545; 81,3607	0,07645	1,42
31	$\hat{Y} = 4{,}981e^{0{,}24t}$	19,64	0,52	9,746	3,1219; 3,076	0,8072	2,79
32	$\hat{Y} = 10{,}14e^{0{,}0184t}$	1,6	0,632	15,4488	3,9305; 73,0937	0,04901	1,93
33	$\hat{Y} = 92{,}6321e^{0{,}145t}$	1,79	0,941	143,4201	11,9758; 55,2244	0,1268	1,07
34	$\hat{Y} = 5{,}92e^{0{,}217t}$	21,46	0,404	6,1068	2,4712; 2,99	0,9197	1,86
35	$\hat{Y} = 2{,}79e^{0{,}0322t}$	6,05	0,598	13,3771	3,6575; 17,2047	0,09224	0,67
36	$\hat{Y} = 33{,}409e^{0{,}131t}$	1,51	0,957	198,8197	14,1002; 55,6576	0,09749	1,18
37	$\hat{Y} = 19{,}296e^{0{,}214t}$	7,33	0,717	22,7462	4,7693; 9,7406	0,4699	2,26
38	$\hat{Y} = 14{,}21e^{0{,}014t}$	1,41	0,449	7,3389	2,709; 75,6581	0,05424	1,14
39	$\hat{Y} = 78{,}902e^{0{,}141t}$	1,53	0,951	173,1118	13,1572; 60,2034	0,1122	1,02
40	$\hat{Y} = 2{,}158e^{0{,}255t}$	25,45	0,537	10,4429	3,2315; 1,4367	0,8277	2,51
41	$\hat{Y} = 3{,}164e^{0{,}00883t}$	6,85	0,0649	0,6249	0,7905; 15,204	0,1171	1,2
42	$\hat{Y} = 36{,}604e^{0{,}133t}$	1,52	0,954	187,1019	13,6785; 54,5937	0,102	1,24
43	$\hat{Y} = 28{,}493e^{0{,}264t}$	5,36	0,86	55,456	7,4469; 13,9127	0,3723	1,1
44	$\hat{Y} = 18{,}794e^{0{,}0256t}$	1,58	0,588	12,8502	3,5847; 60,6662	0,07478	2,48
45	$\hat{Y} = 76{,}303e^{0{,}179t}$	1,59	0,97	289,9517	17,028; 60,6973	0,1104	1,14
46	$\hat{Y} = 9{,}559e^{0{,}179t}$	27,19	0,247	2,9535	1,7186; 3,2043	1,0894	2,98
47	$\hat{Y} = 2{,}615e^{0{,}0288t}$	4,06	0,719	23,0288	4,7988; 23,617	0,06293	1,73
48	$\hat{Y} = 45{,}235e^{0{,}147t}$	1,8	0,955	192,2028	13,8637; 53,1286	0,111	1,54

The results of the assessment of the dynamics of changes in the factors affecting industrial production over time on the basis of econometric modeling of regional districts (cities) are presented as follows (Table 5), note:

I - time change has a high degree of influence on the factor change;

II - time change has little effect on factor change;

III - time change does not affect factor change;

IV - Other indicators have a greater influence on the change in the factor than the change in time.

CONCLUSION

Conclusions of the analysis of the dynamics of factors affecting the district (city) industry of Samarkand region on the basis of the exponential trend models

Table 5

№	Regions	Investments in industry	Labor force in the industry	Number of industrial enterprises
1	Samarkand city	II, IV	III, IV	II, IV
2	Kattakurgan city	I	II	II, IV
3	Aqdaryo	I	III, IV	II, IV
4	Bulungur	II, IV	III, IV	II, IV
5	Jomboy	II, IV	II, IV	II, IV
6	Ishtikhan	I	II, IV	II, IV
7	Kattakurgan	I	II, IV	II, IV
8	Kushrabat	II, IV	III, IV	I, IV
9	Narpai	I	II, IV	II, IV
10	Payariq	III, IV	III, IV	II, IV
11	Pastdargam	I, IV	II, IV	II, IV
12	Pakhtachi	I, IV	II, IV	II, IV
13	Samarkand	II, IV	III, IV	II, IV
14	Nurobod	I	III, IV	II, IV
15	Urgut	II, IV	III, IV	II, IV
16	Tailak	II, IV	II, IV	II, IV

In conclusion, we can say that the dynamics of investment in industry is growing due to the time factor in the city of Kattakurgan and Akdarya, Ishtikhon, Kattakurgan Narpay and Nurabad regions. The influence of other factors is higher in Samarkand city and Bulungur, Dzhambai, Koshrabat, Payarik, Pastdargom, Pakhtachi, Samarkand, Urgut and Tailak regions than the time factor. A low growth in the number of industrially employed labor resources over time and a high influence of other factors is observed in Kattakurgan and Dzhambay, Ishtikhon, Kattakurgan, Narpay, Pastdargom, Pakhtachinsky and Taylak districts. In Akdarya, Bulungur, Koshrabat, Payarik, Samarkand, Nurabad and Urgut regions, the influence of time is practically absent, i.e. the growth of labor resources in the industry depends on other factors.

In addition, in all districts (cities) of the region, the influence of time on the increase in the number of industrial enterprises is low, while the influence of other factors, on the contrary, is high.

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	GIF (Australia)	= **0.564**	**ESJI** (KZ)	= **9.035**	**IBI** (India)	= **4.260**
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THE DEFORMATION DEGREE OF HIGH-STRENGTH CONCRETE AFTER THE BULLET IMPACT

Abstract: *The deformation degree of concrete (strength up to 140 MPa) upon impact of the steel bullet flying at an initial speed of 720 m/s was investigated in the article. Temperature, plastic and elastic deformations of concrete in the direction of load were considered.*

Key words: *high-strength concrete, impact, deformation, the area.*

Language: *English*

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Introduction

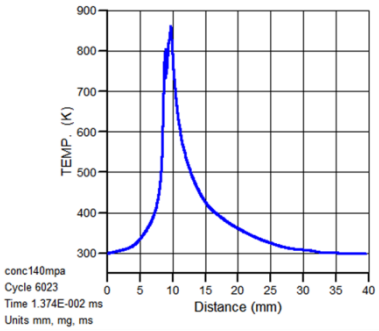
High-strength concretes can withstand long-term high static loads without damage [1-3]. Short-term local dynamic load (for example, the bullet penetration) causes partial damage of concrete at the point of contact. Concrete has a heterogeneous porous structure. This suggests that deformation under loads occurs unevenly in the material volume. The formation of cracks during compressive deformation is possible. Cyclic loads contribute to the further development of cracks until the complete damage of concrete. Evaluation of the deformation degree of concrete products under loads by conducting experimental tests and visual modeling will make it possible to draw a conclusion about the strength characteristics of material in the real operating conditions. In this paper, the analysis of the stress and strain state of a concrete slab after penetration of the Kalashnikov assault rifle bullet into it at an angle of zero degrees was carried out.

Materials and methods

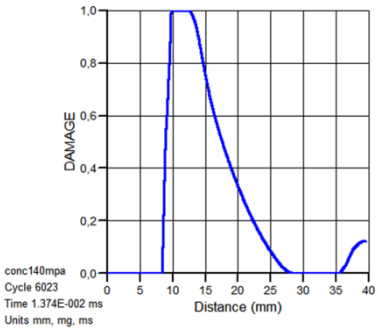
The calculations were carried out in the Ansys Autodyn. For this, models of the slab (thickness of 40 mm) and the Kalashnikov assault rifle bullet (7.62 mm caliber) were built on the plane. The slab and bullet models were given the properties of concrete (strength up to 140 MPa) [4-5] and carbon steel, respectively. Concrete had the equation of state (*P* alpha), the strength model type (*RHT* concrete), the failure model type (*RHT* concrete) and the erosion model type (geometric strain). The concrete slab model was fixed vertically on one of the sides, and an initial velocity of the bullet was taken as 720 m/s according to the experimental conditions. The bullet moved along the *X*-axis of the rectangular coordinate system plotted on the plane. The bullet penetration was performed in the center of the slab. The bullet deformation was not taken into account in the study. Case studies of the properties and the stress and strain state of various grades of concretes under various loads were carried out in the works [6-10].

Results and discussion

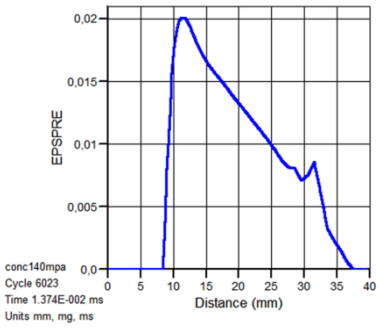
Measurements of the stress and strain state of concrete were carried out in the load direction. Dependences of the deformed state of high-strength concrete after removal of dynamic load on the slab thickness are presented in the Fig. 1.



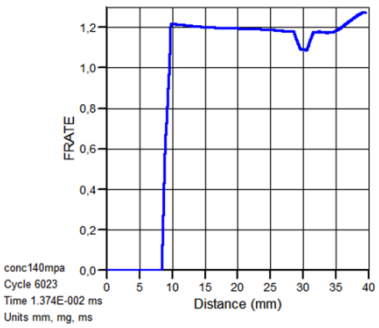
Temperature vs. Distance plot



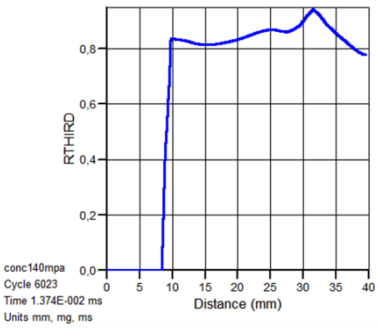
Damage vs. Distance plot



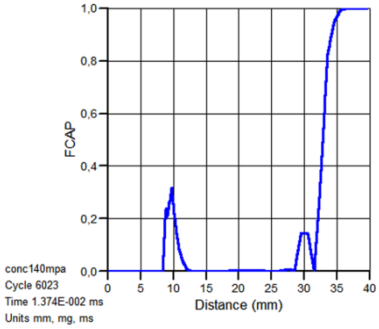
RHT pre-softening plastic strain vs. Distance plot



RHT strain rate enhancement vs. Distance plot



RHT Lode angle vs. Distance plot



RHT elastic cap factor vs. Distance plot

Figure 1 – Dependences of the deformed state of high-strength concrete after removal of dynamic load on the slab thickness.

Heating of the slab by 570 K occurs in the area of maximum deformation of material. The temperature field occurs within a radius of 25 mm from the area of concrete damage. In this case, main damage to concrete (cracks, etc.) occurs within a radius of 18 mm. Dynamic impact causes both plastic and elastic deformations in the slab. Dependence of the occurrence of plastic deformation of preliminary softening, taking into account the magnitude of concrete deformation rate, can be traced in the presented plots. Plastic deformation of material in the impact area is no more than 2%. Deformation rate reaches its maximum at the moment of the bullet impact and practically does not change within a radius of 30 mm. The type of deformation of high-strength concrete under the conditions of penetration of the steel bullet changes from deviatoric pure shear in the impact area to axisymmetric compression in the layers of material, the most distant from the damage area. Impact leads to the occurrence of high pressure, concrete pores are crushed behind the damage area (elastic deformation decreases to almost zero in the middle part of the slab).

Conclusion

Based on the analysis of the results of computer simulation of the bullet penetration into the slab, the following conclusions were made about the degree of concrete deformation:

1. The bullet impact on the concrete slab causes complete damage of material at the point of contact.
2. After impact, plastic and elastic deformations are observed in material, while the former have the maximum magnitude at the point of impact.
3. The areas of elastic deformations and high pressure, located closer to the opposite (to impact) wall of the slab and its middle, respectively, are revealed.

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QR – Issue QR – Article

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VARICOSE VEIN DISEASE OF THE LOWER EXTREMITIES AS A TOPICAL PROBLEM IN MEDICAL PRACTICE

Abstract: *The article under discussion reveals the varicose vein disease of the lower extremities which is one of the actual problems in medicine, as there is an increase of morbidity among the population and is characterized by complications that lead to disability. The author of the article consider that mankind, condemned to live under gravity and be upright most of the time, exposed to negative effects of adverse environmental, biological and other factors, is a risk group for venous pathology and therefore the problem should be of continuous interest to preventive medicine.*

Key words: *varicose vein disease, medicine, problem, morbidity, hormonal disturbances, pregnancy, fatigue, swelling, vascular.*

Language: *English*

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Introduction

Discussion

Etiology of the disease:

1.Genetic predisposition.
2. A sedentary lifestyle.
3. Working conditions.
4.Pregnancy.
5.Hormonal disturbances.

Clinical symptoms:

1.Swelling of the lower extremities. 2.Heaviness in the legs.
3.Fatigue.
4.Widening of the veins.
5.Formation of vascular "snakes" and nodules.
6.Formation of lumps under the skin

Diagnosis:

Examination of the patient in upright position. Fixed the venous pattern and anatomical sections, where varicose veins are localized, the nature of varicose veins, the condition of their walls [1, p.6].

On palpation the density of the walls of the nodes and vein trunks, the presence of compactions and areas of painfulness are determined. Cough-push symptom is investigated: in the upright position the index and middle finger of the hand is placed on the vein segment under investigation and the researcher asks the patient to cough. If at this moment the researcher feels a push, it means that above the point of vein clamping the venous valves are incompetent and there is a vertical reflux. When the patient is in the supine position with the leg elevated vertically, the vein collapse must be recorded to detect an unobstructed outflow of blood from the limb. In the same position, palpation along the large and small saphenous veins may reveal openings in the fasciae through which the incompetent perforating veins pass [2, p.15].

The main diagnostic questions such as the presence of vertical and horizontal reflux, the presence and degree of venous hypertension, the state of the valve apparatus of the main and perforating veins, the causes of their dysfunction are nowadays solved with a high degree of reliability by highly informative instrumental methods of examination.

Ultrasound Doppler sonography (USDG) enables to estimate the functional state of the venous system. Doppler ultrasound detects venous blood flow

with a murmur that is synchronized with breathing and resembles the sound of a sea surf: it becomes stronger when you breathe out and it gets progressively quieter with inhalation. Reflux in the saphenous veins can easily be detected by this method [8, p.4].

The most informative current method is ultrasound angioscans with colour flow mapping (triplex scanning).

This method allows to determine reliably the anatomico-morphological changes of the venous bed and choose the adequate method of varicosity treatment, to determine the indications for the operation, the optimal volume of the surgical intervention, the possibility of using some technical means and methods during the operation, to estimate the state of superficial and deep vein walls and valves, their permeability, functional state by Valsalva test (pushing when exhaling), reflux length, state and function of perforating veins.

Classification:

Several classifications are available, including clinical, etiological, anatomical, and pathophysiological features.

Forms of varicose veins:

1) intradermal and segmental varices without pathological veno-venous reflux;

2) segmental varicose veins with reflux through superficial and/or perforating veins;

3) disseminated varicose veins with reflux through superficial and perforating veins;

4) varicosity with reflux through the deep veins.

Based on this classification, the therapeutic and diagnostic tactics of each individual patient can be clearly defined on the basis of this classification, which is of course a great help to the treatment work and enables optimisation and standardisation of the management of such patients.

International Classification of Varicose Acid Disease - CEAP (C - clinic, E - etiology, A - anatomy, P - pathophysiology):

St. 0 No symptoms on examination and palpation, but complaints of heaviness in the legs and tightness of shoes in the evening.

St. 1 Teleangiectasia and/or reticular veins.

St. 2 Varices.

St. 3 Swelling of the lower extremities in the evening.

St. 4 Cutaneous trophic changes (pigmentation, venous eczema, induration).

St. 5 Skin changes progress around the scarring of healed venous ulcers.

St. 6 Skin changes around an open venous ulcer.

Each stage of varicose vein disease is characterised by specific changes in the lower limbs

However, the CEAP classification is considered by most surgeons to be rather cumbersome and not entirely easy to use routinely, particularly in outpatient practice. Its use is more justified in clinical trials and other scientific activities where there is a need to analyse a large data set in a large sample of patients.

Complications:

The most common complications of varicose veins are bleeding, thrombophlebitis and venous ulceration.

Trauma to the affected veins leads to severe bleeding that requires an ambulance to stop the bleeding.

Deep and superficial vein thrombophlebitis is a dangerous complication of varicose veins, which can lead to pulmonary embolism.

Phlegmatic thrombosis of lower limb veins is a severe course, resulting from total thrombosis of the entire venous system of a limb. There are two types of phlegmazia: white and blue.

White phlegmazia occurs when there is a preserved outflow of venous blood from the limb through the visceral veins of the pelvis. In some clinical manifestations it is similar to arterial embolism: severe ischemic pain due to powerful arterial spasm, pale skin, no pulsation in the peripheral vessels, but unlike arterial embolism, the limb is swollen, moist and warm [5, p.6].

Blue phlegmazia is due to a complete blockage of venous outflow from the limb. The limb turns dark blue which is covered with frictions and severely edematous and intoxicated. The process rapidly spreads to the perineum. This is the only type of venous insufficiency which leads to gangrene and requires amputation.

A thrombus placed in the superficial veins, most frequently in saphenous vein thrombophlebitis, can cause an embolism, if it reaches the middle third of the thigh. Clinically this can be seen by the level of inflammatory changes in the form of thickening, soreness and hyperaemia along the vein. This is where the thrombus attaches to the walls of vein. The diagnosis is clarified by an ultrasound duplex scan.

The most dangerous part of the thrombus is the flotation apex. If the apex of the flotation thrombus is located in the middle third of the thigh, an emergency admission and ligation of the great saphenous vein at the junction with the femoral vein - crossectomy - is necessary [10, p.76].

Treatment:

Treatment measures of any nature should be aimed at restoring or improving blood flow, prevention of CVI complications, improvement of quality of life of patients.

The basic principles of conservative treatment depend on the degree of CVI: at grade 0, elastic compression (therapeutic knitted fabric of grade 1-2) is used, grade 1 - elastic compression (therapeutic knitted fabric of grade 1-2) with occasional courses of monopharmacotherapy, grade 2 - elastic compression (therapeutic knitted fabric of grade 2 with repeated courses of monopharmacotherapy). Therapies, 3rd

and 4th degree - elastic compression (therapeutic knitted fabric, class 2-3) with continuous combined treatment with pharmacology, local treatment and physiotherapy.

Drug therapy is used at the beginning of the disease.

Medical therapy:

1. Venotoniruyuschie tablets, capsules, drops to restore elasticity of veins, improve tissue trophism and blood microcirculation: Detralex, venoruton, ascorutin, endotelon, glivenol, tribenol, vasobral, eskusan, anavenol;
2. Venotonics in the form of ointments and creams: Troxevasin, Lyoton 1000 gel, Essaven, Venitan;
3. Anticoagulants: heparin, hirudin, phenyndione, aspirin.
4. Antiaggregants: persantin, thrombonil;
5. When venous ulcers develop, prescribe anginine, prectal, pentoxifylline.

- Sclerotherapy of main vein tributaries with sclerosants of different concentrations depending on vein diameter.
- Miniphlebectomy
- Sclerosurgical techniques.

Surgical treatment is based on a combined phlebectomy - elimination of vertical and horizontal reflux by removing varicose veins using a special probe (stretching).

By removing the varicose veins with a stylet (styping) and endoscopic vein dissection (transection and ligation) of the perforating veins.

Prevention of CVI and its complications:

Prevention of CVI and its complications begins with the prevention of varicose veins in the lower extremities. The risk factors are described above and allow for primary prevention by identifying risk groups.

A healthy lifestyle since childhood: a proper diet, eating foods free of preservatives and nitrates, avoiding genetically modified foods in the diet.

Eat plenty of fruit and vegetables rich in vitamins C and E. Avoid excessive weight and constantly monitor the balance of caloric intake and expenditure.

Timely detection and treatment of concomitant diseases (collagenosis, diabetes mellitus, hypertension, dyshormonal disorders, etc.), rational contraception.

Elastic compression is nowadays considered as the earliest prophylaxis, especially in risk groups. The rational choice of compression and the wide range of elastic stockings permit their use without disturbing aesthetics and fashion. Modern advances in civilization, such as long plane journeys with limited mobility and prolonged driving, especially with automatic transmission, which causes one leg to be switched off, may be risk factors for thrombotic complications.

The shape of the feet should be monitored, flat feet should be detected as early as possible and corrected by special physical exercises (weight transfer from heel to toe and back without emphasis on the heel, circular movements of the feet).

Wear rational shoes (3-4 cm heel, supinators for transverse flatfoot, and in risk groups also for longitudinal flatfoot, with a wide toe). Ensure correct walking - heel to toe on the outside of the foot. Avoid flat-soled shoes and high heels. Rational exercise is an important component of the lifestyle. All kinds of dynamic exercise: walking, jogging, swimming are important components not only for primary prevention, but also for the prevention of complications. Exercise should be alternated with rest, keeping them in an elevated position at pelvic level if possible.

Conclusion

In conclusion it should be noted that mankind, condemned to live under gravity and be upright most of the time, exposed to negative effects of adverse environmental, biological and other factors, is a risk group for venous pathology and therefore the problem should be of continuous interest to preventive medicine.

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TEACHING STUDENTS AND IMPARTING SKILLS OF SCIENTIFIC EXPERIMENTAL RESEARCH

Abstract: *The paper under discussion describes the method of teaching young students the procedures for preparing, designing and manufacturing experimental equipment, as well as methods of processing the obtained results of researching the operating characteristics of solar converters. Particular attention is paid to inculcating research skills in gifted pupils and teaching them the accuracy of measurements, as well as compliance with safety rules when working with electric current.*

Key words: *science, research, method, technique, measurement, analysis, data processing, design, creation, installation.*

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ОБУЧЕНИЕ СТУДЕНТОВ И ПРИВИВАНИЕ НАВЫКОВ ПРОВЕДЕНИЯ НАУЧНЫХ ЭКСПЕРИМЕНТАЛЬНЫХ ИССЛЕДОВАНИЙ

Аннотация: *В статье приведены метод обучения молодых соискателей порядкам подготовки, проектирования и изготовления экспериментальной установки, а также способам обработки полученных результатов исследования рабочих характеристик солнечных преобразователей. Уделены особые внимания к прививанию навыков исследователей одаренным ученикам и приучению их к вопросам точности измерений, соблюдение правилам безопасности при работе с электрическим током.*

Ключевые слова: *наука, исследование, метод, способ, измерение, анализ, обработка данных, проектирование, создание, установка.*

Введение

Постановка задачи

Научно-исследовательские работы студентов обычно выполняются со стороны одарённых студентов. Молодое поколение, обладающие какой – то природной сверх способностью, нередко удивляют своими творческими работами. Эти работы, хотя могут быть оригинальными техническими решениями, нередко нуждаются в коррекции. Кроме того, практически во всех учебных заведениях, постоянно встречаются учащиеся, желающие принимать участие в

рационализаторских и изобретательских работах. В связи с этим организуются различные кружки и клубы, позволяющие заниматься ручными творческими работами. Однако, следует отметить, что для формирования зрелого и грамотно действующего научного сотрудника, или магистра, аспиранта, докторанта, который смог бы правильно поставить перед собой цель научного исследования, провести теоретические исследования, а так же проводить экспериментальные исследования - требуются разработать дополнительные методы обучения по творческой деятельности.

Выбор методов теоретических исследований и выполнение определенных фундаментальных работ тоже требует определенных навыков. Однако, пока мы эту задачу отложив в сторону, приступим к пояснению отдельных моментов важных процедур экспериментальных исследований. Такой подход к делу позволяет обучать учащихся к правильной организации научно-исследовательской работы и получать достоверные результаты.

Недостаточный опыт и отсутствие учителей исследовательских работ нередко отражается на неуспеваемости выполняемых магистерских, докторских диссертаций. Исходя из вышеизложенного, авторы настоящей статьи делятся некоторыми идеями по необходимости разработки отдельных методов обучения и прививания навыков исследовательских работ среди учащиеся по специализации альтернативные источники тока (солнечная энергетика). Этот фактор является важным особенно среди студентов технических профессиональных учебных заведений и институтов, университетов.

Методика подготовки к экспериментальному исследованию

Важным моментом подготовки к проведению испытаний, проверок или каких-либо измерений является подбор и подготовка всех элементов[1;2], приборов и узлов установки экспериментального исследования. Действие начинается созданием технического проекта установки. Причем, при проектировании систему измерительного комплекса, следует учитывать точность измерений, погрешности выбираемых измерительных приборов, наличие влияния на выходные параметры и на измерение опытных образцов в установке, показательность, удобность, доступность каждому узлу и т.д. [3, с.120; 4, с.28]. Современная наука, техника и технология требует автоматизирование этих установок, включая исследований. Поэтому, как минимум 50% процентов работы, должна быть автоматизирована, такие как поддержание стабильной температуры или уровня вакуума, других постоянных величин, управление физических параметров, поэтапное поступление проверяемых образцов.

На рисунке 1 приведен порядок подготовки и выполнения работы экспериментальных исследований по изучению, проектированию и исследованию эксплуатационных характеристик солнечных преобразователей. Следует отметить, что создание таких установок по рекомендуемой последовательности и перечня позволяет измерить рабочие параметры не только фотоэлектрических преобразователей, но и термоэлектрических генераторов энергии, предназначенных в условиях сконцентрированного излучения [1]. Как видно из рисунка, что при проектировании экспериментальной установки необходимо предусмотреть измерение всех параметров с достаточной точностью и она должна быть многофункциональной. Такая наглядная последовательность рекомендуемой постановки задачи позволяет правильно планировать исследовательскую работу первоначинающих неопытных исследователей, т.к. в данном случае, соискатель имеет возможности правильно и четко предоставить этапы работ, в которых следует обратить внимание на некоторые вопросы. При этом следует приучить молодого соискателя к максимальному использованию современных высокоточных приборов. Объяснить то, что от степени осведомленности соискателя современной техникой и технологией зависит качество его работы и полученные результаты. Нередко встречаются случаи допущения грубых ошибок в измерении показателей исследуемых образцов, в результате применения морально устаревших измерительных приборов и других оборудований.

Рис.1. Этапы проектирования и изготовление экспериментальной установки.

Немаловажным фактором является оценка погрешностей измерения [6, с.45]. Для прививания навыков скрупулёзного исследователя следует обучать его проводить измерения как минимум три раза, сопоставить данные, оценить варианты допущения ошибок и вычислить среднее значение полученного результата. Так например, использовать формулу:

$$x_{ср} = \frac{x_1 + x_2 + x_3}{3};$$

где $x_1 + x_2 + x_3$ – соответственно результаты первого, второго и третьего измерения. Число 3 означает количество измерений.

Соискателю важно знать каким образом возможно получить точные зависимости параметров исследуемого образца. Это тоже требует определенного знания, т.к. на практике, практически всегда встречается одновременное влияние нескольких факторов на выходные параметры солнечных преобразователей. К числу таких факторов относятся температура окружающей среды, плотности светового излучения, запыленность фронтальных поверхностей и т. п. В таких случаях проектированная и изготовленная установка должна позволять придерживать одни факторы неизменными при изменении других параметров в широких пределах. В качестве примера к этому, можно привести вариант поддерживания постоянной температуры с помощью термостатов (при более теплых температурах) или парами азота, поддерживаемого в сосуде Дьюара и возгоняемого с помощью электрического нагревателя способом поддержания постоянным значения тока, протекаемого через нить нагревательного элемента и изменяющего интенсивность светового излучения в широких пределах.

Поскольку вся исследовательская работа связана с электрическим током, существует угроза удара электрическим током [7;8, с.536], следовательно. важно обучать правилам техники безопасности в обязательном порядке. Однако, когда речь идет о подготовке молодых ученых или работе одаренных студентов с научными исследованиями, данная рекомендация крайне важна.

Методика обработки полученных результатов

Обработка полученных результатов, а также сделать соответствующие выводы необходимо выполнить правильно. Разумеется, в зависимости от направления исследования и типов исследуемых объектов, возможно применение различных методов анализа данных эксперимента. Поверхностный анализ данных измерений не даёт точного представления о полученном. Кроме того, не следует ограничиться только цифровыми данными, которые получаются от измерительных приборов. Наиболее приемлемой в этом случае является работа с графиками. Графики наглядно показывают ход процесса, особенно зависимость параметров друг от друга. При цифровом анализе визуальная оценка не всегда даёт возможность правильно оценить. Но, построение графиков также требует определенных навыков., т.к. в некоторых случаях графики строятся на основе полученных точек с помощью измерительного прибора. Они могут быть недостаточными для точности. Кроме того, усреднение значений зависит от интерполяции и экстраполяции графика. Так например, на рисунке 2 показаны два вида усреднения трех точек полученных по

экспериментальным данным. Две кривые усреднения абсолютно не повторяют друг друга. Хотя они оба кривые получены на основе этих трех точек. Здесь уже соискатель может ошибиться. Поэтому необходимо объяснить правильного построения графиков. Известно то, что при любых измерениях показание параметров снимается шаговым образом. Между этими измерениями существуют интервал. И, при построении графиков, этот интервал соединяется либо прямой, либо кривой линией. Это называется ***интерполяцией*** (рис.3а). Продолжение кривого за пределами измеренных точек принято называть ***экстраполяцией*** (рис.3б). Эти две процедуры должны выполняться исходя из закономерностей изменения точек (или, кривых). Последнее является наглядным при показе насыщения того, или другого параметра. Любой соискатель должен быть внимательным к скачкообразному изменению одного, или несколько точек при получении измерительных данных. Не редко под таким результатом скрывается какая-то научная новизна, или ошибка измерений. В таких случаях следует проанализировать физику или химию процесса. Если соискатель специалист по техническим вопросам (возможно не опытным), то обсуждение результатов эксперимента с профессиональными теоретиками не будет бесполезным.

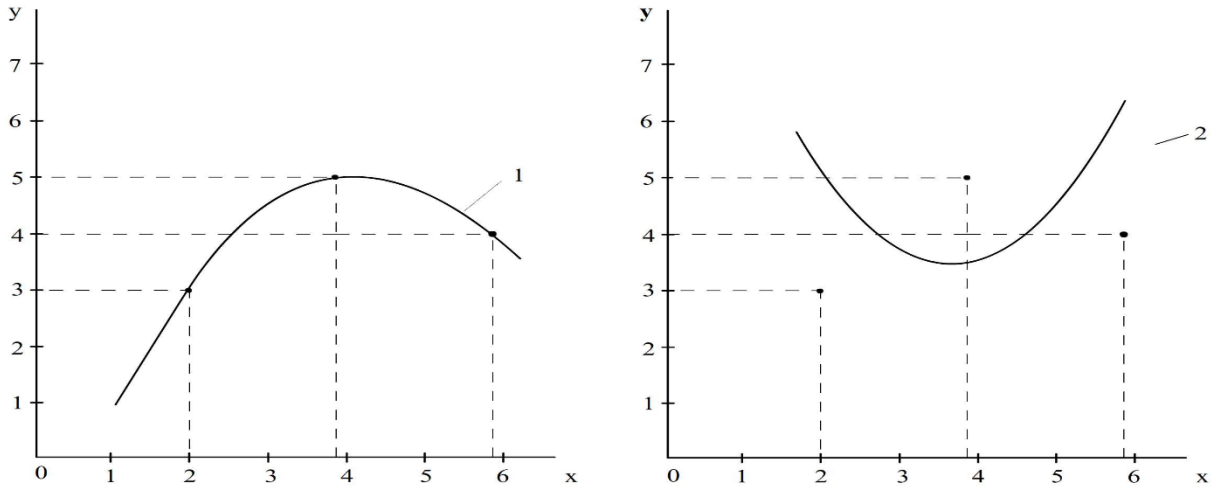

Рис.2. Усреднение полученных трех экспериментальных точек. 1-правильное, 2-неправильное.

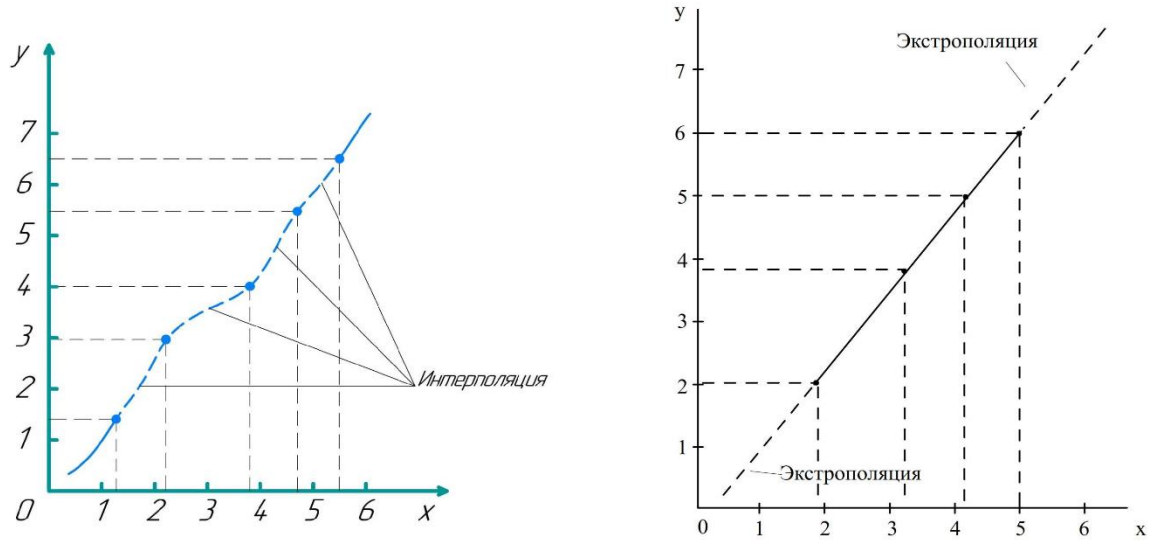

Рис.3. Соединение экспериментальных точек и продолжение графика по форме кривой

За последние годы стало популярной форма исследовательских работ моделирования и программирования. Существуют компьютерные возможности с автоматическим построением графиков с высокой точностью. По этой причине обучающихся следует приучить к программированию исследовательских работ с ранних лет. Для этого наиболее эффективным является прививание навыков понимания физических процессов, протекающих в объеме исследуемого образца [9, с.14026; 10, с.253] и умения сочетания с математическими формулами.

Заключение

Исходя из приведенных выше изложений и рекомендаций можно сделать вывод о том, что для подготовки молодых ученых и исследователей науки, следует выполнить особый подход. Однако этот вопрос, то есть подготовка научных кадров и выполнение научных работ ими в реальной жизни происходит без индивидуального предварительного обучения. Это отражается в чрезвычайной продолжительности выполнения и подготовки диссертационных работ. Методы разнообразны и каждая профессия требует своего наиболее эффективного подхода. При переходе к обучению студентов магистров, аспирантов и докторантов, которые работают над диссертациями на соискание ученых степеней доктора философии, навыкам выполнения научных исследований, несомненно увеличится число молодых ученых, изобретателей и рационализаторов. В настоящей статье рассмотрен вопрос, касающийся только исследователей по солнечной энергетике. Несмотря на высокий опыт и профессионализм, специалисты по педагогическим наукам не смогут обучать студентов профессиональных образовательных учреждений и технических высших учебных заведений. Причиной этого является не квалифицированность по техническим наукам. Поэтому следует расширить опыт научных сотрудников, экспериментаторов и ученых в области обучения молодёжи исследовательским работам.

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FEATURES OF DEVELOPING A STRATEGY FOR THE DEVELOPMENT OF MANUFACTURE OF PRODUCTS THAT HAVE PRIORITY AND PREFERENCES FROM CONSUMERS OF THE SOUTH AND NCFD REGIONS

Abstract: *In the article, the authors consider the role of quality as a tool for promoting the philosophy of quality in the production of competitive and in-demand products at light industry enterprises located in the regions of the Southern Federal District and the North Caucasus Federal District. At the same time, the authors absolutely reasonably confirm the possibility of such an implementation if innovative centers are implemented, saturated with universal and multifunctional equipment, creating prerequisites for the production of the entire range of footwear, namely: men's, women's and, most importantly, children's shoes, the demand for which in regions of the Southern Federal District and the North Caucasus Federal District is quite high. And the use of software will provoke a significant reduction in the cost of its production and provide it with a steady demand in domestic markets with unstable demand.*

Key words: *quality, import substitution, demand, competitiveness, market, profit, demand, buyer, manufacturer, financial stability, sustainable TEP, attractiveness, assortment, assortment policy, demand, sales. paradigm, economic policy, economic analysis, team, success.*

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Introduction

The transition to a market economy in Russia posed a number of problems for light industry enterprises, the main of which are adaptation to

unusual conditions for them of increasing competition, a reduction in the sales market due to high prices for manufactured products and the problem of non-payments, the difficulty of finding suppliers of raw materials, materials and limited financial resources. At the same time, in order to ensure the survival of an enterprise, modern production facilities must have a number of special qualities: great flexibility, the ability to quickly change the assortment.

Production, unable to readjust, adapt to the demands of real conditions, often small groups of consumers, is doomed to bankruptcy; technology becomes so complicated that it requires the introduction of new forms of control, organization and division of labor. The current planning based on the principle "from what has been achieved" is unacceptable, since a sharp increase in the competitiveness of products is necessary; the structure of the cost of production changes, while due to difficulties with suppliers of raw materials, materials, the share of material costs associated with the sale increases; a big problem is to increase the efficiency of the enterprise marketing products. Particular attention should be paid to accelerating the turnover of working capital, reducing excess stocks, and selling products as quickly as possible.

The Russian economy should be able to develop dynamically on the basis of its own internal resources. For such a restructuring of Russian industry, investments are needed, which are currently sorely lacking. One of the most common ways to raise additional funds is to obtain a bank loan. However, this form is not the only one. Leasing is one of the alternative financing options.

Leasing is a form of investment on a return basis, i.e. provision for a certain period of funds that the lessor receives back at a specified time. At the same time, the lessor receives remuneration in the form of a commission for his service.

The lessor provides the lessee with a financial service by acquiring property from the manufacturer (seller) for the full cost of ownership, and the lessee reimburses this cost with periodic installments with interest on the loan.

Leasing is a loan that differs from a traditional bank loan in that it is provided by the lessor to the lessee in the form of property transferred for use, i.e. a kind of trade credit.

In this regard, below is a comparative analysis of the acquisition of equipment at the expense of a loan or by leasing it.

The bank begins the procedure for obtaining a loan by reviewing the application, and most banks will definitely require the property already owned by the enterprise as collateral. The amount of the loan will depend on the value of the property. The bank evaluates the property of the enterprise not at market value, but at the one for which it will be possible to sell the pledge in the shortest possible time. Accordingly, the value of collateral will be greatly underestimated.

In leasing, the lessee receives the equipment it needs and begins to operate it, but at the same time it remains the property of the leasing company. At the same time, the lessee undertakes the obligation to gradually buy out new property from the company, i.e. like renting equipment. That is why, in the case of leasing, no collateral or excellent credit reputation is required - the equipment acquired under leasing remains the property of the lessor until the lessee pays for it in full.

In addition, unlike banks that issue loans (especially to small businesses) for a period of about five years, leasing companies can significantly increase the repayment period. Depending on the purchase, companies allow themselves to expand the scope up to 10 years.

Leasing provides the lessee with the opportunity to use the property in the implementation of entrepreneurial activities and subsequently acquire ownership of it. Leasing agreements may provide for the accounting of property both on the balance sheet of the lessor and the lessee.

Main part

The buyer of equipment on credit has the opportunity to transfer the value of the property to the cost price through depreciation, however, interest on the loan accrued after the capitalization of the property is not included in the cost of the property, therefore, cannot be transferred to the cost price. Lessees, in the case of accounting for property on the balance sheet of the lessor, have the opportunity to include leasing payments in the cost price, which ensures the transfer of the cost of property to the cost price in a much shorter time compared to the purchase of equipment at the expense of borrowed funds. This option, unlike the purchase, also allows you to include in the cost of interest on borrowed funds, which are included in the amount of the lease payment.

The leasing option, taking into account the property on the balance sheet of the lessee, also allows you to transfer the cost of equipment to the cost price through depreciation in a shorter period of time due to the use of a multiplying coefficient to the depreciation rate, as well as to include the cost of interest on attracted funds in the cost price.

The costs of construction and installation works for any method of acquiring equipment could be transferred to the cost, however, in the case of leasing, this could be done in a shorter time (in the case of accounting for property on the balance sheet of the lessor - during the leasing period, when accounting on the balance sheet of the lessee - during the depreciation period of equipment, taking into account the multiplying factor).The costs of construction and installation works in the event of the acquisition of

property at the expense of a loan are subject to inclusion in the cost of fixed assets and are transferred to the cost through depreciation. However, similar costs in the case of leasing, most likely, cannot be taken into account in determining profit.

In terms of value added tax, there is no fundamental difference between the options under consideration, since the tax paid both in the case of leasing and in the case of purchasing equipment is deductible. However, leasing provides an opportunity for a fairly even deduction of VAT paid as part of the lease payment, while when acquiring fixed assets under a supply agreement, the entire amount of tax paid is deductible at the time the property is entered on the balance sheet of the buyer.

The obligation to pay property tax rests with the person on whose balance sheet the property is located. Thus, the tax on the value of the property is paid by the buyer after the transfer of ownership to it, as well as by the lessee, who takes into account the property in accordance with the terms of the leasing agreement on his balance sheet. With leasing, a flexible payment schedule is possible in accordance with production cycles and cash flows. When calculating leasing payments, the leasing company usually takes into account the financial condition of the lessee. If it is a small or newly formed enterprise, or it takes a long time to put the equipment into operation, then the parties to the leasing transaction are likely to set payments in increasing amounts. That is, the amount of individual payments under the leasing agreement will increase over time,

Another advantage of leasing is that if the leasing company is a wholesale buyer of equipment (which is almost always the case), it receives a corresponding discount. And since the price is lower, the payments for leasing this equipment are also lower. Naturally, a firm or enterprise that buys equipment only once cannot receive such discounts. In addition, the lessor is interested in finding the right equipment at the lowest possible price, as this will give him an advantage over competitors.

Distinctive features of the use of credit and leasing mechanisms by the manufacturer are shown in Table 1.

Table 1- Distinctive features of the use of credit and lease payments

Credit	Leasing
Investments are directed to any entrepreneurial activity	Investments are directed to the activation of production activities, the development and modernization of capacities
Control over the intended use of funds is difficult due to the lack of effective tools	Guaranteed control over the intended use of funds, as specifically specified property is leased
100% guarantee of loan repayment and interest for its use is required	The amount of guarantees is reduced by the value of the leased property, which itself is a guarantee
Acquired property is reflected in the balance sheet of the enterprise, depreciation is charged on it	The property is reflected on the balance sheet of the lessor or the lessee; accrued accelerated depreciation
The loan fee is covered by the income received by the company, on which all prescribed taxes are charged	Leasing payments (included in the cost of production) reduce the tax base and stimulate the development of production

Thus, in a state where many enterprises are not able to invest large financial resources in the technical renovation and intensification of production, leasing is the most appropriate way to organize their activities.

A large number of leasing companies or branches of leasing companies operate on the territory of the Southern Federal District and the North Caucasus Federal District (Table 2).

Table 2 - List of operating leasing organizations in the Southern Federal District and the North Caucasus Federal District

Company name	Volume of new business in million rubles without VAT	Quantity lessees
LLC "Gaztechleasing"	2452.21	6
LK URALSIB LLC	3791.92449	87
Europlan	2279.00	1011
CARCADE Leasing	1481.22	1376
Element Leasing LLC	1147.41	466
OOO Raiffeisen-Leasing	1046.68	9

JSC "GLAVLEASING"	1006.13	27
Interleasing LLC	789.90	89
OOO Scania Leasing	740.00	n.a.
GK "KAMAZ-LEASING"	728.59	42
RMB-LEASING LLC	626.16	19
ZAO Leasing Company Medved	421.05	32
CJSC "Client Leasing Company"	367.89	29
UniCredit Leasing LLC	350.52	15
OOO FB-LEASING	309.72	84
GC "NOMOS-leasing"	296.38	81
JSC "GRUZOMOBIL-LEASING"	223.08	48
JSC "Halyk-Leasing"	204.10	1
Leasing-maximum LLC	202.53	47
OOO LK Volzhanin	188.75	10
GC "Absolute"	163.34	24
OOO Globus-Leasing	153.67	19
LC ONZA (ZAO Atlant-M Leasing)	108.85	45
CJSC United Leasing Company CENTER-CAPITAL	106.00	10
GC "Northern Venice"	63.54	2
ZAO RG Leasing	58.37	5
ZAO DeltaLeasing	56.75	16
ZAO INVEST-SVYAZ-HOLDING	55.00	3
RB Leasing LLC	47.73	3
CJSC Capital Leasing	38.67	13
GC "TransCreditLeasing"	38.19	3
LLC "BusinessCarLeasing"	37.51	5

The main volume of leasing transactions is accounted for by CARCADE Leasing, located in Volgograd, and Europlan. Representative offices of this company are located in Krasnodar, Rostov-on-Don, Stavropol.

In general, in the territory of the Southern Federal District and the North Caucasus Federal District, there should be no significant difficulties for shoe industry enterprises in attracting leasing financing for the development of their production.

For the production of women's shoes, while implementing the development strategy for the production of competitive leather goods in the Southern Federal District and the North Caucasus Federal District, the enterprise needs to purchase new, high-performance equipment that meets the latest requirements. The equipment will be purchased on lease. The list of equipment is presented in table 3.

Table 3- Equipment purchased under leasing

Name of equipment, office equipment	Performance	Manufacturer of equipment, office equipment	Installed capacity of equipment, kW	Quantity	Price per piece of equipment, rub.	Equipment cost, rub.
1	2	3	4	5	6	7
Sewing single-needle machine with a flat platform 441 cl.	-	pfaff, Germany	0.27	7	75000	525000
Sewing single-needle core machine 591–900 class.	-	pfaff, Germany	0.27	6	79400	476400

Two-needle sewing machine with a flat platform for stitching with a two-row seam 244 class. Pfaff	-	pfaff, Germany	0.27	4	78100	312400
Sewing two-needle core machine 574–900 cells. Pfaff	-	pfaff, Germany	0.27	3	79600	238800
630 DG	150 pairs/h	"Shen" Germany	4.5	1	341000	341000
640C	250 pairs/h	"Shen" Germany	3.25	1	362100	362100
333E	250 pairs/h	"Shen" Germany	13.0	1	87000	87000
RS2400	120 pairs/h	IROX FOX Italy	7.0	1	29000	29000
755PC	100 pairs/h	"Sigma" Italy	2.2	1	520000	520000
FR4500	150 pairs/h	IROX FOX Italy	7.5	1	42500	42500
173226/P1	-	"Svit" Czech	1.1	1	125000	125000
Total				27		3059200

Condition of the leasing agreement between the enterprise and the leasing company:

1) the cost of technological equipment - the subject of leasing - 3,059,200 rubles;

2) the interest rate on the loan used by the lessor to purchase equipment (accrued on the balance of the loan at the beginning of the year) is 15% per annum. Leasing period 5 years;

3) depreciation rate of technological equipment supplied on lease with a useful life of 10 years - 10% per annum;

4) increasing factor to depreciation - 3;

5) loan repayment evenly. Annually 611,840 rubles;

6) commission fee to the lessor for technological equipment provided under the leasing agreement - 12% of the total expenses of the lessor;

7) additional services (installation of equipment, training of personnel in the use of equipment) (50,000 rubles) are distributed evenly during the leasing period (10,000 for 5 years);

8) VAT rate - 18%.

The leasing payment is determined by the following formula:

LP = AM+NI+PC+PDU+CV+VAT, (1)

where AM - property depreciation; NI - property tax (2.2%); PC - loan fee; PDU - payment for additional services; KV - commission; VAT - rate 18%.

1. The amount of depreciation deductions as part of lease payments is calculated by the formula:

$$AM = \frac{Ц_{им} \cdot N_{ам} \cdot К_{п}}{100}, \quad (2)$$

where is tsim– the price of the subject of leasing;
N_{am}- depreciation rate;
Kp- increasing factor.

$$1годАМ = \frac{3\,059\,200 \cdot 10 \cdot 3}{100} = 917\,760 \text{rub.}$$

$2годАМ = 917760$ rub.

$3годАМ = 917760$ rub.

$4годАМ = 3059200 - 2753280 = 305920$ rub.

$5годАМ = нет$.

2. Calculate the property tax:

$$НИ = \frac{Ц_{ост} \cdot СН_{им}}{100}, \quad (3)$$

where is Tsost- the residual value of the leased asset;
SNim - property tax rate.

$$1годНИ = \frac{(3059200 - 917760) \cdot 2{,}2}{100} = 47111{,}68 \text{rub.}$$

$$2годНИ = \frac{(3059200 - 917760 \cdot 2) \cdot 2{,}2}{100} = 26920{,}96 \text{rub.}$$

$$3\text{годНИ} = \frac{(3059200 - 917760 \cdot 3) \cdot 2{,}2}{100} = 6730{,}24\,\text{rub.}$$

$$4\text{годНИ} = \text{нет.}$$

$$5\text{годНИ} = \text{нет.}$$

3. The loan fee is determined as follows:

$$\text{ПК} = \frac{S_{\text{ok}} \cdot K_{\text{кр}}}{100}, \quad (4)$$

*where*Sok - the balance of the loan;

*TO*кр- Interest on the loan.

The results of calculating the loan fee are presented in Table 4.

Table 4- Loan fee by year

Year	Repayment of a credit	Balance at the beginning of the year	Fee for credit resources at a rate of 15%	Total payments to the bank, rub.
1	611840	3059200	458 880	1070720
2	611840	2447360	367104	978944
3	611840	1835520	275328	887168
4	611840	1223680	183552	795392
5	611840	611840	91776	703616
Total:	3059200	-	1376640	4435840

We will also present the calculation of the final lease payment in tabular form (Table 5).

Table 5- Calculation of leasing payment by years

Year	Depreciation, rub.	Property tax, rub.	Pay per loan, rub.	Pay for additional services, rub.	Komis. remuneration	Leasing-your payment without VAT	VAT	Leasing payment with VAT
1	917760	47111.68	458880	10000	172050.2	1605801.882	289044.3	1894846.2
2	917760	26920.96	367104	10000	158614.2	1480399.155	26471.8	1746871.0
3	917760	6730.24	275328	10000	145178.2	1354996.429	243899.4	1598895.8
4	305920	-	183552	10000	59936.6	559408.64	100693.6	660102.2
5	-	-	91776	10000	12213.1	113989.12	20518.04	134507.2
Total	3059200	80762.88	1376640	50000	547992.4	5114595.226	920627.1	6035222.4

Thus, for 5 years the company will pay the leasing company 6,035,222.4 rubles. These payments will be included in the cost of manufactured products and reduce the tax base. The financial well-being and stability of the enterprise largely depends on the inflow of funds to cover its obligations. The absence of the minimum required cash reserve may indicate financial difficulties. In turn, an excess of cash can be a sign that the company is suffering losses. The reason for these losses can be related both to inflation and the depreciation of money, and to the missed opportunity for their profitable placement and additional income. In any case, it is the analysis of cash flows that will allow you to establish the real financial condition of the enterprise.

Cash flow is the difference between the amounts of cash inflows and outflows of a company over a given period of time. It characterizes the degree of self-financing of the enterprise, its financial strength, financial potential, profitability.

Cash flow is characterized by:

– an inflow equal to the amount of cash receipts (or results in value terms) at this step;

– an outflow equal to payments at this step;

– balance equal to the difference between inflow and outflow.

Cash flow usually consists of partial flows from individual activities:

– cash flow from the investment activity of the enterprise;

– cash flow from operating activities;

– cash flow from financing activities.

Effective cash flow management increases the degree of financial and operational flexibility of the company, as it leads to:

– to improve operational management, especially in terms of balancing receipts and expenditures of funds;

– increasing sales volumes and optimizing costs due to greater opportunities for maneuvering the company's resources;

– improving the efficiency of managing debt obligations and the cost of servicing them, improving the terms of negotiations with creditors and suppliers;

– creation of a reliable base for evaluating the performance of each of the company's divisions, its financial condition as a whole;

– increase the liquidity of the enterprise.

All three types of activity take place in every enterprise.

The cash flow from investing activities includes as an outflow, first of all, the costs distributed over the steps of the billing period for the creation and commissioning of new fixed assets and the liquidation, replacement or compensation of retired fixed assets. In addition, cash flow from investing activities includes changes in working capital (an increase is treated as an outflow of cash, a decrease is treated as an inflow). The outflow also includes own funds invested in the deposit, as well as the costs of purchasing securities of other economic entities intended to finance the project.

As an inflow, cash flow from investing activities includes income from the sale of assets being disposed of (sale of shoes or sale of obsolete equipment). Cash flows from operating activities take into account all types of income and expenses at the corresponding calculation step related to the production of products, and taxes paid on these incomes. The main inflows at the same time are income from the sale of products and other income. Production volumes should be indicated in physical and cost terms. The initial information for determining the proceeds from the sale of products is given by calculation steps for each type of product.

In addition to the proceeds from sales, inflows and outflows of real money, it is necessary to take into account income and expenses from non-sales operations that are not directly related to the production of products. These include, in particular:

– income from property rental or leasing;

– receipt of funds upon closing of deposit accounts and on purchased securities;

– return of loans granted to other participants.

Cash flows from operating activities are generated from the cost of production and distribution of products, which usually consist of production costs and taxes.

Financial activities include operations with funds external to the investment project, i.e. coming not at the expense of the project. They consist of own (share) capital and borrowed funds.

Cash flows from financial activities as inflows include investments of equity capital and borrowed funds: subsidies and subsidies, borrowed funds, including through the issue of the company's own debt securities; as outflows - the costs of repayment and servicing of loans and debt securities issued by the enterprise, as well as, if necessary, the payment of dividends on the shares of the enterprise.

Cash flows from financial activities are formed to a large extent in the development of a financing scheme and in the process of calculating the effectiveness of an investment project.

If the shoes produced are not fully sold, the company loses part of the profit, which is necessary for the further development of production. To reduce losses, the manufacturer must have daily information about the sale of products and make decisions on timely price changes for specific shoe models.

A basis has been prepared for the development of a software product that allows calculating cash receipts from operating activities. This program will become a tool for a sales manager or marketer who controls the sales process of a particular model being produced. As a result of the proposed calculation, we obtain a net inflow from operating activities. A decrease in sales results in a decrease in cash flow and requires a decrease in the selling price of the product in order to increase sales. If such an event does not lead to an increase in cash flow, then the question arises of the advisability of further production of this model.

1. Sales volume (data are entered manually and depend on the model being produced);
2. Product unit price (data entered manually);
3. Revenue = 1· 2;
4. Algorithm for calculating variable costs:

4.1. Raw materials and basic materials = $\sum_{i=1}^{n}$ Consumption rate of the i-th base material·Price of the i-th material;

4.2.1. Ktr - coefficient taking into account transportation costs (data are entered manually (0.15));

4.2. Raw materials and basic materials, including transportation costs = 4.1·4.2.1 + 4.1;

4.3. Auxiliary materials = $\sum_{i=1}^{n}$ Consumption rate of the i-th auxiliary material·Price of the i-th material;

4.4. Auxiliary materials including transport costs = 4.3·4.2.1 + 4.3;

4.5.1. The total capacity of the installed equipment (data is entered manually);

4.5.2. Equipment load factor (data entered manually);

4.5.3. Tsm – shift duration (data are entered manually (Tsm = 8));

4.5.4. Dr – the number of working days per year (data are entered manually (Dr = 249));

4.5.5. Energy losses during transmission (data entered manually (0.85));

4.5. Annual amount of electricity consumed for technological purposes = $\frac{4.5.1 \cdot 4.5.2 \cdot 4.5.3 \cdot 4.5.4}{4.5.5}$;

4.6.1. Price 1 kW (data are entered manually);

4.6. Fuel and energy costs = 4.5·4.6.1;

4.7.1. The number of working days during which the i-th model is produced (data are entered manually);

4.7.2. Release of products per shift (data are entered manually);

4.7. Issue per year = 4.7.1·4.7.2;

4.8.1. The coefficient of labor intensity, taking into account the output (data are entered manually);

4.8. Fuel and energy costs per cost unit = $\frac{4.6 \cdot 100 \cdot 4.8.1}{4.7}$;

5. Payroll;

5.1. Hourly rate of the first category of pieceworkers (data entered manually);

5.2. Average tariff coefficient of piecework workers (data entered manually);

5.3. Production program in labor hours, calculated for a year (data are entered manually);

5.4. Direct wage bill for pieceworkers = 5.1·5.2·5.3;

5.5.1. Number of main time workers of the i-th category (data are entered manually);

5.5.2. Number of auxiliary workers of the i-th category (data are entered manually);

5.5.3. Hourly rate of the main time workers of the i-th category (data are entered manually);

5.5.4. Hourly wage rate for auxiliary time workers of the i-th category (data are entered manually);

5.5.5. Tariff wage fund of the main temporary workers = $\sum_{i=1}^{n}$ 5.5.1 ·5.5.3·4.5.3;

5.5.6. Tariff fund of wages of auxiliary time workers = $\sum_{i=1}^{n}$ 5.5.2 ·5.5.4·4.5.3;

5.6. Number of reserve workers (data entered manually);

5.7. Average tariff coefficient of reserve workers (data entered manually);

5.8.1. Percentage of additional payments to reserve workers (data entered manually);

5.8.2. Daily tariff rate of piecework workers of the first category (data are entered manually);

5.8. Bonuses for reserve workers for qualifications = $\frac{5.8.1}{100} \cdot 5.8.2 \cdot 5.7 \cdot 5.6$;

5.9. Additional payments to reserve workers for performing work on operations=
= 5.8.2·(5.7 - 5.2)·5.6;

5.10. Hourly wage bill for pieceworkers = = 5.4 + (5.8+5.9)·4.5.4;

5.11.1. Percentage of surcharges to daily costs for hours not worked within the working day (data entered manually (0.25));

5.11. Daily wage bill for pieceworkers = $5.10 + \frac{5.10 \cdot 5.11.1}{100}$;

5.12. Daily payroll for time workers = $5.5.5 + \frac{5.5.5 \cdot 5.11.1}{100}$;

5.22. Daily wage bill for support workers = $5.5.6 + \frac{5.5.6 \cdot 5.11.1}{100}$;

5.13.1. Percentage of additional payments to the monthly fund (data are entered manually (9.64));

5.13. Monthly payroll of pieceworkers = $5.11 + \frac{5.11 \cdot 5.13.1}{100}$;

5.14. Monthly payroll of time workers = $\underline{5.12} + \frac{\underline{5.12} \cdot \underline{5.13.1}}{100}$;

5.23. Auxiliary workers monthly payroll= $\underline{5.22} + \frac{\underline{5.22} \cdot \underline{5.13.1}}{100}$;

5.20. Annual wage bill for pieceworkers = 5.13;

5.21. Annual wage bill for time workers = 5.14·4.5.4;

5.24. Auxiliary workers annual payroll = 5.23·4.5.4;

5.15. Basic wage of production workers = 5.10 + 5.5.5·4.5.4;

5.16. Additional wages of production workers = (5.13 + 5.14·4.5.4) - 5.15;

5.17.1. Single social tax rate (data are entered manually (UST = 0.26));

5.17. The amount of contributions to the UST = (5.15 + 5.16)·5.17.1;

5.18. The cost of basic and additional wages per calculation unit, including deductions for UST =

$= \frac{\underline{5.15} + \underline{5.16} + \underline{5.17}}{\underline{4.7.1} \cdot \underline{4.7.2}} \cdot 100 \cdot \underline{4.8.1}$;

5.19. Basic payroll cost per cost unit = $\frac{\underline{5.15}}{\underline{4.7.1} \cdot \underline{4.7.2}} \cdot 100 \cdot \underline{4.8.1}$;

5.20. Variable costs = 4.2 + 4.4 + 4.8 + 5.18;

Algorithm for calculating fixed costs:

6.1. Coefficient taking into account the costs of preparing and mastering production (data are entered manually);

6. Costs for preparation and development of production = 5.19·6.1;

7. Calculation of expenses for the maintenance and operation of equipment:

7.1. Basic and additional wages of auxiliary workers = $\underline{5.24} + \frac{\underline{5.24} \cdot \underline{5.17.1}}{100}$;

7.2.1. Process equipment cost = $\sum_{i=1}^{n}$ Number of i-th technological equipment·Price of the i-th equipment;

7.2.2.1. Coefficient taking into account installation costs (data entered manually (0.1));

7.2.2. The cost of technological equipment, taking into account installation costs = 7.2.1·7.2.2.1 + 7.2.1;

7.2.3. Cost of other equipment = 7.2.2·7.2.2.1;

7.2.4. Total equipment costs = 7.2.2 + 7.2.3;

7.2.5. Percentage of deductions for the repair fund (data are entered manually (8%));

7.2. Equipment repair fund costs = 7.2.4·7.2.5;

7.3.1. Depreciation rate of technological equipment (data are entered manually (10%));

7.3.2. Depreciation rate for other equipment (data entered manually (7.7%));

7.3. Depreciation deductions for the repair fund = 7.2.2·7.3.1+ + 7.2.3·7.3.2;

7.4.1.1. Percentage of deductions for low-value and high-wear tools (data are entered manually (0.05));

7.4.1. Cost of low value and wear tools = 7.2.2·7.4.1.1;

7.4.2.1. Percentage of deductions for the restoration of low-value and high-wear tools (data are entered manually (20%));

7.4.2. The cost of restoring low-value and high-wear tools = 7.4.1·7.4.2.1;

7.4. Costs for low-value and high-wear tools = 7.4.1 + 7.4.2;

7.5.1. The cost of the product of the i-th model (data are entered manually);

7.5.2. Annual output = $\sum_{i=1}^{n} \underline{7.5.1} \cdot 4.7$;

7.5.3. Percentage of deductions for intra-production transfer (data are entered manually (0.82%));

7.5. Intra-production transfer costs = 7.5.2·7.5.3;

7.6. Equipment maintenance and operation costs = 7.1 + + 7.2 + 7.3 + 7.4 + 7.5;

7.7.1. Percentage of deductions for other expenses (data are entered manually (10%));

7.7. Other expenses = 7.6·7.7.1;

7.8. Total costs for the maintenance and operation of equipment = 7.6 + 7.7;

7. The cost of maintaining and operating equipment per calculation unit = $\frac{\underline{7.8} \cdot 100}{\underline{4.7.1} \cdot \underline{4.7.2}} \cdot \underline{4.8.1}$;

8. Calculation of overhead costs:

8.1.1. Number of managers, specialists, employees of the i-th position (data are entered manually);

8.1.2. Monthly salary of the i-th position (data entered manually);

8.1.3. Annual payroll of managers, specialists, employees = $\sum_{i=1}^{n}$ (8.1.1·8.1.2)·12, where 12 is the number of months in a year;

8.1. Basic and additional wages of managers, specialists, employees = $\underline{8.1.3} + \frac{\underline{8.1.3} \cdot \underline{5.17.1}}{100}$;

8.2.1. Price per 1 m2 of the building (data are entered manually);
8.2.2. Production area of the building (data are entered manually);
8.2.3. Capital investment per building = 8.2.1·8.2.2;
8.2. Depreciation of buildings and structures for full restoration = 8.2.3·0.012, where 1.2 is the depreciation rate of buildings and structures for full restoration;
8.3.3.1. Conditional coefficient characterizing fuel consumption in kg for heating 1 m^2 per day with a temperature difference of one degree (data are entered manually (0.02));
8.3.3.2. The volume of the production building (data are entered manually);
8.3.3.3. Duration of the heating period, days (data are entered manually (186));
8.3.3.4. Indoor temperature (data entered manually (18));
8.3.3.5. The outside air temperature is average for the heating period (data are entered manually (6));
8.3.3.6. Price per unit of fuel (data entered manually);

8.3.3. Heating costs = $\frac{\underline{8.3.3.1} \cdot \underline{8.3.3.2} \cdot \underline{8.3.3.3} \cdot (\underline{8.3.3.4} + \underline{8.3.3.5}) \cdot \underline{8.3.3.6}}{1000}$;

8.3.4. Number of fixtures (data entered manually);
8.3.5. Price for 1 kW·h (data entered manually);
8.3.6.1. Luminaire power (data entered manually (75));

8.3.6. Local lighting costs = = $\frac{\underline{8.3.6.1} \cdot \underline{8.3.4} \cdot \underline{4.5.4} \cdot \underline{4.5.3} \cdot \underline{8.3.5}}{1000}$;

8.3.7. Illumination rate 1 m2 of production area (data are entered manually);

8.3.8. General lighting costs = $\frac{\underline{8.3.7} \cdot \underline{8.2.2} \cdot \underline{4.5.3} \cdot \underline{4.5.4} \cdot \underline{8.3.5}}{1000}$;

8.3.9. Total lighting costs = 8.3.6 + 8.3.8;
8.3. Building maintenance costs = 8.3.3 + 8.3.9;
8.4.1. Percentage of deductions for the repair fund of the building (data are entered manually (3%));
8.4. Costs for the repair fund of buildings and structures = 8.2.3·8.4.1;
8.5. Labor protection costs = 8.5.1·(8.5.3 + 8.5.4);
8.6. General production costs = 8.1 + 8.2 + 8.3 + 8.4 + 8.5;
8.7. Other expenses = 8.6·0.1;
8.8. Total overhead costs = 8.6 + 8.7;

8. Cost of overhead costs per calculation unit = $\frac{\underline{8.8} \cdot 100}{\underline{4.7.1} \cdot \underline{4.7.2}} \cdot \underline{4.8.1}$;

9.1. Percentage of deductions for general business expenses (data are entered manually (290%));
9. General expenses = 5.19·9.1;
10. Fixed costs = 6 + 7 + 8 + 9;
11. Production cost = 4 + 10;
12.1. Percentage of deductions for commercial expenses (data are entered manually (1%));
12. Selling expenses = 11·12.1;
13. Full cost = 11 + 12;
14. Interest on loans included in the cost (data entered manually);
15. Profit before taxes = 3 - 4 - 10 - 8.2 - 7.3 - 14;
16.1. Income tax rate (data entered manually (20%));
16. Taxes and fees = 15·16.1;
17. Net income = 15 - 16;
18. Depreciation = 8.2 + 7.3;
19. Net inflow from operating activities = 17 + 18.

This algorithm can be implemented using the Microsoft Excel software product installed at the workplace of almost any specialist.

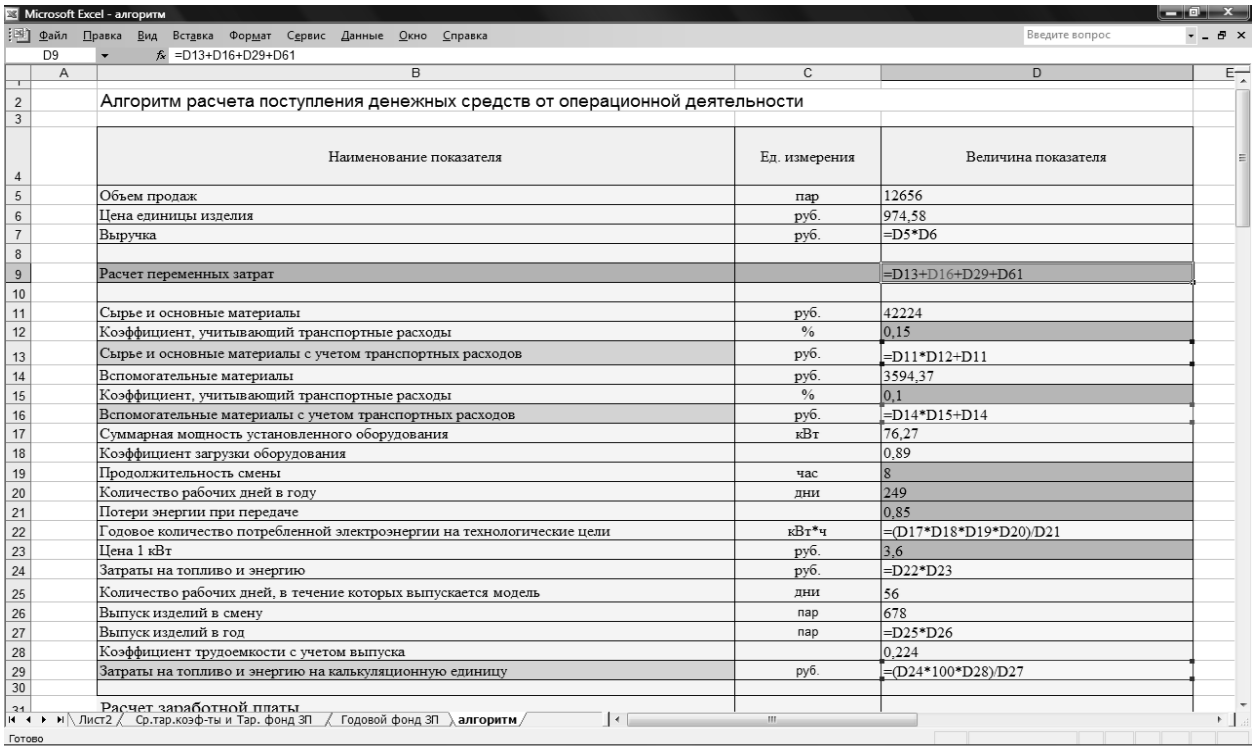
For this calculation, it is important to differentiate the data involved in the calculation. To calculate the cost of a particular manufactured model, the initial data are fixed and variable costs that depend

on production equipment, the composition of the main and auxiliary materials, the number of employees, etc. In the Excel spreadsheet, the cells in which these data are entered are highlighted in blue. In the process of monitoring the sales of a particular model, this data remains unchanged. For another model, the data is corrected.

The calculation also contains data that does not depend on the model and is entered into the calculation table once. They are highlighted in green. Calculation formulas in the table are highlighted in yellow, they are recalculated automatically when the source data changes. The main input data used in the monitoring process are the selling price of a unit of production and sales volume.

Thus, the calculation can be performed daily or in a selected time range, while setting only the sales volume and unit price for a certain period, we will receive an increment in cash flow for this period. The algorithm for calculating cash receipts from operating activities is presented in Table 7.

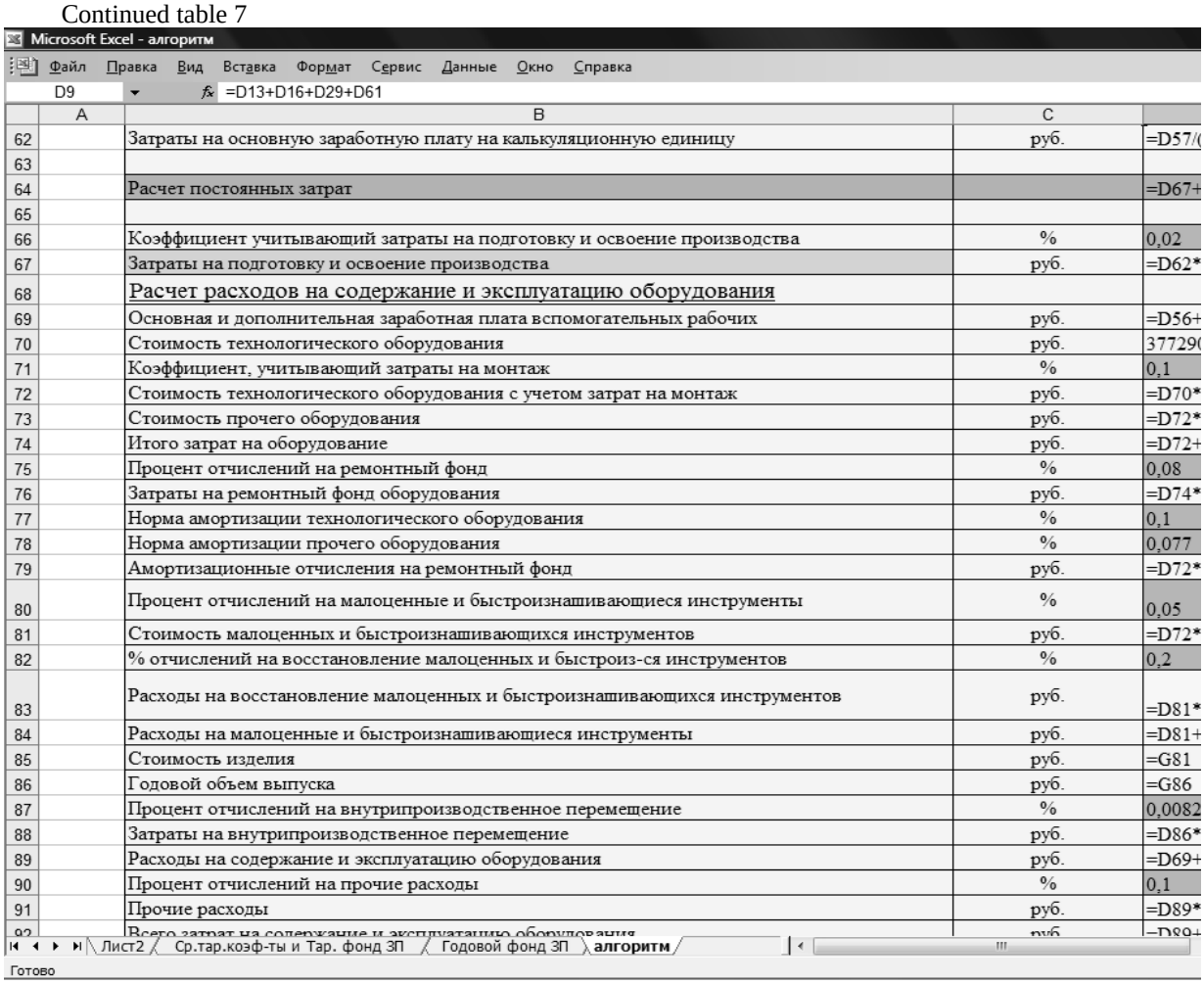
Table 7- Algorithm for calculating cash receipts from operating activities



Алгоритм расчета поступления денежных средств от операционной деятельности

Наименование показателя	Ед. измерения	Величина показателя
Объем продаж	пар	12656
Цена единицы изделия	руб.	974,58
Выручка	руб.	=D5*D6
Расчет переменных затрат		=D13+D16+D29+D61
Сырье и основные материалы	руб.	42224
Коэффициент, учитывающий транспортные расходы	%	0,15
Сырье и основные материалы с учетом транспортных расходов	руб.	=D11*D12+D11
Вспомогательные материалы	руб.	3594,37
Коэффициент, учитывающий транспортные расходы	%	0,1
Вспомогательные материалы с учетом транспортных расходов	руб.	=D14*D15+D14
Суммарная мощность установленного оборудования	кВт	76,27
Коэффициент загрузки оборудования		0,89
Продолжительность смены	час	8
Количество рабочих дней в году	дни	249
Потери энергии при передаче		0,85
Годовое количество потребленной электроэнергии на технологические цели	кВт*ч	=(D17*D18*D19*D20)/D21
Цена 1 кВт	руб.	3,6
Затраты на топливо и энергию	руб.	=D22*D23
Количество рабочих дней, в течение которых выпускается модель	дни	56
Выпуск изделий в смену	пар	678
Выпуск изделий в год	пар	=D25*D26
Коэффициент трудоемкости с учетом выпуска		0,224
Затраты на топливо и энергию на калькуляционную единицу	руб.	=(D24*100*D28)/D27
Расчет заработной платы		

Continued table 7



Microsoft Excel - алгоритм

Файл Правка Вид Вставка Формат Сервис Данные Окно Справка

D9 =D13+D16+D29+D61

	A	B	C	
62		Затраты на основную заработную плату на калькуляционную единицу	руб.	=D57/(
63				
64		Расчет постоянных затрат		=D67+
65				
66		Коэффициент учитывающий затраты на подготовку и освоение производства	%	0,02
67		Затраты на подготовку и освоение производства	руб.	=D62*
68		Расчет расходов на содержание и эксплуатацию оборудования		
69		Основная и дополнительная заработная плата вспомогательных рабочих	руб.	=D56+
70		Стоимость технологического оборудования	руб.	37729(
71		Коэффициент, учитывающий затраты на монтаж	%	0,1
72		Стоимость технологического оборудования с учетом затрат на монтаж	руб.	=D70*
73		Стоимость прочего оборудования	руб.	=D72*
74		Итого затрат на оборудование	руб.	=D72+
75		Процент отчислений на ремонтный фонд	%	0,08
76		Затраты на ремонтный фонд оборудования	руб.	=D74*
77		Норма амортизации технологического оборудования	%	0,1
78		Норма амортизации прочего оборудования	%	0,077
79		Амортизационные отчисления на ремонтный фонд	руб.	=D72*
80		Процент отчислений на малоценные и быстроизнашивающиеся инструменты	%	0,05
81		Стоимость малоценных и быстроизнашивающихся инструментов	руб.	=D72*
82		% отчислений на восстановление малоценных и быстроиз-ся инструментов	%	0,2
83		Расходы на восстановление малоценных и быстроизнашивающихся инструментов	руб.	=D81*
84		Расходы на малоценные и быстроизнашивающиеся инструменты	руб.	=D81+
85		Стоимость изделия	руб.	=G81
86		Годовой объем выпуска	руб.	=G86
87		Процент отчислений на внутрипроизводственное перемещение	%	0,0082
88		Затраты на внутрипроизводственное перемещение	руб.	=D86*
89		Расходы на содержание и эксплуатацию оборудования	руб.	=D69+
90		Процент отчислений на прочие расходы	%	0,1
91		Прочие расходы	руб.	=D89*
92		Всего затрат на содержание и эксплуатацию оборудования	руб.	=D89+

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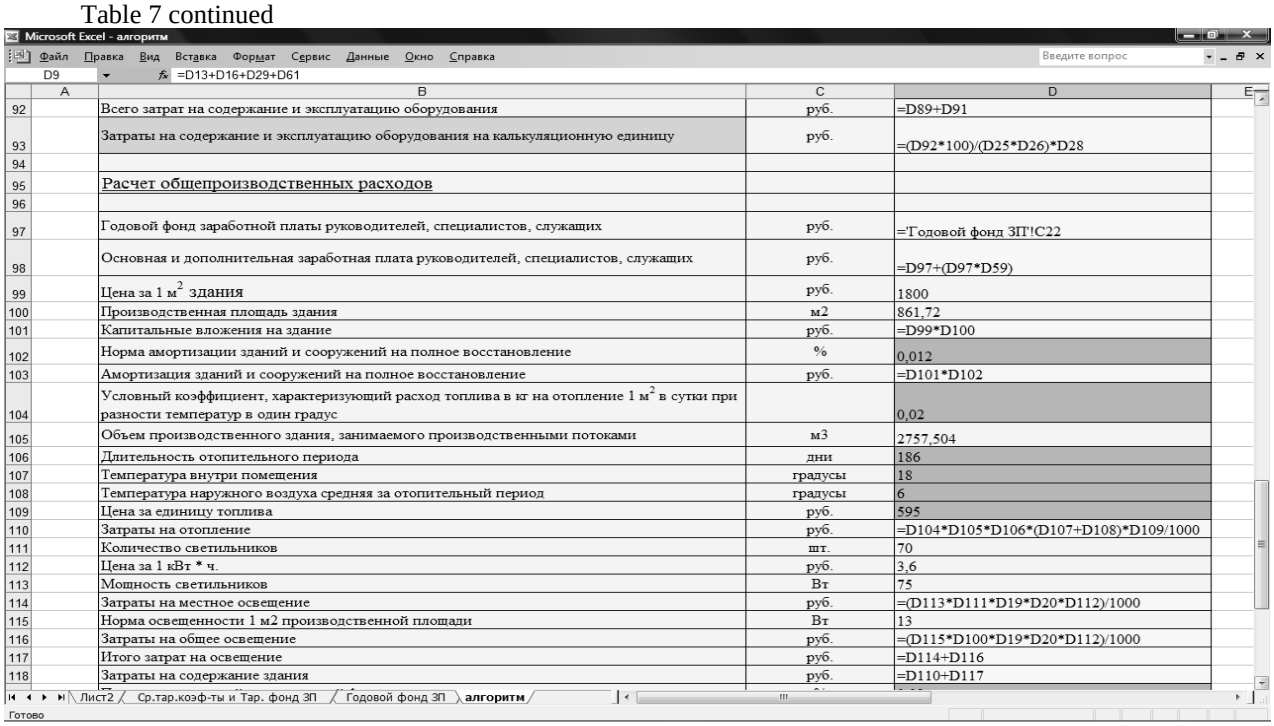
Готово

Table 7 continued



Microsoft Excel - алгоритм

Файл Правка Вид Вставка Формат Сервис Данные Окно Справка

D9 =D13+D16+D29+D61

	A	B	C	D
92		Всего затрат на содержание и эксплуатацию оборудования	руб.	=D89+D91
93		Затраты на содержание и эксплуатацию оборудования на калькуляционную единицу	руб.	=(D92*100)/(D25*D26)*D28
94				
95		Расчет общепроизводственных расходов		
96				
97		Годовой фонд заработной платы руководителей, специалистов, служащих	руб.	='Годовой фонд ЗП'!C22
98		Основная и дополнительная заработная плата руководителей, специалистов, служащих	руб.	=D97+(D97*D59)
99		Цена за 1 м^2 здания	руб.	1800
100		Производственная площадь здания	м2	861,72
101		Капитальные вложения на здание	руб.	=D99*D100
102		Норма амортизации зданий и сооружений на полное восстановление	%	0,012
103		Амортизация зданий и сооружений на полное восстановление	руб.	=D101*D102
104		Условный коэффициент, характеризующий расход топлива в кг на отопление 1 м^2 в сутки при разности температур в один градус		0,02
105		Объем производственного здания, занимаемого производственными потоками	м3	2757,504
106		Длительность отопительного периода	дни	186
107		Температура внутри помещения	градусы	18
108		Температура наружного воздуха средняя за отопительный период	градусы	6
109		Цена за единицу топлива	руб.	595
110		Затраты на отопление	руб.	=D104*D105*D106*(D107+D108)*D109/1000
111		Количество светильников	шт.	70
112		Цена за 1 кВт * ч.	руб.	3,6
113		Мощность светильников	Вт	75
114		Затраты на местное освещение	руб.	=(D113*D111*D19*D20*D112)/1000
115		Норма освещенности 1 м2 производственной площади	Вт	13
116		Затраты на общее освещение	руб.	=(D115*D100*D19*D20*D112)/1000
117		Итого затрат на освещение	руб.	=D114+D116
118		Затраты на содержание здания	руб.	=D110+D117

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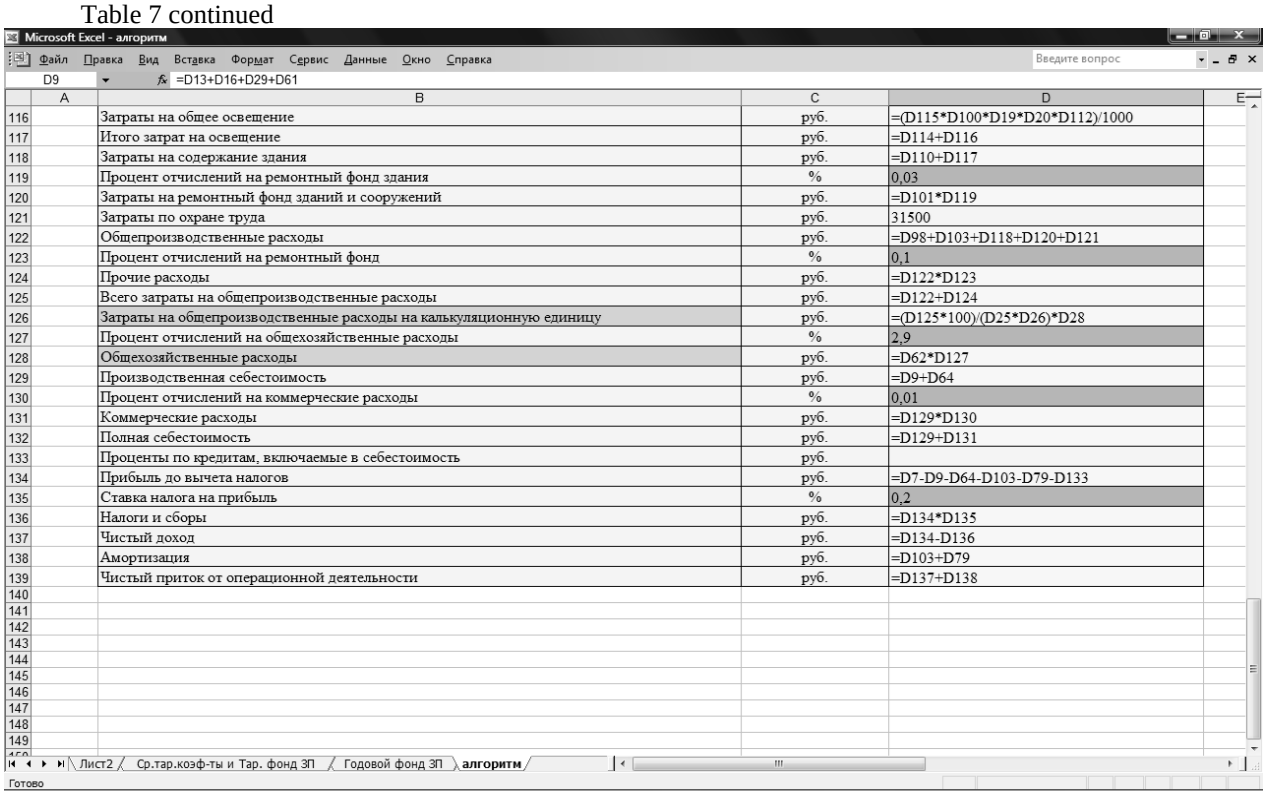
Готово

Table 7 continued



Microsoft Excel - алгоритм

Файл Правка Вид Вставка Формат Сервис Данные Окно Справка

D9 =D13+D16+D29+D61

	A	B	C	D
116		Затраты на общее освещение	руб.	=(D115*D100*D19*D20*D112)/1000
117		Итого затрат на освещение	руб.	=D114+D116
118		Затраты на содержание здания	руб.	=D110+D117
119		Процент отчислений на ремонтный фонд здания	%	0,03
120		Затраты на ремонтный фонд зданий и сооружений	руб.	=D101*D119
121		Затраты по охране труда	руб.	31500
122		Общепроизводственные расходы	руб.	=D98+D103+D118+D120+D121
123		Процент отчислений на ремонтный фонд	%	0,1
124		Прочие расходы	руб.	=D122*D123
125		Всего затраты на общепроизводственные расходы	руб.	=D122+D124
126		Затраты на общепроизводственные расходы на калькуляционную единицу	руб.	=(D125*100)/(D25*D26)*D28
127		Процент отчислений на общехозяйственные расходы	%	2,9
128		Общехозяйственные расходы	руб.	=D62*D127
129		Производственная себестоимость	руб.	=D9+D64
130		Процент отчислений на коммерческие расходы	%	0,01
131		Коммерческие расходы	руб.	=D129*D130
132		Полная себестоимость	руб.	=D129+D131
133		Проценты по кредитам, включаемые в себестоимость	руб.	
134		Прибыль до вычета налогов	руб.	=D7-D9-D64-D103-D79-D133
135		Ставка налога на прибыль	%	0,2
136		Налоги и сборы	руб.	=D134*D135
137		Чистый доход	руб.	=D134-D136
138		Амортизация	руб.	=D103+D79
139		Чистый приток от операционной деятельности	руб.	=D137+D138

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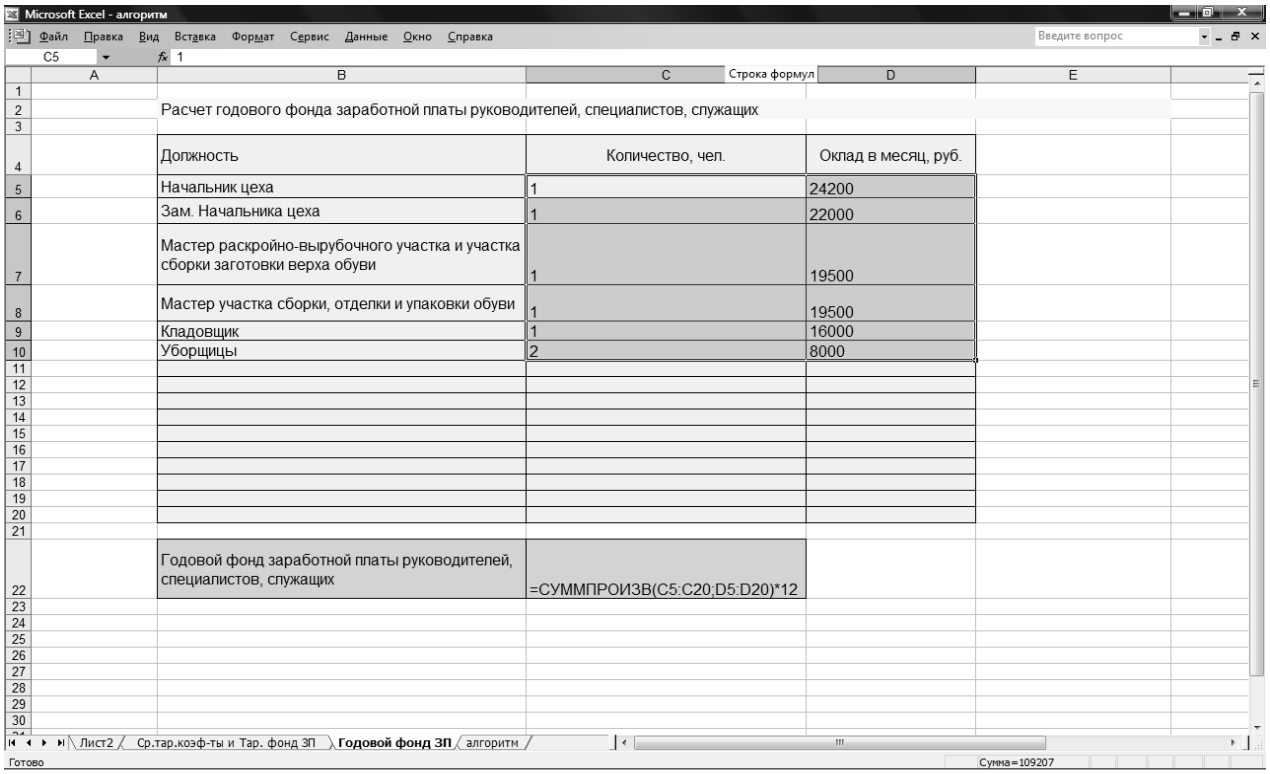
Готово

Table 8- Calculation of the annual payroll of managers, specialists, employees



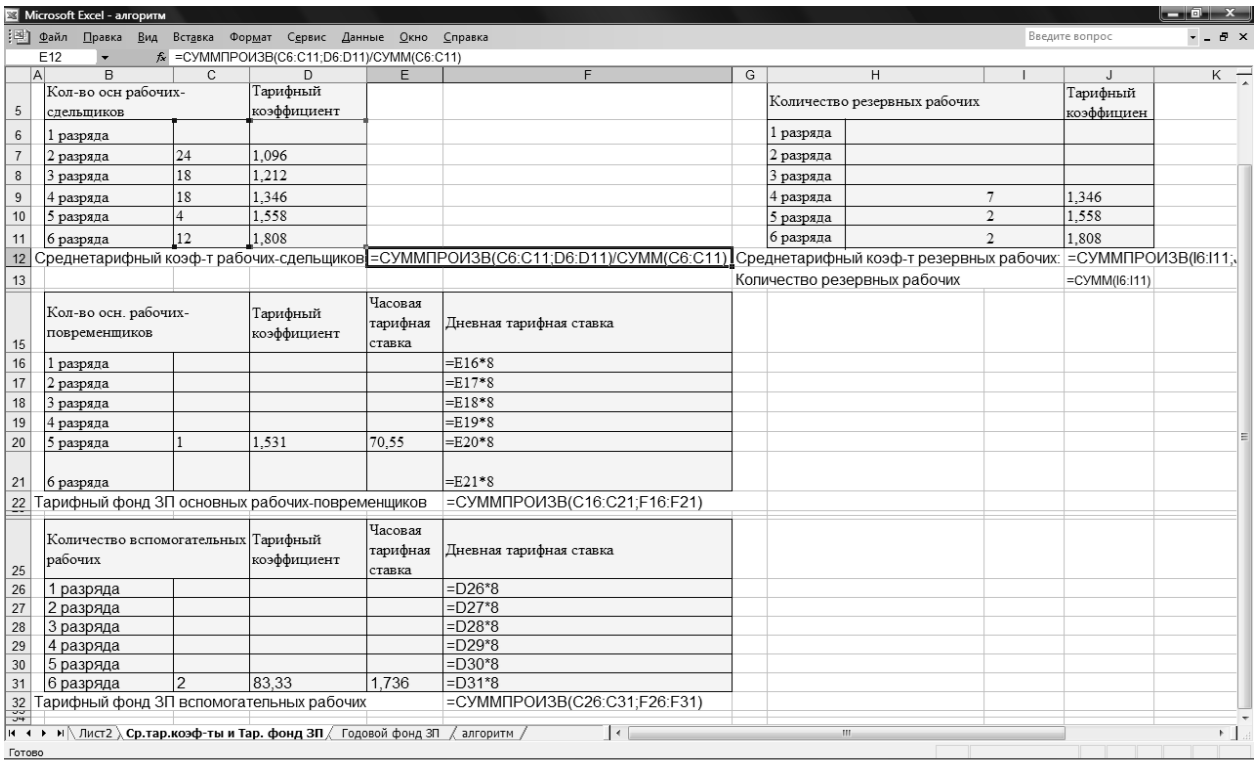
Microsoft Excel - алгоритм

Расчет годового фонда заработной платы руководителей, специалистов, служащих

Должность	Количество, чел.	Оклад в месяц, руб.
Начальник цеха	1	24200
Зам. Начальника цеха	1	22000
Мастер раскройно-вырубочного участка и участка сборки заготовки верха обуви	1	19500
Мастер участка сборки, отделки и упаковки обуви	1	19500
Кладовщик	1	16000
Уборщицы	2	8000

Годовой фонд заработной платы руководителей, специалистов, служащих	=СУММПРОИЗВ(C5:C20;D5:D20)*12

Table9 - Calculation of average tariff coefficients and tariff wage funds



Microsoft Excel - алгоритм

Кол-во осн рабочих-сдельщиков		Тарифный коэффициент
1 разряда		
2 разряда	24	1,096
3 разряда	18	1,212
4 разряда	18	1,346
5 разряда	4	1,558
6 разряда	12	1,808

Среднетарифный коэф-т рабочих-сдельщиков =СУММПРОИЗВ(C6:C11;D6:D11)/СУММ(C6:C11)

Количество резервных рабочих		Тарифный коэффициен
1 разряда		
2 разряда		
3 разряда		
4 разряда	7	1,346
5 разряда	2	1,558
6 разряда	2	1,808

Среднетарифный коэф-т резервных рабочих: =СУММПРОИЗВ(I6:I11;

Количество резервных рабочих =СУММ(I6:I11)

Кол-во осн. рабочих-повременщиков		Тарифный коэффициент	Часовая тарифная ставка	Дневная тарифная ставка
1 разряда				=E16*8
2 разряда				=E17*8
3 разряда				=E18*8
4 разряда				=E19*8
5 разряда	1	1,531	70,55	=E20*8
6 разряда				=E21*8

Тарифный фонд ЗП основных рабочих-повременщиков =СУММПРОИЗВ(C16:C21;F16:F21)

Количество вспомогательных рабочих		Тарифный коэффициент	Часовая тарифная ставка	Дневная тарифная ставка
1 разряда				=D26*8
2 разряда				=D27*8
3 разряда				=D28*8
4 разряда				=D29*8
5 разряда				=D30*8
6 разряда	2	83,33	1,736	=D31*8

Тарифный фонд ЗП вспомогательных рабочих =СУММПРОИЗВ(C26:C31;F26:F31)

Table10 - Algorithm for calculating the receipt of cash from operating activities

Name of indicator	Unit measurements	Indicator value
1	2	3
Volume of sales	steam	12656
Unit price	rub.	974.58
Revenue	rub.	=D5 D6
Calculation of variable costs		=D13+D16+D29+D61
Raw materials and basic materials	rub.	42224
Coefficient taking into account transportation costs	%	0.15
Raw materials and basic materials, including transportation costs	rub.	=D11 D12+D11
Auxiliary materials	rub.	3594.37
Coefficient taking into account transportation costs	%	0.1
Auxiliary materials including transport costs	rub.	=D14 D15+D14
Total capacity of installed equipment	kW	76.27
Equipment load factor		0.89
Shift duration	hour	8
Number of working days per year	days	249
Transmission energy loss		0.85
Annual amount of electricity consumed for technological purposes	kWh	=(D17 D18 D19 D20)/D21
Price 1 kW	rub.	3.6
Fuel and energy costs	rub.	=D22 D23
The number of working days during which the model is released	days	56
Release of products in shift	steam	678
Output per year	steam	=D25 D26
The coefficient of labor intensity, taking into account the output		0.224
Fuel and energy costs per cost unit	rub.	=(D24 100 D28)/D27
Payroll preparation		
Hourly tariff rate of the 1st category of pieceworkers	rub.	50
Average tariff coefficient of pieceworkers		='Average tar.coefficients and Tar. fund ZP'!E12
Production program in labor hours, calculated for a year	hour	153339.19

Direct payroll for pieceworkers	rub.	=D33 D34 D35
Tariff fund of wages of the main time workers	rub.	='Average tar.coefficients and Tar. fund ZP'!F22
Tariff fund of wages of auxiliary time workers	rub.	='Average tar.coefficients and Tar. fund ZP'!F32
Number of reserve workers	people	eleven
Average rate of reserve workers		1.469
Percentage of additional payments to reserve workers	%	0.15
Daily wage rate for pieceworkers of the first category	rub.	400
Bonuses for reserve workers for qualifications	rub.	=D41 D42 D39 D40
Additional payments to reserve workers for performing work on operations	rub.	=D42 (D40-D34) D39
Hourly payroll for pieceworkers	rub.	=D36+(D43+D44)*D20
Percentage of additional payments to daily costs for hours not worked within the working day	%	0.25
Daily payroll for pieceworkers	rub.	=D45+(D45 D46)/100
Daily payroll for time workers	rub.	=D37+(D37 D46)/100
Auxiliary workers' daily wage bill	rub.	=D38+(D38 D46)/100
Percentage of additional payments to the monthly fund	%	9.64
Monthly payroll for pieceworkers	rub.	=D47+(D47 D50)/100
Monthly payroll for time workers	rub.	=D48+(D48 D50)/100
Auxiliary workers monthly payroll	rub.	=D49+(D49 D50)/100
Annual payroll for pieceworkers	rub.	=D51
Annual payroll for time workers	rub.	=D52 D20
Ancillary workers annual wage bill	rub.	=D53 D20
Basic salary of production workers	rub.	=D45+D37 D20
Additional wages for production workers	rub.	=(D51+D52 D20)-D57
Single social tax rate	%	0.26
The amount of contributions to the UST	rub.	=(D57+D58) D59
Costs for the main and additional wages per calculation unit, including deductions for the UST	rub.	=(D57+D58+D60)/(D25 D26) 100 D28

Basic payroll costs per cost unit	rub.	=D57/(D25 D26) 100 D28
Calculation of fixed costs		=D67+D93+D126+D128
Coefficient taking into account the costs of preparation and development of production	%	0.02
Costs for preparation and development of production	rub.	=D62 D66
Calculation of expenses for the maintenance and operation of equipment		
Basic and additional wages of auxiliary workers	rub.	=D56+D56 D59
The cost of technological equipment	rub.	3772900
Installation cost factor	%	0.1
The cost of technological equipment, taking into account the cost of installation	rub.	=D70 D71+D70
Cost of other equipment	rub.	=D72 D71
Total equipment costs	rub.	=D72+D73
Percentage of deductions for the repair fund	%	0.08
Equipment repair fund costs	rub.	=D74 D75
Depreciation rate of technological equipment	%	0.1
Depreciation rate for other equipment	%	0.077
Depreciation deductions for the repair fund	rub.	=D72 D77+D73 D78
Percentage of deductions for low-value and high-wear tools	%	0.05
The cost of low-value and high-wear tools	rub.	=D72 D80
% deductions for the restoration of low-value and high-wear tools	%	0.2
Costs for the restoration of low-value and high-wear tools	rub.	=D81 D82
Costs for low-value and high-wear tools	rub.	=D81+D83
Product cost	rub.	=G81
Annual output	rub.	=G86
Percentage of deductions for intra-production transfer	%	0.0082
Intra-production transfer costs	rub.	=D86 D87

Costs for the maintenance and operation of equipment	rub.	=D69+D76+D79+D84+D88
Percentage of deductions for other expenses	%	0.1
other expenses	rub.	=D89 D90
Total costs for the maintenance and operation of equipment	rub.	=D89+D91
Equipment maintenance and operation costs per cost unit	rub.	=(D92 100)/(D25 D26) D28
Calculation of overhead costs		
Annual payroll for managers, specialists, employees	rub.	='Annual RFP Fund'!C22
Basic and additional wages of managers, specialists, employees	rub.	=D97+(D97 D59)
Price per 1 m2 of the building	rub.	1800
Production area of the building	m2	861.72
Capital investment per building	rub.	=D99 D100
Depreciation rate of buildings and structures for full restoration	%	0.012
Depreciation of buildings and structures for full restoration	rub.	=D101 D102
The volume of the production building occupied by production flows	m3	2757.504
Duration of the heating period	days	186
Indoor temperature	degrees	18
Outside air temperature average for the heating period	degrees	6
Price per unit of fuel	rub.	595
heating costs	rub.	=D104 D105 D106 (D107+D108) D109/1000
Number of fixtures	PC.	70
Price for 1 kWh	rub.	3.6
Luminaire power	Tue	75
Local lighting costs	rub.	=(D113 D111 D19 D20 D112)/1000
Illumination rate 1 m2 of production area	Tue	13
General lighting costs	rub.	=(D115 D100 D19 D20 D112)/1000
Total lighting costs	rub.	=D114+D116
Building maintenance costs	rub.	=D110+D117
Percentage of deductions for the repair fund of the building	%	0.03
Expenses for the repair fund of buildings and structures	rub.	=D101 D119
Labor protection costs	rub.	31500
overhead costs	rub.	=D98+D103+D118+D120+D121

Percentage of deductions for the repair fund	%	0.1
other expenses	rub.	=D122 D123
Total general production costs	rub.	=D122+D124
General production costs per cost unit	rub.	=(D125 100)/(D25 D26) D28
Percentage of deductions for general business expenses	%	2.9
General running costs	rub.	=D62 D127
Production cost	rub.	=D9+D64
Selling expenses	rub.	=D129 D130
Full cost	rub.	=D129+D131
Interest on loans included in the cost	rub.	
Profit before taxes	rub.	=D7-D9-D64-D103-D79-D133
Income tax rate	%	0.2
Taxes and fees	rub.	=D134 D135
net income	rub.	=D134-D136
Depreciation	rub.	=D103+D79
Net inflow from operating activities	rub.	=D137+D138

Of great importance in the management of output is the assessment of the actual output and sales within the limits of production capacity, i.e. within the limits of "minimum - maximum" volume of production. Comparison with a minimum, break-even volume allows you to determine the degree, or zone, of the "security" of the organization and, with a negative value of "security", withdraw certain types of products from production, change production conditions and thereby reduce costs or stop production.

Comparison of the achieved output with the maximum volume determined by the production potential of the organization allows you to assess the possibility of increasing profits with an increase in production volumes if demand or market share of the organization increases.

For a shoe company seeking a strong market position, pricing is key to the success of the chosen strategy. The price is a tool to stimulate demand and at the same time is the main factor in long-term profitability.

Getting the maximum profit is possible with the optimal combination of sales volume and prices for products. However, it is not possible to sell an unlimited number of units of shoes at the same price. An increase in sales leads to market saturation and a drop in effective demand for products. At some point in time, in order to sell a large number of shoes, it will be necessary to reduce the price.

When developing a pricing strategy, goals related to both profit and sales volume and competition are considered. The price determines the profitability of all activities, not only setting the level of profit, but also fixing through the volume of sales the conditions under which the payback of all costs is achieved (break-even point). The price charged for a commodity directly determines the level of demand and, consequently, the volume of sales under elastic demand. The shoe industry is a material-intensive industry, so the relative value of fixed costs in the total cost of footwear will be small, therefore, the price elasticity of demand is high. This means that a decrease in price must be accompanied by a significant increase in demand for shoes. Too high or low price can undermine the success of the product.

In this regard, it is necessary to carry out a break-even analysis.

The break-even point is the volume of production at the sale of which the sales proceeds cover the total costs. At this point, the revenue does not allow the company to make a profit, but there are no losses either.

Consider the various ratios of sales volumes and prices for manufactured products. Price reduction occurs when a company uses a discount system to increase sales. This event leads to an increase in sales proceeds and additional profit. However, the area of income is not unlimited - when a certain volume of production is reached, its further expansion becomes economically unprofitable. At some point, the positive

effect of an increase in sales is lower than the negative effect of a price reduction.

The formula for determining the break-even point is:

$$В_{кр} = \frac{З_{пост}}{Ц - З^{1цу}_{пер}}, \qquad (5)$$

where Zpost- total fixed costs;
C- the selling price of a unit of production;
$З^{1цу}_{пер}$ - variable costs per unit of output.

Table11 - Initial data for building a break-even point

Price products, rub.	Revenue from sales, rub.	Fixed costs, rub.	Variable costs, rub.	Fixed costs per unit of production, rub.	Variable costs per unit of production, rub.
1150	5821300	2868860	3116100	226.67	615.586
1145	6520775	2868860	3505840	226.67	615.599
1140	7213920	2868860	3895390	226.67	615.579
1135	7900735	2868860	4284920	226.67	615.560
1125	8543250	2868860	4674710	226.67	615.579
1115	9171990	2868860	5064010	226.67	615.61
1100	9744900	2868860	5453546	226.67	615.59
1090	10346280	2868860	5843090	226.67	615.58
1075	10884 375	2868860	6232750	226.67	615.58
1060	11403480	2868860	6622160	226.67	615.56
1040	11845600	2868860	7011700	226.67	615.60
1010	12143230	2868860	7401240	226.67	615.59
975	12326944	2868860	7790780	226.67	615.579
950	12624550	2868860	8180340	226.67	615.572
790	10998380	2868860	8569840	226.67	615.56

Table12 - Analysis of the break-even conditions of a shoe company

Monthly sales volume, pairs	Product price, rub.	General costs, rub.	Profit Loss) from product sales, rub.	Dot break even
5062	1150	5984960	-163200	5368.4
5695	1145	6374700	146075	5419.07
6328	1140	6764250	449670	5470.53
6961	1135	7153780	746955	5522.98
7594	1125	7543570	999680	5631.6
8226	1115	7932870	1239120	5744.6
8859	1100	8322406	1422494	5922.38
9492	1090	8711950	1634330	6047.1
10125	1075	9101610	1782765	6244.5
10758	1060	9491020	1912460	6454.9
11390	1040	9880560	1965040	6759.8
12023	1010	10270100	1873130	7273.8
12656	975	10659640	1667304	8004.2
13289	950	11049200	1575350	8578.4
13922	790	11438700	-440320	16446.1

The graph in Figure 1 shows the behavior of variable and fixed costs, as well as sales proceeds at various prices and sales volumes for the given initial data.

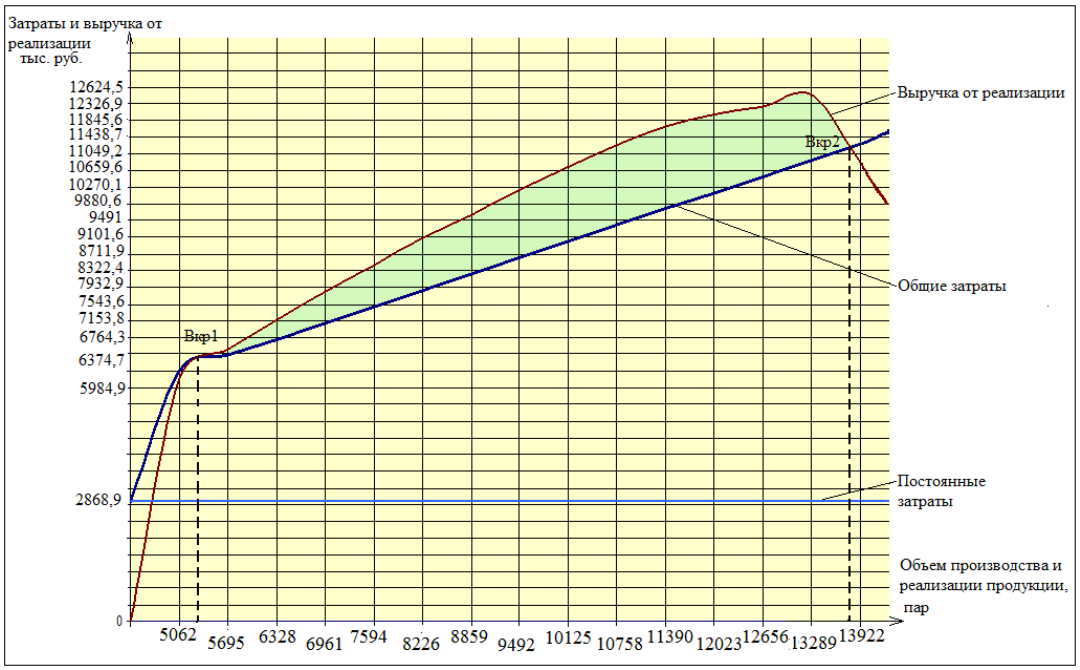


Figure 1- Breakeven Chart

As you can see from Figure 1, the revenue line intersects the total cost line at two points. This means that there are two levels of output and sales of products, at which the total costs are equal to the proceeds from the sale, i.e. two breakeven points. The behavior of total costs is most strongly influenced by variable costs, which change in accordance with changes in the volume of production and sales of products.

The growth in production and sales is accompanied by a constant price reduction. The minimum allowable price per unit of production, providing coverage of total costs, will correspond to the second break-even point; the maximum allowable - the first breakeven point. Calculations show that the transition from unprofitable to profitable production takes place with a production volume of women's summer shoes of 5368.4 units - this is the first break-even point, the second break-even point occurs with a production and sales volume of 16446.1 units. On the field between the two break-even points, there is an area within which the optimal ratios of volume, selling price and, accordingly, profit are achieved. The maximum profit will be received when selling products at a price of 1040 rubles,

For the break-even operation of the enterprise, the selling price should not be less than the cost of a pair of shoes, which in this case is 842.26 rubles. At a price of 790 rubles. the cost price does not overlap, and immediately there are losses. When evaluating the consequences of a price reduction on a change in the break-even point, it is necessary to additionally evaluate the effect of a price reduction on an increase in sales volumes. In other words, an increase in prices can affect the decrease in sales in such a way that the additional profit per unit received as a result of the impact of the price factor will be offset by the amount of losses from the decrease in sales. And vice versa,

Thus, the calculated threshold values of production set the area of production volume and sales of products, within which the break-even activity of the enterprise is ensured. To assess the effectiveness of the production activities of a shoe enterprise, it is necessary to analyze the annual results of the enterprise's work on the production of men's and women's footwear assortment.

Table 13 presents the results of the shoe enterprise for the production of a summer range of shoes.

Table13 - Generalized results of the work of a shoe company for the production of a summer assortment of shoes

Indicators	The value of the indicator for different sales volumes per month, %			
	100	80	60	40
Sales volume, pairs	28168	22534	16901	11266
Sales proceeds, thousand rubles	24033.9	19226.86	14420.58	9612.56
Unit cost of production, rub.	726.7	726.7	726.7	726.7

Full cost, thousand rubles	20373.34	17265.01	14156.57	11047.32
Including raw materials and basic materials, thousand rubles.	12628.89	10102.96	7577.45	4402.8
Profit from sales, thousand rubles	3660.56	1961.85	264.01	-1434.8
Income tax, thousand rubles	732.112	392.37	52.802	-
Net profit, thousand rubles	2928.448	1569.48	211.208	-
Product profitability, %	15.2	10.2	1.8	-

From the analysis of table 13, it can be seen that in the event of a decline in sales and sales of shoes, less than 60% of the production volume brings losses to the enterprise.

Table 14 presents the results of the shoe enterprise for the production of the autumn range of shoes.

Table14 - Generalized results of the work of the shoe enterprise for the production of the autumn assortment of shoes

Indicators	The value of the indicator for different sales volumes per month, %			
	100	80	60	40
Sales volume, pairs	25358	20286.4	15214.8	10143.2
Sales proceeds, thousand rubles	30640.47	24512.37	18384.27	12256.19
Unit cost of production, rub.	1024.58	1024.58	1024.58	1024.58
Full cost, thousand rubles	25747.78	21683.33	17618.45	13554.44
Vincluding raw materials and basic materials, thousand rubles	17105.57	13661.88	10263.34	6842.22
Profit from sales, thousand rubles	4892.69	2829.04	765.82	-1298.25
Income tax, thousand rubles	978.5	565.8	153.16	-
Net profit, thousand rubles	3914.19	2263.23	612.66	-
Product profitability, %	15.9	11.5	4.2	-

Table 15 presents the results of the work of a shoe company for the production of a winter range of footwear.

Table15 - Generalized results of the work of a shoe company for the production of a winter assortment of shoes

Indicators	The value of the indicator for different sales volumes per month, %			
	100	80	60	40
Sales volume, pairs	26114	20891	15668	10445
Sales proceeds, thousand rubles	45032.84	36025.56	27019.46	18012.69
Unit cost of production, rub.	1435.54	1435.54	1435.54	1435.54
Full cost, thousand rubles	37487.78	31183.45	24878.18	18573.85
Including raw materials and basic materials, thousand rubles	28072.03	22457.8	16842.75	11228.5
Profit from sales, thousand rubles	7545.06	4842.11	2141.28	-561.16
Income tax, thousand rubles	1509	968.42	428.26	-
Net profit, thousand rubles	6036	3873.69	1713	-
Product profitability, %	16.8	13.4	7.9	-

Table 16 shows the results of the work of a shoe company for the production of a spring assortment of shoes.

Table16 - Generalized results of the work of a shoe company for the production of a spring assortment of shoes

Indicators	The value of the indicator for different sales volumes per month, %		
	100	80	60
Sales volume, pairs	29661	23728.8	17796.6
Sales proceeds, thousand rubles	31026.82	24821.45	18616.09
Unit cost of production, rub.	890.2	890.2	890.2
Full cost, thousand rubles	26405.04	21576.03	18400.86
Vincluding raw materials and basic materials, thousand rubles	17648.54	14118.8	10589.1
Profit from sales, thousand rubles	4621.78	3245.42	215.23
Income tax, thousand rubles	924.36	649.1	43
Net profit, thousand rubles	3697.4	2596.3	172.23
Product profitability, %	14.9	13	1.1

These calculations indicate that with 100% of the sale of men's and women's shoes in the specified period of time, not only the costs of production and sale of products are covered, but there is also a profit in the amount of 3697.4 thousand rubles. This indicates the effective operation of the enterprise, as well as the correct marketing and assortment policy. Product profitability is 14.9%.

With the implementation of 60% of shoes, the activity of the enterprise brings insignificant income. Basically, this income is achieved through the sale of men's shoes, since losses are observed in the women's assortment with these volumes. A further decrease in sales volumes will lead to an increase in losses. To solve this problem, the conditions for the sale of shoes within a specified period of time, as well as the sales volume of at least 50%, are necessary. If such a situation arises, it is necessary to attract borrowed funds to cover the costs and subsequent output.

Table 17 presents the annual results of the shoe enterprise for the production of men's and women's footwear assortment.

Table17- Annual results of the shoe enterprise for the production of men's and women's shoes

Indicators	Jan.	Feb.	March	Apr.	May	June	July	Aug.	Sen.	Oct.	Nov.	Dec.
1	2	3	4	5	6	7	8	9	10	11	12	13
Sales volume, pairs	26114	26114	29661	29661	29661	28168	28168	28168	25358	25358	25358	26114
Sales proceeds, thousand rubles	45032 .84	45032 .84	31026 .82	31026 .82	31026 .82	24033 .9	24033 .9	24033 .9	30640 .47	30640 .47	30640 .47	45032 .84
Unit cost of productio n, rub.	1435. 54	1435. 54	890.2	890.2	890.2	726.7	726.7	726.7	1024. 58	1024. 58	1024. 58	1435. 54
Full cost, thousand rubles	37487 .78	37487 .78	26405 .04	26405 .04	26405 .04	20373 .34	20373 .34	20373 .34	25747 .78	25747 .78	25747 .78	37487 .78
Profit from sales,	7545. 06	7545. 06	4621. 78	4621. 78	4621. 78	3660. 56	3660. 56	3660. 56	4892. 69	4892. 69	4892. 69	7545. 06

thousand rubles												
Income tax, thousand rubles	1509	1509	924.36	924.36	924.36	732.112	732.112	732.112	978.5	978.5	978.5	1509
Net profit, thousand rubles	6036	6036	3697.4	3697.4	3697.4	2928.448	2928.448	2928.448	3914.19	3914.19	3914.19	6036
Product profitability, %	16.8	16.8	14.9	14.9	14.9	15.2	15.2	15.2	15.9	15.9	15.9	16.8

Most often, an enterprise sells shoes through stores with payment after sale, concluding contracts with trade, indicating the timing of receipt of funds to the manufacturer's accounts. In this case, if the footwear is in demand and is sold in full, then the company receives money on time, which is also needed to pay salaries, purchase working capital and other expenses to ensure the development of production.

During the year, the company produces 327,903 pairs of shoes. With 100% sales of these products, the company will receive revenue in the amount of 392202.1 thousand rubles. However, this situation is not always the case.

For example, with the sale of autumn low shoes in the amount of 80% of the production volume, the profit is reduced by 43.15% and amounts to only 1178 thousand rubles, while the sale of shoes less than 47.4% of the production volume brings losses to the enterprise. Due to the lack of funds, it is necessary to reduce the volume of production, delay the payment of wages to workers, for which at present the heads of the enterprise are liable, sometimes even criminally. If such a situation arises, it is necessary to attract borrowed funds to cover costs and organize subsequent production, which is currently associated with certain difficulties: the interest on the loan has been significantly increased (up to 18%), the loan repayment period has been reduced, etc., leading to an even greater increase in production costs.

In market conditions of management, an effective management system requires a rational organization of marketing activities, which largely determines the level of use of the means of production at the enterprise, the growth of labor productivity, the reduction of production costs, the increase in profits and profitability. This is due to the fact that marketing activity is not only the sale of finished shoes, but also the orientation of production to meet the effective demand of buyers and active work in the market to maintain and form demand for the company's products, and the organization of effective channels for the distribution and promotion of goods.

In a dynamically changing market environment, the performance of an enterprise, including a shoe one, largely depends on the effective results of the production, sales, financial and marketing policies of the enterprise itself, which creates the basis for bankruptcy protection and a stable position in the domestic market.

Thus, shoe companies should focus on both external (consumer enterprises, competition, market conditions, etc.) and internal factors, such as sales volume, profitability, covering basic costs, etc. However, it is impossible to take into account and foresee all situations that may arise during the sale of shoes, i.e. some shoe models are not in demand at a certain stage. In this case, another, usually not advertised, side of marketing should appear: if shoes, even without taking into account market requirements, have already been produced, then they must be sold. For this purpose, in order to respond to lower prices of competitors, it is necessary to reduce too large stocks, get rid of damaged, defective shoes, liquidate leftovers, attract a large number of consumers, stimulate shoe consumption, using discounts. There are about twenty types of discounts, but for shoes the most common are those types of discounts that are used at various levels of the enterprise, sales organizations, and trade. In addition to using discounts, an enterprise can go for an initiative price reduction in case of underutilization of production capacities, a reduction in market share under the pressure of competition from competing enterprises, etc. In this case, the enterprise takes care of its costs, developing measures to reduce them by improving equipment and technology, introducing new types of materials into production, and constantly improving the quality of products. And all this requires large financial costs from enterprises, but, nevertheless, helps to increase the competitiveness of certain types of leather products and the enterprise as a whole. In addition, the greater the number of footwear products produced, the more production costs are reduced, which leads to lower prices, and most importantly, creates such conditions for the functioning of the market that would not allow other competing enterprises to enter it and would cause a positive reaction from consumers. .

With the transition to a new economy, improving the quality and competitiveness of leather products has become a strategic task for all leather and footwear

enterprises in the country and the region as a whole, it becomes necessary to take into account the laws and market requirements, master a new type of economic behavior, and adapt all aspects of their activities to a changing situation. , changes in consumer demand should be taken into account with defending the interests of consumers before industry. The fulfillment of these tasks is possible only on the basis of an in-depth study by manufacturers of domestic footwear products, the needs of hotel groups (consumer segments), methods for examining the quality and competitiveness of footwear. The current situation in the shoe industry of the Southern Federal District and the North Caucasus Federal District is not least the result of the inability of many managers of shoe enterprises in the Southern Federal District and the North Caucasian Federal District to quickly adapt to the new requirements put forward by the market, to the competition that has arisen from Russian and foreign manufacturers. Therefore, the current situation led to the development of a development strategy for the production of competitive leather goods in the Southern Federal District and the North Caucasus Federal District.

In our work, issues related to the development of domestic shoe production in the Southern Federal District and the North Caucasus Federal District were considered. As a result of the work carried out, favorable conditions for the implementation of the strategy were identified:

– a large concentration of skilled labor;
– coordinated specialization of producers;
– long-term traditions of shoe craft;
– a small number of local suppliers of high-quality raw materials, component materials;
– high demand in the Southern Federal District and the North Caucasus Federal District for high-quality footwear.

We believe that for the development of domestic manufacturers of competitive products it is necessary:

– increasing the investment attractiveness of the industry;
– creation of conditions conducive to improving the provision of the industry with material and raw materials;
– protection of the internal market from illegal circulation of goods;
– export promotion;
– legalization of preferential taxation of producers;
– development of an interconnected system of supply and marketing, production, technology and innovation, pricing, financial, personnel policy and personnel management;
– improving the quality and design of products;
– uniting the efforts of all manufacturers to promote the footwear of the region;
– development of a set of measures of regional significance aimed at improving the socio-economic situation by creating new jobs;
– studying the life cycle of products and the use of advertising and media;
– strengthening control and introduction of modern ISO quality management systems, development of a dealer and distribution network;
– concessional lending under targeted federal and regional programs (“Family”, “Children”, “Maternity”);
– expanding the practice of leasing schemes;
– with increased commercial risk and in conditions of uncertainty, it is advisable to use outsourcing.

In the technological part, a competitive assortment of men's, women's and children's shoes has been developed, taking into account factors affecting consumer demand: compliance with the main fashion trends, economic, social and climatic features of the regions of the Southern Federal District and the North Caucasus Federal District. Within the framework of the developed strategy, the production of competitive products will be organized using modern mechanized innovative technical processes, as well as to meet the demand of an elite consumer, using manual labor.

Innovative technological processes have been developed for the production of men's, women's and children's shoes using modern technological equipment with advanced nanotechnologies, which form the basis for reducing the cost of footwear and, thereby, increasing its competitiveness, in comparison with those produced by the leading companies in the world, with the possibility of a wide range of products. production of shoes not only by type, but also by fastening methods. The layout of technological equipment is proposed, on the basis of which it is possible to form a technological process for the production of men's and women's, as well as children's shoes with optimal power, regardless of the production area and the form of production organization.

In the economic part, an algorithm for calculating the receipt of funds from the operating activities of shoe enterprises is given. The calculations were carried out on the basis of assessing the degree of implementation and dynamics of production and sales of products, determining the influence of factors on the change in the value of these indicators, identifying on-farm reserves and developing measures for their development, which should be aimed at accelerating the turnover of products and reducing losses, which will achieve a significant economic effect.

Models for the sale of shoes within a month at 100%, 80%, 50% are proposed. As a result, calculations show that with 100% of the sale of shoes, compensation is provided not only for the production

and sale of shoes, but also a net profit of 1900.54 thousand rubles remains, which indicates the effective operation of the enterprise, as well as the correct marketing assortment policy of the enterprise. We also make a profit when selling 80% of men's, women's and children's shoes.

When selling 50% of shoes from the volume of production, the enterprise incurs losses. To solve this problem, the conditions for the sale of shoes within a specified period of time and the volume of sales of at least 50% are necessary. If such a situation arises, it is necessary to attract borrowed funds to cover costs and organize subsequent production through the use of a bank loan, factoring, and leasing.

Based on the current situation in the economy of our country, in our opinion, an equally significant problem in the development of the regional consumer market is the lack of a full-fledged regulatory framework that ensures the functioning of the mechanism of state regulation of the consumer market in the regions. Based on this, it is the state and regional intervention that should correct the situation on the domestic footwear market in the region, and, thus, there will be an opportunity for the development of competitive leather goods production.

From the analysis made, we single out the following trends in the development of shoe production in the Southern Federal District and the North Caucasus Federal District:

1. Due to the high level of migration of the able-bodied population of the Southern and North Caucasian Federal Districts to developing industries, the footwear industry of our districts can rightfully be called developing.

2. In the Southern and North Caucasian federal districts, close attention is justified to the issues of high-quality provision of the industry with qualified specialists employed in the field of leather and footwear (a large number of specialized educational institutions for training personnel). An important factor is the increase in the investment attractiveness of the industry, especially from the side of regional authorities, and the creation of conditions for increasing its competitiveness. It is necessary to impose high duties on imported imported finished footwear and low duties on imported basic and auxiliary materials and equipment, and it is also necessary to regulate the level of prices and tariffs that would guarantee the manufacturer and trade as a whole the reimbursement of costs and the accumulation of funds for the improvement and further development of production.

Thus, the prerequisites for the development of competitive production in our region are significant and relevant.

In conclusion, we propose a set of the following measures:

1. Creation of a regional program for the development and support of domestic shoe manufacturers in the Southern Federal District and the North Caucasus Federal District (loans, investments, leasing, outsourcing).

2. Development of a modern raw material base of the domestic industry.

3. Stimulation of the tax system for the modernization and reconstruction of existing footwear production and the creation of new competitive production.

4. Improvement of financial condition and re-equipment of 50% of fixed assets.

5. Taking measures to reduce the import of imported shoes into the region and improve the quality of products with bringing exports up to 35%, which will ensure the suppression of the trade in smuggled shoes.

6. Recognition from the Government of the Russian Federation of light industry as a priority among other industries and the adoption of a program for the "breakthrough" development of the industry for the period 2016–2020. and until 2025

7. To ensure doubling by 2025 of industrial production and the production of footwear to 115 million pairs.

8. Competent development of a marketing policy for regional shoe industries to better promote domestic footwear products in local markets and intensify media work at the federal and regional levels to raise the image of Russian footwear.

The implementation of the planned measures will lead to covering the deficit for all types of footwear, increase labor mobility in the Southern Federal District and the North Caucasus Federal District and reduce negative processes in the labor market, as well as a stable balance of interests of workers, employers and regional and state authorities.

In our opinion, for the successful implementation of all of the above measures, the interest of regional authorities in the development of leather goods production, lower prices for components and energy costs, and, most importantly, convenient transportation are most necessary. Thus, all this together will provide our recommendations with a bright future and stable positions both in the domestic and in the markets of near and far abroad. All that is needed is the coherence and interest of all the participants in these regions.

The quality of "it is written for generations" to be at the epicenter of both scientific and amateurish reflections at all times. The problem of ensuring the quality of activities is not just universal, relevant, it is strategic.

The domestic light industry is not going through the best of times, and the consumer is offered products of dubious quality that have entered our markets in counterfeit and other illegal ways, that is, they do not have guarantees for buyers to exercise their rights to protect themselves from unscrupulous manufacturers and suppliers.

To revive the role and importance of a quality-oriented strategy, since only in this case, business leaders will subjectively and objectively be forced to improve their production using nanotechnologies, innovative processes and digital production so that competitive and import-substituting materials and products fully meet the needs of domestic consumers. At the same time, our assertion is substantiated that the consumption of domestic materials and products is regulated by the market. In this case, the requirements of the market should shape the role of the state and consumers in the production of sustainable demand for domestic materials and products, namely:

maintain the range of goods, regulating it with federal, regional and municipal orders;

encourage price stability; increase consumer ability and gradually improve their quality. The implementation of these tasks will create a basis for the consumer to realize the need to pay for the benefits of quality materials and products, and the manufacturer to realize that improving the quality of materials and products cannot be associated only with rising prices, but also through technical innovations in digital production aimed at on the application of new technological and engineering solutions.

Today, and even more so tomorrow, the implementation of one of the defining principles of production efficiency is important - the manufacturer produces exactly what is needed not only for domestic, but also for foreign consumers.

It is equally important to understand the role and significance of quality activity, that is, to what extent leaders have penetrated into the essence of things, learned to manage things, change their properties (range), form, forcing them to serve a person without significant damage to nature, for the benefit and in the name of a person.

Both political leaders and the government have recently begun to talk about the need for a competent industrial policy. However, if we carefully consider the normative, methodological documents on the structural restructuring of industry, then the thought arises whether we are stepping on the same rake that has been stepped on all the years of reforms.

What is the essence of economic reforms and the significance of industrial policy in them, which are theoretically substantiated and tested in practice by a number of developed countries?

This is the fight against inflation, the strengthening of the national currency and financial stabilization. This is a change in the forms of ownership in various sectors of the economy through the process of privatization. This is a structural restructuring of the economy under the conditions of market relations.

At the same time, structural adjustment must be placed at the basis of all these fundamental processes of economic reform. Both financial stabilization and privatization should be subject to a process of structural adjustment, since it is structural restructuring that determines the final result of reforms and the effectiveness of adapting various forms of production to civilized market relations.

The final result should also be taken as the basis for the structural restructuring of the economy. And these are products, services - their competitiveness in the domestic and world markets.

What happened in the Russian reforms? All three basic processes (financial stabilization, privatization and structural adjustments) proceeded on their own, without any interconnection between them. Therefore, the methods used by the government and the Central Bank to combat inflation and other economic indicators often ran counter to the objectives of structural adjustment.

As for the process of structural adjustment, the position of the government is expressed by the following statement: "the market itself will put everything in its place." With such a position towards structural adjustment, it is not surprising that in the national economic policy at that time there was no place for the words quality, competitiveness, import substitution

This is, unfortunately, the reality of the reforms carried out today. In this regard, I would like to refer to well-known world experience.

A world-famous quality specialist E. Deming, who at one time was a scientific consultant to the Japanese government and led Japan out of the economic crisis, in his book “Out of the Crisis” says: “... managing paper money, not a long-term strategy for digital production - the path to the abyss.

Regarding whether the state should pursue an industrial policy, one can cite the statement of the outstanding economist of the past, Adam Smith, who 200 years ago laid the foundations for the scientific analysis of the market economy. About the role of the state, he said: "... only it can, in the interests of the nation, limit the greed of monopolists, the adventurism of bankers and the egoism of merchants." It's like today is about us and our situation in the economy.

What are the results of economic activity today, what are the achievements in this area? The growth of gold and foreign exchange reserves, the decline in inflation, the budget surplus and other financial and economic achievements. And what, is this the end result of public administration? And not the quantity and quality of goods and services sold in the domestic and foreign markets, and not the solvency of the population to purchase these goods and services? And, ultimately, not the quality of life of the population of the country???

Therefore, it is quite natural today that the task is set for all levels of the executive and legislative authorities - to improve the quality of life of Russian citizens.

Let us carry out an enlarged factorial analysis of the problem of "quality of life". The quality of life of citizens depends on the quality of goods and services consumed in the full range - from birth to ritual services, as well as on the solvency of citizens, which allows them to purchase quality goods and services. These two factors (quality and solvency) depend on the state of the country's economy, which in turn depends on the efficiency of enterprises in various sectors of the economy, including light industry. The effectiveness of the work of enterprises depends on the state of management, on the level of application of modern management methods.

The existing world practice of wide application of modern methods is based on standardization and certification. Standardization makes it possible to generalize best practices, formalize them in an accessible and understandable form, and make them available to everyone who wants to apply these best practices. Certification makes it possible to assess the level of implementation of the requirements of the standards into practice and provide an appropriate guarantee for the consumer. At present, no more efficient mechanism has been devised to disseminate advanced experience in solving various problems, and the corresponding international structures for standardization and certification have been created in the world.

An analysis of existing international standards that are aimed at improving the level of enterprise management shows the following areas of their action:

– quality management systems (a series of international standards ISO 9000 and industry supplements);

– environmental management systems (a series of international standards ISO 14000);

– safety and labor protection systems (OHSAS 18001);

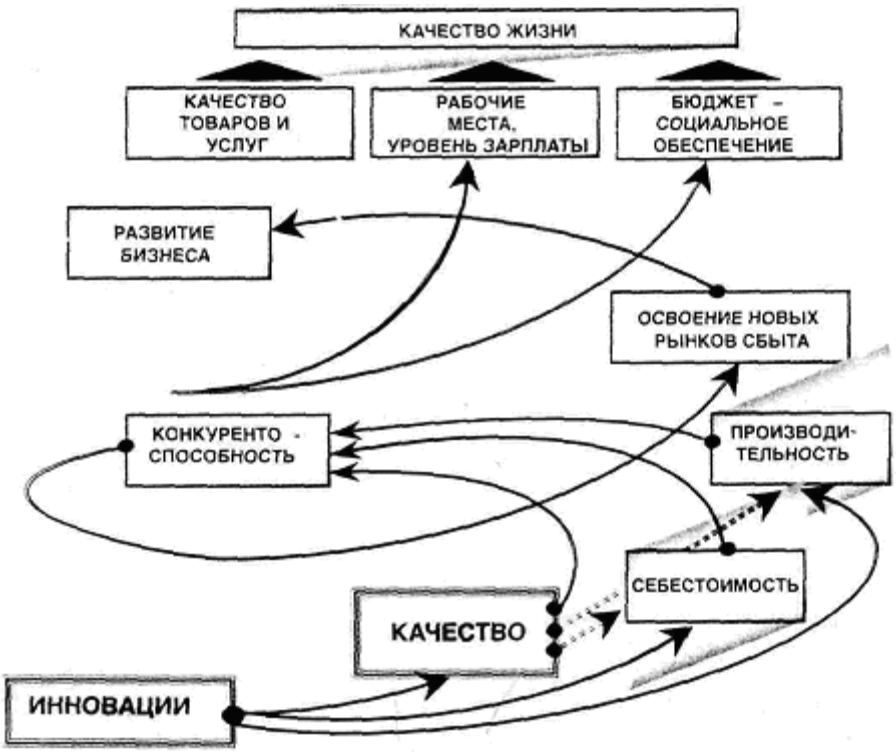
– social responsibility systems (SA 8000)

The structure of the problem "quality of life" and a set of international standards aimed at its solution.

At the same time, international standards on quality management have the most significant and global character. The use of modern methods in them allows us to solve not only the problem of improving quality, but also the problem of economy and productivity. That is, today the concept of "quality management" is moving into the concept of "quality management".

Conclusion

Thus, solving the problem of increasing the efficiency and competitiveness of the economy, and, ultimately, the quality of life, is impossible without the implementation of a well-thought-out and competent industrial policy, in which innovation based on digital production and quality should become priority areas of the state economic policy.



Drawing Innovation and quality - the way to high living standards

The problems of improving the quality, competitiveness of materials and products at the present stage of development of the Russian economy are becoming increasingly important. As the experience of advanced countries, which at one time came out of such crises (the United States in the 30s, Japan, Germany - in the post-war period, later - South Korea and some other countries) shows, in all cases, the basis for industrial policy and the rise economy was put a strategy to improve the quality, competitiveness of products that would be able to win both domestic and foreign markets. All other components of the reform - economic, financial and credit, administrative were subordinated to this main goal.

The developed software for the formation of the technological process for the production of import-substituting products and the determination of specific reduced costs, which are the sum of current costs (cost) and capital investments, measured using the standard efficiency coefficient, taking into account the production program, allows you to calculate the static parameters of the technological process for the production of import-substituting products with various forms of organization of production.The developed software for calculating cash receipts from the operating activities of light industry enterprises based on assessing the degree of implementation and dynamics of production and sales of products, determining the influence of factors on the change in the value of these indicators, identifying on-farm reserves and developing measures for their development, which are aimed at accelerating turnover products and reduce losses, which guarantees light industry enterprises to obtain stable TEP and prevents them from bankruptcy.

Models for the sale of products within a month at 100%, 80%, 50% are proposed. Calculations show that with 100% of the sale of footwear, compensation is provided not only for the production and sale of footwear, but also a net profit of 1900.54 thousand rubles remains, which indicates the effective operation of the enterprise, as well as the correct marketing assortment enterprise policy. It also provides a profit when selling 80% of men's, women's and children's shoes. When selling less than 50% of shoes from the volume of production, the company will incur losses. To solve this problem, the conditions for the sale of shoes within a specified period of time and the volume of sales of at least 50% are necessary.

Based on the current situation in the economy of our country, in our opinion, an equally significant problem in the development of the regional consumer market is the lack of a full-fledged legal framework that ensures the functioning of the mechanism of state regulation of the consumer market in the regions. Based on this, it is the state and regional intervention that should correct the situation on the market for domestic products of light industry enterprises in the regions, and thus there will be an opportunity for the development of competitive and import-substituting products.

The implementation of the planned measures will lead to covering the deficit for all types of products, increase labor mobility in the Southern Federal District and the North Caucasian Federal District and reduce negative processes in the labor market, as well as a stable balance of interests of consumers, employers and municipal, regional and federal branches of government. For the successful implementation of all of the above activities, the interest of regional authorities in the development of production of competitive and import-substituting products, lower prices for components and energy costs, and benefits for transportation produced by enterprises of the regions of the Southern Federal District and the North Caucasus Federal District are most necessary for the regional authorities.

Therefore, only the emphasis on innovation, quality, competitiveness of products and services should be the basis of the industrial policy pursued at all levels yesterday, today and, even more so, tomorrow.

ABOUTthe economic effect of the results of work is limited, which consists in increasing labor productivity, the level of mechanization of production, lowering work in progress and the cost of digital production. An accessible tool for digital production technologists to rationalize the design of technological processes is proposed, which allows the enterprise to form a competitive assortment and predict the maximum income from the production of import-substituting products.

An assortment policy has been developed for the formation of competitive products, taking into account factors affecting consumer demand: compliance with the main fashion trends, taking into account the economic, social and climatic characteristics of the regions of the Southern Federal District and the North Caucasus Federal District, the production of which using modern innovative technical processes, as well as to meet the demand of an elite consumer, with the use of manual labor create the basis for meeting the demand for shoes for buyers in these regions.

Innovative technological processes have been developed for the production of import-substituting products using modern technological equipment with advanced nanotechnologies, which form the basis for reducing the cost of import-substituting products and providing them with increased competitiveness with the products of leading foreign companies, with the possibility of a wide range of products not only by type, but also by sex and age. groups, which guarantees its demand in full.

Layouts of technological equipment are proposed, on the basis of which it is possible to form a technological process for the production of import-substituting products with an optimal output volume,

taking into account the production area and the form of organization of digital production.

Software has been developed for calculating cash receipts from the operating activities of light industry enterprises based on assessing the degree of implementation and dynamics of production and sales of products, determining the influence of factors on the change in the value of these indicators, identifying on-farm reserves and developing measures for their development, which are aimed at accelerating turnover. products and reduce losses, which guarantees enterprises a stable TEP and prevents them from bankruptcy.

Software has been developed to form the technological process of digital production and determine the cost of production of import-substituting products. A computer simulation model has been implemented that describes the dynamics of the process of production of import-substituting products. The proposed methodology and the software implemented on this basis make it possible to reduce the duration of the technological preparation of production and increase, thanks to the rationalization of the technological process, the specific consumer effect of import-substituting products.

Complex indicators of the effectiveness of innovative technological processes for the manufacture of footwear, similar to other types of import-substituting products, have been calculated. Taking into account the production program, promising options for technology and equipment have been formed, the most effective one has been selected; the possibilities of streamlining the flow were identified, allowing to eliminate bottlenecks, to minimize equipment downtime, which is one of the conditions for designing innovative technological processes. The reliability of the calculations carried out to assess the effectiveness of technological processes using targeted programming methods for various technological and organizational solutions is confirmed by calculations of economic efficiency indicators: cost, profit and profitability and other indicators.

The proposed technique allows to reduce the duration of technological preparation of digital production and reduce the time for expert work while maintaining the required depth and validity of engineering conclusions. The economic effect of the conducted research is expressed in the intellectualization of the work of a technologist with a reduction in time spent on developing a range of manufactured import-substituting products and evaluating the effectiveness of technological processes in comparison with a typical economic calculation of the full cost of manufacturing such products.

The analysis of the influence of forms of organization of digital production and manufacturing technology on the cost of import-substituting products is carried out using the example of the technological process of manufacturing children's, women's and men's shoes, taking into account the shift program. Theoretical dependencies are obtained to assess the influence of the factor "organization of production" on individual costing items in general and other technical and economic indicators in order to prevent enterprises from bankruptcy.

Thus, all this together will provide light industry enterprises of the regions of the Southern Federal District and the North Caucasus Federal District with a stable position both in the domestic and in the markets of near and far abroad. All that is needed is the good will and interest of all participants in this process.

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«IMPROVING INNOVATIVE PROJECT-BASED METHODS OF TEACHING SOCIAL MEDIA MARKETING (SMM) IN THE DIGITAL ECONOMY» (ON THE EXAMPLE OF ECONOMIC UNIVERSITIES)

Abstract: *This article was prepared on the basis of the research work "Improving innovative methods for projecting social media marketing (SMM) training in the digital economy" (on the example of economic universities), there were written about its relevance and necessity, object and subject, level of study, and expected results.*

Key words: *digital economy, social media marketing, innovative projecting methodology, education, training, system, economist, dynamics, modernization.*

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Introduction

The developing wave of the digital economy is the beginning of a transition to a new advanced development, which is associated not only with the online revolution, but also with the modernization and reconstruction of the education system. The influence of such factors as the globalization of education, the transition to an innovative education system, the transformation of economic education, the creation of a system of continuous education, allows us to consider economic education as an integral part of global private education. The socio-economic situation in the society of Uzbekistan determined the dynamics of economic changes, processes that prove superiority personality over the dynamics of the ability to adapt to them. The knowledge gained and the economic knowledge formed during the training period is limited, and the normative documents and values being studied do not become permanent reference points in changing time, so the staff overestimates themselves in the process of work. The changes taking place in Uzbekistan have revealed serious shortcomings in specialists with knowledge and experience in making decisions in a market economy, and show that the need for such specialists is growing. The economic reforms being carried out in Uzbekistan require the readiness of the population for the transition to the market, basic economic concepts and the laws of public life.

Main paragraph: The training of specialists capable of successfully working in a market economy with a certain level of economic competence will become an important and urgent task of modern education. In this regard, the need to train competitive personnel in the world market that meets the requirements for the content of education set out in the Law of the Republic of Uzbekistan “On Education” has not lost its relevance. The Decree of the President, which includes the concept of "Comprehensive socio-economic development of Uzbekistan until 2030" and the concept of "Higher education in Uzbekistan until 2030", has become a requirement for education, systemic transformations, an innovative economy and society in Uzbekistan , from the priorities in this area - adaptation of the content and structure of education to the modern needs of the labor market and increasing the availability of quality educational services [1]

The concept of long-term socio-economic development of the Republic of Uzbekistan states that the state will rely on the younger generation in solving

economic reforms and effective market development until 2030. The society is interested in training competitive specialists who are able to positively solve problems, adapt to changing living conditions, know the basics of a market economy, management, marketing, and master innovative ways of developing an enterprise.

In modern socio-economic conditions, the role of economic education in the education of Uzbekistan is growing as an important factor in the formation and development of a post-industrial society. Even innovative trends in world development reflect changes in sustainable economic education as follows:

- the need to prepare people for rapidly changing living conditions due to the accelerating pace of economic development;
- creation of conditions for the formation of economic thinking and rational economic behavior, economic education and the continuation of practical economic activity;
- the need to increase the level of readiness of citizens to make the right choice in a market economy;
- development of communicative and tolerant factors in connection with the expansion of economic cooperation.

Scientific research is being carried out to study the organizational and legal issues related to the effective management of social media marketing processes around the world. It also affects the international labor market.

The study and teaching of social media marketing occupies a special place among socio-economic processes. This is one of the complex social processes closely related to economic, political and other changes in society. The emergence of new professions in the field of Internet marketing, the process of their training has a significant impact on many aspects of social and economic development.

In particular, under the influence of learning processes in the field of social media marketing, the profession of the population of countries and regions will change, the supply of labor resources in the labor markets, and the stereotypes of people's behavior when choosing a career will change. Social media marketing, which is one of the processes of Internet marketing in our country, is characterized by a high demand for training. One of the tasks of the education system in society is to update and regulate the methodology of teaching marketing in social networks. In this regard, the improvement of the innovative design methodology for teaching Social Media Marketing requires the relevance of the work.

Research goals:

Scientific substantiation of teaching social media marketing in a digital economy by the method of innovative design as a socio-pedagogical phenomenon, the study of its essence and content, patterns of formation;

Identification of the philosophical, pedagogical and psychological factors of teaching social media marketing through innovative design methods;

A pedagogical system that satisfies the needs of society for innovative thinkers - the development of theoretical ideas about the goals, content and process of preparing students for innovative activities;

Give a special place in teaching social media marketing to students through an innovative design method, online learning method as an important component of pedagogical innovation;

Development of scientific and methodological recommendations based on the results of experimental research and research in accordance with the requirements of the current stage of development of higher economic education as the main system for preparing students based on innovative design created as special courses, a model for teaching technologies in social media marketing and pedagogical science.

Object of study. The process of higher education in economic universities.

Subject of study. Conditions, means, forms and methods of socio-pedagogical conditions "Improving innovative methods for designing teaching the subject of social media marketing (SMM) in the digital economy."

The degree of knowledge of the problem. The analysis of scientific research shows that the problem of forming knowledge in the disciplines of the specialty by various methods, preparing for self-development has been comprehensively developed.

Among the scientists-teachers of our country B.B. Mamurov [2], I. M. Rasulov [3], D. N. Mamatov [4], M. B. Urazova [5], M. Kh. Makhmudov [6] conducted research on the use of educational technologies, innovative design methods , pedagogical and information technologies in the educational process in higher educational institutions.

On the problems of innovative activity according to the design method in education in the experience of foreign studies found its expression in the following scientific activities of M.Kh. Pashaev [7], K. Baryshnikov [8], G. Zabelina [9], V. Obydenkov [10], G. Golovenchik [11], M. Jennifer [12].

However, it should be noted that these works have not become a unified system of the educational process to improve the teaching of social media marketing to students of economic universities through innovative design methods.

Expected results of the study:

Improving the multifaceted structural-logical model of teaching social media marketing based on improving the methods of innovative design of students of economic universities based on the mechanism of prioritizing the quality of training specialists in economics;

Improving the mechanisms for teaching social media marketing based on innovation through the introduction of pedagogical monitoring based on

structural and logical assessment (assessment system, performance indicators);

Development of information and methodological support for the development of knowledge in the field of social media marketing based on innovative design methods in the system of higher economic education;

It consists of the development of practical recommendations aimed at improving the mechanisms for increasing the effectiveness of teaching social media marketing to students of higher educational institutions based on innovation.

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E-COMMERCE AS A MODERN TREND IN THE DEVELOPMENT OF THE DIGITAL ECONOMY IN UZBEKISTAN

Abstract: *The article discusses the modern development of Internet commerce in the Republic of Uzbekistan.*
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Language: *Russian*
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ЭЛЕКТРОННАЯ КОММЕРЦИЯ КАК СОВРЕМЕННАЯ ТЕНДЕНЦИЯ РАЗВИТИЯ ЦИФРОВОЙ ЭКОНОМИКИ В УЗБЕКИСТАНЕ

Аннотация: *В статье рассматривается современное развитие Интернет-торговли в Республике Узбекистан.*
Ключевые слова: *экономика, технологии, продукт.*

Введение

Сфера e-commerce на сегодня выступает как самое современное средство продвижения продукта (товаров, услуг, прав и т.д.). Одной из основных тенденций мировой экономики является быстрый рост и увеличение роли в ней e-commerce. Результатом формирования современной всемирной информационной сети и экономики стало появление e-commerce, как инновации в предпринимательской деятельности, платформой которой выступают электронные технологии и телекоммуникационные возможности электронных сетей, их различных форм, в частности Интернет-торговли. Интернет-торговля представляет собой единую в мировом масштабе индустрию, работающую в автономном режиме, с использованием современной техники и электронных технологий.

В Республике Узбекистан активно развивается электронная коммерция. Этому способствует создаваемые благоприятные условия для электронной коммерции и активное снижение тарифов на Интернет-услуги. 14 мая 2018 г. было принято постановление Президента Республики Узбекистан №ПП-3724 «О мерах по ускоренному развитию электронной коммерции». Данным постановлением были устранены основные преграды, сдерживающие развитие электронной коммерции в стране, а также утверждена Программа мер по развитию электронной коммерции на 2018-2021 годы.

Важным нововведением данного постановления является предоставление льготных условий налогообложения для субъектов электронной коммерции. Сформирован Национальный реестр участников электронной

коммерции, включение предпринимателей в данный реестр осуществляется на добровольной и бесплатной основе, с условием, что доходы от реализации товаров (услуг) посредством электронной коммерции должны составлять не менее 80 % от общего объема реализованных ими товаров (услуг). Участники Национального реестра платят единый налоговый платеж по ставке 2 %.*(www.e-tijorat.uz)*.

Таким образом, обеспечение динамичного развития национальной экономики прямо связаны с активизацией усилий государства и отечественных предпринимателей по увеличению масштабов участия в Интернет-бизнесе. Использование в Узбекистане теории и методологии электронного бизнеса посредством применения современных информационных технологий, математических моделей и методов позволит более эффективно решать ряд экономических задач, в том числе, задачи долговременного присутствия предпринимательских структур на целевом рынке.

И в связи с этим, можно сказать, что все вышеуказанное говорит о том, что выбранная тема магистерской диссертации на сегодняшний день представляется весьма актуальной.

Основная часть

В Узбекистане доля электронной коммерции мала, около 1%, но тем не менее рынок растет и развивается так как имеет ряд достоинств. Интернет магазины очень удобны и существенно экономят время покупателям. Однако, несмотря на их преимущества можно столкнуться с обманом или несоответствием цены и качества товара или услуги. Поэтому, мы подготовили несколько советов о том, как обезопасить себя потребителю при приобретении товара или услуги через интернет.

Электронная торговля регулируется Законом Республики Узбекистан «Об электронной коммерции».

Электронная коммерция в международной торговле на сегодняшний день играет немаловажную роль, так как Интернет стал эффективным посредником между коммерсантами во всем мире. Международные операции с товарами и услугами трансформировались на протяжении всей цепочки поставок. Интеграция информационных и коммуникационных технологий (ICT) в международные коммерческие операции предоставляет новые возможности и олицетворяет собой новые проблемы для бизнеса, правительств, потребителей и международных организаций.

Глобальная тенденция в области электронной коммерции влечет за собой быстрый и устойчивый рост рынка посылок. Мировой рынок электронной коммерции с 2000 года увеличился почти в двадцать раз и, по прогнозам, будет расти примерно на 10% ежегодно до 2025 года в развитых регионах до ожидаемых 8 триллионов евро. Широкий диапазон рыночных механизмов поддерживает рост электронной коммерции, поскольку в мир онлайн-покупок включаются новые регионы (например, Африка к югу от Сахары, Восточная Европа), новые потребительские сегменты (например, пожилые люди), вводятся новые вертикали продуктов (например, мебель), новые каналы (например, платформы социальных сетей) и новые случаи (например, гиперлокальные «мгновенные» покупки). Фактически, в период с 2016 по 2021 год онлайн-ритейл превысит физическую розничную экспансию в пять раз и составит от 25 до 30% общего объема розничной торговли к 2030 году, по сравнению с 9% в настоящее время.

Новые вызовы для почтовых служб, связанные с конкуренцией в сфере электронной коммерции

Вся логистическая производственная цепочка обработки мелких пакетов и посылок предназначена, в первую очередь, для гигантов электронной коммерции, которые недавно предприняли существенные шаги в направлении интеграции, таких как Amazon, Alibaba и JD.com. Эти шаги включают заказ Amazon 20 000 автофургонов для доставки в США и переход Alibaba на предложение доставки посылок за рамками своих собственных потребностей на более широкий рынок. Только на эти три гиганта приходится около двух пятых онлайн-покупок по всему миру, и переход к доставке посылок представляется очевидным выбором.13 Исследование, проведенное McKinsey & Company, показывает, что препятствием для развития большинства почтовых операторов по-прежнему остаются структурно неконкурентоспособные затраты на рабочую силу, которые на 20-40% выше, чем у их новых конкурентов, а также ИТ-системы и культура неприятия риска; в то же время их новые конкуренты ослабляют их основные источники конкурентного преимущества: сильные бренды и выгоды, обусловленные большими масштабами деятельности.

Потребители

Потребители сегодня ожидают, что доставка заказываемых ими товаров станет еще более быстрой, прозрачной и удобной и будет осуществляться по постоянным или более низким ценам. Несмотря на распространение более дорогих способов доставки, включая доставку в тот же день, около 70% потребителей надеются, что доставка товаров электронной коммерции будет бесплатной. Потребители также постоянно расширяют категории товаров, которые они

предполагают покупать через интернет, включая мебель и продукты питания.

Ритейлеры

В исследовании, проведенном McKinsey & Company, подчеркивается, что две пятых глобальной электронной коммерции находится под контролем трех гигантов: Amazon, Alibaba и JD.com. Эти лидеры розничной торговли могут предложить своим клиентам широкий и быстро растущий спектр вариантов доставки, включая такие инновации, как доставка в определенный интервал времени, расширенное отслеживание и контроль прохождения, перенаправление в полете, выдача на дому и новые варианты доступа, такие как постоматы и умные замки. На самом деле, многие из этих инноваций всего за несколько лет уже стали рыночными стандартами.

Новые конкуренты в сегменте посылок B2C

Операторам почтовой связи становится все труднее покрывать расходы на эти инновации, учитывая, что трансформирующиеся игроки сегмента B2B и экспресс-посылок и стартапы, финансируемые за счет венчурного капитала (такие как Postmates, DoorDash и Instacart) с 2011 года получили финансирование в размере 3,9 млрд. долларов США и в настоящее время присматриваются к рынку непродовольственных товаров). Они готовы и могут потратить значительное количество денежных средств, чтобы завоевать долю на рынке посылок B2C. Эти конкуренты выбирают такой подход, отказываясь от краткосрочной прибыли в обмен на рост прибыли, или предлагают клиентам доставку по заниженным ценам, поскольку они получают выгоду от перекрестных продаж других услуг. По мере роста ожиданий потребителей, они все чаще не хотят брать на себя дополнительные расходы. В частности, интернет-продавцы оказывают давление на своих партнеров по логистике в плане покрытия затрат, с тем чтобы компенсировать потерю сборов за доставку и не нарушать свою юнит-экономику. Увеличение объемов и опыта этих интернет-магазинов по отношению к их партнерам по логистике означает, что они могут получить желаемые уступки, хотя бы через скрытую и растущую угрозу того, что они будут либо привлекать свои собственные логистические ресурсы, либо будут пользоваться услугами нескольких сторонних логистических компаний.

Эффективные почтовые услуги – основа электронной коммерции

Чтобы добиться успеха в конкурентной среде электронной коммерции, почтовым службам необходимо ускорить создание интегрированной трансграничной экосистемы электронной коммерции, которую почтовые операторы должны предоставлять через физические центры электронной коммерции, взаимодействующие с онлайн-платформами электронной коммерции на базе инновационных стандартов ВПС и инструментов ИТ.

Как остаться конкурентоспособными на стремительно растущем рынке электронной коммерции

Поскольку в ближайшие годы рост электронной коммерции продолжится, почтовые службы должны и впредь играть жизненно важную роль на рынке электронной коммерции, используя свои основные преимущества. Чтобы занять свое место, почтовые операторы должны дополнительно оптимизировать свою текущую эксплуатационную деятельность, т.е. повысить эффективность таких процессов и операций, как сортировка, перевозка, вручение, доставка, и интенсифицировать часто игнорируемые вспомогательные функции. Исследование McKinsey & Company предлагает семь ключевых мер по сокращению общих затрат до уровня в 20%. Наиболее эффективными из этих мер для многих игроков являются следующие: использование передовых методов интеграции производства, внедрение гибкого планирования ресурсов с использованием аналитики и автоматизация оперативного планирования и поддержки деятельности до 50%. Почтовым службам также необходимо иметь долгосрочный план по созданию дополнительного потенциала, необходимого для того, чтобы участвовать в процессе непрерывного роста посылок. В долгосрочном плане должны быть ответы на три ключевых вопроса:

Какая производительность необходима (и где) для удовлетворения меняющихся стратегий фулфилмента интернет-магазинов и ожиданий обслуживания?

Какие технические средства автоматизации лучше всего подходят для продуктов?

Как наилучшим образом интегрировать дополнительный потенциал характеристик объединенной сети?

В исследовании отмечается также, что, принимая во внимание, что около 75% проблем качества, связанных со скоростью доставки, в современных почтовых сетях являются структурными, стратегические инвестиции в сеть предоставляют уникальную возможность не только для создания потенциала роста и улучшения базы операционных расходов, но также и для реальных изменений в предложении услуг. По этой причине ведущие игроки уже постоянно вкладывают миллиарды долларов в свои сети. Почтовые службы могут и впредь играть жизненно важную роль во многих областях рынка электронной коммерции: они могут предоставлять решения в области доставки, логистики и оплаты, равно как вступать в партнерские отношения с целью предоставления расширенных решений в области электронной

коммерции в соответствии с требованиями их отдельных рынков.

Почему почтовые службы выходят на рынок электронной коммерции

Благодаря стратегиям диверсификации (стратегиям по расширению деятельности) почтовые службы поддерживают электронную коммерцию и создают уникальные конкурентные преимущества. Отчет ВПС о развитии цифровой экономики также показывает, что благодаря диверсификации почтовые организации создают потенциальный рынок для электронной торговли. Почтовые службы также остаются конкурентоспособными на растущем рынке электронной коммерции, защищая и укрепляя свой основной бизнес.

Крупные конкуренты представляют серьезную угрозу для почтовых операторов, равно как и постоянно меняющиеся цифровые технологии. Последние исследования ВПС выявили пять основных препятствий на пути внедрения почтовых цифровых услуг для поддержки электронной коммерции. В глобальном масштабе более половины почтовых служб сталкиваются со следующими проблемами:

ограниченность ресурсов, что препятствует внедрению почтовых электронных услуг в полном объеме;

время, необходимое для перехода к цифровой культуре;

ограничения ИТ-инфраструктуры; недостаточный внутренний опыт для развития электронных услуг.

Почтовые службы могут и впредь играть жизненно важную роль во многих областях рынка электронной коммерции: они могут предоставлять решения в области доставки, логистики и оплаты, равно как вступать в партнерские отношения с целью предоставления расширенных решений в области электронной коммерции в соответствии с требованиями их отдельных рынков.

Основные конкуренты почтовых служб в электронной коммерции Понимание как внутренних, так и внешних проблем и задач имеет решающее значение для поддержания конкуренто способности почтовых служб. Если почтовые операторы намерены сохранить основной бизнес и предоставлять универсальные услуги наиболее экономичным способом, они должны стать конкурентными игроками рынка посылок. Рынок онлайн-торговли становится все более концентрированным. Только одни супергиганты электронной коммерции, такие как **Amazon, Alibaba и** JD.com в настоящее время составляют около 40% интернет-магазинов, доминируя на семи из 10 крупнейших рынков электронной коммерции в мире. Схожие с ними компании на большинстве оставшихся рынков одинаково велики, включая Flipkart в Индии и eBay в Корее (Республика). Только в Российской Федерации пока не выявлено лидера, доминирующего на рынке.

Почтовые операторы должны прислушиваться к таким предупреждающим знакам. Несмотря на то, что гиганты электронной коммерции предпринимают шаги для удовлетворения растущей доли своих логистических потребностей внутри своих компаний, они закладывают основу для более широкого обслуживания рынка.

Существует несколько возможных бизнес-моделей электронной торговли для почты. Эти модели не являются взаимоисключающими и могут комбинироваться в соответствии с возможностями почтовых служб и характеристиками рынка.

Для проведения анализа моделей электронной коммерции почтовой отрасли важно определить целевую группу для решения в области электронной коммерции. Во-первых, клиентуру можно определять в зависимости от типа отношений в сфере электронной коммерции:

Таблица 1

Модель взаимодействия электронной коммерции	Описание
Для корпоративных клиентов (взаимодействие бизнес-бизнес) (B2B)	Компании осуществляют коммерческую деятельность с другими компаниями
Отношения между юридическим лицом и конечным потребителем (B2C)	Компании продают товары и услуги потребителям
Взаимосвязь типа «предприятие - персонал» (B2E)	Компании продают товары и услуги персоналу
Потребитель для потребителя (модель электронной коммерции, предназначенная для частных лиц) (C2C)	Частные лица продают товары и услуги частным лицам
Модель «государство бизнесу» (G2B)	Государства предлагают услуги коммерческим компаниям
Модель взаимодействия «государство гражданину (G2C)	Государства предлагают услуги гражданам
Межгосударственная модель (G2G)	Государственные учреждения предлагают услуги другим государственным учреждениям

В нижеприводимой таблице суммируются основные бизнес-модели и наиболее общие формы оплаты.

Таблица 3

Бизнес-модель	Описание	Оплата
Доставка посылок	Услуга доставки на национальном, региональном или международном уровнях для магазинов, электронных торговых центров и электронных торговых площадок	За каждую состоявшуюся доставку. Могут быть рассмотрены дополнительные услуги
Поставщик логистических услуг	Почта управляет всей или частью логистической системы продавца, напр., складскими помещениями, товарно-материальными ценностями, обработкой заказа, системой исполнения заказов, доставкой и дополнительными продажами	Поскольку решения соответствуют специальным требованиям заказчика, модель оплаты учитывает расходы, связанные со многими операциями
Цифровая доставка	Надежная доставка в режиме онлайн цифровых отправлений таких, как музыкальных файлов, изображений, видеоматериалов и документов.	За каждую состоявшуюся доставку
Платежи электронной коммерции	Почта предоставляет услуги электронных или физических платежей для интернет-магазинов.	За операцию и/или периодические сборы
Виртуальная услуга международного адреса	Почта предоставляет клиенту физический международный адрес в другой стране, чтобы он мог легко приобретать товары у онлайн продавцов этой страны и отправлять эти товары по почте	За операцию и/или периодические сборы
Услуги эскроу	Почта выступает как доверенная третья сторона для оплаты и доставки товаров, приобретенных в Интернете	За операцию и/или периодические сборы
Почтовый электронный магазин	Почта имеет электронный магазин для продажи продуктов и почтовых услуг по Интернету	Покупатель платит за приобретенную продукцию, а также за доставку любых физических отправлений
Хостинг электронного магазина	Почта предоставляет услуги хостинга для интернет-магазинов	Ежемесячные, полугодовые или ежегодные сборы
Почтовый электронный торговый центр	Почта предоставляет электронный торговый центр для хостинга электронного магазина и рекламы продуктов	Ежемесячные, полугодовые или ежегодные сборы. Комиссия с продаж
Электронная торговая площадка	Почта выступает в качестве посредника для операций по электронной торговле.	Ежемесячные, полугодовые или ежегодные сборы. Комиссия с продаж

Заключение

В целях развития рынка электронной коммерции в стране создали систему онлайн-продаж и доставки товаров от местных производителей через создание ***«Национальной платформы онлайн-торговли».***

Кроме того, создать возможности для экспорта товаров, производимых предприятиями, за счет интеграции с зарубежными интернет-магазинами.

Создание «национальной площадки для онлайн-трейдинга» В целях развития рынка электронной коммерции в стране будет создана система онлайн-продаж и доставки товаров местных производителей путем создания «Национальной платформы онлайн-торговли».

Кроме того, за счет интеграции с зарубежными интернет-магазинами появится возможность экспортировать товары, произведенные бизнесом, за границу.

Создание дополнительных удобств для клиентов; увеличить объем и конкурентоспособность услуг.

Создание Фулфилмент-центра Создание обществом автоматизированных фулфилмент-центров для развития электронной коммерции в

региональных центрах обеспечит его долю на рынке электронной коммерции.

Fulfillment Center решает проблему хранения их продуктов, то есть складов, и позволяет владельцам платформ электронной коммерции быстро упаковывать и доставлять продукты, приобретенные через платформу электронной коммерции, клиентам на месте.

Он предусматривает реализацию возможности управления складами, транспортной логистикой и взаимоотношениями с клиентами с использованием информационных технологий. 2020-2023 гг.

Мероприятия по популяризации электронной торговли

Необходимо разработать комплекс мер, направленных на популяризацию электронной торговли как современного, эффективного, отвечающего самым высоким стандартам и требованиям потребителя формата торговли, позволяющего за счет передовых методов ведения бизнеса значительно снижать денежные и временные затраты потребителя.

В том числе:

- популяризация стандартов работы интернет-магазинов, обеспечение их исполнения ритейлерами позволит создать зону безопасного сервиса для потребителей, предоставить дополнительные гарантии покупателям и будет способствовать дальнейшему развитию интернет-торговли;

- пропаганда позитивного опыта решения участниками электронной торговли совместно с госорганами вопросов защиты персональных данных, обеспечения безопасности электронной торговли способны значительно повысить доверие потребителей;

- создание интерактивных программ в средствах массовой информации, организация всевозможных отраслевых дискуссионных и презентационно-выставочных площадок, инкубаторов, акселераторов, коворкингов и других современных форм работы с МСБ позволит дополнительно вовлечь в периметр активных субъектов электронной торговли значительное количество начинающих предпринимателей.

Для обеспечения развития логистики в рамках электронной коммерции и предоставления электронных сервисов по отслеживанию доставки посылок необходимо внедрять современные технологии в деятельности оператора почтовой связи.

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SCIENTIFIC BASES OF PROTECTION OF WILD RELATIVES OF CULTIVATED PLANTS OF KARAKALPAKSTAN

Abstract: *The article provides the scientific basis for the protection of wild relatives of the Republic of Karakalpakstan, both individual species and populations. Studies have shown that 171 species of wild relatives of cultivated plants have been recorded in the studied territory, among which 3 species are endemic. Occasionally occurring species – 10, i.e. 1,7 part. It is proposed to declare as natural monuments the population of the soft-leaved cretum, prickly almond and Sandy acacia. The protection of species, as well as the protection of the population of valuable relict species as natural monuments, allows covering 109 species (or 63.7%) of 171 wild relatives of cultivated plants of Karakalpakstan. And only 62 species of wild relatives of cultivated plants (or only 36.3%) remain out of protection, but these species have a very extensive range.*

Key words: *wild relatives of cultivated plants, plant protection, species diversity, classification by rare and endangered species, reduction of habitats.*

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НАУЧНЫЕ ОСНОВЫ ОХРАНЫ ДИКОРАСТУЩИХ СОРОДИЧЕЙ КУЛЬТУРНЫХ РАСТЕНИЙ КАРАКАЛПАКСТАНА

Аннотация: *В статье даются научные основы охраны дикорастущих сородичей Республики Каракалпакстан как отдельных видов, так и популяций. Исследования показали что на изучаемой территории зафиксировано 171 видов дикорастущих сородичей культурных растений, среди которых 3 вида эндемы. Изредка встречающихся видов – 10, т.е. 1,7 часть. Предлагается объявить памятниками природы популяцию мягкоплодника критмолистного, миндаля колючейшего и Песчаной акации. Охрана видов а также охрана популяции ценных реликтовых видов как памятников природы, позволяет охватить 109 видов (или 63,7%) из 171 дикорастущих сородичей культурных растений Каракалпакстана. И только 62 видов дикорастущих сородичей культурных растений (или всего 36,3%) остаются вне охраны, но эти виды имеют весьма обширный ареал.*

Ключевые слова: *дикорастущие сородичи культурных растений, охрана растений, видовое разнообразие, классификация по редким и исчезающим видам, сокращение ареалов.*

Введение

Дикорастущие сородичи культурных растений – это естественный ценный генофонд, откуда человечество постоянно черпает и будет черпать исходный материал для селекции. Этот генофонд достояние не только одной нашей стран, а и человечество всей планеты. Ученым давно известно, что каждый вид – «неповторимый

эксперимент природы, хранитель генофонда и информации филогенетического развития. Его вымирание – невозместимая утрата» (Львов П.П. 1979 с. 80).

Поэтому изучение и последующее использование дикорастущих сородичей культурных растений в практической селекции настоящего и будущего непосредственно должны быть связаны с сохранением их в естественной природе (Брежнев Д.Д., Коровина О.Н., 1982).

В «**Послание Президента Республики Узбекистан Шавката Мирзиёева Олий Мажлису»,** Президент особое внимание уделил проблеме охраны окружающей среды, в том числе и растительного покрова, рациональному использованию и воспроизводству природных ресурсов **(**"Народное слово", 29 декабря 2018 г.**)**.

Бережное рачительное отношение к природе отражено и в Основном законе – в статье 50, Конституции Республики Узбекистан и статье – 48 Конституции Республики Каракалпакстан.

Охрана дикорастущих сородичей культурных растений в настоящее время стала серьезной и международной проблемой. Поэтому в резолюции XII Международного ботанического конгресса, состоявшегося в 1975 г., впервые прозвучало что «дикие родственники культурных растений являются важным источником генетического разнообразия для продолжения совершенствования культур, и что они должно тщательно охраняться для будущего».

Всесоюзный научно-исследовательский институт растениеводства им. Н. И. Вавилова (ВНИИР) принимает активное участие в разрешении задач проблемы охраны генетического разнообразия, как нашей страны, так и всего мира.

Особое место в наших исследованиях занимала проблема сохранения генетического разнообразия в естественной природе, на опытных станциях, в ботанических садах страны (Бондаренко О.Н., 1973; Коровина О.Н., Брежнев Д.Д., 1982), ибо влияние человека в связи с развитием научно-технического прогресса и связанное с ним загрязнение окружающей среды, может привести к утрате ценного естественного генефонда (Реймар Н.Ф., Штильмарк Ф.Р., 1978; Fischer M., 1982: Henelt P., 1982; Schlosser S., 1982; Irmtraund T., 1983).

Как свидетельствуют проведенные исследования, уже сократились площади ареалов многих дикорастущих сородичей культурных растений и сильно поредели их популяции, а местами они исчезли совершенно. Нужно отметить, что этот процесс продолжается и в настоящее время, хотя человек и старается сделать все возможное для его предотвращения. Это говорит о том, что необходимо серьезно отнестись к сохранению в естественной природе дикорастущих культурных растений и приложить максимум усилий для сохранения ценного генофонда, рассредоточенного в нашей флоре.

Все вместе взятое, дало нам возможность разработать научно-обоснованные мероприятия охраны дикорастущих сородичей культурных растений, которые на наш взгляд, сводятся к теоретической (охрана отдельных видов) и практической (охрана популяций в естественной природы) формах охраны.

Охрана отдельных видов

Важнейшая задача растениеводов сохранить в нашей природе все видовое разнообразие произрастающих в ней дикорастущих сородичей культурных растений. Для этой цели, видимо, необходимо поэтапно научно обосновать и разработать комплекс мероприятий по сохранению их, в первую очередь, изредка встречающихся и эндемичных видов.

В нынешних условиях необходимы, прежде всего, практические дела, иначе мы рискуем быстро и навсегда потерять долю тех сокровищ, которыми так богата наша флора. В связи с этим необходимо выявить те виды, которые должны сохраняться в отдельных регионах (Owen C.S., 1971); Габриэлян Э.Ц., Данилова Л.В., Камелин Р.В. и др., 1981). В данном случае можно говорить и о Среднеазиатском очаге.

Вот поэтому, нами и была проведена инвентаризация дикорастущих сородичей культурных растений не только на территории СССР (Брежнев Д.Д., Коровина О.Н., 1981), но и на территории Каракалпакстана и Хорезма происхождения культурных растений (Коровина О.Н., 1982).

В результате наших исследований на территории Каракалпакстана и Хорезма зафиксировано 171 видов дикорастущих сородичей культурных растений, среди которого 3 вида эндемы. Изредка встречающихся видов – 10 (таб. 1), т.е. 1,7 часть (Никитин В.В., Бондаренко О.Н., 1973; Бондаренко О.Н., 1975; Коровина О.Н., 1980, 1982).

Нами подготовлен перечень из 9 видов, нуждающихся в охране для включения в очередное издание «Красной книги РУз» (табл. 2).

В главе 4 «Видовой состав дикорастущих сородичей культурных растений», нуждающиеся в охране виды, распределены по категориям (0 и 2), соответственно классификации Комиссии по редким и исчезающим видам Международного Союза Охраны Природы (1975): 0 – изредка встречающийся вид, и 2 – вид, ареал которого сокращается. При этом виды отбирались с учётом следующих принципов: узколокальность, реликтовость, редкая распространённость и интенсивность эксплуатации в природе.

Таблица 1. Изредка встречающиеся и с сокращающимся ареалом виды

№	Семейства и виды	Изредка встречающиеся	Сокращ.ареал
	FABACEAE Lindl.		
1	*Caragana grandiflora* (Beib.) DC.	+	+
	IRIDACEAE Juss.		
2	*Iris falcifolia* Bunge	+	+
	LAMIACEAE Lindl (Labiatae Juss.)		
3	*Lagochilus acutilobus* (Ledeb.) Fisch. & C.A. Mey.	+	+
	NITRARIACEAE Bercht. & J.Presl.		
4	*Nytrariya sibirica* Pall.	+	
	PEGANACEAE (Engl.) Tiegh. ex Takht.		
5	*Malacocarpus crithmifolius* (Retz.) C.A.Mey.	+	
	POACEAE Barnhart		
6	*Stipa barchanica* Lomonosova	+	+
	ROSACEAE Juss.		
7	*Amigdalus spinossisima* Bunge	+	
8	*Crataegus korolkovii* L. Henry	+	+
9	*C. pontica* C. Koch.	+	+
10	*Ammodendron longiracemosum* Raik	+	+
	Всего:	10	7

Согласно классификации, в первую категорию (изредка встречающиеся виды) вошли 10 вида (или 5, 8%). Это представители 7 семейств из 9 родов (табл. 6.1.2).

Во вторую категорию (виды, ареал которых сокращается) вошли 9 видов из 7 семейств и 9 родов.

В целом, выявленный нами перечень видов дикорастущих сородичей культурных растений требующих первостепенной охраны не такой уж большой, однако их сохранение необходимо для селекции настоящего и будущего.

Необходимо сохранять на территории нашей страны имеющие и широкий ареал, ибо в разных частях ареала они несут неповторимые биологические свойства и признаки (Коровина О.В., 1980). Для настоящего и будущего требуется сохранять и все внутривидовые разнообразия, или, точнее генетические разнообразия видов.

Таблица 2. Виды дикорастущих сородичей культурных растений, предложенные для включения в Красную книгу Руз

№	Семейства и виды
	FABACEAE Lindl.
1	*Caragana grandiflora* (Beib.) DC. – карагана крупноцветковая
	IRIDACEAE Juss.
2	*Iris falcifolia* Bunge – ирис серполистный
	LAMIACEAE Lindl (Labiatae Juss.)
3	*Lagochilus acutilobus* (Ledeb.) Fisch. & C.A. Mey. – зайцегуб остролистнй
	NITRARIACEAE Bercht. & J.Presl.
4	*Nytrariya sibirica* Pall. – селитрянка сибирская
	PEGANACEAE (Engl.) Tiegh. ex Takht.
5	*Malacocarpus crithmifolius* (Retz.) C.A.Mey. – мягкоплодник критмолистный
	POACEAE Barnhart
6	*Stipa barchanica* Lomonosova – ковыль прекрасный
	ROSACEAE Juss.
7	*Amigdalus spinossisima* Bunge – миндаль колючейший
8	*Crataegus korolkovii* L. Henry – боярышник Королькова
9	*C. pontica* C. Koch. – боярышник понтийский

Поэтому мы считаем целесообразным указанные виды обязательно включить в очередное издание «Красной книги РУз», так как человечество не должно утратить их, потерять возможность использовать в селекции.

Теоретическая охрана дикорастущих сородичей культурных растений, т.е охрана осуществляемая через «Красную книгу» или путем оглашения разного рода перечней видов как и растений вообще должно сопровождаться широкой пропагандой значения их для практической селекции и человечества. Пропаганда должна осуществляться через радио, телевидение, газеты, журналы и прочие многотиражные издания, а также чтением лекций и докладов среди учащихся, студентов, рабочих и т.д. Подобную деятельность мы тоже активизировали в процессе своей работы.

Охрана популяций дикорастущих сородичей культурных растений в естественной природе.

Практическая охрана видов дикорастущих сородичей культурных растений возможна в местах их максимального сосредоточения в разных местах изучаемого ареала путем создания заповедников или сохранение узколокального видов (ограниченных небольшой территорией) как памятники природы и ООПТ.

При этом необходимо заметить, что охрана дикорастущих сородичей культурных растений, как и растений вообще, может быть репрезентативной в случае, если взято под охрану не менее 80% их (Козловская Н.Ф., 1980).

По нашим данным, анализ состояния охраны дикорастущих сородичей культурных растений Каракалпакстана и Хорезма осуществлен на основе их эколого-географического районирования. На основании чего, мы смогли определить состав и число дикорастущих сородичей культурных растений (в том числе эндемичных видов) в каждом из выделенных нами подрайонов и определить микроочаги максимального их сосредоточения. Эти данные позволили обосновать создание новых охраняемых территорий для сохранения ценного генетического разнообразия, и тем самым осуществлять изучение и планомерные сборы исходного материала для дальнейшего изучения и использования в практической селекции.

Углубленное изучение распространение дикорастущих сородичей культурных растений, их состояние в природе во время экспедиций и по литературным данным, позволило выявить нам таким образам микро-очаги максимального их сосредоточения и предложить создание в них еще 8 ОПТ (Ajiev, 2020, 2021; Ajiev, et. al 2020, 2021a,b,c).

Помимо ОПТ, предлагаемых для сохранения дикорастущих сородичей культурных растений в местах их наибольшего сосредоточения, в которых будет предположительно взято под охрану подавляющее большинство видов, очень важно обратить внимание на узколокальные популяции некоторых редких и эндемичных видов.

В данном случае мы предлагаем объявить памятниками природы популяцию мягкоплодника критмолистного – *Malacocarpus crithmifolius* (Retz) C.A.Mey., произрастающего на обрывах чинка в урочище Кассарма; миндаля колючейшего - *Amygdalus spinossisima* Bunge, произрастающего на песчано-щебнистых склонах северо-западных Кызылкумов (встречается единично останцовые возвышнности Султануиздага и Бельтау); Песчаная акация длиннокистевая - *Ammodendron longiracemosum* Raik, встречающуюся только в районе о. Токмакта.

Таким образом, осуществление охраны выделенных видов через «Красную книгу РУз», охрана видов в предложенных ОПТ, а также охрана популяции ценных реликтовых видов как памятников природы, позволяет охватить 109 видов (или 63,7%) из 171 дикорастущих сородичей культурных растений Каракалпакстана и Хорезма. И только 62 видов дикорастущих сородичей культурных растений (или всего 36,3%) остаются вне охраны, но эти виды имеют весьма обширный ареал.

При таком охвате сохранения видов дикорастущих сородичей культурных растений очага, мы считаем, что защиту можно считать вполне репрезентативной.

Практически же более эффективно осуществление охраны дикорастущих сородичей культурных растений в заповедниках, заказниках, в живых коллекциях в ботанических садах, на опытных станциях и на школьных ботанических участках. Большую пользу в этом окажет объявление некоторых популяций редких видов памятниками природы. В связи с этим следует разослать перечни видов в ботанические сады (расположенные на территории Узбекистана происхождения культурных растений), на опытные станции и в заповедники с предложением вводить их в живые коллекции, тем самым сохранять и осуществлять их изучение. В настоящее время интерес к дикорастущим сородичам культурных растений сильно возрос в всем мире. Вследствие чего считаем, что углубленное изучение дикорастущих сородичей культурных растений Узбекистана стоять на правительственном уровне.

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DIRECT STENTING OF THE ANTERIOR DESCENDING CORONARY ARTERY (DESCRIPTION OF A CLINICAL CASE)

Abstract: *Aim: The goal of revascularization in stable angina is to increase survival and reduce symptoms of ischemia. Randomised trials have shown that direct stenting is associated with improved markers of reperfusion during primary percutaneous coronary intervention for stenosis of anterior descending coronary artery. However, data evaluating its impact on long-term clinical outcomes are lacking. The purpose of this study was to evaluate the efficacy and safety of stenting in patients with ostial stenosis of anterior descending coronary artery.*

Methods: The article presents a clinical case of anterior descending coronary artery stenting in a 57-year-old patient. The peculiarity of the patient was the presence of the anterior descending coronary artery - the ostial stenosis was 80%, then the stenosis in pr/3 was up to 95%, the distal bed was without hemodynamically significant stenoses. According to the anamnesis, physical examination and the results of instrumental examination, indications for direct stenting of the anterior descending coronary artery.

Results: Our data demonstrate the best results when performing direct stenting in patients with angina pectoris FC III. It has been previously proven that direct stenting in patients with stable coronary heart disease reduces the incidence of distal embolism with atherosclerotic plaque components.

Conclusions: In a contemporary, direct stenting during percutaneous coronary intervention is an effective and safe method of treating patients with FC III exertional angina and should be used whenever possible.

Key words: *stenosis of the anterior descending coronary artery, direct stenting, coronary artery disease, coronography.*

Language: *English*

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Introduction

Ischemic heart disease is myocardial damage caused by impaired blood flow through the coronary arteries. The defeat of the coronary arteries is organic (irreversible) and functional (transient). The main cause of organic damage to the coronary arteries is stenosing atherosclerosis [1]. Factors of functional damage to the coronary arteries - spasm, transient platelet aggregation and intravascular thrombosis. The concept of "IHD" includes acute transient and chronic pathological conditions.

The annual mortality of patients with stable angina is almost 2%, and non-fatal MI occurs in 2-3% of patients annually. Patients with an established diagnosis of stable angina pectoris die from coronary artery disease 2 times more often than those without this disease. Men with angina, on average, live 8 years less than those who do not have this disease [3].

Stable coronary heart disease is characterized by episodes of a reversible discrepancy between myocardial oxygen demand and its delivery, most often through an atherosclerotically affected coronary bed. The clinical manifestation of such symptoms of ischemia/hypoxia is usually transient chest discomfort, which is induced by physical or psycho-emotional stress and is reproducible, but can also occur spontaneously. Stable angina is considered if its symptoms have been unchanged for at least 2 months. Stable angina also includes a stable condition following acute coronary syndrome (ACS), often

asymptomatic [1]. As well as a prolonged state of atherosclerotic vascular damage before the onset of symptoms.

During the questioning, depending on the physical activity tolerated, 4 functional classes of angina pectoris are distinguished (according to the classification of the Canadian Society of Cardiology):

-FC I- "Latent" angina pectoris. Seizures occur only under extreme stress

-FC II- Angina attacks occur during normal exercise: fast walking, climbing uphill, stairs (more than 1-2 flights), after a heavy meal, severe stress

-FC III- Attacks of angina sharply limit physical activity - they occur with a slight load: walking at an average pace of <500 m, when climbing stairs for 1-2 flights. Rarely, seizures occur at rest.

-FC IV- Inability to perform any, even minimal load due to the occurrence of angina pectoris. Seizures occur at rest. A history of often MI, heart failure.

Coronary angioplasty and stenting are generally accepted methods of treating patients with coronary heart disease. The development of new types of X-ray surgical instruments, stents, angiographic equipment, and the improvement of surgical techniques have led to the fact that coronary stenting has become a safe and effective method of myocardial revascularization, performed daily in ordinary medical institutions [2, 3]. Coronary angioplasty is most effective in isolated one- and two-vessel lesions of the coronary bed, however, there are types of coronary artery (CA) lesions in which coronary stenting is associated with a number of problems. For example, in case of an ostial lesion of the right coronary artery (RCA), the surgeon has to face certain difficulties. First of all, this is due to the structural features of the RCA orifice, the wall of which, in fact, is represented by the wall of the aorta. A special redistribution of connective tissue elements in this place gives the RCA orifice lesions special properties, such as rigidity during balloon dilatation and a high percentage of artery “regression” [6, 7]. In addition, this type of lesion creates problems for catheterization with a "guiding" catheter. Coronary angioplasty and stenting are generally accepted methods of treating patients with coronary heart disease. The development of new types of X-ray surgical instruments, stents, angiographic equipment, and the improvement of surgical techniques have led to the fact that coronary stenting has become a safe and effective method of myocardial revascularization, performed daily in ordinary medical institutions [2, 3].

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Coronary angiography is the "gold standard" in identifying and assessing the degree of damage to the coronary arteries. Indications for CAG in chronic coronary artery disease:

— Verification of the diagnosis of coronary artery disease in unclear cases;

— Determination of the tactics of myocardial revascularization in case of proven coronary artery disease:

- with the ineffectiveness of medical treatment of coronary artery disease;
- with a high risk of cardiovascular complications according to clinical data and the results of non-invasive studies.

For a justified CAG, it is necessary to take into account the entire range of data obtained during questioning, examination and non-invasive instrumental studies. Carrying out CAG is most justified in patients with an a priori high risk of death and severe cardiovascular complications, since in the course of the study in such patients a decision is usually made on the method of myocardial revascularization in order to reduce this risk [2]. With a low risk of cardiovascular complications, CAG is not advisable, since its results usually do not affect the course of treatment and, accordingly, do not change the prognosis. If necessary, CAG is supplemented with intracoronary ultrasound (IVUS).

In practice, the classification of atherosclerosis of the coronary arteries is used according to the number of affected vessels (single-vessel, two-vessel, three-vessel). It has been proven that the unfavorable prognostic role of stenoses in the proximal sections of the coronary arteries is higher than the role of stenoses in the distal areas [4]. Groups of patients with stenosis of the trunk of the left coronary artery and the proximal part of the anterior descending artery are distinguished separately. The proposed predictive index of coronary artery disease is based on the prevalence of atherosclerosis of the coronary arteries. The prognostic weight of signs of the severity of the lesion varies from 0 (intact CA) to 100 (stenosis of the LCA trunk)

The basis for the treatment of chronic coronary artery disease is the modification of avoidable risk factors and complex drug therapy. As a rule, they are carried out indefinitely. Non-drug methods of treatment include surgical revascularization of the myocardium: coronary bypass grafting and balloon angioplasty with stenting of the coronary arteries [5,6]. The decision on the choice of surgical treatment is made by the attending physician, endovascular

surgeon and cardiovascular surgeon, taking into account the total risk of complications, the state of the myocardium and coronary arteries, the patient's desire and the capabilities of the medical institution.

Revascularization

The goal of revascularization in stable angina is to increase survival and reduce symptoms of ischemia. Revascularization should be considered in patients at high risk of mortality; at low risk, it does not improve prognosis or increase life expectancy. Percutaneous coronary intervention (PCI). Advances in technology, equipment, stents, and adjuvant therapy make PCI a routine and safe procedure in patients with stable CAD and appropriate coronary anatomy.

The risk of death associated with the procedure in stable CAD is <0.5% [3,7].

General approaches for revascularization. The decision to perform revascularization in a patient should be made depending on the severity of coronary artery stenosis, the degree of ischemia, and the expected positive effect on prognosis and symptoms. It is difficult to give absolute recommendations for all situations due to the vast number of possible combinations. In this regard, in a particular clinic for a particular patient, decision-making, as a result of discussion, by consensus of opinions (Team), and not by one opinion, should prevail, in addition, an individual approach for each patient is preferable. Revascularization is indicated for chronic angina refractory to optimal medical therapy, when technically feasible, with an acceptable level of risk and a good life expectancy [8]. It may also be considered as first-line therapy in situations:

• after myocardial infarction;

• dysfunction of the left ventricle;

• multivessel lesion and/or large area of ischemia;

• lesion of the trunk of the left coronary artery (stenosis over 50%).

. Treatment effectiveness indicators.

• elimination of angina attacks completely or transfer of the patient from a higher FC to a lower FC while maintaining a good quality of life;

• reduction of risks of undesirable events.

The purpose of this study was to evaluate the efficacy and safety of stenting in patients with ostial stenosis of anterior descending coronary artery (ADC).

Clinical case:

Patient A. Age: born in 1965

Post date: 01/11/2022

Date of operation: 01/11/2022

Diagnosis before surgery:

Main: Ischemic heart disease. Angina pectoris FC III. (PICS 2019). SP Coronarography dated 04.01.2022

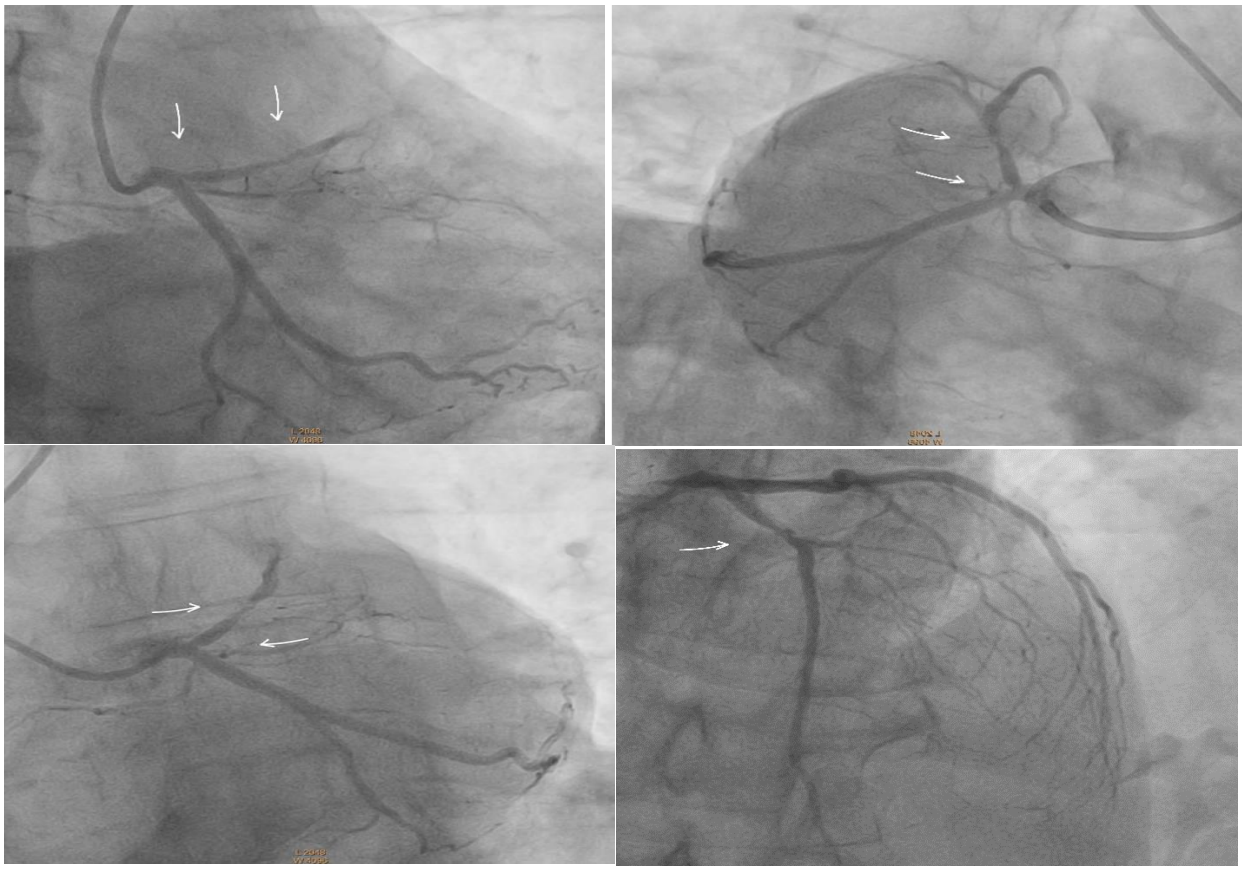

Figure 1. Coronary angiography: LCA-left coronary artery trunk is short, without stenoses.

Concomitant: Hypertension II Art. Degree of AH I. Risk IV. Diabetes mellitus type 2. stage of subcondensation.

Operation name: Direct stenting of the ADC.

Access: right radial artery (sheath 6F).

Coronary angiography dated 01/04/2022: RCA (right coronary artery) - without hemodynamically significant stenoses. PLB (posterolateral branch) - without hemodynamically significant stenoses. PIB (posterior interventricular branch) (RCA-right coronary artery) - without hemodynamically significant stenoses.

Anterior descending coronary artery (ADC) - ostial stenosis 80%, then stenosis in proximal/3 up to 95%, distal channel without hemodynamically significant stenosis. EB (envelope branch) - well developed.

LCA trunk is short, without stenoses. Anterior descending coronary artery ADC - ostial stenosis 80%, then stenosis in proximal/3 up to 95%, distal channel without hemodynamically significant stenosis. EB is well developed, without hemodynamically significant stenoses. OB (obtuse branch) - without hemodynamically significant stenoses.

Guide catheter JL 3.5-6F.

The coronary conductor “Whisper MS” 0.014”-180 cm was placed in distal/3 obtuse branch of EB. The second coronary conductor "Whisper MS" 0.014"-180 cm was placed in distal/3 ADC. Cylinder "Maverick Monorail" 2.5x15 was held in proximal/3 EB. Then the coronary stent "Ultimaster" 2.75x33 mm in size was placed in proximal/3 ADC. Simultaneous direct stenting of proximal/3 ADC with coronary stent "Ultimaster" 2.75x33 mm in size - 6 atm was performed. 2.61 mm. with dilatation proximal / 3 EB (envelope branch) coronary balloon "Maverick Monorail" 2.5x15 - 10 atm. 2.67 mm. Postdilatation of proximal/3 ADC as performed with a coronary balloon from a stent 2.75x33mm12 atm. - 2.84 mm.

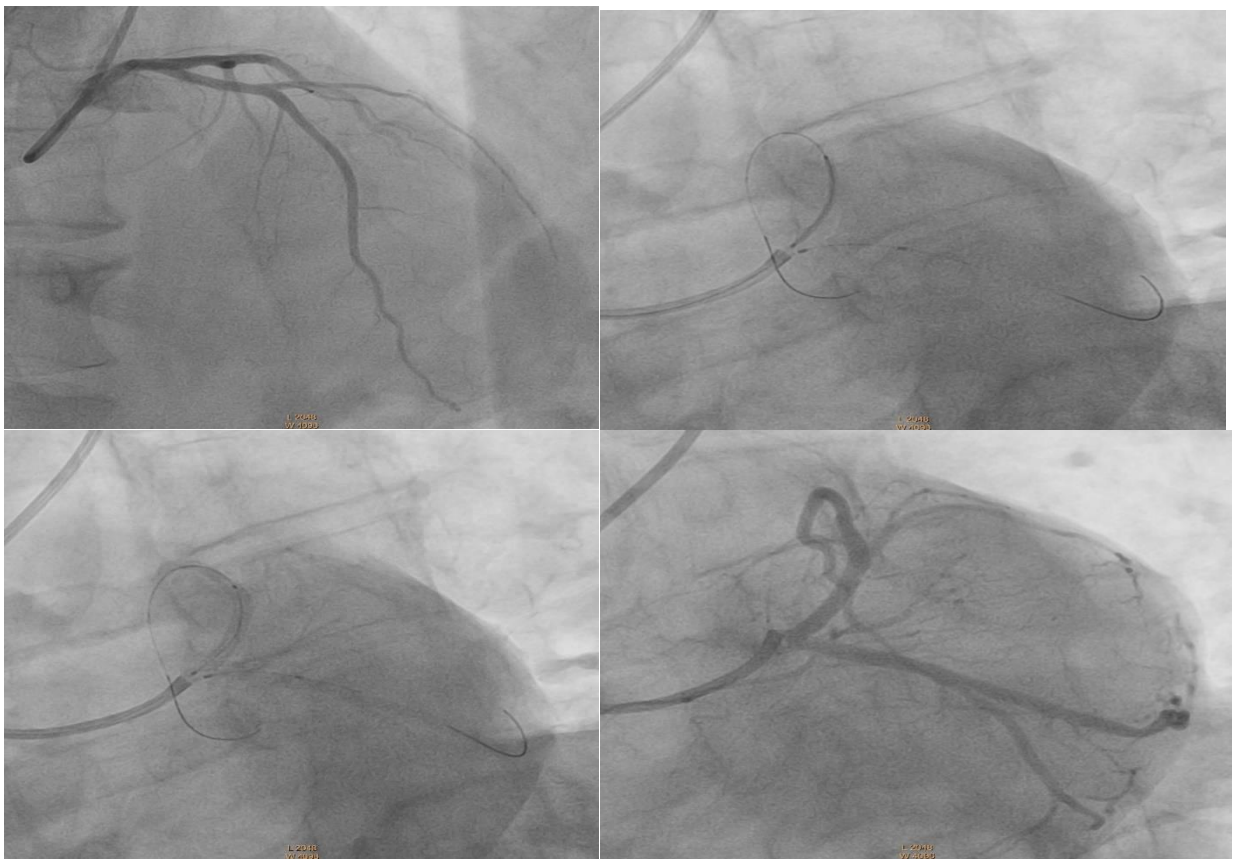

Figure 2. Simultaneously performed direct stenting proximal/3 Anterior descending coronary artery (ADC) with a coronary stent.

Control angiography showed a good TIMI III angiographic result.

The operation was completed without complications, a pressure bandage was placed at the puncture site, after which the patient was transferred to the ward in a stable condition.

Diagnosis after surgery:

Main: Ischemic heart disease. Angina pectoris FC II. (PICS 2019). SP Coronarography dated 04.01.2022

Concomitant: Hypertension II Art. Degree of AH I. Risk IV. Diabetes mellitus type 2. stage of subcondensation.

Results

Our data demonstrate the best results when performing direct stenting in patients with angina pectoris FC III. It has been previously proven that direct stenting in patients with stable coronary heart disease reduces the incidence of distal embolism with atherosclerotic plaque components (AP) [9]. When measuring the index of microcirculatory resistance after direct stenting, the probability of developing microvascular dysfunction decreased [10]. It is fair to assume that the described changes are also characteristic of patients with acute coronary syndrome, in whom, along with ASP components, a large amount of thrombotic masses is an additional substrate for embolism of the distal coronary bed. A number of studies have also shown that the achievement of the final TIMI-3 blood flow was more often observed in patients after direct stenting [5, 11]. A large meta-analysis of about 9,000 patients found that direct stenting was associated with better clinical outcomes and a higher angiographic success rate for PCI, and this is confirmed by our data [6]. Additionally, in a meta-analysis by C. Li et al. it was noted that direct stenting is associated with a decrease in mortality over 1 year of follow-up and a decrease in the incidence of the no-reflow phenomenon [7]. Despite a sufficient number of publications demonstrating the advantages of direct stenting, there are some controversies on this issue. First of all, this is due to the fact that the benefit of direct stenting was demonstrated only in 9 non-randomized analyses, however, data from 4 randomized trials did not show the benefit of this approach [6]. In particular, post-dilation of implanted stents was often performed in a number of studies, which can worsen the prognosis, more than 80% of patients had an initial blood flow of TIMI-3, when analyzing the results of interventions, patients with a final blood flow of TIMI-2 and TIMI-3 were evaluated together [12–14]. However, the main problem of all the conducted studies was the inaccurate calculation of the required number of observations and, as a result, the insufficient number of patients included in each group. Thus, in almost all studies, a decrease in mortality was noted with direct stenting, but this difference was statistically insignificant. All this dictates the need for a large randomized and well-designed study to determine the benefits of direct stenting. It should be noted that direct stenting cannot be performed in all patients with STEMI. It is not recommended to perform direct stenting in severe calcification, the presence of large lateral branches in bifurcation lesions, aorto-ostial lesions, and severe vessel tortuosity [4]. However, in more than 70% of cases, after passing a coronary conductor through the zone of thrombotic occlusion of the coronary artery, the TIMI-1–3 blood flow is determined [15].

Coronary artery lesions in the group of patients with stenosis of the LCA orifice compared with lesions of the middle segment of the LCA were characterized by more pronounced rigidity and necessitated more aggressive post-dilation. In a number of studies, in 3 (7.1%) patients in the group of stenting of the LCA ostial lesion, the degree of residual stenosis was more than 10%, which was associated with incomplete deployment of stents [14]. Thus, angiographic success was achieved in 56 (100%) patients in the RCA middle segment stenting group and in 39 (92.9%; p=0.15) in the RCA orifice stenting group.

In 100% of patients, a decrease in the functional class of angina pectoris and elimination of ischemia were noted. In no case did not require emergency additional interventions. However, due to the incomplete achievement of angiographic success in the RCA orifice stenting group, direct clinical success was also achieved in only 92.9% of cases [17]. When comparing the results after 1 year, 100% survival was observed in both groups. At the same time, in group 1, 2 (3.6%) patients had angina recurrence, while in group 2, angina recurrence was detected in 1 (2.6%) patient (p = 0.82). However, this did not require repeated myocardial revascularizations in either group. After 3 years in the 1st group, the survival rate was 98.2%, while in the 2nd group it remained at the level of 100% (p=0.57). Angina recurrence in group 1 occurred in 3 (5.6%) patients, in group 2 angina recurrence also occurred in 3 (7.1%) patients (p=0.52). At the same time, repeated myocardial revascularization required 1 (1.8%) patient in the 1st group, as well as 3 (7.1%) patients in the 2nd group (p=0.48) [11,13,14].

A clinically important outcome for the analysis of the quality of life of elderly and senile patients was the transition of angina to a lower functional class (IV to III, IV to II, III to II) [8]. Thus, the patients were analyzed according to the principle of the “yes-no” effect. As a result, we obtained results indicating the absolute benefit of myocardial revascularization for this outcome. The effectiveness of myocardial revascularization was also evaluated from the position of influence on some additional clinical and instrumental indicators. There were no significant differences in such indicators as blood pressure, heart rate, total cholesterol. After myocardial revascularization, one can note a significant increase in TF values — by 94% (p<0.01), PFI time — by 59.2% (p<0.01) and DP — by 44.9% (p<0.01), which is an indicator of the increase in the coronary reserve of the heart adequately to the level of physical activity.

Discussion

In the last decade, the possibilities of endovascular surgery have improved significantly in terms of device technology, procedural techniques,

and pharmacological support. In particular, the widespread use of drug-eluting stents is a fundamental component of all these advances.

The introduction of drug-eluting stents into clinical practice significantly reduced restenosis rates and, as a result, the frequency of repeated revascularizations, but was associated with an increased risk of late stent thrombosis [8, 9]. Among all predictors of stent thrombosis, early discontinuation of DAAT is the most important factor. Although the absolute incidence of stent thrombosis is quite low, in most cases stent thrombosis leads to acute myocardial infarction and is accompanied by high mortality [10-12]. Since endothelialization of drug-eluting stent strata takes a rather long period and is the main pathological determinant of stent thrombosis compared to bare-metal stents [13–15], long-term DAPT is recommended by most consensus documents [16, 17]. However, long-term DAAT is associated with a dose-dependent balance between an increased likelihood of bleeding and a reduced risk of ischemic events [18]. Even after the publication of large clinical trials investigating DAPT after drug-eluting stent implantation, the optimal duration of DAPT remains a matter of debate.

Oral coronary lesions differ from other types of lesions in their high rigidity and high incidence of calcification. A special place is occupied by aortic lesions of the coronary artery, in which the specific structure of the aortic wall causes great resistance during balloon dilatation, leading to more frequent elastic collapse of the artery. In the pre-stent era, the immediate results (angiographic success) of angioplasty were significantly worse than with angioplasty of lesions localized in other segments of the coronary artery.

The main reason for this was the high degree of rigidity of the lesions and the high degree of elastic collapse of the artery, as a result of which a high percentage of residual stenosis remained, coronary artery dissections, acute arterial thrombosis, and myocardial infarction often occurred. In the long-term period, a higher percentage of recurrence of myocardial ischemia was observed, and repeated myocardial revascularization was more often required. Subsequently, as techniques and instruments in interventional cardiology improved, as well as with the introduction of stents (including drug-eluting stents), the number of intraoperative complications decreased, and the percentage of immediate angiographic success increased. Numerous clinical studies have confirmed these positions. However, it remains unclear how the use of modern instrumentation, in particular drug-eluting stents, affects the immediate and long-term results of angioplasty of ostial coronary lesions compared with stenting of lesions in other segments of the coronary artery. When comparing the immediate results in our study, we see that angiographic success is achieved in a smaller number of cases with stenting of ostial lesions. This is primarily due to incomplete deployment of stents due to the rigidity of the lesions. However, there were no statistically significant differences in the results obtained. When studying the direct clinical effect of stenting, in all patients in both groups, a decrease in the functional class of angina was observed in the absence of significant complications.

It should be noted that similar data on the advantage of coronary stenting over basic therapy were also obtained in a number of large studies [9,10]. Thus, in the ACIP study during a two-year follow-up, mortality in groups of patients receiving drug treatment was 6.6%, in the group of patients who underwent myocardial revascularization; this indicator was equal to 1.1% [9]. In the RITA 2 study, the number of deaths and myocardial infarctions in the PCI group during the observation period was 6.3%; in the drug treatment group — 3.3% (p=0.02), and percutaneous interventions also caused a more significant reduction in symptoms in patients with severe angina [10]. On the other hand, according to the TIME study, long-term survival in patients with stable angina pectoris of class II and above (Canadian classification) aged over 75 years was similar in the PCI and medical treatment groups, although in both groups there was a decrease in angina symptoms and improvement in quality of life. life [11]. The COURAGE study, one of the largest studies completed to date, found no significant differences in the incidence of major CV events, with the exception of a lower incidence of angina attacks in the invasive treatment group in the first years of follow-up. However, it should be noted that the COURAGE study did not include patients at high risk. Thus, the possibility of extending the data of the COURAGE study to the general population of patients with chronic CAD seems to be very limited [12].

Conclusion

Direct stenting during percutaneous coronary intervention is an effective and safe method of treating patients with FC III exertional angina and should be used whenever possible.

When analyzing the incidence of cardiovascular mortality and the likelihood of survival during the first year after myocardial revascularization, a 3.3% decrease in the risk of "total mortality" and a 2% decrease in the probability of non-fatal infarction can be noted. Over a period of 12 months, a significant decrease in the frequency of hospitalizations, an improvement in the clinical course of stable angina pectoris, and an increase in the coronary reserve of the heart after revascularization were established in comparison with standard basic therapy.

According to echocardiography, after coronary stenting, there was a significant increase in the left ventricular ejection fraction at the end of the

observation period in patients versus patients who received standard therapy. In our own study, we can say about the insignificant advantage of coronary stenting in the prevention of cardiovascular death and non-fatal heart attack. This problem requires further development in order to develop a clear clinical assessment, and if the benefits of coronary artery stenting outweigh the risks, this method can be recommended to elderly and senile patients with stable exertional angina. The main factors that determine the choice of treatment method, however, should remain the individual cardiovascular risk and severity of CHD symptoms [13,14].

Conflict of interest

The authors state that this work, its theme, subject and content do not affect competing interests

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CREATE A MULTIMEDIAL ELECTRONIC EDUCATIONAL GUIDE WITH THE POSSIBILITIES OF THE WYSIWYG WEB BUILDER AUTHOR'S TOOL

Abstract: *There are now electronic publications in almost all industries. But not all of them are useful. Information may only be needed when it is used. Therefore, it is necessary to pay attention to this aspect in the preparation of electronic textbooks. Currently, the use of hypermedia systems in the field of new information technologies is developing. At the heart of such technologies is the idea of expanding and deepening the traditional teaching text on the basis of more advanced teaching material and replacing it with the use of courses and animated boards. In this case, the interconnected nodes are formed between the text sheets, which in one way or another are separated. According to experts, hypertext imitates the ability of the human intellect to remember large amounts of information and to search through this information through the association of communication processes and thinking processes. In other words, hypertext is a complex system of organized learning materials that combines a lot of statistical and dynamic information and has a generalized network structure. In this case, the importance of information boards is played by text, graphics, diagrams, videos, executables and animations (moving process). Texts, in turn, are made up of smaller texts that can be nested as many times as a "matryoshka" ("puppet in a puppet") puppet. . Transition from one text to another is carried out through a certain relationship, which is part of the multimedia electronic textbook. In addition to text interactions, there should be links between text and video, text and executable software, and text and animation effects. These links will also be given in the form of ratios listed in a set of known ratios.*

Key words: *Electronic manual, multimedia electronic manual, creation stages, teacher training programs, user, test, innovative technology, educational materials, modern author's tools, electronic information and educational resource.*

Language: *English*

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Scopus ASCC: *3304.*

Introduction

Today, many organizations use various computer technologies to conduct seminars, business meetings, trainings and other events. More memorable and visual, multimedia technologies are used to make the information richer. These are both hardware, multimedia, and software packages that can process a variety of data, such as text, graphics, and audio. There are different concepts of multimedia:

• Multimedia - a technology that describes the development, use and application of information processing tools;

• Multimedia - computer peripherals (the computer has a CD-Rom drive - a device for reading CDs, audio and video cards, can reproduce audio-video data, joysticks and other special devices)

• Multimedia - combining several means of presenting information into one system.

Typically, multimedia refers to the addition of information, such as text, sound, graphics, animation, video, and spatial modeling, to a computer system. The combination of such tools provides a qualitatively new level of information perception: a person not only thinks passively, but actively participates in what is happening. Programs that use multimedia tools are multimodal, meaning that they affect multiple sensations at the same time and therefore arouse great interest and attention in the listener.

Colorful multimedia application, the presence of pictures, tables and diagrams, along with animation elements and sounds, facilitates the understanding, comprehension and memorization of the studied material, a clearer and more capacious view of objects, events, situations encourages students' cognitive activity.

There are a variety of technological approaches aimed at developing high-quality multimedia applications. There are several basic technological guidelines for creating and using these programs.

A material component can be used as a basis for creating a multimedia e-learning guide, which is a method of constructing material based on the division into elements and visualization in the hierarchy.

At the initial stage of designing a multimedia e-learning material, the model of the material:

• clearly define the content of the material;

• present content in a visual and visual form;

• Identify the content of a multimedia e-learning guide.

Given the achievements of psychology, it allows us to develop a number of general recommendations that should be taken into account when developing a method of visual representation of information on a computer screen:

• the information on the screen must be structured;

• visual data must be changed to audio data from time to time;

• color brightness and / or volume should change from time to time;

• The content of the material provided should not be too simple or too complex.

The list of terms in the field of education includes new words such as "e-textbook", "distance learning course", "virtual practice stand", "virtual workshop", "videoconferencing", "electronic forum", "virtual classroom" appeared. The idea that a person who does not know computers in the 21st century is the same as a person who does not know how to read and write in the 20th century is becoming more and more popular. It is in this context that the requirements for the collection, storage, transmission and processing of information are becoming more and more stringent. Because the quality and speed of implementation of these processes is becoming increasingly important. [1].

Main part

In our opinion, it is advisable to use methods that encourage students to think independently and research. When these methods are used, students are able to work independently. The essence of these methods is that throughout the learning process, students are focused on free thinking and independent work.

Based on the above, it can be said that the creation of a multimedia guide to explore the possibilities of the WYSIWYG Web Builder program opens up great opportunities for students. At the national level, the Uzbek version of the creation of a multimedia manual to study the capabilities of the program Web Builder is in the early stages of development, and this issue is currently in need of additional resources, including electronic multimedia. It would not be wrong to say that software development needs to be increased. There is a growing demand for multimedia teaching software, especially in computer science. This is because one of the main goals of teaching methods is to increase the computer literacy of students and ensure that future professionals become professionals.

WYSIWYG Web-Builder is a modern high-performance system for creating dynamic and static sites for Internet management and intranet design. There are many software tools being developed in the CMS market today, and the capabilities of this software are highly valued. As mentioned above, as a general algorithm for creating a multimedia guide to explore the capabilities of Web Builder, we can cite the following steps:

Gather the necessary information for the created web page. At this stage, the necessary information on the given topic will be collected. For example: state educational standard of science, science program, working program, calendar plan, text of lectures, lesson scenario, set of questions and assignments, consolidation tests, video lesson developments, list of used literature, program use information about the guide is collected. This information is entered into a computer using a Word word processor and formatted. Also, once all the information is prepared, we move on to the next step. Create the overall structure of the web page to be created. At this stage, templates are prepared for the Web site to be created. These templates can also be linked to the skill of the designer and programmer who created the page. Because the software itself has special templates, you can use these templates or create a new template. Link pages to a page. At this stage, each created page is linked together to form a chain for the page. Page Design Department. At this stage, the design of each page will be strengthened and additional decorations will be provided. Check the created web page. This section checks the progress of the page. The easiest way to do this is to try using this page on another computer and check for links..

To the type of creative projects, first of all, it is necessary to include research projects, which mean the activities of students aimed at solving a specific research problem with an unknown solution in advance.

At the heart of such technologies is the idea of expanding and deepening the traditional curriculum on the basis of more advanced teaching material and replacing it with the use of courses and animation boards. This creates interconnected nodes between the selected text sheets in one way or another. According to experts, hypertext imitates the ability of the human intellect to remember large amounts of information and to search through this information by associating the processes of communication and thinking. In other words, hypertext is a complex system of organized learning materials that combines a lot of statistical and dynamic information and has a generalized network structure. In this case, the importance of information boards is played by text, graphics, diagrams, videos, executables and animations. Texts, in turn, are made up of smaller texts that can be nested as many times as a “matryoshka” (“puppet in a puppet”) puppet. . The transition from one text to another is done through a specific relationship that is part of the e-learning manual. In addition to text interactions, there should be text and video links, text and executable software, and text and animation effects. These relationships are also given in the form of ratios given in a set of known ratios. We can describe hypertext in the form of a graph-tree, in which texts of text, graphics, videos, executables, and animations are represented in the form of circles (graph nodes), and the relationships based on them are represented in the form of arcs connecting the corresponding circles. It should be noted that the effectiveness of the use of hypertext depends in many respects on the methodological relevance of the information that can be linked. For example, a set of ratios is characterized by the definition of specific tasks specific to each element, their degree of alternation. Keywords, concepts, and other parts of the text, including videos, may be highlighted (or underlined) to indicate that they are related to other parts of the text. Thus, users of the hypertext system can "travel" through the nodes of the graph and determine the appropriate piece of information from its ends, and the order of use of its arcs. This "journey" of the user through the information boards is called navigation. A hypertext system is a voluntary way of looking at texts sequentially, such as flipping through a book or hierarchically tracking the content of a book (chapters, paragraphs, and pages), as well as “paths” of pre-defined links. allows you to navigate in the nal In our opinion, it is advisable to use methods that encourage students to think independently and research. When these methods are used, students are able to work independently. The essence of these methods is that throughout the learning process, students are focused on free thinking and independent work.

Based on the above, it can be said that the creation of a multimedia guide to explore the possibilities of the WYSIWYG Web Builder program opens up great opportunities for students. At the national level, the Uzbek version of the creation of a multimedia manual to study the capabilities of the program Web Builder is in the early stages of development, and this issue is currently in need of additional resources, including electronic multimedia. It would not be wrong to say that software development needs to be increased. There is a growing demand for multimedia teaching software, especially in computer science. This is because one of the main goals of teaching methods is to increase the computer literacy of students and ensure that future professionals become professionals.

WYSIWYG Web-Builder is a modern high-performance system for creating dynamic and static sites for Internet management and intranet design. There are many software tools being developed in the CMS market today, and the capabilities of this software are highly valued. As mentioned above, as a general algorithm for creating a multimedia guide to explore the capabilities of Web Builder, we can cite the following steps:

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Conclusion

E-learning publications are increasingly using online resources posted on the Internet. Working with network scientific and educational resources has its own characteristics and requires knowledge of the

network, the ability to work with browsers, methods of searching, processing and storing information on the Internet. The first problem facing the Internet user is the problem of information retrieval. The next challenge is to determine if the resources found are suitable for educational use. There are many resources that are not tested for compliance with state education standards. In the process of studying a voluntary course, there may be a problem that the textbook obtained from the Internet does not correspond to the curriculum of the educational institution. The sheer variety of information available on the Internet makes it difficult to choose the software and hardware needed to process it. There are many formats of text, graphics, audio and video information. Let's look at some ways to solve these problems. What to look for? in answering this question, the teacher refers to the curriculum in his or her teaching activities. It is also useful to identify the nature of information that differs in structure, type of presentation, purpose, and form of presentation. How do I search? - To find the necessary information on the Internet, you need to search for resources that contain this information. Such catalogs are available as part of a search, information or research resource, or as a standalone resource. Unlike search engines, directories are more likely to live up to the expectations of users because the search is done within materials on a pre-selected topic.

In conclusion, it is well known that the rapid introduction of information technology in education, computerization of the educational process has become a leading pedagogical and methodological idea. Therefore, the use of new teaching technologies in the educational process, the creation and organization of e-learning courses should be one of the priorities for educators..

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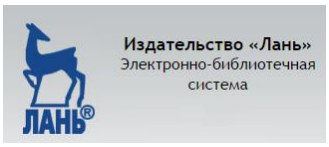

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