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CREATING AN ADMIN PANEL IN WORDPRESS

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ABSTRACT

This research paper explores the process of creating a custom admin panel in WordPress, focusing on the technical aspects and best practices to enhance the functionality and user experience. WordPress, as a content management system (CMS), provides a default admin panel; however, custom requirements often necessitate the development of a tailored interface to meet specific needs. This paper discusses the steps involved in creating a custom admin panel, the importance of user roles and capabilities, and the integration of custom post types and taxonomies. The paper concludes with a discussion on the security considerations and the potential for scalability in WordPress admin panel development.

Keywords:
WordPress, Admin Panel, Content Management System, Custom Post Types, Taxonomies, User Roles, Capabilities, Security, Scalability

INTRODUCTION

WordPress is one of the most widely used content management systems (CMS) globally, powering millions of websites due to its flexibility, ease of use, and extensive plugin ecosystem. The WordPress admin panel, often referred to as the "dashboard," serves as the control center for managing content, users, themes, and plugins. While the default admin panel is sufficient for many applications, there are scenarios where a custom admin panel is required to meet specific functional or user experience needs.

Creating a custom admin panel in WordPress involves more than just modifying the aesthetics of the dashboard. It requires a deep understanding of WordPress's core functionalities, including user roles, capabilities, custom post types, and taxonomies. Additionally, it is crucial to consider the security implications and the potential for scalability when developing a custom solution.

This paper aims to provide a comprehensive guide to creating a custom admin panel in WordPress, from the initial setup to advanced customization techniques. It will cover the essential tools and functions available within WordPress, as well as best practices for ensuring a secure and scalable admin interface.

Understanding the WordPress Admin Panel

1. **Overview of the Default Admin Panel**. The WordPress admin panel, accessible to users with sufficient privileges, provides a unified interface for managing various aspects of a website. It includes sections for posts, pages, media, comments, appearance, plugins, users, tools, and settings. Each of these sections can be customized or extended based on the specific needs of the website.
2. **User Roles and Capabilities**. WordPress uses a role-based access control system, where each user is assigned a role with specific capabilities. Understanding these roles and capabilities is essential when creating a custom admin panel, as they determine what actions users can perform. Custom roles and capabilities can be created to fine-tune access to different sections of the admin panel.

Creating a Custom Admin Panel

1. **Setting Up a Custom Admin Menu**. The first step in creating a custom admin panel is to define the structure of the admin menu. WordPress provides functions like add_menu_page() and add_submenu_page() to create custom menu items. These functions allow developers to specify the menu title, capability required to access the menu, and the callback function that renders the menu page content.
2. **Custom Post Types and Taxonomies**. Custom post types and taxonomies are powerful features of WordPress that allow the organization of content beyond the default posts and pages. Creating a custom admin panel often involves adding custom post types and taxonomies, which can be done using the register_post_type() and register_taxonomy() functions. These custom post types and taxonomies can then be managed through the admin panel.
3. **Custom Meta Boxes and Fields**. Meta boxes are the sections within a post editing screen that allow users to input additional information. Custom meta boxes and fields can be created to provide users with a more tailored content management experience. WordPress's add_meta_box() function is used to create custom meta boxes, while fields can be added using standard HTML and PHP.
4. **Customizing the Admin Dashboard**. The WordPress admin dashboard consists of various widgets that provide quick access to different areas of the site. Custom dashboard widgets can be created using the wp_add_dashboard_widget() function. These widgets can display custom information or provide shortcuts to frequently used functions.
5. **Enhancing User Experience with JavaScript**. JavaScript, particularly with the use of AJAX, can significantly enhance the user experience in the WordPress admin panel. Custom scripts can be enqueued using wp_enqueue_script(), and AJAX can be used to create dynamic, responsive admin panel features.

Security Considerations

1. **Nonces and Data Validation**. Security is a critical aspect of developing a custom admin panel. WordPress provides nonces (numbers used once) to prevent Cross-Site Request Forgery (CSRF) attacks. It is also essential to validate and sanitize all user inputs to protect against SQL injection and other vulnerabilities.
2. **User Role Management**. Ensuring that users have the appropriate roles and capabilities is vital for maintaining a secure admin panel. Custom roles should be created with minimal required capabilities, and sensitive sections of the admin panel should be restricted accordingly.

Scalability and Maintenance

1. **Plugin Development for Reusability**. A custom admin panel can be packaged as a plugin for easier deployment and reusability across multiple WordPress installations. This approach also facilitates updates and maintenance, as the plugin can be managed independently of the core WordPress installation.
2. **Optimizing Performance**. Performance optimization is crucial, especially for large sites with a significant amount of data. Caching strategies and minimizing the use of resource-intensive operations can help maintain a responsive admin panel.

Conclusion

Creating a custom admin panel in WordPress involves a combination of technical expertise and an understanding of user needs. By leveraging WordPress's built-in functions and best practices, developers can create tailored admin interfaces that enhance both functionality and user experience. Security and scalability considerations are essential throughout the development process to ensure that the custom admin panel remains robust and maintainable.

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CHALLENGES AND SOLUTIONS OF WINDING PROCESS IN SPINNING

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Abstract: *The winding process is a vital stage in textile spinning where spun yarn is transferred onto a bobbin or spool. This process, however, is fraught with technical challenges that can compromise the quality and efficiency of yarn production. Common issues include yarn breakages, tension variations, package deformation, sloughing off, and fringe formation, all of which disrupt production and affect downstream processes. To address these challenges, advancements such as tension control systems, anti-patterning devices, slub catchers, programmable control systems, and automatic doffing have been introduced. These innovations ensure more consistent winding, reduce defects, and improve productivity, thus helping spinning mills maintain high-quality standards while minimizing waste.*

INTRODUCTION

Winding is a critical process in the textile spinning industry, where yarn is wound onto a bobbin or spool after being spun. Despite its importance, various technical challenges arise during the winding process, impacting the quality and efficiency of yarn production. These issues can lead to thread breaks, uneven tension, and other defects in the final product. Several solutions and technological advancements have been proposed to overcome these challenges.

Key Challenges in Winding

Yarn Breakages: One of the most common problems in winding is yarn breakage due to high tension or flaws in the yarn. Breakages not only slow down production but also affect the consistency and quality of the wound yarn.

Tension Variation: Maintaining constant tension during winding is crucial. Variations can lead to loose or overly tight winding, which in turn affects yarn quality and causes defects in downstream processes such as weaving or knitting.

Package Deformation: Poor winding can result in deformed yarn packages, which can be problematic during the next stages of yarn processing. Such deformation is often caused by incorrect winding patterns or inconsistent speeds.

Sloughing Off: This occurs when the outer layers of yarn slip off the bobbin due to improper winding techniques, leading to wastage and reduced efficiency.

Fringe Formation: The ends of yarns at the edges of the wound package, if not properly controlled, can cause "fringes" that tangle, making the package difficult to unwind later.

Solutions to Winding Problems

Tension Control Systems: Advanced tension control mechanisms help to regulate the tension consistently throughout the winding process, reducing breakages and ensuring uniform winding. Sensors are often employed to monitor and adjust tension dynamically.

Anti-patterning Devices: Patterning occurs when yarn is wound repeatedly in the same place, leading to defects. Modern anti-patterning devices ensure a more even distribution of yarn across the package.

Slub Catchers and Yarn Clearers: These devices detect irregularities like slubs or knots in the yarn. By automatically clearing these imperfections during winding, the risk of breakage or defects in the final package is reduced.

Programmable Control Systems: Newer winding machines are equipped with programmable systems that allow operators to customize winding parameters such as speed, tension, and traverse settings for different types of yarn.

Automatic Doffing: In larger industrial setups, automatic doffing systems replace the manual changing of bobbins, improving productivity and reducing the risk of handling errors that could deform packages.

CONCLUSION

Winding problems in spinning can significantly impact production efficiency and yarn quality. However, advancements in technology—such as tension control systems, anti-patterning devices, and automated processes—are helping to mitigate these challenges. The adoption of these solutions ensures that spinning mills can maintain high-quality standards and reduce waste.

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SPINNING SYSTEM NOVELTIES: RECENT INNOVATIONS AND TRENDS

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Abstract: The textile industry has undergone significant advancements in spinning technologies, leading to enhanced efficiency, quality, and sustainability in yarn production. Innovations such as compact spinning, rotor spinning, and air-jet spinning have revolutionized traditional methods, offering improvements in yarn strength, reduced hairiness, and higher production speeds. Additionally, the integration of digitalization and automation through Industry 4.0 principles has enabled real-time monitoring and optimization of spinning processes, resulting in reduced defects and improved operational efficiency. Recent developments also emphasize sustainability, with eco-friendly spinning systems that reduce energy consumption and waste. These technological novelties are transforming the spinning sector, providing manufacturers with more versatile, efficient, and sustainable solutions for yarn production.

INTRODUCTION

The textile industry has seen significant technological advancements in spinning systems over recent years. Spinning, the process of turning fibers into yarn, plays a crucial role in fabric production. Innovations in spinning systems have improved efficiency, quality, and sustainability, making modern textile production more adaptable to the global demand for high-quality materials.

Compact Spinning

Compact spinning technology is an evolution in ring spinning. By integrating a compacting zone at the end of the drafting system, this method reduces hairiness, improves strength, and provides a smoother yarn surface. This innovation is increasingly favored for producing high-quality yarn, especially for fine and extra-fine counts.

Compact spinning minimizes fiber fly and waste, leading to better weaving and knitting performance. Key industry players, like Rieter and Zinser, have integrated compact spinning systems into their latest machines, offering manufacturers improved production quality with lower energy consumption.

Rotor Spinning (Open-End Spinning)

Rotor spinning, also known as open-end spinning, has evolved substantially with the introduction of more energy-efficient machines. Known for its high speed, rotor spinning is predominantly used for producing coarse and medium-count yarns. Recent developments in this area focus on reducing energy use, improving automation, and incorporating more sophisticated control systems that detect and address yarn defects automatically.

Modern rotor spinning machines, like the Autocoro series by Saurer, have introduced smart technology that monitors yarn consistency, reducing manual intervention, and enhancing productivity.

Air-Jet Spinning

Air-jet spinning is a fast, automated process where air is used to wrap fibers around a core, producing a yarn structure that mimics ring-spun yarn. This method is well-suited for producing yarn from synthetic blends or short staple fibers. Air-jet spinning has gained traction because of its high production speed, lower energy consumption, and the ability to create yarn with superior strength and less hairiness. Muratec's Vortex spinning system, for instance, uses air jets to spin yarn, offering benefits like high-speed operation, yarn uniformity, and reduced yarn breakage, leading to higher efficiency in production.

Sustainable Spinning Systems

As the textile industry faces increasing pressure to reduce its environmental impact, innovations in spinning systems have moved toward sustainability. Several new systems focus on reducing water usage, energy consumption, and waste. Spinning technologies now incorporate eco-friendly processes, recycling capabilities, and renewable energy sources.

Innovative systems like the SpinDye method combine spinning with dyeing, reducing water consumption and chemical use, which aligns with the global sustainability goals in textiles.

Digitalization and Automation in Spinning

The integration of Industry 4.0 principles in spinning systems has led to increased automation and digital control. Smart spinning machines now feature sensors, real-time monitoring, and data analytics capabilities. This digital shift has allowed manufacturers to monitor spinning parameters like tension, speed, and yarn quality remotely, minimizing defects and enhancing overall efficiency.

Rieter's Digital Spinning Suite, for example, offers full digital integration across the spinning process, enabling manufacturers to track production data, diagnose issues in real-time, and optimize processes remotely.

Conclusion

The evolution of spinning systems has been driven by the need for greater efficiency, sustainability, and quality in yarn production. Innovations such as compact spinning, rotor spinning, air-jet spinning, and digitalized systems have transformed the textile industry, offering manufacturers a range of tools to optimize production, reduce waste, and meet the growing demand for high-quality, sustainable textiles.

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MATHEMATICAL MODELING AND THE PROCESS OF CREATING A MATHEMATICAL MODEL

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Annotation: Mathematical modeling plays a crucial role in various scientific and engineering disciplines. It involves constructing abstract mathematical representations of real-world systems to understand, predict, and optimize their behavior. This article explores the key stages in the development of mathematical models, including problem formulation, model construction, model validation, and refinement. We discuss the importance of accurate assumptions, the choice of mathematical techniques, and the role of computational tools in enhancing the predictive capabilities of models. This overview also highlights the challenges faced during model development and the future directions in the field of mathematical modeling.

Keywords: Mathematical modeling, mathematical model creation, problem formulation, model validation, computational tools, model optimization, predictive analysis.

INTRODUCTION

Mathematical modeling has become an essential tool in the analysis of complex systems in fields such as engineering, physics, biology, economics, and environmental science. A mathematical model is a simplified representation of a system, process, or phenomenon that uses mathematical language to describe relationships between variables. These models help predict outcomes, optimize performance, and offer insights into the behavior of systems under various conditions.

The process of creating a mathematical model involves a series of steps, starting from the identification of the problem and system of interest to the formulation of mathematical expressions that capture the system's key behaviors. As models evolve, they are validated against empirical data, refined to improve accuracy, and applied in solving practical problems.

This article provides a comprehensive overview of the stages involved in mathematical modeling and the critical considerations that must be addressed to develop robust models.

1. Stages in the Process of Creating a Mathematical Model

The process of developing a mathematical model generally follows a structured approach. The stages of mathematical modeling include:

1.1. Problem Identification and System Understanding

The first step in creating a mathematical model is to clearly define the problem that needs to be addressed. This includes understanding the real-world system or process and identifying its essential components, inputs, and outputs. This step is crucial because it shapes the scope and purpose of the model.

In this stage, scientists and engineers often collaborate with domain experts to gather the necessary information about the system. It's essential to know the system's boundaries, constraints, and variables that will be incorporated into the model. A deep understanding of the system enables the modeler to decide what aspects can be simplified or ignored without significantly affecting the model's usefulness.

1.2. Formulation of Assumptions and Hypotheses

To construct a mathematical model, assumptions must be made to simplify the system while preserving its essential features. These assumptions are based on the characteristics of the system and serve to limit the complexity of the model. The modeler must decide which variables and interactions are critical for the model and which can be neglected.

For example, in physics-based models, assumptions about ideal conditions (e.g., ignoring air resistance in a vacuum) might be made to simplify equations. However, making incorrect assumptions can lead to inaccurate or incomplete models, so this step requires careful consideration.

1.3. Mathematical Formulation

Once the assumptions are defined, the next step is to translate the system's behavior into a set of mathematical equations or expressions. This may involve differential equations, algebraic equations, probability models, or statistical methods, depending on the nature of the system.

For instance, if the system involves dynamic changes over time, ordinary or partial differential equations may be used. If the system involves randomness or uncertainty, probabilistic or statistical models might be more appropriate.

The goal at this stage is to describe the relationships between input variables, system parameters, and outputs in mathematical terms. The complexity of these equations will depend on the nature of the system and the assumptions made earlier.

1.4. Model Solution

After the mathematical model is formulated, the next step is to solve the equations to gain insights into the system's behavior. For some models, analytical solutions are possible, allowing exact outcomes to be calculated. However, for more complex systems, numerical methods and computational algorithms may be required to find approximate solutions.

Computational tools, such as MATLAB, Python, or specialized software packages, are commonly used to simulate the behavior of complex systems and solve high-dimensional models that cannot be solved analytically.

1.5. Model Validation

Validation is one of the most critical steps in mathematical modeling. The model must be compared against real-world data or empirical observations to determine its accuracy. This step ensures that the model correctly predicts the system's behavior under various conditions.

Model validation typically involves testing the model under different scenarios or using data sets that were not used in the model development phase. If discrepancies between the model's predictions and observed data are found, the model may need to be refined or adjusted.

1.6. Model Refinement

If the initial model does not adequately match real-world data, it may need to be refined. This can involve revising assumptions, adding additional variables or interactions, or improving the mathematical techniques used. Model refinement is an iterative process that continues until the model's predictions are sufficiently accurate for the problem at hand.

1.7. Model Application

Once a mathematical model has been validated and refined, it can be used for predictive analysis, optimization, or decision-making. Models are often applied to explore scenarios, forecast future outcomes, or identify optimal strategies for achieving a desired objective.

In engineering, for example, mathematical models are used to design systems, such as bridges or chemical reactors, and to predict how they will behave under different loads or conditions. In economics, models help in policy formulation by predicting the effects of changes in variables like interest rates or taxes.

2. Challenges in Mathematical Modeling

Developing mathematical models comes with several challenges, including:

Choosing the right level of complexity: Overly simplified models may miss key aspects of the system, while overly complex models may become too difficult to solve or interpret.

Data availability: Models rely on accurate data for validation and calibration. Insufficient or poor-quality data can limit the usefulness of a model.

Uncertainty and sensitivity analysis: Real-world systems often involve uncertainty, and it's important to assess how sensitive the model's predictions are to variations in input parameters.

3. Future Directions in Mathematical Modeling

The future of mathematical modeling will likely be driven by advances in computational power, data availability, and techniques for handling complexity. Machine learning and artificial intelligence are becoming increasingly integrated with mathematical models, enabling the creation of models that can learn from data and improve their predictions over time.

Additionally, interdisciplinary collaboration between scientists, engineers, and mathematicians will continue to expand the applications of mathematical modeling, opening new frontiers in fields like biology, climate science, and social systems.

Conclusion

Mathematical modeling is a powerful tool for understanding, predicting, and optimizing the behavior of complex systems. The process of creating a mathematical model involves a series of well-defined stages, from problem identification to model application. While challenges exist, the continued evolution of computational tools and techniques promises to enhance the role of mathematical modeling in scientific discovery and problem-solving across various fields.

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ON NEW METHODS FOR SELECTING THE OPTIMAL MINERAL FILLER FOR COMPOSITE CEMENT BINDER

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Abstract : The article presents the results of theoretical and experimental studies on the development of a scientifically based methodology for the appointment of plasticizing chemical additives and mineral fillers when selecting the compositions of complex-modified concretes (CMC) at the design stage. A classification of plasticizing additives is proposed based on the degree of reduction of the surface tension of water when they are introduced and the activity of mineral additives based on the reduced hydration activity index, allowing for the production of highly economical CMCs with the required property indices.

Key words: Concrete, classification of additives, modification, plasticizer, mineral filler, surface tension, adsorption centers, hydration activity

The production of the main construction component such as cement is a very energy-intensive process. Therefore, to solve problems related to saving energy resources, it is necessary to switch to modern approaches to obtaining new-generation concrete, that is, to the production of modified concrete using composite binders. The essence of this approach lies in the partial replacement of clinker, the most expensive cement component, with reactive finely dispersed mineral components of natural and man-

made origin, possessing significant chemical activity and a reserve of internal energy.

To create high-quality binder compositions, it is necessary to initially purposefully manage the production technology based on the use of reactive mineral components, the use of chemical modifiers and modern technological methods to activate their properties and conduct research on the development of the most rational binder compositions.

In this regard, the development of new effective binder compositions using finely dispersed reactive mineral additives for the production of modified concrete used in monolithic and precast-monolithic construction is a pressing task in modern construction materials science.

The processes of formation of the structure and strength of modified concretes are currently poorly studied, and the results of the study of the influence of finely dispersed reactive mineral fillers on the properties of modified concretes have not been sufficiently studied and confirm the relevance of the issues of developing optimal formulations of composite binders and concretes.

Targeted optimization of the grain composition of concrete mixtures was achieved through the use of fillers .

Analysis of the results of the authors' studies [1-3] showed that mineral fillers with adsorption centers of intensities lying in the pKA region from -4 to 7 and more than 13 contribute to the catalytic activation of cement hydration. Active centers of mineral fillers in the pKA regions from 7 to 13 contribute to the acceleration of the adsorption of water molecules from the cement paste, thereby distracting from deeper participation in chemical interactions with the binder and thereby contributing to a decrease in the rate of hydration processes in the cement binder.

Taking into account the above, we have proposed a new criterion - “the indicator of reduced hydration activity”, which, in our opinion, allows us to more accurately assess the contribution of the surface activity of mineral fillers to the course of the processes of interactions and transformations occurring in the hydratable medium.

Table 1

Content of adsorption centers on the surface of mineral fillers

No. p/p	Name of mineral filler	Number of centers, 10^3 mg-eq / m^2				General quantity centers
		-4 …0	0…7	7…12.8	> 12.8	
		R_{ol}	P_{kb}	R_{ob}	R_{kl}	
1.	Sand	8.04	9.11	8.75	1.88	27.78

	Quartz					
2.	Sand dune	4.12	7.08	9.95	1.07	22,22
3.	Gliezh	13.22	16.47	10.08	2.87	42.64
4.	Basalt	23.41	22.15	11.16	1.96	58,68
5.	Zeolite containing rock	102.08	24.88	12.62	2.14	141.72

The proposed indicator is designated by the symbol – P_{pga} and is determined by the formula:

$P_{pga} = P_{kv} + P_{kl} + 0.33\ P_{ol} - 0.1\ P_{ob}$, where (1)

R_{kv}, R_{kl}, P_{ol}, P_{ob} – the number of adsorption centers in the regions 0< pKa <7; pKa >13.0; -4< pKa <0; 7< pKa <13.0 in 10^{-3} mg-eq /g. c respectively .

This criterion, characterizing the acid-base properties of the surface of mineral fillers, allows scientifically substantiated classification of mineral fillers by the degree of their impact on cement systems. In general, the following classification of mineral fillers is proposed by the criterion P_{pga} - the indicator of the reduced hydration activity (Table 2).

Table 2

Classification of mineral fillers by the reduced hydration activity index P_{pga} .

No. p/p	Type of mineral filler	Criterion values P_{pga} .	Potential efficiency in cement systems, cement savings in %
1.	Low-active	from 0< up to . <10	Up to 10%
2.	Medium active	from 10< up to . <25	10-20%
3.	Highly active	from 25< up to <50	20-30%
4.	Super active	Over and above > 50	Up to 50%

For the mineral fillers accepted for study, the calculation of this criterion , i.e. the indicator of the reduced hydration activity, is presented in (Table 3).

Comparative analysis of mineral fillers by the criterion P_{pga} allows us to predict their efficiency in cement systems and characterize them by their degree of activity, for example: dune sand - slightly active ; quartz sand, glyage , OEP - moderately active; basalt, OMP, fly ash Angrenskoy TE S - highly active and zeolite-containing rock - super active.

Table 3

Criterion P_{pga} in mineral fillers

No. p / p	Name of mineral filler	Transformed data		Criterion $P_{pga.}$	E y, MPa
		0.33 R_{ob}	0.1 P_{ol}		
1.	Sand Quartz	2.65	0.87	12.77	200
2.	Sand dune	1.36	0.99	8.52	180
3.	Gliezh	4.36	1.01	22.39	120
4.	Basalt	7.72	1,12	30.71	290
5.	Zeolite containing rock	33.68	1.26	59.44	300

The developed Patent No. IAP 07520 allows to determine **the composition of** filled cement systems with local mineral fillers, which makes it possible to design concrete with the required physical and mechanical properties.

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THEORY FOR EVALUATING A BANK'S FINANCIAL STABILITY: APPLIED TO RUSSIA

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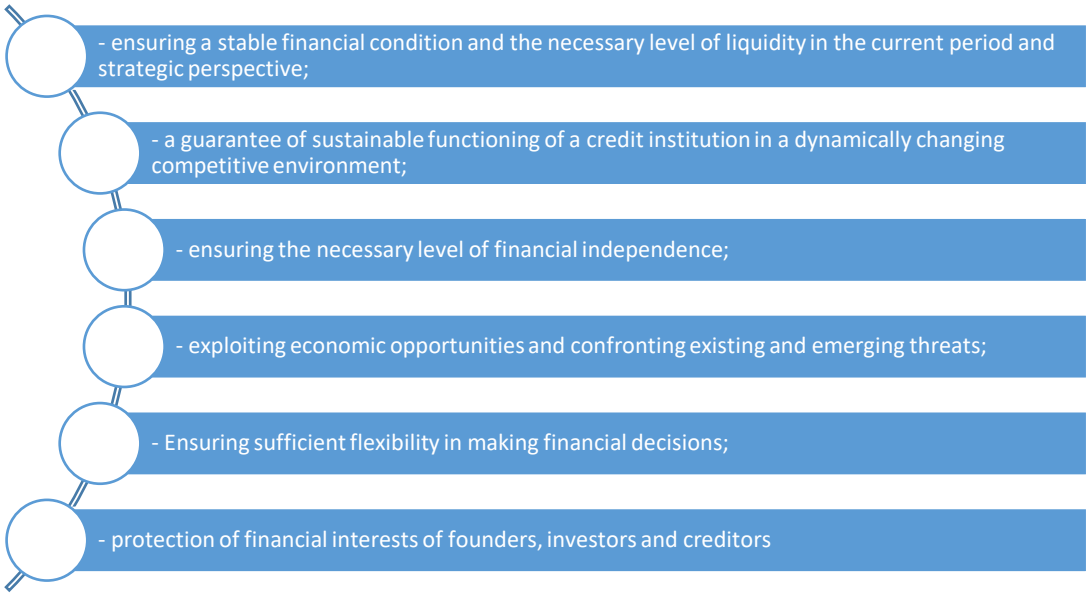
Abstract. *The article talks about how to understand if a bank is doing well with its money and staying safe. It looks at different ways to check how strong a bank is with its money and finds the best methods to use. It also suggests a new way to look at both the good and bad parts of a bank's money situation and how they relate to costs.*

Key words: *economics, financial security, banks, assessment methods, security criteria, risks.*

Banking institutions are crucial as financial middlemen that facilitate the process of "savings investment" in the economy. Banks draw in temporarily available money from individuals and businesses by offering to hold it in accounts at a set interest rate, thus preserving the value of the deposited funds. Banks lend money to people and businesses who temporarily need extra funds. The money is provided under specific terms for repayment, interest, and timelines.
In this respect, the importance of analyzing the operations of banks is growing. The findings of the study are useful for the banks and the Central Bank. Many banks have departments for studying and managing risks, but other parts of analyzing banks' activities are ignored by analysts. Hence, a comprehensive strategy and carefully planned methods are necessary to enhance the financial stability of a business bank, along with an adaptable monitoring system.
The issue of financial stability of banks is one of the key concerns for the national economy right now.
The financial security of a credit institution lies in its ability to independently develop and implement a financial strategy in accordance with the objectives of its activities, in an uncertain external environment, which necessarily entails in this figure.



The issue of guaranteeing the financial stability of a commercial bank is being researched by numerous scientists. Think about how the word "financial security of a credit institution" is defined nowadays. According to Kucherov I.I., a credit institution's financial security is a safeguard against the detrimental effects of both internal and external threats to maintain operational stability and the sustainability of the key interests' implementation. According to Chudaikina T.N., a bank's financial security is an economic category that encompasses the idea of financial stability. In other words, a commercial bank's financial stability is a crucial prerequisite for guaranteeing its financial security.

From the position of the bank, financial security is the protection of the bank from internal and external threats, ensuring management, assets and liabilities in accordance with the marginal conditions of security indicators, taking into account the risks of maintaining the bank's own capital, its effective use, the bank's ability to fulfill its obligations to customers and the state while the condition of legitimacy of operations and compliance of its financial documents with the requirements of supervisory authorities.

Thus, the financial security of a credit institution is a system of measures that contributes to the stable functioning of the bank, the prevention of internal and external threats. The financial security system should be unique in each bank, as it depends on the direction of the bank's activities, the sale of relevant banking products and services to individual consumers. Only the complexity and consistency of the bank's financial security system can ensure the reliability of its security.

The scientific and economic community has formed a system of principles that includes methods and methods for determining the stability of financial institutions

by comparing many factors with the stability of the financial aspects of the activities of credit institutions.

Methods for assessing the financial stability and reliability of commercial organizations and financial institutions are widely used and quite thoroughly studied by both international researchers and domestic scientists. Among the most widely used methods for assessing financial institutions, the following assessment systems are distinguished:

- Instruction of the Bank of Russia No. 4336-U
- Instruction of the Bank of Russia No. 3277-U
- V. Kromonov's technique
- Methodology of the agency "Expert"
- ACFI Methodology
- Methodology "Kommersant"
- Methodology "Ogrbank"
- CAMELS, RATE, FIMS, SAABA, BAKIS, etc.

Consider some of them.[5]

The meaning of the approach used by the Central Bank of Russia is to apply a set of methods for assessing the financial condition of an object, calculating a large number of indicators that allow an expert assessment of most of the bank's activities.

Guidelines for the analysis of the financial stability of commercial banks were compiled by the Central Bank of the Russian Federation, based on:

a) Instructions of the Bank of Russia dated June 11, 2014 No. 3277. U “On methods assessment of the financial stability of the bank in order to recognize it as sufficient for participation in the deposit insurance system”.

b) Bank of Russia Instruction No. 199-I dated November 29, 2019 (as amended on December 24, 2021) "On Mandatory Ratios and Add-Ons to Capital Adequacy Ratios for Banks with a Universal License".[3]

This document is the main regulatory document,

used as an instrument of supervision over the activities of commercial banks in the territory of the Russian Federation. This act establishes the procedure for calculating all economic indicators included in the calculation of mandatory economic standards, as well as the limit values of the standards.

The list of mandatory bank ratios is given in Table 1.

Table 1 - List of mandatory standards calculated

Russian banks

No. Indicators of mandatory standards Standard

1 Basic capital adequacy ratio of the Bank (N1.1) >=4.5%

2 Capital adequacy ratio of the Bank (Sh.2) >=6%
3 Capital adequacy ratio of the Bank (N1.0) >=8%
4 Instant liquidity ratio of the Bank (N2) >=15%
5 Current liquidity ratio of the Bank (N3) >=50%
6 Long-term liquidity ratio of the Bank (I4) >=120%
7 Maximum risk limit per borrower or group of related borrowers (H6) (maximum) >=25%
8 Maximum size of large credit risks (N7) >=800%
9 Ratio of the maximum amount of loans, bank guarantees and guarantees provided by the Bank to its participants (shareholders) (H19.1) >=50%
10 Total risk ratio for the Bank's insiders (N10.1) >=3%
11 Normative use of the Bank's own funds (capital) for the acquisition of shares (stakes) of other legal entities (Sh2) >=25%
No. Indicators of mandatory standards Standard
12 Normal ratio of the size of mortgage coverage and the volume of mortgage-backed bonds issue (N18) >=100.0%

So, in the methodology proposed by the Bank of Russia, it determines a generalizing result that reveals the degree of stability of a commercial bank as a whole, new analysis criteria are constantly added, which allows us to draw a reliable conclusion. The main disadvantages of this technique are that the evaluation is static. Within the framework of this methodology, there are no calculations of predictive indicators. The revealed result according to this technique may be late in relation to the occurrence of problems.

By V. Kromonov's technique is to calculate 5 groups of indicators and compare these indicators with an ideal bank. The initial information for the calculations are balances, the data of which are grouped into economically homogeneous groups.[4] Compiled and grouped such indicators as the authorized capital (UF), equity (SC), demand liabilities (OS), total liabilities (CO). liquid assets (LA), working assets (risk) (RA), capital protection (PC).

Based on these guidelines, six coefficients are calculated. According to Kromonov's method, the optimally reliable bank is a bank with the following coefficients: K1=1, K2=1, K3=3, K4=1, K5=1, K6=3. This means that such an ideal "bank: [7]

- invests in operating assets in the amount of equity capital;
- contains funds in liquid form in the amount equal to demand liabilities;
- has three times more liabilities than working assets;
- contains funds in liquid form and in the form of capital investments in an amount equal to total liabilities;

- has capital assets in the amount equal to the size of equity capital;
- has a capital three times greater than the authorized capital.[2]

Thus, the concept of V. Kromonov's methodology lies in the fact that in it the analyzed bank is compared with the ideal bank, the value of which is taken as 100%, the closer the real analyzed bank is to the ideal one, the higher its reliability. The reliability of the bank according to this technique characterizes it as an object of break-even or safe investments for depositors. The disadvantages of this technique are the controversy of the normalization of the coefficients and the ambiguity of the reliability criteria, as well as how the weight values were determined.

The CAMELS valuation methodology is a system for analyzing the state of financial instruments, which is a comprehensive assessment based on data received by the control authorities. The methodology for analyzing bank performance was introduced in 1978 after the decision of the US supervisory authorities to standardize their systems for analyzing the financial condition of a commercial bank.[8]

The abbreviation stands for the first letters of the analyzed indicators.

C - capital adequacy ratio: is the amount of capital sufficient to protect deposits;

A - asset quality indicator: assessment of the return potential of assets, taking into account problem loans;

M - indicator of the quality of management institutions, analysis of the qualitative characteristics of banking management based on the results of work;

E - indicator of profitability (profitability) of organizations: the efficiency of activities and the sufficiency of profit for long-term development are determined;

b - an indicator of the organization's liquidity: liquidity is determined in terms of the timely fulfillment of obligations.

B - an indicator of the organization's sensitivity to risks assesses the impact of external factors on banking activities: interest rate, currency risks, the risk of loss of profitability.[6]

The advantages of this technique are that the rating for each indicator shows directions for improving the efficiency of the bank. The overall score reflects the degree of need for intervention in relation to the bank. The disadvantage of this technique is that it is based on subjective assessments, therefore, the overall result of this technique depends on the professionalism of the analyst.

The approach of the "Expert" magazine is divided into two parts. The first part examines profitability and dependability, while the second part examines changes in dynamics. Profitability within this approach refers to the proportion of earnings to total assets, while the reliability indicator is calculated based on the bank's capital ratio to the funds it has attracted. The primary benefits of this method are the use of

statistical analysis based on two criteria. The downside of this method is that it doesn't consider non-numeric factors.

In summary, all methods have measurable indicators, but not all include qualitative indicators. In order to fully evaluate the bank, it is important to analyze both the numbers and the quality of its operations. Additionally, upon examining the pros and cons of the methods at hand, we can determine that all the methods effectively evaluate only the present status of the bank, without predicting the future. Therefore, to accurately assess the financial strength of a bank, it is insufficient to rely on just one approach. In order to analyze the quality, it is important to utilize a method for coefficients and ratings, as well as employ economic and mathematical approaches that will enable the prediction of values and identification of opportunities to enhance financial stability within a commercial bank.

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“O‘ZBEKISTON TURIZMINI YANADA RIVOJLANTIRISHDA IJTIMOIY TURIZMNING AHAMIYATI”

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Annotatsiya: *Ushbu ilmiy maqolada O‘zbekistonning turizm sohasida ijtimoiy turizmning o‘rni va dolzarbligi, mamlakatimizdagi ijtimoiy turizmning imkoniyatlari, shuningdek uni rivojlantirish ko‘plab ijtimoiy, iqtisodiy, siyosiy va ekologik faktorlar bilan bog‘liq bo‘lgan chora-tadbirlari ishlab chiqilgan.*
Kalit so‘zlar: *kam ta’minlangan qatlamlar, ijtimoiy tenglik, mahalliy aholi, global tendensiyalar, ijtimoiy xizmatlar.*
Абстракт: *В данной научной статье разработаны роль и актуальность социального туризма в сфере туризма Узбекистана, возможности социального туризма в нашей стране, а также меры, связанные с его развитием с учетом множества социальных, экономических, политических и экологических факторов.*
Ключевые слова: *малообеспеченные группы, социальное равенство, местное население, мировые тенденции, социальные услуги.*
Abstract: *In this scientific article, the role and relevance of social tourism in the field of tourism of Uzbekistan, the possibilities of social tourism in our country, as well as measures related to its development with many social, economic, political and environmental factors have been developed.*
Key words: *disadvantaged groups, social equality, local population, global trends, social services.*

KIRISH

Bugun dunyo iqtisodiyotida eng tez rivojlanib borayotgan sohalardan biri bo‘lgan turizm, ko‘plab mamlakatlar uchun katta daromad manbaiga aylanib bormoqda. Xizmatlar sohasi, dunyoda daromadligi bo‘yicha yetakchi sohalar ichida uchinchi o‘rinni egallamoqda. Shu bois dunyoning ko‘plab davlatlari ushbu sohani yanada rivojlantirish, bu borada tegishli infrastrukturani jahon standartlari darajasida yaratish va sayyohlar oqimini oshirish bo‘yicha barcha chora-tadbirlarni amalga oshirmoqda.

O‘zbekistonda ham turizm rivojlanib borayotgan sohalardan biri bo‘lmoqda. 2023-yil 21-fevral kuni VII “O‘zbekiston gidlari forumi”ning ochilish marosimida Turizm

qo‘mitasi raisi Umid Shadiyev O‘zbekistonga 2023-yilda xorijdan 7 millionga yaqin turist kelganligini, ularning O‘zbekistonda qolish muddati o‘rtacha to‘rt kungacha uzaygani, bu 2022-yilga nisbatan 1,3 barobarga ko‘payganini ma’lum qilgan bo‘lsa, bu ko‘satkich 2024 yilning yanvar-may oylarida 2,8 milliondan ortiq chet el fuqarolari turistik maqsadda O‘zbekistonga tashrif buyurdi. Statistika agentligi ma’lumotlariga ko‘ra, bu ko‘rsatkich o‘tgan yilning mos davri bilan solishtirilganda 248,2 ming nafarga yoki 9,6 foizga oshgan. 2024 yilning 5 oyida O‘zbekistonga turistik maqsadlarda kelgan chet el fuqarolarining mamlakatlar kesimida soni bo‘yicha Tojikiston yetakchilik qilmoqda – 871,5 ming nafar. Ushbu ko‘rsatkich qolgan davlatlar bo‘yicha quyidagicha ko‘rinishga ega: Qirg‘iziston – 857 ming nafar, Qozog‘iston – 498,2 ming nafar, Rossiya – 289,6 ming nafar[1]. Bundan ko‘rinib turibdiki, mamlakatimiz ichki va tashqi turizmi sezilarli darajada o‘zgarmoqda. Albatta bunda ijtimoiy turizmning ham ahamiyati katta.

Ijtimoiy turizm – bu davlat tomonidan ijtimoiy ehtiyojlarga ajratiladigan mablag‘lar hisobidan sayohat qilish hisoblanadi. Ijtimoiy turizmning maqsadi foyda olish emas, balki daromadi kam bo‘lgan kishilarni dam olishga bo‘lgan huquqini amalga oshirish uchun ularni qo‘llab-quvvatlash hisoblanadi. Turizmning mazkur turi chet elda keng tarqalgan. Sobiq ittifoq davrida ham turizmning mazkur turi ommabop hisoblangan, uning ulushiga ichki turizmning qariyb 80%i va xalqaro turizmning 50%i to‘g‘ri kelar edi[2].

Ijtimoiy va iqtisodiy turizm kambag‘al aholi (yoshlar va maktab o‘quvchilari, nogironlar va nafaqaxo‘rlar) uchun dam olish va sayohat qilish uchun munosib sharoitlar yaratishga qaratilgan. Ushbu turdagi turizmga subsidiyalar nafaqat davlat tomonidan, balki turli xil fondlar (davlat va nodavlat), shuningdek, turli xayriya tashkilotlari tomonidan ajratilishi mumkin[3]. Ijtimoiy turizm ko‘plab muassasalar, davlat va nodavlat tashkilotlari tomonidan qo‘llab-quvvatlanadi, ular orqali ijtimoiy loyihalar amalga oshiriladi.

O‘zbekistonning ijtimoiy turizm sohasidagi o‘sish sur'atlari va uning iqtisodiy ahamiyati quyidagicha, o‘sish sur'atlari:

1. Mahalliy sayohatchilar sonining ortishi: “O‘zbekiston bo‘ylab sayohat qil!” dasturi doirasida 2022 yilda 11,4 millionta ichki sayyohat amalga oshirildi. Bu 2021 yilga qaraganda 1,9 barobar ko‘p[4]. 2023-yilda esa dasturga asosan, hududlarga 21

[1] https://www.gazeta.uz/oz/2024/05/13/tourists/
[2] I.STuxliyev, A.A.Eshtayev, B.B.Xolov, N.A.Xakimova. “Turizm va mehmondo‘stlik asoslari”- o‘quv qo‘llanma. Toshkent-2021. 25-26 betlar.
[3] https://uz.delachieve.com/ijtimoiy-turizm-hamma-uchun-dam-olish/
[4] https://www.gazeta.uz/oz/2023/03/07/inner-travel/

mln mahalliy sayyoh tashrifi tashkil etildi. Bu esa mamlakatning turizm sohasida ijobiy o‘sishni ko‘rsatadi.

2. Yangi turistik yo‘nalishlar: O‘zbekiston turizmning yangi yo‘nalishlarini rivojlantirishga e'tibor qaratmoqda, masalan, tarixiy, madaniy va ekologik turizm. Shuningdek, 2025-yil 1-yanvardan boshlab turizmning quyidagi yangi turlari (yo‘nalishlari)ga ruxsat berilmoqda, geologiya turizmi; sanoat va ilmiy turizm; harbiy turizm[5]. Bu yangi imkoniyatlar sayyohlarni jalb qiladi.

3. **Infratuzilmaning rivojlanishi**: Yangi mehmonxonalar, transport tizimlari va turistik obyektlar qurilishi turizmni qo‘llab-quvvatlaydi. O‘zbekistonda mehmonxona infratuzilmasi modernizatsiya qilinmoqda.

Iqtisodiy ahamiyati quyidagicha:

1. **Ish o‘rinlari yaratish**: Turizm sektori yangi ish o‘rinlari va xizmat ko‘rsatish sohasida ishchilarni jalb qiladi, bu esa iqtisodiy o‘sishga ijobiy ta'sir ko‘rsatadi.

2. **Mahalliy iqtisodotni rivojlantirish**: Sayyohlar kelishi mahalliy ishlab chiqaruvchilar, restoranlar va boshqa xizmat ko‘rsatish sohalariga talabni oshiradi, bu esa mahalliy iqtisodiyotga ijobiy ta'sir qiladi.

3. **Mablag‘ tushumlari**: Sayohatchilardan tushadigan mablag‘lar O‘zbekiston iqtisodiyotiga katta hissa qo‘shadi. Bu, ayniqsa, xizmatlar va mahsulotlar savdosida muhim ahamiyatga ega.

4. **Ijtimoiy rivojlanish**: Turizm nafaqat iqtisodiy foyda keltiradi, balki ijtimoiy rivojlanishga ham xizmat qiladi, masalan, madaniy merosni saqlash va mahalliy madaniyatni rivojlantirish orqali.

Ijtimoiy turizmning global tendensiyalari quyidagicha:

1. Inkluzivlik: Dunyoda ijtimoiy turizmning inkluzivlik tamoyili rivojlanmoqda, bu esa kam ta'minlangan va maxsus ehtiyojlari bo‘lgan insonlar uchun sayohat imkoniyatlarini oshirishga qaratilgan.

2. Sifatli xizmatlar: Ijtimoiy turizm doirasida xizmatlar sifatini oshirishga e'tibor qaratilmoqda, shu jumladan, mehmonxonalar va boshqa turizm obyektlarining moslashuvchanligi.

3. Mahalliy hamjamiyatlar bilan hamkorlik: Ijtimoiy turizm ko‘plab davlatlarda mahalliy aholi va hamjamiyatlar bilan yaqin aloqada rivojlanmoqda, bu esa ularning iqtisodiy va madaniy rivojlanishiga yordam beradi.

[5] O‘zbekiston Respublikasi Prezidentining 2024 yil 4 martdagi PQ–109-son qarori bilan tasdiqlangan 2024-yilda strategik yo‘nalishlardagi islohotlarni amalga oshirish chora-tadbirlar rejasining 68-69-bandlari ijrosini ta’minlash maqsadida Strategik islohotlar agentligi va Turizm qo‘mitasi tomonidan O‘zbekiston Respublikasi Prezidentining “Turizm sohasida axborot taqdim etish tizimini takomillashtirish hamda yangi imkoniyatlarni yaratishga oid qo‘shimcha chora-tadbirlar to‘g‘risida”gi qarori loyihasi. https://asr.gov.uz/news/12198.

4. Barqarorlik va ekologik mas'uliyat: Ijtimoiy turizmning yana bir muhim tendentsiyasi — ekologik barqarorlik va mas'uliyat. Sayohat qilish orqali ijtimoiy va ekologik masalalarni birgalikda hal qilishga qaratilgan tashabbuslar ko‘paymoqda.
5. Texnologiyalar va raqamli innovatsiyalar: Raqamli texnologiyalar orqali ijtimoiy turizmni rivojlantirish uchun yangi platformalar va xizmatlar yaratilmoqda, bu esa ko‘proq insonlarni jalb qilishga yordam beradi.

Xulosa qilib aytganda, jtimoiy turizmdagi muammolarni hal etish uchun bir nechta kompleks yondashuv va hamkorliklar zarur ekan. Ya’ni m**ahalliy jamoalar bilan hamkorlik**, **iqtisodiy va moliyaviy qo‘llab-quvvatlash**, **o‘qitish va treninglar**, **barqaror rivojlanish strategiyalari**, **marketing va brend yaratish**, **ma'lumot va resurslar almashinuvi**, **monitoring va baholash**, **qonunchilik va siyosat**da ijtimoiy turizmni qo‘llab-quvvatlaydigan qonunlar va siyosatlarni ishlab chiqish va amalga oshirish. Ushbu yondashuvlar ijtimoiy turizmni muvaffaqiyatli rivojlantirishda muhim rol o‘ynaydi.

Umuman olganda, ijtimoiy turizm global miqyosda ijtimoiy adolatni ta'minlash, hamjamiyatlarni rivojlantirish va sayohat imkoniyatlarini kengaytirishga xizmat qiluvchi muhim tendentsiya hisoblanadi.

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КАРКАСЛИ СТРУКТУРАЛИ БЕТОНЛАРНИ ОЛИШНИНГ АЛОХИДАЛАНГАН ТЕХНОЛОГИЯЛАРИ ВА УЛАРНИНГ САМАРАДОРЛИГИ

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Аннотация. Хозирги кунда бетоншуносликнинг асосий масалаларидан бири цементли бетон ғоваклигининг минималлаштирилишига ва бетон структурасида технологик нуқсонларнинг хосил бўлишини олдини олишга эришиш хисобланади. Бетонлар технологиясини ривожлантиришнинг асосий технологияга оид йўналишларидан бири сифатида бетон қоришмасини таёрлаш усулини такомиллаштиришини, хусусан бетон қоришмасини тайёрлашнинг алохидаланган (икки босқичли) усулини олиш мумкин. Бетон қоришмасини тайёрлашнинг алохидаланган технологияси бўйича каркасли структурали бетонларни 2 хил усулда олиш мумкин: йирик тўлдиргичдан иборат каркас бўшлиқларига цемент қоришмасини босим билан сингдириш ёки йирик тўлдиргичли каркасни цементли қоришмага чўктириш.
Калит сўзлар: бетон ғоваклиги, бетон структураси, цемент тоши, модификатор, зич тўлдиргич, каркасли структурали бетонлар, йирик тўлдиргич , суперпластификатор , суспензия, тенденция , макроструктураси , интенсив зичлаш, боғловчилар, сиқилишга мустахкамлик чегараси, цементнинг нисбий сарфи.

Хозирги кунда бетоншуносликнинг асосий масалаларидан бири цементли бетон ғоваклигининг минималлаштирилишига ва бетон структурасида технологик нуқсонларнинг хосил бўлишини олдини олишга эришиш хисобланади. Ушбу масалани ечиш охирги 40-50 йил ичида цемент тошининг структурасига ва “цемент тоши - тўлдиргич” контакт зонасига турли модификаторлар билан таъсир кўрсатиш ва технологик чоралар кўриш билан амалга оширилмоқда. Бетонлар технологиясини ривожлантиришнинг асосий технологияга оид йўналишларидан бири сифатида бетон қоришмасини таёрлаш усулини такомиллаштиришини, хусусан бетон қоришмасини тайёрлашнинг алохидаланган (икки босқичли) усулини олиш мумкин. Зич тўлдиргичлар асосидаги бетонларда ғовакларнинг асосий манбаи сифатида

цемент тоши (қоришмаси) эканлигини эътиборга олсак, у холда уларнинг хажмини бетон структурасидаги улушини камайтиришни (бетон қоришмасини тайёрлашнинг алохидаланган технологияси ёрдамида) бетон технологиясини ривожлантиришнинг энг истиқболли йўналишларидан бири сифатида кўриш мумкин. Бетон қоришмасини тайёрлашнинг алохидаланган технологияси бўйича каркасли структурали бетонларни 2 хил усулда олиш мумкин: йирик тўлдиргичдан иборат каркас бўшлиқларига цемент қоришмасини босим билан сингдириш ёки йирик тўлдиргичли каркасни цементли қоришмага чўктириш. Замонавий кимёвий қўшимчалар – суперпластификаторларнинг (СП) юқори ҳаракатчан цемент суспезияларини олиш имкониятларини бериши бетон қоришмасининг алохидаланган технологиясини амалга оширишда янги имкониятларни очиб беради. Шунинг учун юқори самарали суперпластификаторлар асосидаги каркасли структурали бетонлар структураси ва хоссаларини шаклланишининг асосий қонуниятларини ўрганиш хозирги кунда бетоншунослик сохасидаги жуда ҳам долзарб масала хисобланади.

Маълумки, охирги ўн беш-йигирма йил ичида бетон технологиясида энг етакчи тенденциялардан бири – юқори харакатчан, шулар жумласидан ўзи зичланувчи бетон қоришмаларини қўллаш ҳисобланади. Ушбу бетон қоришмаларининг афзалликлари [1,2,3] кўп карра асослаб берилган. Бироқ ушбу қоришмалардан олинувчи бетонларга афзалликлар билан бир қаторда айрим камчиликлар хам хосдир. Ушбу камчиликлар уларнинг макроструктурасининг ўзига хослиги билан боғлиқ, хусусан қоришма қисмининг (цемент тошининг) одатдан юқорироқ концентрацияси, яъни йирик тўлдиргичларнинг кам миқдордаги концентрациясидир. Ушбу кўрсаткич ўзи зичланувчан бетонда асосан 0,34-0,36 ни ташкил қилади.

Буни аксича, қаттиқ қоришмалардан олинувчи бетонлар йирик тўлдиргичнинг каттароқ концентрацияси билан тавсифланади. Ушбу кўрсаткич 0,53 ва ундан каттароқ миқдорларга эга бўлиши мумкин. Бунинг натижаси сифатида бундай бетонларнинг киришиши ва ўрмаланувчанлиги миқдорлари анча камроқ бўлади. Бироқ қаттиқ бетон қоришмалари кўп холатларда технологик эмас, чунки жойлаштиришда интенсив зичлашни талаб этади. Шунинг учун йирик тўлдиргичнинг концентрацияси юқори бўлган бетонларни олишнинг мумкин бўлган йўналишларидан бири алохидаланган бетонлаш технологиясини қўллаш ҳисобланади. Ушбу технология йирик тўлдиргичнинг зич тахламида мавжуд бўлган бўшлиқларни юқори ҳракатчан қоришма қисми билан тўлдиришни кўзда тутади. Қоришма қисми сифатида эса цемент асосидаги ёки

полимерли таркиблар қўлланилиши мумкин ҳисобланади. Бундай бетонларни бошқача қилиб “каркасли структурали бетонлар” деб ҳам аташади [4,5]. Уларнинг самарадорлиги турлича боғловчиларни ишлатганда ҳам ўз исботини топган [4]. Кейинги тадқиқотларда йирик тўлдиргич хоссалари ва каркасли структурали бетонлар олиш усулининг бетоннинг сиқилишга ва чўзилишга мустаҳкамлиги чегараларига таъсирини ўрганиш натижалари келтирилган.

Каркасли структурали бетонлар алохидаланган бетонлашнинг қуйидаги икки усули билан тайёрланади:

-кам қовушқоқ қоришма қисмини хажми қайд этилган йирик тўлдиргичнинг бўшлиқларига босим билан сингдирилади (кейинчалик 1-технология); -йирик тўлдиргични кам қовушқоқ қоришма қисми хажмига чўктирилади, йирик тўлдиргич тахламнинг зич тахламини таъминлаш учун керак бўлса вибрацияни қўллаш билан бирга (кейинчалик 2-технология);

Тажрибаларда бетоннинг қуйидаги хоссалари ўрганилди ва кўрсаткичлари аниқланди: 28 суткадаги сиқилишга мустаҳкамлиги чегараси R_c , ўртача зичлик, ультратовуш импульсининг тарқалиш тезлиги, цементнинг нисбий сарфи Ц/Rc. Тадқиқотларнинг натижалари 1-жадвалда келтирилган. СС2 таркиби учун бундан ташқари 2,7, 15,28,90 суткалик муддатда парчалашда чўзилишга мустаҳкамлик чегараси Rt (2-жадвал).

Ўтказилган тадқиқотларнинг натижалари шундан далолат бермоқдаки, каркасли структурали бетонларда сиқилишга мустаҳкамлик чегараси кўрсаткичи бўйича 2-технология, яъни йирик тўлдиргични қоришма қисмига чўктириш технологияси, 1-технологияга нисбатан, яъни кам қовушқоқ қоришма қисмини хажми қайд этилган йирик тўлдиргичнинг бўшлиқларига босим билан сингдириш технологиясига нисбатан афзалроқ экан, чунки бунда бетоннинг мустаҳкамлиги чегараси кўрсаткичи 26-50% га юқорироқ бўлади.

1-жадвал.

Каркасли структурали бетонларнинг мустаҳкамлигини аниқлаш натижалари

Серияси	Бетон ўртача зичлиги,кг/м^3	Ультратовуш импульс тезлиги, м/с	Сиқилишга мустаҳкамлик чегараси, R_c МПа	Цементнинг нисбий сарфи Ц/Rc., (м^{3}МПа)
М1	2430	4420	30,2	8,34
К1	2480	4605	48,7	5,55
С1	2458	4620	31,9	6,61
К2	2475	4710	56,6	5,04
М2	2447	4551	38,2	5,85

С2	2465	4711	47,8	5,21
СС2	2488	4728	55,7	3,91
Изоҳ: М,С,К – мос равишда майда,ўрта, йирик қум;1,2- технологиялар СС – йирик тўлдиргич , такибидаги фракциялари 5-10 ва 20-40 мм 40+60% нисбатда бўлган.				

2-жадвал.

СС2 таркибининг қотиш муддати бўйича сиқилишга ва чўзилишга мустахкамлиги чегараси

Қотиш вақти,сут	Сиқилишга мустахкамлик чегараси R, базавий намунага келтирилган,МПа	Парчалашда чўзилишга мустахкамлик чегараси Rtr, МПа	Марказий чўзилишга мустахкамлик чегараси Rt, МПа
2	36,2	2,74	2,54
7	64,2	4	3,71
15	64,8	3,5	3,25
28	60,8	4,63	4,3
90	84,2	4,96	4.6

Қоришма қисмига чўктириш усулида олинувчи каркасли структурали бетонларни қўллашнинг рационал бўлган соҳаси- бу В50 синфидан юқорироқ бўлган бетонларни олиш, яъни асосан юқори мустахкам бетонларни олиш ҳисобланади.

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