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# ՖԻՆԱՆՍՆԵՐ ԵՎ ՀԱՇՎԱՊԱՀԱԿԱՆ ՀԱՇՎԱՌՈՒՄ

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МЕЖДУНАРОДНЫЙ ЦЕНТР ПО ОБУЧЕНИЮ БУХГАЛТЕРИИ

**ՖԻՆԱՆՍՆԵՐ ԵՎ ՀԱՅԱՍՏԱՆԻ  
ՀԱՅՎԱՐԱՆ**

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**ԵՐԵՎԱՆ 2022**

**«ՀՈՒՄԿ» ՀԻՄՆԱԴՐԱՄ ՀՐԱՏԱՐԱԿՉՈՒԹՅՈՒՆ**

«Ֆինանսներ և հաշվապահական հաշվառում» գիտական հանդեսը լուս է տեսնում տարեկան երկու անգամ: Հրատարակվում է 2018 թվականից:

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# **Financial Accounting**

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## **CONCEPTUAL ISSUES OF ACCOUNTING DEVELOPMENT**

**Abstract:** Accounting as a science has a history of five hundred years of development. During that period, the problems of accounting were changed many times, which continues to this day. In current, the beneficiaries of the accounting reports are not only interested in financial information, but also in the publication of non-financial information. In this regard, the problem arises to develop a methodology, that would allow the introduction of a non-financial information system within the framework of traditional accounting. The article proposes new conceptual foundations for the integration of financial and non-financial information systems. The methodological approaches are presented, in which the financial and non-financial results of economic activity are interconnected, combined with the same dimension, and are accounted for on the basis of double entry.

**Keywords:** International Financial Reporting Standards (IFRS), non-financial information flows, integrated accounting, reporting system

**JEL classification:** M40, M41

**Research aim:** to Introduce conceptual provisions for the integration of financial and non-financial information flows into the accounting system.

Research hypothesis: the traditional financial accounting system creates opportunities to integrate non-financial information as well, if a special methodology is used for that purpose.

Research novelty: introduced an accounting concept for financial and non-financial information flows, in order to publishing accounting statements, characterizing the efficiency of economic activity companies.

### Introduction

The origins of the science of accounting have been traced back to Italy, with a proposal for a double-entry method by Luca Pacioli, presented in the 1494 "Treatise on Accounting". For the first time, double-entry bookkeeping has become a systematic measure, in which the information flows of the value results of economic transactions are interconnected. To date, the principles of double-entry bookkeeping have hardly changed; the "debit and credit" of accounts used in practice seems to be the international language of financial accounting - applied in all countries [1].

Of course, it is now assumed, that with the introduction of the Block Chain system in the Internet environment, classical accounting is gradually losing its position and may lose its practical significance after some time [2]. This belief stems from the current situation, when the introduction of "Smart Contracts" in the business sector into the Block Chain system allows not only to record the results of economic transactions, but also to coordinate them and present them to the beneficiaries in closed reports. In this case, instead of double entry, triple registration is applied to economic transactions, establishing control over the information security of each interconnected block.

However, no matter how much experts claim, that the future of accounting is the Block Chain system, it still cannot completely replace

the current financial accounting used in business, as it does not have the information disclosure and publicity required to prepare internationally accepted financial statements, basis on the conceptual approaches of the presentation [3].

### Research Methodology

International Financial Reporting Standards (IFRS) regulate approaches to the preparation of published financial statements. However, the emphasis is on the principles of financial information presentation, and non-financial information is usually excluded from the reporting system. This is mainly due to the financial accounting framework, which includes the organization's assets, liabilities, equity, income and expenses. And today, the business world is also interested in non-financial information, so that assessments can be made not only on the financial condition of the organization, but also on strengthening competitive position, sustainable development opportunities, corporate interests, security issues, environmental and social activities.

Of course, such information cannot be presented in financial terms, which is currently the subject of discussion among theorists about the possibility of including non-financial information in the accounting system.

The demand for non-financial reporting has become a tradition for companies, where financial information is supplemented by other performance metrics that measure the effectiveness of the company in achieving various corporate and social responsibility goals. The integrated report shows, how the organization's strategic goals, their performance lead to the creation of not only financial, but also non-financial values. Information user groups, such as employees,

consumers, suppliers, **communities'** legislative bodies are interested in receiving such accounting non-financial reporting [4].

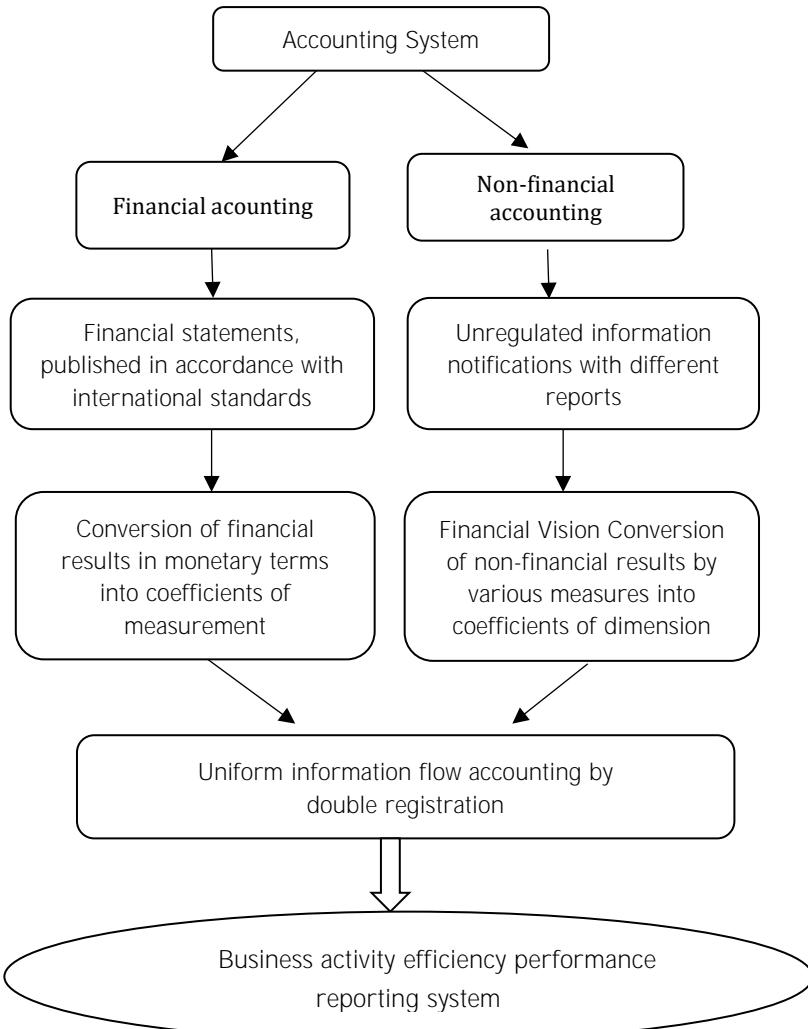


Figure 1. Proposed Conceptual Approaches to Accounting Development Vision<sup>1</sup>

<sup>1</sup> Created by author

Of course, the use of non-financial statements in the accounting system is associated with a number of methodological and practical issues. There is even an opinion, that only in the future it will be possible to develop, adopt international standards, which will regulate the issues, related to the preparation and submission of non-financial statements, which will allow reporting on the basis of common principles in different countries [5].

However, we believe, that the non-financial results of the business can still be included in the field of accounting, even by integrating it with the financial accounting information system. To this end, we propose to implement the following conceptual approaches (see Figure 1).

To begin with clarifying the objectives of the financial results of the activities of the organizations, linking them with the non-financial consequences of the business activities.

Traditional accounting focuses on the financial side of economic activity, with an emphasis on the results of business organization of organizations. However, when the financial results of commercial activities are correlated with the consequences of satisfying social, environmental and corporate interests, there is an opportunity to integrate financial and non-financial outcomes information into the accounting system.

In addition, apply uniformity of financial and non-financial results in the accounting system. If in the traditional financial accounting system, the unit of measurement is the money, then in the non-financial information system it is not enough, as it measures the characteristics of business results, such as time, job hours, technological hazardous emissions, hazardous waste, etc. Therefore, both financial and non-financial information must be presented in the

homogeneous dimension, that we propose to construct using coefficients [6].

Furthermore, record both financial and non-financial information in the accounting system by double-entry, opening special accounts for them.

Naturally, the proposed accounts will operate outside the traditional accounting system. And in order for information integration of financial and non-financial productivity indicators to take place, the results of economic activity converted into coefficients in the dimension of homogeneous measurement will be recorded in the accounts by double entry. This will enable the financial and non-financial information flows to be present in a joint report.

In conclusion, to develop an organization performance reporting system, reflecting not only the financial results, but also the non-financial consequences (environmental protection, increase of employees' welfare, satisfaction of corporate interests, strengthening of partnerships, expansion of social programs, implementation of public goals, market). strengthening competitive positions and etc.). Such a report will allow information users to assess, which the organization's financial interests targeted to the non-financial purposes, that are no less important in the business environment.

## Conclusion

The current financial accounting system, which is regulated by international accounting standards, is currently unable to fully meet the information needs of reporting users, as they make decisions based not only on financial, but also on non-financial information. Therefore, there is currently a need to develop an integrated system of financial and non-financial information flows, which will be based on double

entry in the accounting framework. In this case, the users of the accounting reporting information will be presented with published reports on the effective performance of the organization, which will assess potential investors or current partners not only the commercial results of economic activity, but also the non-financial consequences. Therefore, we believe that the vision of accounting development should be oriented towards the concept of integration of financial and non-financial information.

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<https://asue.am/upload/files/science/banber/2021-year-3/3.pdf>

## **ՀԱՇՎԱՊԱՀԱԿԱՆ ՀԱՇՎԱՌՄԱՆ ԶԱՐԳԱՑՄԱՆ ՀԱՅԵՑԱԿԱՐԳԱՅԻՆ ՀԻՄՆԱԽՆԴԻՐՆԵՐԸ**

**Բանալի բառեր** – ֆինանսական հաշվետվությունների միջազգային ստանդարտներ (ՖՀՄՍ), ոչ ֆինանսական տեղեկատվական հոսքեր, ինտեգրված հաշվառում, հաշվետվական համակարգ

Հաշվապահական հաշվառումը, որպես գիտություն, զարգացման հինգ հարյուր տարվա պատմություն ունի: Այդ ժամանակաշրջանի ընթացքում բազմիցս փոփոխությունների ենթարկվեցին հաշվառման առջև դրված խնդիրները, և այդ գործընթացը կրում է շարունակական բնույթ: Այսօր արդեն ֆինանսական տեղեկատվության օգտագործողներին չի հետաքրքրում միայն զուտ ֆինանսական տեղեկատվությունը, այլ նաև պահանջարկ է ստանում ոչ ֆինանսական տեղեկատվության հրապարակումը: Այս առումով, հիմնախնդիր է առաջանում զարգացնել այնպիսի մեթոդաբանություն, որը թույլ կտար ֆինանսական հաշվետվություններ ծևավորող ավանդական հաշվապահական հաշվառման շրջանակում ներդնելու նաև ոչ ֆինանսական տեղեկատվական համակարգ: Հողվածում առաջարկվում են ֆինանսական և ոչ ֆինանսական տեղեկատվական համակարգերի ինտեգրման հայեցակարգային նոր հիմունքներ: Ներկայացվում են մեթոդաբանական այն մոտեցումները, որոնք կիրառելիս տնտեսական գործունեության ֆինանսական և ոչ ֆինանսական արդյունքները փոխկապակցվում են և, համադրվելով միևնույն չափայնությամբ, կրկնակի գրանցման հենքով ենթարկվում են հաշվառման:

**Армен Джугурян**  
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## **КОНЦЕПТУАЛЬНЫЕ ВОПРОСЫ РАЗВИТИЯ БУХГАЛТЕРСКОГО УЧЕТА**

**Ключевые слова** - Международные стандарты финансовой отчетности (МСФО), нефинансовые информационные потоки, интегрированный учет, система отчетности

Бухгалтерский учет как наука имеет пятисотлетнюю историю развития. За этот период задачи бухгалтерского учета неоднократно менялись, что продолжается и по сей день. Сегодня бенефициары бухгалтерского отчета заинтересованы не только в финансовой информации, но и в публикации нефинансовой отчетности. В связи с этим, возникает проблема разработки методологии, которая позволила бы внедрить нефинансовую информационную систему в рамках традиционного учета. В статье предлагаются новые концептуальные основы интеграции финансовых и нефинансовых информационных систем. Представлены методические подходы, в которых финансовые и нефинансовые результаты хозяйственной деятельности взаимосвязаны, сопоставимы единными измерителями и учитываются на основе двойной записи.

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## THE ROLE OF INTEGRATED REPORTING IN THE SUSTAINABLE DEVELOPMENT OF COUNTRIES

**Abstract:** This article is devoted to sustainable development of countries, companies and how integrated reporting can contribute to sustainability. The article presents the idea of integrated reporting, the need for such reports, the global trends of integrated reporting and its role in sustainable development. Business growth is tied to sustainable development goals (SDGs) at a macro level and contributing to SDGs helps to create long-term value. Especially in recent years investors pay more attention to corporate sustainability as it enhances business value, improves reputation, brand image and operations.

**Keywords:** integrated reporting, **countries'** sustainable development, non-financial reports, corporate sustainable development

**JEL classification:** M 42

**Research aim:** The aim of the research is to study integrated reporting as a factor that contributes to both the business environment and sustainable development of countries.

**Research hypothesis:** It is assumed that in addition to the national strategies, the activities and corporate strategies of organizations towards stability and sustainability is of great importance to achieve sustainable development goals (SDGs) globally.

**Research novelty:** In this research, we have highlighted the connection between corporate sustainability, integrated reporting, and global sustainable development goals.

## Introduction

The problems that international community has faced in the recent decades have led to the transition to a more transparent reporting system known as integrated reporting. Integrated report is a set of financial and non-financial statements aimed to inform **stakeholders about the organization's objectives, strategy, vision and mission, policies, activities, and a number of other factors that may affect the organization's ability to create and maintain long-term value in the future.** Though there is not a unified approach to the classification and preparation of non-financial statements, it is important that companies present non-financial statements in addition to financial statements, making corporate social responsibility and sustainable development part of their business, and promoting the business world to a better quality level of reporting. The impact of the company on its stakeholders involves risks and opportunities from the financial side, particularly impact on financial performance and long-term prospect of the business. That is why, investors are increasingly interested in non-financial information about the company.

## Research results

The concept of sustainable development was first raised internationally in the report of the United Nations (UN) International Commission on Environment and Development dated 1987, “**Our Common Future**”, where the term “**sustainable development**” is interpreted as development, “**that seeks to meet the needs and aspirations of the present without compromising the ability to meet**

**those of the future**" [1, p. 39]. The UN Environment Program (UNEP) was adopted in Stockholm in 1972 to coordinate international efforts of environment protection. The need to discuss the concept of sustainable development on the international agenda stemmed from the relationships between poverty, inequality and environmental degradation. The UN conference on environment took place in Rio de Janeiro, 1992. At "Earth Summit", environmental protection was accepted as integral part of sustainable development. "Agenda 21" was adopted, a concept designed to review issues related to growth, social justice, environmental protection. According to it, to achieve sustainable development, environmental protection shall constitute an integral part of the development process and member states shall cooperate in a spirit of global partnership to conserve, protect and **restore the integrity of the Earth's ecosystem** [2, p. 4]. In August 2015, the 193 members of the United Nations agreed on a single document titled "**Agenda 2030**", which was subsequently adopted at the General Assembly in New York on September 25-27. Though sustainable development goals are not legally binding, countries are expected to make commitments to achieve the 17 SDGs: 1. End poverty in all its forms everywhere; 2. End hunger, achieve food security; 3. Ensure healthy lives and promote well-being for all at all ages; 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all; 5. Achieve gender equality and empower women and girls; 6. Ensure availability and sustainable management of water and sanitation for all; 7. Ensure access to affordable, reliable, sustainable and modern energy for all; 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all; 9. Build resilient infrastructure, promote sustainable industrialization and foster innovation; 10. Reduce

inequality within and among countries; 11. Make cities and human settlements inclusive, safe, resilient and sustainable; 12. Ensure sustainable consumption and production patterns; 13. Take urgent action to combat climate change; 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development; 15. Protect, restore, and promote sustainable use of ecosystems, sustainably manage forests, combat desertification, reverse land degradation; 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions; 17. Strengthen the means of implementation and revitalise the global partnership for sustainable development [3].

**Businesses' corporate** strategies are also very important in achieving SDGs. The concept of "corporate sustainable development" first appeared in the scientific works of researchers J. Elkington and M. Epstein. Epstein, a professor at Rice University, proposes a model of corporate sustainability that views company stability as a reflection of macro-level sustainable activities [4, p. 79-96].

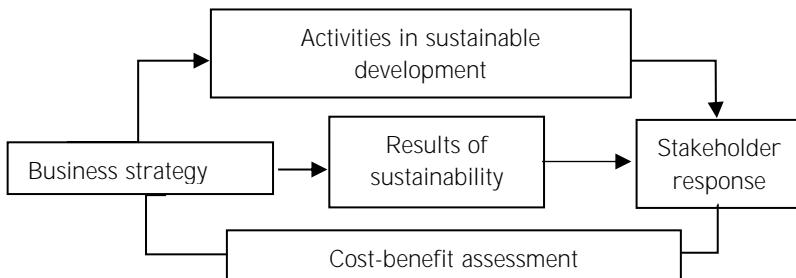


Figure 1. **Epstein's model of sustainable corporate development** [4 p.79-96].

In the works of John Elkington, a famed expert on sustainable development, the corporate stability is the result of the company's successful response to the social problems that have become urgent. Elkington separates 3 "pressure waves" from society. During the 1<sup>st</sup>

"restrictive" wave (1960-1980), society demanded that companies reduce their impact on the environment. During the 2<sup>nd</sup> "green" wave (1980-1990), social demand for companies expanded. Stakeholders demanded to implement fundamentally new technological processes, showing initiative, which would affect the company's competitiveness. During the 3<sup>rd</sup> "globalization" wave (since 1990), active civil society in various countries began to demand from the companies to integrate globally into sustainable development [5, p. 90-100]. According to futurist Wayne Visser, the sustainable development of a company intersects with human development, corporate citizenship, social responsibility, social justice, environmental management, ethics and with stakeholder management [6, p. 384].

Since 2005, Corporate Knights (CK), Canadian research agency, has compiled the "Global 100" annual ranking of companies with revenues of more than \$ 1 billion, based on the indicators set by the agency. The evaluation methodology is based on the 21 key performance metrics (KPIs), which relate primarily to resources, HR and management, revenue, environmental and community impact, female involvement, energy efficiency, waste management, innovation, stability degree of the largest supplier and so on [7]. Performance criteria are weighed and each criterion is associated with at least one of the UN SDGs. According to the publication in 2021, the Top 5 stable companies were the following: Schneider Electric SE (France), Orsted A/S (Denmark), Banco do Brasil (Brazil), Neste Oyj (Finland), Stantec (Canada). The companies were registered in 26 countries of the world. Most companies were registered in the USA, Canada, France, Germany, Denmark, Finland, Great Britain, Japan [7]. Though rating is given to high-income companies based on public information, which

is why we **don't** consider it inclusive, but almost all the countries represented have quite good positions in achieving the UN SDGs.

Integrated reports are a set of financial and non-financial statements. General purpose financial statements are prepared in accordance with International Financial Reporting Standards (IFRSs), which set out different recognition, measurement and disclosure requirements. Financial statements include statement of financial position at the end of the period, statement of profit or loss and other comprehensive income for the period, statement of changes in equity for the period, statement of cash flows for the period and notes (comprising a summary of significant accounting policies and other explanatory notes) [8, p. 10-11].

In addition to this information, non-financial reports relate to different aspects of the company's activities and impact on different environments, contribute to increase in transparency, assist stakeholders in decision making based on those reports and have become more widespread in recent years. There is no global list of non-financial reporting forms, as these types of reports are quite flexible. However, we tried to separate some of the main types of non-financial reports. Thus, the report called "Management report" allows the company's directors to present various comments on the financial statements prepared in accordance with IFRS and other aspects of the company's operations [9, p. 28]. The report may also provide assessments, forecasts on the future activities of the company, development prospects and is quite similar in nature to the "Strategic report". The "Strategic report" refers to the company's ideology, mission, vision, its goals, business model and adopted values. Strategic report also presents the risks that may arise during the operation of the company and the extent to which the company can manage them

(Risk management). For example, the international professional services organization EY presented its new strategic report in 2019, “EY Global review – NextWave”, which gave a detailed overview of the adopted strategy and the goal of “Building a better working world together”. In the report Chairman and CEO Carmine Di Sibio explains that in the fast-changing world EY is also being transformed through data and technologies adopting new global strategy that will help face the new challenges and focus on innovation and collaboration [10, p. 4-5]. Strategic reports may not be published on an annual basis but may be revised because of unforeseen circumstances (such as a coronavirus pandemic).

Another non-financial report is the "Environmental report", where the company mainly presents its environmental impact assessments, risks and mitigation measures. The components included in the environmental report are existing and possible impacts on the environment, environmental risks, environmental policy, actions taken by the company, brief description of environmental costs, the environmental legislation within which the company operates, the violations committed, and so on.

Among on-financial reports, the Corporate social responsibility report has a special place. According to the Corporate Finance Institute (CFI), Corporate social responsibility (CSR) refers to strategies that companies put into action as part of corporate governance that are **designed to ensure the company's operations are ethical and beneficial** for society [11]. There are many main aspects of CSR reports, such as: Responsible attitude towards employees (transparency of recruitment processes, promotion, training, qualification, employee evaluation, termination procedures, working conditions, workplace safety, social benefits and guarantees, corporate culture, non-discrimination and

equal opportunities for all, etc.); Responsible attitude towards the environment (reduction of pollution, replacement of non-renewable resources consumption, energy efficiency, maintaining ecosystems, mitigation of climate change, etc.); Conscientious business attitude (fair competition, anti-monopoly and anti-dumping policies, fight against corruption, fight against money laundering and terrorist financing, active participation in the development of state policy aimed at entrepreneurship promotion, payment of taxes, etc.); Responsible attitude towards consumers (quality, non-hazardous products and services, conscientious presentation of information about products, adaptation of products for consumers with certain limitations and problems), and so on [12, p. 12-14].

Above-mentioned reports are often summarized in a single report, known as Sustainability report. Sustainability report presents the impact of the company's activities on the economic, environmental and social environments, i.e. it presents summary of the above-mentioned reports, emphasizing the company's ability to create sustainable environments.

There is no mandatory legal requirement for non-financial statements in Armenia. The level of non-financial reporting remains low in Armenia and is left entirely to the discretion of the organizations. Unfortunately, no state body has been formed in our country to deal with the implementation and control of integrated reporting, professional discussions in this area remain at a low level. However, recently there has been some activity. In particular, the specialists of the Ministry of Finance of the Republic of Armenia participated in the meetings entitled "Modern Trends in the Application of Integrated Reporting" in Moscow on September 14-17, 2021. Within the framework of the project, a Memorandum of Understanding was

signed between the Association of Chartered Accountants (ACCA), which will enable more effective cooperation with the institution in the areas of accounting and auditing [13].

### Conclusion

The issues of environmental management, sustainable development, and social policy have become increasingly important, especially in recent decades, as human activities greatly affect the environment, deteriorating its quality, leading to a number of problems that are vital to humanity (biodiversity destruction, desertification, climate changes, pollution of biological habitats, etc.). Apart from individuals, the position of the business environment and organizations has a huge importance in the protection of the environment, leading to the inclusion of the directions and goals of the environmental strategy in the process of business planning and organizing. In addition to the environmental impact on the environment, it is important to consider the impact of companies on community **and employees' life**. Business stability is a triple management process in which companies manage their financial, social, environmental threats and opportunities. Integrated reporting allows to combine financial and non-financial aspects, providing more complete information to the users of reports in the decision making.

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**Կարինե Զուրաբյան**  
տ.գ.թ., դոցենտ, ԵՊՀ

**Մարիամ Գրիգորյան**  
Մագիստրոս, ԵՊՀ

## **ԻՆՏԵԳՐԱՑՎԱԾ ՀԱՇՎԵՏՎՈՂԱԿԱՆՈՒԹՅԱՆ ԴԵՐԸ ԵՐԿՐՏԵՐԻ ԿԱՅՈՒՆ ԶԱՐԳԱՑՄԱՆ ՀԱՄԱՏԵՔՍՈՒՄ**

**Բանալի բառեր** – ինտեգրացված հաշվետվողականություն, երկրների կայուն զարգացում, ոչ ֆինանսական հաշվետվություններ, կորպորատիվ կայուն զարգացում

Շրջակա միջավայրի կառավարման, կայուն զարգացման և սոցիալական քաղաքականության հիմնահարցերն առավել մեծ կարևորություն են ստացել հատկապես Վերջին տասնամյակներին, քանի որ մարդու տնտեսական գործունեությունը մեծապես ազդում է շրջակա միջավայրի վրա՝ վատացնելով նրա որակը և հանդիսանալով մի շարք խնդիրների պատճառ, ինչը ստիճանում գործարար միջավայրին անցում կատարել ավելի թափանցիկ հաշվետվողական համակարգի, որը հայտնի է ինտեգրացված հաշվետվողականություն անվամբ: Հոդվածում ներկայացվում են ինտեգրացված հաշվետվողականության գաղափարը, նման հաշվետվությունների հրապարակման անհրաժեշտությունը, ինտեգրացված հաշվետվողականության միտումները, դրանց դերը երկրների կայուն զարգացման համատեքստում: Վերջին տարիներին ներդրողներն առավել մեծ ուշադրություն են դարձնում ոչ ֆինանսական գեկուցներին, քանի որ դրանք ցույց են տալիս՝ արդյո՞ք կազմակերպությունները պատրաստ են երկարաժամկետ արժեք ստեղծել թե ոչ: Ինտեգրացված հաշվետվողականությունը կարևոր քայլ է կայուն զարգացման համար: Վերջինիս նպատակները կարող են իրականություն դառնալ միայն միասնական ջանքերի արդյունքում: Այսպիսով, միկրո մակարդակում կազմակերպությունների գործունեությունը և կորպորատիվ կայուն զարգացումը նպաստում են մակրո մակարդակում երկրների կայուն զարգացմանը և ՄԱԿ-ի սահմանած թիրախների ապահովմանը:

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## РОЛЬ ИНТЕГРИРОВАННОЙ ОТЧЕТНОСТИ В КОНТЕКСТЕ УСТОЙЧИВОГО РАЗВИТИЯ СТРАН

**Ключевые слова** - интегрированная отчетность, устойчивое развитие стран, нефинансовая отчетность, корпоративное устойчивое развитие

Проблемы природопользования, устойчивого развития и социальной политики стали более актуальными, особенно в последние десятилетия, так как деятельность человека оказывает огромное влияние на окружающую среду, ухудшая ее качество, вызывая ряд проблем, что и привело к необходимости более прозрачной отчетности, которая известна как интегрированная отчетность. В статье представлена идея интегрированной отчетности, необходимость публикации таких отчетов, тенденции интегрированной отчетности, их роль в контексте устойчивого развития стран. Особенно в последние годы инвесторы уделяют больше внимания нефинансовым отчетам, поскольку они показывают, готовы ли организации создавать долгосрочную стоимость или нет.

Интегрированная отчетность – это шаг к устойчивому развитию стран. Цели устойчивого развития могут стать реальностью только в результате совместных усилий. Таким образом, деятельность на микроуровне и корпоративное устойчивое развитие способствуют устойчивому развитию стран на макроуровне и достижению целей, поставленных ООН.

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# Financial Literacy and Education

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## WORK: MONEY MOTIVE AND THE MEANING OF LIFE

**Abstract:** There is a huge amount of literature on the personal significance and social role of human work. Theoretical aspects of the relationship between man and work are reflected in philosophy, religion, history, art, psychology, sociology, ethics, socio-political projects for the reorganization of society on the principles of reason and humanism. **The problems of managing a person's labor behavior** are in the focus of attention of the theory and practice of management, public administration, as well as a whole group of economic sciences. Nevertheless, the relationship "work and man" is an inexhaustible field of study, especially for the philosophical understanding of the vital meaning of work. It is the philosophical approach that ensures the integrity of the coverage of the phenomenon of work as a truly human activity, the manifestation and development of its physical, intellectual and spiritual forces. The holistic coverage of human work allows us to avoid the methodological errors of segmentalist approaches – economism, technocracy, hedonism, pragmatism and similar interpretations of the essence and vital meaning of labor.

**Keywords:** Human work, philosophical approach, attitude to work, wage motive, personal concept of the meaning of life

JEL classification: A 13, O 15

Research goals: To identify whether there is a relationship between a person's attitude to work and his personal concept of the meaning of life? Here we need to answer the following questions: when forming the meaning of life, what is the ratio of monetary and non-monetary incentives to work?; does the motive of wages exhaust the meaning of work?; what is meaningless work?; and aren't most of us engaged in the so-called «Sisyphean labor»?; and if so, how could Sisyphus be helped?; what is the role of technology?; artificial intelligence – man's friend or competitor?

Research hypothesis: It can be a priori argued that there is a mutual conditionality between the attitude to work and the personal concept of the meaning of life. Obviously, the nature and content of a person's daily work in a certain way affects his worldview and value orientations. It is to this evidence that the main theoretical interpretations come, and again, socio-philosophical projects for the reorganization of social life are built on this argument. But is the meaning of life just a kind of mirror that passively reflects real life? Perhaps this is partly true in the first stages of human socialization. However, it seems to me that the personal concept of the meaning of life in a mature person is already an active phenomenon itself, and in many respects, this concept itself determines a person's attitude to work and, accordingly, the character of his work activity. This means that it is possible and necessary to find a "golden mean" between objective factors and personal characteristics of the formation of a person's attitude to work. The same "golden mean" should be found between the material and non-material components of work motivation.

Research novelty: The idea is substantiated that it is necessary to distinguish between the concepts of "content of work" and "personal

meaning of work". The first concept reflects the objective quality of concrete type of work, in particular, its saturation with intellectual elements, the possibilities of a creative approach, and the real prospect of personal and professional development of the subject of work. The second concept captures how these objective characteristics are refracted through the prism of the subject's personal perception. This means that work is really meaningful (or can be recognized as such) only through a subjective assessment by the performer of these labor actions. Several conclusions follow from the distinction between these concepts. After all, one cannot simply assume that the development of the content of work automatically leads to higher employee satisfaction, that is, labor acquires a higher personal meaning. The concept of "work itself" is very attractive, but in practice the implementation of this humanistic idea is distorted, in particular, when the motive of the content of work is unreasonably opposed to the motive of wages. The attitude to work as a sphere of creative self-affirmation and development of an employee not only does not negate the importance of the wage motive, but also requires even more flexible application. Moreover, even if work really becomes the first vital human need, the motive of salary will not completely lose its motivational significance. Salary is after all not only an economic reward for a certain quality and quantity of work performed by a person. A fair salary is at the same time an assessment of the professional dignity of an employee, a form of social recognition of his status. This means that the salary, and more specifically its size, validity (fairness, that is, commensurability with real labor productivity), comparability with the salaries existing in a given society inevitably affect the self-esteem of the individual and thus play a certain role in shaping the personal concept of the meaning of labor and life in general.

## Introduction

When studying the phenomenon of labor, a single object of knowledge inevitably breaks up into different subjects of study of a certain cycle of scientific disciplines. At the same time, in modern science there is an integration of cognitive results. Thanks to this, the philosophical approach has the ability to avoid purely speculative conclusions and use experimental data and theoretical developments in work economics, work psychology, work sociology, management, conflictology and business ethics. In turn, philosophical generalizations contribute to the methodological enrichment of these disciplines.

All theoretical concepts of the meaning of work can be divided into four groups: natural-teleological, economic, ethical and philosophical. According to the first approach, labor is a natural necessity: it is through labor that people produce the necessary goods of life. A kind of concretization of this approach is Aristotle's teleological interpretation of the question, who, in fact, is obliged to work, and who should be freed from labor. According to him, nature itself arranged it in such a way (by endowing the slaves with a powerful physique) that it was the slaves who worked, that is, labor was a slave occupation, and therefore of little interest for theorizing.

The economic approach begins, apparently, with Plato's well-known statement of the question of whether a wealthy artisan wants to work, to which he answers that since a person works solely for the sake of food, there is no need for a wealthy artisan to work. This is the concept of "homo oeconomicus"— an economic man, who sees exclusively economic meaning in a person's labor activity. The concept was comprehensively substantiated in the views of the founder of economic science, Adam Smith, while the practical implementation was

in the works of the “father” of scientific management, Frederick Winslow Taylor.

Morality, as the oldest form of social consciousness, gives us a very contradictory picture of labor as a certain sphere of human life. For example, in antiquity labor was considered an unworthy occupation for a free person, but it is known that professional skills and labor successes were highly valued among the most artisans. In the reassessment of the meaning of work, an exceptionally positive role was played by the Christian concept of work as Adam's punishment for disobedience to the will of God. In paradise there was no need to work. Work arose as a punishment (although it is already dictated by future necessity): “**By the sweat of your brow you will eat your food until you return to the ground, since from it you were taken**” (Genesis 3:16-19). There was a powerful motive for work: indeed, if the ancient slave could see the reason for his own hard work only in the will of his master, then the believing person is already much easier to obey the will of the Lord. Plus, two factors: firstly, all living people are punished without exception, and secondly, they will be rewarded in the afterlife: heavenly pleasures for diligent work, hellish torment for laziness.

Philosophers have always placed above the labor activity of a person his reflection, speculative or aesthetic attitude to the world. Therefore, the philosophical understanding of the problems of work really begins only when a different, active attitude to the surrounding reality arises. The bearer of a new attitude to the world and, accordingly, a new ideology was the third estate of feudal society. The wealthy artisans, merchants, people of free professions, having begun a struggle with the ruling class of the aristocracy for political power, **brought to the fore the “ethics of work”**. The main idea here is “self-

**made man", that is, the requirement to evaluate a person not by kinship or title, not by the antiquity of the merits of his family, but by what he achieved with his own work - wealth, recognition, fame, etc.**

And here in philosophy begins a radical change in attitude to the problems of human labor. Helvetius argues with Plato: look, he says, how many wealthy artisans continue to do their job and leave it with **regret only when old age forces them. Doesn't this mean that work for these people is something more than just making money?** But Helvetia also has an objection in the Bible: when a person experiences joy in work, gets pleasure, overcomes the boredom of inaction, is this really a punishment for him? Or, on the contrary, is it a divine reward?

At first glance, these four areas of theoretical thought have mutually exclusive worldview foundations, but within the framework of a scientific analysis of modern problems of the meaning and social significance of human labor, they complement each other to a certain extent.

### Research results

The methodological basis of the socio-philosophical study of the problems of managing the labor behavior of a person is the clarification of two interrelated concepts - **the "meaning" and "meaninglessness" of human labor.** We are talking about "human" labor, because in the broadest sense of the word, some types of animals also "work", and robots with artificial intelligence have far surpassed the production indicators of human labor, not only in terms of physical actions, but also intellectual operations. Nevertheless, only a person is concerned with the nature of meaningful actions, only he consciously seeks a goal, and only he suffers from the meaninglessness of work (as well as life in general). And let's not forget that wages also concern only a person, serve as one of the motivators of his labor

activity, and sometimes act as the best compensation for the forced performance of monotonous, meaningless work.

Both labor activity in general and the whole set of problems associated with the motivation of work, and, in particular, the use of money as a motivator, sometimes both in practice and in the literature get too simplified an interpretation: work is just an activity for the sake of getting money, money is only a means of acquiring consumer goods. However, work and money are intertwined in a much more complex system, creating many different and not always clear combinations within the framework of the integral life concept of each person. A huge number of publications on the philosophy of work confirm what has been said, and regarding the essence and vital significance of money, I will give the following opinion of an economist: “**As for money itself, that's a subject of immense difficulty, again not just on the practical level, but in its essence and nature. There's a standard definition of money in economics, or at least of the uses of money, as serving a triple function: a store of value, a medium of exchange, and a unit of account. But the real uses of money are more mysterious than this makes them sound, and its evolution is more mysterious too**” [7, p. 37].

No less complex and mysterious is the individual’s perception of the meaning and meaninglessness of his own work. According to Greek mythology, Zeus punished Sisyphus because he deceived Hades, the god of the underworld, and fled from there. The punishment of Sisyphus is the lifting of a huge stone from the foot of the mountain to the top, and the very last moment, when he reaches the top a little, the stone rolls down, and Sisyphus must start all over again. Apparently, the great and omnipotent god was also a subtle connoisseur of human nature. After all, he could choose any other punishment. Indeed,

history knows a huge number of the most sophisticated punishments and tortures. However, as the same story shows, a person can endure all this. But he is not able to withstand the meaninglessness of what he does every day, or rather; the awareness of the complete meaninglessness of his work is incompatible with the normal human psyche. Sisyphean work is a death sentence for the normal human psyche. Actually, Sisyphus himself could not have endured such work: he would either go crazy or commit suicide (if that's possible in the afterlife).

Some authors associate the suffering of Sisyphus with the futility of his work. Indeed, the essential characteristic of labor is its productivity, that is, the creation of certain material or spiritual benefits. But the uselessness of work and its meaninglessness are different phenomena from the point of view of personal perception of reality. The simplest example: a person can do any useless, provided that **this is paid for**. Salary is a “great comforter”, the best psychotherapist. The objective characteristic of such labor is its uselessness, thus, a completely acceptable personal meaning is reincarnated – material reward.

Man is a creature that seeks meaning in everything and, above all, the meaning of his everyday work and his whole life [1; 2; 5; 10]. This is the essential characteristic of Homo Sapiens. And since this is so, it seems to me somewhat amusing to offer him this property of his as a kind of “rule of life”: “**Pursue what is meaningful, not what is expedient**” [10, p. 161]. If this is a rule, then it is not at all one of the 12 rules, but the most important rule, which includes all the other rules. In addition, meaningfulness and expediency do not always contradict each other: in any case, they should not be so sharply contrasted.

The Christian concept of work as divine punishment offers a different solution: the reward awaits the believer in the other world. In fact, labor remains a punishment regardless of the nature of this activity: the content of the labor process, the amount of material reward, the professional attitude of the subject to his own activity, the possibilities of his personal development. Since work is justified as a punishment, which is the main meaning of work, then the first behavioral requirement is to work submissively and with love, regardless of the content side of labor itself as a human activity. The main contradiction of the Christian concept of the meaning of labor is the impossibility of a normal person to really love his punishment. After all, punishment is imposed on us, dictates its will to us from the outside; a normal person always seeks to escape punishment, but in no case fall in love with him. Loving punishment is a form of psychological pathology, for example, a manifestation of the masochistic inclinations of a person. And the punishment itself ceases to be such if a person is able to rethink it.

Here I, perhaps, would venture to formulate a certain regularity: from the fact that for a particular person work in general is a meaningless occupation, it does not directly follow that for him life itself is just as meaningless, meanwhile, the feedback is different: if a person has lost the meaning of life, then any work, the most meaningful, intellectual, creative, is also meaningless for him. In the first case, the need for labor activity is justified (in fact, comprehended) through monetary compensation, in the second case, if we seek to somehow influence the attitude of the individual to work, we must first be able to change his concept of the meaning of life.

**Recently, such a phenomenon as “workaholism” has been** discussed in the literature, there are positive assessments of the

behavior of “workaholics”, especially from practical managers. But the “workaholic” and true hard work, true love of work are diametrically opposed phenomena. Indeed, for a “workaholic” nothing exists except work, the whole meaning of life comes down to incessant work, this denies all the richness of the manifestations of human life.

Let us turn to Viktor Frankl concept of three possible ways to overcome the "existential vacuum", that is, to reacquire the lost meaning of life by a person. (Let me remind you that the author managed to survive in the Nazi camps, so the loss and gain of the meaning of life for him is not just a scientific interest). The first way is through understanding what a person gives to life: first of all, work, creativity, offspring, helping other people, etc. The second way is through understanding what a person receives from life: reward, pleasure, recognition, love, etc. The third way is through a person's attitude to his own destiny, especially to the state when he is not deprived of the opportunity to give and receive something from life [5].

The latter is the state of Sisyphus: he is unable to give or receive anything from his meaningless activity. He does not receive a salary, he cannot hope to be in the Guinness Book of Records, and no one admires him, no one pities him. But there is a third way: he can change his attitude towards what he does. Nobly and with a sense of dignity to bear their punishment, will not break before Zeus, thereby radically changing the meaning of their endless labor.

In the light of what has been said, the position of the person who directly declares that he is interested only in the material side of labor seems to me much more honest. Labor in itself has no special content for him, that is, it doesn't matter what he specifically does when he “works”: he makes money for himself. And the only question worth

asking him concerns the limits of his material aspirations: how much does he need; how much money will be enough for a “good life”? [11].

Of course, this is also pathology, when the subject of work is absolutely indifferent to the very process of work, and, following Karl Marx, can call this phenomenon “alienation of work”. According to this concept, a person's own activity becomes alien to him and dominates him; and the cause of all this is the condition of the wage-worker, the capitalist exploitation of work. But Marx's explanation leaves aside the personal aspect of this situation, or rather considers the self-alienation of the individual only as a consequence of socio-economic relations. However, the indifference of the subject of work to the content of his own activity may also be the result of a person's conscious attitude to labor in general. Maybe for a particular person, due to his character, upbringing, inclinations, value orientations, the center of understanding life is not in the sphere of work, but in leisure, pleasures, entertainment and free pastime. Such a person, if forced to work, will consider his work only as a means of ensuring the material possibilities of his functioning in other spheres of life.

Most people do not want to think about work, said Henry Ford, they prefer monotonous work (although for him, as he admits, this is a real punishment): “**Repetitive labor** – the doing of one thing over and over again and always in the same way – is a terrifying prospect to a certain kind of mind. It is terrifying to me. We could not possibly do the same thing day in and day out, but to other minds, perhaps we might say to the majority of minds, repetitive operations hold no terrors. In fact, to some types of mind thought is absolutely appalling. To them the ideal job is one where the creative instinct need not be expressed. The jobs where it is necessary to put in mind as well as muscle have very few takers – we always need men who like a job

because it is difficult. The average worker, sorry to say, wants a job in which he does not have to put forth much physical exertion – above all, he wants a job **in which he does not have to think**" [4, p. 60]. Moreover, such a desire for some people becomes an internal need: "**Indeed, for most purposes and most people, it is necessary to establish something in the way of a routine and to make most motions purely repetitive, otherwise the individual will not get enough done to be able to live off his own exertions**" [4, p. 60]. (Hence, by the way, it follows that the creation of assembly line labor is a great boon of Henry Ford).

Of course, the environment and the individual are in dialectical interaction, and again, here one must follow the logic of the "**golden mean**": a person, even at the very beginning of primary socialization, is not at all a "**tabula rasa**" – a blank board on which society can write everything, what he considers necessary. But, on the other hand, a person, as a personality, cannot be absolutely free both from the formative influence of the environment and from the behavioral requirements for oneself imposed by the same environment.

Mistakes of the first type were committed in the Soviet Union, during the restructuring of public life on socialist principles, especially during the period of "the full-scale construction of communist society." **Although the principle "From each according to his ability, to each according to his work" was proclaimed**, in reality, the egalitarianism (as rough equalization) prevailed (after all, they were paid not according to actual work, but according to the position occupied), the restriction of personal initiative (if not considered as such absurd statements about readiness "fulfill the five-year plan in four years, or even three years initiated by the party elite), a ban on any manifestations of personal interest. Any desire of an individual to earn more than his

salary, if not crossed in the bud, was considered indecent behavior of a Soviet person. And, by the way, "Soviet" meant a Russian person, with an appropriate attitude to work. The ethno-cultural characteristics of other nations, with their different attitude to work and earning money, were considered incompatible with socialist morality. That is why it turned out that the society that proclaimed itself a "labor society" turned out not to be a society of abundance, but of forced poverty. Except for the top of the party bureaucracy (provided with special services), all Soviet people lived equally badly, because they had no legal opportunity to earn more by their own labor. And they were hardly inspired by the statements of ideologues and propagandists that during the construction of communism, labor turns into "the first vital need of the individual." It should be noted that the ideologists themselves were so inspired by this prospect that from the beginning of the 80-s of the last century (that is, exactly ten years before the complete collapse of the Soviet state), some sociologists seriously argued that the Soviet person was already half working for money, for the other half supposedly works for the sake of work itself, work as its main vital necessity.

The motivational role of the monetary factor and its share in the formation of the personal meaning of life have changed qualitatively in post-Soviet societies with the beginning of the process of their transformation from a centralized economy to free economic relations. Shock therapy led to the fact that these societies formed what is commonly called "wild capitalism".

The advantages of the socialist organization of life (for example – full employment, free education and health care, state care for mother and child, social optimism) were lost, and instead of the "advantages of capitalism" (which for many years so attracted the rank and file

members of a socialist society), an ugly centaur turned out. Socio-economic stratification of society, polarization of wealth and poverty, unreduced unemployment, boundless corruption, merging of the economically and politically dominant elite with the criminal elite, permanent crises, excessive commercialization of education, science and art, a tendency to establish authoritarian power. A phenomenon has arisen that has been called “**educational ballast**”, when people with higher education are forced to engage in unskilled types of work for the sake of a piece of bread.

Naturally, under these conditions, the money motive not only comes to the fore, but also becomes an exaggerated motivator. All other moments of human work fade into the background, all the richness of human needs (all five levels of their hierarchy according to Abraham Maslow – confidence in the future, respect, affection, development, self-realization) are reduced to the level of purely physiological survival needs. The significance of work itself as a purely human activity is almost irrelevant: a person works solely for the sake of money. Accordingly, the coverage of the life concept of the meaning of human life is compressed.

This is a real work crisis. Not just a crisis of motivation to work, but a crisis of work itself as the main sphere of manifestation and development of immanent human qualities, as the most human component in the “man” phenomenon. In general, if in the countries of, so to speak, “classical capitalism”, political power and big capital as a whole successfully manage to mitigate acute socio-economic problems, therefore, ideologists quite reasonably build models of “post-capitalist capitalism” [8], then the realities of “transformational” societies, rather, they force, on the contrary, to remember the author of Capital and remind others that “Marx was right” [3].

A set of concepts of “humanization of work”, which began to spread widely since the mid-1970s, as well as many practical measures for their implementation, can be considered a kind of technological solution to the problem of meaningless labor.

Many new theories of motivation have emerged. Briefly, the essence of the new approaches is as follows. Under the Taylor or Ford system, it was believed that a person, as an employee, was already initially motivated, and his only motive was this wage, therefore, this motive must be used, directed to the realization of the goals set for him. Nowadays, advanced managers set themselves the task of “creating motivation”. This means, first of all, the understanding by management of the entire wealth of human needs, the allocation of an actual need for a specific person and the use of this need for the most effective impact on the labor activity of an employee.

It became generally accepted to distinguish between the “content of work” and the “context of work”, understanding the importance of the employee’s focus on “work itself”; they began to apply appropriate organizational innovations work “job enlargement”, “job rotation”, “job enrichment”, the use of a “flexible working hours”, creation of “self-managing work groups”, “work online” etc. [9].

How far all this really contributes to the “humanization of work” is hard to say: purely abstractly, of course, the worker’s freedom of choice and the field of creative activity are expanding. But the worker is at the same time a member of society, a citizen of the state, so that “industrial democracy” is not only not equivalent to social democracy, but may even come into conflict with it.

In general, it must be said that the development of modern technologies has created a paradoxical situation: if in the field of work activity, the latest information technology, automation and robotization

contribute to the liberation of a person as a subject of work, then in society as a whole, the opposite phenomenon occurs – technical means increasingly serve the purpose of limiting individual freedoms, comprehensive control over his life.

The fundamental solution to the relationship between the man of labor and his technical means was given by the founder of cybernetics, Norbert Wiener: "For a man – human, for a machine – machine." Theoretically, it sounds convincing, but in practice the main question remains: **who defines the line between “human” and “machine”?** It is clear that there is no third party, and the border is determined by the human himself. But doesn't man succumb to the temptation to put on the shoulders of machines what he himself must do? After all, it is obvious that with the development of various technical means (labor, leisure, games, entertainment, communication, etc.), a person gradually gets used to technical comfort.

Russian futurologist Zakaraya Arti states the inevitable metamorphosis of Homo Sapiens in a comfortable technical environment: "**Man craved comfort and got it.** Mankind succumbed to the evolutionary temptation and slid into the dead end of Homo Commodum, a convenient human being.... It all started at the moment when a person accepted the philosophy of the instrument and became part of it" [12, p. 14, 15–16].

Indeed, the entire history of "Homo Faber" – "a man who creates tools", shows that there is a discrepancy between the knowledge that allows you to create more and more powerful technical means, and the ability to use them beneficially, in other words, between the mind of "**Homo Sapiens**" and his wisdom. Quite aptly noted: "Humans were always far better at inventing tools than using them wisely. It is easier to manipulate a river by building a dam across it than it is to predict

all the complex consequences this will have for the wider ecological system. Similarly, it will be easier to redirect the flow of our minds than do divine what it will do to our personal psychology or to our social systems” [6, p. 16].

We remember that at the beginning of the industrial revolution of the early 19th century, the luddite movement arose: the use of machine technology in production deprived a lot of people of labor and earnings, so they began to smash machines and equipment. No matter how retrospectively we evaluate this movement, it also included the protection of a person from encroachment on his labor and his right to monetary reward. Now, and even more so in the near future, artificial intelligence is able to abolish a number of professions, but disturbing opinions are barely audible in the choir of enthusiastic adherents of artificial intelligence.

We would like to express confidence that a balanced approach will prevail, that a person will be able to maintain his position as a creator, and artificial intelligence will always be his faithful assistant. Man, and mankind have a path to a healthy future, to salvation, an opportunity to get out of the temptations of economic, technological, hedonistic, pragmatic and other (possible) dead ends. This way is the true philosophy of work. First of all – awareness of the human essence of work, respect and love for work, the desire for creativity in work and a worthy reward for work achievements.

## Conclusion

The personal meaning of life is formed under the influence of many circumstances, among which the attitude of a person to work is of exceptional importance. In turn, the concept of the meaning of life formed in a person to a large extent predetermines the attitude of a

person to labor activity. Such a dialectics explains why objectively meaningful, creative work causes labor enthusiasm in one person, and completes indifference in another. The same relationship exists between the motive of wages and the work activity of the individual. It is important to understand that the concepts of “work itself” and “economic man” are not mutually exclusive, but complement each other. The remuneration must be fair: this applies both to the case when a person is aimed solely at money, and the focus on the very content of labor. In other words, “work content” does not replace its “context”, that is, first of all, the size of the salary, but also acceptable physical working conditions, a favorable interpersonal atmosphere, and so on. Nowadays, the modern technical environment has a dual effect on a person's understanding of his own work and life in general. Technique and technology, especially artificial intelligence, can make human work truly a sphere of free realization and unlimited development of human abilities, but they can also deprive a person not only of freedom in work, but also of work itself, as the most characteristic activity for a human being. The choice is still up to the person, as long as there is a possibility of harmonizing relations between the person and the world of technology, provided that the person himself is able to realize and appreciate the meaning of work for the realization of a full-fledged human life.

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## Վալերի Միրզոյան փ.գ.դ., պրոֆեսոր

### ԱՇԽԱՏԱՆՔ. ԴՐԱՄԱԿԱՆ ՇԱՐԺԱՌԻԹԸ ԵՎ ԿՅԱՆՔԻ ԻՄԱՍՏԸ

**Բանալի բառեր** – մարդկային աշխատանք, փիլիսոփայական մոտեցում, աշխատանքի հանդեպ վերաբերմունք, վարձատրության շարժառիթ, կյանքի իմաստի անձնային հայեցակարգ

Կյանքի անձնային իմաստը ծևավորվում է բազում հանգամանքների ազրեցությամբ. բացադիկ նշանակություն ունի աշխատանքի հանդեպ մարդու վերաբերմունքը: Իսկ ծևավորված իմաստն, իր հերթին, մեծապես ազդում է աշխատանքի հանդեպ վերաբերմունքի վրա: Նման դիալեկտիկան բացատրում է, թե ինչու ինքնին բովանդակալից, ստեղծագործական աշխատանքը մեկի մեջ առաջացնում է աշխատանքային խանդավառություն, մեկ ուրիշի մեջ՝ լիակատար անտարբերություն: Այդպիսի առնչություն կա նաև դրամական վարձատրության և մարդու աշխատանքային ակտիվության միջև: Կարևոր է հասկանալ, որ «աշխատանքն ինքնին» և «տնտեսական մարդու» հայեցակարգերը ոչ միայն միմյանց չեն բացառում, այլև լրացնում են: Տեխնիկան և տեխնոլոգիան, հատկապես արհեստական ինտելեկտը, կարող են աշխատանքը վերածել մարդու ընդունակությունների ազատ դրսւորման և անկաշկանդ զարգացման ասպարեզի, բայց կարող են նաև մարդուն զրկել ոչ միայն աշխատանքային ազատությունից, այլև բուն իսկ աշխատանքից՝ որպես մարդկային էակի համար առավել բնութագրական գործունեության տեսակի: Ընտրությունը մարդունն է: Կա տակավին հնարավորություն ներդաշնակելու մարդը և իր իսկ ստեղծած տեխնիկական աշխարհի փոխհարաբերությունները՝ պայմանով, սակայն, որ մարդն ինքը կկարողանա ըմբռնել և ըստ արժանվույն գնահատել աշխատանքի իմաստը մարդկային լիարժեք կյանքի համար:

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## ТРУД: ДЕНЕЖНЫЙ МОТИВ И СМЫСЛ ЖИЗНИ

**Ключевые слова** – человеческий труд, философский подход, отношение к труду, мотив заработной платы, личностная концепция смысла жизни

Личностный смысл жизни формируется под воздействием многих обстоятельств: исключительное значение имеет отношение человека к труду. Сформированная же у человека концепция смысла жизни в огромной мере предопределяет отношение человека к трудовой деятельности. Подобная диалектика объясняет, почему объективно содержательный, творческий труд у одного человека вызывает трудовой энтузиазм, а у другого – полное безразличие. Такая же взаимосвязь существует между мотивом заработной платы и трудовой активностью личности. Важно понять, что концепции “труд сам по себе” и “экономический человек” не взаимоисключают, а дополняют друг друга. Техника и технология, особенно искусственный интеллект, могут сделать человеческий труд действительно сферой свободной реализации и безграничного развития человеческих способностей, но также могут лишить человека не только свободы в труде, но и вообще самого труда, как наиболее характерной для человеческого существа деятельности. Выбор пока за человеком, пока есть возможность гармонизации отношений между человеком и миром техники при условии, если сам человек сумеет осознать и по достоинству оценить смысл труда для полноценной человеческой жизни.

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## ISSUES OF ORGANIZING HIGHER EDUCATION OF ACCOUNTANTS

**Abstract:** As one of the oldest professions in economics, accountants are still competitive in their skills and abilities and are always in demand in the labor market. Moreover, this profession is constantly evolving, presenting not only in the fields of finance but also in the fields of management, taxation, and strategic accounting. At present, more than 12 higher education institutions are training accounting specialists in the Republic of Armenia. However, the question arises, as to how competitive the educational programs are implemented, how effective the management of accounting education in universities is. The article presents the shortcomings of the implementation of accounting educational programs in RA universities, on the basis of which suggestions are made for the effective organization of higher education for accountants.

**Keywords:** Educational programs, skills-based education, the combination of practical-theoretical study, accounting education

**JEL classification:** M40

**Research aim:** is to identify the existing gaps in the accounting programs implemented in the field of accounting, to propose new approaches aimed at defining the priorities for training highly qualified accountants, considering the provision of theoretical knowledge, practical skills, lifelong learning role, and IT development.

Research novelty: conceptual approaches to the organization of higher education of accountants based on professional skills were proposed.

## Introduction

The profession of an accountant is one of the most popular and demanded in the framework of educational programs implemented in the field of economics. The modern business world is in great demand for highly qualified accountants. Moreover, the social significance of the profession plays an important role. The protection of the interests of economic entities, state bodies, shareholders, investors, and other market participants largely depends on the level of accountant qualification, following the ethical norms of accountants (auditors). The implementation of quality accounting and auditing largely determines the foundations of information and the economic security of the country. The training of highly qualified accountants is one of the most important tasks of the modern education system.

Contrary to popular belief, modern accounting has entered the field of blockchain technology, so it does not rule out that in the foreseeable future it may become a secondary profession, even disappear [1]. The use and digitalization of information technologies have made significant changes. Accounting in the profession in the last decade, facilitating the professional activity of accountants using some tools. The companies, that developed these tools are arguing that automation will completely drive accounting out of the job market. It is time to end this debate. A qualified accountant is a business consultant, who solves problems that information technology simply can not and will never be able to solve on its own. Technology has an important role to play in raising the level of accounting, but there are clear

limitations to its use. No software package can replace financial prudence, critical thinking, and trusted advice from a professional consultant.

It is another matter, that there is a need to review the accounting teaching approaches in universities, using the most modern educational mechanisms, that will meet the dynamically changing demands of the labor market, maintain the competitive advantages of the accountant in the labor market. Also, it is important to pay special attention to internationally recognized accounting qualifications, which currently have a great impact on the accounting position in the labor market.

### Literature Review

The problems of accounting training area in the center of attention of both domestic and foreign scientists, researchers. Conceptual-organizational approaches to the formation and development of accounting education were discussed by V.G Getman [2], Y.V. Sokolov [3], in the works of Sheremet [4]. Issues related to the development of new generation educational programs, changing the content according to business requirements were discussed in the researchers A.N. of Romanov, O.M. Ostrovsky, V.V-Kovalyov [5], in the scientific works of N.T Labintz [6], L. I Khoruzhi [7]. The researcher also has made a certain contribution to the development of accounting education, noting that a new modern educational system is being developed in the field of accounting education, which serves to acquire personal knowledge and ensure the continuity of education based on technological and pedagogical innovations. Lapshina [9] referred to the introduction of innovative technologies in the field of accounting education. She formulated the innovative paradigm of modern

accounting education, which includes target, content, organizational and methodological components.

Certain aspects related to the training of accountants have been considered in the works of foreign authors as well. U. Sugahara survey conducted by identified the main factors influencing the convergence of national accounting education systems, mainly using IES (International Education Standards) in accounting education strategies (S. Sugahara, K. Watts) [10].

Theoretical and practical approaches to the formation of a global model influencing accounting education have been proposed by Mourning, Q . Wetti, A. Abideran, L. Pereira [11]. They discussed the need to introduce JES (ISO) in the accounting system, which will ensure compliance with global accounting education and under international professional quality standards.

A study on the continuity of accounting education was conducted by Helliar [12]. Despite the fact, that accounting education is formed in a particular country under the influence of national peculiarities, as the author notes, it is still necessary to consolidate the national accounting and education systems, and to create a unified global model.

With all due respect to the significant contribution of the above-mentioned researchers in solving this problem, it should be noted, that the formation of an educational trajectory of accounting education that corresponds to modern realities is still insufficiently studied. In particular, the introduction of a common European education system requires certain methodological, structural, and organizational development aimed at continuing education throughout life, adapting the educational process to the needs of employers.

In this regard, there is an objective need to continue the research, which comprehensively covers the theoretical, practical, and methodological problems of higher education of accountants, taking into account the modern challenges.

### Research Methodology

Nowadays, the training of accountants is carried out in different dimensions of the organization of education.

First of all, it is necessary to understand, how higher education institutions can continuously integrate the skills due to changes in the profession of accountant into accounting education programs, given the fact, that they are already equipped with the required courses. How do the processes of substantial slow-complex curriculum change in higher education affect the ability to develop skills in demand in a timely manner? Are our academic staff motivated and capable of teaching these skills?

Studies show, that in international practice, the training of accountants also takes place in the non-formal education system. The ACCA (Association of Chartered Certified Accountants) system, which provides non-formal accounting education at three levels, is widespread in Europe. ACCA is a global professional association, that provides international qualifications in the field of accounting and auditing. The qualification is accepted by the European Union member states in about 179 countries around the world. The professional qualification covers all areas of business, financial reporting, management accounting, taxation, auditing, law, as well as business ethics. To qualify, you must pass 14 professional exams in English and have relevant professional work experience.

In the United States, accountants are trained by The American Institute of Certified Public Accountants (AICPA) by issuing CPA Certificate (Certified Public Accountant) and an H&R Block tax reporting institution. Qualification exams are held in 55 states of the United States, there is no centralized body, and requirements in each state and Licensing procedure may be slightly different.

About 208,600 ACCA graduates, currently members of the Higher Education Association, are currently receiving non-formal education [13]. Graduates of H&R Block already number around 170,000 in the United States, working in accounting, tax reporting for individuals, and legal entities. The members of Certified Professional Accountants (CPAs) in the United States currently comprise about 40,000 people, with non-formal vocational training, auditing, and advanced financial consulting [15].

Bachelor's and master's degree programs in accounting are implemented in 12 state and non-state higher educational institutions in the Republic of Armenia. Which, however, does not prevent the provision of non-formal accounting education services in our country as well. The latter are specialized services; at the end of short-term teaching courses, the student is provided with certificates of accounting skills. According to various estimates, about 350 students in RA receive accounting education in these institutions annually. Of course, at the same time, the secondary, especially higher education institutions of the Republic of Armenia carry out bachelor's and master's degree programs in the field of "Accounting and taxation", which have a significant share in the admission of applicants. Therefore, in such conditions, it is necessary to organize higher education of accountants in such a way that it becomes competitive with both non-formal education and university education systems.

As a rule, non-formal education, in contrast to university education, is carried out in a relatively short period of time, and at the same time does not present special requirements for entrance exams. Therefore, the question arises whether it is not possible to reduce the curricula of accountants in universities, to target them mostly in the practical field.

Studies show, that in many Western universities, bachelor's degree programs in accounting are implemented in three years, and master's programs in one and a half years [16]. However, in such a short period of time, special requirements are set for the organization of education. In particular, accounting, being considered a highly applied profession, requires adding a component of student practical work to its curriculum. In this case, the universities attach the students to the existing accounting offices during their studies, where they work, gain experience and receive a salary. Consequently, university classes are reduced, supplemented to some extent by the student's years of practical activity, combining the academic field with teaching.

Significant changes are expected in the accounting profession over the next three decades, to which professional organizations, their members, and educational institutions must respond. First, accountants will use more sophisticated, smarter technologies to improve their traditional way of working; these technologies can even replace the traditional approach. Smart software systems (including cloud computing) will support the trend towards outsourcing services, greater use of social media through smart technology will enhance collaboration, engagement with a "wider range of stakeholders".

Second, continuous globalization will create more opportunities and challenges for members of the accounting profession. While globalization encourages the free flow of money from one capital

market to another, the intensification of foreign outsourcing activities, the transfer of technical and professional skills, will continue to pose a threat to local issues (through different cultural, financial, and tax systems). US, EU, Australian accounting firms provide services to India and China to minimize costs, which will create employment shifts in the West's accounting sector. Third, the increase in regulation and related disclosure rules will have the greatest impact on the profession in the years to come.

In general, in order to increase the competitiveness of educational institutions training specialists in the field of accounting education, as well as to face the acute challenges, it is necessary to apply the "university-employer" interconnected learning model, which assumes, that the student will spend part of the academic week at the university and the other part at the accounting office (see figure 1). In this case, the curricula are substantially transformed; the center of gravity of the learning is transferred from the theoretical to the practical sphere. Therefore, teaching is aimed at acquiring professional skills, the measure of students' progress is based not on the assessment of the exam, but on the fulfillment of the assignment given by the university, which should be considered as a competitive advantage, encouraged in the future workplace.

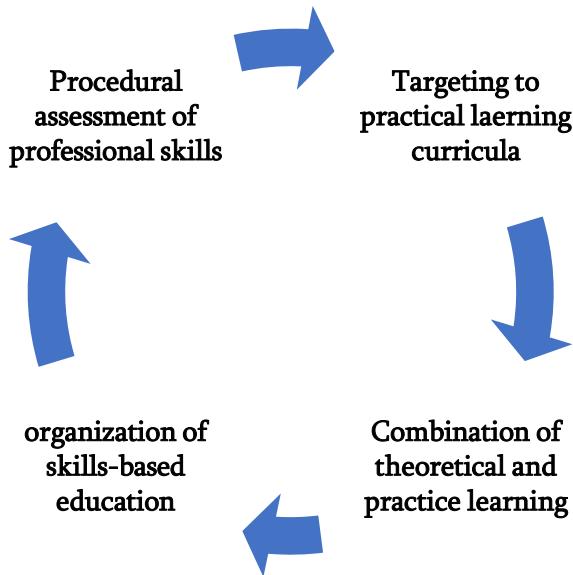


Figure 1 Cycle of improvement in the organization of higher education for accountants<sup>2</sup>

Generally, the organization of education based on abilities has always been referred to in professional literature. However, this educational system also has its organizational complexity, especially in large academic groups and student streams. As a rule, in practice, there are difficulties in attaching students to employers from the beginning, in controlling the learning outcomes of each during the study. However, the efficiency of this process increases significantly when the existing experienced accountants take part in the revision of the curricula, the content reforms of the curricula, which is not yet observed in our reality.

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<sup>2</sup> Created by author

The organization of skills-based education is done in a number of steps. The first step is to determine, what abilities the student will acquire at the end of the education, according to which a study plan is made. To this end, the efforts of all education beneficiaries are consolidated with the aim of generalizing the "knowledge + skill + ability" components in the acquisition of specific professional skills. And it turns out that academic programs are built not on the learner's professional knowledge, but on the acquisition of the learner's abilities [17].

### Conclusion

Thus, the ways to improve the higher education of accountants should be presented in the following chain: procedural assessment of professional skills, targeting of curricula in the field of practice, organization of skills-based education, a combination of theoretical training and practice.

First of all, it is necessary to sharply emphasize the component of practical work in the current curricula, unloading the educational curricula from theoretical materials, which is done in the case of organizing non-formal education.

Second, during the years of study at the university is coming necessity practical activity outcomes, when the results of the student's university attendance are combined with the specific tasks he/she performs in the workplace. In this case, the curricula do not include weeks of special experiences, but instead, from the beginning first year, practical activity days are provided, which are formed in each semester of study.

Third, the implementation of skills-based education is used, when the student's progress is assessed not by the expression of the acquired

knowledge, but by the ability to perform specific practical tasks, thus making measurable the student's ability to work in the accounting profession.

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**Մերի Բադայան**  
տ.գ.թ., դոցենտ, <ՊՏԸ<

## **ՀԱՇՎԱՊԱՀՆԵՐԻ ԲԱՐՁՐԱԳՈՒՅՆ ԿՐԹՈՒԹՅԱՆ ԿԱԶՄԱԿԵՐՊՄԱՆ ՀԻՄՆԱԽՆԴԻՐՆԵՐԸ**

**Բանալի բառեր** – կրթական ծրագրեր, ունակությունների հենքով կրթություն, գործնական և տեսական կրթության համակցում, հաշվապահական կրթություն

Դասվելով հնագույն մասնագիտությունների շարքին՝ հաշվապահությունը ներկայում էլ մնում է արդիական, իսկ հաշվապահները իրենց հմտություններով ու կարողություններով մրցակցային են ու աշխատաշուկայում ունեն կայուն բարձր պահանջարկ: Ավելին, այս մասնագիտությունը անընդհատ զարգանում է և ներկայանում ոչ միայն ֆինանսական, այլև կառավարչական, հարկային, ռազմավարական հաշվառման ոլորտներում: Ներկայումս <<-ում հաշվապահական հաշվառման գծով մասնագետներ են պատրաստում ավելի քան 12 բարձրագույն ուսումնական հաստատություն: Սակայն հարց է առաջանում, թե որքանով են մրցունակ իրականացվող կրթական ծրագրերը և որքանով է արդյունավետ հաշվապահական հաշվառման կրթության կառավարումը << բուհական համակարգում: Հոդվածում ներկայացվում են << բուհերում հաշվապահական հաշվառման կրթական ծրագրերի իրականացման թերությունները և դրա հիման վրա կատարվում են առաջարկություններ՝ հաշվապահների բարձրագույն կրթության արդյունավետ կազմակերպման ուղղությամբ:

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## **ПРОБЛЕМЫ ОРГАНИЗАЦИИ ВЫСШЕГО ОБРАЗОВАНИЯ БУХГАЛТЕРОВ**

**Ключевые слова** - образовательные программы, образование на базе компетенции, сочетание практическо-теоретического образования, образование бухгалтеров

Являясь одной из древнейших экономических профессий, бухгалтер по-прежнему конкурентоспособен по своим навыкам и умениям и всегда востребован на рынке труда. Более того, эта профессия постоянно развивается, присутствуя не только в сфере финансов, но и в сфере управления, налогообложения и стратегического учета. В настоящее время в Республике Армения подготовку специалистов по бухгалтерскому учету осуществляют более 12 высших учебных заведений. Однако возникает вопрос, насколько конкурентоспособны образовательные программы, насколько эффективно управление бухгалтерским образованием в вузах. В статье представлены недостатки реализации бухгалтерских образовательных программ в вузах РА, на основании чего вносятся предложения по эффективной организации высшего образования бухгалтеров.

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## ABOUT THE MOTIVATION OF FINANCIAL LITERACY

Abstract: Ensuring financial literacy is not only of personal, but also public importance, which is why it is always under the care of the state. Thus, the Central Bank of the Republic of Armenia is taking many measures to increase the population's financial literacy, so that individuals can prevent as much risks of their financial transactions as possible, be guided in making investment decisions, and be informed about their financial rights and obligations. Additionally, the Central Bank of Armenia has developed a National Strategy for Financial Education, which continues to be implemented. Despite these measures, however, no actions are taken to motivate the population to become financially literate. This article presents specific suggestions for a centralized assessment of an individual's level of financial literacy, which can be used as a motivation tool throughout life.

Keywords: Financial literacy, individual financial capabilities, financial behavior, financial literacy assessment, lifelong motivation

JEL classification: M3

Research aim: clarify levels of financial literacy and evaluate their performance indicators

Research novelty: proposed the launch of a centralized financial literacy register, which provides an opportunity to assess the

correlation between an individual's level of financial literacy and their financial behavioral outcomes.

## Introduction

Good management of personal finances is a key skill in the modern world. All areas of everyday life, regardless of education, age, social status etc. relate to finance. Thus, the management of finances is one of the most important skills in the organization of life and improvement of personal well-being. Expanding the range of accessible financial services provides people with more opportunities. However, there are still risks that both existing and potential new consumers may not perceive. Increasing financial literacy and providing sound financial advice will allow more people to take advantage of new financial opportunities while still avoiding risks that they may not have otherwise known about or understood.

Financial literacy comes from a combination of knowledge, skills, attitudes, and behaviors that allow people to make informed and responsible financial decisions, aimed at ensuring individual financial well-being [1]. While specific definitions for what it entails vary, most (including the definition used for this paper) are generally consistent with the OECD definition of financial capabilities. Improvement in a **population's financial literacy and skills** is beneficial for most, if not all parties - helping people create a better future for themselves and their **families which results in the betterment of the country's economy**. Financial education also helps to prevent financial fraud teaching people to detect and avoid it. Despite these benefits, there are still difficulties in spreading financial literacy among the population, due to both methodological and organizational issues.

## Research Results

The ability to manage personal finances well is a vital skill and component of the economy that effectively promotes economic and financial stability, in addition to the well-being of individuals and families. Research has shown, among other things, that many do not enjoy the benefits of financial services. Others borrow without calculating their own income and expenses, and later find it difficult to repay their debts—another product of poor financial planning [2]. In recent years, the availability of quick and easy loans requiring only passport data from the borrower has increased significantly leaving many people vulnerable to the deceptive but tempting offer of easy money. Thus, they often accumulate debts, leading to problems with interest or principal repayment.

Increasing people's ability to manage their personal finances will improve their quality of life. Those who are financially struggling are often the most vulnerable to scams and fraud and thus financial education will allow them to use their money as well as possible to avoid accumulating too much debt, manage any already existing debt, avoid unnecessary expenses, or take risks. Those who are financially stable will benefit from financial education to become more competent at managing their personal finances effectively, for example, by making savings, investing wisely, managing risks (for example through insurance), and avoiding financial fraud.

Financial education has been addressed by many reputable international organizations, highlighting its importance for the common good of the individual and the state. For example, strengthening financial capacity, including financial education, consumer protection, and the Organization for Economic Co-operation and Development (OECD) has been identified as a priority for public development [3].

The Central Bank of RA, with the support of the Savings Banks Fund for International Cooperation (SBFIC), financed by the Government of Germany conducted The Financial Capability Assessment (FSF) survey, which measures the financial capabilities of the population of Armenia in 2019 [4]. The FSF survey revealed that in 2019, Armenia's financial capacity index is 46.8%, increasing by 2.3 percentage points since 2014. Nevertheless, Armenia remains in the group of countries with medium financial capacity. Some of the main findings of the survey include that the index is:

- Slightly higher among men (47.7%) than women (46.3%).
- Slightly higher among the urban population (47.5%) compared to the rural population (45.3%).
- Significantly higher among young people (51.1% in the 18-25 age group) compared to the elderly (40.5% in the 60-year-old age group).
- Higher among those who study or have received higher professional education (56.8% in the group of persons with higher professional education, 39.3% in the group of persons who have no education or have primary education).
- Largely correlated with the level of income (56.5% - those with a monthly income of more than 350,000 AMD & 45.0% of those whose monthly income does not exceed 100,000 AMD).
- Relatively low among the unemployed (40.1%).

As expected, respondents are more aware of relatively simple financial instruments and services than the more sophisticated rare services. The surveys show that 47.0% of respondents are aware of the functions of the Financial System Mediator. Similarly, 37.4% of respondents were unaware or struggled to answer about the functions of the Deposit Insurance Guarantee Fund in Armenia, and many respondents were not aware of the level of the Deposit Guarantee

threshold in Armenia. Furthermore, 92.1% of respondents stated that they avoid tempting offers from unknown sources despite low awareness of various forms of financial fraud or warning signals.

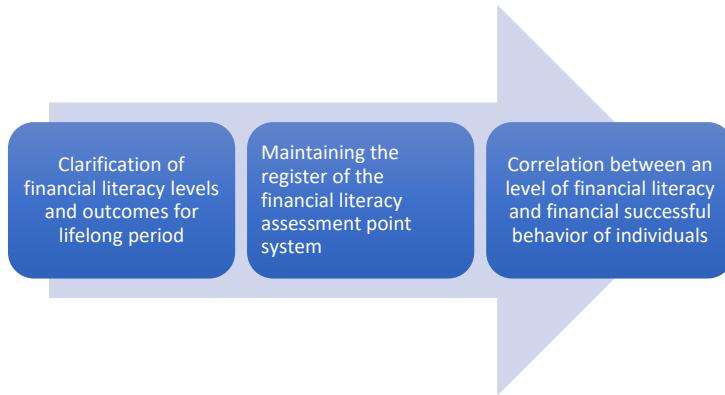
Financial well-being can be defined as a situation in which a person can cover his current expenses, has a sense of security towards his financial future and is free to make choices that help him enjoy life [5]. As a rule, financial well-being is directly related to financial literacy, which is why a National Financial Education Program has been developed in Armenia, outlining the dynamics and predictions of financial ability indicators for the 18 and older population (see table 1). As shown in the table, the Armenian government predicts positive trends in the improvement of personal financial literacy and capabilities of this population. However, the question arises in how these positive developments will take shape.

*Table 1. Dynamics and prediction of financial ability indicators (%) for the 18 and older population [6]*

Indicators of financial ability	2014	2019	2025	2031	2037
Apply macroeconomic insights to personal finance management	39,2	42,7	45	50	60
Personal and Family budget management	46,1	50,5	55	60	70
Savings and Long-term management	33,7	41,0	45	55	65
Loans and debt management	45,1	46,2	50	55	65
Protection of own financial rights	57,7	56,3	60	65	70

It should be noted that the "Financial Education at School" program was launched in 2014 as a result of cooperation between the Ministry of Education, Science, Culture, Sports and the Central Bank of Armenia. The goal of the program is to provide financial education not only for students but also for their family members. Topics of financial education were included in four subjects spanning elementary, middle, and high school: "Mathematics", "I and the world around me", "Algebra" and "Social science". Educational standards, programs and other teaching aids have since been developed and approved. The Central Bank of Armenia also cooperates with universities to ensure the provision of financial education to students. For example, the American University of Armenia has an "Introduction to Personal Finance" course, which was originally developed and taught by the CB team, but is now taught by a university lecturer. The "Financial Education in Rural Communities" program, implemented in cooperation with the Central Bank and the Ministry of Territorial Administration and Infrastructure, was launched in 2015, conducting seminars in rural communities in different regions of Armenia. Throughout 2016 - 2019 Trainings were organized in 158 rural communities of Armenia, with a total of 2,518 participants [7]. The seminars mainly focused on seasonal income planning, budgeting, loans, savings and available financial services with an overall goal to strengthen responsible financial decision-making and behavior in rural communities in Armenia. Finally, the Central Bank of Armenia's financial education website provides information and guidance to help people manage their personal finances. It covers a wide range of topics including budgeting, savings, loans, payments and transfers, payment cards, insurance, pensions, how to file a complaint, and how to avoid financial fraud [8].

As we can see, the central bank of the Republic of Armenia is at the core of the development of personal financial management of the population in Armenia, carrying out most of the organizational work in this field. However, at the same time, it should be noted, that this process of education is not regulated by the Central Bank and still needs a greater focus on clear coordination [9].



*Figure 1. Proposed correlated actions to motivate an individual's financial literacy<sup>3</sup>*

We are especially interested for implementation of a financial literacy assessment and motivation system by the Central Bank of Armenia and suggest taking a number of steps in this regard (see figure 1).

Firstly by dividing the period of individual financial literacy into stages and fixing specific financial management skills at each stage (see table 2).

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<sup>3</sup> Created by authors

*Table 2. Minimum requirements for a financially capable person<sup>4</sup>*

Age groups	Level of financial literacy	Knowledge	Skills
up to 18 years old	Understanding the main financial categories	Know the financial service providers	Be able to orient in the field of financial services
		Understand macroeconomic categories	Comment on the market, inflation, unemployment.
		Know what a family budget is	Be able to analyze family budget revenues and expenditures
18-50 years old	Decision making in financial transactions	Getting a loan	Be able to assess credit risk
		Insurance	Be able to decide on the choice of insurance policies
		Payment and settlement tools	Will be able to use electronic payment tools
		Financial rights	Will be able to defend personal financial rights

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<sup>4</sup> Created by authors

More than 50 years old	Management of own financial accumulations	Pension funds	Ability to choose Pension fund manager
		Reverse mortgage transactions	To evaluate the effectiveness of mortgage transactions
		Investing in securities	Making choices in investing in securities

Secondly, maintaining a special register by the Central Bank of the Republic of Armenia, where the indicators of financial education received during the life of an individual will be accumulated by a point system. In other words, at any time, this register will provide an opportunity to find out how much a particular person has accumulated in terms of financial management skills by being involved in formal (secondary school, college, university) or non-formal (training, financial over qualification studies) training.

Thirdly, the scores on financial literacy accumulated by many institutions (commercial banks, grant providers, government institutions supporting business) will be taken into account when assessing an individual's creditworthiness, investment capacity, and ability to use financial resources effectively.

### Conclusion

If the financial education and training received by individuals will benefit them systematically (through the points system which will affect credit etc.), they will be more motivated to seek out this education through not only formal, but informal ways as well. Thus, research that

assesses the relationship between the success of an individual's financial behavior and his or her level of financial literacy will be useful.

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## **Նոննա Խաչատրյան տ.գ.թ., դոցենտ, ԵՊՀ**

### **Հասմիկ Սահակյան**

**«Հաշվապահության Ուսուցման Միջազգային Կենտրոն»  
կրթական հիմնադրամ, գործադիր տնօրեն**

## **ՖԻՆԱՆՍԱԿԱՆ ԳՐԱԳԻՏՈՒԹՅԱՆ ՄՈՏԻՎԱՑԻԱՅԻ ՇՈՒՐՋ**

**Բանալի բառեր** – ֆինանսական գրագիտություն, անհատի ֆինանսական կարողություններ, ֆինանսական վարքագիծ, ֆինանսական գրագիտության գնահատում, մոտիվացիա

Ֆինանսական գրագիտության ապահովումը ոչ միայն մասնավոր, այլև հանրային կարևորություն է ստանում, և, այդ իսկ պատճառով, մշտապես գտնվում է պետական հոգածության ներքո: Այսպես, ՀՀ Կենտրոնական Բանկը բազմաթիվ միջոցառումներ է ձեռնարկում ազգաբնակչության ֆինանսական գրագիտության բարձրացման ուղղությամբ, որպեսզի անհատները հնարավորինս կանխարգելեն իրենց ֆինանսական գործարքների ռիսկերը, ճիշտ կողմնորոշվեն ներդրումային որոշումներ կայացնելիս, իրազեկվեն ֆինանսական իրավունքների և պարտավորությունների ոլորտում: Այդ հանգամանից ենելով, ՀՀ ԿԲ-ի կողմից մշակվել է ֆինանսական կրթության ազգային ռազմավարություն: Սակայն, դրա հետ մեկտեղ, դեռևս միջոցներ չեն ձեռնարկվում ազգաբնակչությանը մոտիվացնելու ֆինանսական գրագիտության ձեռք բերման հարցում և չեն իրականացվում կոնկրետ ուսումնասիրություններ անհատի ֆինանսական կրթության մակարդակի և նրա վարքագծային դրսնորումների փոխանչությունների վերաբերյալ: Հոդվածում ներկայացնում են կոնկրետ առաջարկներ՝ կենտրոնացված համակարգով գնահատելու անհատի ֆինանսական գրագիտության մակարդակը և այն կիրառելու որպես մոտիվացիոն գործիք՝ ողջ կյանքի ընթացքում:

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## **О МОТИВАЦИИ ФИНАНСОВОЙ ГРАМОТНОСТИ**

**Ключевые слова** - финансовая грамотность, индивидуальные финансовые возможности, финансовое поведение, оценка финансовой грамотности, мотивация

Обеспечение финансовой грамотности имеет не только индивидуальное, но и общественное значение, поэтому всегда находится под опекой государства. В этой связи, Центральный банк Республики Армения принимает множество мер по повышению финансовой грамотности населения, чтобы физические лица могли максимально предотвращать риски своих финансовых операций, ориентироваться в принятии инвестиционных решений, быть информированными в сфере финансовых прав и обязанностей. Более того, Центральный Банк Армении разработал Национальную стратегию финансового образования. Однако, при этом не предпринимаются меры по мотивации населения к приобретению финансовой грамотности; В статье представлены конкретные предложения по оценке уровня финансовой грамотности личности централизованно, используя ее как мотивационный инструмент на протяжении всей жизни индивидуума.

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## FINANCIAL LITERACY PROBLEMS IN CRYPTO TRANSACTIONS

**Abstract:** The article discusses the issues of competitive financial literacy, drawing parallels with developments in e-payment systems. The unprecedented activation of current electronic payments, the transfer of population payments to the electronic domain, the use of cryptocurrencies in parallel with traditional money are creating new problems of financial literacy. At the same time, financial literacy must be competitive in terms of being able to protect e-payment transactions from the risks of cyber security breaches and sharp fluctuations in cryptocurrency markets.

**Keywords:** competitive financial literacy, cryptocurrency transactions, e-payment risks, financial education developments

**JEL classification:** E42

**Research goals:** to introduce cryptocurrency transaction risk management approaches

**Research novelty:** ways to curb the risks of cryptocurrency transactions through financial literacy were presented

### Introduction

Payment and settlement systems are the blood vessels of the macro-economy, as they carry out money transfers, repayments of financial obligations, clearing transactions, international transfers. In the current stage of economics, when the digital economy is emerging at a faster pace, both in theory and in practice, the solutions to the

problems aimed at improving the financial literacy of electronic payment systems are becoming especially relevant.

The digital literacy of e-transactions in the digital environment is related to both the compliance with the regulations developed by the Central Bank and the business interests of financial institutions. On the one hand, the state seeks to make the systemic risks of electronic payment and settlement activities as manageable as possible, on the other hand, commercial banks and specialized financial institutions try to make their payment and settlement transactions competitive, resort to innovative payment instruments that require special approaches to financial literacy.

In particular, in the case of the development of the electronic payment and settlement system, the functions of money are significantly revised, mostly emphasizing both the technical and economic efficiency of the implementation of payment instruments. The e-money market is becoming increasingly competitive, which is why payment system entities are trying to use financial management tools that will ensure both a stable level of liquidity and a high level of efficiency.

### Research results

The effectiveness of e-payment transactions is currently being assessed based on the degree to which the needs of the sector's beneficiaries are being met. Ensuring accountability in that direction is considered to be the most urgent. However, studies show that in practice, the reporting of e-payment activities is mainly focused on the financial management control functions, and does not represent the competitive environment of the sector at all [1].

Making transactions in the virtual environment creates special risks related not only to cyber security, but also to the financial management of transactions. In particular, the risks of card services coverage, financial security of payment transactions, capital adequacy of financial institutions, which require special management approaches, are being addressed, and operational management decisions are being implemented.

In the last decade, in parallel with the operation of centralized electronic payment systems, cryptocurrencies, which are managed in a blockchain system on the principle of decentralization, have been active in the financial market [2]. Gradually, a situation arises when the issuance and circulation of cryptocurrencies have an impact on changes in the electronic money supply by the central bank. In this regard, it is important to introduce ways to improve financial literacy in the use of cryptocurrencies.

Cryptocurrencies are currently showing significant activity in electronic payment calculations. Financial markets are not yet fully confident in cryptocurrencies, but that does not stop this generation of e-money from gradually making its way into payment calculations, as there are a number of advantages that are not noticeable in traditional electronic payment calculations. The most important of these are the speed of cryptocurrency transactions, their relative cheapness, decentralized management, and secrecy through electronic cryptocurrency transactions [3].

Cryptography has been used by humans since time immemorial, when access to information was restricted, and only certain groups of users were allowed to decrypt. In this case, the cryptographers set certain rules for decrypting the information **и** approaches provided to the users of the cryptography. Encryption is an ancient science. It has

a history of about 4000 years [4]. Information was created through cryptocurrencies and symbols about hiding places and places where jewelry was stored. At various times, couriers transmitted information over long distances; the risks of information leaks on the roads were prevented by encryption. Encryption gained momentum especially during World War II, when it was used to secure data transmission and prevent leaks of military secrets. Nowadays, in the virtual environment, encryption has become widespread, in which case the original electronic text is first encrypted, passed through a pre-selected key to the addressee. Then, when the electronic information reaches the addressee, it is decrypted, ensuring the confidentiality of the information [5].

In our information age, when Internet technologies are rapidly evolving, there has been an increase in the number of cryptocurrencies, especially among virtual users, forming a cypher punk army. Even before the advent of the Internet, the public was concerned that some details of men's personal lives might become public property when individuals made purchases through bank transfers and paid for services received. And in this regard, the community expanded so much that in 1992 it published the Crypto-Manifesto, stating that "in the electronic age, the protection of the private sector in the open society is a must." Privacy is not secrecy, but merely the exercise of a right so that the whole world does not see what the individual is doing, as opposed to secrecy, when an individual's activities are not made public at all. The exercise of the right to private information presupposes the provision of one's own behavioral sample information to the public [6].

In this regard, the cryptocurrency movement began in the 1980s, when certain groups of consumers began to use cryptographic

approaches in payment and settlement relationships, using cryptographic methods. And the use of the Internet has increased the information flow of personal life and individual behavior

## Conclusion

Developments in the use of cryptocurrencies became more active when they began to be used in the stock exchange system. Thus, in 2017, the Chicago stock exchange traded \$ 257 million worth of securities on the stock exchange cryptocurrency, after which the value of bitcoin was at 20 thousand for several weeks. within the dollar. However, the financial community is still wary of using cryptocurrencies, as there are a number of shortcomings, such as:

- the prices of cryptocurrencies fluctuate sharply (in just three years the value of Bitcoin went from \$ 7,000 to \$ 40,000 и decreased to 2 \$ 2,000) and their acquisitions are considered extremely risky by investors.
- cryptocurrencies are not visible and cause psychological complications to the owner, when it becomes clear that they are circulated only in a virtual environment,
- in case of wallet loss, the transfers made to the wrong addressee due to a technical error when making payments through cryptocurrencies are not subject to correction и recovery;
- the legal regulation of cryptocurrencies in many countries has not yet expired, moreover, they are even banned, which causes skepticism among users.

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**Հրայտանիելյան**  
Հայցորդ, Հյուսիսային համալսարան

## ՖԻՆԱՆՍԱԿԱՆ ԳՐԱԳԻՏՈՒԹՅԱՆ ՀԻՄՆԱԽՆԴԻՐՆԵՐԸ ԿՐԻՊՏՈԱՐԺԻՎԹԱՅԻՆ ԳՈՐԾԱՐՔՆԵՐՈՒՄ

**Բանալի բառեր** - մրցունակ ֆինանսական գրագիտություն, կրիպտոարժույթներով գործարքներ, էլեկտրոնային վճարային ռիսկեր, ֆինանսական կրթության զարգացումներ

Հոդվածում քննարկվում են մրցունակ ֆինանսական գրագիտության ձևավորման հիմնահարցերը՝ գուգահեռներ անցկացնելով էլեկտրոնային վճարային համակարգերի զարգացումների հետ։ Ներկայումս էլեկտրոնային վճարումների աննախադեպ ակտիվացումը, ազգարնակչության վճարումների տեղափոխումը էլեկտրոնային տիրույթ,

ավանդական փողին գուգահեռ կրիպտոարժույթների գործածումը ֆինանսական գրագիտության նոր խնդիրներ են առաջացնում: Ընդուրում, ֆինանսական գրագիտությունը պետք է լինի մրցունակ այն առումով, որ կարողանա էլեկտրոնային վճարային գործարքները զերծ պահել կիրեռանվտանգության խաթարման ռիսկերից և կրիպտոարժույթների շուկայական կտրով տատանումներից:

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## **ПРОБЛЕМЫ ФИНАНСОВОЙ ГРАМОТНОСТИ В КРИПТОВАЛЮТНЫХ СДЕЛКАХ**

**Ключевые слова** - Конкурентная финансовая грамотность, транзакции с криптовалютой, риски электронных платежей, развитие финансового образования

В статье рассматривается процесс развития конкурентоспособной финансовой грамотности, проводится параллель с развитием электронных платежных систем. Беспрецедентная активизация текущих электронных платежей, перевод платежей населения в электронный домен, использование криптовалют параллельно с традиционными деньгами создают новые проблемы, связанные с финансовой грамотностью. В то же время, финансовая грамотность должна быть конкурентоспособной с точки зрения способности защищать транзакции электронных платежей от рисков нарушения кибербезопасности и резких колебаний на рынках криптовалют.

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## THE IMPACT OF THE INTRODUCTION OF DIGITAL INNOVATIONS IN THE INTERNAL AUDIT SYSTEM

**Abstract:** The development of digital technologies is becoming more noticeable every day around the world. Automation is very effective in almost all areas. Organizations are facing new challenges in adopting digital technologies, increasing their use and efficiency. Automation of tasks primarily affects the speed of work, and secondly, to reduce risks within the organization, since each work is associated with a certain risk. It is recommended that you switch to automation to manage these risks. Digital technology also has risks; it can be said that digital innovation risk management has also become one of the main research topics for organizations. Internal audit as a means of preventing and controlling risks should contribute to the development of digital innovation in the digital economy. The introduction of digital technologies from the point of view of the use of big data implies a faster and more efficient work of auditors.

**Keywords:** Digital technologies, artificial intelligence, information technology in internal audit, risk management

**JEL classification:** M42

**Research aim:** Emphasize the importance of digital technologies in the internal audit system.

Research hypothesis: Risk assessment and management plays an important role in the internal audit system. Many problems can be solved faster and more efficiently through automation.

Research novelty: Demonstrate the potential of digitalization, address issues in internal audit, evaluate work efficiency after digitalization.

### Introduction

The world economy is still in a relatively stable phase, and the main growth of the economy continues to be an ongoing issue. In-depth study of the digital economy **↳** investment in various fields, from the Internet to artificial intelligence **↳** other new generation information technologies, contribute to the growth of the economy. The digital economy can contribute to far-reaching reforms, from production to organizational models of business structures. The epidemic has made it clear that we live in a digital environment; this trend will only grow in the coming years. The development of digital technology **has helped not only organizations but also consumer's** employees, as during the epidemic employees were able to do the same work from home, organizations were able to operate continuously, and convenient digital applications were created for consumers to run without any problems, the normal life of the people continued. Online business activity has grown significantly during the epidemic. It can be said that the organizations accepted the challenge of digitalization. The transition to digitalization in all areas involved great risks, as everything happened very quickly. There are a number of issues with the internal audit system that need to be addressed as soon as possible. Studies have shown that there is a great need for digital technologies in the internal audit system. Research answers the question of how digitalization contributes to the effectiveness of internal audit work.

## Literature Review

Back in June 1999, the International Internal Audit Association (IIA) revised and adopted a new definition of risk-based internal audit, which facilitates the identification and management of an entity's risks [1]. Practical Internal Audit Standards reaffirmed its purpose in 2001, stating that the systematic approach to internal auditing will help businesses by reducing and controlling the risks in the organization [2]. In 2004, the COSO Committee issued a statement stating that internal control a combination of risk management can better influence the development of enterprises, effectively facilitate the transformation of the internal audit into a risk and risk-based audit will become a major trend in the future. The Financial Risk Management Association (GARP) The International Association for Risk Management (PRMIA) has proposed a new key internal audit task to analyze and identify significant distortions carry out risk management and control. The latest edition of Internal Audit was published in January 2011 by the International Association of Internal Audit in the framework of international professional practice. Many scholars argue that the use of risk-based internal auditing can have a positive effect. Zhang Lijin & Chen Weiu pointed out that the main role of contingent risks is in the internal audit function [4]. Li Feng Chu, a researcher, said that risk management is an audit, and internal audit is performed in accordance with international standards to ensure efficiency in the risk management system. Digital risk is a term that includes all the digital capabilities that improve the efficiency of risks, especially through process automation. In essence, digital risk involves systematic processes, data analysis, and IT refinement [5]. The digitization process may involve new components that will introduce new risks. Modern enterprises mainly use information tools

to carry out all kinds of work in all fields. Businesses should also assess and prevent cyber-risk within the information network [7]. In the course of the business of enterprises, it is also possible to incur internal digital risks based on systematic errors or on the influence of the human factor.

### Research Methodology

Risk management is a key element of corporate governance. Risk management within the organization brings many benefits and contributes to a structured, consistent and systematic approach. The primary role of internal auditing is to provide assurance to management managers to separate and manage risk analysis identification [8]. However, after the epidemic started, when everyone went digital, they started working from home and a number of problems arose that needed to be solved quickly because time was not given to accept the challenge. Internal audit operations became more complex during this time as the risks ranged from cyber-surveillance to the creation of a digital security system. It was during this time that it became clear that a great deal of digital technology was needed in the internal audit system to be effective [3]. Research has been conducted by a number of companies on how effective the introduction of digital innovations will be in the internal audit system. To answer the main research question, the following questions were studied:

- What digitization can be useful in internal audit functions.
- To what extent did they consider the internal audit functions to be relevant to their current activities
- What are digital technologies like, such as robotics, process automation, artificial intelligence, and the impact of predictive analytics on the current performance of internal auditing

- To what extent does the internal audit system already use digital technologies
- How to use internal audit functions with the help of digital technologies
- Are there any plans to support the introduction of new technologies in the internal audit system?
- Were there any attempts to introduce new technologies, and if so, how effective was it
- To what extent will digital audit work in accordance with their plans, further development, and what is needed to adapt to these technologies in the future.
- The following research was conducted to answer these questions.
- During the first phase, professional literature was studied
- During the second phase, inquiries were made from auditors working for a Dutch audit firm.
- The third phase was aimed at comparing the results of the research ~~without~~ drawing conclusions
- The results of the survey show the current state of digital auditing in the Netherlands. Based on the conclusion of the research, it is proposed to introduce digital technologies in the internal audit system in the future. The term digitalization is used in different ways but it can be defined as a digital technology or software management system. In the context of business, digitalization has the following goal:

*Improving the company's activities.* From a practical point of view, information technologies such as automation, artificial intelligence, speed up processes, increase work efficiency, reduce long-term costs. Digitalization is a very broad topic and in the focus of organizations. A number of researches are carried out day by day in different fields,

the center of research is artificial intelligence and automation [10]. Artificial intelligence has a very old history, it can be said to be older than computers.

The definition of artificial intelligence is not entirely new. In fact, it can be considered as a branch of cognitive science which is considered to be a rather old concept. After research by Alan Turing in 1950, he came to the conclusion that a car could be intelligent, displaying obvious communication behavior like a human [11].

### Analysis

The main driving force of digitalization in internal audit and function is annual planning and actual audit tasks [4]. The study below shows the percentage analysis of the effectiveness of the introduction of digital technologies in the internal audit system.

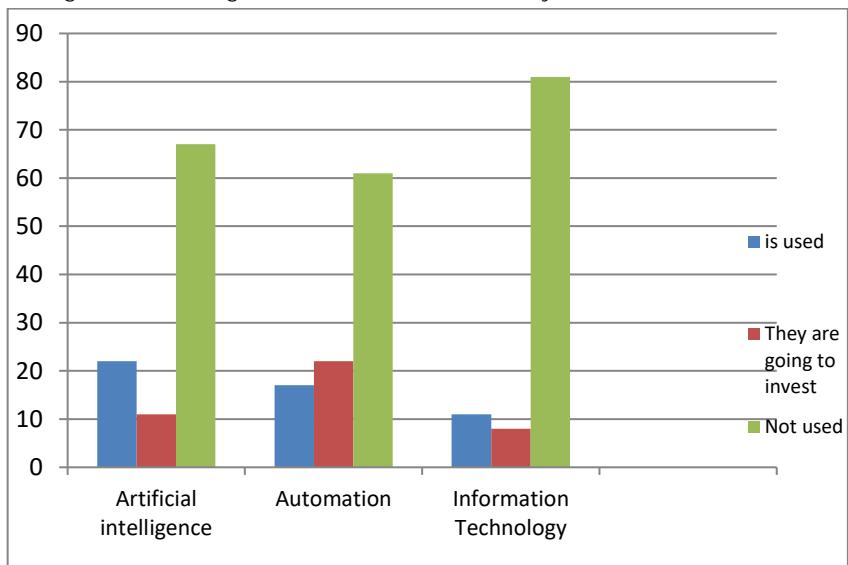


Figure 1. Analysis of the application of digital innovations<sup>5</sup>

<sup>5</sup> Created by aauthor

To make the analysis, we made a number of inquiries from auditing companies operating in Armenia. Surveys have shown that there is a need to introduce information technology in auditing companies. Although companies have different software ideas, digital innovations still need to be improved in the audit system. The main and most important factor in the use of digitalization and information technologies is the availability of digitalization, quality management, privacy. In the research below, we present the potential factors of digitalization through digital analysis [9].

*Table 1. The main factor that will enable the development of digital technologies<sup>6</sup>*

	Great importance	Medium importance	Low significance
Availability, quality, privacy of data	86%	14%	0%
Accurate reflection of the predicted model	39%	56%	6%
Employee skill, experience	69%	28%	3%
Budget availability	42%	42%	17%
Availability of technologies and tools	44%	53%	3%
Marking the sphere of business activity	25%	58%	17%
Comment, evaluation of results	42%	58%	6%

The table below outlines the key factors that, according to current auditors, play a role in digital innovation. According to the analysis, no

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<sup>6</sup> Created by aauthor

matter how much digital technologies are used in the experience of employees, knowledge is very important in the internal audit system, it is also very important for the availability, quality and confidentiality of data. Another study found that one of the largest consumer companies decided to create a digital audit function [7]. The company decided to set up a data analysis team to perform systematic data analysis. This innovation can have a positive impact on performing fast and efficient data analysis through digitalization in the audit system. With this program, risk management will become faster and more efficient for organizations.

## Conclusion

Examining the introduction of digital technologies in the internal audit system, their impact, efficiency Perspectives, it can be concluded that the use of automation in internal audit can reduce dependence on brand work, reduce costs, and increase business efficiency. However, this practice is just beginning to develop; it still takes a long time to create, implement or adapt new programs. Admittedly, having a flexible digital system will save organizations a lot of time on both risk assessment and data analysis. Businesses for various reasons still continue to use the traditional annual audit based on conclusions that may be ineffective and time consuming. The key factors that will help in the successful implementation of digital technology are identified as data availability, data quality management and privacy factors [6]. Another important factor is the interpretation of the results through communication. The main obstacle to the use of digitalization can be identified as projected costs, another obstacle is the incompetence of internal audit staff, which can negatively affect the acceptance of new challenges. However, it can be said that no new

technologies are planned to be introduced in the internal audit system in the near future.

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## **ԹՎԱՅԻՆ ՆՈՐԱՐԱՐՈՒԹՅՈՒՆՆԵՐԻ ՆԵՐԴՐՄԱՆ ԱՉՂԵՑՈՒԹՅՈՒՆԸ ՆԵՐՔԻՆ ԱՌԴԻՇԻ ՀԱՄԱԿԱՐԳՈՒՄ**

**Բանալի բառեր** - Թվային տեխնոլոգիաներ, արհեստական ինտելեկտ, տեղեկատվական տեխնոլոգիաները ներքին առողջության ոհսկերի կառավարում

Թվային տեխնոլոգիաների զարգացումը արդիական է դառնում ամբողջ աշխարհում: Գրեթե բոլոր բնագավառներում աշխատանքի ավտոմատացումը ունի բարձր արդյունավետություն: Կազմակերպությունների համար նոր մարտահրավերներ են թվային տեխնոլոգիաների ներդրմումը, դրանց գործարկման և դրա արդյունավետության բարձրացումը: Աշխատանքի ավտոմատացումն, առաջին հերթին, ազդում է աշխատանքի արագ կատարման, երկրորդ՝ կազմակերպության ներսում ոհսկերի զսպման վրա, քանի որ յուրաքանչյուր աշխատանքը ունի որոշակի ոհսկ և այդ ոհսկերը կառավարելու համար ավտոմատացումն ավելի է խրախուսվում: Թվային տեխնոլոգիաները նույնական ունեն ոհսկեր և, կարելի է ասել, որ թվային նորարարությունների ոհսկերի կառավարումը նույնական դարձել է հիմնական հետազոտության առարկա կազմակերպությունների համար: Ներքին առողջության որպես ոհսկեր կանխարգելող և վերահսկող թվային տնտեսության մեջ պետք է աջակցի թվային տեխնոլոգիաների նորարարություններին: Մեծ տվյալների օգտագործման առումով թվային տեխնոլոգիաների ներդրումը ենթադրում է առողջությունների ավելի արագ և արդյունավետ աշխատանք:

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## **ВЛИЯНИЕ ВНЕДРЕНИЯ ЦИФРОВЫХ ИННОВАЦИЙ НА СИСТЕМУ ВНУТРЕННЕГО АУДИТА**

**Ключевые слова** – цифровые технологии, искусственный интеллект, информационные технологии во внутреннем аудите, управление рисками

Развитие цифровых технологий с каждым днем становится все более заметным во всем мире. Автоматизация работы очень эффективна практически во всех сферах. Организации сталкиваются с новыми проблемами при внедрении цифровых технологий, повышении их использования и эффективности. Автоматизация заданий в первую очередь влияет на скорость выполнения работы, а во-вторых, на снижение рисков внутри организации, поскольку каждая работа связана с определенным риском; рекомендуется переключаться на автоматизацию для управления этими рисками. Цифровые технологии также имеют риски; можно сказать, что управление рисками цифровых инноваций также стало одной из основных тем исследований для организаций. Внутренний аудит как средство предотвращения и контроля рисков должен способствовать развитию инноваций в области цифровых технологий в цифровой экономике. Внедрение цифровых технологий с точки зрения использования больших данных предполагает более быструю и эффективную работу аудиторов.

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## ISSUES OF INFORMATION TECHNOLOGY AUDITING RISK ANALAZING

**Abstract:** The information transformation is especially the function of IT audit and control, as it forms a new level of IT risks, the measures to be reduced to be in line with it. All this makes IT auditors, as well as to question the experts of different levels of IT. The study examined various types of risk through the interviews and surveys with experts. The risk of business interruption was studied, the risk of the process of interdependence and the security risk of the system. The decision-making test and evaluation laboratory is used to find the connection between risks and is combined with an analytical network process to select optimal measures to reduce risks. The results show that IT consultants prefer Disaster Recovery Plan. They typically use remote reproduction or high availability data protection. IT staff believes that all the controls of IT risks are important. IT auditors note that data access is very important, as users must be provided with daily access to data. IT users prefer data input/output control.

**Keywords:** IT audit, IT risks, control, enterprise resource planning, decision making trial and evaluation laboratory, analytic network process

JEL classification: M42

Research aim: to highlight the key points for auditing as **identified** by various experts, to differentiate between the variety of expert perspectives on a topic.

Research hypothesis: risk management plays a critical role in protecting information for enterprises using automated IT systems to deliver internal information.

Research novelty: to show the use of a hybrid model to attain feasible measures under an IT auditing environment and with the use of DEMATEL and ANP methods to determine the best solutions.

## Introduction

Enterprise resource planning (ERP) systems can be used to integrate an **enterprise's** basic functions or processes and accommodate the special requirements of individual departments. There are many risks associated with the ERP systems, particularly in relation to the correct and secure storage of information. However, such systems are highly complex and risky. They may also fail because of increasing costs and organizational changes, which will inevitably damage the company.

An integrated evaluation model is utilized for IT auditing and risk control, which considers the intertwined relations between criteria and alternatives, such as business interruption risk, process interdependency risk, system security risk, disaster recovery planning, data processing control and so on. The remainder of the paper is organized as follows. First, it introduces the ERP system, internal control and IT auditing. Then it details the use of a hybrid model to attain feasible measures under an IT auditing environment. The DEMATEL and the ANP methods are used to determine the best solution. Then it presents an empirical case for risk control measures. Finally, the main conclusions from this research are proposed in final section.

## Literature Review

An ERP system can assist enterprises operate and make decisions. The system integrates business process by **workflow** automation and relational databases, and it can facilitate real-time capturing and processing of economic procedures. The ERP system must have greatly **flexibility** to suit overall strategies, which is done by adjustment and **modification** of the ERP architecture. The hardware/software and IT personnel no longer control the resources of the company nor do they reside within the four walls of the operation. The ERP system has the potential to reduce the cycle time, accelerate information distribution and improve financial management. ERP is the core technology in businesses. It can provide functionality to integrate and automate practices related to the company. The system is integrated through standard business processes and includes all the data and information [4]. ERP can assist managers to make decisions and determine optimal solutions. However, ERP systems are costly and require a long implementation period.

In this study, ERP is **defined** as a tool for managing an **enterprise's** internal data. Users can retrieve real-time and integral information about the business, whereas the system adjusts various objectives to achieve the **organization's** future goals.

Auditing is an important mechanism in the organization [5]. It can provide reasonable assurance of data validity and reliability. Internal auditing is in relation to **the organization's enterprise risk** management activities and help to determine the key business and IT risks to be managed by IT management consultants [1]. Risk management involves **defining**, measuring and controlling potential

risk related to the enterprise's IT. It plays an important role in protecting the enterprise's data [7].

Audit associated risk increases when enterprises have implemented ERP systems, leading to problems such as business interruption, compromised system security and process interdependency risks [3].

Business interruption risk may be derived from endogenous or exogenous factors such as hardware/software faults or striking employees. These factors tend to disrupt business processes or reduce the amount of transactions that can be processed.

Process interdependency risk: Because of the high interdependency of ERP systems, any failure may disrupt the entire workflow of the organization. The risks are greater in an ERP setting than in a non-ERP system.

System security risk may arise from employees or from external sources such as hackers who attempt to access the company's information system [3].

### Research Methodology

The mathematical algorithm for solving the team selection problem is narrowly related to selection issues [2]. First, this study looks at enterprise risks associated with the implementation of an ERP system. Measures are sifted from references and expert information. They include measures such as DRP, hardware and systems software control, data processing control, data input/output control, data access control, systems development and maintenance control, segregation of duties control. Second, we focus on measures that can be adopted to reduce the identified risks. The DEMATEL method is used to determine the relationship between risks. The ANP or AHP

methods are used to determine the priority of the measures and facilitate reduced risks.

*DEMATEL*. In 1973, the Battelle Memorial Institute of Geneva Research Centre adopted the DEMATEL method that can be used to analyse the relation- ship between cause and effect, allowing for the visualization of the structure using **matrices or figures**. There are five steps in the process for computing the matrix.

Step 1: *Producing the direct-relation matrix*. The integer scale ranges from 0 to 4 for each element that will be of **influence** to each other, where 0 represents no **influence** and 4 represents very high **influence**.

Step 2: *Normalizing the direct-relation matrix*. The largest value of  $Z$  is computed using equation (1). The normalized direct-relation matrix can be obtained through Formula (2). All the principal diagonal elements are equal to zero in matrix  $X$ .

$$L = \max_{1 \leq i \leq n} (\sum_{j=1}^n Z_{ij}) \quad (1)$$

$$X = \frac{Z}{L} \quad (2)$$

Step 3: *Obtaining the total-relation matrix*. Using Formula (3), we can derive the total relation matrix  $T$ . The identity matrix is denoted as.

$$T = X + X^2 + X^3 + \dots = \sum_{i=1}^{\infty} X^i = X(1-X)^{-1} \quad (3)$$

Step 4: *Computing the dispatcher group and receiver group*. In this step, the sum of the rows and columns indicates in formulas (4), (5) and (6) are used to obtain  $D$  and  $R$ . Equations (4) to (6) can determine the relationship and level of **influence** to each other by using the values of  $D-R$  and  $D+R$ , where  $R$  is the sum of the columns and  $D$  is the sum of the rows in matrix  $T$ .

$$T = [t_{ij}]_{n \times n} \quad i, j \in 1, 2, \dots, n \quad (4)$$

$$D = \sum_{j=1}^n S_{ij} \quad (5)$$

$$R = \sum_{i=1}^n S_{ij} \quad (6)$$

Generally, when the value of  $(D-R)$  is positive, the particular criterion belongs to the cause group. If the value of  $(D-R)$  is negative, the particular criterion belongs to the effect group. On the other hand,  $D+R$  can indicate the relationship between each criterion. If the value of  $D+R$  is large, this indicates that the two criteria have a closer relationship with each other; however, if the value of  $D+R$  is low, the relationship is less closely linked [6].

Step 5: Set the threshold value and obtain the impact-digraph-map. To find an appropriate impact-digraph-map, it must reach the threshold value of the influence level. In the impact-digraph-map, the horizontal axis is  $D+R$ , and the vertical axis is  $D-R$ .

**ANP.** A more effective group decision mechanism can enhance decision quality and improve the managerial operations of an organization. The ANP offers a technique to input judgments and measurements to get ratio scale priorities for the distribution of influence among the factors and groups of factors. Because of its greater capability for modeling the interdependencies among elements of the problem, the ANP can be used to make a better in-depth analysis [4]. The interdependence of each valuation criteria, the options and the weighting priorities can be obtained after determining the relationship using a supermatrix following comprehensive evaluation. The supermatrix is based on the Markov chain process. The resultant supermatrix is a partitioned matrix where each segment represents a relationship between two nodes in a system. In this study, the ANP is utilized the consistency index ( $CI$ ) and consistency ratio ( $CR$ ) to confirm the consistency of the comparison matrix. The definition of  $CI$  and  $CR$  are as follows:

$$CI = (Z_{\max} - n) / (n-1). CR = \frac{CI}{RI} \quad (7)$$

The random index (*RI*) is the average consistency index across numerous random entries of mutual matrices with the same orders. If  $CR \leq 0.1$ , the estimate is accepted, on the other hand, a new comparison matrix is asked for until  $CR \leq 0.1$ .

$$W = \begin{bmatrix} C_1 & & & & & \\ & \vdots & & & & \\ & e_{1,1} & e_{1,2} & e_{1,3} & \cdots & e_{1,n} \\ & e_{2,1} & & & & \\ & \vdots & & & & \\ & e_{n,1} & e_{n,2} & e_{n,3} & \cdots & e_{n,n} \end{bmatrix} \begin{bmatrix} W_{11} & W_{12} & \cdots & W_{1n} \\ W_{21} & W_{22} & \cdots & W_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ W_{n1} & W_{n2} & \cdots & W_{nn} \end{bmatrix}$$

Figure 1. Supermatrix

In the supermatrix,  $W_{21}$  represents the impact of the goal on the criteria,  $W_{32}$  represents the effect of the criteria on each alternative, and  $W_{22}$  represents the interdependency between two components. To form the supermatrix, the eigenvectors of each matrix are combined together. Lastly, to compute the final limit matrix, the value of each column must be stochastic, and the sum of columns must be equal to one.

### Analysis

Although the recent trend has been for many enterprises to implement an ERP system, the risk of an internal audit has also increased. The issue of control risks has become of great importance. This study provides seven measures for controlling system-related risk. A five-step DEMATEL procedure is followed. First, the decision goals for selecting

system risk criteria are **defined**. **Second**, data from experts for adopting these three risks criteria are used as evaluation factors. Third, the data obtained from the experts are scaled to measure the relationships between those factors. The DEMATEL method is used to analyse the data, with the initial direct-relation matrix.

*Table 1. Total-relation matrix*

	Business interruption risk	Process interdepend ency risk	System security risk
Business interruption risk	1,068	1,418	1,408
Process interdependency risk	1,198	0,896	1,157
System security risk	0,917	0,865	0,699
<i>R</i>	3,183	3,180	3,265
<i>D</i>	<i>D+R</i>		<i>D-R</i>
3,894	7,077		0,711
3,251	3,251		3,251
2,481	2,481		2,482

In our study, the threshold value is set to 1.1 in accordance with the opinion of the expert panel. In cases where there are many factors and complex relationships, the results will not be obvious if the threshold value is set to be less than or more than 1.1.

The ANP method is adopted to compute the weight of each criterion by using the Super Decision software. The ANP questionnaire utilizes a nine-point rating, with a score of 1 referring to least important and a score of 9 representing extreme importance. The *CR* value results are under 0.1, meaning that the assessment values are acceptable and the eigen-vectors fit the supermatrix.

In accordance with the results obtained using the DEMATEL method, the criteria have some relationship with each other. Furthermore, ANP is used to determine the priority of the measures to reduce the **identified** risks. The expert panel consists of a total of 14 experts.

*Table 2. Weight of each alternative achieved from all experts*

Measures	Value
Data input/output control	0,14426
Data access control	0,14023
Segregation of duties control	0,11292
Data processing control	0,10742
Disaster recovery plan	0,10493
Hardware and systems software control	0,09707
Systems development and maintenance control	0,09315

The results show that the most important alternative is data input/output control, followed by data access control, segregation of duties control, data processing control, disaster recovery planning, hardware and systems software control, and systems development and maintenance control. The ANP results indicate that data input/output control should be given priority for reducing IT risk because hackers are often very interested in searching for internal data.

One of the goals of our study is to differentiate between the variety of expert perspectives on a topic. To do this, the experts are divided into four groups: IT consultants, IT personnel, internal auditors and IT users.

IT personnel generally focus more on the structure and security of the system. IT consultants pay greater attention to disaster recovery planning and hardware and systems software control, to avoid the

consequences of system malfunctions. IT auditors, in contrast, place greater importance on data access control, segregation of duties control and data input/output control. IT users indicate that data input/output control is the most important type of control.

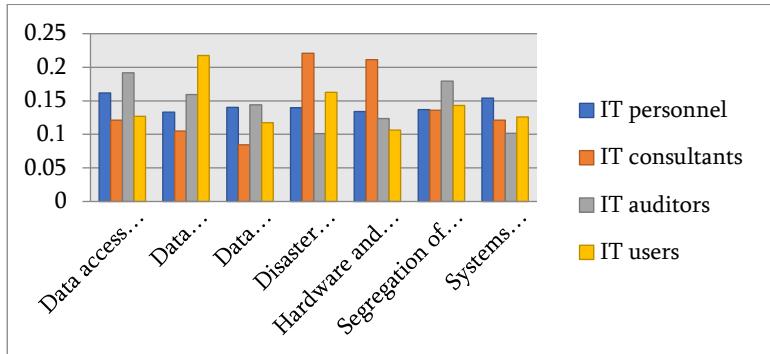


Figure 2. Priority of measures to reduce IT risk by all experts

## Conclusion

Risk management plays a critical role in protecting information for enterprises using automated information technology systems to deliver internal information. The issue of reducing IT risk is of great importance.

In our study, we consulted many experts as to their opinions for solving this problem. Unsurprisingly, each group of experts had their own preferences for methods to reduce IT risk. IT personnel believed that every IT risk control is of importance but preferred no particular type of control. There are many problems associated with data access, such as the stealing of private data for **profit**, sending **confidential** data by mail, deleting data on purpose and so on.

IT consultants feel that disaster recovery plans and hardware and systems software control are the most important type of control,

as consultants are wary of the **enterprise's** special requirements and prefer to avoid any potential system downtime.

Auditors tend to prefer the segregation of duties control and data access control to reduce IT risks. For them, data access control is very important because users access data every day. Errors that happen in the front end will lead to many errors in the back end. The segregation of duties control is an important measure. If it is not perfect, it causes everyone or every department to revise any data in the ERP system. On the other hand, auditors are not concerned with disaster recovery plans because disasters rarely occur.

Users hold the view that data input/output control is the most important control measure for reducing the risk of errors. This type of control can ensure safety of information. IT users have the idea that disaster recovery plans should be set up to ensure that **significant** data will not be lost in the event of a major database crash.

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**Լիլիթ Միրզոյան**  
Ասպիրանտ,ՀՊՏՀ

## **ՏԵՂԵԿԱՏՎԱԿԱՆ ՏԵԽՆՈԼՈԳԻԱՆԵՐԻ ԱՌԴՅԱՇ ՈՒՍԿԵՐԻ ՎԵՐԼՈՒԾՈՒԹՅԱՆ ՀԻՄՆԱԽՆԴԻՐՆԵՐԸ**

**Բանափի բառեր** - SS առլիտ, SS ոխսկեր, վերահսկողություն, ձեռնարկության ռեսուրսների պլանավորում, որոշումների կայացման փորձարկման և գնահատման լաբորատորիա, վերլուծական ցանցային գործընթաց

Տեղեկատվական տրանսֆորմացիան վերահմաստավորում է հասլավես SS առլիտի և վերահսկողության գործառույթը, քանի որ այն ձևավորում է SS ոխսկերի նոր մակարդակ, որոնց նվազեցման ուղղությամբ կատարվելիք միջոցառումներն ել պետք է ժամանակին հիմանական լինեն: Այս ամենը ստիպում է SS առլիտորներին, ինչպես նաև SS տարրեր մակարդակի փորձագետներին կասկածի տակ դնել

վաղուց հաստատված գործելակերպը, վերահմաստավորել հիմնարար գործընթացները և վերաորակավորել իրենց գործառույթը թվային դարաշրջանին համապատասխան: Փորձագիտական հարցագրույցների և հարցումների արդյունքների համադրումն ի հայտ են բերել ոիսկերի տարբեր տեսակներ: Ուսումնասիրվել են բիզնեսի ընդհատման, գործընթացի փոխախվածության և համակարգի անվտանգության ոիսկերը: Որոշումների կայացման, փորձարկման և գնահատման լաբորատորիան օգտագործվում է ոիսկերի միջև կապը գտնելու համար և գուգակցվում է վերլուծական ցանցի գործընթացին՝ ոիսկերի նվազեցման օպտիմալ միջոցներ ընտրելու համար:

Արդյունքները ցույց են տալիս, որ SS խորհրդատունները նախընտրում են աղետների վերականգնման ծրագիրը (disaster recovery plan): Նրանք ստվարաբար օգտագործում են հեռավոր վերարտադրությունը կամ բարձր հասանելիությունը (high availability) տվյալների պաշտպանության համար: SS անձնակազմը կարծում է, որ SS ոիսկերի բոլոր վերահսկումները կարևոր են: SS առողջապահությունը նշում են, որ տվյալների հասանելիության վերահսկումը շատ կարևոր է, քանի որ օգտագործողների համար պետք է ապահովի տվյալների ամենօրյա հասանելիություն:

**Лилит Мирзоян**

Аспирант, АГЭУ

## **ПРОБЛЕМЫ АНАЛИЗА РИСКОВ АУДИТА ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ**

**Ключевые слова** – ИТ аудит, ИТ риски, контроль, планирование ресурсов предприятия, лаборатория тестирования и оценки принятия решений, аналитический сетевой процесс

Преобразование информации переосмысливает особенно функции ИТ-аудита и контроля, поскольку оно формирует новый уровень рисков, которые должны быть уменьшены, чтобы быть в соответствии со временем. Все это заставляет ИТ аудиторов, а также ИТ экспертов различных уровней подвергать сомнению давно установленные методы, переосмысливать фундаментальные процессы и переоценивать свою функцию в соответствии с цифровой эпохой. Исследование изучило различные виды риска через интервью и опросы с экспертами. Был изучен риск прерывания бизнеса, риск развития взаимозависимости и риск безопасности системы. Лаборатория тестирования и оценки принятия решений используется для поиска связи между рисками и сочетается с аналитическим процессом сети, чтобы выбрать оптимальные меры для снижения рисков.

Результаты показывают, что ИТ консультанты предпочитают план аварийного восстановления (*disaster recovery plan*). Они обычно используют удаленное воспроизведение или высокую доступность (*high availability*) для защиты данных. ИТ персонал считает, что все элементы управления рисками важны. ИТ аудиторы отмечают, что доступ к данным очень важен, поскольку пользователям должен быть предоставлен ежедневный доступ к данным.

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# Taxation

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## TAX PLANNING IMPLEMENTATION ISSUES IN THE ARTSAKH REPUBLIC

**Abstract:** Tax planning is not always considered in practice as a key component of the financial management system. The organizations pay more attention to the accurate calculation and timely repayment of incurred tax liabilities, trying not to create problems with the tax authorities. However, in parallel with tax administration, in practice, tax planning is also used, which allows organizations to lighten the tax burden within the law framework, to reduce tax liabilities.

The article analyzes the peculiarities of tax liabilities in the organizations operating in the Artsakh Republic, on the basis of which the key factors hindering tax planning are presented.

**Keywords:** Tax allowances, tax optimization, tax burden, tax liabilities, tax planning

**JEL classification:** P34

**Research aims:** introduce tax planning as a key financial management tool for organizations.

Research novelty: the main obstacles to the application of tax planning in the organizations of the Artsakh Republic were revealed.

## Introduction

The need for tax planning has always been used by theorists as an effective management tool, it has found its application in practice. The formation of tax liabilities is an integral part of the activity of each economic entity. Although every business entity realizes the importance of taxation from the point of view of public interest, in particular, it considers the tax levied in the organization as an additional financial burden and tries to lighten it as much as possible. In this regard, the tax planning toolkit is used, which is especially relevant in the organizations of the Artsakh Republic.

## Literature review

Studies show that there is no common definition of tax planning in the professional literature. However, tax planning is generally viewed by organizations as a legal tool to reduce the tax burden [1]. Thus, tax planning is considered by the taxpayer as a targeted legal activity, aimed at reducing tax expenditures, duties, and other mandatory budget expenditures. According to another approach, tax planning is defined as a means of reducing tax liabilities, when legal benefits are used tax reduction opportunities [3]. It is argued, that tax planning is simply a choice of legal entity status, with the aim of reducing the amount of tax liabilities incurred in the course of economic activity.

Tax planning is also considered from the point of view of financial management of organizations, considering that it is an integral part of the financial and economic management system, using the

opportunities provided by law to present optimal tax liabilities [5]. In this regard, tax planning is defined as the most important area of the organization's strategic financial management, with the aim of increasing cash inflows and, in order to contain the growth of tax liabilities as much as possible in the foreseeable future [6]. The professional literature also states that tax planning is one of the most important areas of management of the financial and economic activity of an economic entity, the purpose of which is to legally circumvent a certain amount of tax liabilities, by applying tax benefits and even existing legal gaps [4].

According to another definition, tax planning is a means of developing methods for reducing tax expenditures by predicting the possible behavior of the organization in response to changes in the tax regime, as well as by cooperating with regional tax authorities [7].

Tax planning was referred to in the "Concept of Tax System Reforms", adopted by the Ministry of Finance of the Artsakh Republic, where paragraph 5.2.4 on the fight against aggressive tax planning of illegal business states the need to reveal the use of tax evasion mechanisms. In particular, the concept states, that in contrast to illegal business, which is directly legislated as a case of tax evasion as a consequence, sanctions are applied, aggressive tax planning is more difficult to qualify as a violation of tax law, as additional evidence is needed. Thus, in order to increase the effectiveness of the fight against aggressive tax planning, it is proposed to improve the system of receiving, comparing and selling information by third parties.

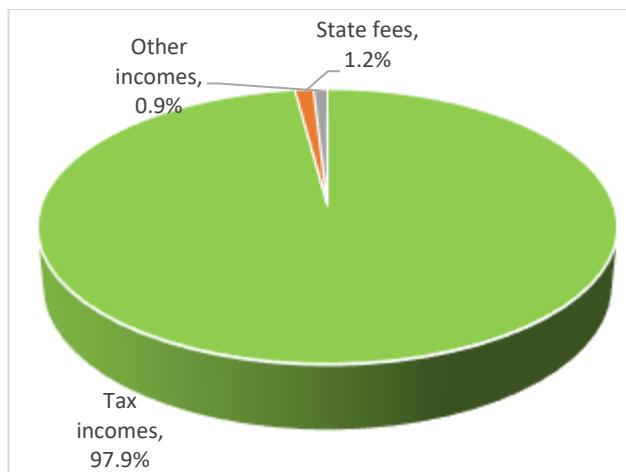
### Research results

The structure of the state budget revenues of the Artsakh Republic shows, that taxes make up 97.3% of revenues (see Figure 1).

At the same time, the income tax has the highest share in tax revenues - 34.5%, followed by value added tax - 31.2% (see Table 1).

Such a picture of business tax revenues is also conditioned by the tax breaks applied. More than 22% of taxpayers operating in the Artsakh Republic, or about 1300 taxpayers, are taxed through the system of patent fees. Each year, more than 600 new taxpayers are granted benefits for a period of three months, as a result of which start-up taxpayers are exempted from making trade tax, fixed fees and patent payments within the specified period [8].

And the decrease in the share of profit tax is first of all conditioned by the low rate applied, which was set at 10% in the Republic of Artsakh until 2021, **but** it is only a year that it has become 18%. However, we believe that such a structure of tax revenues in the country is also conditioned by the use of inefficient tax planning, or more precisely, by inadequate awareness of the sector.



*Figure 1. Structure of the state budget of Artsakh Republic by revenues [8]*

*Table 1. The structure of tax inflows in Artsakh Republic in 2021. (%) [8]*

VAT	31,2
Profit tax	14,5
Income tax	34,5
Excise tax	9,5
Other entries	10,3

Thus, year by year, the number of loss-making organizations in the Artsakh Republic is increasing, which is especially evident in the manufacturing industry and trade. The reasons for the loss can be not only the unfavorable business environment, but also the factors of taxpayers' awareness on tax planning.

*Table 2. Loss-making organizations in Artsakh Republic [9] (as a percentage of the total number of organizations)*

	2016	2017	2018	2019	2020
Total	20.3	15.8	16.9	17.2	23.4
<i>including</i>					
Mining	0.9	0.7	0.5	1.2	1.2
Manufacturing	7.3	6.8	7.0	6.6	8.9
Construction	2.0	3.0	3.1	3.3	2.9
Retail and Wholesale	5.5	2.5	2.7	2.9	5.0
Information and Communication	2.5	1.2	1.8	1.2	2.7

Of course, during the year, about 10 seminars are organized with taxpayers in Stepanakert and neighboring regions, involving about 1,500 taxpayers. At the same time, the website of the tax authority provides visitors with an average of about 160,000 views per year. However, at the same time, it should be noted, that in such cases, as a rule, the emphasis is not on tax planning literacy, but on the implementation of tax administration [10].

## Conclusion

The tax planning toolkit has low application efficiency in the organizations operating in the Artsakh Republic, which has a number of reasons.

To begin with low level of awareness of economic entities on tax planning.

In addition, the lack of tax planning toolkit in the financial and economic management system of organizations.

Lastly, the existence of a relatively unfavorable business environment, that tolerates the activities of loss-making or low-tax organizations and consequently does not motivate the active application of tax planning.

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**Լիանա Գրիգորյան  
տ.գ.դ., պրոֆեսոր, <ՊՏԸՀ**

**Վարդուհի Խաչատրյան  
Դասախոս, Շուշիի տեխնոլոգիական համալսարան**

**ՀԱՐԿԱՅԻՆ ՊԱԼԱՆԱՎՈՐՄԱՆ ՆԵՐԴՐՄԱՆ ԽՆԴԻՆԵՐԸ  
ԱՐՑԱԽԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆՈՒՄ**

**Բանալի բառեր** - հարկային արտոնություններ, հարկերի օպտիմալացում, հարկային բեռ, հարկային պարտավորություններ, հարկային պլանավորում

Հարկային պլանավորումը միշտ չէ, որ գործնականում դիտարկվում է որպես ֆինանսական կառավարման համակարգի կարևորագույն բաղադրիչ: Որպես կանոն՝ կազմակերպությունները առավելապես ուշադրություն են դարձնում ծևավորվող հարկային պարտավորությունների ճշգրիտ հաշվարկմանը և ժամանակին մարմաննը՝ ծգտելով խնդիրներ չստեղծել հարկային մարմինների հետ: Սակայն, հարկային վարչարությանը զուգահեռ, գործնականում կարևորվում է նաև հարկային պլանավորումը, որը կազմակերպություններին հնարավորություն է ստեղծում օրենսդրության սահմաններում թեթևացնելու հարկային բեռը, կրճատելու հարկային պարտավորությունները:

Հոդվածում վերլուծվում են Արցախի Հանրապետությունում գործող կազմակերպություններում ծևավորվող հարկային պարտավորությունների առանձնահատկությունները, և դրա հիման վրա ներկայացվում են հարկային պլանավորմանը խոչընդոտող առանցքային գործոնները:

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## **ЗАДАЧИ ВНЕДРЕНИЯ НАЛОГОВОГО ПЛАНИРОВАНИЯ В РЕСПУБЛИКЕ АРЦАХ**

**Ключевые слова:** Налоговые льготы, налоговая оптимизация, налоговая нагрузка, налоговые обязательства, налоговое планирование

Налоговое планирование не всегда рассматривается на практике как ключевой компонент системы управления финансами. Организации уделяют больше внимания правильному исчислению и своевременному погашению возникших налоговых обязательств, стараясь не создавать проблем с налоговыми органами. Однако параллельно с налоговым администрированием на практике применяется и налоговое планирование, позволяющее облегчить организациям налоговое бремя в рамках закона, уменьшить налоговые обязательства.

В статье проанализированы особенности налоговых обязательств в организациях, действующих в Республике Арцах, на основании чего представлены основные факторы, препятствующие налоговому планированию.

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# **Financial Management and Decision Making**

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## **ISSUES OF DEVELOPMENT A FINANCIAL SYSTEM OF HIGHER PROFESSIONAL EDUCATION IN RA**

**Abstract:** The effective organization of higher professional education is one of the key conditions for the socio-economic development of the country. As a result of university education, the composition of the human capital accumulated in the country is changing qualitatively, which makes it possible for a qualified workforce to contribute to the development of the economy. On the other hand, a population with a higher education is not only a skilled labor force, but also a cornerstone of intellectual development, which plays a very important role in shaping the value system of a country and a nation. The article presents an analysis of the possibilities for the development of a competitive system of higher professional education in Armenia.

**Keywords:** Bologna process, higher professional education, academic mobility, tuition fees, competitiveness

**JEL classification:** F68

**Research aim:** identify ways to improve funding for the higher education system in Armenia.

Research goals: the financing opportunities of the RA higher education system were presented, linking them with the Bologna Agreement

### Introduction

The importance of the educational services provided is already generally enshrined in law in the Republic of Armenia. Strengthening the intellectual potential, supporting the preservation and development of national and universal values. Based on the above-mentioned goal, the state ensures the maintenance and development of the education sector through targeted budget funding, the volumes of which are determined in accordance with the state education development program.

The Republic of Armenia stands out in the region by the numerical advantage of the students of higher educational institutions receiving higher specialties. Thus, in recent years, the number of operating universities in our country that provide only the highest professional level services is about sixty, and the annual number of students per 10,000 inhabitants is about 265. This figure is quite high, even surpassing that of developed economies of the same name, such as the United Kingdom and Canada.

However, in recent years, there has been a tendency in Armenia to significantly reduce the number of applicants for higher education institutions, as well as the number of university graduates (which is due not only to demographic factors, but also to declining demand for specialists in the labor market. Among the officially registered unemployed in Armenia, a high proportion is occupied by people with vocational education, predominantly women. And such an atmosphere can not but have a negative impact on the provision of higher professional education services.

Thus, the official statistics show that in recent years there has been a decreasing trend in the number of teaching staff working in RA universities, one of the reasons for which is the relatively low remuneration of professors and associate professors. Currently, a situation has arisen in which the salaries of middle-class specialists working in financial institutions, in the private enterprise-real sector, are twice as high as the salaries of the teaching staff of the university, which makes the work of professors and associate professors unattractive.

#### Research results

Such a situation is registered in the system of the second degree of higher professional education of the Republic of Armenia, when, despite the fact that the number of organizations providing master's education has remained almost unchanged in recent years, the number of masters studying in them has significantly decreased. The only thing is that there is a slight increase in the number of master's programs organized only for foreign students.

It is noteworthy that against the general background of the reduction of the number of RA applicants in the number of RA applicants, the number of foreign students in the country is stable, even a slight increase. This circumstance has its explanation. First, the tuition fees set by Armenian universities for foreigners are relatively low. And secondly, the living conditions, the climate of the country, the quality of the educational services make the RA higher education system attractive for foreign students. The participation of the Republic of Armenia in the Bologna process also has a positive role here, which implies the introduction of professional programs in universities in line with international standards [1].

Back in 2004, Armenia became a party to the Bologna Agreement, operating in the European Union for Higher Education, undertaking to implement professional education on the basis of academic credit, to apply a three-tier system of professional education in universities (bachelor, master, doctorate). In this case, there was an opportunity to create platforms for the recognition of diplomas between different countries, to organize exchange programs for lecturers and students, to activate the academic mobility, by which the RA higher education system became part of the common European higher education area. However, on the other hand, the international integration of higher professional education is not yet effective [2]. This is due to a number of factors, the first of which is financial and economic. Armenian universities currently do not have sufficient resources to provide mobility funding for at least 20% of students, which is one of the initial requirements of the Bologna Agreement. In addition, the implementation of research programs with universities is still passive, which requires significant financial investments. As a result, the academic movement in the Republic of Armenia has been creating a negative balance in the last decade.

It is also noteworthy that if there is some international academic mobility in our country, then the process is very passive within the country, despite the fact that the process is regulated by a special decision of the Government of the Republic of Armenia. Therefore, in addition to financial and economic obstacles, the passive situation of the integration factors of the RA higher education system is also conditioned by organizational factors, when the higher education institutions are not able to cooperate with each other even within the republic [3].

The export of higher professional education services can be a key factor in activating the RA higher education system. Currently, even economically developed countries seek to provide as many university education services as possible to international students, as their tuition fees are relatively high compared to local students. Thus, the share of international students currently studying at universities is about 24% in the United States, 29% in Australia and 31% in the United Kingdom [4]. The above-mentioned countries are the leaders in the ranking of the most expensive tuition fees charged to international students. The average annual tuition for a foreign student in the United States is \$ 25,000, in Australia \$ 24,000, in the United Kingdom \$ 21,000, and in Singapore \$ 18,000. For comparison, the annual tuition fees of foreign students studying in RA universities fluctuate in the range of 2,000 - 3,500 USD, which makes it possible to make the RA professional education market attractive for international students, if domestic universities can organize effective marketing. in this area [4]. However, at present such a tendency is not observed. Most of the international students of RA universities are of Armenian descent, who come to the homeland from the Russian Federation and Georgia to receive higher professional education.

### Conclusion

Thus, the analysis of the development tendencies of the higher professional education system in the Republic of Armenia shows:

First, the existence of active university activity in the country, the high share of those receiving higher education, led to the supply of specialists studying at universities, the inadequacy of its demand in the labor market, thus contributing to the growth of unemployment of the population with higher education.

Second, by joining the Bologna Agreement, the Republic of Armenia, with its university system, is not yet actively participating in the process of building a common European higher education area, focusing on it more formally than practically, thus creating additional obstacles to the internationalization of education.

Third, the higher education system of the Republic of Armenia can be attractive in the professional education market, based on the relatively inexpensive tuition fees within the country, the opportunities for organizing the educational process according to international standards. However, inefficient marketing activities still do not allow Armenian universities to activate the expansion of the export of educational services and the involvement of international students, which does not allow the domestic education system to accumulate additional financial resources for further development.

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## **Աստղիկ Պողոսյան**

Հայցորդ, Հյուսիսային համալսարան

### **ԲԱՐՁՐԱԳՈՒՅՆ ՄԱՍՆԱԳԻՏԱԿԱՆ ԿՐԹԱԿԱՆ ՖԻՆԱՆՍԱԿԱՆ ՀԱՄԱԿԱՐԳԻ ԶԱՐԳԱՑՄԱՆ ԽՆԴԻՐՆԵՐԸ ՀՀ-ՈՒՄ**

**Բանալի բառեր** - Բոլոնիայի գործընթաց, բարձրագույն մասնագիտական կրթություն, ակադեմիական շարժունություն, կրթավճարներ, մրցունակություն

Բարձրագույն մասնագիտական կրթության արդյունավետ կազմակերպումը երկրի սոցիալ-տնտեսական զարգացման առանցքային դրույթներից է: Համալսարանական կրթության արդյունքում որակապես փոխվում է երկրում կուտակվող մարդկային կապիտալի կազմը, ինչը հնարավորություն է տալիս տնտեսությանը կլանել ավելի որոշյալ աշխատուժ: Մյուս կողմից, բարձրագույն կրթություն ունեցող ազգաբնակչությունը հանդես է գալիս ոչ միայն որպես որակավորված աշխատուժ, այլև մտավորականություն ձևավորող հիմնասյուն, որը չափազանց կարևոր դերակատարում է ստանձնում երկրի և ազգի արժեհամակարգը ձևավորման ժամանակ: Հոդվածում մեկնաբանվում են ՀՀ-ում մրցունակ բարձրագույն մասնագիտական կրթական համակարգի զարգացման հնարավորությունները:

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## **ПРОБЛЕМЫ РАЗВИТИЯ ФИНАНСОВОЙ СИСТЕМЫ ВЫСШЕГО ПРОФЕССИОНАЛЬНОГО ОБРАЗОВАНИЯ В РА**

**Ключевые слова** - Болонский процесс, высшее профессиональное образование, академическая мобильность, плата за обучение, конкурентоспособность

Эффективная организация высшего профессионального образования одно из ключевых условий социально-экономического развития страны. В результате университетского образования состав человеческого капитала, накопленного в стране, качественно меняется, что дает возможность квалифицированной рабочей силе вносить свой вклад в развитие экономики. С другой стороны, население с высшим образованием - это не только квалифицированная рабочая сила, но и краеугольный камень интеллектуального развития, который играет очень важную роль в формировании системы ценностей страны и нации. В статье представлен анализ возможностей развития конкурентоспособной системы высшего профессионального образования в Армении.

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## THE PROJECT MANAGEMENT RISKS FACTORS ANALYZING (Tehran Municipality case study)

**Abstract:** Given the competitive organization in today's environment, paying attention to the risks and challenges of the project is critical to the success of an organization and special attention is paid to it. All research hypotheses have been validated and the impact of challenges (Familiarity of employees with project control methods according to PMBOK standard, Financial burden imposed on the organization in case of implementation of standard project control, Inaccurate initial estimation and lack of complete identification of stakeholder needs at the beginning of the project, which leads to project changes, Intra-organizational and soft processes and organizational culture, Perception of inefficiency of project control and indicators of acquired value and PMBOK standard among effective factors, Insufficient attention to more accurate scheduling and estimates in projects, Failure to apply risk management in the areas of project control in the organization, Lack of easy access to lessons learned and useful information in previous projects, Lack of cooperation of senior managers due to unwillingness to make changes in the organization, Lack of integration of information and interactions between the employer and the contractor, Lack of specialized personnel, Financial problems in the organization in financing projects) on risk has been proven.

**Keywords:** Determination, Project Scheduling, Smart PLS, Structural Equations

JEL classification: C8, C4

Research Objective: The purpose of this study is to investigate the factors affecting the risk and challenges of the project in Tehran Municipality.

Research novelty: In this research, to collect information based on the statistical population consisting of 68 project managers of Tehran Municipality, the questionnaire was distributed by census method among sample members and information was analyzed by structural equation analysis method and PLS software. Divergent validity was used for validation and Cronbach's alpha was used for Reliability.

## Introduction

Given the current competitive environment, organizations and their managers are looking to address the concerns of the projects they have in hand and should be completed as planned. Project-oriented organizations are no exception to this approach. Because projects are exposed to many risks due to their nature. If the project risk is not managed properly, it will lead to heavy costs. Therefore, project risk management is an important issue for researchers. The organizations that experience the most problems in this area are mostly project-oriented and project delivery time is important to them. In fact, the success of a project largely depends on the definition and implementation of a proper and effective project management system and is one of the main tasks of a project manager. Timely completion and estimation of the cost of each project is one of the main criteria for success and failure to complete it on time, and with the projected costs, it will not meet the needs of the employer and the goals of the project. In fact, project management can be considered the application of knowledge, skills, tools

and techniques in project activities to meet the needs of project agents and expectations from the project. In fact, project management involves levels of project management knowledge that are defined as a standard. With the growth, complexity and sensitivity of projects, project management professionals have always been looking for better and more effective tools and solutions for project management. As a result, a wide range of project management tools and techniques have been developed to date, each of which has helped facilitate and expedite the levels of the project management process. Acquired Value Management System (EVMS) is one of the project management techniques. To measure the performance and progress of the project purposefully. This technique is a systematic way to integrate, measure and compare cost, time and area of progress in a project. Value management is derived from the criteria of a cost control and planning system, first used by the US Department of Defense in 1967 as an acceptable method for cost management and the development of new systems. This system actually includes the features of an efficient and effective project management system, has undergone various changes in recent years, and now the national project management standard in many developed countries, including the United States, Britain, Japan and many from other countries Other countries Large recorded Organizations. Like NASA, Lockheed, Boeing and so on. The Project Management Institute cites a set of simplified EVMS terms and formulas in three key chapters as a guide to the Project Management Knowledge Set (PMBOK) in 2000 to highlight its importance and application. One of the most important indicators of project success is matching project cost performance and schedule with the planned program. Understanding the components affecting project risk management can help project managers and project-based organizations [1]. So many project managers, company managers and customers are

interested to know what will happen to the project in the future, how long it will take and how much it will cost. Existence of preconditions in the executive organization and project structure that the lack of such a requirement causes the inefficiency of the system implementation. In this research, the researcher seeks to identify the components affecting risk and its challenges in project management in Tehran Municipality.

### Theoretical Foundations

Ted Klastron (2004) believes life of projects management regardless project management knowledge, returns at least to 4500 years ago. Constructors of Egyptian pyramids and Maya temples in Central America, mostly are considered as first project managers in the world [2].

In book of Ali Vahedi Diz (2016), project management is defined as follows [3]:

**“Process of planning, scheduling and controlling project activities** in order to attain to time, cost and performance (qualitative) goals of project within defined work scope and efficient and effective use of sources.”

Considering growing trend of projects and necessity of management on projects, Project Management Institute of USA was established in 1969. This institute decided to document opinions and earned knowledge of project managers in 1976; that as a result of this activity, a scrapbook under title “Project Management Body of Knowledge” was published in 1987 [4].

From point of view of Project Management Institute of USA (PMI), in fifth published version, project management can be divided in 10 knowledge. This knowledge includes:

1. Project integration management
2. Project scope management

3. Project time management
4. Project cost management
5. Project quality management
6. Human resources management
7. Project communications management
8. Risk management
9. Procurement management
10. Stakeholder management

### What is Earned Value?

Name of “earned value” is arising from this thought that every deliverable item of project has a foreseen value and when that considered item to be fulfilled, its value will be earned in project that is called “earned value” [5]. However, comparison between actual costs and programmed costs is a usual method in projects, but this comparison can’t compute amount of works completion and project activities. But this level (comparison of actual costs than programmed costs) is an actual level to calculate earned value better. This fact is inferred from evaluation and recognition of work completion amount. Evaluation and determination of work completion percentages often need reasonable judgments and there are different techniques for determining it. One of techniques for evaluating work completion amount for an activity, is zero-hundred technique that if an activity is fulfilled with regard to considered goals for it, value is 100, otherwise its value is zero. In a project of a considered deliverable item that is not fulfilled, surely there is blind spot for its incertitude and an accident occurred.

Taking feedback from project is an important activity for the aim of project success. Periodic and purposeful feedbacks of project, enable project managers to identify problems of project early and

make corrective actions for preserving time and cost of project. Earned value management (EVM) is one of most effective techniques for project managers to evaluate performance and take feedback from project. This technique helps project managers to take an action according to PDCA management cycle. EVM is also called management with lights on, because this technique specifies objectively and clearly that where is project and where is going (with comparison to a situation that is expected to be there) [6].

Earned value management technique is an approach for integrating time and cost management in framework of project finite management and has important role in replying to management questions that have high importance in success of every project. Some examples of these questions are as follows:

- Is the project ahead of schedule or behind?
- How much is efficiency of time consumption?
- How much is probable cost of remaining works of project?
- How much is probable total cost of project?
- At end of project, how much deviation of set budget will be there?

If after applying EVM, if it is found that the project is behind of schedule and/or expended costs of project is more than foreseen costs and work is done more expensive than plan, project managers use EVM methodology for identifying below mentioned items:

- Where did the problems arise?
- Which actions must be performed for returning project back to normal mode?

It is necessary that balance between scheduling and cost performance to be managed in order that project manager to be able to complete his/her project. Best sign to be aware about that process and plan has problem is costs increase. Therefore, supervising on

costs through costs estimation can be early warning for project managers in field of project potential problems. Early understanding about problems causes that project manager to make appropriate corrective actions before problems to be insoluble [7].

*Table 1: Number of questions and Cronbach's alpha coefficient for each structure*

	Components	Number of items	AVE <sup>2</sup>	Combined reliability	Cronbach's alpha
A1	Familiarity of employees with project control methods according to PMBOK standard	3	0/52	0/78	0/826
A2	Financial burden imposed on the organization in case of implementation of standard project control	2	0/55	0/75	0/782
A3	Inaccurate initial estimation and lack of complete identification of stakeholder needs at the beginning of the project, which leads to project changes	4	0/52	0/70	0/891
A4	Intra-organizational and soft processes and organizational culture	2	0/48	0/82	0//810
A5	Perception of inefficiency of project control and indicators of acquired value and PMBOK standard among effective factors	4	0/60	0/76	0/833
A6	Insufficient attention to more accurate scheduling and estimates in projects	4	0/55	0/80	0/791
A7	Failure to apply risk management in the areas of project control in the organization	3	0/49	0/81	0/851
A8	Lack of easy access to lessons learned and useful information in previous projects	2	0/56	0/78	0/832
A9	Lack of cooperation of senior managers due to unwillingness to make changes in the organization	2	0/45	0/90	0/790

A10	Lack of integration of information and interactions between the employer and the contractor			2	0/49	0/89	0/812
A11	Lack of specialized personnel			2	0/58	0/77	0/799
A12	Financial problems in the organization in financing projects			3	0/61	0/91	0/892

### Methodology

The present study is applied in terms of purpose and descriptive-survey method. The study population includes the managers of Tehran Municipality. These managers have a management background in the municipality and have a good understanding of risk. The sample size in this research is from the census method of 68 managers. The method of data collection in this study is a standard structured questionnaire. A questionnaire that contains risk measures and has been prepared using previous studies. The reliability of the questionnaire was measured by calculating Cronbach's alpha and calculating the combined reliability coefficient (CR). Cronbach's alpha values and the calculated reliability coefficient for each structure and the number of items used for each structure are given in Table 1.

*Table 2. Assessment of divergent validity by Fornell and Larker methods*

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
A1	1											
A2	0/385	1										
A3	0/390	0/142	1									
A4	0/125	0/452	0/675	1								
A5	0/429	0/340	0/134	0/195	1							
A6	0/394	0/354	0/860	0/162	/2315	1						
A7	0/273	0/283	0/267	0/321	0/051	0/392	1					
A8	0/320	0/284	0/332	0/292	0/119	0/891	0/892	1				
A9	0/813	0/652	0/280	0/720	0/061	0/364	0/502	0/669	1			
A10	0/390	0/314	0/864	0/249	0/332	0/442	0/492	0/308	0/790	1		
A11	0/294	0/302	0/492	0/521	0/636	0/913	0/367	0/341	0/221	0/581	1	
A12	0/934	0/387	0/554	0/442	0/492	0/521	0/985	0/913	0/334	0/652	0/443	1

### Divergent validity

An important criterion that determines the divergent validity is the degree of relationship between the structure and its indicators in comparison with the relationship between that structure and other structures; In such a way that the acceptable divergent validity of a model indicates that a structure in the model has more interaction with its indicators than with other structures. The results of the divergent validity study are presented in Table 2.

### Findings

Structural model fit: In order to check the fit of the structural model, the criteria R<sup>2</sup> and q<sup>2</sup> have been used, the values of each of which are given in Table 3 and indicate the appropriate fit of the structural model.

*Table 3. Criteria R<sup>2</sup> and q<sup>2</sup>*

Structures	R <sup>2</sup>	Q <sup>2</sup>
A1	0/648515	0/0000000
A2	0/852612	0/2451620
A3	0/695361	0/2652201
A4	0/732541	0/2736915
A5	0/936512	0/2315842
A6	0/775514	0/2515012
A7	0/925164	0/2815412
A8	0/791051	0/2438122
A9	0/862915	0/2830174
A10	0/790281	0/2251421
A11	0/882561	0/2182719
A12	0/590382	0/0000000

### Overall model fit

To fit the overall model that controls both the measurement and structural model parts. The GOF criterion is used. Considering the three values as weak, medium and strong values for GOF indicates a strong fit of the overall model. According to the results, it can be said that when the t-statistic for each of the path coefficients is higher than the significance threshold (1.96), it can be concluded that this hypothesis is confirmed at the 95% confidence level.

Therefore, in the first hypothesis of the research, employees' familiarity with project control methods based on PMBOK standard has a significant effect on identifying and evaluating risks and challenges in terms of project cost and timing (0.587, 5.397). In the second hypothesis of the research, the financial burden imposed on the organization if the project control standard is implemented has a significant effect on identifying and evaluating risks and challenges in terms of project cost and timing (0.679, 6.644).in the third hypothesis of the research, the initial incorrect estimation and incomplete identification of stakeholder needs at the beginning of the project, which leads to project changes, has a significant effect on identifying and evaluating risks and challenges in terms of project cost and timing (0.498, 6.099).

In the fourth hypothesis, intra-organizational and soft processes and organizational culture have a significant effect on identifying and evaluating risks and challenges in terms of project cost and timing (0.605, 7.290).In the fifth hypothesis of the research, the perception of inefficiency of project control and indicators of acquired value and PMBOK standard of effective factors on identifying and evaluating risks and challenges in terms of cost and timing of projects has a significant effect (0.722, 6.322). In the sixth hypothesis of the research,

insufficient attention to more accurate planning and estimation in projects has a significant effect on identifying and evaluating risks and challenges in terms of project cost and timing (0.558, 4.884). In the seventh hypothesis of the research, the lack of risk management in project control areas in the organization has a significant effect on identifying and evaluating risks and challenges in terms of project cost and timing (0.489, 6.556). In the eighth research hypothesis, the lack of easy access to lessons learned and useful information in previous projects has a significant effect on identifying and evaluating risks and challenges in terms of project cost and timing (0.587, 5/045). In the ninth hypothesis of the research, the lack of cooperation of senior managers due to the unwillingness to make changes in the organization has a significant effect on identifying and evaluating risks and challenges in terms of cost and timing of projects (0.498, 4.388).

In the tenth hypothesis of the research, the lack of integration of information and interactions between the employer and the contractor has a significant effect on identifying and evaluating risks and challenges in terms of cost and timing of projects (0.593, 6.098). In the eleventh hypothesis of the research, the lack of specialized staff has a significant effect on identifying and evaluating risks and challenges in terms of cost and timing of projects (0.741, 6.093). In the twelfth hypothesis of the research, financial problems in the organization in financing projects have a significant effect on identifying and evaluating risks and challenges in terms of cost and timing of projects (0.440, 5.456).

## Discussion and Conclusion

As stated, the main purpose of this study is to investigate the factors affecting the risk and challenges of the project in Tehran Municipality, which examined the effects of these dimensions in the managers of Tehran Municipality, it can be said that this study is the first study Has examined the risk in 12 dimensions from the perspective of managers, which has studied the factors and variables of this research simultaneously, and the gap of its simultaneous study is felt.

In examining the first hypothesis of the research, it was found that (Familiarity of employees with project control methods according to PMBOK standard) is effective on risks and challenges and this hypothesis was confirmed. This result is in line with research (Ramesh et al, 2018; Globerson & Zwikael, 2002).

In examining the second hypothesis of the research, it was found that (Financial burden imposed on the organization in case of implementation of standard project control) is effective on risks and challenges and this hypothesis was confirmed. This result is in line with research (Badewi, 2015; Al-Hajj & Zraunig, 2018).

In examining the third hypothesis of the research, it was found that (Inaccurate initial estimation and lack of complete identification of stakeholder needs at the beginning of the project, which leads to project changes) is effective on risks and challenges and this hypothesis was confirmed. This result is in line with research (Besner & Hobbs, 2012).

In examining the fourth hypothesis of the research, it was found that (Intra-organizational and soft processes and organizational culture) is effective on risks and challenges and this hypothesis was confirmed. This result is in line with research (Zwikael & Smyrk, 2015).

In examining the fifth hypothesis of the research, it was found that (Perception of inefficiency of project control and indicators of acquired value and PMBOK standard among effective factors) is effective on risks and challenges and this hypothesis was confirmed. This result is in line with research (Joslin& Müller, 2015; Naeem etal, 2018).

In examining the sixth hypothesis of the research, it was found that (Insufficient attention to more accurate scheduling and estimates in projects) is effective on risks and challenges and this hypothesis was confirmed. This result is in line with research (Carbone & Tippett, 2004).

In examining the seventh hypothesis of the research, it was found that (Failure to apply risk management in the areas of project control in the organization) is effective on risks and challenges and this hypothesis was confirmed. This result is in line with research (Parker & Mobey, 2004).

In examining the eighth hypothesis of the research, it was found that (Lack of easy access to lessons learned and useful information in previous projects) is effective on risks and challenges and this hypothesis was confirmed. This result is in line with research (Carvalho etal, 2015; Davis, 2014).

In examining the ninth hypothesis of the research, it was found that (Lack of cooperation of senior managers due to unwillingness to make changes in the organization) is effective on risks and challenges and this hypothesis was confirmed. This result is in line with research (Grant & Pennypacker, 2006).

In examining the tenth hypothesis of the research, it was found that (Lack of integration of information and interactions between the employer and the contractor) is effective on risks and challenges and

this hypothesis was confirmed. This result is in line with research (Ika, 2009).

In examining the eleventh hypothesis of the research, it was found that (Lack of specialized personnel) is effective on risks and challenges and this hypothesis was confirmed. This result is in line with research (Carbone & Tippett, 2004; Globerson & Zwikael, 2002).

In examining the twelfth hypothesis of the research, it was found that (Financial problems in the organization in financing projects) is effective on risks and challenges and this hypothesis was confirmed. This result is in line with research (Badewi, 2015; Al-Hajj & Zraunig, 2018).

After review, it was shown that all 12 factors are involved in the risks and challenges of project management. The relationship between each of them and risk was determined according to the technique of structural equations for each criterion.

The research results show that project challenges affect its risk and make it possible for managers to identify these challenges. In this regard, according to the purpose of the research, all hypotheses (familiarity of employees with project control methods based on PMBOK standard, financial burden imposed on the organization if the project control standard is implemented, initial incorrect estimation and failure to fully identify stakeholder needs at the beginning The project that leads to project changes, intra-organizational and soft processes and organizational culture, perception of project control inefficiencies and PMBOK value-added indicators and standards are effective factors, insufficient attention to more accurate timing. Lack of risk management in the areas of project control in the organization, lack of easy access to lessons learned and useful information in previous projects, lack of cooperation of senior managers due to

unwillingness to make changes in the organization, lack of integration of information and interactions between employers and contractor, shortage of skilled manpower, financial problems of the organization in financing projects) affect the risks and challenges. Suggestions for future research are provided:

- In future research, the data base method can be used for qualitative research and compared with the theme analysis method. Quantitative multi-criteria quantitative decision-making methods such as TOPSIS and Dematel can also be used in future research to rank the same components and model them through the fuzzy map method.
- The method of structural equations and LISREL software can be used in larger data and compared with current research and published results. Comparative studies for the two countries can also be used, compared to the present study, and the results published.
- In this research, the theme analysis method was used for qualitative research and the structural equation method was used for quantitative research. And published the results.

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## ՆԱԽԱԳԾԵՐԻ ԿԱՌԱՎԱՐՄԱՆ ՌԻՍԿԵՐԻ ԳՈՐԾՈՆԱՅԻՆ ՎԵՐԼՈՒԾՈՒԹՅՈՒՆԸ (Թեհրանի քաղաքապետարանի օրինակով)

**Բանալի բառեր** - որոշումներ, ծրագրի ժամանակացույց, Smart PLS, կառուցվածքային հավասարումներ

Հաշվի առնելով կազմակերպությունների մրցակցային միջավայրը՝ մեր օրերում կարևոր է բիզնես նախագծերի ռիսկերի և մարտահրավերների վերլուծությունը: Ներկայացված հետազոտության բոլոր վարկածների և մարտահրավերների ազդեցությունը հաստատվել են համաձայն PMBOK ստանդարտի: Ապացուցված է, որ Թեհրանի քաղաքապետարանում նախագծերի ֆինանսավորման ժամանակ գործադրուի և կապալառուի միջև մասնագիտացված անձնակազմի համակարգված գործունեությունը բացակայում է:

Հետազոտության արդյունքները ցույց են տալիս, որ մոնիցիպալ նախագծերի մարտահրավերները ազդում են ռիսկերի ձևավորման վրա և հնարավորություն են տալիս կառավարիչներին կատարելու ռիսկերի կանխարգելման գործոնային վերլուծություն: Այս առողմով, ըստ հետազոտության նպատակի, քննարկվել են մի շարք վարկածներ, ինչպիսիք են՝ աշխատակիցների ծանոթությունը ծրագրի վերահսկման մեթոդներին հիմնված PMBOK ստանդարտի վրա, կազմակերպության վրա դրված ֆինանսական բեռի գնահատումը, նախնական սխալի գնահատումը՝ շահագրգիռ կողմերի լիարժեք նույնականացում չկատարելու դեպքում: Տեղեկատվությունը վերլուծվել է կառուցվածքային հավասարումների վերլուծության մեթոդով և PLS ծրագրաշարով՝ օգտագործելով Թեհրանի քաղաքապետարանում իրականացվող 68 նախագծերի կառավարիչների շրջանում կատարված հարցումների տեղեկատվությունը:

**Реза Барати**  
Аспирант, ЕУА

## **АНАЛИЗ ФАКТОРОВ РИСКОВ В УПРАВЛЕНИИ ПРОЕКТАМИ (на примере муниципалитета Тегерана)**

**Ключевые слова** - детерминация, планирование проекта, Smart PLS, структурные уравнения

Учитывая конкурентную среду организаций, сегодня становится актуальным анализ рисков и вызовов бизнес-проектов. Влияние всех гипотез и проблем представленного исследования было подтверждено в соответствии со стандартом PMBOK. Доказано отсутствие скоординированной деятельности специализированного персонала подрядчика и работодателя при финансировании проектов в муниципалитете Тегерана.

Результаты исследования показывают, что сложности муниципальных проектов влияют на формирование рисков, что позволяет менеджерам проводить анализ факторов их предотвращения. В связи с этим, согласно цели исследования, обсуждался ряд гипотез, таких как: знакомство сотрудников с методами управления проектами на основе стандарта PMBOK, оценка финансовой нагрузки на организацию, оценка исходной ошибки в случае полного выявления недовыполнения целей заинтересованных сторон. Информация была проанализирована с использованием метода анализа структурных уравнений программного обеспечения PLS с использованием информации из опросов, проведенных среди 68 руководителей проектов в муниципалитете Тегерана.

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## ISSUES OF ASSESSMENT EMPLOYMENT STATE REGULATION RESULTS

**Abstract:** The regulation of employment is always under the care of the state, as on the one hand it solves social problems, on the other hand it supports the progress of the country's economy. The state seeks work-to-rule a balance between labor supply and demand, fill vacancies, and create new jobs through investment. To this end, the government publishes an annual employment regulation program that, clearly outlines measures having a regulatory role in the labor market.

However, at the same time, assessments of the effectiveness of employment state regulation are not yet provided. The article presents the thesis, that ensuring the realization of labor supply and alleviation of social tensions should become somewhat measurable in terms of efficiency, which is proposed to be implemented on the basis of comparability of lessening of socio-economic tensions and reduction of unemployment.

**Keywords:** employment, government regulation, labor supply and demand, socio-economic tension, unemployment rate, employment regulation efficiency

**JEL code:** J08

**Research goal:** propose criteria for evaluating the results of the regulation of labor employment by the state.

**Research novelty:** a mechanism for evaluating the effectiveness of state employment regulation has been proposed, considering both

the balance of labor supply and demand, as well as the correlation between social tension and unemployment.

## Introduction

The goal of the employment policy of the state is to create a stable labor market-oriented conditions, which is implemented through state regulation of the economy and social protection of the population.

The Law on Employment in the Republic of Armenia clearly states that the goal of the state employment policy, as a component of economic policy, is to meet the demand for the required quantity of quality labor force, to ensure the effective realization of the existing labor supply, which should be considered one of the main conditions for sustainable economic development [1].

However, it should be noted, that from the point of view of government interests, the employment of the population also solves a social problem. Therefore, the purpose of the state employment policy, as a component of the social protection policy, is to guarantee internationally accepted standards of decent work and to ensure consistent conditions, which should be considered one of the main conditions for easing social tensions in the country.

## Research results

By regulating the employment of the labor force, the state pursues the goal of ensuring social solidarity, striving to create new jobs, filling vacancies, improving the existing remuneration systems [3].

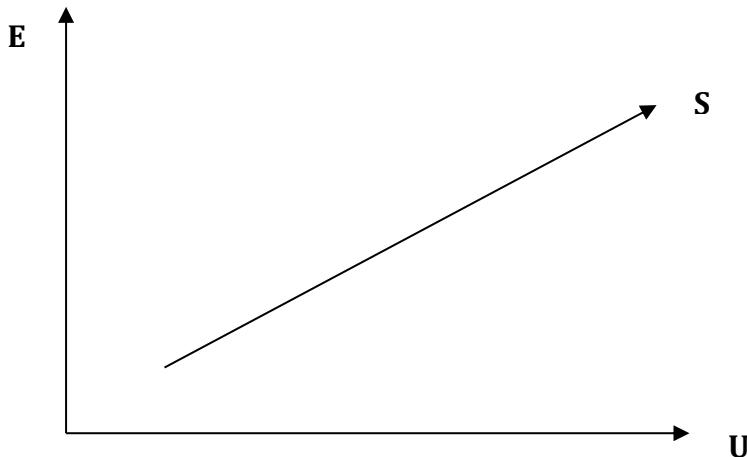
On the other hand, in pursuing employment policies, the state enters into partnerships with local governments, social partners, employers, non-governmental employment organizations, as well as other interested organizations [5]. To this end, each year a state

employment regulation program is presented, the purpose of which is to create conditions for ensuring sustainable and effective employment of the population. It is aimed at ensuring sustainable employment, promoting self-employment, increasing the level of employment of job seekers, especially people with disabilities, youth, promoting the involvement of employers in state programs providing sustainable employment, promoting "education-labor market" interactions, to ensure effective, sustainable employment of uncompetitive groups within the framework of integrated social services [2].

On the basics of all this, is the regulation of the structural balance of labor supply and demand, which is implemented through wage, business organization, financial, investment, tax, regional development, educational, demographic and labor mobility policies [4].

The general approaches to labor supply balancing of demand regulation are presented by us through graphical analysis, assessing changes in the unemployment rate (E) and socio-economic strain (U). When labor supply (S) increases in the labor market and it is not satisfied, both the unemployment rate rises and additional socio-economic tensions cultivating among the population (see Figure 1).

However, such a situation can not be long-term, which will eventually lead to social discontent and even revolts, so the state seeks to take measures to increase employment by trying to increase labor demand, thereby reduce unemployment, fill vacancies, support uncompetitive jobs for special groups. Consequently, when there is a decline in labor demand (D) among the population (see Figure 2), it leads to both a reduction in the unemployment rate and a reduction in the socio-economic tension of the population.



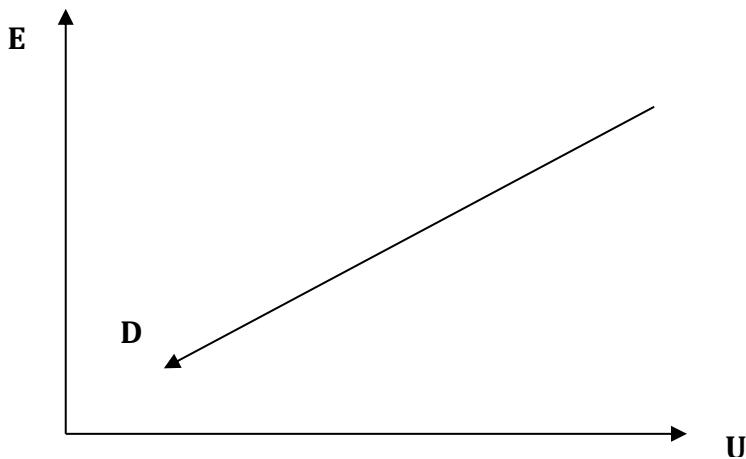
*Figure 1. Increasing unemployment and socio-economic tensions due to boosted labor supply<sup>7</sup>*

However, this situation can also hinder the socio-economic development of the country, as the decline in labor demand in the market may indicate the passivity of the economy and the decline in sustainable development.

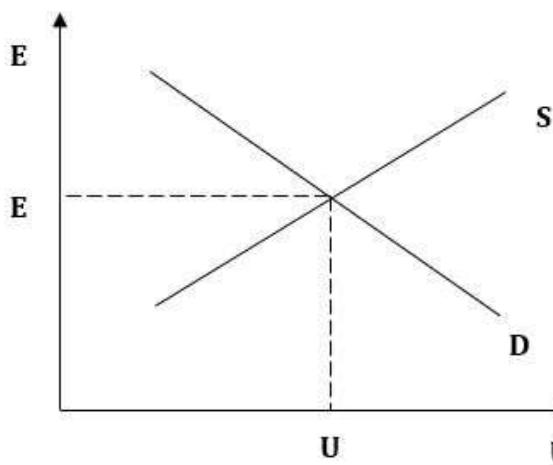
Therefore, in the field of employment regulation, the state can regulate the balance of labor supply and demand, which in the context of the level of unemployment and socio-economic satisfaction of the population, we propose to present in Figure 3.

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<sup>7</sup> Figures 1-4 composed by author

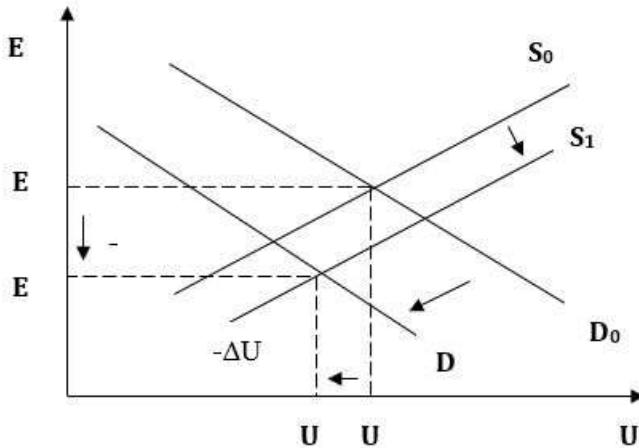


*Figure 2. Decrease in unemployment and socio-economic stress due to reduced labor demand.*



*Figure 3. Balancing of labor supply and demand in the context of the relationship between unemployment and socio-economic tensions.*

Figure 3 shows that by balancing labor supply and demand through state employment regulation, a situation is created in the country where the unemployment rate ( $E_0$ ) and the socio-economic stress level ( $U_0$ ) are considered moderate. are within reasonable limits.



*Figure 4. Transformed equilibrium of labor supply and demand as regulated by the state.*

However, the role of the state in regulating employment is not only to determine the supply-labor equilibrium, but also to attempt to ensure social protection, effective supply of labor supply, thereby contributing to the reduction of unemployment ( $-\Delta E$ ) and the improvement of the socio-economic situation ( $-\Delta U$ ). Therefore, government measures are taken to mitigate the growing labor market supply as a result of structural changes in new demand, which in turn leads to a balancing of labor supply and demand in a new revised point (see Figure 4).

Figure 4 shows, that the state's functions in regulating employment are considered justified, as balancing labor supply and demand leads to both a decrease in the unemployment rate (from point  $E_0$  to

point  $E_1$ ) and a reduction in the socio-economic tension of the population (from point  $U_0$  to point  $U_1$ ):

Therefore, the implementation of the labor supply policy and the alleviation of social tension in the state policy on employment stipulated by the legislation of the Republic of Armenia should become somewhat measurable in terms of efficiency, which we propose on the basis of reducing socio-economic tension and reducing unemployment level. In our opinion, when ensuring the equilibrium of labor supply and demand, when the state manages to ensure a parallel decline in socio-economic tensions compared to the reduction of the unemployment rate ( $/U / \Delta E > 1$ ), then the effectiveness of the state employment policy is recorded. In its turn, we offer to present  $\Delta U$  with a set of indicators, such us:

- **real wage increase ( $\Delta U_1$ );**
- improving working conditions ( $U_2$ );
- positive change in employment opportunities for people with disabilities ( $U_3$ );
- speed of professional transition of young graduates ( $\Delta U_4$ );
- **employer extension of employee career support ( $\Delta U_5$ );**
- positive trend of equalization of average nominal salaries of urban and regional employees ( $U_6$ );
- increased support for entrepreneurship in the labor market ( $U_7$ );
- expansion of support to agriculture through the promotion of **seasonal employment ( $\Delta U_8$ )**;
- **expansion of support for childcare in parallel with work ( $\Delta U_9$ )**;
- receipt of information on vacancies and activation of the **recruitment process ( $\Delta U_{10}$ )**.

## Conclusion

At the same time, the directions of alleviating the social tension of the population through the application of the tools of regulation of employment, depending on the specific situation of the economic development of the country, can be changed and presented in “n” number. In this regard, we propose to evaluate the efficiency of the state employment regulation with the following indicator:

$$W = \Delta E / (\sum \Delta U_n)$$

which allows:

To begin with, to assess the lessening of socio-economic tensions of the population due to the impact of the use of certain directions and tools of employment regulation.

In addition, to establish interrelationship between the socio-economic expectations of the population and the level of unemployment in the context of balancing supply and demand labor recourses.

Lastly, to identify the risks of disruption of social solidarity from the point of view of state interests, which are formed as a result of inefficient regulation of employment by the state.

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## **Արինե Ստեփանյան**

Ասպիրանտ, Եվրոպական համալսարան

### **ԶԲԱՂՎԱԾՈՒԹՅԱՆ ՊԵՏԱԿԱՆ ԿԱՐԳԱՎՈՐՄԱՆ ԱՐԴՅՈՒՆՔՆԵՐԻ ԳՆԱՀԱՏՄԱՆ ՀԻՄՆԱԽՆԴԻՐՆԵՐԸ**

**Բանալի բառեր** – զբաղվածություն, պետական կարգավորում, աշխատութիւն առաջարկ և պահանջարկ, սոցիալ-տնտեսական լարվածություն, գործազրկության մակարդակ, զբաղվածության կարգավորման արդյունավետություն

Զբաղվածության կարգավորումը մշտապես գտնվում է պետական հոգածության ներքո, քանի որ մի կողմից այն լուծում է սոցիալական խնդիրներ, և, մյուս կողմից, աջակցում երկրի տնտեսության առաջընթացին: Պետությունը ձգտում է հավասարակշուություն սահմանել աշխատութիւն առաջարկի և պահանջարկի միջև, լրացնել թափուր աշխատատեղեր, ներդրումների ճանապարհով ստեղծել նոր աշխատավայրեր: Այս նպատակով կառավարության կողմից հրատարակվում է զբաղվածության կարգավորման ամենամյա ծրագիր, որտեղ հստակ նշվում են այն միջոցառումները, որոնք կարգավորիչ դերակատարում ունեն աշխատաշուկայում:

Սակայն, դրա հետ մեկտեղ, գործնականում դեռևս չեն տրվում զբաղվածության կարգավորման արդյունավետության գնահատականներ: Հոդվածում ներկայացվում է այն թեզը, որ աշխատութիւն առաջարկի իրացման ապահովումն ու սոցիալական լարվածության թուլացումը պետք է որոշակիորեն դառնան չափելի՝ արդյունավետության տեսանկյունից, որը առաջարկվում է իրականացնել ազգաբնակ-

չուրթյան սոցիալ-տնտեսական լարվածության թուլացման և գործազրկության մակարդակի նվազման համարելիության միջոցով։ Այս առումով հնարավոր է դառնում՝

Գնահատել ազգաբնակչության սոցիալ-տնտեսական լարվածության մեղմումը զբաղվածության կարգավորման առանձին ուղղությունների և գործիքների կիրառման ներագրեցության շնորհիվ։

Աշխատուժի պահանջարկի և առաջարկի հավասարակշռման համատեքստում արձանագրելու գործազրկության և ազգաբնակչության սոցիալ-տնտեսական սպասումների փոխառնչության շրջանակը։

Պետական շահերի տեսանկյունից վերհանելու սոցիալական համերաշխության խաթարման ռիսկերը, որոնք ձևավորվում են պետության կողմից զբաղվածության անարդյունավետ կարգավորման արդյունքում։

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## **ЗАДАЧИ ОЦЕНКИ РЕЗУЛЬТАТОВ ГОСУДАРСТВЕННОГО РЕГУЛИРОВАНИЯ ЗАНЯТОСТИ**

**Ключевые слова** - занятость, государственное регулирование, спрос и предложение труда, социально-экономическая напряженность, уровень безработицы, эффективность регулирования занятости

Регулирование занятости всегда находится на попечении государства, так как с одной стороны оно решает социальные проблемы, с другой поддерживает прогресс экономики страны. Государство стремится установить баланс между спросом и предложением рабочей силы, заполнить вакансии и создать новые рабочие места за счет инвестиций. С этой целью правительство ежегодно публикует программу регулирования занятости, в которой четко изложены меры, играющие регулирующую роль на рынке труда.

Однако в то же время эффективность регулирования занятости пока не подвергается оценке.

В статье представлен тезис о том, что обеспечение использования потенциала предложения рабочей силы, а также ослабление социальной напряженности должны стать в некоторой степени измеримы с точки зрения эффективности, достигнуть этого предлагается путем сочетания смягчения социально-экономической напряженности населения и снижения уровня безработицы. В этом смысле становится возможным:

Оценить смягчение социально-экономической напряженности населения за счет воздействия применения отдельных направлений и инструментов регулирования занятости.

Зафиксировать взаимосвязь между социально-экономическими ожиданиями населения в разрезе спроса и предложения рабочей силы.

Выявить риски нарушения социальной справедливости с точки зрения государственных интересов, которые формируются в результате неэффективного государством регулирования занятости.

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## ASSESSING THE EFFECTIVENESS OF COMMUNITY ENLARGEMENT IN TERMS OF FINANCIAL INDEPENDENCE

**Abstract.** In the 21st century, the processes of decentralization of public administration are becoming more and more interesting. The Republic of Armenia is not left out of these processes either. One of the key issues since the independence of the Republic of Armenia was the establishment and development of the local self-government system, but the high degree of fragmentation of the administrative-territorial structure did not allow the further development of the system and the efficient use of resources. The administrative-territorial reforms launched in 2011 aim to establish an effective, functioning local self-government system, which will ensure balanced territorial development. In this article, we present the assessment of the effectiveness of community enlargement due to administrative-territorial reforms in the context of community financial independence.

**Keywords:** community consolidation, decentralization, convergence, financial indicator, revenue, expenditure

**JEL classification:** H72, H70, R12, R50, R58

**Research aim:** to evaluate the effectiveness of community consolidation in terms of increasing community financial independence

**Research hypothesis:** the process of community consolidation has had a positive impact on increasing the communities' own incomes

Research novelty: to demonstrate the use of the convergence method to estimate the depth and velocity of communities' consolidation process

## Introduction

A decentralized public administration system on the one hand enables local governments to improve the quality of public service delivery, as well aids to exercise a more effective local self-government; on the other hand, it enables central governments to focus more on public areas.

One of the positive aspects of decentralization of public services is that the local self-government bodies are more aware of the preferences and needs of the community residents, thus, they carry out more effective management in this area. Since 2015, the Republic of Armenia has started to deepen the decentralization processes, which was conditioned by the implementation of the practical steps seen in the "Concept of Community Enlargement and the Formation of Inter-Community Associations", already adopted in 2011. The consolidation of communities, in practice, was a step towards weakening the entrenched foundations of centralized governance, and ensuring the balanced territorial development.

## Literature review

Fiscal decentralization is the process of delegation of fiscal responsibilities to the sub-national governments; involving devolution of powers to tax and spending along with arrangements for correcting the imbalances between resources and obligations [1]. For the local authorities or for the private sector (which is not under the control of the local government) this is the clear division of public administration

functions between the "local governments"; applying the principle of complementarity, according to which the upper echelon of the public administration system should not be assigned what the lower echelon can do better [2].

In 2011, the Government of the Republic of Armenia adopted the "Concept of Community Enlargement and the Formation of Inter-Community Associations" [3]. When discussing the issues of financial decentralization, many authors consider the low share of own revenues in the share of total community income, as well as the dependence of small and weak communities on subsidies for financial equalization [4]. Studies that aim on determination of the change in the share of own income in the aggregate communities in the total income, show, that the share of own income in the aggregate communities is growing faster, which indicates the efficiency of the increase, in terms of increasing financial independence [5].

In this article we discuss the financial indicators of the communities in the pre-consolidation and post-consolidation regions, as well as the issues related to the speed of change of own income, and the direction in the consolidated and non-consolidated communities.

### Research Methodology

The following article discusses the financial indicators of the RA communities' pre-consolidation and post-consolidation periods, as well, the rate of change and direction of communities' own income in the share of total income. For the communities' financial indicators studies we calculate 2012-2020 communities' total income, expenditures and own income descriptive statistics. Thus, the aforementioned indicators were used to compare pre and post-

consolidation periods in the frameworks of the following research.

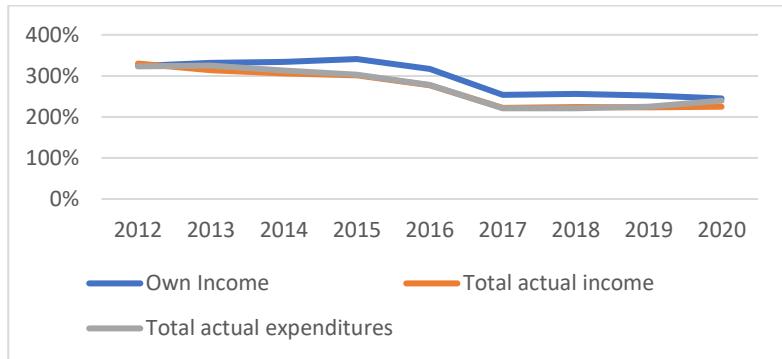
For detecting the rate of change and direction of communities' own income, we used convergence method. We evaluated  $\sigma$  and  $\beta$  convergence coefficients for consolidated (Cc) and non-consolidated (NCc) communities which allow us to draw solid conclusions about the rate of change and direction of own income. We developed a linear regression model using the E-views computer analytics package, to assess the above-mentioned indicators based on 2012-2020 data. The data sample is 449 for non-consolidated communities, and 52 sample for consolidated communities.

The information regarding the data was obtained from various sources, specifically from the data on **communities' expenditures** and income were taken from the official websites of the Ministry of Territorial Administration and Infrastructure of the Republic of Armenia and Regional Administrations of RA [6].

### Analysis

Initially, let's study the financial indicators of the RA communities during 2012-2020. Figure 1 shows that the communities' own income variation coefficients showed an upward trend until 2015, then decreased and stabilized until 2020, maintaining the downward trend. The coefficients of variation of the actual communities' income, have decreased by 33% by 2017, but since 2017 they have shown a very small tendency of growth. The picture is slightly different when it comes to the actual expenditures of communities, the indicators showed a decreasing tendency until 2016, but since 2016 it stabilized and showed a growing tendency at a rather high rate. In general, the indicators showed a steady downward trend from 2015-2016, which

could be related to the consolidation process. As for the indicator averages they have registered a stable growth during the observed period.



*Figure 1. Coefficient of variation of own income, total actual income and expenditures (2012-2020)*

Now, let us study the  $\sigma$  and  $\beta$  coefficients of convergence calculated on the data of the RA communities. The coefficients  $\sigma$  and  $\beta$  make it possible to determine the speed and direction of the change of the share of own income in the total income of the communities. The basis year for the research was 2012, and the end of the period was 2020. During the study period, we calculated the coefficients separately for the consolidated or non-consolidated communities in the period covered.  $\sigma$  and  $\beta$  convergence indices have the same value, but the calculation is based on different methodologies; the coefficient  $\sigma$  is calculated by series coefficients of variation, and the coefficient  $\beta$  is calculated by linear regression [7], [8]. The following formula is generally used to determine  $\beta$  convergence.

$$\ln(\Delta y_{i,t}) = \alpha + \beta \ln(y_{i,t-1}) + \gamma Z_{i,t} + u_{i,t}$$

Where.  $y_{i,t}$  and  $\Delta y_{i,t}$  respectively estimated indicators are in the base and final periods

- $Z_{i,t}$  includes all other factors supposedly
- $u_{i,t}$  is the standard error
- $\alpha, \beta$  are the parameters of model

To calculate the coefficient  $\beta$ , evaluate the following linear regression models (a linear regression model was developed using the E-views computer analytics package). In the linear regression model, the following variables are selected: independent variables - ratio of consolidated/non-consolidated communities' own revenue, total actual revenue in the final (2020) period, dependent variables - ratio of consolidated/nonconsolidated communities' own revenue, total actual revenue in the baseline (2012) period. Consider the equations of the two evaluated models. The evaluated models are significant (Prob = 0.0000, Prob = 0.0000), which proves that the model is applicable. With the initial grand purpose of checking the reliability of the model results, we have conducted diagnostics tests additionally. We have checked the heteroscedasticity of the errors, using the Breusch-Pagan-Godfrey test. The null hypothesis is not rejected at the 5% significance level, so we notice that the error is homoscedastic (P values are less than 0.05, which means that the null hypothesis that the variables are significant, is not rejected,  $C_c$  (0.0001),  $NC_c$  (0.0115)). To check the presence of auto-correlation in the model, Lagrange multiplier test was conducted. The null test hypothesis (there is no serial correlation  $C_c$  (0.0362),  $NC_c$  (0.0080 of any order) is not rejected at the 5% significance level (P values are less than 0.05,)).

After the implementation of diagnostic tests, let us consider the coefficient of determination (R-squared) of the model. R-squared and Adjusted R-squared is enough low ( $C_c$  R-squared=0.242,  $C_c$  Adjusted R-squared=0.227,  $NC_c$  R-squared=0.092,  $NC_c$  Adjusted R-squared=0.090) are evaluated models, the indicators are due to the

fact that the model does not include other factors. Let us present the equations of the evaluated models.

$$NC_c 2020 = 0.236 * NC_c 2012 + 0.178 \quad (1)$$

$$C_c 2020 = 0.328 * C_c 2012 + 0.142 \quad (2)$$

Evaluate  $\beta$  convergences using model equations. Using the aforementioned equation we get.

$$NC_c = \frac{e^{-8\beta} - 1}{8} = 0,236 \quad (1)$$

$$C_c = \frac{e^{-8\beta} - 1}{8} = 0,328 \quad (2)$$

Solve the equation with  $\beta$  to get .  $\beta_{NCc} = -0.132$  (1),  $\beta_{Cc} = -0.160$  (2)

The  $\sigma$  coefficient of convergence is calculated by another methodology. To calculate the coefficient of convergence, it is necessary to use the coefficients of variation of series (CV) [9].

$$\sigma_{con} = \frac{CV1 - CV0}{CV0}$$

where. CV1 is the coefficient of variation at the end of the period under review

CV0 is the coefficient of variation in the base peri

Table 2. Descriptive statistics<sup>8</sup>

Years	Standard Deviation	Mean	Sample Variance
C <sub>c</sub> 2012	0.157782	0.368324	0.024895
NC <sub>c</sub> 2012	0.152742	0.327502	0.02333
C <sub>c</sub> 2020	0.10506	0.262749	0.011038
NC <sub>c</sub> 2020	0.118769	0.255626	0.014106

From Table 2 it becomes clear that the variations of the series are (the variation coefficient(CV) determined with standard deviation/mean ratio). CV2012NC<sub>c</sub>= 0.466385, CV2012C<sub>c</sub>= 0.428379, CV2020NC<sub>c</sub>= 0.464621, CV2020C<sub>c</sub>= 0.399852. Using the variation coefficients and off the formula for calculating convergence we get

$$\sigma NC_c = -0.00378, \sigma C_c = -0.06659:$$

### Conclusion

We present the dynamics of community financial indicators, the speed of change in the ratio of own revenues to total actual revenues through convergence coefficients during the years 2012-2020. The coefficients of variation of the rows indicate a positive dynamics, which can be conditioned by the processes that took place during the **communities' consolidation**. The coefficients  $\sigma$  and  $\beta$  also indicate a positive trend of consolidation considering the vital aspect of sustainable regional development.

The indicators also show that the ratio of own income/total and actual income is growing faster in large communities, which in fact shows of increasing the financial independence of communities.

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<sup>8</sup> The table was created by the author on the basis of the data exported from “EViews 12” statistical software.

The aforementioned, plays a major role in deepening decentralization and sustainable regional development processes.

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**Սամսոն Պետրոսյան**  
Ասպիրանտ, ԵՊՏՀ

**ՀԱՄԱՅՆՔՆԵՐԻ ԽՈՇՈՐԱՑՄԱՆ ԱՐԴՅՈՒՆԱՎԵՏՈՒԹՅԱՆ  
ԳՆԱՀԱՏՈՒՄԸ ՖԻՆԱՆՍԱԿԱՆ ԱՆԿԱԽՈՒԹՅԱՆ  
ՏԵՍԱՆԿՅՈՒՆԻՑ**

**Բանալի բառեր** - համայնքների խոշորացում, ապակենտրոնացում, կոնվերգենցիա, ֆինանսական ցուցանիշներ, եկամուտ, ծախս

21-րդ դարում պետական կառավարման ապակենտրոնացման գործընթացները դառնում են ավելի արդական: <<-ն նույնպես անմասն չի մնում այս գործընթացներից: << անկախացումից ի վեր առանցքային հիմնախնդիրներից էր տեղական ինքնակառավարման համակարգի կայացումը և զարգացումը, սակայն վարչատարածքային կառուցվածքի մասնատվածության բարձր աստիճանը թույլ չէր տալիս համակարգի հետագա զարգացումը և ռեսուրսների արդյունավետ օգտագործումը: 2011 թ. մեկնարկած վարչատարածքային բարեփոխումները նպատակ ունեին ձևավորել արդյունավետ և գործուն տեղական ինքնակառավարման համակարգ, ինչը պետք է ապահովեր տարածքային համաշափ զարգացում: Սույն հոդվածում ներկայացնում ենք վարչատարածքային բարեփոխումներով պայմանավորված համայնքների խոշորացման արդյունավետության գնահատումը համայնքների ֆինանսական անկախության համատեքստում:

**Самсон Петросян**

Аспирант, АГЭУ

## **ОЦЕНКА ЭФФЕКТИВНОСТИ РАСШИРЕНИЯ СООБЩЕСТВА С ТОЧКИ ЗРЕНИЯ ФИНАНСОВОЙ НЕЗАВИСИМОСТИ**

**Ключевые слова** - консолидация сообщества, децентрализация, конвергенция, финансовый показатель, доход, расход

В 21 веке все более интересными становятся процессы децентрализации государственного управления. Не осталась в стороне от этих процессов и Республика Армения. Одним из ключевых вопросов с момента обретения независимости Республики Армения было создание и развитие системы местного самоуправления, однако высокая степень раздробленности административно-территориального устройства не позволяла дальнейшего развития системы и эффективного использования ресурсов. Административно-территориальные реформы, начатые в 2011 году, направлены на создание эффективной, функционирующей системы местного самоуправления, которая обеспечит сбалансированное территориальное развитие. В данной статье мы представляем оценку эффективности укрупнения общины за счет административно-территориальных реформ в контексте финансовой самостоятельности общины.

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## RISKS EVALUATING ISSUES IN EPC PROJECTS (Infrastructure projects of Tehran Municipality case study)

**Abstract:** Implementation of engineering, supply and construction (EPC) contracts is one of the key areas of project management. EPC contracts are especially active in the public sector, where construction, resource management, and engineering solutions are intertwined within a single urban development project, bringing with them relevant risks. The model analysis of the obtained data revealed the weak links in the field of software management. The surveys, from which the evaluation of the results revealed that the main risks of the implementation of the EPC program are related to the imperfection of management feedback, lack of harmonization of project beneficiaries' expectations, inefficiency of the program implementation. The study also revealed the managerial risks of the implementation of the contractual obligations of the EPC, which are formed from the inadequate knowledge and skills of the project managers.

**Keywords:** Engineering, Procurement and Construction contract (EPS) Risk evaluation, Project Scheduling, MAXQDA, Fuzzy Vikor

**JEL classification:** C8, C4

**Research Objective:** The purpose of this research is to identify and evaluate the risks and challenges in terms of project cost and schedule in Tehran Municipality projects.

**Research novelty:** In this research, risks and challenges were identified through the qualitative section and modeled through MAXQDA software, and also their relationships and rankings were done by the fuzzy vikor technique, in which item A1 (Familiarity of employees with project control methods based on PMBOK standard) was identified as the

challenge with the highest degree of importance, and the rest of the challenges ranked next.

### Introduction

Project management is one of most important and most used branches of management during recent decades. With growing, complication and sensitivity of projects, also specialists of project management always were seeking to find better and more effective tools and solutions for projects management [1].

Earned value management is a very capable technique for management of limit, time and project cost. This technique enables project managers to measure time and cost variances of project and also compute indexes of time performance and project costs that on its basis to be able to analyze and control project performance. Also, this technique has very valuable capability in estimating cost and time of projects completion [2]. Estimation of final results during project and a time that there is no opportunity for corrective action, is one of essential needs of project control. Because in this way, possibility of early and timely identification of weaknesses will be prepared for managers and project team. Therefore, many project managers, senior managers of companies and clients are interested to know what will happen to project in future and how long will it take and how much will it cost [3]. Earned value management system provides such essential and important information and issues prompt warning to project manager in order to take due corrective actions [5].

### Statement of Problem

Design and construction of one delivery technique, is project execution that has a record in decreasing total costs of project and building and constructing big equipment [4]. But amount of costs decrement in this technique may be different affected by different work cultures. Sometimes in work culture of Iran, using design and construction

technique in form of derivatives of EPC contracts, has caused decrement of resulted issues and problems from incoordination of engaged factors in projects (employer, consultant and contractor). In Iran in recent years, contracts of design and construction in form of EPC contracts in terms of having privileges such as different kinds of risk to contractors, decrease of cost prices and time reduction and construction acceleration, had growing and impressive trend and in general is one of most favorite choices among project execution-delivery techniques (PDS) before employers of private and governmental sections based on conditions of project and employer. Nature of design and construction contracts is in such a way that most of challenges are with contractors. Since cost and scheduling of project are considered as an important and risky part in these contracts and there is need to identify proper techniques of project control for controlling them, consequently identification and evaluation of challenges of techniques execution can have great role in project management in such projects and also can provide clearer path to employer and contractor in order to execute project with considering factors of time and cost [6].

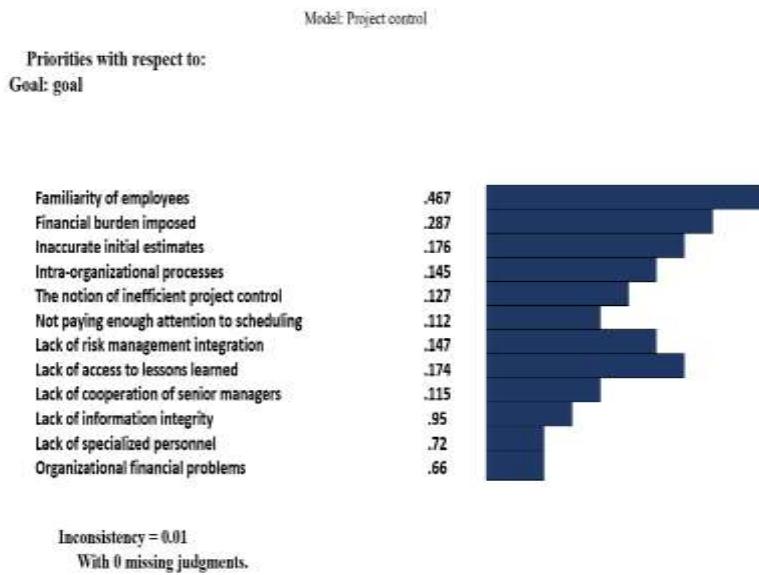
Also, one of most important goals of project management team is that they be able to accomplish the project in accordance with budget, scheduling and covering all work limitations. Therefore, in these projects, it is felt that such factors should be controlled continuously. Earned value management that is called EVM in brief, is a valuable methodology in analyzing and controlling project performance. Resulted value by integrating three factors of time, cost and limitation, prepare possibility of exact measurement of amount of project progress and timely decision making for carrying out corrective actions. Of course focus of this technique is on cost management more and even its scheduling indexes are calculated based on cost. Also scheduling indexes that are used in this technique, have not good function in last one third part of project that this

issue causes to define another concept in the name of earned schedule (ES). In this research, we will deal with evaluation and identification of existent risks and challenges in terms of project cost and time control in EPC contracts of Infrastructure projects of Tehran Municipality and we explore their uncertainty and problems based on method of earned value management and project management knowledge and we will present some strategies in order to optimize current status, because Infrastructure project has unique risks and challenges in terms of difference in existent possibilities and knowledge [7].

### Methodology

The present study has been used in terms of applied purpose and in terms of hybrid approach method. In this way, first, in order to design the model and identify the components, dimensions and variables of the model, a qualitative approach has been used in the research, and after designing the model and identifying the components of the model, a quantitative approach has been used to finalize the model. In this study, after the content analysis method of identifying and evaluating risks and challenges in terms of cost and timing of EPC projects and providing appropriate implementation solutions were evaluated, in the next step using the Delphi method to identify the relevant dimensions and components According to the experts, at the end, these variables and related components were monitored and used in the form of a questionnaire in a special method developed in the Delphi method. In the quantitative part of the research, a questionnaire was designed to test the designed model and the obtained data were analyzed using descriptive statistics and inferential statistics. Therefore, in the descriptive part, the frequency distribution table, central indicators, dispersion, distribution form and related diagrams have been used. In the inferential section, the Victor technique is used to measure the variables. The statistical

population of the study consists of managers and experts of urban infrastructure projects in Tehran Municipality. They are about 68 people. The target population to select a sample from among experts and university professors who had the necessary criteria, 10 people were selected as a statistical sample in the qualitative section. Also in the quantitative part of the research, the same 40 was determined as the sample size. Sampling method is available randomly. The main research data collection tools are interview, questionnaire, case study and document review. A researcher-made questionnaire was used to explain the model. The validity of the questionnaire was assessed and confirmed by face validity, content validity and construct validity. In order to make the questionnaire reliable, it was measured by calculating the incompatibility rate. The values of the calculated incompatibility rates are as follows.



*Figure 1. Incompatibility rate of pair wise comparison of criteria*

According to the figure 1, the incompatibility rate of pairwise comparison of these criteria was 1%, which indicates the acceptable accuracy of this pair wise comparison.

### Research findings

According to the coding in 26 interviews conducted with experts of infrastructure projects of Tehran Municipality, 269 initial codes were formed. After the initial classification of the obtained data, the concepts of open coding based on orientations, appropriateness and nature of semantic load were divided into 12 categories, which are: familiarity of employees with project control methods based on PMBOK standard, Financial burden imposed on the organization in case of standard project control implementation, inaccurate initial estimation and incomplete identification of beneficiaries needs at the beginning of the project that leads to project changes, intra-organizational and soft processes and organization culture, perception of inefficiency of project control and earned value indices and PMBOK standard among the effective factors, insufficient attention to scheduling and more accurate estimates in projects, failure to apply risk management in project control areas in the organization, lack of easy access to lessons learned and useful information in previous projects, lack of cooperation of senior managers due to unwillingness to make changes in the organization, lack of information integrity and interactions between the employer and the contractor, shortage of expert personnel, financial problems in the organization in funding projects.

In the following, the output obtained from MAXQDA software related to the analysis of research qualitative data is presented.

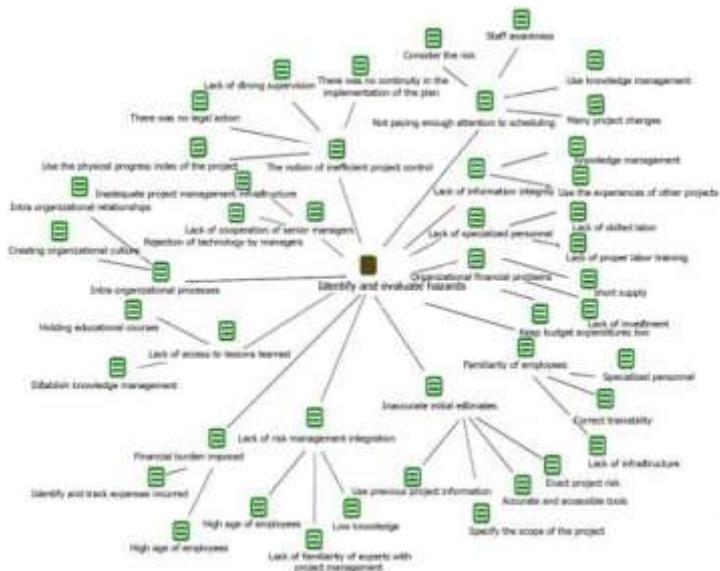


Figure 2. Output obtained from MAXQDA

Open coding	Categories	Number of interviews									
		1	2	3	4	5	6	7	8	9	10
1. Expert personnel	Familiarity of employees with project control methods according to PMBOK standard	0	0	0	0	1	1	1	0	0	1
2. Proper trainability		1	0	0	0	0	0	1	1	1	1
3. Lack of infrastructure		1	1	1	0	0	0	1	1	1	0
1. Avoiding financial loss	Financial burden imposed on the organization in case of implementation of standard project control	1	0	0	1	0	1	0	0	1	1
2. Identifying and tracking expenses incurred		1	1	0	0	0	0	1	1	0	0
1. Project exact risk	Inaccurate initial estimation and lack of complete definition of beneficiaries needs at the beginning of the project, which leads to project changes	0	0	0	0	0	1	1	0	0	0
2. Accurate and accessible tools		1	1	0	0	0	1	0	0	1	0
3. Specifying the scope of the project		0	0	0	0	1	1	0	1	0	1
4. Using previous project data		1	1	1	0	0	1	1	0	0	0
1. Intra-organizational relationships	Intra-organizational and soft processes and organizational culture	0	0	1	1	0	1	1	1	0	0
2. Creating organizational culture		1	0	0	0	1	1	0	0	1	0
1. Lack of continuity in project implementation	Perception of inefficiency of project control and indices of earned value and PMBOK standard among effective factors	0	0	1	1	0	0	1	0	0	1
2. Lack of strong supervision		1	1	0	0	0	0	0	1	1	1
3. Lack of rights pursuit		1	0	0	1	1	1	0	1	1	0
4. Using physical progress index of the project		0	1	1	1	0	0	1	0	0	1
1. Using knowledge management	Insufficient attention to more accurate scheduling and estimates in projects	0	0	0	1	1	1	1	0	0	0
2. Staff awareness		1	0	0	0	0	0	0	1	0	1

3. Ignoring risk		0	0	1	1	1	0	0	0	0	1
4. Many changes of the project		1	1	1	0	0	0	0	1	1	0
1. Low knowledge	Failure to use risk management in project control areas in the organization	0	0	1	1	0	0	0	0	0	1
2. Lack of familiarity of experts with project management		1	1	0	0	0	0	1	1	1	1
3. High age of staff		0	0	1	1	0	0	0	0	1	0
1. Holding educational courses	Lack of easy access to lessons learned subjects and useful information in previous projects	0	0	1	1	0	0	1	1	0	0
2. Establishment of knowledge management		0	0	0	0	0	0	1	1	0	0
1. False infrastructures of Project Management	Lack of cooperation of senior managers due to unwillingness to make changes in the organization	1	1	0	0	1	1	1	0	0	1
2. Rejection of technology by managers		1	0	1	0	0	0	1	1	0	0
1. Knowledge management	Lack of integrity of information and interactions between the employer and the contractor	0	1	0	0	1	1	1	0	0	1
2. Using experiences of other projects		0	0	0	1	1	1	1	0	1	0
1. Lack of skilled labor	Shortage of expert personnel	1	1	0	0	0	1	1	0	0	1
2. Lack of proper labor training		0	0	0	1	1	0	0	1	0	0
1. Resource scarcity	Financial problems in the organization in funding projects	1	1	1	1	0	0	0	1	1	1
2. Lack of investor		1	1	0	1	1	1	1	0	0	0
3. Keeping budget expenditures low		0	0	0	0	1	1	0	0	1	0

## Results

Determining linguistic variables: Linguistic variables and their options are shown in Figure 1. Linguistic terms to determine the importance of the weight of the criteria and the ranking of each criterion are listed in the table below.

*Table 1. Triangular fuzzy number scale*

Triangular fuzzy number	Linguistic terms
(0,0,0.25)	Very low (VL)
(0,0.25,0.5)	Low (L)
(0.25,0.5,0.75)	Medium (M)
(0.5,0.75,1)	High (H)
(0.75,1,1)	Very high (VH)

### Step 1: Determining the importance of the criteria weight

In order to determine the weight and importance of criteria and indices, a questionnaire based on the Likert scale (very low to very high) was distributed among 8 groups every with 5 experts and senior managers of Tehran Municipality based on Table 1. The following tables are related to the criteria comparison questionnaire, which is first presented in the form of verbal variables.

*Table 2. The importance of the weight of the criteria according to opinion of the expert group*

	D1	D2	D3	D4	D5	D6	D7	D8
C1	M	H	VL	VL	L	M	M	L
C2	M	M	H	H	L	H	H	H
C3	VH	M	H	M	VM	M	H	M
C4	M	VH	VM	H	VH	M	L	VH
C5	VH	M	H	VH	VH	VH	H	H

Given the 8 groups of experts have rated each of the main criteria. Then, according to the following formula, we will gather the experts' opinions so that we can calculate the weight and importance of each criterion. Assume that the relevant triangular fuzzy numbers are as (a, b, c) set and k is the number of decision makers (experts), so for gathering experts' opinions we do as follows.

$$A = \text{Min } k \{a_k\} k, b = \sum_{k=1}^K b_k, C = \text{Max } k \{C_k\} k$$

Step 2: The next step is to defuzzify the criteria weight matrix. In previous researches, the difuzzification process has been performed under title “determining the best value of non-fuzzy performance (BNP)”. In general, there are three methods for determining the value of BNP, which are: mean of maximum (MOM), center of gravity (COA) and cutting  $\alpha$ . Center of gravity method (COA) is a simple and scientific method and does not need to introduce the preferences of each evaluator. The value of BNP or center of gravity method is calculated as follows. If the set of triangular fuzzy numbers is defined as follows:

$$W_k = (L_w, M_w, U_w)$$

$$BNP_w = L_w + [(U_w - L_w) + (M_w - L_w)]/3$$

Step 3: Constructing fuzzy decision matrix

Step 4: Calculating best value ( $f_i^*$ ) and the worst value ( $f_i^-$ ) according to the following equation.

$$f_i^- = \text{Min } x_{ij}, f_i^* = \text{Max } x_{ij}$$

Step 5: Normalizing  $d_{ij}$  fuzzy difference

$$f_i^\circ = (a_i^\circ, b_i^\circ, c_i^\circ), f_i^* = (a_i^*, b_i^*, c_i^*) , \widetilde{d}_{ij} = (\widetilde{f_i^*} - \widetilde{x_{ij}}) / (c_i^* - a_i^\circ)$$

Step 6: Calculate the separation values of Si and Ri

The following equations are used to calculate Si and Ri.

$$\widetilde{S}_j = \sum_{i=1}^n (\widetilde{W}_j \otimes \widetilde{d}_{ij})$$

$$\widetilde{R}_j = \max_i (\widetilde{W}_j \otimes \widetilde{d}_{ij})$$

### Step 7: Calculation of the Q

The following equations are used to calculate Q:

$$Q_i = \nu \left[ \frac{S_i - S^*}{S^- - S^*} \right] + (1 - \nu) \left[ \frac{R_i - R^*}{R^- - R^*} \right],$$

$$S^* = \text{Min}S_i; S^- = \text{Max}S_i, R^* = \text{Min}R_i; R^- = \text{Max}R_i$$

Therefore:

$$S^* = (-01.35, 0, 1.988); \quad S = 2.976, \quad R^* = (-0.12, 0, 0.590);$$

$$R = 0.845$$

Now by using the relation Q with value of  $\nu = 0.5$

*Table 3. Calculation of Q values for different options*

	S	Ranking	R	Ranking	Q ( $\nu=0.5$ )	Ranking
		based on S	based on R	based on Q		
A1	0.332	1	0.089	1	0.133	1
A2	0.572	12	0.141	9	0.597	10
A3	0.551	11	0.153	10	0.663	12
A4	0.378	4	0.091	2	0.134	2
A5	0.384	9	0.121	7	0.299	5
A6	0.338	2	0.165	12	0.439	7
A7	0.441	7	0.095	3	0.161	4
A8	0.501	10	0.162	11	0.552	9
A9	0.399	5	0.105	6	0.445	8
A10	0.418	6	0.132	8	0.398	6
A11	0.472	8	0.096	4	0.154	3
A12	0.377	3	0.099	5	0.639	11

Then, by analyzing the sensitivity for different values of  $\nu$ , Table (4) is obtained. As can be seen from this table, in all cases, option A1 has been selected as the most important option for risks and challenges.

*Table 4. Non-fuzzy weighted decision matrix*

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12
V=0	0.14	0.02	0.02	0.01	0.02	0.02	0.01	0.10	0.07	0.15	0.12	0.02
V=0. 1	0.15	0.59	0.67	0.18	0.38	0.52	0.34	0.19	0.17	0.21	0.29	0.19
V=0. 2	0.15	0.61	0.69	0.16	0.36	0.12	0.23	0.09	0.15	0.02	0.01	0.12
V=0. 3	0.16	0.64	0.69	0.16	0.34	0.19	0.67	0.18	0.45	0.52	0.31	0.19
V=0. 5	0.18	0.67	0.70	0.16	0.32	0.17	0.14	0.43	0.16	0.47	0.01	0.10

In the description of Fuzzy Vikor method, it was explained in detail that the selection of the final choice will be made by controlling the two conditions C1 and C2, and if any of the conditions are not met, the answer to the problem will change from single-choice to two-choice or multiple-choice. The following conditions are considered:

$$DQ=1/m-1$$

Considering that the next option with a value greater than 0.1 is in the next priority, therefore the first condition is met. According to Table 3, the Q ranking results are consistent with S and R, so the second condition is also met. According to the results, in the issue of choosing risks and challenges, option A1 is the top option and the rest of the options are placed in the next rankings.

### Conclusion

Analysis of resulted data from interview with experts in this study has shown that the risks and challenges, which are 12 categories, include:

*Table 5. Weights of importance of each project control challenge*

Project control challenges	Q(V=0.5)	Ranking based on Q
Familiarity of employees with project control methods based on PMBOK standard	0.133	1
Financial burden imposed on the organization in case of implementation of standard project control	0.597	10
Inaccurate initial estimation and lack of complete identification of beneficiaries needs at the beginning of the project, which leads to project changes	0.663	12
Intra-organizational and soft processes and organizational culture	0.134	2
Perception of inefficiency of project control and earned value indices and PMBOK standard among the effective factors	0.299	5
Insufficient attention to scheduling and more accurate estimates in projects	0.439	7
Failure to apply risk management in project control areas in the organization	0.161	4
Lack of easy access to lessons learned and useful information in previous projects	0.552	9
Lack of cooperation of senior managers due to unwillingness to make changes in the organization	0.445	8
Lack of information integrity and interactions between the employer and the contractor	0.398	6
Shortage of expert personnel	0.154	3
Financial problems in the organization in funding projects	0.639	11

The weight and position of each option (project control challenge) was determined based on the desired criteria, and finally, with the help of the governing relations in the Fuzzy Vikor method, the share of each criterion in the importance of the project control challenge was determined. After the considered calculation, it was observed that prioritizing the importance of 12 project control challenges in Tehran municipality projects in order of weight is according to Table 5.

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**Ռեզա Բարաթի  
Ասպիրանտ, ՀԵՀ**

**ԵՊԸ ՊԱՅՄԱՆԱԳՐԱՅԻՆ ՌԻՍԿԵՐԻ ԳՆԱՀԱՏՄԱՆ  
ՀԻՄՆԱԽՆԴԻՐՆԵՐԸ**

(Թեհրանի քաղաքապետարանի Ենթակառուցվածքային  
ծրագրերի օրինակով)

**Բանալի բառեր** – «Ճարտարագիտական - մատակարարման – շինարարական» (ՃՄՇ) պայմանագիր, ոիսկերի գնահատում, ծրագրի ընթացքի կարգավորում, MAXQDA, Fuzzy Vikor

Ճարտարագիտական, մատակարարման և շինարարական (ՃՄՇ) պայմանագրերի իրագործումը ծրագրային կառավարման առանցքային ուղղություններից է: ՃՄՇ պայմանագրերը հատկապես իրենց ակտիվ կիրառությունն են ստանում հանրային ոլորտում, որտեղ մեկ քաղաքաշինական ծրագրի շրջանակում փոխչաղկապվում են շինարարական, ռեսուտիվների կառավարման, ճարտարապետական լուծումների խնդիրներ՝ իրենց հետ բերելով համապատասխան ոիսկեր:

Հոդվածում ներկայացվում են քաղաքաշինական ոլորտում ՃՄՇ պայմանագրերի իրականացման ոիսկերի գնահատման մոտեցումներ՝ իրականացնելով հարցումներ Թեհրանի քաղաքաշինական ոլորտի պայմանագրային ծրագրերում ընդգրկված աշխատակիցների միջև: Ստացված տվյալների մոդելավորված վերլուծությամբ բացահայտվել են ՃՄՇ ծրագրային կառավարման ոլորտի թույլ օլակները: Իրականացված 26 հարցումները կատարվել են 269 առանձնացված հարցադրումներով, որոնցից ստացված արդյունքների գնահատումներով պարզվել է, որ ՃՄՇ ծրագրի իրագործման հիմնական ոիսկերը փոխկապակցված են կառավարման հետադարձ կապի անկատարու-

թյան, ծրագրի շահառուների սպասումների ներդաշնակեցման բացակայության, ծրագրի իրականացման շղթայի կարգաբերումների անարդյունավետության հետ:

Հետազոտության արդյունքում բացահայտվել են նաև ՃՄՇ պայմանագրային պարտավորությունների իրականացման կառավարչական ռիսկեր, որոնք ձևավորվում են ծրագրային կառավարման ոչ բարար գիտելիքներից և կարողություններից:

**Реза Барати**  
Аспирант, ЕУА

## **ВОПРОСЫ ОЦЕНКИ РИСКОВ ПО КОНТРАКТУ ИПС (на примере инфраструктурных программ муниципалитета Тегерана)**

**Ключевые слова** - “Инжиниринг-Поставка–Строительство” контракт (ИПС), оценка рисков, регулирование процесса проекта, MAXQDA, Fuzzy Vikor

Выполнение контрактов на проектирование, поставку и строительство является одним из ключевых направлений управления программным обеспечением. Контракты по ИПС особенно активны в государственном секторе, где строительство, управление ресурсами и архитектурные решения переплетаются в рамках единого градостроительного проекта, что влечет за собой соответствующие риски.

В статье представлены подходы к оценке рисков при реализации контрактов ИПС в секторе градостроительства, путем проведения опросов сотрудников, участвующих в контрактах на градостроительство в Тегеране. Модельный анализ полученных данных выявил слабые звенья в области управления программным обеспечением. Было проведено 26 опросов с 269 отдельными направлениями, из которых оценка результатов показала, что основные риски реализации

программы ИПС связаны с несовершенством обратной связи с руководством, отсутствием согласования ожиданий бенефициаров проекта.

В ходе исследования также были выявлены управленические риски выполнения договорных обязательств ИПС, которые формируются из-за недостаточности знаний и навыков управленцев в системе программного управления.

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## CLASSIFICATION OF THE ENTERPRISE MANAGEMENT TOOLS DESIGN FEATURES IN COMPETITIVE ENVIRONMENT

**Abstract:** The process of enterprise management is impossible to consider as a separate closed system. The competitive features of enterprise management tools in a competitive environment are understood as special characteristics that distinguish them from other tools. There are two groups of features of enterprise management tools in a competitive environment: general and specific features. At work, in the chain of study of management tools, their features, the stages of their development and use are also revealed. Based on the described features, the enterprise management tools were also classified according to the following criteria: in relation to management objects, management functions, management results, use of management information systems, management impact method. Stability in the market-competitive environment is very important for any enterprise. In order to confirm this statement, it is necessary to organize the activities of the enterprise in such a way that it corresponds to the strategic goals and objectives of the enterprise development. Therefore, in the management process, it is crucial to identify the main business processes on which the management tools are developed. Of particular importance is the use of information technology in these processes, which can significantly improve the efficiency of the management process.

In order to better understand the essence of developing enterprise management tools in a competitive environment, it is necessary to classify the features of this phenomenon.

The competitive features of enterprise management tools in a competitive environment are understood as special characteristics that distinguish them from other tools.

**Keywords:** Management tool, competitive environment, features of management tools, business process, main characteristics of management tools, main stages of development and use of management tools

**JEL classification:** M10, M11

**Research aim:** to classify the features of management tools, which will allow to make more effective choices when choosing tools in the management process

**Research hypothesis:** the importance of classifying management tools in their design and application

**Research novelty:** introduced a model for the development and application of enterprise management tools, which allows classifying management tools according to their specific characteristics

## Introduction

Based on the analysis of scientific publications on business management, the study of management science and management theories, two groups of features of the development of enterprise management tools in a competitive environment are distinguished: general and specific features.

Common features are a set of characteristics that are common to all enterprise management tools. Common features include the following features of management tools:

- management tools are designed by the management entity to exercise managerial influence over the management facility.
- the management tools used by the business entity should be in line with the mission of the enterprise, its strategic goals and development goals;
- all management tools used by the enterprise should be consistent with each other when used to achieve the overall goals of the enterprise and solve problems;
- enterprise management tools have a number of specific characteristics.

The following are the main characteristics of the enterprise management tools (parameters that describe (reveal) the nature of the management tools).

- **The object** of management is that on which the managerial influence is exerted by means of a management tool.
- **The management subject** is the governing body, collegial body or committee, which exercises managerial influence using a management tool.
- **Time is the** period during which the managerial influence is exercised by the management tool of the enterprise, presupposes the determination of a specific time from the beginning to the end of the managerial influence.
- **scale** - this describes the ratio of the sphere of managerial influence to the size of the enterprise (the sphere of managerial influence can be the workshop, the structural unit of the enterprise, the business unit of the enterprise, the branch, the whole enterprise as a whole).
- **The purpose of management** is the desired, possible, necessary condition of the controlled object to be achieved.
- **Resource saving** - a feature that reflects the amount of material, manpower and time resources needed for the successful use of enterprise management tools.
- **Level of innovation** - a characteristic that reflects the level of change in the enterprise's internal environment required for the use of management tools (staff qualifications, information system status, equipment and production technology status).

### Research methodology and results

Each management tool used by the enterprise has the described characteristics, the content of which may differ depending on the situation, the parameters of the external and internal environment of the enterprise.

Special features appear when considering the main stages of development and use of management tools. Based on the analysis of

this process, a model for the development and use of enterprise management tools was built.

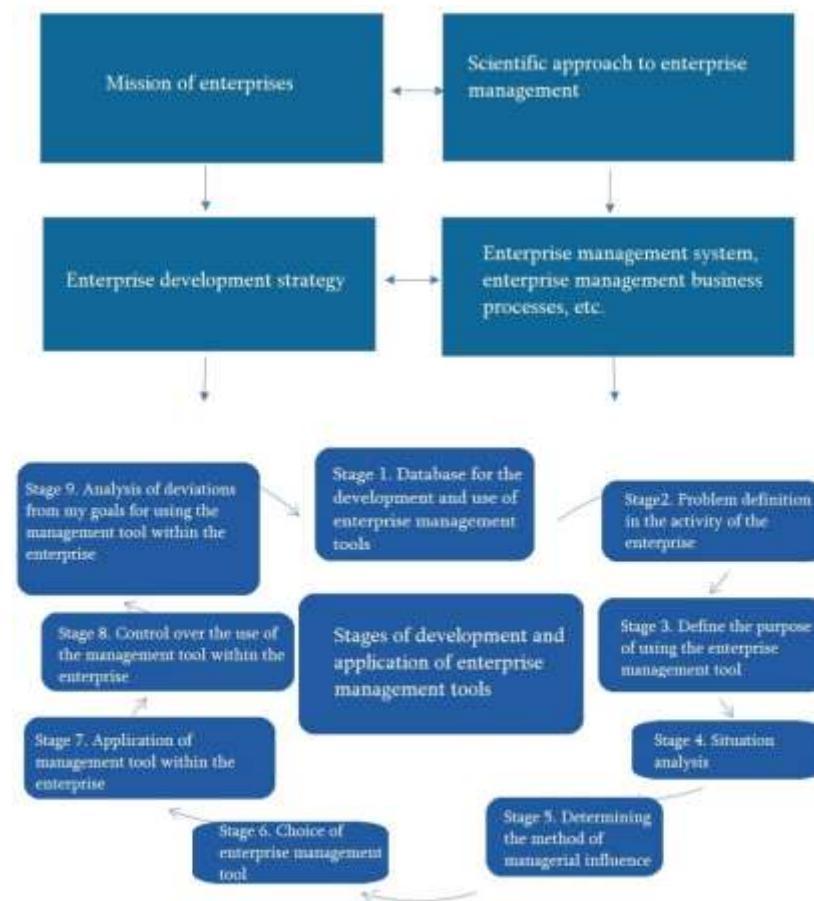


Figure. 1. Formulation and Application Model of the model of enterprise management tools<sup>9</sup>

<sup>9</sup> Created by author

The activities of each enterprise are based on its mission, strategic goals and development issues. The company determines the scientific approach to management, to which it will adhere, guided by which it will form the management system of the enterprise, which is presented in Figure 1, consists of nine business processes of the enterprise, the organizational structure. of the enterprise. All of the above have an impact on the main stages of the development of enterprise management tools. These stages are discussed in more detail below.

The first stage consists of defining the database on the basis of which the enterprise management tools are developed and used. The database includes information on the mission of the enterprise, its strategic goals and development goals, the scientific management approach to which the company is committed, the enterprise management system, the business processes of the enterprise; on the state of the internal-external environment of the enterprise, on the number of resources available to the enterprise. Database creation works do not end with the next stage, but are carried out at all stages of enterprise management tool design and use.

The second stage is to identify the problem in the enterprise. The accumulation of information leads to the awareness of the problems of the business entity, which must be solved and overcome for further successful development. In the process of problem identification and analysis, the object to which the operation of the enterprise management tool will be directed is determined.

The third step is to define the purpose of using the enterprise management tool. After identifying and analyzing the existing problems in the activity of the enterprise, the goal is determined, for the implementation of which the management tool will be used. The goal must be in line with the enterprise mission and goal system.

The fourth stage, the situation analysis, is carried out using the information accumulated in the previous stages on the external-internal state of the enterprise, in the direction of the identified problems. In this case, the analysis should contain information about the initial state of the competitive environment and its changing trends.

The fifth stage, the determination of the method of managerial influence, includes the definition of the approach by which the staff will be interested in achieving the goals of the enterprise. Numerous studies in the field of management and general management have shown that effective management of the enterprise is possible only on the basis of a combination of four methods of managerial influence: economic, administrative, social-psychological-educational [1].

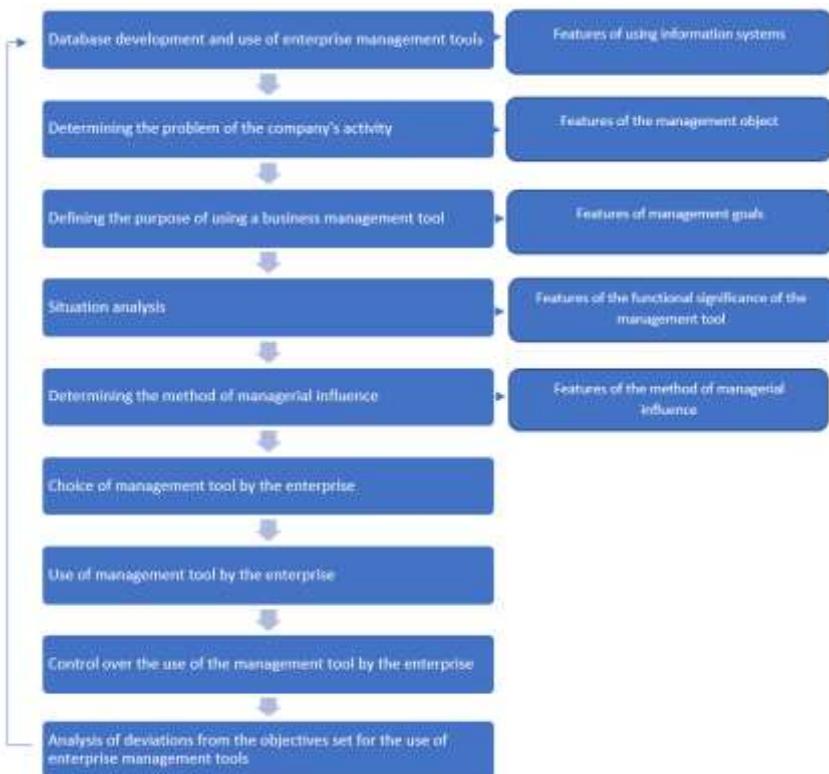
The sixth stage is the selection of the management tool. Considering the information collected and processed in the previous stages, a management tool is selected to be used by the enterprise. The management tools used as a result of the initial stages are in line with the enterprise's mission, its strategic goals and development objectives, and the current state of the enterprise's competitive environment.

The seventh step is to use the enterprise management tool to achieve the set goals.

The eighth stage controls the use of the management tool, which includes the comparison of the planned indicators with the real indicators. The results of the audit serve as information to the managers about the extent to which the objectives were achieved, for which the enterprise management tool was used.

The ninth stage, the analysis of deviations from the intended use of the enterprise management tool, is the final stage of the process, which includes the study of deviations, the possibility of correcting mistakes. The final analysis should provide an overview of the management tool (strengths and weaknesses of the management tool), identify additional opportunities for enterprise development, and serve as an information base for further use of enterprise management tools.

The first five phases are supportive: designed to select effective enterprise management tools. Accordingly, each of the stages forms specific features of the management tools presented in Figure 2.



*Figure 2. Features of enterprise management tools in a competitive environment<sup>10</sup>*

1) The peculiarities of the use of information systems is the totality of the properties of the management tools, which are characterized by the information systems used for their implementation (software products, equipment).

2) Features of the control object is a set of certain properties that the control tool possesses, depending on which control object it has a controlling effect on. Management tools that are focused on different management objects have special properties, it is impossible to use

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marketing management tools, for example, for production management.

3) The features of the management goal are a number of properties of the management tools, which are characterized by the desired result of its use.

4) Features of the management functional goal are the features of the management tool, depending on which management function it will perform. Accordingly, the management tools used to forecast the activities of the enterprise cannot be used to organize and coordinate the activities of the enterprise.

5) Features of the method of managerial influence represent a set of properties of the management tool, which are characterized by methods of managerial influence.

Thus, the described features reveal the essence and nature of enterprise management tools in a competitive environment, allow the development of management tools that help to achieve the set goals with the optimal use of resources.

Based on the specific features described, it is possible to classify enterprise management tools according to the following criteria: In relation to management facilities, management functions, management results, use of management information systems, management impact method (see Table 1)

*Table 1. Enterprise management tools classification*

Classification feature	Types of enterprise management tools
Related to management facilities	Marketing management tools; production management tools; logistics management tools; personnel management tools; investment management tools; financial management tools; Innovation management tools.
Related to management functions	Analysis tools; forecasting tools; planning tools; organizational tools; coordination tools; accounting tools; monitoring and evaluation tools; diagnostic tools; incentive tools.
Related to management results	Anti-crisis management tools; change management tools; adaptive management tools; strategic management tools; Project management tools; financial engineering tools;

	logistics tools; image management tools; benchmarking; saving production; quality management tools; organizational design tools; merger and acquisition tools; Outsourcing; outfitting; diversification; CRM (Customer Feedback Management System); factoring; six sigmas; business intellect; certification; standardization; leasing; project management; reengineering; budgeting.
Related to the use of information systems	Management tools used through Web 2.0 innovative products applications. control tools used through visualization programs. management tools used through functional modules (CRM - customer relationship management; SCM - logistics management); management tools used through cloud computing business intelligence.
Regarding the method of management influence	Administrative management tools; economic management tools; social management tools; psychological management tools; mixed management tools.

Stability in the market-competitive environment is very important for any enterprise. In order to confirm this assertion, it is necessary to organize the activity of the enterprise in such a way that it corresponds to the strategic goals of the enterprise development: improvement of the management system, increase of efficiency of resource use, increase of competitiveness of produced products, increase of the level of financial and economic indicators.

During its activity, the company strives to improve the results of its activity. Modern approaches and Management technology-based enterprise management tools help to improve operational efficiency and reduce costs.

The development of a market economy in Armenia predetermined the practice of enterprise management, in which functions were distributed among the structural subdivisions of enterprises and there was a low degree of clarification of borders a low level of responsibility. Development and implementation of management decisions, implementation of business processes of the enterprise was determined by the established experience, not provided by relevant regulations, by instructions. and the quality of work and the decisions made were

based on the personal abilities of the heads of the structural subdivisions [5, p. 68].

Any manager who has sought to accomplish the tasks assigned to him / her is looking for special tools to work in his / her area of responsibility. According to the hierarchy, the dominant approach in the operational management of the enterprise is the approach of the top manager (head of the enterprise).

The following aspects (targeted subsystems) of the enterprise are most important in organizing the management of the enterprise: finance, economic, engineering support (equipment-technologies), production, commerce, personnel management, quality management, information-organizational-methodological support, security.

All aspects of a business are interconnected, and management is an integral part of it. The most important key components are quality management, information management, and cost management. This set of management components determines the most important basis of behavior in the internal environment of the enterprise, determines the rules of its sustainable development in a market environment. They are applied to the operating regulations of certain functional units through various interaction scenarios within the enterprise. It can be argued that they provide an opportunity to improve the coordination of in-house operational cooperation parameters, and increase the efficiency of material, information and use of time resources, addressing them to address the priority issues of enterprise development.

The need for change creates the preconditions for the spread of TQM ideology in the enterprise, based on overall quality management. An effective implementation of the quality management system in the enterprise can be done with ISO 9000. Through the development and certification of a quality system in accordance with 2000 Series standards. In fact, the key to quality assurance is the implementation of the procedures and process documentation requirements for the operations of the enterprise [5, p. 89].

Existence of a certificate certifying the quality of the enterprise's work related to the external environment is one of the competitive advantages in the market of suppliers of raw materials.

Quality assurance in the enterprise is based on the ISO 9000: 2000 series based on eight basic principles of management: customer orientation, leadership, active staff involvement, process approach, systematic approach to management, continuous improvement, fact-based decisions. Establishing mutually beneficial relationships with suppliers.

Managers need to take a coordinated approach to enterprise information management and use modern integrated ERP class information and management systems. The ERP standard is an enterprise resource management standard based on the construction of a single information area of an economic object.

The current level of support for the organization of business processes enterprise requires rapid processing continuous analysis of large volumes of information. The most important component of this media is documented information. How to use it and the ultimate goal should be in line with the directions of enterprise development. The development and storage of such a large body of information is possible with the use of special computer equipment, based on an individual approach, considering the characteristics of the enterprise.

Building an organization's business model using ERP standards increases the efficiency of implementing different management subsystems, helps to avoid unnecessary actions, and reduces errors. Effective implementation of such a model is possible only with the use of information technologies. Predictive and planning technologies for ERP systems can significantly reduce costs and improve the quality of business processes in the enterprise.

The use of information technology to improve management efficiency has led to the development of a number of enterprise management tools and systems. MRP I - materials need planning; MRP II - Production Resource Planning; CSRP - planning resources depending on customer needs. ERP - Enterprise Resource Planning [5, p. 93].

One of the primary tools for managing an organization in a competitive environment is the ERP system, which covers a variety of areas of activity: production management, procurement and inventory management, sales management, financial management, accounting and management accounting.

### Conclusion

Thus, the described features of the design of management tools for enterprises have the following meanings: Demonstrates the scope of opportunities for enterprise management development, promotes the development of enterprise management tools, expands the use of information technology in enterprise management, facilitates the distribution of responsibilities for enterprise management, determines the depth of analytical issues related to enterprise management tools development. The presented classification allows to identify the main business processes of developing enterprise management tools in a competitive environment.

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**ՄՐՑԱԿՑԱՅԻՆ ՄԻՋԱՎԱՅՐՈՒՄ ՁԵՌՆԱՐԿՈՒԹՅԱՆ  
ԿԱՌԱՎԱՐՄԱՆ ԳՈՐԾԻՔՆԵՐԻ ՁԵՎԱՎՈՐՄԱՆ  
ԱՌԱՋՆԱՀԱՏԿՈՒԹՅՈՒՆՆԵՐԻ ԴԱՍԱԿԱՐԳՈՒՄ**

**Բանալի բառեր** - կառավարման գործիք, մրցակցային միջավայր, կառավարման գործիքների առանձնահատկություն, բիզնես գործընթաց, կառավարման գործիքների հիմնական բնութագրեր, կառավարման գործիքների ծևավորման և օգտագործման հիմնական փուլեր

Ձեռնարկությունների կառավարման գործընթացն անհնար է՝ դիտարկել որպես առանձին փակ համակարգ: Մրցակցային միջավայրում ձեռնարկության կառավարման գործիքների ծևավորման առանձնահատկությունները հասկացվում են որպես հատուկ բնութագրական հատկություններ, որոնք դրանց տարբերում են այլ գործիքներից: Առանձնանում են մրցակցային միջավայրում ձեռնարկության կառավարման գործիքների ծևավորման առանձնահատկությունների երկու խումբ՝ ընդհանուր և հատուկ:

Հողվածում կառավարման գործիքների և դրանց առանձնահատկությունների ուսումնասիրության շղթայում նաև վեր են հանվել դրանց ծևավորման և օգտագործման փուլերը: Նկարագրված առանձնահատկությունների հիման վրա դասակարգվել են նաև ձեռնարկության կառավարման գործիքները հետևյալ չափանիշների համաձայն: Կառավարման օբյեկտների, կառավարման գործառույթների, կառավարման արդյունքների, կառավարման տեղեկատվական համակարգերի օգտագործման, կառավարման ազդեցության մեթոդի առնչությամբ:

Յուրաքանչյուր ձեռնարկության համար շուկայական-մրցակցային միջավայրում շատ կարևոր է գործունեության կայունությունը: Այս պնդումը հաստատելու համար անհրաժեշտ է ձեռնարկության գործունեությունը կազմակերպել այնպես, որ այն համապատասխանի

ձեռնարկության զարգացման ռազմավարական նպատակներին և խնդիրներին: Ուստի կառավարման գործընթացում առանցքային է գործիքների մշակման ժամանակ բացահայտել այն հիմնական բիզ-նես գործընթացները, որոնց հիման վրա մշակվում են կառավարման գործիքները: Առանձնահատուկ կարևորություն է իրենից ներկայացնում այս գործընթացներում տեղեկատվական տեխնոլոգիաների օգտագործումը, որը հնարավորություն է տալիս էապես բարելավել կառավարման գործընթացի արդյունավետությունը:

**Завен Хукеян**  
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## КЛАССИФИКАЦИЯ ОСОБЕННОСТЕЙ ФОРМИРОВАНИЯ ИНСТРУМЕНТОВ УПРАВЛЕНИЯ ПРЕДПРИЯТИЕМ В КОНКУРЕНТНОЙ СРЕДЕ

**Ключевые слова** - инструмент управления, конкурентная среда, особенности инструментов управления, бизнес-процесс, основные характеристики инструментов управления, основные этапы разработки и использования инструментов управления

Процесс управления предприятием нельзя рассматривать как отдельную замкнутую систему. Под конкурентными свойствами инструментов управления предприятием в конкурентной среде подразумеваются особые характеристики, отличающие их от других инструментов. Различают две группы особенностей средств управления предприятием в конкурентной среде: общие и специфические.

В статье в цепочке изучения инструментов управления также раскрываются их особенности, этапы их разработки и использования. На основании описанных признаков средства управления предприятием также были классифицированы по следующим критериям: применительно к объектам управления, функциям управления,

результатам управления, использованию информационных систем управления, методу управленческого воздействия.

Стабильность в рыночно-конкурентной среде очень важна для любого предприятия. Для подтверждения этого утверждения необходимо организовать деятельность предприятия таким образом, чтобы она соответствовала стратегическим целям и задачам развития предприятия. Поэтому в процессе управления крайне важно определить основные бизнес-процессы, на основе которых разрабатываются инструменты управления. Особое значение имеет использование в этих процессах информационных технологий, позволяющих значительно повысить эффективность процесса управления.

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