



APPROACHES TO THE STUDY OF THE DEVELOPMENT OF SCIENCE AND CULTURE IN THE ISLAMIC WORLD

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Abstract

This article describes the flourishing of science and culture in the Islamic world, Muslims' attitude towards knowledge as the highest value, the role of science and culture in the formation and development of Islamic civilization, and explains that the flourishing of science and culture in the Islamic world occurred not through religious laws and rules themselves, but through its complex socio-historical activities, reform movements related to freedom of thought, and scientific dialogue with external civilizations. It is also recognized that today scientists of developed Western countries recognize that science and culture spread throughout the world through Islam, the flourishing of national cultures is associated with the spread of science and enlightenment with the Islamic religion.

Keywords: Civilization, Muslim culture, caliph, global, societal development, religious conservatism.

Introduction

Islamic culture, which occupies an important place in the history of world civilizations, has made an incomparable contribution to the development of science and culture in the world. The religion of Islam arose in the Arabian Peninsula at the beginning of the 7th century, and its founder was the Prophet Muhammad (570-632), peace be upon him. The emergence of the religion of Islam in Arabia is an incredible miracle. Because in the 7th century, the Arabian



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Peninsula was mired in ignorance, and its people were backward, Bedouin, and pagan. Muhammad (pbuh) created a huge state. The Arabs achieved great progress in a short time. The new religion also brought people a new culture. The first caliph, Abu Bakr (632-634), after the death of Muhammad (pbuh), through the wars of "Ridda" (an attempt by some Arab tribes to leave Islam), he maintained central power and managed to unite the Muslim community. He made financial and social reforms. He compiled the Holy Quran in book form. The second caliph, Umar ibn al-Khattab (634-644), expanded the territory of the caliphate through conquests. Egypt, North Africa, Jerusalem, and other similar territories were added. He organized the administration, divided the provinces, appointed governors, established military and financial departments, formed a tax system, introduced social justice issues, aid for the poor and needy, and maintained social order and the rule of law. The third caliph, Uthman ibn Affan (644-656), re-compiled the Quran and brought it into book form. He standardized copies of the Quran and sent them to different regions. He expanded the social infrastructure, roads, mosques, and governance systems. During the reign of the fourth caliph, Ali ibn Abi Talib (656-661), internal conflicts, intrigues, and internal strife increased - the wars with Muawiyah (Siffin), the Khawarij movement, and threats to internal social and political stability. During the Umayyads (661-750), due to the expansion of territories, the systems for collecting taxes and replenishing the state treasury were strengthened. The Abbasid dynasty (750-1258) marked the heyday of the Islamic world. Scholars of various nationalities, such as Arabs, Persians, and Turks, united in scientific and cultural centers. The religion and culture of Islam developed. Arabic became the common language.

Western scholars also recognize the enormous influence of Islam on human science and culture. For example, the French scholar Jolivet Costelot writes in his book "The Law of History": "The spread of Islam was the need of the time. Therefore, the development of Muslims accelerated greatly. As a result, an amazing Islamic culture emerged. Along with the conquests, Islamic culture spread everywhere. Islamic culture was reflected in art, literature, and science. Thus, the torch of philosophy, astronomy, chemistry, medicine, and spiritual sciences remained in the hands of Muslims for several centuries. They became



inventors. Not just inventors, but inventors who mastered the foundations of science with great sharpness and perseverance¹. Modern researcher K. Ponting expresses the same opinion: “No religion in the history of the world has found its followers so quickly and easily. The rise of the Arabs in the Arabian Peninsula in 630 AD "astounded" humanity². As a result, the rapid development of Muslims led to the emergence of a mind-boggling Islamic culture.

During the prophethood of Muhammad (PBUH) and after him, the issues of justice were deeply expressed, so the land of Islam expanded. Along with the teachings of Islam, Islamic culture also began to spread widely. Islamic teachings and their philosophy have a special place in the development of society and have historically been the spiritual basis for the gradual development of all types of social relations.

In accordance with the requirements of the era, the religion of Islam was formed in the form of a set of laws, rules, and procedures that embody socio-economic, political, and cultural directions. In the early stages of Muslim culture, the Holy Quran, the revelation that came to Muhammad (PBUH), the hadiths of the prophet, and later the lifestyle of the companions and subjects were accepted as the basis for solving all problems and issues. Therefore, in the early Islamic period, reliance on tradition, that is, the Holy Quran, the Sunnah of the Prophet, and imitation, prevailed, and at the same time, Sharia (Islamic laws and regulations) developed first of all during this period³.

Science and culture played a special role in the formation and development of Islamic civilization. However, some scholars limited themselves to an absolutely positive assessment of this process and did not take into account its critical aspects. Although this opinion is correct to a certain extent, it does not take into account the fact that the development of science in the Islamic world was largely determined by religious demands and needs.

¹ Samadova, R., & Djurayev, H. (2025). Islom dinining madaniyat va ilm-fan rivojiga ta'siri. *Modern Science and Research*, 4(4), 1335–1338. Retrieved from <https://inlibrary.uz/index.php/science-research/article/view/80669>
<https://inlibrary.uz/index.php/science-research/article/view/80669>

² Понтинг К. История исламской цивилизации. Указ. соч. – С. 314, 316.

³ Arifxanova S.M., Rasuleva G.X., Abdullayeva M.N. *Musulmon falsafasida ratsionalizm va bilim muommolari*. – Toshkent: Falsafa va huquq instituti, 2011. – p. 7.



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Researcher I. Ikramova writes: “The history of scientific thought shows that religion and science, despite their differences, can interact in positive ways. The relationship between religion and science has been gaining increasing importance as a topic of discussion for centuries”⁴.

The creation of spiritual culture and knowledge of the laws of its development is a complex and very contradictory phenomenon. This process can be understood only taking into account the dialectical unity of objective and subjective factors. This is explained by the fact that the process of creation, nature and level of development of spiritual culture depend on the specific historical conditions of social production, or rather, on the stage of development of society in a given socio-economic framework.

On the other hand, Muhammad Abdu believes that “the reason for the decline of science in the Islamic world is not only the consequences of colonialism, but also the lack of a thorough revision of the internal religious doctrine”⁵. This idea is fully supported, since since the 13th century, religious conservatism has been growing in the Islamic world, and reactions against the development of independent thought and new branches of science have intensified⁶.

Therefore, although the development of science and culture in the Islamic world was initially positive, it later declined due to internal problems, religious conservatism, and the primacy of narrative-based rather than intellectual thinking. Critical analysis shows that many scholars have over-idealized or under-examined this process.

Although the question of the development of science and culture in the Islamic world has been raised by many authors, it is not always true that their analysis is perfect. In particular, Dr. Roxanne Marcotte stated in her work: “Islamic science was formed in the traditions of knowledge in the sources of the Sunnah, and the central importance of the Quran and the Hadith was the basis of its scientific development”⁷. This idea is true, because the influence of Quranic sources on the development of science is based on certain fields (for example, astronomy,

⁴ Ikramova I. “Ibn Rushd e’tiqod va aql uyg’unligi borasida // Academic research in educational sciences volume 2 | special ISSUE 1 | 2021 issn: 2181-1385. – B. 3.

⁵ Muhammad A. Islohot va ijti hod. – Qohira: Dorul-kutub, 1905. – B. 44.

⁶ Askari A. Islom va modernizm. 2001. Tehron: Amir Kabir. – B. 212.

⁷ Marcotte R. Islam and Science // Ars Disputandi. 2006 – p.143.



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mathematics and medicine). In all fields of science, the development of science is often shaped by pragmatic needs and practice. The main reason for the writing of “Al-jabr wal-Muqabala” by Muhammad ibn Musa al-Khwarizmi, one of the theorists of the science of “Mathematics”, was about the distribution of heirs in the science of inheritance.

Today, scientists from developed Western countries recognize that science and culture spread throughout the world through Islam. The famous French historian, psychologist, sociologist, and founder of social psychology Gustave Le Bon (1841-1831) says this in his book "History of Arab Culture": "The dedication of Muslims to research is astonishing. There may be a nation equal to Muslims in science and research, but I think it has never surpassed them. Muslims paid great attention to building mosques and madrasas in the cities they conquered. If the city was large, then not one, but several mosques and madrasas were built"⁸.

One of the distinctive features of Muslim culture is the love of science and books. According to historical sources, there were 70 libraries owned by Arabs in Andalusia to increase people's interest in reading books. The rise of material and spiritual culture in Andalusia was due to the awakening of the population's interest in scientific knowledge.

However, in many places, the economic, political and social conditions in the formation of science were given little attention, overly romanticizing religious factors. Because the real sources of the development of science were associated with the economic rise of the Arab Caliphate and the movement to translate knowledge from other civilizations.

As Mohammadreza Shahidipak states, "The Prophet's daily life was an example of ideal human behavior and led to the emergence of Islamic psychological and social sciences"⁹. While this idea is important, it can lead to closed systems for scientific analysis, as scientific systems based on religious ideals do not always provide opportunities for universal critical inquiry.

Safvet Halilović (Professor of Tafsir and Anthropology of the Quran at the Faculty of Islamic Pedagogy, University of Zenica, Bosnia and Herzegovina)

⁸ La Civilization des Arabes 1884. – p. 22.

⁹ Shahidipak M. (2020). The Concept of Science in Islamic Civilization. Scholarly Journal of Psychology and Behavioral Sciences, p. 420. Received: June 04, 2020 Published: June 12, 2020.



describes Islamic civilization as “a unique experience that ensured a balance between the mind and the heart, uniting religion and science”¹⁰. Indeed, Islamic culture in Andalusia became a center of high culture and science, but it cannot be denied that in this process internal criticism and freedom of thought were limited. From this point of view, the development of science and culture in the Islamic world was indeed a complex and multifaceted process. Religious incentives played an important role in it. At the same time, practice, economic needs and external influences were also decisive factors. Knowledge was the primary value of medieval Muslim civilization.

The researchers write: “Muslims treated knowledge as a supreme value. Because knowledge found its expression in all aspects of Muslim spiritual life, in their political and religious activities, and in the daily life of the ordinary Muslim. Muhammad's concept of "knowledge" directed the spiritual life of Islam to its main unchanging core”¹¹.

According to Professor B. Abdukhalimov, the flourishing of national cultures, the spread of science and enlightenment with Islam are beginning to be observed, as evidenced by the scientific centers "Baytul Hikma" in Baghdad (9th century), "Sivan al-Hikma" in Bukhara (10th century), "Dar al-Hikma" in Cairo (11th-12th centuries), and "al-Ma'mun" in Khorezm (11th century). Among the listed scientific schools, "Baytul Hikma" in Baghdad stands out for being the oldest, the earliest of the scientific centers, and a place rich in various scholars, which has gained great fame due to its education of famous scientists¹².

Abdul Aziz Romdoni (Varendra University) emphasized: "Islam and science are interconnected, and it is necessary to integrate them. Because science can develop only on the basis of religious values"¹³. This idea, no matter how much it supports religious and scientific unity, is not entirely compatible with the independent and

¹⁰ Halilović S. (2017). Islamic Civilization in Spain. *Psychiatria Danubina*, т.29 Suppl 1, p.64–72.

¹¹ Kalandarova G. E'tiqod va bilimning ratsional va irratsional omillar. International Conference on Innovations in Applied Sciences, Education and Humanities Hosted from Barcelona, Spain <https://conferencea.org> July, 26th 2023 – p. 9.

¹² Abdualimov B. “Bayt al-Hikma” va O’rta Osiyo olimlarining Bag’doddagi ilmiy faoliyati. – T.: TIU, 2004. – p. 4.

¹³ Romdhoni A. (2023). The Position of Science From The Islamic Perspective. *AL-IKHSAN*, jurnal.



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critical nature of science. Science develops not only within religious boundaries, but also through free analysis and empirical methodology.

When analyzing the issue of the development of science and culture in the Islamic world from the point of view of religious studies, it becomes clear that the opinions of some scholars are overly idealized and far from a critical approach.

A. Ramli and Jaffari Awang present the prosperity of Islamic civilization as “the result of scientific dialogue between Buddhism and Islam”¹⁴. They evaluate this relationship only in a positive way, ignoring internal critical contradictions and doctrinal conflicts. In the history of Islamic civilization, not only external influences, but also internal exchanges of ideas and the Mu’tazila-Ash’ari conflict played an important role.

Jauharotul Makniah (Muhammadiyah University of Malang) expressed the following opinion: “The revival of Islamic civilization can be achieved through the integration of science and education systems with religious values”¹⁵. This view does not sufficiently take into account complex ethical and methodological issues, since the natural development of science often relies on critical thinking and empirical research outside the religious framework.

Muhammad Hifdil Islam emphasized: “The history of Islamic civilization was formed entirely based on religious values”¹⁶. However, real historical processes developed not simply on the basis of religious principles, but under the influence of social, political, and economic dynamics. This requires a critical reexamination of his generalized thesis.

Doctor Fatmir Shehu (Associate Professor, International Islamic University of Malaysia): “Islam can serve as the basis of the future civilization of humanity”¹⁷. However, this idea does not provide a sufficient analysis of the role of Islamic civilization in modern global civilizational processes and what opportunities and obstacles it faces in global competition.

¹⁴ Ramli A, Awang J, & Ab Rahman Z. (2020). The Contribution of Muslim-Buddhist Relation on Islamic Civilization. T.22, P.34-46. Jurnal.

¹⁵ Makniah J. (2019). Modern Islamic Civilization: A Strategy of Civil Reconstruction through Islamic Science and Education ICCD 2019. Jurnal p. 271-275.

¹⁶ Hifdil Islam M. (2019). Islam and Civilization. Al-Insyiroh. Jurnal

¹⁷ Shehu F. (2016). Islam – The Future Civilization of Mankind. Jurnal



On the one hand, religious values have strongly inspired science, on the other hand, the development of science has been shaped by practice, free thought and contacts with foreign cultures.

In the 9th-12th centuries, the processes of interpreting the Holy Quran, collecting hadiths, and developing Sharia laws were carried out in cities (in Iran - Hamadan, Nishapur, Mashhad, in Afghanistan - Balkh, Herat, in Central Asia - in cities such as Bukhara, Samarkand, Termez, Merv). Representatives of Transoxiana, Muhammad Khorezm and Ahmad Ferghani, went to the Baghdad Academy "Baytul Hikma" in the 10s of the 9th century, "...it is from this time that we can speak of the independent development of Muslim culture in Central Asia, that is, a new stage in the culture of local peoples, the influence of Islam on the culture of the peoples of Central Asia"¹⁸.

The views of some authors who try to explain the process of the development of science and culture in the Islamic world solely as the result of divine inspiration based on the Quran and Sunnah require critical reconsideration. Because these approaches in many cases do not adequately reflect the complex, multifaceted history and internal contradictions of Islamic civilization.

In particular, K. Kurmanbayev and D. Sikhimbayeva noted: "From the very beginning, the concept of science in Islam was linked to divine enlightenment, which formed religious and secular knowledge as a whole"¹⁹. This view of the authors may be correct from a metaphysical point of view, but they did not illuminate the process of the formation of science in social, economic and political conditions. Ignoring the fact that science is not only enlightenment based on the "heart" and "virtue", but also a process based on experience, observation, and logical analysis, distances it from modern (French: moderne - the newest, most modern) concepts of science.

D. Gutas's critical remarks offer a radical approach to this topic. He writes: "The concept of Islam and science represents a complex historical reality in the form of a false binary. For the perception of "Islam" as a self-acting historical agent is

¹⁸ Усмонов М.А. Распространение ислама и его роль в истории Средней Азии. // Из истории общественно-философской мысли и вольнодумия в Средней Азии. – Т.: Фан, 1994. – С. 24.

¹⁹ Kurmanbayev K, Siximbayeva D. (2021). The Concept of Knowledge in Islam and Its Role in Muslim Civilization. – p. 29-33.



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contrary to reality”²⁰. Authors who criticize Gutas’s view often try to accuse him of “secular relativism,” but he rightly points out that the development of science in Islamic civilization was not always dependent on the absolute encouragement of Sharia or religion. Rather, this process was shaped by historical periods, geopolitical factors, and foreign influences. It ignores the diverse and evolving nature of Islamic cultures and the specific historical conditions that shaped scientific movements. Gutas criticizes the tendency to view “Islam” as a single, unchanging entity, and this oversimplification obscures the complexities of Islamic history and culture. First, he emphasizes the importance of understanding the specific historical contexts in which scientific activity flourished or declined in Muslim societies. Second, he calls for an examination of the social structures, intellectual traditions, and institutional conditions that shaped social and intellectual scientific thought and practice. Third, he argues that historians must move beyond identifying the initial conditions that might lead to scientific development and examine how science has maintained itself in a variety of changing circumstances. He emphasizes the need to move beyond broad generalizations and examine the specific social, intellectual, and institutional conditions that influenced the development of science in different periods and regions of the Islamic world.

Monica Ringer (University of California, Los Angeles), through her concept of historical reforms in Islamic civilization and the “new historical Islam,” emphasizes the changing nature of scientific development in its historical context, rather than a narrative or idealized form. He argues that “Islamic modernism, while explaining Islam as a metaphysical ‘essence’, simultaneously reshapes it through specific historical processes”²¹. This approach is important because it dismantles dogmatic notions of the development of science and superimposes a genuine historical analysis on them.

Some scholars believe that the development of science and culture in the Islamic world was shaped solely by religious revelation and Quranic sources. This approach may be correct in some sense, and may have been shaped by the

²⁰ Gutas D. (2003). Islam and Science: A False Statement of the Problem. – p. 215.

²¹ Ringer M. (2020). Islam in History, Islamic History. In Islamic Modernism and the Re-Enchantment of the Sacred in the Age of History. – p. 103.



development of the Sharia sciences, but it needs critical reexamination, as it ignores the complex history, philosophical disagreements, and external influences associated with the development of science in Islamic civilization. Abdul Aziz Romdoni and Sofia Anaba Fauzia argue in their article: “There is an inseparable connection between Islam and science, and science can only fully develop when it is integrated with religious values”²². At first glance, this idea expresses a divine and intellectual unity, but its problem is that the rational and critical nature of science risks being limited by the norms of the Sharia. Understanding science only within the framework of religious tolerance leads to its development being limited and to the creation of barriers against experimental methodologies.

On this basis, it can be concluded that the development of science and culture in the Islamic world was not simply due to the laws of religion or the inspiration of the Sunnah, but rather as a result of its complex socio-historical activity, reform movements regarding freedom of thought, and scientific dialogue with external civilizations. To understand the development of Islamic science, it is necessary not to deify it, but to recognize its practical, logical, and socially relevant forms.

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²² Romdoni A.A, Fauziya S.A. The Position of Science from the Islamic Perspective (Analysis of Surat al-Taubah Verse 122) // AL-IKHSAN: Interdisciplinary Journal of Islamic Studies. – 2023. – p. 3.



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