The Axiological Aspects of Science in the Thought of Ibn Khaldun

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https://doi.org/10.22452/usuluddin.vol52no2.4

Abstract

The study of the philosophy of science in the world of Islamic philosophy is still relatively rare. However, there are many great Islamic philosophers in the past who have contributed to the understanding of scientific development during their time. Ibn Khaldun, as one of the greatest Islamic thinkers, has made significant contributions to the development of various fields of knowledge. One area of study that has attracted Ibn Khaldun's attention is related to scientific development. Ibn Khaldun's own focus is on various scientific problems that occurred during his lifetime, including those related to value issues. Axiology of science as a branch of the philosophy of science focusing on value issues within science is a new approach that is still rarely found in studies related to Islamic thought. This research will attempt to explore Ibn Khaldun's thoughts related to the field of Axiology of Science through a literature review of Ibn Khaldun's major work, the *Muqaddimah*. The results of the study indicate that many of Ibn Khaldun's philosophical thoughts touch on the relationship between values and science, such as the values of divinity, economics, and politics. Economic values can influence the direction of scientific development, while political values can be influenced by the activities of scientists. The misuse of scientific knowledge for evil purposes has also developed and been highlighted by Ibn Khaldun during that period. This indicates an awareness of moral aspects among scientists at that time.

Keywords: Axiology of science; philosophy of science; science; thought; Ibn Khaldun

Introduction

The axiology of science is one of the relatively new studies in the world of philosophy. This is because axiology of science itself is part of the philosophy of science, which has often been equated with studies of epistemology or the philosophy of knowledge. The philosophy of science as a standalone study has only developed since there were many criticisms of the strong influence of

empiricism on the development of science. In its development, the philosophy of science then gave birth to specific studies related to branches of philosophy that accompanied the development of the philosophy of science, such as metaphysics, epistemology, and axiology. The axiology of science itself is a study that is very different from the study of the philosophy of science initially. If the previous philosophy of science emphasized more on aspects of the truth value, then the axiology of science actually emphasizes more on the external values of science, beyond the truth value.

The philosophy of science itself is a study that is still rarely found in Islamic philosophy research. Islamic philosophy generally deals more with epistemological issues in general, rather than focusing on problems of scientific knowledge. It is still rare for us to find studies of the axiology of science that have been extracted from the thoughts of earlier Islamic figures. This is regrettable, considering that during the heyday of Islam, scientific development was very rapid, so we certainly can find axiological problems in every development of science.

Ibn Khaldun, as one of the great figures in the world of Islamic philosophy, has paid much attention to the development of knowledge at that time. Some of his thoughts have been articulated in his major work, *the Muqaddimah*. As for what Ibn Khaldun conveyed, it still implicitly discusses axiological issues in the development of knowledge at that time, so that the issues of science that surface are only limited to sources, classifications, and methods that distinguish science from other knowledge. This then becomes a problem, namely the study of the axiology of science still centered on Western thinking orientations.

The Islamic civilization, which is rich with spiritual values, will provide a new perspective in understanding the value aspects of the development of knowledge. In this research, every essence of Ibn Khaldun's thought related to the value problems in the development of knowledge in the Middle East at that time will be explored. It is hoped that from Ibn Khaldun’s thoughts, a new perspective can be developed in addressing non-epistemic values that also influence the development of knowledge, towards a better civilization.

Method

This study is a qualitative research in the field of philosophy that attempts to explore the thoughts of Ibn Khaldun through several of his works. In philosophical research, several principles are used in processing the collected data, namely coherence, totality or holism, and idealization. In the principle of coherence, every concept, part, and relation must be able to be harmonized with each other, so that there is no contradiction or inconsistency among them. Totality or holism demands a radical and principal understanding, so that the text, issues, or situations are seen in relation to the essence of humanity. In the principle of idealization, philosophical research will lead to an ethics or *das sollen* for human actions specifically and directed towards every field [1].

The data collection method used in this research is literature study. The primary data used comes from the book 'Muqaddimah' by Ibn Khaldun. Additionally, there are also several other written works with topics related to Ibn Khaldun's thoughts on the philosophy of science or related topics. These literature sources will then be interpreted and analyzed using philosophical methods to draw conclusions that are expected to have implications for the development of the field of philosophy of science and also for the general public.

Biography of Ibn Khaldun

Ibn Khaldun was born on 1 Ramadan 732 H or May 27, 1332 AD. His family was one of those who migrated from Andalusia to Tunisia in the 7th century H. His full name is Waliyuddin Abdurrahman ibn Muhammad ibn Muhammad ibn Muhammad ibn al-Hasan ibn Jabir ibn Muhammad ibn Muhammad ibn Abdurrahman ibn Khaldun. His great-grandfather, Khaldun, entered Andalusia with the Yemeni forces and initially settled in the city of Carmona and then his descendants moved to Seville. Ibn Khaldun's father, Muhammad, did not have a role in politics. He preferred learning and delved into jurisprudence, philology, and poetry [2].

[1] Anton Bakker and Achmad Charris Zubair, *Metodologi Penelitian Filsafat* (Sleman: PT. Kanisius, 1990).

[2] Muhammad Abdullah Enan, *Biografi Ibnu Khaldun* (Serambi Ilmu Semesta, 2013), 14–20.

Ibn Khaldun received education at home from his father and several scholars in Tunisia. Ibn Khaldun never received formal education in a madrasa. He obtained his knowledge from one teacher to another by collecting ijazas (proof of having received education from a teacher)[3]. At a young age, Ibn Khaldun had mastered several classical Islamic sciences such as 'ulum aqliyah (the sciences of philosophy, Sufism, and metaphysics). He was not satisfied with just one or two sciences; Ibn Khaldun was also interested in politics, history, economics, law, geography, etc. His knowledge was as vast as an encyclopedia [4].

One of Ibn Khaldun's greatest works, *the Muqaddimah* or Introduction, played a crucial role in providing a conceptual and paradigmatic framework as the epistemological foundation of social sciences and human civilization. From this conceptual and paradigmatic framework, new sciences emerged, such as the study of history, culture, and civilization of a society[5]. *The Muqaddimah* often serves as the main reference in historiography and is a precursor to modern sciences such as anthropology, sociology, economics, and politics. Arnold Toynbee declared *the Muqaddimah* as the greatest work produced by human thought[6]. From this statement, we can depict the influence of Ibn Khaldun's work on the development of knowledge.

Axiology of Science

Axiology in the context of the philosophy of science can be defined as the study that questions how humans use their knowledge, or it can also be understood as the study that examines the purpose of knowledge itself[7]. Axiologically, knowledge must be used and utilized for the benefit of humanity by improving their quality of life while considering human nature, human dignity, and the balance/sustainability of nature. Scientific efforts are made through the communal and universal utilization of scientific knowledge[8].

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[3] Robert Irwin, *Ibn Khaldun: An Intellectual Biography* (Princeton University Press, 2018), 153.

[4] Ahmad Syafii Maarif, *Ibn Khaldun dalam Pandangan Penulis Barat dan Timur* (Gema Insani, 1996), 12.

[5] Zaid Ahmad, *The Epistemology of Ibn Khaldun* (Routledge, 2004), 6.

[6] Tamara Sonn, *Islam: A Brief History* (John Wiley & Sons, 2010), 61.

[7] Suwardi Endraswara, *Filsafat Ilmu* (Media Pressindo, 2021), 147.

[8] Jujun S. Suriasumantri;, *Ilmu Dalam Perspektif Moral, Sosial, Dan Politik* (PT. Gramedia Pustaka Utama, 1986), 16.

The benefits of scientific knowledge can be seen in at least four aspects: first, it benefits the individuals engaged in that particular field of knowledge. The definite benefit experienced is the increase in knowledge for those individuals. Second, it benefits the knowledge itself. Scientific knowledge is a journey to continuously discover the truth. Without this journey, knowledge would stagnate and be useless. Third, it benefits a broader scope. According to this understanding, knowledge should benefit the contemporary life of humanity. It is not appropriate for humans to develop knowledge that harms human life. Fourth, knowledge should also be beneficial for a longer time scale. Knowledge should be developed transgenerationally, not only useful for the current generation but also for future generations[9].

In Islam, a field of knowledge is considered beneficial if it contains several aspects. First, knowledge should bring humans closer to the truth of Allah and not distance them from it. Second, the knowledge should help the community to realize its goals. Third, knowledge should provide guidance for others. Fourth, the knowledge should be able to solve community problems[10].

When discussing axiology in the scientific context, we mainly talk about moral values. In this case, the branch of axiology that is more related to the scientific context is the ethical aspect of scientists' activities. The ethical aspect of scientific knowledge is about the concrete individual nature of scientific knowledge. New scientific knowledge can be functionalized when scientific theories are developed into technology. The design of technology is made for the benefit of life sustainability and for the achievement of life goals[11].

Knowledge and Divine Values

Ibn Khaldun, like other Islamic Philosophers, sets boundaries on human reasoning and acknowledges the need for a higher source of knowledge. Ibn Khaldun regards human reasoning as silver and gold. However perfect silver and gold are, they cannot be used to

[9] Achmad Charris Zubair, *Etika dan Asketika Ilmu: Kajian Filsafat Ilmu* (Nuansa Cendekia, 2023), 163.
[10] Zubair, *Etika dan Asketika Ilmu*, 166.
[11] Suparlan Suhartono, *Filsafat Ilmu Pengetahuan : Persoalan Eksistensi Dan Hakikat Ilmu Pengetahuan* (Yogyakarta: Ar-Ruzz Media, 2017), 145.

weigh a mountain. We need knowledge tools beyond reasoning to explain things that cannot be explained by logic alone[12].

Ibn Khaldun also does not disregard divine values in explaining methods to attain scientific knowledge. For Ibn Khaldun, humans must always train their thinking abilities to find ways and meanings to survive and continue living. This process then gives birth to new knowledge and skills. This knowledge and skills can be obtained through various methods, such as through previous generations that have developed these knowledge and skills; through what is taught by the Prophet; or can also be obtained through perception, understanding, and observation of specific facts[13]. This division is clearly different from the division of knowledge in Western philosophy, which focuses on reason and empiricism. In this case, both rational and empirical knowledge belong to a group that can be said to be self-acquired knowledge. Other knowledge is inherited knowledge from scientific authorities.

In Ibn Khaldun's political view, it can also be found that he does not separate his divine values in analyzing social behavior. On one hand, he sees that social, political, and civilizational ties generally develop independently of religion. On the other hand, the fact that he is a Muslim also influences his view on the relationship between divinity, humanity, and society[14].

Ibn Khaldun's epistemology in his thoughts on civilization is very realistic and secular, but not secular in the sense of abandoning religion. Ibn Khaldun's secularism tries to clearly delineate what is the realm of religion and what is the realm of reason. Ibn Khaldun's understanding of the soul of every being then leads him to an understanding of the human soul in two aspects: the soul related to the body. This soul produces the ability to sense and think, which then produces knowledge with various specializations and its relative truth. The second soul is related to spirituality. This soul

[12] R. Mulyadhi Kartanegara, *Essentials of Islamic Epistemology: A Philosophical Inquiry Into the Foundation of Knowledge* (Universiti Brunei Darussalam, 2014), 34.
[13] Ahmad, *The Epistemology of Ibn Khaldun*, 24.
[14] Akhmad Satoni and Sulaiman Kurdi, *Sketsa Pemikiran Politik Islam* (Yogyakarta: Deepublish, 2016), 122.

produces spiritual abilities that penetrate the angelic realm and produce knowledge that is absolute in its truth[15].

The spiritual realm can only be penetrated by the highest soul predetermined by God. The inability of the human mind to penetrate the spiritual realm shows the limitation of human reason. Building on this statement, Ibn Khaldun then classifies knowledge into knowledge acquired through thought or reason (philosophy) and knowledge revealed or in this case, Shariah. This division aims to place human potential proportionally, which previously had no clear boundaries. Ibn Khaldun believes that this will prevent us from being trapped in speculative matters, so there needs to be a placement of each human potential to work according to its domain[16].

Knowledge and Human Needs

Ibn Khaldun did not directly use the term "knowledge" to explain the relationship between knowledge and human needs. In this regard, he explained it using the term "skill." Ibn Khaldun connected economic needs with the sustainability of these skills. According to Ibn Khaldun, if knowledge receives more attention from the wealthy, it will turn the skill into a sought-after commodity. This then motivates the community to learn the skill to use it as a source of livelihood in the future[17].

However, if the skill does not receive much economic demand, it will not attract market attention, so people will not be interested in learning it. Eventually, the skill will be abandoned and neglected[18]. In this regard, Ibn Khaldun strongly emphasizes the economic value in the development of a field of knowledge in the future. Some fields of knowledge that do not meet market demands will gradually disappear over time. This cannot be denied with the increasing trend of industrialization in universities, which threatens people's interest in studying knowledge or skills not needed by the market.

[15] Hafidz, "Watak Peradaban Dalam Epistemologi Ibnu Khaldun: Suatu Studi Epistemologi Ibnu Khaldun Sebagai Analisa Untuk Merekonstruksi Epistemologi Pendidikan Islam" (tesis kedoktoran, Universitas Gadjah Mada, Yogyakarta, 2007), 347.
[16] Hafidz, 347.
[17] Muhammad bin Khaldun Abdurrahman Al-Allamah, *Mukaddimah Ibnu Khaldun* (Pustaka Al Kautsar, 2001), 732.
[18] Abdurrahman, 732.

The economic influence ultimately affects the attitudes of those who study these market-demanded skills. High demand for these skills leads them to set high prices for their services and also makes them arrogant[19]. In this case, knowledge truly becomes a commodity whose price is determined by market demand. The higher the demand, the higher the price for the services provided by that knowledge. What is interesting is that Ibn Khaldun highlights the impact of this economic influence on the attitudes of those who study it. How the high demand for certain knowledge leads to arrogance in those who study it.

Ibn Khaldun then explains that this arrogance will not last forever. If the prosperity level of an area diminishes, society will refocus on their basic needs. The low purchasing power of society will then reduce the demand for skills that previously received attention. These skills will then diminish and disappear altogether[20]. Ibn Khaldun once explained how economic conditions greatly affect the sustainability of knowledge for study. The level of advancement of a civilization will affect the demand for certain knowledge. In societies with a medium to lower level of civilization, they only focus on knowledge related to basic needs.

The Crime of Misusing Knowledge

In *the Muqaddimah*, Ibn Khaldun attempts to criticize one example of deception under the guise of science, namely in the tradition of alchemy in his time. However, it should be noted that the alchemy referred to in *the Muqaddimah* is different from modern chemistry. What Ibn Khaldun criticized was related to the practice of transforming certain metals into gold, which was prevalent in the Middle East at that time. Ibn Khaldun instead clarified what could be achieved through alchemy.

Ibn Khaldun stated that many alchemists engaged in deceit by combining silver with gold or copper with silver, or mixing them both with a certain ratio. These fraudsters would use their manipulated results to mint coins with legal prints that could be circulated among the public. This was done to give the impression to the general public that the gold and silver minerals they possessed were pure. Their actions were undoubtedly unethical and made

[19] Irwin, *Ibn Khaldun*, 145.
[20] Abdurrahman, *Mukaddimah Ibnu Khaldun*, 734.

them unworthy of being considered scientists. They were more deserving to be called thieves and even worse than thieves[21].

If further scrutinized, this criticism can also be directed at some scientific statements not based on empirical facts. This was reiterated by Ibn Khaldun in *the Muqaddimah*. Ibn Khaldun stated that scientists, or in this case, chemists, would inform about the success stories of other alchemists. They would then respond to this information and discuss it with great confidence. When these chemists were asked about the truth and evidence of this information, none of them could prove it[22]. This indicates the lack of effort in proving the truth of a theory that developed in the scientific community at that time.

From what Ibn Khaldun conveyed, we find that knowledge whose truth is doubted cannot simply be regarded as a science, and therefore, we cannot disseminate such knowledge to the public under the guise of science. There is a connection between the truth value and ethical value here. Ibn Khaldun clearly states that knowledge whose truth cannot be proven scientifically cannot be solely applied in society, and if done so, such actions can be considered as deception and are certainly contrary to morality.

Regarding the historical aspect of science, referring to Thomas Kuhn's history of science, a paradigm that constitutes normal science may experience anomalies and be replaced by another paradigm. This fact is also explained by Ibn Khaldun in *the Muqaddimah*. He states that human knowledge cannot reach everything beyond its reach. It's like someone trying to create humans, animals, or plants[23]. From this, we can also see that what was initially considered non-scientific knowledge may become something scientific in the future because humans have not been able to reach it before.

The Political Aspect of Science

According to Ibn Khaldun, there is a significant difference between scientists and politicians. Scientists are those who train their thinking abilities in study and research. They deal with ideas that they abstract and then try to understand with their universal

[21] Abdurrahman, 978.
[22] Abdurrahman, 980.
[23] Abdurrahman, 984.

thinking. The general ideas existing in the minds of scientists are used to understand what exists in reality. The facts outside the head are just a small part of the universal ideas in the mind. Politicians, on the other hand, deal with the facts in reality. They must understand reality and make decisions based on this political reality. What they decide may contradict those general ideas[24].

Ibn Khaldun even added that the intellectual abilities possessed by humans, or in this case, by scientists, cannot be fully trusted. The analysis results of scientists on a political reality seem to be formed based on their perspectives and thinking paradigms. In this case, ordinary people are considered to be more trustworthy when reflecting on political reality. They have the right to share their views with others. This is because they are not influenced by speculations like those that occur among scientists. Their decisions are not influenced by analogies and generalizations[25]. In other words, it is not appropriate to use scientists' thinking as advice for political policies because of the gap between the ideas in the scientists' minds and reality.

What Ibn Khaldun conveyed is a form of separation between the domains of scientists and politicians. This is actually related to several axiological theories that attempt to separate social and political values from scientific activities. This problem then extends into a question: is science free from values? While generally this separation aims to eliminate political intervention in scientific activities, Ibn Khaldun does the opposite. He prevents scientists from entering the political realm and intervening in political policies.

Conclusion

Ibn Khaldun's thoughts do not directly address the main problems in axiology. However, from what has been gleaned from *the Muqaddimah*, we can find many issues during Ibn Khaldun's lifetime that directly touch on values in the process of scientific development. Some of his thoughts may not be unfamiliar, such as the relationship between the divine value in a science. This is due to Ibn Khaldun's background as a Muslim philosopher. What is interesting to note is how Ibn Khaldun views science from a socio-

[24] Abdurrahman, 123.
[25] Abdurrahman, 123.

economic perspective, such as how economic value influences scientific life and from there can lead to crimes that then masquerade as science.

On the other hand, from the results of the investigation, it can be seen how Ibn Khaldun then sees the relationship between economic value and science also related to the civilization of a country. The level of civilization of a country that affects the economic needs of society will indirectly affect the development of science. In addition, civilization will also indirectly relate to how political influences affect science or vice versa. Ibn Khaldun actually highlights how science intervenes in political policies, not vice versa. This is somewhat different from the axiology of science in general, which instead focuses on how political interventions affect the development of a science.

Recommendations

Research related to the exploration of the philosophy of science among Muslim philosophers needs to be enhanced, especially regarding specific branches of the philosophy of science, such as the metaphysics of science, epistemology of science, axiology of science, and sociology of science. Researchers suggest further research on other aspects of the philosophy of science that can still be explored from Ibn Khaldun's thoughts. Ibn Khaldun's focus on civilization is closely related to the sociology of science, so further exploration of Ibn Khaldun's sociology of science is needed.

Acknowledgments

On this occasion, the researcher would like to express gratitude to those involved in this research. The researcher expresses gratitude to the Master's Program in Aqidah and Islamic Philosophy as the educational institution where knowledge is currently being sought. The researcher also extends thanks to the Faculty of Philosophy at Gadjah Mada University, as the place where knowledge was gained at the undergraduate level, and for their assistance in facilitating the search for literature sources used in this research. The researcher also expresses thanks to the lecturers and fellow students who supported the academic activities of the researcher, both at the undergraduate and master's levels.

References

Abdurrahman, Muhammad bin Khaldun. *Mukaddimah Ibnu Khaldun*. Pustaka Al Kautsar, 2001.

Ahmad Syafii Maarif. *Ibn Khaldun dalam Pandangan Penulis Barat dan Timur*. Gema Insani, 1996.

Akhmad Satoni & Sulaiman Kurdi. *Sketsa Pemikiran Politik Islam*. Yogyakarta: Deepublish, 2016.

Anton Bakker & Achmad Charris Zubair. *Metodologi Penelitian Filsafat*. Sleman: PT. Kanisius, 1990.

Hafidz. "Watak Peradaban Dalam Epistemologi Ibnu Khaldun: Suatu Studi Epistemologi Ibnu Khaldun Sebagai Analisa Untuk Merekonstruksi Epistemologi Pendidikan Islam." Tesis Kedoktoran, Universitas Gadjah Mada, 2007.

Jujun S Suriasumantri. *Ilmu Dalam Perspektif Moral, Sosial, Dan Politik*. PT. Gramedia Pustaka Utama, 1986.

Muhammad Abdullah Enan. *Biografi Ibnu Khaldun*. Serambi Ilmu Semesta, 2013.

R. Mulyadhi Kartanegara. *Essentials of Islamic Epistemology: A Philosophical Inquiry into the Foundation of Knowledge*. Universiti Brunei Darussalam, 2014.

Robert Irwin. *Ibn Khaldun: An Intellectual Biography*. Princeton University Press, 2018.

Suparlan Suhartono. *Filsafat Ilmu Pengetahuan : Persoalan Eksistensi Dan Hakikat Ilmu Pengetahuan*. Yogyakarta: Ar-Ruzz Media, 2017.

Suwardi Endraswara. *Filsafat Ilmu*. Media Pressindo, 2021.

Tamara Sonn. *Islam: A Brief History*. John Wiley & Sons, 2010.

Zaid Ahmad. *The Epistemology of Ibn Khaldun*. Routledge, 2004.

Zubair, Achmad Charris. *Etika dan Asketika Ilmu: Kajian Filsafat Ilmu*. Nuansa Cendekia, 2023.