Araştırma Makalesi – Original Article

The Level of Interest in the Fields of Philosophy of Science and History of Science among Academicians at Four Universities in the Central Anatolia Region of Turkey*

Türkiye'nin İç Anadolu Bölgesindeki Dört Üniversitede Akademisyenlerin Bilim Felsefesi ve Bilim Tarihi Alanlarına Duydukları İlgi Düzeyleri

Habib Sarıkaya[i], Ömür Şaylıgil[ii]

[i]PhD. Dr., Eskisehir Osmangazi University, Faculty of Medicine, Department of History of Medicine and Ethics, https://orcid.org/0000-0001-7802-6487

[ii]Prof. Dr. Eskisehir Osmangazi University, Faculty of Medicine, Department of History of Medicine and Ethics, https://orcid.org/ 0000-0001-7517-7503

ABSTRACT

Aim: Determination of the level of interest in the fields of history of science and philosophy of science among academicians will contribute to the identification of the steps to be taken towards a solution to identify the problems that prevent producing knowledge and contributing to science and creating a more suitable scientific environment. The aim of this research is to reveal the level of interest in the fields of philosophy of science and history of science among academicians.

Methods: In this research, conducted with the voluntary participation of 682 academicians from four different universities in the Central Anatolia Region, data were collected through face-to-face interviews between December 2019 and March 2020.

Findings: It was found that 52.3% of the academics were interested in the field of philosophy of science, while 10.1% were very interested in it. While the rate of academics who were interested in the history of science was 63.5%, the rate of those who were very interested in it was 10.7%. The level of interest in the history of science increased with age (p=0.019). Male academics (13.5% very interested) were more interested in the history of science than female academics (7.2% very interested) (p<0.05).

Conclusion: Experienced academicians with a higher academic rank were more interested in the fields of philosophy of science and history of science than academicians with less experience and a lower academic rank. This is explained by the fact that young academicians' perception of science is influenced by post-modernism more, while older academicians' perception is influenced by positivism more.

Keywords: History of Science, Philosophy of Science, Academic

ÖZET

Amaç: Akademisyenlerin bilim tarihi ve bilim felsefesi alanlarına duyulan ilgi düzeylerinin saptanması, bilgi üretmeye ve bilime katkı sağlamaya engel olan sorunların tespit edilmesi yönünde çözüme doğru atılacak adımların belirlenmesine ve daha uygun bir bilimsel ortamın yaratılmasına katkı sağlayacaktır. Bu araştırmanın amacı, akademisyenlerin bilim felsefesi ve bilim tarihi alanlarına olan ilgi düzeylerinin ortaya konulmasıdır.

Yöntem: İç Anadolu Bölgesi'ndeki dört farklı üniversiteden 682 akademisyenin gönüllü katılımıyla gerçekleştirilen bu araştırmada veriler, Aralık 2019 ile Mart 2020 tarihleri arasında yüz yüze görüşmeler yoluyla toplanmıştır.

Bulgular: Akademisyenlerin %52.3'ünün bilim felsefesi alanına ilgi duydukları, %10.1'inin ise çok ilgi duydukları tespit edilmiştir. Bilim tarihine ilgi duyan akademisyenlerin oranı yüzde 63.5 olurken, çok ilgilenen akademisyenlerin oranı ise yüzde 10.7 bulunmuştur. Yaş arttıkça bilim tarihine duyulan ilgi düzeyinin arttığı görülmüştür (p<0.05). Erkek akademisyenlerin (%13.5 çok ilgi duyuyorum) kadın akademisyenlere (%7.2 çok ilgi duyuyorum) göre bilim tarihine daha fazla ilgilendikleri saptanmıştır (p<0.05).

Sonuç: Deneyimli ve akademik unvanı daha yüksek olan akademisyenler, daha az deneyimli ve akademik unvanı daha düşük olan akademisyenlere göre, bilim felsefesi ve bilim tarihi alanlarına daha fazla ilgi duymaktadırlar. Bu durumun genç akademisyenlerin zihinlerindeki bilim algısının günümüzde post-modernizmden, görece daha yaşlı akademisyenlerin ise pozitivizmden daha fazla etkilenmiş oldukları ile açıklanmaktadır.

Anahtar Kelimeler: Bilim Tarihi, Bilim Felsefesi, Akademisyen

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İletişim - Correspondence Author: Habib Sarıkaya <habibsarikaya45@gmail.com>
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Introduction

The most important driving force in the development of societies in our age is science. Today this force continues to be effective in all fields, from education to health, agriculture, industry, and development. The direct relationship between the development levels of countries and their capacity of utilizing scientific data to solve various problems has now turned into a reality that must be accepted.[1]

Developments in all fields are provided by scientists who recognize science, understand the nature of science, and fulfill the requirements of science in those fields. The work of producing knowledge and science in countries is predominantly carried out in universities. Universities are expected to produce science in societies. Turkey is the country with the highest production of university-based publications among European countries. Of the scientific publications in Turkey, 91% are produced by universities.[2]

While the impact of academics on our development is so obvious, revealing their interest in the fields of philosophy of science and history of science in terms of how they view science, how they do science, how they make a distinction between the scientific and non-scientific , and how they make inferences from hypotheses and theories will contribute to the determination of the steps to be taken towards a solution to identify problems that prevent production of knowledge and contribution to science.

History of science and philosophy of science are important elements of the nature of science phenomenon together with the fields of sociology of science and psychology of science. Therefore, determination of the level of interest of academics in the fields of history of science and philosophy of science will equip us with knowledge for determining their approaches to the nature of science.

To give a definition, philosophy of science aims to illuminate the conceptual structure and functioning of science by making use of the method of thinking and analysis specific to philosophy. When we see the production of scientific knowledge as a process, the philosophy of science tries to understand science from a philosophical point of view in matters, such as the fact-theory relationship and the contexts of discovery and verification, by evaluating logical analysis methods, such as concept, hypothesis, induction, and deduction together with processes, such as observation, experimentation, and measurement, that aim to determine facts.[3]

The history of science is a research activity that examines the development process of scientific knowledge. It is the aim of the history of science to examine the conditions of emergence, spread, and use of scientific knowledge and to determine the formation of a certain method, a type of thinking, and even a broad perspective. The task of the history of science is to trace and clarify the birth and development of scientific concepts, theories, and understanding, rather than catalog the facts and inventions.[4]

Even though they are equipped with modern knowledge, it is observed that those who are engaged in scientific activities frequently fall into the mistake that the results they reach are certain and unchangeable facts.[5-6] The increasing interest of academics in the fields of philosophy of science and history of science will increase their awareness of their conditions on the ground of science and will be stimulating and encouraging for them in the process of developing a new concept, phenomenon, and theory.

Revealing the level of interest of academics in the fields of philosophy of science and history of science will contribute to the creation of a more appropriate scientific environment for understanding and comprehending science. The aim of this study is to reveal the level of interest of the academics working in the Central Anatolia Region in the fields of philosophy of science and history of science.

Methodology

This is a cross-sectional descriptive study that was conducted to determine the level of interest in the fields of philosophy of science and history of science in academics working at Eskişehir Osmangazi University, Sivas Cumhuriyet University, Kırıkkale University, and Karamanoğlu Mehmetbey University in the Central Anatolia Region between December 2019 and March 2020. The study sample consisted of 682 academics working at four universities which were determined within the scope of the doctoral study which was conducted at Osmangazi University Health Sciences Institute.

It is necessary to achieve homogeneity in the basic variables that are the basis of our research so that the academics in the study sample can represent the research universe. For this reason, it was thought that the "academic title" and "field of science" variables of the academics in the study sample needed to be of the same homogeneity as the variables in the universe.

Table 1. Categorization of Faculties and Departments in Universities by the Field of Science

Categorized Fields of Science							
Medicine	**Architecture and Engineering**	**Fundamental Sciences (faculties of science and literature)**	**Economics and Administrative Sciences**	**Health Sciences**	**Social Sciences**	**Pharmacy, Veterinary, and Dentistry**	**Educational Sciences**
Faculty of Medicine	Faculty of Engineering and Architecture	Faculty of Science	Faculty of Economics and Administrative Sciences	Faculty of Health Sciences	Faculty of Communication	Faculty of Dentistry	Faculty of Education
	Faculty of Art and Design	Faculty of Literature			Faculty of Theology	Faculty of Pharmacy	
	Faculty of Art, Design and Architecture	Faculty of Science and Literature			Faculty of Law	Faculty of Veterinary Medicine	
	Faculty of Technology						

* Faculty of Law (n=4) was kept under the title of "Social Sciences".

In our study, a categorization and combination were made according to the weights of the faculties and departments in the universities included in the research universe, based on the categorization of the fields of science that was established by the bibliometric research results of the OECD.[7] Accordingly, faculties and departments in 8 different fields of science were combined (***Table 1***). The fields of science categorized in our research were "Medicine", "Architecture and Engineering", "Fundamental Sciences", "Economics and Administrative Sciences", "Health Sciences", "Social Sciences", "Pharmacy, Veterinary, and Dentistry", and "Educational Sciences". The sample group was determined by considering the proportional distribution of the "categorical field of science" and "academic title" variables of the academics in the research universe by faculties and departments.

According to the distribution of categorical science fields and academic titles, it was aimed to reach 260 academics from Eskişehir Osmangazi University, 270 from Sivas Cumhuriyet University, 220 from Kırıkkale University and 150 from Karamanoğlu Mehmetbey University. At Eskişehir Osmangazi University, 91% (n=236) of the targeted number of academicians was reached. At Sivas Cumhuriyet University, 85% (n=228) of the targeted number of academicians was reached. At Karamanoğlu Mehmet Bey University, 82% (n=124) of the targeted number of academicians was reached. In Kırıkkale University, 42% (n=94) of the targeted number of academicians was reached.

The data were collected through face-to-face interviews between December 2019 and March 2020 with the voluntary participation of academics. The data collection tool created within the scope of the doctoral thesis study[8] consisted of three parts. In the first part, demographic information, in the second part, the draft scale of the nature of science for academics, in the third part, the levels of interest in the fields of

history of science and philosophy of science was the main topic. It took around 15 minutes to complete the survey. The participants were asked to answer two questions ("Are you interested in the philosophy of science?" and "Are you interested in the history of science?") on a 5-point Likert-type data collection tool which was developed by the researcher. Percentage distributions and chi-square test were used in the statistical evaluation of the data. The data has been collected in accordance with the principles of voluntariness and the Helsinki Declaration.

This study was approved by the Eskisehir Osmangazi University Non-Interventional Clinical Research Ethics Committee within the scope of a doctoral thesis study which was conducted at Eskisehir Osmangazi University Health Science Institute (Decision Date and No: November 13, 2018-14).

Findings

Of the academics in the four universities in the research universe, 31.8% were from the field of Medicine, 1.3% from Law, 14.4% from Architecture and Engineering, 17.7% from Fundamental Sciences, 8.2% from Economics and Administrative Sciences, 5.0% from Health Sciences, 4.8% from Social Sciences, 8.9% from Pharmacy, Veterinary, and Dentistry, and 5.5% from Educational Sciences.[9] The distribution of the academics participating in our study by their categorical fields of science was determined to be as follows: 21.8%, Medicine; 0.6%, Law; 19.2%, Architecture and Engineering; 17.9% from Fundamental Sciences; 10.1%, Economics and Administrative Sciences; 5.4%, Health Sciences; 5.9%, Social Sciences; 8.7%, Pharmacy, Veterinary and Dentistry; 10.4%, Educational Sciences. The distribution of the academics in the sample group by their fields of science was largely similar to the distribution of the academics in the selected universities by their fields of science (***Table 2***).

Of the academics in the universities in the research universe, 13.6% were Professors, 8.9% were Associate Professors, 39.8% were Lecturers (the titles of Faculty Member, Lecturer, and Lecturer, PhD were combined under the title "Lecturer"), and 42.6% were Research Assistants (the titles of Research Assistant and Research Assistant, PhD were combined under the title of "Research Assistant").[9] Of the academics participating in the study, the title of 13.5% was Professor, 14.4% was Associate Professor, 28.9% was Lecturer (the titles of Faculty Member, Lecturer, and Lecturer, PhD were combined under the title of "Lecturer"), and 42.6% was Research Assistant (the titles of Research Assistant and Research Assistant, PhD were combined under the title of "Research Assistant") (Table 2). The distribution of the academics in the sample group according to their academic titles was similar to the distribution of the academics in the research universe (***Table 2***).

Table 2. Distribution of Academic Titles and Categorical Science Field Variables According to Research Universe and Sample

	Research Universe*		**Sample**	
Fields of Science	**%**	**n**	**%**	**n**
Medicine	31.8	1346	21.8	149
Law	1.3	55	0.6	4
Architecture and Engineering	16.8	712	19.2	131
Fundamental Sciences	17.7	750	17.9	122
Economics and Administrative Sciences	8.2	347	10.1	69
Health Sciences	5.0	212	5.4	37
Social Sciences	4.8	203	5.9	40
Pharmacy, Veterinary and Dentistry	8.9	377	8.7	59
Educational Sciences	5.5	233	10.4	71
Total	**100.0**	**4235**	**100.0**	**682**
Titles				
Professor	13.6	576	13.5	92
Associate Professor	8.9	377	14.4	98
Lecturer	34.9	1478	29.5	201
Research Assistant	42.6	1804	42.6	291
Total	**100.0**	**4235**	**100.0**	**682**

***** The data in the research universe were taken from YÖK's Higher Education Information Management System in July 2020.

The mean age of the academics participating in the research was 38.4±9.7 years. Regarding the age distribution, 43.1% of them were in the 24-34 age group, 31.1% in the 35-44 age group, 16.9% in the 45-54 age group, and 8.9% in the 55-and-over age group. The mean length of participants' experience in the academy was 11.6±9.52 years. Also, 26.2% of the academics had a total academic experience of 1-4 years, 42.5% 5-14 years, 17.6% 15-24 years, and 13.6% 25 years or more (***Table 3***).

Table 3. Distribution of Academics by Gender, Age, Academic Year of Experience, Universities, Categorical Fields of Science, and Academic Titles

Gender	**N**	**%**	**Categorical fields of science**	**N**	**%**
Female	304	44.6	Medicine	149	21.8
Male	378	55.4	Architecture and Engineering	131	19.2
Age			Fundamental Sciences	122	17.9
24-34	294	43.1	Economics and Administrative Sciences	69	10.1
35-44	212	31.1	Health Sciences	37	5.4
45-54	115	16.9	Social Sciences*	44	6.5
≥55	61	8.9	Pharmacy, Veterinary, and Dentistry	59	8.7
Academic experience (year)			Educational Sciences	71	10.4
1-4	179	26.3			
5-14	290	42.5	**Academic title**		
15-24	120	17.6	Professor	92	13.5
≥25	93	13.6	Associate Professor	98	14.4
University			Faculty Member	184	27.0
Eskişehir Osmangazi University	236	34.6	Lecturer**	17	2.5
Sivas Cumhuriyet University	228	33.4	Research Assistant	153	22.4
Karamanoğlu Mehmetbey University	124	18.2	Research Assistant, PhD	138	20.2
Kırıkkale University	94	13.8	**Total**	**682**	**100**
Total	**682**	**100**			

* The fields of "Law" (n=4) and "Social Sciences" (n=40) were combined under "Social Sciences."

**The titles of Lecturer, PhD (n=4) and Lecturer (n=13) were combined under the title 'Lecturer.'

Of the academics in the sample group, 34.6% were from Eskişehir Osmangazi University, 33.4% were from Sivas Cumhuriyet University, 18.2% were from Karamanoğlu Mehmetbey University, and 13.8% were from Kırıkkale University (***Table 3***).

In our study, it was found that 52.3% of the academics were interested in the field of philosophy of science, and 10.1% were very interested. While the rate of academics who were interested in the history of science was 63.5%, the rate of those who were very interested was 10.7% (***Table 4***).

While the level of interest of academics in the philosophy of science did not show a difference by age and gender ($p<0.05$), it indicated a difference by the academic year of experience. Experienced academics were more interested in the philosophy of science than less experienced academics ($p=0.001$) (***Table 4***).

The level of interest of academics in the field of history of science differed by gender, age, and academic year of experience. Male academics were more interested in the history of science than female academics ($p=0.034$). The level of interest in the history of science increased with age ($p=0.019$). It was determined that experienced academics were more interested in the history of science than less experienced academics ($p=0.001$) (***Table 4***).

Tablo 4. Distribution of Academics' Level of Interest in the Philosophy of Science and History of Science by Gender, Age, and Year of Academic Experience

	Are you interested in the philosophy of science?						
	Not interested at all %	Not interested %	Neutral %	Interested %	Very interested %	N	p
Gender							0.395
Female	4.3	18.1	17.8	52.0	7.9	304	
Male	4.5	16.4	14.6	52.6	11.9	378	
Age							0.084
24-34	5.8	17.3	19.7	50.0	7.1	294	
35-44	2.8	19.8	12.3	54.7	10.4	212	
45-54	4.3	13.0	17.4	51.3	13.9	115	
≥55	3.3	14.8	8.2	57.4	16.4	61	
Academic experience (year)							0.001
1-4	6.7	24.0	21.2	40.2	7.8	179	
5-14	3.8	14.5	13.4	58.6	9.7	290	
15-24	4.2	17.5	17.5	53.3	7.5	120	
≥25	2.2	11.8	11.8	54.8	19.4	93	
Total	**4.4**	**17.2**	**16.0**	**52.3**	**10.1**	**682**	
	Are you interested in the history of science?						
	Not interested at all %	Not interested %	Neutral %	Interested %	Very interested %	N	p
Gender							0.034
Female	2.0	14.8	12.8	63.2	7.2	304	
Male	1.9	9.5	11.4	63.8	13.5	378	
Age							0.019
24-34	2.7	15.3	15.0	60.5	6.5	294	
35-44	1.4	9.0	9.4	66.5	13.7	212	
45-54	1.7	7.8	12.2	66.1	12.2	115	
≥55		13.1	6.6	62.3	18.0	61	
Academic experience (year)							0.001
1-4	4.5	17.3	16.8	55.3	6.1	179	
5-14	1.0	10.7	10.7	66.6	11.0	290	
15-24	0.8	10.0	10.0	69.2	10.0	120	
≥25	1.1	7.5	9.7	62.4	19.4	93	
Total	**1.9**	**11.9**	**12.0**	**63.5**	**10.7**	**682**	

In the distribution of the level of interest in the philosophy of science by academic titles, Research Assistants, PhD were found to be less interested in philosophy of science than Professors and Associate Professors (p=0.032) (***Table 5***). The higher the academic title was, the higher the level of interest in the field of history of science was (p<0.01). The rate of interest in the history of science was 84.8% in Professors (67.4%, interested; 17.4%, very interested), 82.6% in Associate Professors (66.3%, interested; 16.3%, very interested), 78.3% in Faculty Members (67.4%, interested; 10.9%, very interested), 70.6% in Lecturers (64.7%, interested; 5.9%, very interested), 72.5% in Research Assistants (61.4%, interested; 11.1%, very interested), and 58.0% in Research Assistants, PhD (55.8%, interested; 2.2%, very interested) (Table 5). The level of interest of academics in the fields of philosophy of science and history of science differed by their fields of science. The interest in the philosophy of science in the fields of "Medicine" (6.7%, not interested at all; 22.8%, not interested) and "Pharmacy, Veterinary, and Dentistry" (35.6%, not interested) was considerably lower than in other fields of science (p<0.001) (Table 5). The level of interest in the history of science was found higher in "Fundamental Sciences" (64.8%, interested; 19.7%, very interested), "Social Sciences" (75.0%, interested, 18.2%, very interested), and "Educational Sciences" (67.6%, interested; 15.5%, very interested) than in the fields of "Medicine", "Architecture and Engineering", "Economics and Administrative Sciences", "Health Sciences", and "Pharmacy, Veterinary, and Dentistry" (p<0.001) (***Table 5***).

Table 5. Distribution of Interest Levels in the Philosophy of Science and History of Science by Academic Titles and Fields of Science

	Are you interested in the philosophy of science?						
	Not interested at all %	Not interested %	Neutral %	Interested %	Very interested %	N	p
Academic title							0.032
Professor	2.2	14.1	15.2	54.3	14.1	92	
Associate Professor	5.1	17.3	11.2	54.1	12.2	98	
Faculty Member	2.7	16.3	13.0	54.3	13.6	184	
Lecturer*	5.9	11.8	17.6	64.7		17	
Research Assistant	4.6	14.4	18.3	51.6	11.1	153	
Research Assistant, PhD	7.2	23.9	21.0	46.4	1.4	138	
Field of science							0.001
Medicine	6.7	22.8	20.8	45.0	4.7	149	
Architecture and Engineering	3.8	14.5	24.4	51.1	6.1	131	
Fundamental Sciences	2.5	13.1	9.8	59.0	15.6	122	
Economics and Administrative Sciences	5.8	11.6	8.7	65.2	8.7	69	
Health Sciences	2.7	10.8	13.5	64.9	8.1	37	
Social Sciences**	2.3	6.8	11.4	59.1	20.5	44	
Pharmacy, Veterinary, and Dentistry	6.8	35.6	20.3	30.5	6.8	59	
Educational Sciences	2.8	16.9	8.5	53.5	18.3	71	
Total	**4.4**	**17.2**	**16.0**	**52.3**	**10.1**	**682**	
	Are you interested in the history of science?						
	Not interested at all %	Not interested %	Neutral %	Interested %	Very interested %	N	p
Academic title							0.001
Professor	1.1	4.3	9.8	67.4	17.4	92	
Associate Professor	3.1	7.1	7.1	66.3	16.3	98	
Faculty Member		10.9	10.9	67.4	10.9	184	
Lecturer*		17.6	11.8	64.7	5.9	17	
Research Assistant	0.7	13.7	13.1	61.4	11.1	153	
Research Assistant, PhD	5.8	18.8	17.4	55.8	2.2	138	
Field of science							0.001
Medicine	4.0	18.1	16.8	56.4	4.7	149	
Architecture and Engineering	1.5	7.6	15.3	65.6	9.9	131	
Fundamental Sciences		8.2	7.4	64.8	19.7	122	
Economics and Administrative Sciences		15.9	8.7	68.1	7.2	69	
Health Sciences		21.6	8.1	67.6	2.7	37	
Social Sciences**		2.3	4.5	75.0	18.2	44	
Pharmacy, Veterinary, and Dentistry	5.1	15.3	20.3	52.5	6.8	59	
Educational Sciences	2.8	7.0	7.0	67.6	15.5	71	
Total	**1.9**	**11.9**	**12.0**	**63.5**	**10.7**	**682**	

*The titles of Lecturer, PhD (n=4) and Lecturer (n=13) were combined under the title 'Lecturer.'

** The fields of "Law" (n=4) and "Social Sciences" (n=40) were combined under "Social Sciences."

Discussion and Conclusion

Interest in the history and philosophy of science helps us understand the evolution, foundations, boundaries, and societal impacts of science.[10] This provides a deeper comprehension of science and contributes to overall intellectual development.[11]

The lack of interest in the philosophy of science can pose a series of problems for academics who have chosen science as their profession. The absence of philosophy can impair rationality due to a scarcity of knowledge about abstract principles in the intellectual domain, and it can lead to the marginalization of metaphysics, which carries with it pure curiosity. Science deals with undeniable facts on one hand and general ideas on the other. In this relationship between the two, science provides a foundation for the emergence of new ideas. Academics at universities should primarily instill in their students an interest in coordinating undeniable facts with abstract principles.[12] The coordination of abstract principles referred to here is synonymous with rationality. Alfred North Whitehead (1861-1947) emphasized the importance of rationality, stating the following: "The balance of the mind has become a part of the tradition that seizes upon processed thought. It is the salt that flavors life. The primary endeavor of universities is to transmit this tradition as a widespread heritage from generation to generation".[13]

As a result of the fight against metaphysical elements to narrow the unknown area, positivism led to the formation of disciplines in today's universities with the increase of knowledge in depth. The first step of the branching that started with the effect of positivism in the history of science can be shown as the separation of science from philosophy. Later, the deep proliferation of information on the vertical axis has brought the breakdown on the horizontal axis, and the boundaries of each separate science field have become clear.[14] Today, the influence of positivism continues in the fields of science or natural sciences. The low interest in the philosophy of science and history of science in the fields of Medicine, Architecture, and Engineering, Health Sciences, Pharmacy, Veterinary, and Dentistry, which are fields of science that owe their existence in a way to objective thinking and therefore to positivism, compared to that of social sciences is understood as a reflex of the positivist tradition to avoid metaphysics.

Although Thomas Samuel Kuhn (1922-1996) gave the social sciences the legitimacy of being scientific in the philosophy of science, based on the understanding that no field of science is superior to another, the distinction of social sciences from natural sciences is still felt very strongly today.[15] The low level of interest of the fields of science in the philosophy of science and history of science in our research shows that positivism still has suspicions of the scientific nature of the fields of philosophy of science and history of science.

Metaphysics is the provocative aspect of philosophy where questions are freely asked without being confined to conventional boundaries, always keeping curiosity and skepticism close by, thus instilling courage. Being distant from the philosophy of science means staying distant from these qualities of metaphysics. Robert Maynard Hutchins (1899-1977) expressed this matter by saying: "The purpose of higher education is wisdom. Wisdom is knowing principles and reasons. Therefore, metaphysics is the highest wisdom... A university cannot exist without metaphysics."[16] When viewed from this angle to contemplate philosophy, and consequently metaphysics, independently of science is to accept the absence of one of the essential foundations of a meaningful university education.

It can be thought that the underlying reason why professors and associate professors are more interested in the philosophy of science and the history of science than the research assistants is that they have a holistic approach to science with the academic experience they have gained. On the other hand, while the value of science as perceived by academics who hold the title of professor and associate professor may have been more affected by positivism, which is the understanding of the philosophy of science in the modern period, the value of science as perceived by research assistants may have been affected by the post-modernism today. This situation can be seen as the reason for the difference between professors and associate professors, and research assistants in terms of their interest in the philosophy of science and the history of science. Also, the total academic experience supports this situation regardless of the academic title.

Science historian Koyre asserts that accurate observations about science cannot be made without taking into account all aspects of the history of science, that is, without comprehensively considering the history of science. According to him, scientific teachings should be understood within their historical frameworks. In the studies of the history of scientific thought, the examined works should be placed within their intellectual and conceptual context, and the mental practices, preferences, and reservations of the authors should be interpreted. It is also necessary to integrate the history of scientific thought with the situations that precede and accompany it.[17]

In this study, a lower interest in the history of science has been observed among young academics. The history of science enables us to understand the past and development of science. Understanding past developments helps us grasp the origins of our current scientific knowledge and allows us to see the solidity of the foundation on which new knowledge will be constructed.[18] It should be noted that knowledge that is not built on a solid foundation can turn into rubble at the slightest shake.

The apparent indifference of academics who have chosen scientific endeavors as their profession towards the history and philosophy of science, viewing these fields as unrelated to their domain, could potentially render them superficial and lacking depth. In the words of the Spanish philosopher José Ortega y Gasset, (1883-1955) the following observations are particularly striking concerning a scientist with a standard education[19]: "...he is ignorant about everything that is not within his field of expertise and that he does not know specifically. I have no choice but to call him a knowledgeable ignorant, and this is a very delicate situation. The ignorance in question is not the ignorance of the ignorant person, but the ignorance of the educated person with all his crankiness."

This perspective highlights the implications of the academic community's neglect of broader intellectual pursuits, underscoring the potential repercussions of confining knowledge within the boundaries of one's specialized field.

Our research reveals a low interest among academics in the fields of philosophy of science and history of science, which raises the possibility that it might be a consequence of the transformation of universities as institutions. The development of universities is historically evaluated in three generations reflecting changes in society.[20] The first generation universities focused on education, the second generation universities were oriented towards both education and research, and finally, the third generation universities primarily focus on contributing to the economic and social development of countries.[21] Todays universities are predominantly characterized by the features of third-generation universities, influenced by globalization.[20,22] In the current competitive environment, where the material value creation potential of knowledge is emphasized, universities prioritize the utility and reciprocity of knowledge over its closeness to truth. Such an approach blurs Whitehead's rationality, which anticipates the coordination of abstract principles, and renders Hutchins' wisdom irrelevant.

In our study, it was determined that male academics were more interested in the history of science than female academics. It can be stated that this situation is consistent with the feminist criticisms that have been expressed more strongly in recent years and the discourse on gender inequality in science.

The main criticism of the established science methodology by feminist theorists is that the existing sciences are a result of the male perspective and therefore do not take into account the female experience. According to this criticism, human knowledge is largely based on experience. Undoubtedly, the human experience differs according to the action that people take, the social context they are in, and the type of relationships they establish. According to feminists, women's experiences historically differ systematically from that of men. Established institutional scientific knowledge includes a part of human experience,

namely the experiences of men. According to feminists, it is unacceptable to see them as the common experience of humanity. [23]

When we look at the history of science, we see a lot of male names besides the developments.[24] When we consider the reasons for this, the shallow idea that "men are more prone to do science than women" can only find a place for itself in the patriarchal structure, but the main point to be understood is that the gender inequality originating from the tradition affects the values in the work of producing science, and the male mentality reaches a centralized structure, thereby making its own norms accepted in the continuity of science with its general dominance. There is various evidence that the society of historians of science and scholarship in the history of science are held by men and that women are excluded in this field.[25]

Throughout history, gender inequality has been influential in many areas of life, including health. This inequality has also manifested itself in the field of science. The assumption that women should be limited to secondary roles preserves the fact that women's contribution to science is misrepresented.[26]

The concept of "scientist" (*whose translation has a masculine reference in Turkish*) in the masculine structure of positivism, which is the understanding of science in the modern period, has begun to transform into the concept of "person of science" (*which has no gender reference as it means a person who deals with science*) in the subjective understanding of science of post-modernism, which is the basis for the rise of feminism. Considering that the subject who does science has recently turned into an egalitarian concept (person of science), the low level of interest of women in the field of the history of science with male figures in its catalogs can be explained by the fact that the inequality in this field is deeper than it looks.[27]

In conclusion, it was found in this research that the level of interest of academics in the history of science and philosophy of science differed by their fields of science, experienced academics were more interested in philosophy of science and history of science than less experienced academics, professors and associate professors were more interested in philosophy of science and history of science than research assistants, and that male academics were more interested in the history of science than female academics.

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The authors declare that they comply with the Law on Protection of Personal Data and copyright regulations applicable to intellectual and artistic works.

Ethical Approval

Ethics committee approval was obtained from Eskişehir Osmangazi University Non-Interventional Clinical Research Ethics Committee for this study (date and number: 13.11.2018-14).

Author Contributions

Habib Sarıkaya: Idea/concept, design, data collection and processing, literature review, article writing,

Ömür Şaylıgil: Idea/concept, control/supervision, analysis or interpretation, literature review, article writing, critical review.

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