

# A Philosophical Perspective Analysis of Researches in Positivism and Interpretivism Paradigms

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## Abstract

**Background and Objectives:** Given that developing the useful paradigm makes novel and philosophical specifications for administrators of various fields of health-care dealing with humans. Despite positivistic research and quantitative methodology have much to offer in health research, many questions in healthcare management (HM) cannot be answered by these approaches; such weaknesses of utilizing only a “functionalist paradigm” in HM researchers, tend us to examine a variety of research approaches which may find useful to meet the needs of understanding their environment and purposed as aim of this paper. **Methods:** Thirty HM articles analyzed using a meta-analysis method based on a philosophical perspective from inform research design field. **Findings:** We seek not to make an argument about which methodological paradigm is best, rather we present the reader with a paradigm view of each. Despite dominant of functionalist paradigm in many HM researches, we found necessary new HM approaches based on interpretive paradigm. Helpful instances of these approaches in term of HM are explored in descriptive data mining and Health Technology Assessment. **Conclusions:** This study indicated that in some articles of HM the “Functionalist” paradigm, whereas new challenges are raised for many shift paradigm as a significant requirement. Although this is not a general conclusion about the field of HM researchers, but this is conclusive that HM researchers consider combining approaches rather than just rely on traditional methods. Realizing both objective and subjective knowledge in HM required discussion of the research paradigms, which achieved more by “functionalism” and partly by “interpretive” paradigms.

**Keywords:** *Paradigm, Epistemology, Ontology, Methodology, Health Technology Assessment (HTA), Social Capital.*

## 1 Introduction

Philosophy can be defined as the questioning of basic fundamental concepts and the need to embrace a meaningful understanding of a particular field; the discipline of philosophy

can be used to allow research to be viewed in a certain way, by using particular accepted approaches [1] Another study suggests needing of natural science in phenomenological philosophy [2]. To accommodate these radically non-classical phenomena, a new philosophical foundation is called for: phenomenology; “Phenomenological philosophy” is brought into focus for use in theoretical physics via qualitative work with topology and hyper complex numbers.

While trial designs and other positivistic research methods have much to offer in health research, their promotion – which are indicators of “functionalist” paradigm – can be misplaced. Many questions about health care are not amenable to randomized controlled trials: For example, a randomized trial could not research the question of the number of people who die every year as a result of waiting too long with severe chest pain before calling an ambulance for ethical and practical reasons; A randomized controlled trial design cannot answer the question of why – it cannot explore what is going on in a person’s life and relationships that may have influenced them to delay seeking help. Herein lies one of the weaknesses of utilizing a positivist, quantitative methodology [3].

Tavakol and Zeinaloo have compared philosophical contrast between two different inquiries approaches, with the aim of creating structure for an effective medical inquiry paradigm [4]. They surveyed these facts that while a quantitative (positivistic) inquiry can measure the incidence, the prevalence and the odds ratio, it cannot answer “why,” for example “despite improving medical technology, why asthma is getting worse?” Qualitative (naturalistic) studies are concerned with answering questions such as “What is X, how does X vary in different circumstances?” Therefore, qualitative research can complement quantitative research by exploring areas not amenable to quantitative research on its own. Thereupon, both of them can enhance the validation of research: Quantitative research can help to answer the ‘how many, how often’ questions but qualitative research can help to illuminate ‘why’ questions.

The study of Ryan and Farrelly was tried to describe patients’ experiences of living with advanced heart failure and has found that there may be an illogical but enduring ethos of ‘cure’ pervading health care worker’s attitudes to this disease [5] Lavoie describes the dimension of “interpretive” researches as “free from the objectivist bias” and correspondingly qualitative/interpretive aspects of research in favor of the quantitative/predictive aspects [6]. This study claims that “objectivism” prevents researchers from understanding the real world or from improving upon their theoretical and empirical knowledge. But on the other hand, “interpretive” paradigm alters style of scientific discourse from neoclassical works, because it comes more and more to reflect an interesting rivalry among divergent perspectives, each begging for clear interpretation from the others, rather than a monolithic system of objectively “tested” quantitative relationships which neither asks for nor seems to require any interpretation.

“Interpretive research” is used here to broadly describe social inquiry that derives knowledge claims from the interpretation of lived experiences of individuals or groups; As such it is a subset of qualitative research that assumes that social reality is locally

and specifically constructed [7].

### 1.1 The idea of “Health and Trust”

The idea of “social capital” is made such an enduring impact on the contemporary academic research and policy agenda largely because of the attention it has focused on the role and strength of civic associations [8]; The study of Szreter and Woolcock is attempted to outline the policy implications which such a revised theory of social capital would have for the public health field. Also they would argue that taking seriously the concept of linking social capital problematizes in particular the quality of relationships whenever and wherever resources might flow across perceived power gradients. They believe that improving human health requires both the entitlement to appropriate ‘material’ needs and the capability to benefit from it, which is so often mediated through social relationships.

The report of World Health Organization (WHO) surveyed increasing efforts in recent years to documents what appear to be a rather close link between social capital and health, and based on data from the 21 countries, which covered by the European Social Survey (ESS), confirms this close relationship [9]; in this way, social capital is measured for each of these countries as a weighted mean of individuals’ self-reported rate of trust (Fig. 1); The question’s exact wording is: “Generally speaking, would you say that most people can be trusted, or that you can’t be too careful in dealing with people?” The positive relationship is evident and the correlation rather strong (0.51).

### 1.2 Decision-making by “Health technology assessment”

Health technology assessment (HTA) studies explore an interpretive paradigm in HM researches. HTA is ‘the multidisciplinary field of policy analysis that studies medical, social, ethical and economic implications of development, diffusion and the use of health technology’ [10].

In policymaking respect of HTA, the metaphor of a bridge is often presented to explain the pragmatic and translational features of HTA: it is the bridge between the community of scientists who produce valid evidence of the impact of technology and policymakers who make decisions that govern healthcare systems and organizations about related topics [11]. Therefore, from the ‘policymaker’ perspective, HTA is a vital support for making rational and credible decisions and requires that the inputs fit with the general framework according to which decisions are made (e.g. timing and underlying values). Also from the scientific community perspective, the bridge is a strong call for focusing evaluation research on salient issues that can be governed by decision makers; ‘building the bridge’ requires scientists to serve the needs of policymakers with good science.

It is fundamental to provide a definition of technology to understand the meaning and scope of HTA. While in the past the term has been often limited to ‘hard’ medical

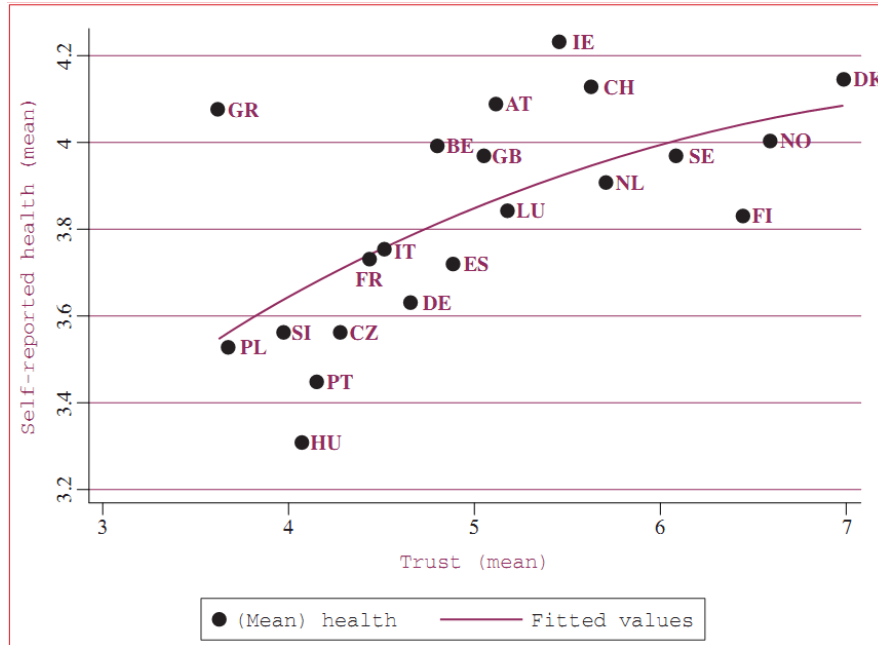


Figure 1: Health and trust in 21 European countries; Source: [9] Note: AT = Austria; BE = Belgium; CH = Switzerland; CZ = the Czech Republic; DE = Germany; DK= Denmark; ES = Spain; FI = Finland; FR = France; GB = the United Kingdom; GR = Greece; HU =Hungary; IE = Ireland; IT = Italy; LU = Luxembourg; NL = the Netherlands; NO = Norway; PL = Poland; PT = Portugal; SE = Sweden; SI = Slovenia.

technologies, such as CT scanners or robots, with time, HTA has increasingly made reference to health technologies as ‘applied knowledge’ used in the healthcare sector or to improve health [12]. While evidence-based medicine (EBM) tries to integrate individual clinical expertise with the best available external clinical evidence from systematic research, HTA incorporates the aims of EBM and makes reference to systematic research with broader goals: to offer guidance to decision making at all levels (including health policies at a macro level) and to assess interventions from a larger societal perspective to include economic, social, ethical, and organizational impacts.

A major feature of HTA is its multidisciplinary content. Policymaking requires an overall assessment of the main aspects that may be impacted by technologies. While efficacy measurements require medical and clinical epidemiologic expertise, the evaluation of other dimensions requires a different type of expertise. For example, for implantable medical devices, engineering and information technology (IT) expertise may be important to make an overall safety assessment. Moreover, genetic technologies and other interventions may raise ethical concerns and thus may require a specific assessment according to ethical standards. In addition, technologies may have an impact on models

Table 1: Dimensions of Philosophical Paradigms and their Dominant [18]

		The sociology of Radical change			
		Radical humanism		Radical structuralism	
Subjective		Interpretive Sociology		Functionalist Sociology	
					Objective
				Positioning Design/Planning BCG	
		The sociology of regular change			

of care (e.g. they may favour home care) or may influence personal behaviors (e.g. contraceptive devices) and thus need to be investigated from sociological perspectives [11]. The work is based on the idea that HTA organizations have a responsibility to produce assessments that are as useful as possible to their users, ultimately benefiting public health and well-being.

Ethical analysis both specifies this responsibility to the HTA organization and functions as a tool to help fulfil it. HTA is never value-free, so making values explicit is the key to increasing the international transferability and policy relevance of HTA [13]. Finally, ethical analysis within HTA can provide insight into these issues, and assist decision-makers in interpreting information in a policy-relevant way [14].

In I.R Iran, the book of HTA is online available placed by Ministry of Health and Medical Education of IR. [15].

## 2 Methods

Thirty articles of Healthcare Management Researches analysed using a meta-analysis method based on a philosophical perspective from inform research design field. Selecting articles is a randomly and therefore, the findings of this research cannot be necessarily generalized to the whole healthcare management field.

From a sociological viewpoint, Burrell and Morgan created the framework for four sociological paradigms which are now widely used to convey a standpoint on a particular issue [16]. Those four paradigms were functionalist, interpretive, radical humanist and radical structuralist.

In many fields of management research, the dominant paradigm of scholars is “Functionalist”; for instance, in Information Systems (IS) only 3.8% of all IS research was “interpretive” [17] or in strategic management [18], as is illustrated in table 1.

Table 2: Ontological and Epistemological Underpinnings of Sociological Paradigm, [19]

Metaphysical Paradigm [16]	Ontology	Epistemology
Functionalist	Objectivist: direct observation of concrete reality	Empirical inquiry, scientific method, inductive logic
Interpretive	Subjectivist: social reality intersubjectively constructed	Based on systemic models
Radical humanist	Relativist: social reality Deconstructed	Dialectic inquiry
Radical structuralist	Post-relativist, change ontology	Post-relativist, change ontology

Epistemology in this context refers to the nature of knowledge or how we come to know certain things about the world. In the context of health care, an understanding is necessary of how certain research methods and certain approaches to data collection have emerged from vastly different traditions, and, importantly, how they produce different understandings of the social world [3]. Each of above sociological paradigms in terms of their ontological and epistemological underpinnings that are summarized by as table 2: [19].

### 3 Results

In some studies, about subjective properties, there are observed from perspective sociological that “fundamental change” and in a subjective environment is its main challenge; Thus we find that its paradigm is “interpretive” [2].

Broom and Willis abound a research on HM from newspaper and television documentaries to web sources and academic journals [3]; this study examines broad traditions in health research, from positivism to interpretivism, exploring the implications of these traditions and the various methodological approaches derived from them for health research. Finally, this research aims to provide an “interpretivism” overview of what might be broadly call research paradigms on health.

The “interpretive paradigm” is evident in anti-positivist literature of the Lavoie research [6]. Walther et. al have focused on theoretical framework of research quality and claimed that “interpretive” paradigm helps to inform the development of this framework [7]. The study of Szreter and Woolcock emphasizes the role of community on the agents and moreover, considers society as a fully integrated structural of elements [8]; These assumptions reflect the characteristics of the “objective attitude” and “Sociology regulation”. So this study is in the “functionalist” paradigm.

Other functionalist paradigms illustrate [50, 21], which have used positive epistemology and nomothetic methodology using predictive knowledge mining.

Science that the study of Tavakol and Zeinaloo attends on “structural relationship in a realistic society world,” so uses “interpretive” paradigm [4]; also this is occurred in the

study of Ryan and Farrelly, [5] because that they tried to describe patients' experiences of living, so the important care of this study is opinion of people who are directly involved with the issue, therefore it has an "anti-positivism epistemology"; moreover, their methodology was qualitative and open unstructured interviews were audio-taped.

HTA needs to be understood in the context of evidence-based health delivery and policy, which calls for decision making in the healthcare sector and beyond to be based on a systematic analysis of scientific evidence of the effects of interventions [11].

We found dominant interpretive paradigm in HTA studies, which use problem-focused scientific evidence to make policy and organizational decisions. Saarni et. al say modern health technology (and HTA as part of it) can be seen as an "imperialistic" approach towards other health-care ideologies, emphasizing as it does rational, mechanical, non-intuitive and non-emotional ways of thinking [13]. Further they believe, integrating ethics and HTA does not necessarily have to enforce this way of thinking.

Finally, other examples of "interpretive paradigm" can be found at these HM researches: Aqil, et. al argue that based on documented weaknesses of routine health information systems (RHIS), they have developed the Performance of Routine Information System Management (PRISM) framework, which offers a paradigm shift by putting emphasis on RHIS performance and incorporating the organizational, technical and behavioural determinants of performance [22].

In another study about expansion of primary health care (PHC), a family medicine (FM) program has been implemented, a model of social insurance, aiming to identify facilitators of and barriers to implementation of FM in IR Iran [23].

The importance of people who have been asked in the survey by WHO indicates it has an "anti-positivism epistemology" [9]; Also according to ideographic methodology and voluntarism approach in human nature of, it is classified in the "interpretive" paradigm.

Warelow has considered the changing philosophical and theoretical construction of nursing which has moved from an initial focus on positivism and science, and undergone a paradigmatic shift so that it is now being interpreted by some nursing theorists in alternative ways [24]. Wilson, et al used a "critical interpretive synthesis" (CIS) approach, to develop a theoretical framework based on insights drawn from a range of relevant sources [25].

## 4 Discussion

Expanding philosophical viewpoint to four articles in 2011-2014 of common authors, which have used "Data Mining" (DM) techniques in healthcare (specially using surgery data), we found: (i) We see in part of articles -[26]-[27] and [47]-[51]- that the dominant paradigm is "interpretive," due to the use of DM's descriptive approaches or subjective models in supply chain management (SCM) on HM; an interpretive structural modeling approach in SCM subject can be found [28]. (ii) On the other hand, using objective models such as DM's predictive approaches -[29]-[42]- indicates a dominant of "Functionalist" in these HM researches.

We seek not to make an argument about which methodological paradigm is best, but rather to provide the reader with a critical understanding of how the methodologies presented in the following chapters have emerged from, and contribute to, the reproduction of particular understandings of the social and natural world [3]. According to this view, reflected in table 3) (appendix), we present the reader any studied article with a paradigm view of each Philosophical Perspective which explores dominant paradigm rather than another in examined studies.

## 5 Conclusions

This study indicated that in some articles of healthcare management (HM) – such as that we studied – the “Functionalist” paradigm, whereas new challenges are raised for many shift paradigm as a significant requirement. Although this is not a general conclusion about the field of HM researchers, but this is conclusive that HM researchers consider combining approaches rather than just rely on traditional methods. Realizing both objective and subjective knowledge in HM required discussion of the research paradigms, which achieved more by “functionalism” and partly by “interpretive” paradigms. Needing for subjective concepts of HM has been extended interpretivism researches in recent years.

## Abbreviations

(CIS): Critical Interpretive Synthesis; (DM): Data Mining; (EBM): evidence-based medicine; (ESS): European Social Survey; (FM): Family Medicine; (PHC): primary health care, (HM): Healthcare Management; (HTA): Health Technology Assessment; (IT): Information Technology; (IS): Information Systems; (PRISM): Routine Information System Management; (RHIS): routine health information systems; (SCM): supply chain management; (WHO): World Health Organization.

## References

- [1] Burke M E. Making choices: research paradigms and information management: Practical applications of philosophy in IM research. *Library review*; 2007, 56(6): 476-484.
- [2] Rosen S. M., Why natural science needs phenomenological philosophy, *Progress in Biophysics and Molecular Biology*, (In Press); 2015.
- [3] Broom A. and Willis E. Competing paradigms and health research. *Researching health: qualitative, quantitative and mixed methods*; 2007, chapter 2: 16-30.
- [4] [4] Tavakol M. and Zeinaloo A A. Medical research paradigms: positivistic inquiry paradigm versus naturalistic inquiry paradigm. *J Med Educ*; 2004, 5(2): 75-90.
- [5] Ryan M. and Farrelly M. Living with an unfixable heart: a qualitative study exploring the experience of living with advanced heart failure. *European Journal of Cardiovascular Nursing*; 2009, 8(3): 223-231.



- [6] Lavoie D. "The interpretive dimension of economics: Science, hermeneutics, and praxeology." *The Review of Austrian Economics*; 2011, 24(2): 91-128.
- [7] Walther J, et al. "Quality in interpretive engineering education research: Reflections on an example study," *Journal of Engineering Education*; 2013, 102(4): 626-659.
- [8] Szreter S, and Woolcock M. Health by association? Social capital, social theory, and the political economy of public health. *International Journal of Epidemiology*; 2004, 33(4): 650-667.
- [9] Rocco L, and Suhrcke M. *Is Social Capital Good for Health?: A European Perspective*. Copenhagen: WHO Regional Office for Europe, 2012.
- [10] HTA, (2009). *International Network of Agencies for Health Technology Assessment*. HTA Resources.
- [11] Fattore G., et al. (2011). Health technology assessment: what is it? Current status and perspectives in the field of electrophysiology. *Europace*; 13(2): ii49-ii53.
- [12] Banta D. (2003) The development of health technology assessment. *Health Policy*; 63: 121-32.
- [13] [13] Saarni, S I., et al. (2008). Ethical analysis to improve decision-making on health technologies. *World Health Organization*; 86(8): 617-623.
- [14] Autti-Ramo I, Makela M. (2007). Screening for fetal abnormalities: from a health technology assessment report to a national statute. *Int J Technol Assess Health Care*; 23: 436-42.
- [15] Olyaeemanesh A. (2013). *Health Technology Assessment in Islamic Republic of Iran*, Health technology assessment in IR of Iran; is available at: [http://ihta.behdasht.gov.ir/uploads/HTA\\_book\\_English\\_.pdf](http://ihta.behdasht.gov.ir/uploads/HTA_book_English_.pdf).
- [16] Burrell, G. and Morgan, G. (1979). *Sociological Paradigms and Organisational Analysis*, Gower, London.
- [17] Chappell, T. W. (2013). *An information systems quandary: Why is there a dearth of interpretive research in a positivist dominated discipline?*. PhD Thesis, Diss. CAPELLA UNIVERSITY.
- [18] Rostami M. (2011). *How do we think in strategic management?*, ICSM05.
- [19] Korhonen, J., and Hiekkanen K. (2013). *Doing IT Better: An Organization Design Perspective*. Proceedings For the 9th European Conference on Management Leadership and Governance: ECMLG 2013. Academic Conferences Limited.
- [20] Méry, B., et al. Hypofractionated radiation therapy for treatment of bladder carcinoma in patients aged 90 years and more: A new paradigm to be explored?. *International urology and nephrology*; 2015, 47:1129-1134.
- [21] Carson, M B., and Lu H. Network-based prediction and knowledge mining of disease genes. *BMC Medical Genomics*; 2015, 8(2): S9.
- [22] Aqil, A. et al. (2009). PRISM framework: a paradigm shift for designing, strengthening and evaluating routine health information systems. *Health Policy and Planning*; 24(3): 217-228.
- [23] Takian, A. et al. (2011). Expediency and coincidence in re-engineering a health system: an interpretive approach to formation of family medicine in Iran. *Health policy and planning*; 26(2): 163-173.
- [24] Warelow, P J. (2013). Changing philosophies: a paradigmatic nursing shift from Nightingale. *AUSTRALIAN JOURNAL OF ADVANCED NURSING*; 31(1): 36-45.
- [25] Wilson M G., et al. (2014). Processes, contexts, and rationale for disinvestment: a protocol for a critical interpretive synthesis. *Systematic Reviews*; 3(143).

- [26] Sepehri, M. M., Khavaninzadeh, M., Rezapour, M., & Teimourpour, B. (2011). A data mining approach to fistula surgery failure analysis in hemodialysis patients. 18th Iranian Conference of Biomedical Engineering (ICBME), 2011 (pp. 15-20). IEEE. is available at: [ieeexplore.ieee.org/xpl/freeabs\\_all.jsp?arnumber=6168546](http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=6168546).
- [27] [27] Kazemzadeh B R., et al. "Design and analysis of a health care supply chain management." *Advanced Materials Research*; 2012. 433(440): 2128-2134.
- [28] Govindan, K., et al. "Lean, green and resilient practices influence on supply chain performance: interpretive structural modeling approach," *International Journal of Environmental Science and Technology*; 2015, 12(1): 15-34.
- [29] Khavanin Zadeh, Morteza, Mohammad Rezapour, and Mohammad Mehdi Sepehri. "Data mining performance in identifying the Risk Factors of early arteriovenous fistula failure in Hemodialysis Patients," *International journal of hospital research* 2, no. 1 (2013): 49-54. Available at: <http://ijhr.iums.ac.ir/index.php/ijhr/article/view/52/116>.
- [30] Rezapour, Mohammad, Morteza Khavanin Zadeh, and Mohammad Mehdi Sepehri. "Implementation of predictive data mining techniques for identifying risk factors of early AVF failure in hemodialysis patients," *Computational and Mathematical Methods in Medicine* 2013 (2013). URL: <http://dx.doi.org/10.1155/2013/830745>
- [31] Rezapour, M., Sepehri, M. M., & Rezapour, H. (2014). A data mining approach to determine better methods for learners' assessment in e-learning courses. *Management Research in Iran*, 17(4), 139-160.
- [32] Rezapour M, Khavanin Zadeh M., "Association between non-matured arterio-venous fistula and blood pressure in hemodialysis patients," *Medical journal of the Islamic Republic of Iran* 28 (2014): 144. Available at: [http://mjiri.iums.ac.ir/browse.php?a\\_id=2569&sid=1&slc\\_lang=en](http://mjiri.iums.ac.ir/browse.php?a_id=2569&sid=1&slc_lang=en).
- [33] Khavanin Zadeh, M., Rezapour, M., Khavanin Zadeh, E., Balin Parast, M., & Rezapour, H. (2015). The Relationship between Risk Factors of Hemodialysis Patients and Arterio Venous Fistula Maturation at Hasheminezhad Hospital. *Iranian Journal of Surgery*, 22(4), 54-64.
- [34] Rezapour, M., Taran, S., Parast, M. B., & Zadeh, M. K. (2016). The impact of vascular diameter ratio on hemodialysis maturation time: Evidence from data mining approaches and thermodynamics law. *Medical journal of the Islamic Republic of Iran*, 30, 359.
- [35] Rezapour, M., Zadeh Khavanin, and M. Balinparast. "The Role of the Vascular Diameter Ratio in the Arteriovenous Fistula Maturation Time," *The Journal of Vascular Access* 14, no. 1.
- [36] Rezapour M., Sepehri M.M, Khavanin Zadeh M., Alborzi M. (2017). Data Mining Application for Detect Impacts of Infection and Hypertension on Vascular Surgery Complications, 2th International Conference on Knowledge-Based Research in Computer Engineering & Information Technology.
- [37] Rezapour, M., Payani, E., Taran, M., Rajabzadeh Ghatari, A., & Khavanin Zadeh, M. (2017). "Roles of triglyceride and phosphate in atherosclerosis of diabetic hemodialysis patients". *Medical Journal of the Islamic Republic of Iran (MJIRI)*, 31(1), 465-471.
- [38] Rezapour, M., Sepehri, M. M., Khavanin Zadeh, M., & Alborzi, M. (2018). A new method to determine anastomosis angle configuration for arteriovenous fistula maturation. *Medical Journal of the Islamic Republic of Iran (MJIRI)*, 32(1), 365-370.

- [39] Rezapour, M., Zadeh, M. K., Sepehri, M. M., & Alborzi, M. (2018). Less primary fistula failure in hypertensive patients. *Journal of human hypertension*, 32(4), 311. Is available at URL: <https://www.nature.com/articles/s41371-018-0052-3>.
- [40] Rezapour, M. (2018). Forecasting Surgical Outcomes Using a Fuzzy-Based Decision System. *International Journal of Hospital Research*, 7(1), 1-11., [http://ijhr.iuums.ac.ir/article\\_87050.html](http://ijhr.iuums.ac.ir/article_87050.html).
- [41] Sepehri, M. M. & Rezapour, M. (2019). *Medical Data Mining: Efficient Knowledge Discovery from Health Data*. Volume 1, Fater Negar, Hospital Management Research Center, Iran University of Medical Sciences.
- [42] Rezapour, Mohammad. "Predicting Stroke in Hemodialysis Patients Using Data Mining," *Digital Transformation* 1, no. 1 (2021): 45-57.
- [43] Khameneh, M., et al. Using Data Mining for Identify Patients at High Risk to Hepatocellular Carcinoma in the Cirrhosis Liver: Preliminary Report. *Govaresh*; 2014, 19(4): 265-274.
- [44] Gilson, L., and Raphaely N. The terrain of health policy analysis in low and middle income countries: a review of published literature 1994–2007. *Health policy and planning*; 2008, 23(5): 294-307.
- [45] Brand, V. Empirical business ethics research and paradigm analysis. *Journal of Business Ethics*; 2009, 86(4): 429-449.
- [46] Smith, S L. Naïve expertise: spacious alternative to the standard account of method. *Philosophy of Management*; 2010, 9(3): 95-133.
- [47] Rezapour, M., and Nakhostin Ansari, N. "Incidence of Stroke in Hemodialysis Patients with Central Venous Catheter: A Systematic Review," *Journal of Vessels and Circulation* 2, no. 1 (2021): 27-27.
- [48] Rezapour, M., Nakhostin Ansari, N. Khavanin Zadeh, M. and Asadi, R. "Risk of Stroke in Hypertensive Diabetic Chronic Kidney Disease Patients after Central Venous Catheter placement," *Razi Journal of Medical Sciences* 27, no. 8 (2020).
- [49] Rezapour, M., Shadpour, P. Karimi, A. Mousavi Jahromi, Y. and Khavanin Zadeh, M. "Inverse effects of anemia and diabetes mellitus on non-cuffed central venous catheters longevity," *Iran J Vasc Surg Endovasc Ther* <http://ijvset.gums.ac.ir>, 1, no. 1 (2021).
- [50] Rezapour, M, Asadi, R. and Marghoob, B. "Central Venous Catheter placement, Diabetes Mellitus and Hypertension Are Associated with Risk of Cerebrovascular Accident in Hemodialysis patients". *International Journal of Hospital Research* 10, no. 3 (2021).
- [51] Rezapour, M. and Ansari, N.N., 2021. Designing and Producing a Telerehabilitation Mobile Application and a Web-Based Smart Dashboard for Online Monitoring of Patients at Risk of Stroke During COVID-19 Pandemic and Post-Pandemic Era. *International Journal of Basic Science in Medicine*, 6(4), pp.127-131.

Table 3: Identified Analyzed HM Researches from the “Philosophical Specifications” Perspective.

Article Properties					nature of the social sciences				Sociological approach	Dominant Paradigm
ID	Year	Author(s)	Jour / Conf / Thesis / Book	Indexer	Ontology	Epistemology	Human Nature	Methodology	Regulation / Fundamental change	
1	2015	Rosen S. M.	Progress in Biophysics and Molecular Biology	Elsevier	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
2	2007	Broom A. & Willis E.	Researching health: qualitative, quantitative and mixed methods	G-Scholar	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
3	2011	Lavoie D.	The Review of Austrian Economics	Springer	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
4	2013	Walther, J. et al.	Jour. Engineering Education	ProQuest	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
5	2004	Szreter and Woolcock	International Journal of Epidemiology	Oxford	Realism	Positivism	Determinism	Nomothetic	Regulation	Functionalist
6	2012	Rocco and Suhrcke	Guideline Report	WHO	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
7	2013	Chappell T W.	Ph.D. Thesis	ProQuest	Realism	Positivism	Determinism	Nomothetic	Regulation	Functionalist
8	2004	Tavakol M. & Zeinaloo A. A.	J Med Educ	G-Scholar	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
9	2009	Ryan M. & Farrelly M.	European Journal of Cardiovascular Nursing	PubMed	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
10	2011	Sepehri M. M., et al.	ICBME Conf.	IEEE	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
11	2012	Kazemzadeh B R., et al	Adv MATERIALS RESEARCH	Scientific	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
12	2012	Khavanin Zadeh M., et al.	IJHR	ISC	Realism	Positivism	Determinism	Nomothetic	Regulation	Functionalist
13	2013	Rezapour M., et al.	CMMM	ISI	Realism	Positivism	Determinism	Nomothetic	Regulation	Functionalist
14	2013	Rezapour M., et al.	JRMI	ISC	Realism	Positivism	Determinism	Nomothetic	Regulation	Functionalist
15	2014	Rezapour & Khavanin Zadeh	MJIRI	PubMed	Realism	Positivism	Determinism	Nomothetic	Regulation	Functionalist

Table 3 (Contd.)

16	2014	Khameneh, M., et al. [43]	Govaresh	G-Scholar	Realism	Positivism	Determinism	Nomothetic	Regulation	Functionalist
17	2011	Fattore G., et al.	Europace	Oxford	Realism	Positivism	Determinism	Nomothetic	Regulation	Functionalist
18	2008	Saarni, S I., et al.	WHO	WHO	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
19	2013	Olyacemanesh A., et al.	Book	Ministry of Health and Medical Education	Realism	Positivism	Determinism	Nomothetic	Regulation	Functionalist
20	2014	Wilson M G., et al.	Systematic Reviews	Oxford	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
21	2015	Govindan K. et al.	International Journal of Environmental Science and Technology	Springer	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
22	2013	Korhonen & Hiekkänen	European Conference on Management	ProQuest	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
23	2015	Méry, B. et al.	International urology and nephrology	Springer	Realism	Positivism	Determinism	Nomothetic	Regulation	Functionalist
24	2015	Carson & Lu	BMC Medical Genomics	PubMed	Realism	Positivism	Determinism	Nomothetic	Regulation	Functionalist
25	2009	Aqil A. et al.	Health Policy and Planning	Oxford	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
26	2011	Takian A. et al.	Health Policy and Planning	Oxford	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
27	2013	Warelow, P.J.	AUSTRALIAN JOURNAL OF ADVANCED NURSING	PubMed	Nominalism	Anti-Positivism	Voluntarism	Ideographic	Regulation	Interpretive
28	2008	(Gilson L. & Raphaely N., 2008) [44]	Health Policy and Planning	Oxford	Realism	Positivism	Determinism	Nomothetic	Regulation	Functionalist
29	2009	(Brand V., 2009) [45]	Journal of Business Ethics	Springer	Realism	Positivism	Determinism	Nomothetic	Regulation	Functionalist
30	2010	(Smith S L., 2010) [46]	Philosophy of Management	Springer	Realism	Positivism	Determinism	Nomothetic	Regulation	Functionalist

