Pobrane z czasopisma Annales H - Oeconomia **http://oeconomia.annales.umcs.pl**
Data: 31/10/2026 01:14:09

DOI:10.17951/h.2026.60.1.7-20

ANNALES
UNIVERSITATIS MARIAE CURIE-SKŁODOWSKA
LUBLIN – POLONIA

VOL. LX, 1 SECTIO H 2026

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Delphi Analysis as a Method of Image Creation of the Polish Future Hospital

Keywords: Delphi method; organization development; hospital past

JEL: I110

How to quote this paper: Chojnacka, M., & Miciuła, I. (2026). Delphi Analysis as a Method of Image Creation of the Polish Future Hospital. *Annales Universitatis Mariae Curie-Skłodowska, sectio H – Oeconomia*, *60*(1), 7–20.

Abstract

Theoretical background: The development of Polish hospitals is conditioned by a number of specific endo- and exogenous factors attributed to this group of entities. The aforementioned determinants relate to the predominance of prospects for action in conditions of high resource scarcity (both financial and personnel or material). The shape of Polish future hospitals is affected by the uncertainty, complexity, instability and ambiguity of the environment in which they operate. These entities need support (identification, adaptation, implication, assimilation, exploration, evaluation and accumulation) of the organizational system in achieving development goals. The effort to identify the distinctive features that may characterize the hospitals of future was undertaken by prominent Polish researchers. They were invited to participate in

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an expert study carried out using the Delphi method. Their answers allowed the development of an image of the Polish future hospital. This is simultaneously a desirable, probable, credible and possible image.
Purpose of the article: The aim of this study was to identify the characteristics of Polish future hospital. During the research, an expert method implemented by Delphi analysis was used. It included elements of prospective (novel) knowledge. First round involved experts sharing their intuitive assessments, as a result, an impressive set of characteristics was collected. In the next round, respondents received aggregated results based on the first round and were asked to express their individual level of agreement with other experts' positions according to a scale of 1 to 5. There was also space for them to express their opinions or comments. The next step was to compile the collected material and present the results to the survey participants.
Research methods: The study was conducted using the Delphi method, which is a research technique used to achieve consensus among experts in a given field with recognized scientific achievements. In this case, the goal was to develop a vision of Polish hospitals of the future. The study consisted of several rounds, which allowed for clarification of the results. The experts did not know the views of the other participants, which was intended to prevent the "group effect."
Main findings: The results of Delphi study revealed a catalog of priority future characteristics of Polish hospitals. The results of this study will be used in further empirical research. The study provides an overview of future hospital perspectives, as well as recognition of their characteristics. They also provide a pretext for creative insights into the future of hospitals by managers of such facilities. The study also complements the presented approaches, procedures and techniques used in studies of the future. No research relating to image formation of future hospital has been carried out in Poland so far.

Introduction

Today's times make us reflect on the possibility of preparing for a set of events that may take place in the future. Attempts are being made to obtain a picture of the analyzed object in the future through a combination of conscious creation, of what may occur, and unconscious ordering and combining of the information held (Krupowicz, 1997). This procedure is carried out, among others, by exploring and descripting the opinions of highly respected subject matter experts who rely on their own intuition and experience (Wójciak, 2015). As a result, the world is not recognized as such, but rather what people with broad and deep expertise[1] think about reality and how they interpret it. At the same time, which is worth emphasizing, subjectivism is a priori and explicitly acceptable (Cisek, 2009, p. 26). This attempt to create an image of the object in the future sometimes provides an indication of future needs, opportunities, social, economic, technical, natural and cultural risks. Research experience shows that prediction of the future and its forecasting is possible[2] thanks to the work of experts, representing various fields of science. They are the main actors in the heuristic investigation of the essence of matters, which causes the method to be called expert in the literature. However, the term "Delphic method" is more often used. This term is associated with the Greek sanctuary at Delphi, where the

[1] In terms of knowledge skills and experience through practice and education in a specific field.

[2] Possible, which does not mean certain. For example, experts who participated in a 1973 study of tourist travel to the moon indicated, according to the arithmetic mean, that there would be such circumstances as early as 1991. However, the experts did not predict the collapse of the Soviet Union.

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priestess Pythia formulated prophecies on the basis of information gained from the inhabitants. It is worth noting that the method comes in different varieties. The basic types are considered to be (Cisek, 2009, p. 26; Linstone & Turoff, 2002; Loo, 2002):

- the consensus-building Delphi, according to which a common opinion is sought, developing a consensus among experts;
- the Delphi policy, which consists in obtaining an overview of possible positions in a given area.

The use of this method is justified when analyzing problems of a heterogeneous nature, as well as in situations of high volatility, uncertainty, complexity and ambiguity of phenomena. This method gains importance among economists and management practitioners, which is related to the incremental way of organizational development and non-linear planning (Chojnacka, 2021, p. 7; Lichtarski, 2014, p. 94; Perechuda et al., 2012, p. 256).[3]

The aim of the work was to create an expert image of Polish hospitals of the future. It was an attempt to select a catalog of priority and future-oriented features of Polish hospitals. This research is a pretext for a creative look at the future of hospitals from many perspectives. The analyzes carried out are important because Polish hospitals are facing serious changes resulting from the transformation and deregulation processes planned by the Minister of Health (requiring internal restructuring of medical facilities and sometimes their re-profiling). Moreover, this research is important in the context of the Act of June 16, 2023 on quality in healthcare and patient safety, as well as indicators related to it. The presented analyzes complement them and provide a background for future actions. The authors believe that this research may also allow hospital managers to look at the aspect of changes from a different (expert) perspective.

Literature review

Thinking about the future can be oriented in three ways, namely thinking about the desired future or the possible future, as well as thinking about how to create the future. These three indicated perspectives prompt, in turn, either the creation of visions, the construction of scenarios, or the formulation of strategies. At the same time, it is worth remembering that (Klasik et al., 2014, p. 51):

- focusing only on creating visions carries the risk of practicing "sterile dreaming," to the exclusion of recognizing future situational conditions and reflecting on ways to actualize states considered desirable;
- focusing only on the construction of scenarios carries another limitation, i.e., it threatens to stop at the realization of purely cognitive goals;

[3] The incremental approach is to be understood as the object's taking action in response to changes in the external and internal situation, in which the structuring of reality takes place *post factum* (in opposition to the synoptic approach).

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- focusing only on strategy construction carries the risk of taking unrealistic and/or axiologically unjustified actions.

The basic decalogue of principles for thinking about the future includes 10 points. They are summarized in Table 1.

Table 1. Principles of thinking about the future

Principles	
No.	Content
1	View of the current organization's activities from the perspective of an uncertain and multiple future
2	Globalization of reflection on the organization's future in a way that takes into account the growing interdependence of its development problems
3	Recognize and take into account qualitative and non-quantifiable factors in studying the organization's future
4	Maintain balance between respecting the importance of structural and behavioral (mental) inertia factors and taking into account possible abrupt changes that violate the continuity of development processes
5	Attach particular importance to the information resources from the decision-making channels inherent in the organization and its environment
6	Creative alternative thinking about the organization's future challenging the dominant contemporary ideas and views represented by conformist and conservative experts and specialists
7	Modification of structures, behavior and rules of the game as a function of anticipated changes in the political, economic, social and technological environment
8	Thinking about organizational transformation starting with the formation of new skills and competencies of people, especially their imagination and ability to take initiative and bear responsibility
9	Mobilization of internal and external intellectual potential using various forms of creative teamwork
10	Multiplicity and complementarity of approaches, procedures and techniques used in the study of the future

Source: (Klasik, 1993a, pp. 86–90; 1993b).

The multiplicity of approaches to the Delphi method results in a variety of proposed research procedures. Rogalska, for example, leans toward the consensus concept. She recognizes that the procedure should begin with defining the problem (determining the characteristics to be evaluated and the measurement scale). In the second stage, a group of experts should be selected. Rogalska (2010) assumes that "the assumption in the Delphi method is the claim that the concordance of opinions is equivalent to their truthfulness and accuracy. Thus, by definition, opinions that differ significantly from the others will be eliminated, even though they may be correct" (p. 151). The next step should be to send out a survey questionnaire to the experts. After receiving feedback, it is necessary to proceed with statistical inference (verifying differences in opinions). Rogalska recommends verification of normality of the expert opinion distributions and equality of their variances. She then suggests determination of correlation coefficients between expert evaluations (too low means there is no consensus). If there is no agreement, she recommends resending the forms to those whose opinions deviate from the average to revise their views. After receiving the responses, she considers it necessary to perform repeated statistical analyses. Their result is to determine the decision whether to resend the questionnaires for verification, or to reject the expert's opinion,

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or perhaps to accept the evaluation for further calculations. Rogalska (2010) recognizes that "experts do not have to be the best, but only good enough. This avoids the charge that the experts are not competent enough" (p. 151).

The Delphi method involves a multi-stage evaluation by experts of the issue under consideration using controlled feedback. This feedback involves the experts taking into account before the next round of evaluations the aggregated value from the previous round in the form of, for example, an arithmetic mean. In this way, experts can change their opinions, coming to a commonly developed position (Ławnik & Banasik, 2018, p. 118). Expert opinions can also be expressed in fuzzy numbers (Ławnik et al., 2019).

The implementation of the survey can be commissioned to a scientific or consulting organization. Then it can be expected that this specialized institution will help in the formulation of problems addressed to the experts, in the recruitment of respondents, in the monitoring of survey, as well as in the statistical analysis and substantive presentation of results. The culmination of established cooperation is a study that includes final recommendations (Skulimowski, 2018, p. 66; Skulimowski & Kluz, 2016).

There is a systematic increase in healthcare studies that use the Delphi method. This increase in interest was noted two decades ago by Mullen (2003). For example, there are studies that relate to:

- future of managerial competence development in Canadian healthcare (Loo, 1997);
- basics of creating educational campaigns and health promotion (de Meyrick, 2003);
- development of post-merger strategies for the largest university hospital in Europe (Geisler et al., 2010);
- demonstration of the method's effectiveness (as one of five) in the health field (Masum et al., 2010);
- development of indicators to improve educational outcomes at the hospital level (Sadegh Tabrizi et al., 2014);
- proposal to improve the Delphi method for software development and evaluation in medical institutions (Yang et al., 2016);
- apply pertinent and reliable methods for the evaluation of management competencies of Dutch medical residents (Gennissen et al., 2016);
- establish approaches to identifying problems in the Indian healthcare system (Narayanamurthy et al., 2017);
- competencies needed for mental health promotion (Tamminen et al., 2018);
- five initiatives that experienced healthcare leaders believe to be needed for improving the quality of the system. Practical implications (i.e., a set of recommendations) that they would add if they had a wide range of options for policy and organizational change (Barson et al., 2018);
- perceptions of management and leadership orientation, as well as the orientation of future management and leadership in hospitals in Finland (Pihlainen et al., 2019b);

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- perceptions of management and leadership competencies in Finnish hospitals in 2030 (Pihlainen et al., 2019a);
- demonstration of innovative methods and linking them to local efforts aimed at quality improvement in healthcare entities (Reed et al., 2020);
- development of a benchmark for evaluation of smart healthcare (in three iterations, hospital: standardized, excellent, smart) (Liao et al., 2021);
- reveal critical failure factors and barriers to implementing Lean Six Sigma in Italian hospitals (Marolla et al., 2022);
- impact of nurse turnover on the organization (Sawada et al., 2022).

These are only examples of studies that relate to healthcare and in which the Delphi method was the research tool. The review of the available achievements in the literature leads to the conclusion that heuristic research is a valuable way of searching for a path that leads to achieving the desired goal. In addition, it turned out that although the Delphi method is also known to Polish researchers, few authors have published works relating to health care or entities performing medical activities. It is a natural consequence, as well as a researcher's duty, to undertake a scientific search in an area that is poorly recognized or unrecognized.

Research methods

It is a natural consequence, as well as a researcher's duty, to undertake a scientific search in an area that is poorly recognized or unrecognized. This provided an imperative to emerge with a scientifically colored picture of the "hospital of the future." As it was intended, this was to be a Delphi consensus study to develop a view (an idea) of Polish future hospitals in three time zones (closer to a year, intermediate from three to five years and further beyond five years). The meeting place became an online space. Fifty prominent experts, who are representatives of various fields, were invited to participate in the survey. The selection of experts was purposive and was carried out on the basis of scientific, substantive criterion. The purpose of the selection was to invite to participate in the study top-class specialists representing the scientific sphere and having recognized scientific achievements in the environment in the field of presented issues. Fourteen of them (including eight women and six men) accepted the invitation.[4] They were mainly professors and three individuals with doctoral degrees. The scientific criterion was verified on the basis of information in the ORCID database, while verification of the substantive criterion (scope of scientific interest) was made on the basis of literature studies. In the first phase of the study, the experts' task was to answer freely (descriptively)

[4] Ten experts meet the methodological conditions for applying the Delphi method (Okoli & Pawlowski, 2004, pp. 5–29; Paliwoda, 1983, pp. 31–38; Stitt-Gohdes & Crews, 2004, pp. 55–68). Delphi studies have been conducted on groups of 5, 7, 9, and 11 experts (Brockhoff, 2002, pp. 285–311).

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three open-ended questions relating to the characteristics of Polish future hospitals in the perspective of up to one year, three to five years and more than five years.

Each respondent described the features of the future hospital, accompanied by a rationale for the views they expressed. Most of the responses were provided in writing, the exception was two experts who were interviewed. Transcript of the interview formed the basis for notes. The first expert answered on the November 4, and the last on November 30, 2022. The participants of this survey were aware that they were addressing a huge, complex and multifaceted field. They expressed this by formulating thoughts that complemented their statements. It should be emphasized that none of the invited respondents knew what positions had been presented by others. As a result, a research material containing an impressive set of characteristics was collected. Once all the responses were obtained, it was then proceeded to systematize the information and then categorize the areas along the lines of "affinity diagram" technique. This was intended to achieve greater transparency and unambiguity. In this way, cognitive categories and relevant elements for each of the areas studied were extracted. Subsequently, a questionnaire designed for use in the next round presented them in tabular form. Given that most of the experts elaborated on the features included in the closer perspective for the next and subsequent perspectives, while bearing in mind the suggestions of five experts, indicating that there was no need to differentiate the time frames, it was decided to present the features of hospitals according to the respondents' recommendations.

The second round involved the experts being asked to fill out a form containing the characteristics created from the baseline material. The purpose of this stage was to find out the individual level of agreement with the positions of other experts on the picture of the "Polish future hospital." This was enabled by a scale from 1 (with 1 meaning that the respondent strongly disagrees with the description) to 5 (agrees throughout). Space was also provided for respondents to share their opinions or remarks. Both the prepared questionnaire in a Word document and the online form contained seven areas and accommodated a total of 141 questions. Among the content areas mentioned were: hospital environment, infrastructure, technology, finance, patient, staff, suppliers, management. Eleven experts participated in the second round of the survey. Based on the responses obtained, the level of acceptance for each research problem was determined, and the comments and suggestions formulated by the experts were carefully analyzed. The next step was to provide the participants with a summary of the final results (effects of the survey). It is worth mentioning that a high agreement of experts' opinions with regard to the 55 characteristics was obtained, and thus the set goals were met. In addition, it is worth mentioning that the results will be used in further empirical work. The study was conducted without interference and was characterized by a high level of time discipline on the experts' part. A synthetic presentation of the research procedure is shown in Figure 1.

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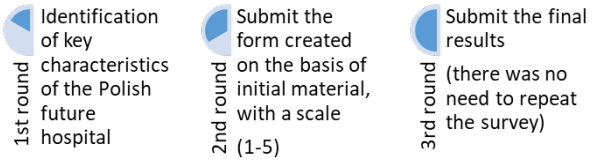


Figure 1. Synthetic diagram of the research procedure

Source: Authors' own study.

The research method employed exhibits numerous strengths, such as the meticulous selection of experts and the utilization of the Delphi method. This is a well-established research method that allows for the systematic collection and analysis of expert opinions. Its application in this case was justified, as it enabled the achievement of a consensus regarding the vision for future hospitals. Additionally, the reliability of the data is noteworthy. The use of the ORCID database to verify the academic achievements of experts and the conduct of interviews with a portion of the respondents enhance the credibility of the results. However, there are also certain limitations that should be considered when interpreting the findings. Among the weaknesses can be included:

- a low number of respondents – although the experts were carefully selected (they represented various fields and possessed recognized academic achievements, guaranteeing high-quality data and a broad perspective on the problem), the number of 14 participants in the study may be considered too small to consider the results fully representative;
- limitation to experts – the study focused solely on the opinions of experts, neglecting the perspective of other stakeholders, such as patients, medical staff, or hospital managers;
- subjectivity of assessments – despite the use of the Likert scale to assess agreement with individual characteristics, the experts' assessments remain subjective;
- lack of empirical verification – the obtained results have not been verified in empirical research, which makes it difficult to assess their practical applicability;
- limited time frame – the study focused on three time perspectives, which may not account for more distant trends and changes in the healthcare system.

Results

Revision of the factors allowed to reduce the number of characteristics by including only the most important ones. It was assumed, *a priori*, that the mean representing the inclusion of a factor is 3.76. The set of factors covered were those on which there was agreement between experts at the level of 80% (0.89), as evidenced by the mean deviations. The results presented were sent to all experts. There were no objections to the results obtained. The level of acceptance was 100% to the individual indicators.

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The results of survey with their level of acceptance and the list of objections formulated by the experts to individual solutions were sent to the participants via e-mail. Table 2 presents the characteristics of prominent experts on the Polish future hospital (64 attributes).

Table 2. Attributes of the Polish future hospital

	Characteristics	Mean	Standard deviation	Concordance 3rd round (%)
	Environment of the future hospital			
1	Will struggle with inability to predict the future	4.00	0.45	100
2	Will struggle with staffing shortages	4.55	0.52	100
3	Should strive to provide employment conditions competitive to the commercial market, specialized medical staff	4.27	0.65	100
4	Should be open to substantive discussion (between the management of the labor unions and employees working at the hospital)	4.45	0.52	100
5	Should be under permanent infrastructural and functional development, especially development as to its efficiency, adequacy and flexibility in the health services offered, also due to the ever emerging new challenges in its management, in relation to the evolving morbidity of the population (new mutations of diseases)	4.64	0.50	100
6	Should have been paid by the National Health Service for the overruns	4.27	0.49	100
7	Should strive to have organ donation promoted	4.09	0.70	100
8	Should strive to ensure that the country creates working conditions that encourage medical staff to provide their services in hospitals	4.55	0.69	100
9	Should strive to ensure that competitive employment conditions are provided in the country in relation to the competitive market for specialized medical staff	4.27	0.65	100
10	Hospital should work with stakeholders to develop methods of form and motivational strategies aimed at committed work based on professional ethos	4.27	0.65	100
11	Reports the need for changes and expansion of geriatric education – due to aging populations	4.36	0.67	100
12	Reports the need to implement changes in the curriculum to include the need to look at the patient holistically, not just through the lens of one disease	4.55	0.69	100
	Infrastructure of the future hospital			
13	Should be properly signed (simple, intuitively legible). Signage should be adapted to seniors, people with visual or hearing disabilities	4.64	0.50	100
14	Should be equipped with interactive facility plans	4.18	0.87	100
	Should be equipped with modern equipment	4.64	0.50	100
15	Should strive to create a friendly environment that provides comfort and intimacy for patients	4.73	0.65	100
16	Should ensure accessibility to supporting infrastructure (access, parking, toilets, rooms for a parent equipped with a feeding chair, changing table)	4.73	0.47	100
	Technologies of the future hospital			
17	Should implement digital solutions to improve the processes of planning and implementation of services (making appointments, keeping appointment cards)	4.55	0.52	100

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	Characteristics	Mean	Standard deviation	Concordance 3rd round (%)
18	Should implement systems for collection, processing and sharing of digital resources about medical events – electronic medical records	4.45	0.69	100
19	Should implement systems in the field of remote medical care (e-prescription, e-referral)	4.73	0.47	100
20	Should introduce remote patient monitoring (e.g., implementation of diagnostic tests outside the hospital)	4.36	0.81	100
21	Should ensure digitization of imaged and other test results	4.55	0.69	100
	Finances of the future hospital			
22	Should strive to increase revenue sources	4.27	0.79	100
23	Should take service costs into account when purchasing equipment	4.55	0.69	100
24	Hospital should not economize on the purchase of diagnostic equipment that has a direct impact on the patient's life	4.55	0.69	100
	Patient of the future hospital			
25	Should educate the patient to know the entire cycle of care (from prevention, monitoring, disease diagnosis, preparation, interventions, recovery and long-term management)	4.36	0.50	100
26	Hospital should implement the medical care plan (recovery by the hospitalized person) carry out together with the patient and with his involvement	4.55	0.69	100
	Staff of the future hospital			
27	Should strive to eliminate unethical behavior on the employee-employee line	4.64	0.50	100
28	Should have employees who can communicate with hearing impaired patients	4.73	0.47	100
29	Should have employees who have the skills to talk about pain and death	4.82	0.40	100
30	Should have employees who know how to maintain a good relationship with patients	4.82	0.40	100
31	Should have employees who are willing to accept change	4.45	0.82	100
32	Should have employees who know how to communicate with patients	4.82	0.40	100
33	Should have employees who show kindness and empathy towards the patient	4.91	0.30	100
34	Should replace rivalry among employees with cooperation	4.55	0.69	100
35	Should strengthen team spirit among employees	4.45	0.69	100
36	Hospital staff should provide information on examinations, treatments and outpatient clinics offered, as well as on offerings provided by other hospitals of the future	4.64	0.50	100
37	Should have professional staff plus access to knowledge and staff from other hospitals of the future	4.45	0.52	100
38	Hospital should offer health services in a more holistic and integrated paradigm of caring for its patients	4.45	0.69	100
39	Hospital should provide medical and nursing staff able to communicate in foreign languages (at least English and Ukrainian, Russian, in border areas also languages of the neighboring country)	4.36	0.67	100
40	Hospital should provide patients with additional support (e.g., emotional by a psychologist or educational to raise awareness of the need to change lifestyle or habits)	4.45	0.52	100
	Supply of the future hospital			
41	Should consciously manage the supply chain	4.18	0.60	100
42	Should ensure adaptability of supply chains	3.91	0.83	100

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	Characteristics	Mean	Standard deviation	Concordance 3rd round (%)
	Management of the future hospital			
43	Hospital should be process-mature and self-improving	4.36	0.50	100
44	Hospital should be fully pro-quality oriented at the declarative and mental level	4.45	0.52	100
45	Hospital should be open to changes	4.55	0.69	100
46	Hospital should make reductions in waiting times for various procedures, especially those that are the most critical from the patient's health and life point of view	4.55	0.52	100
47	Hospital should employ such specialists who are willing to develop their professional competence, are open to the development of medicine (management supports in a specific and real manner the employees to acquire the multiplication of new competence skills)	4.55	0.52	100
48	Excessive administrative staffing should be reduced by directors	3.91	0.83	100
49	Directors should shorten procedural procedures regarding the treatment process	4.18	0.87	100
	Directors should strive to eliminate bullying practices in the workplace	4.73	0.49	100
50	Directors should strive to improve the quality of services in clinical and non-clinical departments	4.55	0.69	100
51	Directors should strive to comply with regulations	4.64	0.50	100
52	Directors should strive to deal with uncertainty and ambiguity in the employment context	4.27	0.65	100
53	Directors should strive to increase accessibility to a wide range of medical services	4.18	0.87	100
54	Directors should strive to increase professionalism of medical, administrative, technical, support staff	4.82	0.40	100
55	Directors should strive to minimize employee turnover to the minimum necessary	4.27	0.79	100
56	Directors should take care of patient safety	4.73	0.47	100
57	Directors should improve procedures for treatment process	4.73	0.47	100
58	Directors should create conditions for development of new medical procedures	3.82	0.87	100
59	Directors should deal with excessive workload of employees	4.55	0.52	100
60	Directors should implement coordinated healthcare	4.55	0.52	100
61	Directors should introduce training courses	4.27	0.65	100
62	Directors should support research shared by several medical centers	4.27	0.79	100
63	Directors should provide medical and nursing staffing to a degree that enables medical and peri-medical services to meet the needs of at least the local community	4.55	0.52	100
64	Directors should take advantage of opportunities that arise, be proactive in their activities, and rely on people to support them in these activities	4.36	0.50	100

Source: Authors' own study.

To the above presented table, Respondent X added the following reflection to the factor with an ordinal number of 1: "Both sound scientific reflection and management of entities with the inclusion of logical, well-thought-out strategies make quite probable future scenarios that can be realized with high probability." Respondent

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Y, on the other hand, added the thought to the factor no. 10: "This will be difficult to implement, because it touches the axionormative, duty, deontological sphere." Respondent Z to the factor with no. 18 added the following content: "Objectives feasible, but with some caution and succession." Another remark, this time by Expert Alpha, referred to the attribute with no. 25. The respondent shared the following observation: "This should be accompanied by an awareness of adapting education to the patient's abilities and perceptions (not all patients have the same – high level of understanding capabilities, if only because of the various diseases that affect them)." Respondent Beta added a note to the factor no. 55: "Rotation – especially with high turnover and flexible forms of employment – need not be a negative phenomenon; with a common-sense and logical approach."

Conclusions

The issues addressed in this paper are of significant importance for hospital directors who implement development intentions under conditions of resource shortages (capital, personnel and material). External circumstances (including: the COVID pandemic, the war in Ukraine, unfavorable demographic trends, and more specifically, the aging population), determine, more than once, to undertake various types of projects, allowing to increase activity and improve the situation of facilities belonging to healthcare. Development involves undertaking managerial activities that take a long-term perspective into account. Achieving coherence of goals from the financial, customer, internal and development perspectives in conditions of high environmental instability may be difficult but possible (Jaworzyńska, 2015, p. 183). Similarly to taking actions for efficiency, requiring not only the collection of data, but also a holistic approach to their measurement (Kister, 2018, p. 58). Consideration of the identification of distinctive features that may characterize the future hospitals was undertaken by Polish experts. According to their answers, developing a picture of the Polish hospital of the future. This is both a desirable, probable, credible and possible image. A Polish hospital is one in which patient safety is taken care of, the professionalism of the medical staff is strived for, and it is also a place where harmony and consensus prevail. Employees of the future hospital are kind and empathetic. They are also able to communicate in sign or foreign language as well. Such a hospital does not avoid new technologies, implement systems in the field of remote medical care (e-prescription, e-referral). Its infrastructure is not objectionable (it has new medical equipment, parking lots of friendly environment, ensuring comfort and intimacy of patients). It is also a hospital that is subject to permanent functional development, especially development as to its efficiency, adequacy and flexibility in the health services it offers, also due to the ever-emerging challenges in the way it is managed.

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