

Frączkiewicz-Wronka, Aldona; Ingram, Tomasz; Szymaniec-Mlicka, Karolina;
Tworek, Piotr

Article

Risk management and financial stability in the Polish public hospitals: The moderating effect of the stakeholders' engagement in the decision-making

Risks

Provided in Cooperation with:

MDPI – Multidisciplinary Digital Publishing Institute, Basel

Suggested Citation: Frączkiewicz-Wronka, Aldona; Ingram, Tomasz; Szymaniec-Mlicka, Karolina; Tworek, Piotr (2021) : Risk management and financial stability in the Polish public hospitals: The moderating effect of the stakeholders' engagement in the decision-making, Risks, ISSN 2227-9091, MDPI, Basel, Vol. 9, Iss. 5, pp. 1-24,
<https://doi.org/10.3390/risks9050087>

This Version is available at:

<https://hdl.handle.net/10419/258175>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/4.0/>

Article

Risk Management and Financial Stability in the Polish Public Hospitals: The Moderating Effect of the Stakeholders' Engagement in the Decision-Making

Aldona Frączkiewicz-Wronka ¹, Tomasz Ingram ², Karolina Szymaniec-Mlicka ^{1,*} and Piotr Tworek ¹

¹ Department of Public Management & Social Science, University of Economics in Katowice, 40-287 Katowice, Poland; afw@ue.katowice.pl (A.F.-W.); piotr.tworek@ue.katowice.pl (P.T.)

² Department of Entrepreneurship & Management Innovation, University of Economics in Katowice, 40-287 Katowice, Poland; tomasz.ingram@uekat.pl

* Correspondence: karolina.szymaniec-mlicka@uekat.pl

Abstract: Public healthcare organizations usually operate under significant financial strain and frequently strive for survival. Thus, in most cases, financial stability is a “holy grail” of public healthcare organizations in general and hospitals in particular. The financial stability itself is partly dependent upon the ability to manage risk associated with hospital actions. In the paper, we seek to address the question related to the moderating role of stakeholders' engagement in the relationship between risk management practices and a hospital's financial stability. To answer this question, we designed and carried out empirical research on a sample of 103 out of 274 Polish public hospitals operating at the first-level (closest to the patient). Results show that risk management practices are positively related to financial stability. Hospitals with well-developed risk management practices are better prepared and find appropriate answers to threats, helping them attain financial stability. We also found that stakeholder engagement acts as a moderator of the relationship between risk management practices and financial stability. Research results indicate that with more sophisticated risk management practices, stakeholder engagement in decision-making leads to statistically lower financial stability. On the other hand, high levels of stakeholders' engagement help when risk management practices are underdeveloped.

Keywords: public management; risk management; public hospitals; financial stability; stakeholders' engagement; survey research; Poland

Citation: Frączkiewicz-Wronka, Aldona, Tomasz Ingram, Karolina Szymaniec-Mlicka, and Piotr Tworek. 2021. Risk Management and Financial Stability in the Polish Public Hospitals: The Moderating Effect of the Stakeholders' Engagement in the Decision-Making. *Risks* 9: 87. <https://doi.org/10.3390/risks9050087>

Academic Editors: Józef Dziechciarz and Krzysztof Jajuga

Received: 23 March 2021

Accepted: 28 April 2021

Published: 6 May 2021

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

1. Introduction

One of the critical issues that need to be solved in contemporary healthcare organizations is analyzing many diverse and complex interdependencies emerging in the decision-making process, both between interest groups, within these units and with respect to hospitals' relationships with the external environment and emerging risks. Such analysis is essential to identify and address problems related to the effective delivery of health services and the pursuit of financial sustainability.

The shape and scope of health services provided in a given country are a consequence of the adopted healthcare model. Health protection is an essential instrument for creating both the individual ability to function in the labor market and society. It contributes to the state's economic functioning, hence the need for public entities to shape the health protection policy introduced by the European Union (EU from here onwards), especially cohesion policy. We define health policy as various forms of intervening—as a consequence of making systemic choices—in the natural course of events causing health effects. The primary goal of healthcare policy is to ensure citizens' access to healthcare

services. Achieving this goal requires the state to design and implement solutions consistent with the practiced economic (the principles of collecting and allocating public funds) and political (implementing the principles of social justice) doctrine, taking the form of the healthcare system. The implementation of citizens’ access to healthcare is carried out by the state defining the rules of functioning of entities providing health services and, in particular, their functions, tasks, rules for the provision of services, the required qualifications of the staff, and the method of financing their activities.

Hospitals play a unique role in the healthcare system, mainly due to the scope of tasks and the value of funding allocated to implementing entrusted functions. By providing health services financed from public funds, hospitals are the guarantor of obligations incurred with voters in the economic and social sphere. That explains the importance of the stakeholders and their engagement in the decision-making process. The difficulty in managing hospitals results from the need to reconcile economic efficiency with the social and political consequences of the decisions made, reflected in stakeholders’ reactions in the closer and more distant environment that creates the management ecosystem. External and internal factors are controlling such ecosystems (Banoun et al. 2016). The boundaries of the ecosystem, in which stakeholders, through their decisions—supporting or blocking, create risks for hospitals to achieve the desired outcomes (Vargo et al. 2015, 2017), are comprised of the designated by the state norms and business activity principles. Research carried out in the years 2007–2016 allowed for the identification of key stakeholders influencing managerial decision-making processes in Polish public hospitals (Table 1) (Frączkiewicz-Wronka 2018).

Table 1. The identification of key stakeholders in public hospitals in Poland and associated risk of failure to meet their expectations.

Stakeholder	Interest	Impact	Relevance	Identified Risks
Founding body	High level of medical security in a given area; secured provision of health care services; stable financial condition; achievement of statutory objectives; improved image of the organization.	Grants subsidies for provision of services, approves a plan for development of the entity reporting to it.	Attempts are made to take into consideration the expectations and suggestions of a social supervisory board.	Lack of acceptance for actions taken by managers in the hospital and, as a consequence, reduction in financial support and/or boardroom changes in the hospital.
Patients	High quality and availability of medical services; well-developed and modern hospital infrastructure; a comprehensive range of medical services; competent and friendly staff; a variety of medical services on offer.	Their positive feedback is an incentive for and an indicator of future development and a way to attract new patients; patients’ preferences determine the performance of the contract; claims may affect the entity’s financial condition.	Decisions which are made do not always take into account the expectations of patients’ families.	Change of a service and, consequently, a risk that the contract with the NHF may not be completed. Negative feedback, once spread, may damage the organization’s positive image.
Ministries (e.g., Ministry of Health, Ministry of Labor and Social Policy)	Tasks performed in compliance with legal requirements (acts and ordinances); adherence to legal standards in the area of public obligations; provision of top quality services, in line with valid regulations and standards; ensured and secured medical services in a given area; an increase in one’s own political capital.	Indirect impact through legal regulations, decide about some funds allocated to health care units.	It is important to meet their requirements and perform a contract in compliance with accepted documents, without the need to incur additional costs of service provision.	Withdrawal of funds allocated for operations. Refusal to finance activities planned for the future.

The National Health Fund (NHF)	Correct performance of contractual provisions; a wider range of services; maintaining the right cash flow from provision of services; timely accounting for service provision; furnishing of complete and up-to-date information.	Decides about awarding contracts for provision of services. If a contract is not signed the entity is not able to continue its operations.	The adopted strategy must take into account the legal regulations.	Inability to sign a contract for provision of medical services.
Local government	Availability and high quality of services for the local community; fulfilment of statutory obligations; ensuring highly specialized medical care for inhabitants; pursuing the political interest (health care tends to be one of the main points on the political agenda).	Through a decision-making process related to financial support they approve a specific strategy of the health care unit.	Maintenance of good relationships by meeting the contractual provisions.	Making a decision on replacement of managerial staff. Refusal to grant funds.

Source: Frączkiewicz-Wronka (2018).

Managers identify stakeholders and perceive them as important players in the areas where public organizations operate. All that signifies that making decisions in hospitals that provide health services financed from public funds is more than complicated. In particular, managers have to assess the consequences of not satisfying stakeholders in their understanding of values, which carries numerous risks. Hence, the need to study the relationships between risk management practices, stakeholder management, and financial stability by hospitals providing health services financed from public funds.

2. Legal and Economic Determinants of Hospital Functioning

The fundamental problem that each healthcare system has to deal with is providing funds to finance its activities. In Poland, public expenditure on healthcare amounts to approximately 6.3% of GDP. Lithuania (6.8%), Estonia (6.4%), and Latvia (5.9%) have less or the same amount of funds for healthcare than Poland. The so-called “old union” states spend much more for this purpose, taking, for example, France (11.2%), Germany (11.2%) (Organisation for Economic Cooperation and Development 2020). Poland is one of the countries with a low share of healthcare expenditure in current public spending. In 2017, Poland’s public expenditure on health and health care in 2017 amounted to PLN 90.4 billion. It accounted for 4.55% of GDP, while current private expenditure was equal to PLN 39.7 billion and accounted for 2% of GDP (Główny Urząd Statystyczny 2019). The primary source of healthcare financing is comprised of compulsory health insurance contributions; hence, the institution managing them, the National Health Fund (in polish: NFZ), is a crucial stakeholder for every entity providing health services.

On the basis of GUS reports, current expenditure on healthcare in 2017 according to functions, points out that most funds are spent on medical services, 58.3% (hospital plus outpatient). Data presented in Table 2.

Table 2. Current expenditure structure on healthcare in 2017 in Poland (Główny Urząd Statystyczny 2019).

Expenditure Structure on Healthcare in 2017	Structure
Government schemes	10.4%
Compulsory contributory health insurance schemes	59.1%
Voluntary health insurance schemes	5.7%
NPISH financing schemes	0.8%
Enterprise financing schemes	1.2%
Household out-of-pocket payment	22.8%

It is followed by spending on medical supplies, including drugs (22.7%) and long-term healthcare (6%). The lowest expenses are incurred on rehabilitation services (4.8%), prevention and public health (2.3%), and healthcare management and administration (1.8%). The share of the public and private sectors in financing individual healthcare functions in Poland depends on the type of service. For example, the “Healthcare” segment was financed by public funds in 78% and from the private sector is 22%. Current expenditure on healthcare in 2017 points out that the most considerable amount (39.4%) of current healthcare expenditure goes to hospitals, mainly the so-called general. It was followed by spending on outpatient healthcare facilities (27.1%) as well as retailers and other suppliers of medical goods (22.4%), mainly for pharmacies for drug reimbursement. The share of the public and private sectors in financing individual healthcare providers varied depending on the provider type. For example, ‘hospitals’ were financed in 94.1% by public funds and just in 5.9% by the private sector (Główny Urząd Statystyczny 2019).

The hospital is the most important but also the costliest entity in any healthcare system. Due to their function in the healthcare system, these entities often and quickly fall into debt, pictured in Figure 1.

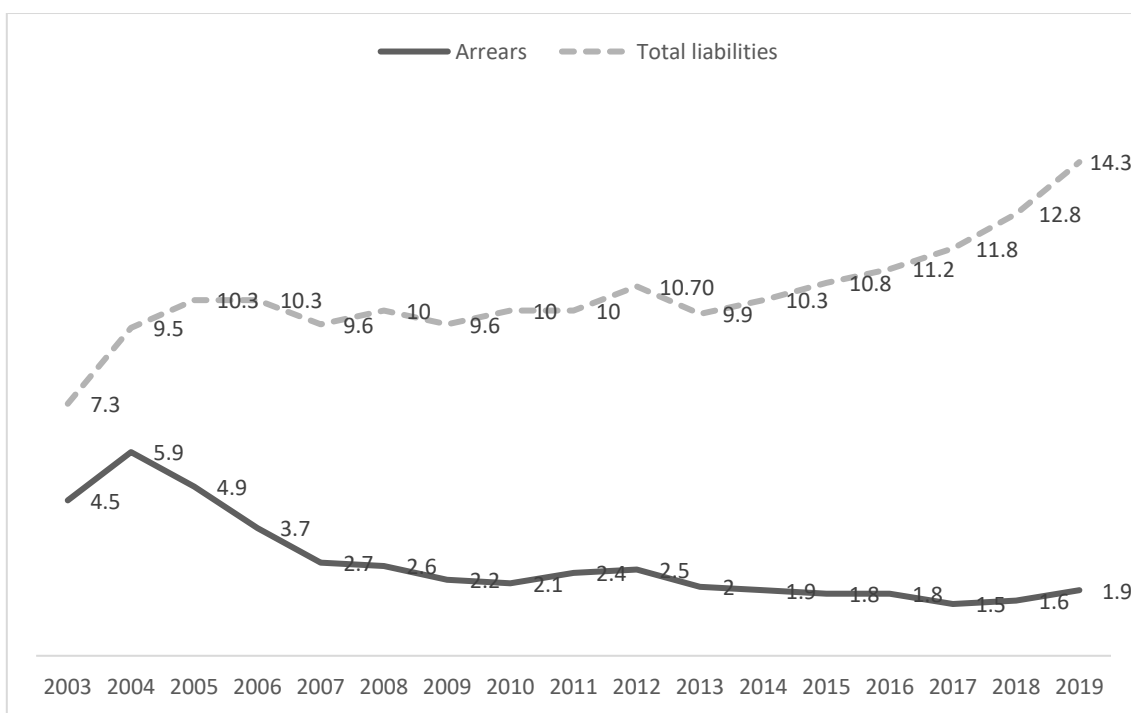


Figure 1. Evolution of hospitals’ liabilities in billions of PLN.

Table 3 presents task and macroeconomic environment in which hospitals operate in Poland were shaped mainly due to the legal regulations introduced in 1991–2017.

Table 3. Analysis of the legal changes in the functioning of hospitals.

1991	Healthcare Units Act from 30 August 1991 [Ustawa z dnia 30 sierpnia 1991 r. o zakładach opieki zdrowotnej], Polish Journal of Laws 1991 No. 91, act: 408.
<ul style="list-style-type: none"> • Changing the source of financing and organization of healthcare entities. • Transferring ownership rights of the independent public healthcare institutions (in polish SPZOZ) to the local government. • Creating conditions for a gradual departure from hospital administration towards active hospital management. • Initiating the separation of a group of managers purposefully trained for management in the healthcare system’s entities. 	

1997	Common Health Insurance Act from 6 February 1997 [Ustawa z dnia 6 lutego 1997 r. o powszechnym ubezpieczeniu zdrowotnym], Polish Journal of Laws 1997, No. 28, act: 153.
	<ul style="list-style-type: none"> • Departing from the budget system of healthcare financing and transitioning to a hybrid system, which was based on budget and insurance. • Decentralizing the financing as a consequence of the emergence of regional and industry Healthcare Funds (Kasa Chorych) as a paying institution. • Stimulating the growth of competitiveness in the market of public entities as a consequence of limiting the possibility of concluding contracts by the Healthcare Funds only to public entities (SPZOZ). • Creating the additional income sources as a subsidy from the state budget, which was intended solely for the implementation of health policy programs commissioned by the state.
2003	Common Health Insurance in National Health Fund Act from 23 January 2003 [Ustawa z dnia 23 stycznia 2003 r. o powszechnym ubezpieczeniu zdrowotnym w Narodowym Funduszu Zdrowia], Polish Journal of Laws 2003, No. 45, act: 391.
	<ul style="list-style-type: none"> • Centralizing the financing as a consequence of the liquidation of Healthcare Funds and establishing the National Health Fund (NFZ), including the voivodeship branches (NFZ OW). • Introducing the obligation to prepare healthcare plans for individual voivodeships. • Weakening of the competitive behavior and consolidation of mechanisms promoting low economic efficiency in hospital operations.
2004	Publicly Funded Healthcare Services Act from 27 August 2004 [Ustawa z dnia 27 sierpnia 2004 r. o świadczeniach opieki zdrowotnej finansowanych ze środków publicznych], Polish Journal of Laws 2004, No. 210, act: 2135.
	<ul style="list-style-type: none"> • Improving the quality of health services as a consequence of conditioning of receiving funds on the quality of an offer (confirmation of desirable infrastructural conditions and human resources) prepared by the entities applying for contract on realizing health services from public funds. These funds were at the disposal of NFZ (Rudawska 2011). • Admitting public and non-public entities to participate in competitions for contracts to provide healthcare services on the same terms.
2010	Healing Activities Act from 15 April 2011 [Ustawa z dnia 15 kwietnia 2011 r. o działalności leczniczej], Polish Journal of Laws 2011, No. 112, act: 654.
	<ul style="list-style-type: none"> • Creating a legal possibility of commercialization of the healthcare facilities. • The government prepared a system of incentives based on the repayment of a partially paid by the local government debt of independent public healthcare institutions (up to the sum of public-law liabilities) (Węgrzyn 2012).
2017	The change of the Publicly Funded Healthcare Services Act from 23 March 2017 [Ustawa z dnia 23 marca 2017 r. o zmianie ustawy o świadczeniach opieki zdrowotnej finansowanych ze środków publicznych], Polish Journal of Laws 2017, act: 844.
	<ul style="list-style-type: none"> • Launching the so-called hospital networks as a consequence of changes in the rules of financing health services as part of hospital treatment, and partly also as a part of outpatient specialist care.

The launch of the primary hospital healthcare system (the so-called hospital network) in 2017 directly impacted the hospitals' functioning (Dubas-Jakóbczyk et al. 2019). As part of the security system, hospitals were divided into: 1st-degree hospitals, 2nd-degree hospitals, 3rd-degree hospitals, and additional into oncology, pulmonary, pediatric, and nationwide hospitals. The changes aimed to optimize the number of specialist departments and enable better coordination of inpatient and outpatient services. The costs of services provided are settled based on contracts concluded within the hospital network in a flat-rate form. The lump-sum amount depends on the number and structure of services provided and reported by the service provider in the period preceding the new contract. The lump-sum means that a given hospital receives a budget for hospital services, but it also receives funds for outpatient specialist care carried out by adequate clinics, services in the

field of therapeutic rehabilitation, and even night and holiday healthcare services. According to the legislator's intention, the introduced solution was aiming to: (1) improve the organization of healthcare services provided by hospitals and hospital clinics and improve patients' access to specialist treatment in hospitals, (2) guarantee an appropriate level, as well as continuity and stability of hospital financing, (3) limit the phenomenon of dispersion of public funds allocated to the financing of guaranteed services, (4) ensure a certain stabilization of the continuity of financing the activities of medical entities included in the network, and (5) facilitate the management of hospitals.

The hospital's operation effects, both in the economic terms and the evaluation of access to health services guaranteed by the state, are the subject of constant assessment by various stakeholders. The need to satisfy stakeholders contributes to problems with achieving financial stability, and the lack of it is an impulse to look for solutions that would allow improving the problematic financial condition of Polish hospitals.

3. Risk and Stakeholders in the Decision-Making Processes in Public Hospitals

Risk is inextricably linked with starting a business, and the ability to assess it by managers influences the results achieved by organizations operating in various sectors (Power 2016; Raczkowski and Tworek 2017). In terms of terminology, risk is considered a prediction of the possible likelihood of a loss of resources or not obtaining income than the assumption made (Mennen and Van Tuyll 2015). Since risk is part of the decision-making process, it requires explicit recognition, identification, monitoring, and management. The theoretical framework for defining risk has its sources in research trends related to the organizations' functioning, especially in the aspects of examining the determinants of making strategic choices (Fone and Young 2007; Mennen and Van Tuyll 2015; Power 2016; Raczkowski and Tworek 2017; Young and Tippins 2001) and the functioning of the organization in conditions of uncertainty (Collins 1992). Practically, the risk relates to organizations' management functions, especially the ability to anticipate certain events or achieve expected or undesirable outcomes (Tworek 2016; Young and Tippins 2001). The key to the operationalization of the concept of risk is the assumption that it is quantifiable (i.e., measurable). Keeping in mind the nature of the organizations, we carried out our research, focused on describing hospitals' operation risk.

In the practice of the organization's functioning, it is essential to correctly determine the specific and non-specific risks for a given type of activity and organization. In healthcare organizations, the most tragic consequence of risk is the loss of the patient's life (Carroll 2009; Kwiecińska-Bożek 2018). The American Society for Healthcare Risk Management (ASHRM) assumes that health-specific risks relate to the deterioration of a patient's health and/or patient safety (Carroll 2009). According to the World Health Organization (WHO), the main risk category in healthcare is the risk of in-hospital infections (World Health Organization 2011).

In the theory of healthcare economics, both the threat and the opportunity mean a different dimension of risk effects, but ultimately the effects of risk on the organization assume an economic dimension (Sohn 2016). In general, risk should be examined through the lenses of the many sub-categories that make up the overall picture of economic risk categories in hospitals. This issue relates uniquely to the methodological perspective of economic risk management in hospitals' operations (Kavaler and Spiegel 2003; Kolluru et al. 1996; Roberts 2002). Correctly performed quantification/measurement of risk may be reflected in the hospital's economic calculus because its incorrect estimation in the decision-making may have economic consequences for the organization. This aspect of considerations relates to the financial risk as a critical issue in achieving economic efficiency by the hospital (McCue and McCluer 2008; Ozcan and McCue 1996).

Hypothesis 1 (H1). *Risk management practices are positively related to financial stability.*

Risk management in healthcare should be considered both from subjective and objective points of view. This issue relates especially to stakeholders interested in hospital risk management (Adil 2008; Bennet et al. 2010; Frączkiewicz-Wronka 2018). On the other hand, risk management, considered from the subject's point of view, is related to the processual approach connected with the universal division of risk into three subprocesses: identification, analysis, assessment, and reaction to risk (Elleuch et al. 2014; The Orange Book 2004). In addition to research of a theoretical or empirical nature, professional literature exhibits the utilitarian aspect of risk management theory (Carroll 2009; Kavalier and Spiegel 2003; Kolluru et al. 1996; Roberts 2002). In theory and practice, emphasizing the need to monitor and control the risk management process (Beck de Silva Etges et al. 2016; The Orange Book 2004; Tworek 2016). The empirical research results in public organizations indicate that it usually takes place as part of the control and internal audit (Bakalikwira et al. 2017; Chambers et al. 2017; Sarens et al. 2010). Hospital risk management is perceived as a highly specialized sub-discipline of knowledge (Hood et al. 2003).

Research on financial risk management in hospitals focuses mainly on operational, investment, and financial activities, resulting from applicable legal regulations. The critical issue in the research on financial risk in hospitals is to define the common denominator, i.e., the value around which the risk should be assessed (the value of reference) (Tworek 2016). Concerning the achievements of the theory of finance (see more Jajuga 2019; Skoczylas and Waśniewski 2014; Wędzki 2012), in this context, reference should be made to the three financial goals of the organization, i.e., financial liquidity, risk, and profitability (Feng 2011; Stroh 2005). Public hospitals in Poland are assessed, among others, by business profitability ratios (as of the Decree of the Minister of Health from 12 April 2017, on economic and financial indicators necessary to prepare an analysis and forecast of the economics and financial situation of independent public healthcare institutions). The indicators used to assess public hospitals are as follows: net profitability ration, operating profit ratio, and asset profitability ratio. The profitability analysis is complemented by the efficiency, liquidity, and debt analysis. The legal regulation of hospitals' economic and financial assessment by indicating obligatory indicators was the Ministry's response to the demands of the environment regarding the possibility of comparing the results achieved by independent public health care institutions (Zaleska 2017). Financial liquidity is the inability to meet current liabilities, and the risk is the possibility of not achieving the intended financial results, while profitability means the ability to achieve positive financial results. These three categories, between which there are interrelationships and dependencies, create an overall picture of the risk related to hospitals' lack of financial stability, with the crucial issue being the lack of stable sources of financing in Polish hospitals. This issue is critical for the balancing of the hospital's operations. This problem relates to the systemic risk category (Agnew et al. 2006).

Hypothesis 2 (H2). *Stakeholders' engagement in decision-making is positively related to financial stability.*

Financial risk in healthcare entities' activities, considered a macroeconomic category, relates to the proper valuation of services in all types of services financed by the NFZ. In turn, the risk considered in the microeconomic category means that a public hospital budget is not correctly estimated. Considering the main problem of healthcare in Poland is the insufficient financing level, Polish public hospitals' main challenge is the lack of financial stability, resulting from debt and financial liquidity. In management practice, stakeholders are interested in hospital profitability, i.e., achieving the desired values of financial ratios indicated in the Decree of the Ministry of Health from 12 April 2007. These indicators might be helpful in the evaluation of the healthcare unit by founding bodies,

payer, investors, banks, and other stakeholders who are related to a particular healthcare organization (Zaleska 2017). That means hospitals should be interested in minimizing their business risk and maximizing the benefits expressed as a cash equivalent.

On the other hand, stakeholders will be interested in increasing the cash flow as a common denominator for determining entire organizations' risk (Tworek 2016). Therefore, stakeholders' engagement in the financial decision-making process (Burke and Demirag 2017; Lin et al. 2017; Tseng et al. 2020) is a prerequisite for effective hospital financial management (Ozcan and McCue 1996; Zheng et al. 2019). Its absence may lead to the hospital's liquidation by the founding bodies who play the primary stakeholder's role. Moreover, this is the most severe financial effect of the occurrence of economic risk.

According to Nieszporska (2012, p. 151), "(...) the risk categories identified in the activities of Polish public hospitals focus on five aspects/problem areas: (1) significant—equated with cost-effectiveness or the possibility of financial losses, (2) operational indicators—understood as a system of facility's ease of adaptation to changes, with particular emphasis on in-hospital rules, (3) internal control—understood as the evaluation of the control system in each organizational unit of the hospital, (4) the quality of management—represented by all activities related to the organization and modification of hospital structures and the transfer of information, (5) external factors—understood as comprehensive effectiveness in introducing changes to the hospital environment".

Hypothesis 3 (H3). *Stakeholders' engagement in the decision-making moderates the relationship between risk management practices and financial stability.*

The conducted considerations allow for the formulation of a hypothesis that examining the relationship between the issue of stakeholder management and risk management in public hospitals as well as financial stability considered in terms of the financial condition of the organization is an important issue, the results of which may affect the management process of a public hospital (Beck de Silva Etges et al. 2016; Dixit 2017; Mahama et al. 2020). The context of considerations regarding stakeholder management in the public sector, taking into account risk-related issues, is extensive (Borraz 2007; Dansoh et al. 2020; Hunt 2010; Klinke and Renn 2012; Professeure 2004; Rixon 2010). In general, authors in the literature postulate the implementation of the risk management principles to organizations providing health services outlined in the New Public Management (NPM) model (Beck de Silva Etges et al. 2016; Flemig et al. 2016; Hinna et al. 2018; Krewski et al. 2007; Li et al. 2020; Osborne et al. 2020; Oulasvirta and Anttiroiko 2017; Rana et al. 2019).

The scientific literature indicates that in private organizations, the decision-making processes are much smoother and calmer, while public organizations experience more turbulence, breaks, recirculation, and conflicts (Nutt 1999). As Nutt (2005) emphasized, the decision-making process in public organizations requires recognizing rulers' opinions, understanding the mandates and obligations of the organization, and balancing users' needs. The specificity of public organizations' operation also entails a growing demand for opening the external participation process. There is an increasing need to set public expectations about how services are delivered in public organizations and involving more people in the decision-making process. Simultaneously, the legibility of decision-making criteria decreases, and more time is needed to make decisions; there is also a need to consider "soft" criteria and the ones' that will ensure equality in access to services. Frączkiewicz-Wronka (2012, p. 42) argued that "(...) decisions in public organizations are often made in a forced manner and far from rational objectivity, because—as practice shows—reason requires the manager to make political choices instead of looking for economic rationality in solving many tasks that are encountered by the organization". Dillon

et al. (2010, p. 236) underlined that “(...) in the end political bargaining appears to be the main determinant of the decision outcome”.

One of the distinguishing features of management in public organizations is the existence of many stakeholders who influence the decision-making process by using, among other things, mechanisms of regulation, cooperation, setting directions for changes, legitimation, and control (Gomes et al. 2010). Literature defines a stakeholder as a person, a group of people, or as organizations affected by the organizations’ functioning or the effects of its functioning. Bryson (2004) believed that attention to stakeholders is essential in the entire process of strategic management because success in a public organization depends on satisfying key stakeholders. At the same time, satisfaction signifies meeting needs that are perceived as valuable in the stakeholder’s individual hierarchy. As Rainey (2003) claimed, public institutions arise and live by satisfying the interests of those influential enough to maintain the political *raison d’être* of the organization and secure the resources that flow in with it. Therefore, public organizations have a special responsibility towards their stakeholders, and this means for managers an obligation to take into account their expectations in the decision-making process. It should also be remembered that stakeholders are interested in both the decision-making process and its results (Osborne et al. 2014). Public value for stakeholders can only be created with the support of the organization’s key stakeholders (Langrafe et al. 2020; Williams and Shearer 2011). Due to the unique role of stakeholders in the functioning of public organizations, managers must take into account in the decision-making process the effects that these decisions have on the benefits and losses incurred by individual stakeholders (Johnsen 2015), which is facilitated by the use of the participation process of key stakeholders in the decision-making process (Quick and Bryson 2016). Including stakeholders in the decision-making process allows for obtaining a larger pool of information, increases the legitimacy of decisions made, and improves their quality (Beierle 2002; George et al. 2016). At the same time, the power of veto or resistance to change is reduced (Edelenbos and Klijn 2006). As Elias (2019, p. 313) claimed, stakeholders’ engagement “can address problematic situations holistically and give due regard to competing interests”. Although the need to involve stakeholders in decision-making processes is becoming more transparent, the process is not free from problems. One of the most important is the necessity to engage resources, mainly financial ones, necessary to implement the participation process (McEvoy et al. 2019). The necessity to incur the high costs of organizing the participation process may negate its benefits. Schalk (2015) also pointed to other problems that arise in stakeholders’ engagement in the decision-making process—too much information increases the complexity of the problem, and the time needed for the decision-making process is also longer.

Stakeholders’ engagement requires the creation of appropriate conditions for the implementation of an effective participation process, including determining the purpose of stakeholders’ engagement, identifying limitations, identifying stakeholders, determining the degree of engagement, ensuring the appropriate quality of the engagement techniques used, informing stakeholders about their role in the process, as well as monitoring the activity of individual stakeholders. It is also vital to present stakeholders to the extent to which they influenced the decision made, the effects of their engagement, which will motivate them to participate in subsequent projects (Tončinić et al. 2020).

Reed et al. (2018, p. 9) indicated that “(...) different modes of engagement are possible, and typically lie along an information or knowledge exchange continuum, from approaches based more on one-way flows of information and knowledge to publics and stakeholders (communication mode) and seeking feedback from publics and stakeholders (consultation mode) to more two-way knowledge exchange and joint formulation of goals and outcomes (more deliberative and coproductive modes)”.

In healthcare, patient engagement in decisions regarding the treatment process is relatively well recognized; however, the problem of broader stakeholders' engagement in decision-making processes regarding the management of medical entities or the healthcare system's functioning enjoys less research interest (Malfait et al. 2018; McCarron et al. 2019). Simultaneously, as noted by Petkovic et al. (2020), although healthcare organizations have many stakeholders, the research focus is mainly on the patient and public engagement at the system level. In particular, in the healthcare literature, stakeholders' engagement should help cope with social and economic changes such as increasing healthcare demand and higher patient expectations, considering budget constraints. It builds trust in the healthcare system and engages communities and individuals in healthcare (Cleemput et al. 2015).

One way to engage stakeholders in the decision-making process is to create formal advisory bodies—the so-called stakeholder committees (Malfait et al. 2017, 2018). Analyses conducted by Malfait et al. (2017) with a team on the functioning of the stakeholder committees in Belgian hospitals indicated that the success factors for the actual stakeholder participation in the decision-making process are: (1) close cooperation with the management board, (2) focusing on the operational level of the activity as being more practical and closer to patients than the strategic level, (3) transferring greater autonomy to the stakeholder committee activity, also by enabling the choice of the topics taken—as well as—(4) enabling stakeholders to prepare for decision-making, e.g., by sharing materials.

The issue of stakeholders' engagement was also dealt with by McCarron et al. (2019). They noticed a solid need to build stakeholders' capacity and competence to participate in the decision-making (McCarron et al. 2019). That is particularly important because stakeholders' engagement in the decision-making process raises the issue of knowledge that individual stakeholders have, reflected in a stronger medical professional's position than patients (O'Shea et al. 2019). As a consequence of the synthesis of the literature review, Djellouli et al. (2019) indicated that a recurring conclusion from the research is the belief of stakeholders that although they contributed to the activities undertaken, they did not influence the decision-making process because managers made decisions. The qualitative research carried out by Szymaniec-Mlicka (2017) shows that the directors of hospitals in Poland do not actively engage the hospital's stakeholders in the decision-making process, treating such activities more as an unfortunate necessity. Usually, actions towards stakeholders are limited to informing them about the decisions made. However, there is a trend among directors—if they engage stakeholders, they are more likely to take action concerning internal than external stakeholders. Research results of Cleemput et al. (2015) were aimed at identifying the benefits and risks related to stakeholders' engagement in the decision-making process. They pointed out the benefits of engagement could be “increasing awareness among the general public and patients about the challenges and costs of healthcare and enriched decision processes with expertise from patients' experience. (...) Subjectivity, insufficient resources to participate and weigh on the process, difficulties in finding effective ways to express a collective opinion, the risk of manipulation, lobbying or power games of other stakeholders” were identified as potential risks (Cleemput et al. 2015, p. 447).

Jansen et al. (2018) developed a checklist of 29 questions relating to critical stages of stakeholders' engagements in setting health priorities. As key areas, they included what follows: (1) proactively identifying potentially adversely affected stakeholders, (2) comprehensively including them in the decision-making process, (3) ensuring meaningful participation, (4) communication of recommendations or decisions, and (5) the organization of evaluation and appeal mechanisms (Jansen et al. 2018).

On the other hand, Norris et al. (2017) focused on analyzing how the hospital stakeholders define engagement. Research has shown that stakeholders define engagement similarly, as “(...) an active and committed decision-making about a meaningful problem through respectful interactions and dialog where everyone’s voice is considered” (Norris et al. 2017, p. 1).

Wortley et al. (2016), using a literature review, identified the determinants of the choice of the method of stakeholders’ engagement in the decision-making process regarding health technology assessment, which included: perceived complexity of the policy-making issue, perceived impact of the decision, transparency, and opportunities for public engagement in governance, time, and resource constraints. “The influence of these factors vary depending on the context, indicating that a one size fits all approach to public engagement may not be effective” (Wortley et al. 2016, p. 872).

4. Research Methods and Way of Data Collection

We commenced the research by analyzing the literature in the EBSCOhost, Emerald Management, Science Direct, Scopus, Web of Science, and SpringerLink databases. The bibliometric analyses covered the period 1978–2017. We used the following keywords in the search process: decision-making in public hospitals, risk management in public hospitals, identification, and stakeholder management in public hospitals. The literature synthesis made it possible to formulate the research problem, pose research questions and statistical hypotheses emerging from them, design a research model, and prepare a research questionnaire.

Based on the literature review, we formulated three research hypotheses. Figure 2 illustrates relationships between main research constructs.

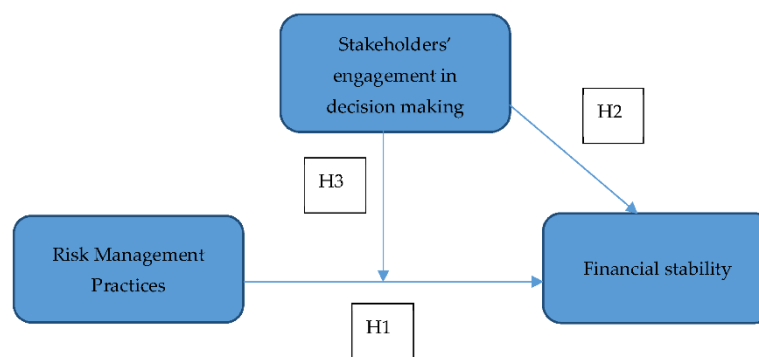


Figure 2. Hypothesized relationships between financial stability, risk management, and stakeholders’ engagement in decision-making. Hypothesis 1 (H1). Risk management practices are positively related to financial stability. Hypothesis 2 (H2). Stakeholders’ engagement in decision-making is positively related to financial stability. Hypothesis 3 (H3). Stakeholders’ engagement in the decision-making moderates the relationship between risk management practices and financial stability.

In the next step, we prepared a measurement tool that consisted of 3 scales. The questionnaire contained questions examining the organizations’ financial stability, stakeholders’ engagement in decision-making, and risk management in the organization. We gathered the answers on the 7-point Likert scale. Additionally, we asked respondents about the hospital geographical location, the size of the contract with the NFZ, the gender and position of the respondent.

To measure the financial stability (latent variable), we used a 3-item long scale (Cornforth 1978; Snow 1992; Wronka-Pośpiech 2014) (Cronbach’s alpha = 0.865). Our respondents were asked to answer subsequent questions: “Our hospital has diversified sources of income, and that guarantees us financial safety,”; “Our hospital can acquire sufficient

funds necessary to fulfill its strategy,”; and “Our hospital has sufficient liquid financial resources to handle the short decrease in our incomes.” Exploratory factor analysis (KMO = 0.724; Bartlett’s test: approx. Chi-square = 146,322 with 3 degrees of freedom $p = 0.000$) carried out using the principal components analysis extraction method with rotation Varimax informed us that all three items load significantly (loading strength from 0.879 to 0.912) to a single metavariate that explains nearly 80% of the variance.

Risk management practices (latent variable) were investigated using the tool employed in a similar research carried out in public organizations from Belgium by Sarens et al. (2010) (we adapted the original scale, and the measurement was done using a 5-item long scale (Cronbach’s alpha = 0.857). Our respondents were asked to answer subsequent questions: “In our hospital, we understand that the lack of reaction to threats or risks signifies the loss of resources important for our functioning”; “In the hospital, we have procedures indicating how to react to incoming threats in diverse fields of our activity”; “In the hospital, we have employees trained how to manage risk or threats”; “In the hospital, we have employees responsible for managing threats”; “In the hospital, we have procedures indicating how to react to incoming threats or risks from external stakeholders”. Exploratory factor analysis (KMO = 0.750; Bartlett’s test: approx. Chi-square = 333,673 with 10 degrees of freedom and $p = 0.000$) carried out using principal components analysis revealed that all the items load to single metavariate (loading strength ranging from 0.696 to 0.939), explaining 66.30% of the variance.

Stakeholders’ engagement in decision-making perceived as latent variable, was measured using a 6-item long scale adapted from Amaeshi and Crane (2006) (Cronbach’s alpha = 0.860). The decision-making processes refer to strategic aspects of hospitals operation, and the engagement refers to the process of informing and asking for the opinion of stakeholders during scheduled meetings, by email, etc. We left the understanding of the engagement to the respondents. The sample question was as follows: “Key external stakeholders are encouraged to participate in the decision process at every stage of newly undertaken actions” or “We analyze circumstances, methods, and results of engaging external key stakeholders in the decision process”. Exploratory factor analysis (KMO = 0.806; Bartlett’s test: approx. Chi-square = 357,816 with 15 degrees of freedom and $p = 0.000$) carried out using principal components analysis revealed that all the items load to single metavariate (loading strength ranging from 0.524 to 0.885), explaining 62.37% of the variance.

We started our research in January 2018 by testing the questionnaire on a sample of 31 employees of healthcare entities, students of postgraduate studies in Management in Healthcare at the University of Economics in Katowice and the Medical University of Silesia. Apart from filling in the questionnaire, the respondents were also asked to submit any comments on the content or formulating the questionnaire’s questions.

The primary data collection stage was carried out from May 2018 to December 2019 by the Research and Development Centre (from here onwards: RDC) at the UE Katowice (cbir@ue.katowice.pl). The RDC started gathering data by sending traditional mail to all first-level hospitals qualified to the “hospital’s network” in Poland. Then, an employee of the center called the person indicated as the respondent (director or deputy director or chief accountant), asking to complete and return the questionnaire to the university’s address. It should be emphasized that collecting data in hospitals is difficult as hospital managers are reluctant to spend their time-sharing information.

In our study, we used purposive sampling. As of October 2017, in Poland, 594 medical facilities are qualified for the so-called “network of hospitals” because they meet the statutory conditions, and NFZ guarantees lump-sum financing for these facilities. The hospitals’ network was expanded to include medical facilities that, for at least the last two years (2015–2017), provided services as part of an admission room or hospital emergency

department under a contract with the NFZ, and have specific hospital departments listed in the Act. As a result, 355 Polish hospitals remain outside the network, 16 of which are public institutions, and the rest are private hospitals.

We aimed at studying only first-level hospitals (274 in total). Such a decision was recognized as true that, due to the territorial range of their activities, they secure the basic needs of residents in the field of residential treatment. First-level hospitals operate in each of the 16 voivodships in Poland and are arranged in such a way as to provide citizens with the best possible access to hospital health services. By definition, these are hospitals operating in the districts, less often in the commune. They constitute the most homogeneous group of entities in terms of the ownership structure (founding entity – district/commune), the hospital wards' medical profile, the scope of services provided, and financing sources. According to the research conducted in 2013–2018, such hospitals operate in a task environment dominated by similar stakeholders (Austen and Frączkiewicz-Wronka 2018). However, in various conditions, depending on the local government units, the characteristics of the interest, influence, and importance of individual stakeholders may vary.

Due to the population's size (hospital register with contact details downloaded from the Ministry of Health website), we decided to send the questionnaire to all first-level hospitals meeting the criterion of a medical facility qualified for the network. Detailed sample selection and composition are presented in the Table 4.

Table 4. Sample selection and composition.

Voivodeship		Sampling Frame— Number of the First-Level Hospi- tals in Voivode- ships	Number of Re- ceived Question- naires	Number of Dis- carded Question- naires	Number of Ques- tionnaires Included in Analyses
1	Lower Silesia Province	20	15	7	8
2	Kuyavian-Pomeranian Province	16	8	5	3
3	Lublin Province	18	7	5	2
4	Lubuskie Province	10	5	4	1
5	Łódź Province	15	15	0	15
6	Lesser Poland Province	11	9	5	5
7	Masovian Province	37	17	4	13
8	Holy Cross Province	8	6	2	4
9	Pomeranian Province	11	8	3	5
10	Podkarpackie Province	12	9	2	7
11	Podlasie Province	14	8	4	5
12	Opole Province	12	4	2	2
13	West Pomeranian Province	15	8	3	5
14	Greater Poland Province	24	12	3	9
15	Warmia-Masuria Province	19	8	1	7
16	Silesia Province	32	16	2	12
	Together	274	155	52	103

In the collecting information phase, we obtained 155 responses, of which 103 fully completed ones (containing all the answers required in the form) were qualified for further statistical analyses. Therefore, the effective sample amounts to 37.59% of the sampling frame.

5. Research Results

To test our research hypotheses, in the first step, we employed descriptives of financial stability, risk management practices, and stakeholders’ engagement (see Table 5).

Table 5. Descriptives.

Constructs	Financial Stability	Risk Management Practices	Stakeholders’ Engagement
Mean	3.6893	5.6951	5.2994
Std. Deviation	1.47474	0.97612	0.94695

N = 103.

Analysis of Table 4 reveals that, on average, hospitals in the sample tend to assess their financial stability below the mid-point of the scale (mean = 3.69) with a relatively significant standard deviation equal to 1.47. On the other hand, hospitals are assessing much higher risk management practices in the unit (mean = 5.69) and stakeholders’ engagement (mean = 5.30). Respondents also report many coherent levels of risk management practices and stakeholders’ engagement (standard deviation in both cases is lower than 1).

To fully understand the relationships between studied constructs, we further used structural equation modeling in Mplus 8.2 for Mac. For this purpose, we estimated three models, the first (model 1) with relationships between two primary constructs assuming the influence of risk management practices on financial stability; the second, with added the influence of stakeholders’ engagement on financial stability (model 2); and third, in which we additionally account for the interaction between risk management practices and stakeholders’ engagement. In all three estimations, we treated constructs as latent and first-order reflective; however, we were forced to use random type analysis due to latent constructs interaction in the model in the third case. Thus, in the third model, we cannot supply model fit statistics other than the Akaike Information Criterion (Hooper et al. 2008). The results are presented in Table 6.

Table 6. Model estimation results.

Model	Model 1	Model 2	Model 3
	The Effect of Risk Management Practices on Financial Stability	The Effect of Risk Management Practices and Stakeholders’ Engagement on Financial Stability	The Effect of Risk Management Practices on Financial Stability Moderated by Stakeholders’ Engagement
MODEL FIT STATISTICS			
RMSEA	0.074	0.092	-
CFI (Compound Fit Index)	0.980	0.913	-
TLI (Tucker–Lewis Index)	0.968	0.889	-
Akaike Information Criterion (AIC)	2304.632	3838.519	3834.898
r ²	0.060	0.110	0.121
MODEL ESTIMATION RESULTS			
Independent variables (IV)	Estimate β (S.E. σ)	Estimate β (S.E. σ)	Estimate β (S.E. σ)
Risk management practices	0.572 (0.269) *	1.003 (0.465)	0.265 (0.253)
Stakeholders’ engagement	-	-0.623 (0.619)	-0.221 (0.224)
Risk management practices × stakeholders’ engagement (the interaction)	-	-	-0.207 (0.088)

Constant	2.230 (0.440)	2.106 (0.431)	0.904 (0.061)
----------	---------------	---------------	---------------

Note: * means that statistically significant parameters at $p < 0.01$ are highlighted.

Analysis of the estimated leads to several observations. According to Hooper et al. (2008), the first model is moderately fitted, with RMSEA lower than 0.074 and CFI and TLI both significantly above the 0.9 cut-off line; however, it explains only 6% of the variability financial stability ($r^2 = 0.06$). The second model is significantly worse fitted with RMSEA (root mean square error of approximation) equal to 0.092 (0.08 and below as the acceptable although moderately fit indicator), and CFI slightly above the 0.9 cut-off line (equal to 0.913) and TLI slightly below it (equal to 0.889). In the third model, we were unable to provide fit statistics; however, AIC is lower than in model 2 (AIC of model 3 = 3834.898 vs. AIC of model 2 = 3838.519), which signifies a small improvement in the model fit (the decrease of AIC coefficient signifies improved fit (Hooper et al. 2008). Both models 2 and 3 explain a higher percentage of the variability of financial stability than model 1 (r^2 coefficient equal to 0.11 and 0.121, respectively), although it still accounts for a small part of changes in the level of financial stability.

Referring to Hypothesis H1, in the first model, risk management practices are a significant predictor of financial stability, according to the structural equation modeling estimation. The coefficient signifies that to higher perceived financial stability (coefficients in the first model: $\beta = 0.572$; $\sigma = 0.0269$). In the second model, after accounting for stakeholders' engagement, the relationship is still significant (coefficients in the second model: $\beta = 1.003$; $\sigma = 0.465$). In the third model, when considering the influence of interaction effect between risk management practices and stakeholders' engagement on financial stability, risk management practices themselves stop being important ($\beta = 0.265$; $\sigma = 0.253$). That brings partial support for our Hypothesis H1, while risk management practices, if accounted alone, comprise an essential factor determining financial stability, however, they stop playing this role when considering for stakeholders' engagement interaction.

Referring to our second hypothesis, stakeholders' engagement by itself is not a significant predictor of financial stability of the hospital neither in model 2 ($\beta = -0.623$; $\sigma = 0.619$) nor the model 3 ($\beta = -0.221$; $\sigma = 0.224$). Thus, we are forced to reject our second hypothesis. Finally, the interaction between risk management practices and financial stability plays a vital role in explaining the relationship between risk management practices and the hospitals' financial stability (model 3: $\beta = -0.207$; $\sigma = 0.088$). To better understand the moderated relationships' nature, we plotted two-way interaction using an excel tool adapted from www.jeremydawson.co.uk/slopes.htm (accessed on 30 April 2021). After introducing the data to the excel sheet, we were able to draw a plot, illustrated in Figure 3, representing the influence of interactions between risk management practices and stakeholders engagement on financial stability.

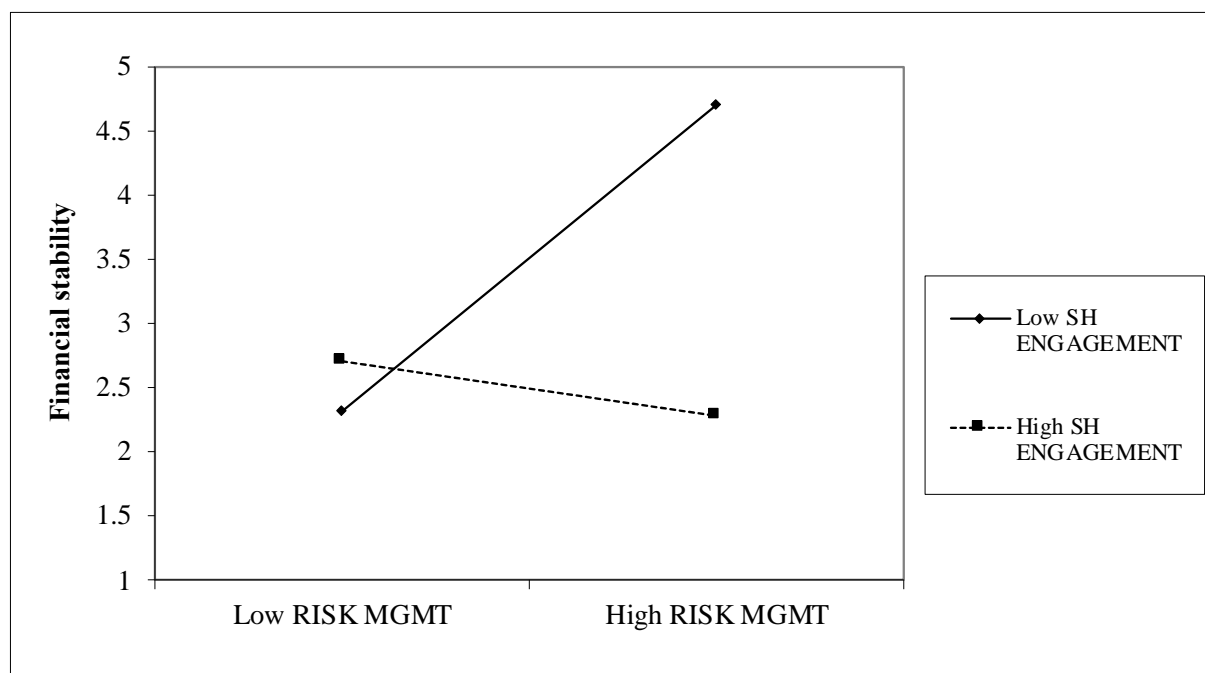


Figure 3. Interaction between risk management practices and stakeholders' engagement. Note: RISK MGMT—risk management practices; SH ENGAGEMENT—stakeholders' engagement in decision-making.

Interpreting the drawing, with high levels of stakeholders' engagement, the increase of risk management practices negatively affects financial stability. However, when stakeholders' engagement is low, the increase in attention paid to risk management practices pays back in increased financial stability. That brings support to our Hypothesis H3.

6. Discussion

In healthcare organizations in general and the hospital environment, both risk and risk management attract significant attention. It mostly triggers interest in the risk related to patient safety (Cagliano et al. 2011; Sheppard et al. 2013); however, there are also works related to cybersecurity risk management (Coronado and Wong 2014); managing healthcare waste (Akpieyi et al. 2015). However, as we outlined earlier in the text, it might be argued that the sources of risk for Polish hospitals should also be studied from a purely managerial and financial perspective. In such a case, organizational procedures—risk management practices—allowing hospitals to become prepared and adequately respond to the unforeseen obstacles and adversities may become essential factors guaranteeing its continuous operation under different financial strains (Beck de Silva Etges et al. 2016; Mahama et al. 2020; Zheng et al. 2019). Thus, well-crafted and executed risk management practices should lead to better financial stability. Especially, when they are coupled with shareholder engagement in the process (Bromiley et al. 2015). Thus, in our study, we tested how risk management practices in healthcare organizations influence a hospital's perceived financial stability considering principal hospital shareholders' engagement.

According to our research results, risk management practices affect financial stability in researched units only when examined without the interaction with the shareholder engagement. When we considered the interaction with the shareholder engagement, the influence of risk management practices on financial stability is nonsignificant. That demonstrates that risk management practices per se can influence financial stability, and hospitals shall seek to develop both appropriate tools to identify and manage risks and encourage their employees to act in a critical or difficult situation. However, in the meantime, other factors are affecting the financial stability of a hospital, which were not included in the model (Sowada et al. 2020). We assume that improvements in the decision-making

processes, better financial planning, more accessible and better-suited information systems, and apt human resource practices contribute to financial stability to a more considerable extent (Griffith 2000).

Next, we also tested if the shareholders' engagement in Polish hospitals' decision-making processes led to improved financial stability. However, our model estimations brought no support for the second hypothesis; thus, we found no evidence of the influence of shareholders' engagement in the decision-making on financial stability. That result might be perceived as controversial, considering the hospital's obligation to account for stakeholders' expectations in the decision-making processes (Norris et al. 2017; Osborne et al. 2015; Rixon 2010; Wortley et al. 2016). It also contrasts research results that emphasize potential profits of stakeholders' engagement, namely: acquiring more thorough information, the better legitimization of decisions, or the quality of the decision that is made (Beierle 2002; George et al. 2016). On the other hand, it shows that stakeholder participation is not always desirable and does not lead to expected results, although we did not include nonlinear effects in our hypothesis, producing a different result (Schalk 2015).

Finally, with respect to our third hypotheses, we tested how risk management practices with shareholder engagement affect financial stability. Research results show that these two factors, when taken together, affect financial stability significantly. In particular, when risk management practices are becoming more and more sophisticated, higher stakeholder engagement in the decision-making processes leads to hospitals' statistically lower financial stability. This means that when awareness of the risks increases within the hospital, stakeholders that are actively engaged in decisions limits hospitals' ability to respond appropriately to identified risks. We assume that the adverse impact of shareholders' engagement in the decision-making processes with high-risk management standards may remain a result of extending the time needed to make a decision considering too broad or irrelevant information (Schalk 2015), and critical situation, in which risk management processes are employed, require prompt answers. It might also be caused by the lack of appropriate conditions for stakeholders to actively participate in the process (Reed et al. 2018), or the lack of understanding of the problem by stakeholders and their irrelevant or even harmful pressures on inappropriate solutions (Wheeler and Sillanpää 1997), especially when their power is too large (Malfait et al. 2017; Malfait et al. 2018; McCarron et al. 2019; Petkovic et al. 2020).

Concerning limitations, we identified four main issues that hinder our study. Firstly, due to the relatively small sample, we could not employ more sophisticated data analysis methods. Our research also suffers from a single response bias (Burchett and Ben-Porath 2019). We tried to mitigate it by directly contacting every single respondent, but we still gathered opinions of single respondents within each hospital. In future studies, we suggest gathering data from multiple sources of information, for example, manager and stakeholder or manager and chosen employee (Turner et al. 2017). Secondly, we gathered opinions on financial stability—in our case, it would make much sense to combine these declarative statements with data flowing from financial reports (Min et al. 2020). However, in the process of data gathering, it exceeded our possibilities of reaching such information, and because of the difficult situation of numerous Polish hospitals, we decided to exclude this type of questions from the survey. We are certain that the future in-depth qualitative study would help to better address this issue. Additionally, we are convinced that testing financial stability both on the basis of declarative statement and "hard data" would bring a more comprehensive, bias free, and valuable standpoint to develop discussion. Thirdly, our study focused on detecting relationships between variables, but it fails to explain why these relationships exist. We suppose that future studies should understand the processes behind relationships between risk management and financial stability (Feng 2011; Karam

et al. 2018; McCue and McCluer 2008; Ozcan and McCue 1996). It would also help to contextualize essential, outlined relationships better.

The contextualization of our model offers, in our opinion, a fascinating field of future research. In particular, we assume that it would be profitable for better understanding relationships between studied constructs to include at least three variables helping to explain the main relationship: leadership, while appropriate style might foster and encourage employees respond to a critical situation (Crosby and Bryson 2018); professionalization of management, which might translate existing procedures to life—competent managers would enable and empower employees to identify and better respond to adversities (Gerard 2019; Ingram and Glod 2016), and finally, risk management maturity, which is strongly related to professionalization. Maturity is understood as skills that demonstrate hospitals' readiness to perform specific tasks and the state of being complete, perfect, or ready (Antonucci 2016). In this respect, it seems reasonable to focus on both process maturity (Fraser and Vaishnavi 1997), object maturity (Mahama et al. 2020) as well as people's capability (Nonaka 1994).

Moreover, future studies would also embrace the topic of mutual relationships between risk management practices and financial stability. Clear identification of cause and effect in this regard is difficult while both of these phenomena reinforce themselves mutually. These relationships should be studied more deeply in the future in a richer context and on the larger sample, enabling inclusion of more contextual variables to the model. Most importantly, contextualization should also lead to including the hospital ecosystem as a dynamic moderator of the primary relationship. In such a case, we encourage scholars to perceive ecosystems as a community that consists of the living organisms and the nonliving components of particular natural environment space, interacting as a system. There are many relationships between these organisms and components that allow them to function in harmony and balance. Ecosystems are controlled by external and internal factors (Chapin et al. 2002; Banoun et al. 2016). On the ground of social sciences, the term ecosystem has been mainly applied in recent years to social innovation to describe the enabling environment that needs to be put in place if social innovations are to achieve their ultimate ambition of systemic change (Biggs et al. 2010; Pel et al. 2020; Vargo et al. 2015, 2017). In this context, an ecosystem approach provides a framework for both understanding all the interactions and resources relating to actors involved in social innovation work at a given time and for identifying what changes need to happen in order to build a field that is 'more than the sum of its parts'. In future research, including the ecosystem into the model should mainly focus on testing the interactions of its numerous components (legal regulations, level of financing, political changes, the competition level, etc.) with risk management and shareholders engagement as well as its impact on the financial stability of a hospital. Thus, we argue that the environmental factors that may have the most significant impact on the process of implementing risk management policy in Polish hospitals include social expectations that public services will be of higher quality and better access, which "force" managers to seek opportunities to streamline processes within the organization (Noronha and Mekoth 2013). A strong factor facilitating change is also the ageing society (Buliński and Błachnio 2017), which creates the need to develop new areas of healthcare services that would meet emerging health challenges, including the development of healthcare services based on telemedicine, which will improve the availability of healthcare services for people with limited mobility.

7. Conclusions

On the practical side, our research leads to several recommendations. We divided them into three groups: implications for organizational stakeholders (mainly managers), implications for shareholders (owner entity), and national health system stakeholders. In

the first instance, since risk management practices are proven, at least in isolation, to lead to improved financial stability, hospital managers are encouraged to motivate employees to actively monitor the situation with respect to potential risks or crises (Hunt 2010; Kloutsiniotis and Mihail 2017; Li et al. 2020; Oulasvirta and Anttiroiko 2017; Rana et al. 2019). Hospitals should also focus on developing procedures to mitigate risks and train employees to facilitate adequate reaction to a critical situation (Agnew et al. 2006; Ferdosi et al. 2020; Roberts 2002). It seems similarly reasonable and justifiable to create emergency response teams of employees trained specially to counter unforeseen crises (Ab Aziz et al. 2019; Hunt 2010).

Further, we prove that under certain conditions (with well-developed risk management practices that are most likely the result and reflection of managers' high professional competencies in a hospital), shareholders' engagement might be detrimental to financial stability. Professional managers might not need additional help from stakeholders when making tough times (Hinna et al. 2018; Noordegraaf and Van der Meulen 2008). Although, when risk management practices are nonexistent, shareholders should actively engage in decision-making processes to enhance quality. Thus, shareholders should balance their engagement based on constant evaluation of actual needs to shape financial stability actively (Li et al. 2020; Rixon 2010; Wu 2012).

Finally, we suggest including the assessment of risk management procedures and preparedness into the evaluation criteria for hospitals for the system level stakeholders. Additionally, the care for healthcare managers' qualifications seems to be on point (Dwyer et al. 2006) since these might affect hospital decision-makers' attitude towards risk management. At a systemic level, we believe that stakeholders should support the creation of capacity building, perceived as "(...) the process by which individuals and organizations develop or strengthen abilities related to understanding, providing input to, conducting, or utilizing risk management as a tool for better health policy and decision making, as well as developing awareness and support in the environment within hospitals acting for implementation risk management as a tool for an effective hospital management" (Pichler et al. 2019, p. 363). Finally, results suggest that system-level stakeholders should focus on controlling shareholders' level of engagement in decision-making, especially when managers are qualified professionals (Kwiecińska-Bożek 2018; Linnander et al. 2017).

Author Contributions: Conceptualization, A.F.-W., T.I., K.S.-M., P.T.; methodology, A.F.-W., T.I., K.S.-M., P.T.; software, A.F.-W., T.I., K.S.-M., P.T.; validation, A.F.-W., T.I., K.S.-M., P.T.; formal analysis, A.F.-W., T.I., K.S.-M., P.T.; investigation, A.F.-W., T.I., K.S.-M., P.T.; resources, A.F.-W., T.I., K.S.-M., P.T.; data curation, A.F.-W., T.I., K.S.-M., P.T.; writing—original draft preparation, A.F.-W., T.I., K.S.-M., P.T.; writing—review and editing, A.F.-W., T.I., K.S.-M., P.T.; visualization, A.F.-W., T.I., K.S.-M., P.T.; supervision, A.F.-W., T.I., K.S.-M., P.T.; project administration, A.F.-W., T.I., K.S.-M., P.T.; funding acquisition, A.F.-W., T.I., K.S.-M., P.T. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by the Polish Ministry of Science and Higher Education under University of Economics in Katowice the research potential fund.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Data are available on request from the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

References

- Ab Aziz, Nur Farhani, Farid Wajdi Akashah, and Aniza Abdul Aziz. 2019. Conceptual framework for risk communication between emergency response team and management team at healthcare facilities: A Malaysian perspective. *International Journal of Disaster Risk Reduction* 41: 101282, doi:10.1016/j.ijdrr.2019.101282.
- Adil, Mahmood. 2008. Risk communication in healthcare: An overview. *Journal of Communication in Healthcare* 1: 363–72, doi:10.1179/cih.2008.1.4.363.
- Agnew, John E., Nicholas Komaromy, and Richard E. Smith. 2006. Healthcare Institution Risk Assessments: Concentration on “Process” or “Outcome”? *Journal of Risk Research* 9: 503–23.
- Akpieyi, Alex, Terry L. Tudor, and Cleber Dutra. 2015. The utilisation of risk-based frameworks for managing healthcare waste: A case study of the National Health Service in London. *Safety Science* 72: 127–32, doi:10.1016/j.ssci.2014.08.014.
- Amaeshi, Kenneth M., and Andrew Crane. 2006. Stakeholder engagement: A mechanism for sustainable aviation. *Corporate Social Responsibility and Environmental Management* 13: 245–60, doi:10.1002/csr.108.
- Antonucci, Domenic. 2016. *Risk Maturity Models*. London: Kogan Page Limited.
- Austen, Agata, and Aldona Frączkiewicz-Wronka. 2018. Stakeholders and resources in public hospitals: Towards an integrated view. *Argumenta Oeconomica* 1: 253–74.
- Bakalikwira, Lasuli, Juma Bananuka, Twaha K. Kigongo, Doreen Musimenta, and Veronica Mukyala. 2017. Accountability in the public health care systems: A developing economy perspective. *Cogent Business & Management* 4: 1–14, doi:10.1080/23311975.2017.1334995.
- Banoun, Arnaud, Lucas Dufour, and Meena Andiappan. 2016. Evolution of a service ecosystem: Longitudinal evidence from multiple shared services centers based on the economies of worth framework. *Journal of Business Research* 69: 2990–98, doi:10.1016/j.jbusres.2016.02.032.
- Beck de Silva Etges, Joana Siqueira de Souza, Francisco José Kliemann Neto, and Elaine Aparecida Felix. 2016. A proposed enterprise risk management model for health organizations. *Journal of Risk Research* 22: 513–31, doi:10.1080/13669877.2017.1422780.
- Beierle, Thomas C. 2002. The quality of stakeholder-based decisions. *Risk Analysis* 22: 739–49, doi:10.1111/0272-4332.00065.
- Bennet, Peter, Kenneth Calman, Sarah Curtis, and Denis Fischbacher-Smith. 2010. *Risk Communication and Public Health*. Oxford: Oxford University Press.
- Biggs, Reinette, Frances R. Westley, and Stephen R. Carpenter. 2010. Navigating the back loop: Fostering social innovation and transformation in ecosystem management. *Ecology and Society* 15: 28, doi:10.5751/ES-03411-150209.
- Borraz, Olivier. 2007. Risk and Public Problems. *Journal of Risk Research* 10: 941–57, doi:10.1080/13669870701504541.
- Bromiley, Philip, Michael McShane, Anil Nair, and Elzotbek Rustambekov. 2015. Enterprise risk management: Review, critique, and research directions. *Long Range Planning* 48: 265–76, doi:10.1016/j.lrp.2014.07.005.
- Bryson, John M. 2004. What to do when stakeholders matter: Stakeholder identification and analysis techniques. *Public Management Review* 6: 21–53, doi:10.1080/14719030410001675722.
- Buliński, Leszek, and Aleksandra Błachnio. 2017. Health in old age, and patients’ approaches to telemedicine in Poland. *Annals of Agricultural and Environmental Medicine* 24: 322–28, doi:10.26444/aaem/74200.
- Burchett, Danielle, and Yossef S. Ben-Porath. 2019. Methodological considerations for developing and evaluating response bias indicators. *Psychological Assessment* 31: 1497–511, doi:10.1037/pas0000680.
- Burke, Richard, and Istemi Demirag. 2017. Risk transfer and stakeholder relationships in Public Private Partnerships. *Accounting Forum* 41: 28–43, doi:10.1016/j.accfor.2016.06.004.
- Cagliano, Anna Corina, Sabrina Grimaldi, and Carlo Rafele. 2011. A systemic methodology for risk management in healthcare sector. *Safety Science* 49: 695–708, doi:10.1016/j.ssci.2011.01.006.
- Carroll, Robert, ed. 2009. *Risk Management Handbook for Health Care Organizations*. Hoboken: John Wiley & Sons Inc.
- Chambers, Naomi, Gill Harvey, and Russell Mannion. 2017. Who should serve on health care boards? What should they do and how should they behave? A fresh look at the literature and the evidence. *Cogent Business & Management* 4: 1–14, doi:10.1080/23311975.2017.1357348.
- Chapin, F. Stuart, Pamela A. Matson, and Harold A. Mooney. 2002. *Principles of Terrestrial Ecosystem Ecology*. New York: Springer.
- Cleemput, Irina, Wendy Christiaens, Laurence Kohn, Christian Léonard, François Daue, and Alain Denis. 2015. Acceptability and Perceived Benefits and Risks of Public and Patient Involvement in Health Care Policy: A Delphi Survey in Belgian Stakeholders. *Value Health* 18: 477–83, doi:10.1016/j.jval.2014.12.015.
- Collins, David. 1992. The Strategic Management of Uncertainty. *European Management Journal* 10: 125–35.
- Cornforth, Chris. 1978. What makes boards effective? An examination of the relationships between board inputs, structures, processes and effectiveness in non-profit organizations. *Corporate Governance: An International Review* 9: 217–27.
- Coronado, Anthony J., and Timothy L. Wong. 2014. Healthcare cybersecurity risk management: Keys to an effective plan. *Biomedical Instrumentation & Technology* 48: 26–30, doi:10.2345/0899-8205-48.s1.26.
- Crosby, Barbara C., and John M. Bryson. 2018. Why leadership of public leadership research matters: And what to do about it. *Public Management Review* 20: 1265–86, doi:10.1080/14719037.2017.1348731.
- Dansoh, Ayirebi, Samuel Frimpong, Godslove Ampatwaum, Goodenough Dennis Oppong, and Robert Kyei-Osei. 2020. Exploring the role of traditional authorities in managing the public as stakeholders on PPP projects: A case study. *International Journal of Construction Management* 20: 628–41, doi:10.1080/15623599.2020.1725722.

- Dillon, Stuart, John Buchanan, and Jim Corner. 2010. *Comparing Public and Private Sector Decision Making: Problem Structuring and Information Quality Issues*. Paper presented at 45th Annual Conference of the ORSNZ, Auckland, New Zealand, November 29–30.
- Dixit, Sunil K. 2017. A new multiperspective emphasis on the public hospital governance. *International Journal of Healthcare Management* 13: 267–75, doi:10.1080/20479700.2017.1403761.
- Djellouli, Nehla, Lorelei Jones, Helen Barratt, Angus I. G. Ramsay, Steven Towndrow, and Sandy Oliver. 2019. Involving the public in decision-making about large-scale changes to health services: A scoping review. *Health Policy* 123: 635–45, doi:10.1016/j.healthpol.2019.05.006.
- Dubas-Jakóbczyk, Katarzyna, Iwona Kowalska-Bobko, and Christoph Sowada. 2019. The 2017 reform of the hospital sector in Poland—The challenge of consistent design. *Health Policy* 123: 538–43, doi:10.1016/j.healthpol.2019.03.013.
- Dwyer, Joseph, Michael Paskavitz, Sylvia Vriesendorp, and Sarah Johnson. 2006. An urgent call to professionalize leadership and management in health care worldwide. *Management Sciences for Health Occasional Papers* 4: 1–14.
- Edelenbos, Jurian, and Erik-Hans Klijn. 2006. Managing Stakeholder Involvement in Decision Making: A Comparative Analysis of Six Interactive Processes in the Netherlands. *Journal of Public Administration Research and Theory* 16: 417–46, doi:10.1093/jop-art/mui049.
- Elias, Arun A. 2019. Strategy Development Through Stakeholder Involvement: A New Zealand Study. *Global Journal of Flexible Systems Management* 20: 313–22, doi:10.1007/s40171-019-00217-6.
- Elleuch, Hatem, Wafik Hachicha, and Habib Chabchoub. 2014. A combined approach for supply chain risk management: Description and application to a real hospital pharmaceutical case study. *Journal of Risk Research* 17: 641–63, doi:10.1080/13669877.2013.815653.
- Feng, Ziqin. 2011. Financial risks from three dimensions and risk identification model of enterprise. *Strategic Finance* 6: 71–80, doi:10.1080/17509653.2011.10671148.
- Ferdosi, Masoud, Reza Rezayatmand, and Yasamin Molavi Taleghani. 2020. Risk Management in Executive Levels of Healthcare Organizations: Insights from a Scoping Review 2018. *Risk Management and Healthcare Policy* 13: 215–43, doi:10.2147/RMHP.S231712.
- Flemig, Sophie, Stephen Osborne, and Tony Kinder. 2016. Risky Business—Reconceptualizing Risk and Innovation in Public Services. *Public Money & Management* 36: 425–32. doi:10.1080/09540962.2016.1206751.
- Fone, Martin, and Peter C. Young. 2007. *Managing Risks in Public Organizations*. London: Palgrave Macmillan.
- Frączkiewicz-Wronka, Aldona. 2012. Rola i znaczenie interesariuszy w procesie podejmowania decyzji w organizacjach publicznych [Role and importance of stakeholders in decision making in public organizations]. In *Wykorzystanie Analizy Interesariuszy w Zarządzaniu Organizacją Zdrowotną [Using Stakeholder Analysis in Managing a Health Organization]*. Edited by Aldona Frączkiewicz-Wronka. Katowice: Śląsk, pp. 15–46.
- Frączkiewicz-Wronka, Aldona. 2018. Stakeholders as a source of risk in public hospitals in Poland—selected problems. In *Public Relations w Przestrzeni Publicznej [Public Relations in Public Space]*. Edited by Anna Adamus-Matuszyńska. Prace Naukowe Uniwersytetu Ekonomicznego w Katowicach. Katowice: Uniwersytetu Ekonomicznego w Katowicach, pp. 150–57.
- Fraser, Martin D., and Vijay Vaishnavi. 1997. A formal specifications maturity model. *Communications of the ACM* 40: 95–103.
- George, Bert, Sebastian Desmidt, and Julie De Moyer. 2016. Strategic decision quality in Flemish municipalities. *Public Money & Management* 36: 317–24, doi:10.1080/09540962.2016.1194073.
- Gerard, Nathan. 2019. Perils of professionalization: Chronicling a crisis and renewing the potential of healthcare management. *Health Care Analysis* 27: 269–88, doi:10.1007/s10728-019-00368-8.
- Główny Urząd Statystyczny (GUS) [Main Statistical Office]. 2019. *Ochrona Zdrowia w Gospodarstwach Domowych w 2017 r. [Healthcare in Households in 2017]*. Warsaw: GUS.
- Gomes, Ricardo Corrêa, Joyce Liddle, and Luciana O.M. Gomes. 2010. A five-sided model of stakeholder influence. A cross-national analysis of decision making in local government. *Public Management Review* 12: 701–24, doi:10.1080/14719031003633979.
- Griffith, John R. 2000. Championship management for healthcare organizations. *Journal of Healthcare Management* 45: 17–30.
- Hinna, Alessandro, Danila Scarozza, and Fabrizio Rotundi. 2018. Implementing Risk Management in the Italian Public Sector: Hybridization between Old and New Practices. *International Journal of Public Administration* 41: 110–28, doi:10.1080/01900692.2016.1255959.
- Hood, John, Andrew Mills, and William M. Stein. 2003. Development in UK public sector risk management: The implications for PPP/PFI projects. In *Public-Private Partnership: Managing Risks and Opportunities*. Edited by Akintola Akintoye, Cliff Hardcastle and Matthias Beck. Hoboken: Blackwell Science Ltd.
- Hooper, Daire, Joseph Coughlan, and Michael R. Mullen. 2008. Evaluating Model Fit: A Synthesis of the Structural Equation Modeling Literature. *Electronic Journal of Business Research Methods* 6: 53–60, doi:10.1010.21427/D7CF7R.
- Hunt, Brian. 2010. Risk and Crisis Management in the Public Sector. *Public Management Review* 12: 747–51, doi:10.1080/14719037.2010.512202.
- Ingram, Tomasz, and Wojciech Glod. 2016. Talent management in healthcare organizations—qualitative research results. *Procedia Economics and Finance* 39: 339–46, doi:10.1016/S2212-5671(16)30333-1.
- Jajuga, Krzysztof, ed. 2019. *Zarządzanie Ryzykiem [Risk Management]*. Warszawa: PWN.
- Jansen, Maarten P. M., Rob Baltussen, and Kristine Bærøe. 2018. Stakeholder Participation for Legitimate Priority Setting: A Checklist. *International Journal of Health Policy and Management* 7: 973–76, doi:10.15171/ijhpm.2018.57.

- Johnsen, Åge. 2015. Strategic Management Thinking and Practice in the Public Sector: A Strategic Planning for All Seasons? *Financial Accountability & Management* 31: 243–268, doi:10.1111/faam.12056.
- Karam, Marlène, Isabelle Brault, Thérèse Van Durme, and Jean Macq. 2018. Comparing interprofessional and interorganizational collaboration in healthcare: A systematic review of the qualitative research. *International Journal of Nursing Studies* 79: 70–83, doi:10.1016/j.ijnurstu.2017.11.002.
- Kavaler, Florence, and Allen D. Spiegel. 2003. *Risk Management in Health Care Institutions: A Strategic Approach*. Burlington: Jones & Bartlett Publishers.
- Klinke, Andreas, and Ortwin Renn. 2012. Adaptive and Integrative Governance on Risk and Uncertainty. *Journal of Risk Research* 15: 273–92, doi:10.1080/13669877.2011.636838.
- Kloutsiniotis, Panagiotis V., and Dimitrios M. Mihail. 2017. Linking innovative human resource practices, employee attitudes and intention to leave in healthcare services. *Employee Relations* 39: 34–53, doi:10.1108/ER-11-2015-0205.
- Kolluru, Rao V., Steven M. Bartell, Robin M. Pitblado, and Scott R. Stricoff. 1996. *Risk Assessment and Management Handbook. For Environmental, Health and Safety Professional*. New York: McGraw-Hill.
- Krewski, Daniel, Victoria Hogan, Michelle C. Turner, Patricia L. Zeman, Ian McDowell, Nancy Edwards, and Joseph Loses. 2007. An Integrated Framework for Risk Management and Population Health. *Human and Ecological Risk Assessment: An International Journal* 13: 1288–312, doi:10.1080/10807030701655798.
- Kwiecińska-Bożek, Lidia. 2018. Risk Management in Public Hospitals in Poland—Selected Issues. In *Public Relations w Przestrzeni Publicznej [Public Relations in Public Space]*. Edited by Anna Adamus-Matuszyńska. Prace Naukowe Uniwersytetu Ekonomicznego w Katowicach. Katowicach: Uniwersytetu Ekonomicznego w Katowicach, pp. 140–49.
- Langrafe, Taiguara de Freitas, Simone Ruchdi Barakat, Fabricio Stocker, and Joao Mauricio Gama Boaventura. 2020. A stakeholder theory approach to creating value in higher education institutions. *The Bottom Line* 33, doi:10.1108/BL-03-2020-0021.
- Li, Yanwei, Araz Taeighagh, Martin de Jong, and Andreas Klinke. 2020. Toward a Commonly Shared Public Policy Perspective for Analyzing Risk Coping Strategies. *Risk Analysis* 1–14, doi:10.1111/risa.13505.
- Lin, Lexin, Claudia Rivera, Marcus Abrahamsson, and Henrik Tehler. 2017. Communicating risk in disaster risk management systems—experimental evidence of the perceived usefulness of risk descriptions. *Journal of Risk Research* 20: 1534–53, doi:10.1080/13669877.2016.1179212.
- Linnander, Erika L., Jeannie M. Mantopoulos, Nikole Allen, Ingrid M. Nembhard, and Elizabeth H. Bradley. 2017. Professionalizing healthcare management: A descriptive case study. *International Journal of Health Policy and Management* 6: 555–60, doi:10.1080/10.15171/ijhpm.2017.40.
- Mahama, Habib, Mohamed Elbashirs, Stave Sutton, and Vicky Arnold. 2020. New development: Enabling enterprise risk management maturity in public sector organizations. *Public Money & Management* 1–5, doi:10.1080/09540962.2020.1769314.
- Malfait, Simon, Ann Van Hecke, Johan Hellings, Griet De Bodt, Kristof Eeckloo K. 2017. The impact of stakeholder involvement in hospital policy decision making: A study of the hospital's business processes. *International Journal of Clinical and Laboratory Medicine* 72: 63–71, doi:10.1080/17843286.2016.1246681.
- Malfait, Simon, Ann Van Hecke, Griet De Bodt, Nele Palsterman, and Kristof Eeckloo. 2018. Patient and public involvement in hospital policy-making: Identifying key elements for effective participation. *Health Policy* 122: 380–88, doi:10.1016/j.healthpol.2018.02.007.
- McCarron, Tamara L., Karen Moffat, Gloria Wilkinson, Sandra Zelinsky, Jamie M. Boyd, Deborah White, Derek Hassay, Diane L. Lorenzetti, Nancy J. Marlett, and Thomas Noseworthy. 2019. Understanding patient engagement in health system decision-making: A co-designed scoping review. *Systematic Reviews* 8: 97, doi:10.1186/s13643-019-0994-8.
- McCue, Michael J., and Forrest R. McCluer. 2008. Financial and Operational Ratios for Bond-Insured Hospitals. *Hospital Topics* 86: 3–8, doi:10.3200/HTPS.86.1.3-8.
- McEvoy, Rachel, Edel Tierney, and Anne MacFarlane. 2019. 'Participation is integral': Understanding the levers and barriers to the implementation of community participation in primary healthcare: A qualitative study using normalisation process theory. *BMC Health Services Research* 19: 515, doi:10.1186/s12913-019-4331-7.
- Mennen, Marcel G., and Maaïke Van Tuyl. 2015. Dealing with Future Risks in the Netherlands: The National Security Strategy and the National Risk Assessment. *Journal of Risk Research* 18: 860–76, doi:10.1080/13669877.2014.923028.
- Min, Naon, Ruowen Shen, David Berlan, and Keon-Hyung Lee. 2020. How Organizational Identity Affects Hospital Performance: Comparing Predictive Power of Mission Statements and Sector Affiliation. *Public Performance & Management Review* 43: 845–70, doi:10.1080/15309576.2019.1684958.
- Nieszporska, Sylwia. 2012. Ryzyko w ochronie zdrowia [The Risk in Health Care]. *Logistyka* 5: 149–52.
- Nonaka, Ikujiro. 1994. A dynamic theory of organizational knowledge creation. *Organization Science* 5: 14–37.
- Noordegraaf, Mirko, and Martijn Van der Meulen. 2008. Professional power play: Organizing management in health care. *Public Administration* 86: 1055–69, doi:10.1111/j.1467-9299.2008.00746.x.
- Noronha, Aruna Mesquita, and Nandakumar Mekoth. 2013. Social support expectations from healthcare systems: Antecedents and emotions. *International Journal of Healthcare Management* 6: 269–75, doi:10.1179/2047971913Y.0000000053.
- Norris, Jill M., Deborah E. White, Lorelli Nowell, Kelly Mrklas, and Henry T. Stelfox. 2017. How do stakeholders from multiple hierarchical levels of a large provincial health system define engagement? A qualitative study. *Implementation Science* 12: 1–13, doi:10.1186/s13012-017-0625-5.

- Nutt, Paul. 1999. Public-private differences and the assessment of alternatives for decision making. *Journal of Public Administration Research and Theory* 9: 305–49.
- Nutt, Paul. 2005. Comparing Public and Private Sector Decision-Making Practices. *Journal of Public Administration Research and Theory* 16: 289–318, doi:10.1093/jopart/mui041.
- O’Shea, Alison, Annette L. Boaz, and Mary Chambers. 2019. A Hierarchy of Power: The Place of Patient and Public Involvement in Healthcare Service Development. *Frontiers in Sociology* 4: 38, doi:10.3389/fsoc.2019.00038.
- Organisation for Economic Cooperation and Development (OECD). 2020. *Health at a Glance 2019: OECD Indicators*. Paris: OECD Publishing, doi:10.1787/19991312.
- Osborne, Stephen P., Zoe Radnor, Tony Kinder, and Isabel Vidal. 2014. Sustainable public service organisations: A public service-dominant approach. *Society and Economy* 36: 313–38, doi:10.1556/SocEc.36.2014.3.1.
- Osborne, Stephen P., Zoe Radnor, Tony Kinder, and Isabel Vidal. 2015. The SERVICE Framework: A Public-service-dominant Approach to Sustainable Public Services. *British Journal of Management* 26: 424–38, doi:10.1111/1467-8551.12094.
- Osborne, Stephen P., Taco Brandsen, Valentina Mele, Juraj Nemec, Marieke van Genugten, and S. Sophie Fleming. 2020. Risking innovation. Understanding risk and public service innovation—Evidence from a four nation study. *Public Money & Management* 40: 52–56, doi:10.1080/09540962.2019.1621051.
- Oulasvirta, Lasse, and Ari-Veikko Anttiroiko. 2017. Adoption of comprehensive risk management in local government. *Local Government Studies* 43: 451–74, doi:10.1080/03003930.2017.1294071.
- Ozcan, Yasar A., and Michael J. McCue. 1996. Development of a Financial Performance Index for Hospitals: DEA Approach. *Journal of the Operational Research Society* 47: 18–26.
- Pel, Bonno, Julia Wittmayer, Jens Dorland, and Michael S. Jorgensen. 2020. Unpacking the Social Innovation Ecosystem: An empirically grounded typology of empowering network constellations. *Innovation: The European Journal of Social Science Research* 33: 311–36, doi:10.1080/13511610.2019.1705147.
- Petkovic, Jennifer, Alison Riddle, Elie A. Akl, Joanne Khabsa, Lyubove Lytvyn, Pearl Atwere, Pauline Cambell, Kalipso Chalkidou, Stephanie M. Chang, Sally Crowe, and et al. 2020. Protocol for the development of guidance for stakeholder engagement in health and healthcare guideline development and implementation. *Systematic Reviews* 9: 1–11, doi:10.1186/s13643-020-1272-5.
- Pichler, Franz, Wija Oortwijn, Alric Ruether, and Rebecca Trowman. 2019. Defining capacity building in the context of HTA: A proposal by the HTAi Scientific Development and Capacity Building Committee. *International Journal of Technology Assessment in Health Care* 35: 362–66, doi:10.1017/S0266462319000631.
- Power, Michael. 2016. *Riskwork: Essays on the Organizational Life of Risk Management*. Oxford: Oxford University Press.
- Professeure, Lucie Rouillard. 2004. Managing Risk: A New Approach to Government Intervention. *Public Management Review* 6: 95–111, doi:10.1080/14719030410001675759.
- Quick, Kathryn S., and John M. Bryson. 2016. Public Participation. In *Handbook on Theories of Governance*. Edited by Chris Ansell and Jacob Torfing. Cheltenham: Edward Elgar Press.
- Raczkowski, Konrad, and Piotr Tworek. 2017. What Does Risk Management in an Economy Really Mean? In *Risk Management in the Public Administration*. Edited by Konrad Raczkowski. London: Palgrave Macmillan.
- Rainey, Hal G. 2003. *Understanding and Managing Public Organizations*. San Francisco: Jossey-Bass.
- Rana, Tarek, Danture Wickramasinghe, and Enrico Bracci. 2019. New development: Integrating risk management in management control systems—lessons for public sector managers. *Public Money & Management* 39: 148–51, doi:10.1080/09540962.2019.1580921.
- Reed, Mark, Steven Vella, Edward Challies, Joris de Vente, Lynne Frewer, Daniela Hohenwallner-Ries, Tobias Huber, Rosmarie Neumann, Elizabeth Oughton, Julian Sidoli del Ceno, and et al. 2018. A theory of participation: What makes stakeholder and public engagement in environmental management work? *Restoration Ecology* 26: 7–17, doi:10.1111/rec.12541.
- Rixon, Daphne. 2010. Stakeholder Engagement in Public Sector Agencies: Ascending the Rungs of the Accountability Ladder. *International Journal of Public Administration* 33: 374–556, doi:10.1080/01900691003606006.
- Roberts, Geoff. 2002. *Risk Management in Healthcar*. London: Witherby & Co.
- Rudawska, Iga. 2011. Ku rynkowi w opiece zdrowotnej [Towards a market in healthcare]. *Polskie Stowarzyszenie Zarządzania Wiedzą* 55: 131–38.
- Sarens, Gerrit, Christian de Visscher, and Diane van Gils. 2010. Risk management and internal control in the public sector: An in-depth analysis of Belgian Social Security Public Institutions. *Federale Overheidsdienst Financiën — België* 70: 65–90.
- Schalk, Jelmer. 2015. Linking Stakeholder Involvement to Policy Performance: Nonlinear Effects in Dutch Local Government Policy Making. *American Review of Public Administration* 47: 479–59, doi:10.1177/0275074015615435.
- Sheppard, Faye, Marcie Williams, and Victor R. Klein. 2013. TeamSTEPS and patient safety in healthcare. *Journal of Healthcare Risk Management* 32: 5–10, doi:10.1002/jhrm.21099.
- Skoczylas, Wanda, and Piotr Waśniewski. 2014. Wskaźniki finansowe w raporcie z badania sprawozdania finansowego przez biegłego rewidenta [Financial ratios in the report supplementing the opinion on the audit of financial statement by the statutory auditor]. *Finanse, Rynki Finansowe, Ubezpieczenia* 69: 243–52.
- Snow, Donald. 1992. *Inside the Environmental Movement: Meeting the Leadership Challenge*. Washington: Island Press.
- Sohn, Kitae. 2016. Risk Incomprehension and Its Economic Consequences. *The Journal of Development Studies* 52: 1545–60, doi:10.1080/00220388.2016.1166208.

- Sowada, Christoph, Iwona Kowalska-Bobko, and Anna Sagan. 2020. What next after the 'commercialization' of public hospitals? Searching for effective solutions to achieve financial stability of the hospital sector in Poland. *Health Policy* 124: 1050–55, doi:10.1016/j.healthpol.2020.05.024.
- Stroh, Patrick J. 2005. Enterprise Risk Management at UnitedHealth Group. *Strategic Finance* 87: 26–27.
- Szymaniec-Mlicka, Karolina. 2017. The decision-making process in public healthcare entities. identification of the decision-making process type. *Management* 21: 191–204.
- The Orange Book. Management of Risk—Principles and Concepts*. 2004. London: HM Treasury UK.
- Tončinić, Sara, Renée Wildt-Liesveld, and Hubertus Vrijhoef. 2020. Evaluation of a digital platform that engages stakeholders in the co-creation of healthcare innovations: A mixed-methods study. *International Journal of Care Coordination* 23: 33–42, doi:10.1177/2053434520913578.
- Tseng, Ming-Lang, Hien Minh Ha, Ming K. Lim, Kuo-Jui Wu, and Mohammad Iranmanesh. 2020. Sustainable supply chain management in stakeholders: Supporting from sustainable supply and process management in the healthcare industry in Vietnam. *International Journal of Logistics Research and Applications* 1–20, doi:10.1080/13675567.2020.1749577.
- Turner, Scott F., Laura B. Cardinal, and Richard M. Burton. 2017. Research design for mixed methods: A triangulation-based framework and roadmap. *Organizational Research Methods* 20: 243–67, doi:10.1177/1094428115610808.
- Tworek, Piotr. 2016. Understanding Public Risk. In *Public Risk Management. Tome I: Perspective of Theory and Practice*. Edited by Piotr Tworek and Józef Myrczek. Katowice, Poland: Publishing House of the University of Economics.
- Vargo, Stephen L., Heiko Wieland, and Melissa Archpru Akaka. 2015. Innovation through institutionalization: A service ecosystems perspective. *Industrial Marketing Management* 44: 63–72, doi:10.1016/j.indmarman.2014.10.008.
- Vargo, Stephen L., Melissa Archpru Akaka, and Claudia M. Vaughan. 2017. Conceptualizing Value: A Service-ecosystem View. *Journal of Creating Value* 3: 1–8, doi:10.1177/2394964317732861.
- Wędzki, Dariusz. 2012. The sequence of cash flow in bankruptcy prediction: Evidence from Poland. *Zeszyty Teoretyczne Rachunkowości* 68: 161–79.
- Węgrzyn, Maria. 2012. Healthcare as a link in the public finance system. Existing and desired directions of change. *Zeszyty Naukowe Wyższej Szkoły Bankowej w Poznaniu* 41: 187–99.
- Wheeler, David, and Maria Sillanpää. 1997. *The Stakeholder Corporation: A Blueprint for Maximising Stakeholder Value*. London: Pitman.
- Williams, Iestyn, and Heather Shearer. 2011. Appraising public value: Past, present and futures. *Public Administration* 89: 1367–84, doi:10.1111/j.1467-9299.2011.01942.x.
- World Health Organization (WHO). 2011. *Report on the Burden of Endemic Health Care-Associated Infection Worldwide, Clean Care is Safer Care*. Geneva: WHO.
- Wortley, Sally, Jackie Street, Wendy Lipworth, and Kristen Howard. 2016. What factors determine the choice of public engagement undertaken by health technology assessment decision-making organizations? *Journal of Health Organization and Management* 30: 872–90, doi:10.1108/JHOM-08-2015-0119.
- Wronka-Pośpiech, Martyna. 2014. Sukces i jego pomiar w przedsiębiorstwach społecznych—próba operacjonalizacji [Success and its measurement in social enterprises—An attempt of operationalisation]. *Prace Naukowe Wałbrzyskiej Wyższej Szkoły Zarządzania i Przedsiębiorczości* 27: 363–87.
- Wu, Minyu. 2012. Managing stakeholders: An integrative perspective on the source of competitive advantage. *Asian Social Science* 8: 160.
- Young, Peter C., and Steven C. Tippins. 2001. *Managing Business Risk: An Organization—Wide Approach to Risk Management*. New York: American Management Association.
- Zaleska, Beata. 2017. Rola wskaźników finansowych w analizie i prognozie sytuacji ekonomiczno-finansowej samodzielnych publicznych zakładów opieki zdrowotnej. [The role of financial ratios in analysis and forecast of economic and financial situation of the independent public healthcare centers]. *Zeszyty Naukowe Wydziału Nauk Ekonomicznych* 21: 373–86.
- Zheng, Yi, Wei Wang, Wenbin Liu, and John Mingers. 2019. A performance management framework for the public sector: The balanced stakeholder model. *Journal of the Operational Research Society* 70: 568–39, doi:10.1080/01605682.2018.1448247.