Contributions to Management Science

Ovidiu Nicolescu
Constantin Oprean
Aurel Mihail Titu
Sebastian Vaduva *Editors*

Romanian Management Theory and Practice

Navigating Digitization and Internationalization in the New Global Economy

SAMRO
SOCIETATEA ACADEMICA DE MANAGEMENT DIN ROMANIA

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Contributions to Management Science

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Introduction

The practices and study of modern management were birth in western Europe and north America at the beginning of the nineteenth century. During the twentieth century, some of these managerial practices were transferred and improved in the Asian context, first in Japan and later in the rest of Asia. Romanian management practices, similar with other Eastern European nations, had a unique development. In the late nineteenth and early twentieth century, they were an integral part of western management thinking. However, with the forced adoption of a communist political system and the nationalization of the Romanian economy, the managerial systems were recalibrated. Profit maximizing objectives were replaced with social objectives yielding mixed results.

Nevertheless, since the revolution of 1989 and the integration into NATO and the European Union, Romanian management systems are once again an integral part of the global economy. The current volume presents the latest thinking and research on the features of Romanian management theory and practices. As the COVID-19 crisis revealed the limitations of globalization and the overreliance on Asian suppliers, Romania, along with the rest of Eastern Europe, will continue to be integrated into the global economy and become a dependable alternative to Asian suppliers.

Chapter 1 contains a bibliometric analysis of patterns and trends in academic publications related to the external environment, organizational structure, organizational strategy, and organizational performance. The analysis focused on academic papers published in the past half-century, aiming to provide a comprehensive overview of the research landscape in this field. The study outlines the history of studying these concepts independently, and the deficiencies of empirical research on their holistic relationships. The analysis also explored the geographic distribution of the research, with the United States being the most prolific country in terms of published papers. The study identified clusters of keywords and their relationships, shedding light on the key concepts and their associations in academic literature. The findings of this bibliometric analysis provide useful insights into the research landscape of the relationships between the environment, structure, strategy, and performance. These findings can guide future research and contribute to a better understanding of these important concepts in organizational studies.

Chapter 2 focuses on the COVID pandemic and the impact it had on organizations, causing rapid changes in behavior, culture, and management. This study examines how the pandemic has affected decision-making and highlights the importance of the meritocracy system within companies. Universities, as examples of knowledge-based institutions, have also been affected by the pandemic. The shift to online learning and the need for digital technology has posed significant challenges. Effective communication management was crucial to ensure the continuation of learning and support for both students and professors. The study proposes qualitative indicators that can enhance communication in knowledge-based organization. These indicators include increased employee engagement, improved transparency, the development of an open communication culture, and the use of technology effectively.

Chapter 3 focuses on stakeholder-based management system in contrast to traditional management systems. The study outlines the concept and features of the CRSBMS and provides practical implications for company managers. It presents two approaches for implementing the system, considering the company's existing knowledge in dealing with stakeholders. The introduction section discusses the rapid changes in various fields over the past three decades, including digitalization and the transition to a smart economy. The chapter identifies two major trends in management literature and practice: the call for radical changes and the emphasis on stakeholders. The CRSBMS addresses these trends by prioritizing relevant stakeholders and establishing win-win relationships. It is structured around managerial synapse, relevant stakeholders, and a stakeholder's council. The benefits of the CRSBMS are also categorized into three groups: benefits for the company, benefits for relevant stakeholders, and societal and business benefits. These benefits include increased motivation, better harmonization of objectives, enhanced quality of work processes, attraction and sharing of resources, receptivity to digital transformation, improved product and service quality, and a stronger sustainable competitive advantage.

Chapter 4, the authors focus on the challenges and opportunities associated with implementing aggregate planning services. This is an instrument used by organizations to align their capacity with customer demand. It involves forecasting demand and planning accordingly. In the case of services, aggregate planning becomes more challenging as demand is difficult to forecast. Services are perishable, and underutilized capacity is perceived as waste. Demand management plays a crucial role, and client service levels must be set to determine the percentage of demand that must be satisfied. Another challenge is the wide range of services offered, and their personalized nature which make it complicated to assess capacity. Factors like the size of the staff, the number of clients, or the number of beds may need to be considered when defining the capacity of a service organization. The Romanian case study, which is presented, offers accounting services, and has developed three forecasts: optimistic, realistic, and pessimistic. By calculating the total billable hours for each scenario and dividing it by the available working hours per employee, the number of employees needed to meet demand is determined. The company can then assess whether it has enough qualified employees to cover the entire demand.

In Chapter 5, the authors focus on the barriers in Central and Eastern Europe (CEE) to developing integrated risk management services within health insurance entities. The study is based on a questionnaire which was sent to over 200 entities in the region. The results highlight the lack of an IT program for risk analysis as the most significant barrier, followed by poor collaboration between internal departments. The study proposes a conceptual model called RMBarr (Response for the Mitigation of Barriers) to improve ERM within HIEs by addressing the identified barriers. The proposed RMBarr model includes responses to each barrier, such as internal benchmarking, allocation of financial resources, acquisition of risk analysis software, RM training courses, and recruitment of qualified RM staff. The model aims to improve the understanding and implementation of ERM in HIEs. The study concludes that ERM remains a challenge due to human and organizational barriers, as well as the complexity of ERM frameworks. The proposed model can guide HIEs in overcoming these barriers and enhancing their ERM systems.

Chapter 6 focuses on the Romanian ICT sector and discusses the innovation—internationalization performance process. The results suggest that there is a bi-directional relationship between innovation and internationalization in both domestic and multinational companies. The study expands the knowledge in this area by examining the virtuous circle in the knowledge-intensive ICT sector. Additionally, it focuses on an emerging economy undergoing economic, social, and political adjustment, providing insights into the drivers of economic growth. The comparative approach between multinational and domestic companies highlights strategic elements that can serve as models of good practice. The findings have management implications at both micro and macro levels. Policymakers can support sectors with growth potential, such as the ICT sector, while managers can leverage the synergy between innovation, internationalization, and performance to increase competitiveness.

Chapter 7 presents an instrument called the Auto-Quality Matrix (AQM) that is designed to manage nonconformities within a company. The tool was developed and tested in the food industry, in a company which bottles water. The AQM works on both material and information flows within the company, allowing for the visualization of the quality level of each section and its evolution. It also helps to identify nonconformities and their sources more accurately. The study highlights the advantages of using this tool, as well as the conceptual approach behind its design and validation. The AQM is designed based on the principles of Kaizen, which focuses on continuous improvement and involves all employees in the organization. It helps to stabilize processes, improve product quality, and create accountability among staff members. The tool allows for the identification and resolution of nonconformities, and it can be customized for different industries and flows within an organization. The results of the study demonstrate the effectiveness of the AQM in managing nonconformities. It provides a visual basis for addressing and resolving nonconformities and helps to map and model processes and value flows within an organization. The tool can be accessed in real time on various devices, making it convenient and accessible for users.

Chapter 8 analyzes the relationship between urban management and the energy transition, focusing on conceptual, intellectual, and social structures. The authors conducted an extensive literature review to synthesize key aspects and used the Web of Science database to gather relevant articles. The themes "management," "energy," "transitions," and "cities" are identified as the most relevant. The analysis also includes keyword and thematic maps, a dendrogram, a co-citation network, and a country collaboration map, providing insights into the research. The contribution of this chapter is to provide useful information for future review studies, shape the understanding of the urban management-energy transition nexus in the scientific world, and pave the way for further research on their dynamics. The chapter highlights the importance of energy, water, sanitation, transport, and telecommunication systems in supporting urban areas' operation and performance. However, these systems also contribute to environmental and societal challenges, such as greenhouse gas emissions and energy consumption. As cities are home to more than half of the global population and consume a significant amount of energy, they are seen as both part of the problem and part of the solution to address these challenges. The energy transition, which involves using cleaner and greener energy sources, can be facilitated by effective urban management.

Chapter 9 discusses the importance of teamwork and the employer–employee relationship in the context of the COVID-19 pandemic. The findings highlight the increasing emphasis on teamwork in organizations and the importance of this skill in the labor market. It discusses how the pandemic affected teamwork and the efforts made by employers to ensure a balance between professional and private life. The mental health of employees has become a priority for many employers, but the level of concern varies. The research methodology involved the use of a questionnaire that was distributed online to a random sample of respondents. The results showed that team performance improved for some, while others experienced a decline. The relationship between employers and employees generally improved or remained stagnant, but there were cases where it worsened. The level of concern for employee well-being and work-life balance also varied among employers. In conclusion, the COVID-19 pandemic had both positive and negative effects on team performance and the employer-employee relationship. While some organizations formed a stronger bond among employees and improved team performance, others experienced challenges and a decline in performance. The level of concern for employee well-being and motivation varied among employers. Overall, the text emphasizes the importance of teamwork and a positive employer-employee relationship for organizational success.

Chapter 10 discusses the concept of humanistic management, which prioritizes the well-being of people and society in business and organizational management. It emphasizes human development, potential, and dignity. Humanistic marketing, which integrates concepts from humanistic psychology, is a response to the need for reevaluating marketing. It combines conventional consumer behavior theories with humanistic psychology concepts to create a marketing strategy that promotes human values and sustainability. The text also explores the role of recommender systems in online consumer behavior. Recommender systems analyze user behavior and make

suggestions based on their interests, improving the relevance and personalization of recommendations. These systems can shape consumer behavior by introducing users to new items, influencing their perceptions and evaluations, promoting certain items over others, and creating feedback loops. The impact of recommender systems on consumer behavior is complex and has positive and negative implications. The text further discusses the importance of trust in online shopping, as customers need to have confidence in the seller and the e-commerce platform. Trust can be influenced by various factors such as the brand, reputation, and customer ratings and reviews. Personality traits like trust and suspiciousness can affect online shoppers' trust and decision-making processes. Fast and slow thinking, which are thinking styles, also play a role in how consumers respond to recommendation systems.

Chapter 11 discusses the integration of the VUCA (volatility, uncertainty, complexity, ambiguity) concept in the capital markets due to the multiple crises experienced between 2020 and 2023. These crises have led to changes in the perception of the markets, impacting portfolio management strategies. Managers must now anticipate demands and design strategies better adapted to these changes. The chapter highlights specific problems in emerging markets, such as the lack of essential market structures, reduced liquidity, and insufficient knowledge in the field of capital markets. However, the development of pension funds has compensated for some of these issues. The research methodology applied in this context includes questionnaires addressed to investors and fund managers to understand their intentions regarding active portfolio management and the design of new products. The real options paradigm and dynamic capabilities paradigm are integrated to incorporate dynamic aspects. Furthermore, the text discusses issues specific to emerging markets, including the lack of major market structures, reduced liquidity, and insufficient knowledge. It highlights the role of investment funds and pension funds in these markets, as well as the potential for future growth. Overall, the chapter provides insights and recommendations for portfolio managers in VUCA environments, particularly in emerging markets. It emphasizes the importance of adapting portfolio management objectives, considering new strategies, and integrating alternative assets.

Chapter 12 investigates the impact of career shocks on the professional development of women managers in Romania. The researchers collected data from interviews with Romanian businesswomen published in online women's business magazines between 2014 and 2021. Positive career shocks often result from moments of realization or identifying new opportunities. Negative career shocks, such as personal issues or disappointment with organizational life, can create challenges and setbacks in career paths. The study also highlights the importance of people and communication in the career advancement of women in leadership positions. Social and professional networks, mentors, and effective communication with colleagues, clients, and managers were identified as factors that support career development after a career shock. In terms of career pathing and development, the study found that women in leadership positions in Romania often choose non-traditional career paths. They prioritize their interests and personal values and are willing to take risks and explore new opportunities outside of their organizations.

Mentors and role models play a significant role in guiding and supporting women in their career journeys. Based on their findings, the researchers provide recommendations for industry attitudes toward women's career development. They suggest that organizations should support women's career advancement by providing mentorship programs, promoting work-life balance, and creating a supportive and inclusive work environment.

Chapter 13 discusses the concept of educational well-being and its importance in the current educational landscape. Educational well-being is seen as a multidimensional and complex concept that impacts both individuals and institutions, with direct effects on quality of life. The author proposes an innovative management and leadership process based on human values and aims to create an optimal social and psychological climate for well-being in schools and universities. This process involves the design of mechanisms, relationships, rules, resources, and managerial processes that support activities promoting well-being. The chapter presents a well-being model based on four pillars: learning, support, work, and life. The research methodology involves a review of scientific literature and an empirical investigation that includes the application of a questionnaire to teachers in the South-West Oltenia region. The findings of the study suggest that teachers are supportive of the principles and methodologies related to well-being in the education system. They emphasize the importance of social, emotional, and educational relational conditions in schools in creating and developing well-being for both students and teachers. The study also highlights the need for continuous improvement and feedback at all levels of the education system. The chapter highlights the importance of involving all stakeholders in the decision-making process and creating partnerships between students, teachers, and other non-teaching staff. It emphasizes the role of positive education in promoting well-being and flourishing for individuals and communities. The authors propose a whole-school approach that encompasses all aspects of the education system, including curriculum design, teacher training, leadership, and infrastructure.

Contents

Chapter 1
Trends and Publication Patterns of Environment–Structure–Strategy–Performance Relationship: A Bibliometric Perspective

Simona Cătălina Ștefan and Ion Popa

Abstract The present research started from the premise that although there is a long history of studying the four concepts independently and the relationships between various combinations of them, in terms of a unitary holistic approach, there is still an uncovered need in terms of empirical research. Therefore, the purpose of the bibliometric analysis, that is the subject of this chapter, is to provide a suggestive picture of the landscape created by academic papers published in the last half century on this topic. The bibliometric analysis allowed for the highlighting, from a quantitative perspective, the publication patterns and the main trends in the study of the relations between "environment", "structure", "strategy", and "performances". Although this type of analysis is based only on a collection of bibliometric data, not including the analysis of the actual content of the work, some useful conclusions could be highlighted which could guide the future course of the research.

1.1 Introduction

A query of the databases of academic publications highlights that the concepts of "external environment", "organizational structure", "organizational strategy", and "organizational performance" have been studied both through the management and multidisciplinary or transdisciplinary lens. In addition, both the theoretical and managerial implications of their relationships have been widely analysed over time. On the other hand, it is expected that the success of a firm does not depend on a

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single factor, such as favourable environmental conditions, appropriate organizational design, or inspired strategy (Kaynak & Kuan, 1993), but different strategic orientations and structures, under various environment conditions, would condition firm performance (Ogollah & Bolo, 2009). Therefore, this research assumed that there is a long history of studying the four concepts independently and their relationships taken individually. However, considering the complex/holistic approach of the environment–structure–strategy–performance relationships, we seek answers to the following questions:

RQ1. *How does academic interest evolve in studying the relationships between environment, structure, strategy, and performance over time from a holistic perspective?*

RQ2. *What are the patterns and trends in academic publications?*

Over time, several bibliometric analyses sought to shed light on the given topic by separately analysing the strategic management concept (Ferreira et al., 2016; Farrukh et al., 2020; Ramos-Rodríguez & Ruíz-Navarro, 2004) or business performance (Melega et al., 2022) and its different dimensions, such as financial performance (Bartolacci et al., 2020) and environmental performance (Zhang et al., 2021). However, to date, no bibliometric analysis has been identified that focused jointly on the environment, structure, strategy, and performance nexus.

Therefore, the purpose of the bibliometric analysis is to provide a suggestive picture of the landscape created by academic documents published in the last half century on this subject. More specifically, it will be aimed at the following: (1) analyse the evolution in time of the researchers' interest in studying the four concepts approached individually and (2) investigate the complex, holistic association between the four concepts, as illustrated in academic publications, as networks created between keywords, authors, institutions to which they are affiliated, citations, and journals. In the following sections, the methodology applied for bibliometric analysis, as well as its results, will be presented.

1.2 Methodological Considerations

The purpose of this paper is to describe how the concepts of environment, structure, strategy, and performance have been approached over time in academic production. To this end, the bibliometric analysis was considered appropriate to be used. Bibliometric analysis can be described as a quantitative evaluation of the publication patterns of all communications, together with their authors, through mathematical and statistical methods, in order to increase the understanding of the written communication process, the nature and course of a discipline/concept, etc. (Özköse & Gencer, 2017). Bibliometric analysis involves the use of several methods, indicators, and representations in the form of networks, thus creating a picture of scientific activity in the field of concepts of interest (Dabi et al., 2016).

Table 1.1 Search terms and number of items identified in WoS

Concepts	Number of items identified	
	First iteration	Second iteration
Environment	578,008	489,326
Strategy	378,646	306,913
Structure	3756	2967
Performance	844,911	760,669
Environment ∩ Strategy ∩ Structure ∩ Performance	375	373

Source: Author based on data extracted from the WoS platform (Clarivate, 2021)

Bibliometric analysis involves the existence of a database in the form of a literature corpus relevant to the field/topic of the analysis (Holman et al., 2018). To extract the necessary data to perform the bibliometric analysis, the Web of Science (WoS) platform (Clarivate, 2021) was selected, the search being limited to the databases included in the Core Collection, namely, SCI-EXPANDED, SSCI, CPCI-S, CPCI-SSH, and ESCI, for the period 1975–2022. The search terms for the concepts/combinations of concepts of interest are presented in Table 1.1; they are being identified as follows: (1) in "Title", for analyses that involved a single concept, to limit the number of identified items, and (2) in "Topic", which includes the title, abstract, and keywords, for analyses that covered several concepts, starting from the premise that it is possible that not all of them can be found in the title of the document.

The search was carried out, each time, in two iterations: in the first iteration, all the items that corresponded to the criteria were identified, and (2) in the second, the search was refined by selecting only items classified as Document Type: *Article*, *Proceedings paper*, *Review* and *Early Access*.

The identified set of items was analysed (1) directly, through grouping functions according to different criteria, such as the year of publication, the domain, the authors, the institutional affiliation of the authors, the country/region, and the journal/conference where the documents were published, and also (2) by creating "maps", with the help of the VOSViewer application (van Eck & Waltman, 2021), thus allowing a more suggestive illustration not only from the perspective of the frequency of occurrence of the characteristics listed above but also of the relationships between them.

1.3 Analysis of the Evolution Over Time of Researchers' Interest in the Concepts of Environment, Strategy Structure, and Performance

The first of the analyses concerned the evolution over time of the interest enjoyed by the four concepts analysed. The number of documents published in WoS indexed journals/conferences proceedings, by their high-quality standard, can be considered

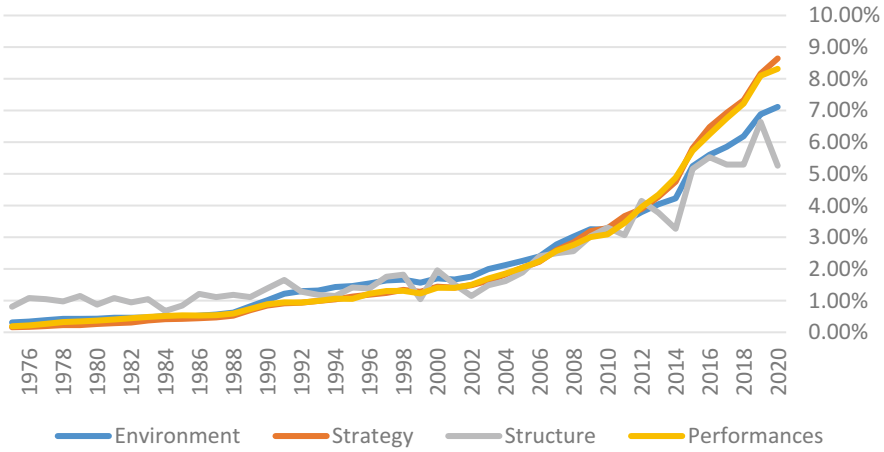

Fig. 1.1 Comparative evolution of the share of items identified in WoS between 1975 and 2020. (*Source*: Author based on data extracted from the WoS platform (Clarivate, 2021))

an important indicator of the growth and direction of development of a scientific field (van Nunen et al., 2018).

According to Price (1963 cited by Dabi et al., 2016), the development of science follows four phases: (1) the first is the phase of precursors, in which a small body of scientists begins to publish on a new field; (2) the second phase is that of exponential growth, when due to the large number of aspects to be explored, a large number of scientists are attracted; (3) in the third phase, we observe a strengthening of the body of knowledge, which is followed by (4) the fourth phase characterized by a decrease in the number of publications and corresponds to the collapse of the field. Furthermore, Price (1962 cited by Dabi et al., 2016) suggests that scientific production is evolving faster than other human activities, with the growth phase doubling its size every 10–15 years.

As can be seen in Fig. 1.1, although the search in the WoS databases has been restricted to the title of the documents, the number of items identified is impressive, ranging from 2964 for "structure" and 760,669 for "performance". Although it can be assumed that only a part of these papers approached the "environment" with the meaning of "external environment of organizations" or "performance" as "organizational performance", it can still be concluded that, even in terms of the number of papers published in databases of scientific interest, the issues related to the analysed concepts aroused a major interest in the academic environment. It can also be noted that although the number of publications has increased significantly over time, there are still a considerable number of documents published in the first years of analysis (1975–1980) for which data are available in WoS. Moreover, considering the trend of the evolution over time of the number of identified items, it can be assumed that even before 1975 several documents on these topics were published, but not included in the WoS database.

Therefore, given that the number of items identified for each years is considerably higher for the "environment" and "performance" concepts, to highlight the differences over time, in Fig. 1.1, the number of items for each year was represented as a share of the total items identified for each of the four concepts. Four distinct periods can thus be identified: (1) the period 1975–1990, during which there was a greater interest in the structure; (2) the period 1991–2000, in which, in addition to the structure, more intense environmental concerns can also be identified; (3) the period 2001–2010, in which oscillating developments can be identified, against the background of the general interest in all four concepts; and (4) the period 2011–2020, in which there is an interest in a greater increase in strategy and performance. Analysing these results in light of the four phases identified by Price (1963 cited by Dabi et al., 2016), the study of strategy and performance can be framed in the second phase of exponential growth of scientific production, while the study of structure and environment corresponds to the third phase of consolidation.

1.4 A Holistic Approach to Environment–Structure–Strategy–Performance Concepts

This analysis will consider the relationships reflected in scientific production, its relevance in the academic environment, and the links highlighted as lexical, geographical, or time networks.

1.4.1 Scientific Production

The scientific production regarding the analysed field is illustrated first by the evolution of the number of papers published in journals/participations in WoS indexed conferences, between 1981 and 2020. Although the first item has been identified for 1980, it can be stated that concerns for the holistic analysis of the interrelationships between environment, strategy, structure, and performance are found in WoS indexed documents since 1991. In addition, one can notice the constant upward trend of the number of documents, even if it is less obvious in the 1991–2005 period. Therefore, from the perspective of the four phases suggested by Price (1963 cited by Dabi et al., 2016), it can be seen that between 1990 and 2005 the holistic study of the four concepts was in its initial phase, in which few researchers approached it and wrote it on this subject, and starting with 2005, an exponential increase in scientific production will be observed, corresponding to the second phase of development (see Fig. 1.2[1]). The year 2020 was marked by a decrease in the number of publications that address correlated, the four concepts of interest for this research,

[1] Since only one item was identified between 1980 and 1991, it was omitted from Fig. 1.2.

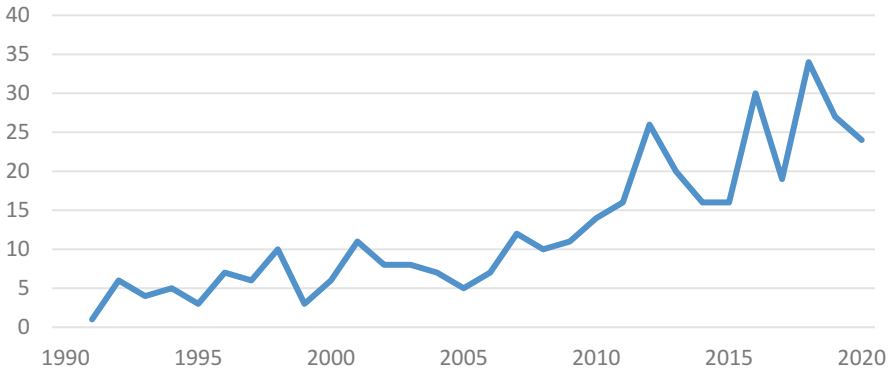

Fig. 1.2 Evolution of the number of items that correspond to the search criteria in the period 1991–2020. (*Source:* Clarivate, 2021)

which can be attributed either to the effects of the COVID 19 pandemic, which have also been felt in the academic world, or to the fact that some conference volumes have not yet been indexed in WoS.

To create a more relevant image, scientific production will be broken down by WoS domains (categories), thus highlighting the scientific fields in which the study of environmental, structure, strategy, and performance concepts has received increased attention. As highlighted in Table 1.2, more than half of the items (54.69%) are represented by papers published in journals classified in the field of "management" and almost a third (30.83%) in the field of "business". It can also be noted that although the number and share is relatively small, there are also works framed in the fields of *industrial engineering*, *engineering manufacturing*, and *psychology applied*, which also denotes the interest of researchers in the field of engineering and psychology in the integrated approach to the environment, structure, strategy, and organizational performance.

Considering the top three domains including research approaching the holistic study of the concepts of environment, structure, strategy, and performance, respectively, *management*, *business*, and *operations research management science*, we were interested in whether these concerns were constant over time, or a certain pattern could be identified. Therefore, in Fig. 1.3, the evolution over time of the number of items identified in WoS was represented for each of the three areas.

As illustrated in Fig. 1.3, two distinct periods can be highlighted: (1) the first period, which includes the years before 2010, in which the number of articles published in journals classified in the three fields is comparable and (2) the period 2011–2020, in which the number of documents classified in the field of *operations research management science* is decreasing, simultaneously with an upward trend of those in the field of *management* and *business*. At the same time, a considerable decrease in the number of documents published in 2020 can be observed; this is undoubtedly because of the COVID 19 pandemic, which has also been felt in terms of the production of academic papers.

Table 1.2 Classification according to WoS domain

WoS domain	No. of items	Share in total items (1981–2020)
Management	204	54.69%
Business	115	30.83%
Operations research management science	48	12.87%
Engineering industrial	29	7.78%
Economics	18	4.83%
Computer science information systems	17	4.56%
Environmental studies	16	4.29%
Information science library science	16	4.29%
Psychology applied	16	4.29%
Engineering manufacturing	12	3.22%
Business finance	11	2.95%

Source: Clarivate (2021)

1.5 Geographic Distribution

In terms of the geographical distribution of interest in the joint study of environment, structure, strategy, and performance, the application of the mapping method based on the distance between the items available in VOSViewer highlighted the countries with the most intense research interests (Table 1.3 and Fig. 1.4), but also its relevance (in terms of the average number of citations) and the evolution over time of these concerns.

The analysis included 22 countries whose authors produced at least five documents dealing with the given topics, which were grouped by VOSViewer according

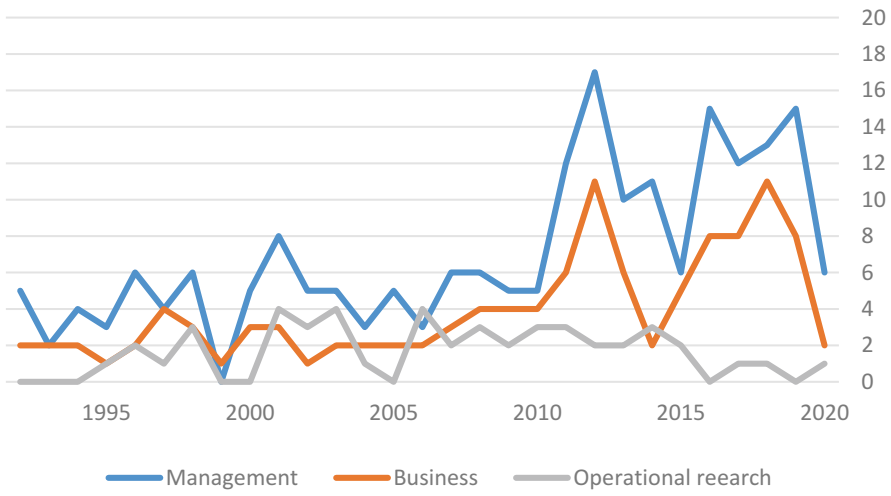

Fig. 1.3 Comparative evolution of the number of items classified in "management", "business", and "operations research management science" WoS domains. (*Source:* Clarivate, 2021)

to the common references they used, into four clusters. As can be seen in Table 1.3, although the documents were mostly written in English, the common historical and cultural background but also the geographical proximity contributed to the formation of the clusters, which suggests that, in order to research the links between the environment–structure–strategy–performances, the authors of the documents also related to some extent to a body of literature with elements of local specificity.

In terms of *scientific production*, the most prolific country was the United States, with 124 documents, which is almost one third of the items analysed. At the same time, it can be noted that in this country the concerns for the topic under review are the earliest (the average of the years of publication being 2007), which largely explains the first position in terms of the number of citations (10,468). However, in terms of the average number of citations (84.42), the United States is surpassed by countries with more recent concerns, such as France and the Netherlands, with the average number of citations per document of 91.78 and 150.00, respectively.

In terms of number of documents (38), the second position is occupied by China, but the works of Chinese authors enjoy a lower recognition, reflected by the average number of citations (15.32), which is partly justified by the fact that the average of the years of publication is more recent (2013). England ranks third in the number of documents (29) but has a relatively high average number of citations (52.17). The average year of publication of documents written by authors affiliated with institutions in England is 2012.

From *the perspective of evolution in time* (Fig. 1.4), among the first countries whose authors published papers on the analysed topic were the United States (the average year of publication, 2007), Canada (2009), and Australia (2010), while, more recently, the interest in studying the topic was also manifested in Brazil, Sweden, and Italy (the average year of publication, 2016) and Germany (2017).

Table 1.3 Geographical distribution of items according to the country of origin of the authors

Cluster	Country	Items	Citations	The total power of links
1	USA	124	10468	3254.89
1	England	29	1513	1669.32
1	Canada	11	520	604.20
1	India	11	137	568.47
1	Norway	7	246	633.25
1	Sweden	7	262	285.97
1	Switzerland	7	345	354.11
2	People's Republic of China	38	582	1562.14
2	Spain	23	493	836.24
2	Denmark	18	631	1031.04
2	Italy	10	118	424.07
2	Brazil	9	82	147.20
2	Scotland	6	39	439.09
2	Wales	5	218	388.10
3	Australia	13	725	618.61
3	Germany	12	180	821.22
3	Netherlands	11	1650	636.02
3	Taiwan	10	151	375.44
3	France	9	826	701.21
3	Turkey	9	131	315.21
4	New Zealand	8	101	514.56
4	South Africa	7	145	449.10

Source: Authors with VOSViewer 1.6.17 (van Eck & Waltman, 2021)

Regarding the *scientific impact* (Fig. 1.5), the Netherlands is notable, with papers written by authors affiliated with its institutions cited on average 150 times, France (average number of citations, 91.78) and the United States (84.42).

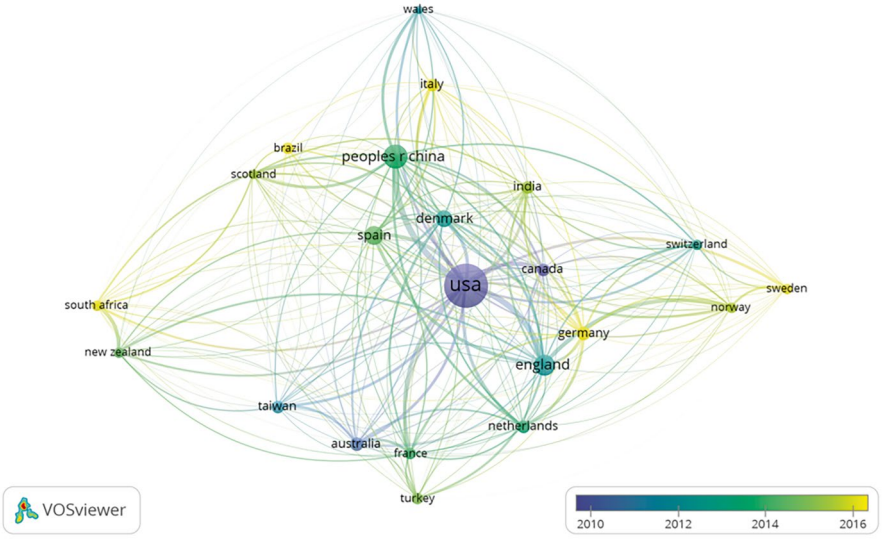

Fig. 1.4 Map of the geographical distribution of scientific output according to the average year of publication of the documents. (*Source:* Authors with VOSViewer 1.6.17 (van Eck & Waltman, 2021))

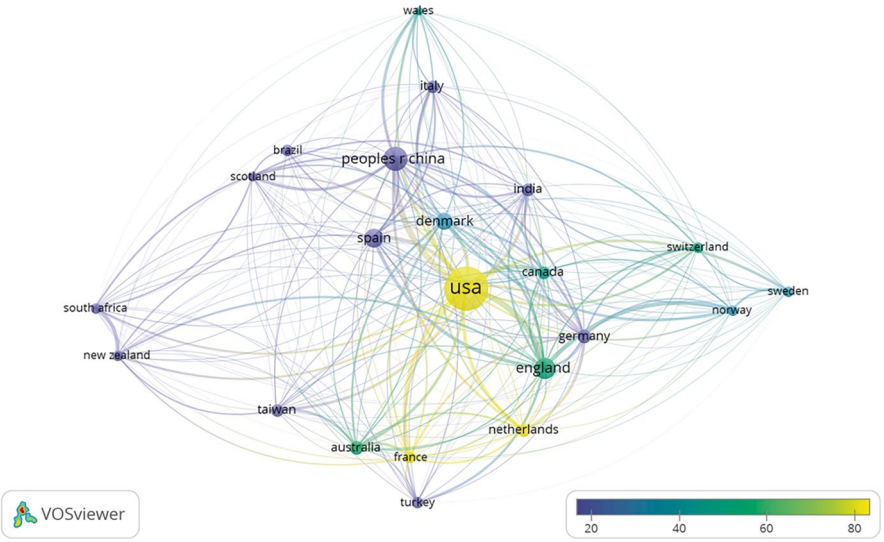

Fig. 1.5 Map of the geographical distribution of scientific production according to the average number of citations. (*Source:* Authors with VOSViewer 1.6.17 (van Eck & Waltman, 2021))

1.6 Journals Publication

The analysis of journals interested in jointly concepts of environmental–structure–strategy–performance revealed that 13 of them published more than 5 documents, which were grouped into three clusters (Table 1.4).

The first cluster includes journals in the field of management. The journals included in this cluster are distinguished by the superior number of published documents, which accumulate (in general) more citations. In particular, the journal with

Table 1.4 Distribution of items according to journals

Cluster	Journal	Items	Average year	Citations	Average citations
1	Organization Science	14	2005	2106	150.43
1	Management Science	8	2004	1992	249.00
1	Journal of Management Studies	7	2002	306	43.71
1	Management Decision	7	2012	226	32.29
1	Journal of Business Research	6	2008	334	55.67
1	Journal of Management	6	2001	1397	232.83
1	Strategic Management Journal	6	1998	965	160.83
2	Journal of Operations Management	6	2005	902	150.33
2	International Journal of Production Economics	5	2009	254	50.80
2	International Journal of Production Research	5	2010	76	15.20
2	Omega-International Journal of Management Science	5	2003	209	41.80
3	Business Strategy and the Environment	5	2015	131	26.20
3	Technovation	5	2004	295	59.00

Source: Authors with VOSViewer 1.6.17 (van Eck & Waltman, 2021)

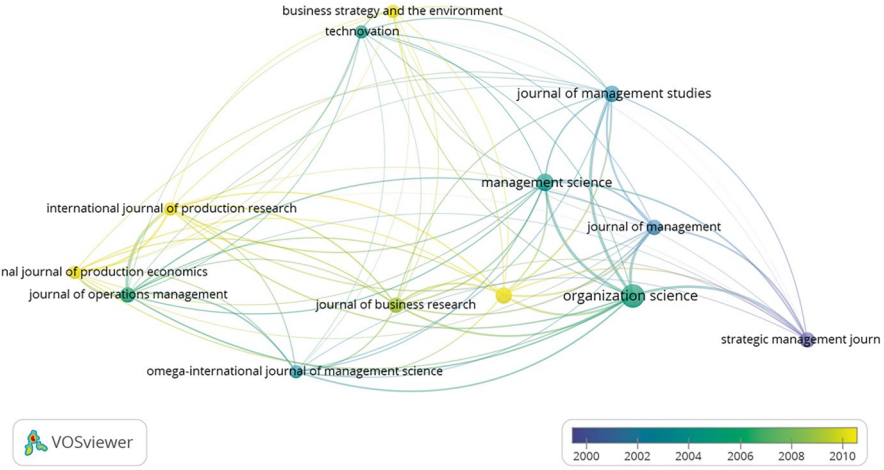

Fig. 1.6 Map of the distribution of journals according to the average year of publication. (*Source:* Authors with VOSViewer 1.6.17 (van Eck & Waltman, 2021))

the most published documents is "Organization Science", but in terms of the number of citations and the average number of citations in the first positions are "Management Science", "Journal of Management", and "Strategic Management Journal". This supports the finding highlighted in the previous subsection on concentration in the field of management of interest for a holistic study of the environment, structure, strategy, and organizational performance.

The second cluster focusses on topics specific to operational and production management, while the third cluster addresses both strategic management and technology and innovation as its drivers.

From *the perspective of evolution in time* (Fig. 1.6), among the first journals in which articles were published on the analysed topic were Strategic Management Journal (average year of publication, 1998), Journal of Management (2001), and Journal of Management Studies (2002), all three of these journals belonging to the first cluster. Among the relevant journals in which papers have been published, we can mention Management Decision (average year of publication, 2012) and Business Strategy and the Environment (2015).

Regarding the *scientific impact* (Fig. 1.7), three of the journals included in the first cluster stand out, namely, Management Science, Journal of Management, and Strategic Management Journal, the papers published by them being cited on average 249, 232, and 160 times, respectively, to which can be added the Journal of Operations Management (cluster two) also with an average of 150 citations.

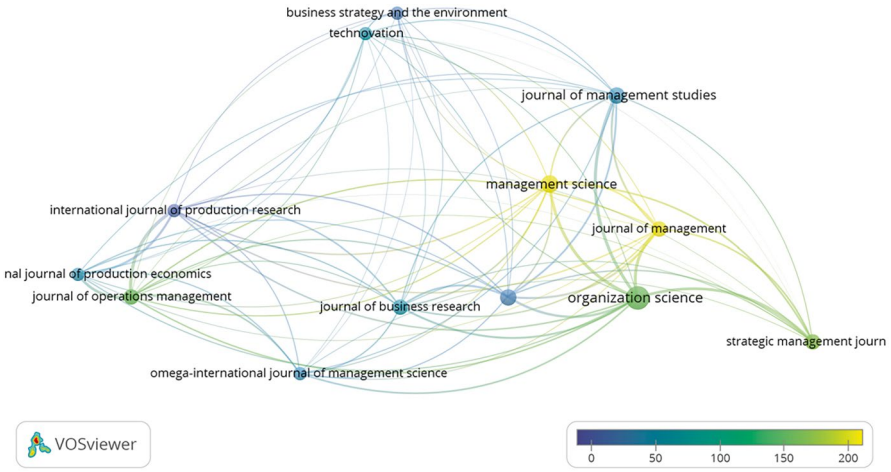

Fig. 1.7 Map of the distribution of journals according to the average number of citations. (*Source:* Authors with VOSViewer 1.6.17 (van Eck & Waltman, 2021))

1.7 Semantic Analysis

Semantic analysis considers the analysis of the frequency of occurrence of keywords, as well as the links between them determined by the simultaneous appearance in the same document. In this way, the purpose is to identify not only the concepts most frequently addressed by researchers in their work but also the way in which they are analysed together, thus forming clusters. It is also possible to visualize the evolution over time of the scientific community's concerns for the study of these concepts.

We recall in this context that although the initial search for the items concerned the title, the abstract, and the keywords, the semantic analysis will be carried out only on the basis of the keywords, not including the actual content of the documents. On the other hand, for the unitary analysis of keywords with the same content, singular/plural forms or those written differently but with the same meaning (e.g., with or without hyphen) have been consolidated. Concepts with some degree of similarity (e.g., organizational design and structure) have not been strengthened in order to be able to illustrate more eloquently the interest and specific links between each of them.

Within the 373 documents analysed, 1733 keywords were identified. To keep only truly relevant keywords, a threshold of 10 occurrences of them was established, which reduced their number to 59. In Table 1.5, the keywords with the highest frequency of occurrence are presented, and in Figs. 1.8 and 1.9, the relationships between them are determined by the number of occurrences (together) in the same documents, as well as their evolution over time and their scientific impact.

Table 1.5 Distribution of items according to the frequency of keywords

Cluster	Keywords	Items	Average year	The total power of links	Average citations
1	Environment	65	2007	314	52.85
1	Firm performance	47	2013	211	58.85
1	Firm	36	2008	172	67.31
1	Determinants	30	2006	133	58.67
1	Implementation	22	2011	116	22.41
2	Performance	155	2009	644	59.14
2	Impact	49	2012	265	31.82
2	Technology	29	2003	148	93.48
2	Design	28	2009	140	44.25
2	Systems	25	2007	108	36.52
2	Fit	24	2008	139	49.5
3	Strategy	126	2010	563	68.53
3	Management	68	2012	313	39.62
3	Model	38	2007	183	83.76
3	Organizational design	34	2010	156	42.09
3	Knowledge	23	2012	118	60.83
3	Framework	22	2010	98	48.86
4	Organizational structure	75	2009	360	70.83
4	Innovation	63	2011	302	76.19
4	Competitive advantage	26	2011	131	32.08
4	Capability	23	2012	131	25.48

Source: Authors with VOSViewer 1.6.17 (van Eck & Waltman, 2021)

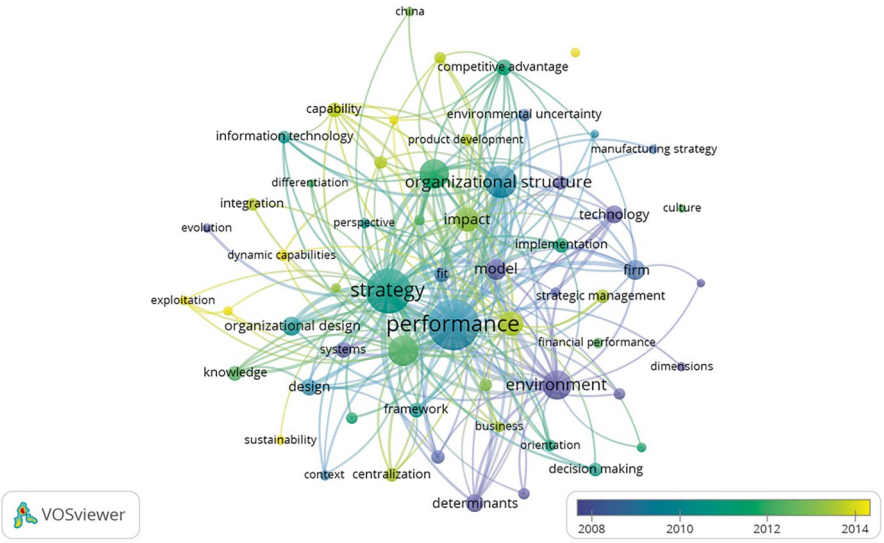

Fig. 1.8 Map of the distribution of keywords by the average year of publication. (*Source:* Authors with VOSViewer 1.6.17 (van Eck & Waltman, 2021))

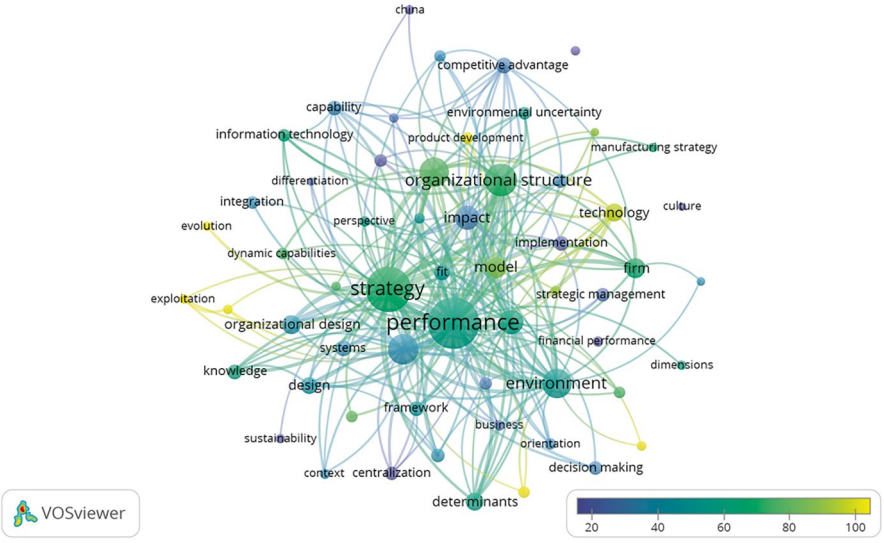

Fig. 1.9 Map of the distribution of keywords by the average number of citations. (*Source:* Authors with VOSViewer 1.6.17 (van Eck & Waltman, 2021))

From *the perspective of time evolution* (Fig. 1.8), in the works in which the relationship between environment–structure–strategy–performance was analysed whose average year of publication was between 2001 and 2010, the keywords frequently mentioned were "performance", "strategy", "organizational structure", and

"environment". This fact suggests that the interest in their study was manifested earlier in time, not that they would be addressed to a lesser extent in more recent publications. From a methodological perspective, keywords referring to the methods of analysis used, such as "model", "determinants", "fit", and "framework", may be noted.

However, it can be noted that, more recently, the interest of researchers in the concept of "performance" manifests itself at the level of the organization/firm, a fact denoted by keywords such as "firm performance"/"organizational performance". As for the strategy, it is approached in a more comprehensive manner, while focusing on its links with the other components of the organization's management, in this respect, may be observed as keywords: "management" and "strategic management". At the same time, we can notice the interest in all the analysis of the relationships between the concepts of environment, structure, strategy, performance, and organizational capabilities (keywords: "capability"/"dynamic capabilities" and "knowledge management"). From a methodological perspective, keywords such as "impact", "antecedents", and "integration" suggest the use of complex methods that highlight in an integrated way the relationships between the analysed concepts.

Regarding the *scientific impact* (Fig. 1.9), reflected by the average number of citations of the documents, stand out keywords such: "technology", "model", "innovation", "organizational structure", "strategy", "firm", and "knowledge", in which they were mentioned being cited (on average) more than 60 times.

As can be seen, based on the frequency of occurrences (together), the 59 keywords analysed were grouped into four groups (highlighted in Fig. 1.10 with a different colour), for each of them, the keyword with the highest frequency of occurrence being one of the four concepts analysed in this paper. It can thus be inferred that although in the 1373 documents all four concepts were found in one form or another, from the authors' perspective, the major interest (reflected in the keywords) was only for one or the other of them. However, in each of the clusters, in addition to the keywords considered as defining (those with the highest frequency of occurrence), derivatives, or related keywords to one of the other three, can also be identified, so that for each cluster one can observe the researchers' interest in two of the analysed concepts, even if the meaning and scope of the coverage are partially different.

Cluster 1. (red). The concept with the highest frequency of occurrence ($n = 65$) is "environment", which also has the strongest links to the other keywords represented on the map (314). However, interest in "firm performance" ($n = 47$), "organizational performance" ($n = 18$), and "strategic management" ($n = 19$) is shown, but with a gap of 6 years in the average year of publication. This observation is consistent with those of the previous chapters, when we noticed that the interest in studying aspects related to strategy and performance was more sustained after 2010.

Regarding the methodological aspects, "determinants" ($n = 30$) can be noted as a keyword, indicating causal analyses, but also "dimensions" ($n = 12$), suggesting that concepts of interest are also holistically analysed, considering their dimensions. Some of the possible dimensions of the concept of "performance" are suggested by the keywords included in this cluster itself, namely, "firm performance",

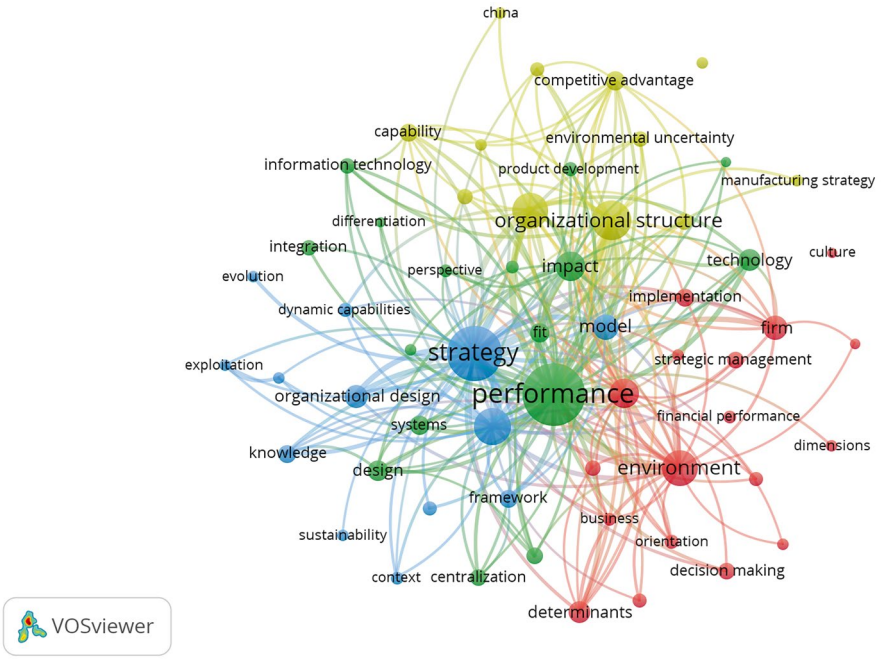

Fig. 1.10 Keyword clusters on the map. (*Source:* Authors with VOSViewer 1.6.17 (van Eck & Waltman, 2021))

"organizational performance", and "financial performance". It can also be noted that the uncertainty ($n = 16$) was considered a relevant environmental dimension, as a determining factor of performance. In terms of strategy, one of the keywords with a significant frequency is "diversification", which suggests in research that addressed the medium–structure–strategy–performance link, they also considered the strategic orientation/competitive advantage targeted as determining factors.

Cluster 2 (green). The keyword with the highest frequency of occurrence ($n = 155$) is "performance", which also has the highest number of links (58), but also the highest power of links with the other keywords (644) of all concepts analysed. This fact is explainable considering the expected purpose of the research aimed at environmental–structure–strategy–performance relationship, respectively, highlighting the factors/combinations of factors that can lead to the increase of performance. It can also be stressed in this context that performance is not limited to those of an organizational nature, as in the case of the first cluster. Other relevant keywords, with which performance has strong links (mentioned together in the same documents), are *technology/information technology* and *human resources management*, which indicates the focus on different resources as determining factors of performance. Also, from the perspective of the relations of interest for this analysis, *centralization* (in terms of structure) and *diversification* strategies can be mentioned.

From a methodological perspective, high-intensity links with the abovementioned concepts have the keywords "contingency theory" and "systems" and as an illustration of the methods used "fit". For all this, the average year of publication is 2007 and 2008. Subsequently, a change from a methodological point of view can be observed through a more complex approach, denoted by the more frequent inclusion of "impact" as a keyword in published documents.

Cluster 3 (blue). The central concept of this cluster is "strategy". Through his 126 appearances, it forms 57 links with the other keywords, the total power of which is 563. It can be noted that (in general) the average years of publication of documents in which the keywords included in this cluster are mentioned are 2010 and beyond, which suggests that they illustrate more recent trends, circumscribed to the second stage in the evolution of research on the topic of environment–structure–strategy–performance relationships, in which greater emphasis was placed on the strategic component. Also, among the concepts analysed in relation to the strategy can be noted those of "knowledge", "dynamic capabilities", as well as more comprehensive goals than performance, such as "sustainability". Regarding the methodology of analysis, keywords such as "framework" and "context" suggest a holistic approach, and "model" suggests the use of complex models to highlight the relationships between the concepts included in this type of approach.

Cluster 4 (yellow). The central keyword of this cluster is "organizational structure", which has 75 appearances, forms 58 links with the other keywords, whose power is 360. As in the case of the other clusters, in addition to the organizational structure, there are also keywords that describe variants/dimensions of the other concepts of interest: environment ("environmental uncertainty") and strategy ("business strategy", "manufacturing strategy", "market orientation", "competitive advantage"). The "Organizational Structure" has 2009 as an average year of publication, which indicates that interest in studying the organizational structure began earlier. Interesting to note is that the other concepts represented by the keywords included in cluster 4 (such as "innovation", "capability", "knowledge management") aroused the interest of specialists a little later, which also suggests that the analysis of the relationships between them and structure is a more recent one.

1.8 Conclusions

The bibliometric analysis allowed for the highlighting, from a quantitative perspective, of the publication patterns, as well as the main trends in the study of the relations between the environment, structure, strategy, and performances. Although this type of analysis is based only on a collection of bibliometric data, not including the analysis of the actual content of the works, some useful elements can be highlighted which will guide the future course of the research.

The interest of researchers in studying the concepts of environment, structure, strategy, and performance predates 1975 (the year in which the first data are

available in WoS), but with an intensification of these as we approach the year 2020, this being more evident lately in terms of the concept of strategy and performance.

From the perspective of a holistic approach, concerns are found in WoS indexed works since 1991. Furthermore, one can notice the constant upward trend of the number of works, even if it is less obvious in the period 1991–2005. Therefore, from the perspective of the four phases suggested by Price (1963 cited by Dabi et al., 2016), it can be seen that between 1990 and 2005 the holistic study of the four concepts was in its initial phase, in which few researchers approached it and wrote it on this subject, and starting with 2005, an exponential increase in scientific production will be observed, corresponding to the second phase of development. Taking this approach into account, it is expected that in the next few years the holistic study of environment, structure, strategy, and performance relationships will pass in the third phase of strengthening the body of knowledge.

More than half of the documents that address the analysed topic are published in journals/conference volumes indexed in WoS in the management category and almost a quarter in business, this trend being more obvious since 2010.

The semantic analysis of the keywords highlighted interesting patterns in terms of the frequency of occurrence, the association between them, and the evolution in time of the researchers' interest in studying the links between concepts; all these results are extremely useful in outlining their own methodology for analysing the relationships between environment, structure, strategy, and performance.

Considering the above, we found enough evidence to support the relevance of the present research topic for the field of management, to continue and deepen our research, as well as enough patterns and methodological indications to guide our future approach to the research process. The results thus obtained will be published in future papers.

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Chapter 2
The Culture of Quality and the Organizational Behavior of Knowledge Organizations in the COVID Context

Aurel Mihail Țîțu, Constantin Oprean, Alina Bianca Pop, Ștefan Țîțu, Costel Ceocea, and Camelia Cristina Dragomir

Abstract The SARS-CoV-2 pandemic, which is currently present in every country, has had a significant and unique effect on organizations all over the world. The abrupt move to remote work and virtual communication, among other things, has upset the old concepts of organizational behavior, organizational culture, quality culture, and management with all that encompasses it. This study intends to examine how the SARS-CoV-2 pandemic affects several aspects of organizational life and, implicitly, people's decision-making, with a special emphasis on the meritocracy system in the company. These broad changes, to which the study's authors refer, also resulted in a shift in organizational culture that put more of an emphasis on adaptability and flexibility. The overall message of the study is that the SARS-CoV-2 pandemic has brought attention to the value of meritocracy in the workplace since it may help identify and advance high-performing workers even in

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the face of challenges. This study emphasizes the nature and function of universities in contemporary society as knowledge-based institutions, as well as the effects of the SARS-CoV-2 pandemic on universities as a whole and on those who work there as professors and more esteemed mentors. The researchers encourage and make recommendations for specific qualitative indicators that might be used in a setting resembling a university to enhance communication management with all conceivable connections to university administration. The evidence we provide shows that universities play a crucial role in society by facilitating access to knowledge, encouraging critical but also constructive thinking, and aiding in the intellectual growth of individuals. Universities and other organizations are facing tough problems because of the pandemic, including the need to transition to "distance" learning and keep up with emerging digital technology. To ensure the continuation of learning and to support both students and professors, it is stressed the significance of excellent communication management in universities and the need for clear and effective communication techniques. Managing a university-type organization can require effective and efficient communication to be successful. In this well-documented study, several qualitative indicators are put forth that can be used to enhance communication management in a setting resembling a university, to balance the quality culture, and to implement the proper paradigm for meritocracy. These signs include increasing transparency, open and effective employee participation, and the emergence of an open and honest communication culture. In a different vein, the study suggests a new paradigm, namely, the open presentation and operationalization of certain potential benefits that may arise from the successful use of these indicators, as well as the approaches to evaluating their efficacy and efficiency.

2.1 Introduction

This study investigates how businesses responded to the problems provided by the SARS-CoV-2 epidemic and how they behaved within those systems. In the study, many facets of the substantial adjustments in organizational behavior brought about by the pandemic are addressed, including remote work and virtual communication, a situation in which businesses have needed to be more adaptive and agile to survive and grow (Jackson & Workman, 2021). The study also looks at the pandemic's effects on workers' well-being (Konrad & Turnley, 2022) and stresses the value of crisis management and emergency preparation (Barker & Mattiacci, 2021). Worldwide organizations have been significantly impacted by the SARS-CoV-2 epidemic (Hitt & Ireland, 2020). Traditional organizational behavior has been greatly challenged by remote labor and virtual communication, and businesses have had to change to survive and flourish. Organizational culture has undergone major changes as a result of the epidemic, including increased adaptation and flexibility (Jackson & Workman, 2021).

The article also looks at how the epidemic has affected employee morale and how crucial good communication is to be preserving a corporate culture. The article

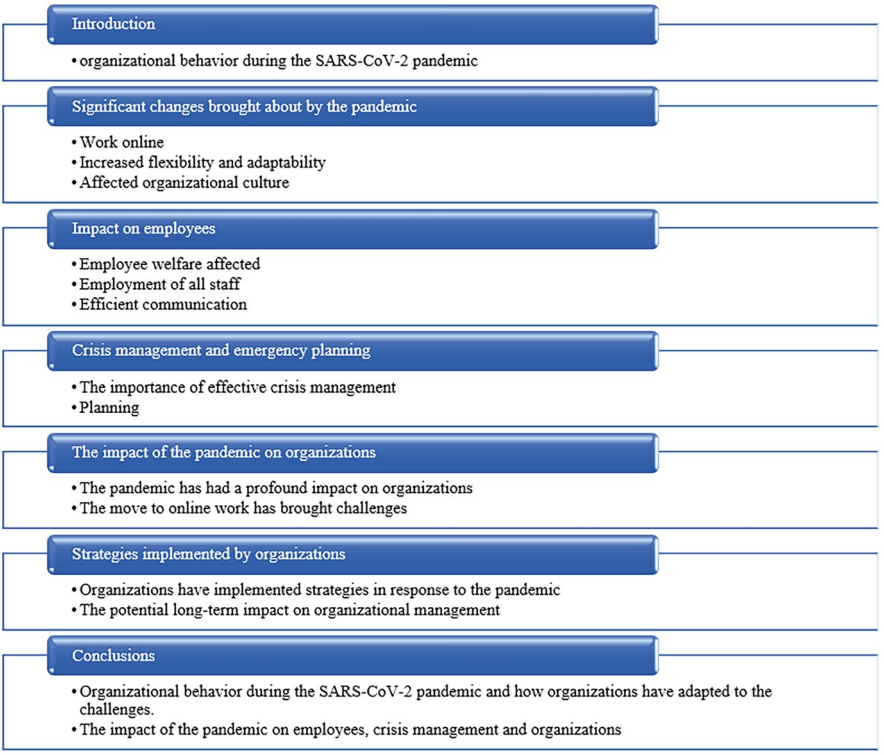

Fig. 2.1 Structure of the paper. (*Source:* Made by the authors)

will address the tactics companies have developed in reaction to the epidemic as well as any possible long-term repercussions these strategies may have on organizational management. The effects of the pandemic are already being felt on organizational management (Fig. 2.1).

The SARS-CoV-2 epidemic, also known as COVID-19, has had a significant effect on businesses and their management strategies. Organizations are facing new issues because of the abrupt move to online work, the recession, and the requirement for rapid decisions. One of the difficulties that companies will face during the pandemic is keeping meritocracy in place. People are chosen and promoted in a meritocracy system based on their skills and accomplishments (Chen & Huang, 2020).

These issues also arise in a university setting. The university itself serves as a crucial institution in contemporary society by facilitating access to information and encouraging intellectual growth. The SARS-CoV-2 epidemic has, however, had a considerable influence on universities, posing a challenge to conventional approaches to teaching and learning and necessitating that they adjust to new technology. In this essay, the pandemic's effects on universities are discussed along with the purpose and function of universities in contemporary society as knowledge-based institutions.

Running a business akin to a university requires effective communication. We propose several qualitative indicators that may be used to enhance communication management in an institution of higher learning. Improved employee involvement, more transparency, and the emergence of an open communication culture are some of these signs. It also looks at how to measure these indicators' efficacy as well as any possible advantages of using them.

2.2 Covid-19 Pandemic's Effect on Organizational Culture, Behavior, and Management

Researchers and practitioners alike have been interested in the subject of organizational behavior in relation to the COVID-19 epidemic. This is in line with research by Chen, Yang, and Wang (2021b), who discovered that organizations were more likely to survive and even prosper if they were able to swiftly adjust to changes brought on by the epidemic.

Another viewpoint is that the epidemic has made the value of occupational well-being and mental health more apparent. Employees who reported high levels of stress and burnout during the pandemic were more likely to have unfavorable views regarding their employment, according to research by Li et al. (2020). Because of this, businesses should put their employees' well-being first to retain productivity and engagement.

The use of online work and digital technology has risen because of the epidemic, according to a third viewpoint. According to research by Zeng et al. (2021), businesses that had adopted digital technology before the pandemic were better prepared to handle the move to online employment. To be competitive in the post-pandemic environment, businesses need to invest in digital technology (Fig. 2.2).

Because of this, both managers and employees now need to be more adaptable and flexible. The pandemic also brought to light the need of efficient communication in preserving organizational cohesiveness and productivity (Jackson & Workman, 2021), necessitating a greater degree of flexibility and adaptability on the part of companies (Hitt & Ireland, 2020).

Employee happiness was significantly impacted by the epidemic as well (Konrad & Turnley, 2022). Employees have faced challenges because of the abrupt change to online employment, particularly in terms of their mental and emotional health. The epidemic has also underlined how crucial it is to offer tools and assistance to workers so they can preserve their well-being. Effective crisis management and emergency preparation are critical, as the epidemic has shown (Barker & Mattiacci, 2021).

The pandemic has had a profound effect on organizational culture as well. It has altered the way businesses operate and brought about numerous changes. It has also

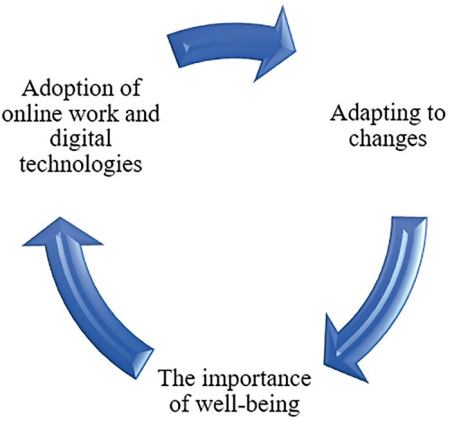

Fig. 2.2 Organizational behavior in the context of the COVID-19 pandemic. (*Source:* Made by the authors)

brought attention to the significance of certain facets of organizational culture, including adaptability, resilience, flexibility, and employee well-being.

According to studies, businesses with a strong culture of flexibility and adaptation respond to crises better and are more likely to be resilient in the face of ambiguous and swiftly changing conditions. The negative impacts of the epidemic on employees can be lessened by an organizational culture that places a high priority on employee support and well-being. The epidemic has also hastened the use of digital technology and online labor, which has increased the value of culture in the digital age. Organizations must foster a culture that values and promotes the use of digital technologies if they want to compete in the post-pandemic world.

According to research by Chen et al. (2021a), the pandemic caused alterations in corporate culture, such as a stronger emphasis on teamwork and adaptation as well as a move toward virtual communication. The study, which was published in the Journal of Business Research, showed how the pandemic has changed organizational behavior, resulting in things like higher workplace stress and worse job satisfaction (Fig. 2.3).

The epidemic significantly disrupted organizational operations, which prompted adjustments to management methods (Kirschner, 2020a, b). According to research by Gao et al. (2021), which was published in the Journal of Management and Strategy, the pandemic had a substantial effect on organizational management, changing decision-making procedures, and bringing management crises to the forefront of attention. This leads to the conclusion that in order for enterprises to survive the epidemic, they have to become nimbler and more flexible (Fig. 2.4).

According to research by Chen et al. (2020), which was published in the Journal of Business Research, the pandemic underlined the value of strong leadership in times of crisis. The study suggests that leaders are essential to helping firms effectively address the problems faced by the epidemic. However, the pandemic's impact on the economy has reduced many organizations' income, causing them to make

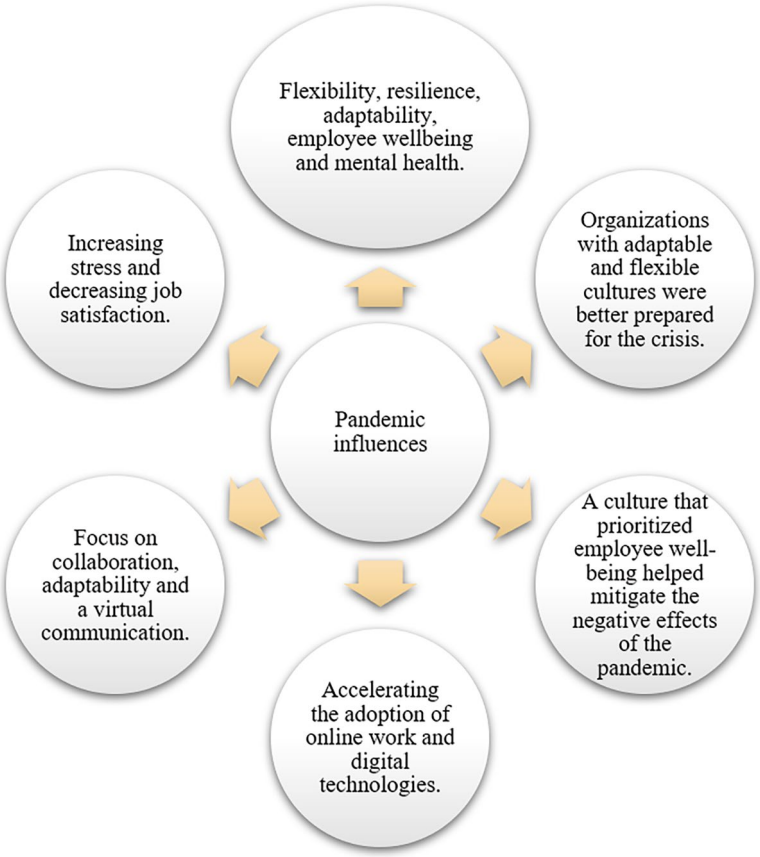

Fig. 2.3 Influences of the COVID-19 pandemic on organizational culture. (*Source:* Made by the authors)

challenging choices like layoffs and compensation reductions (Chen, 2020a, b). Nonetheless, some businesses have turned to creative solutions, such as adopting new business models or creating brand-new goods and services (Zheng et al., 2020).

Organizational management is likely to be affected for some time by the epidemic and the responses taken. For instance, the persistent presence of online labor in organizational operations may influence management techniques (Kirschner, 2020a, b). Moreover, the corporate landscape may alter permanently because of the economic crisis, with some businesses battling to survive and others rising as new leaders (Chen, 2020a, b).

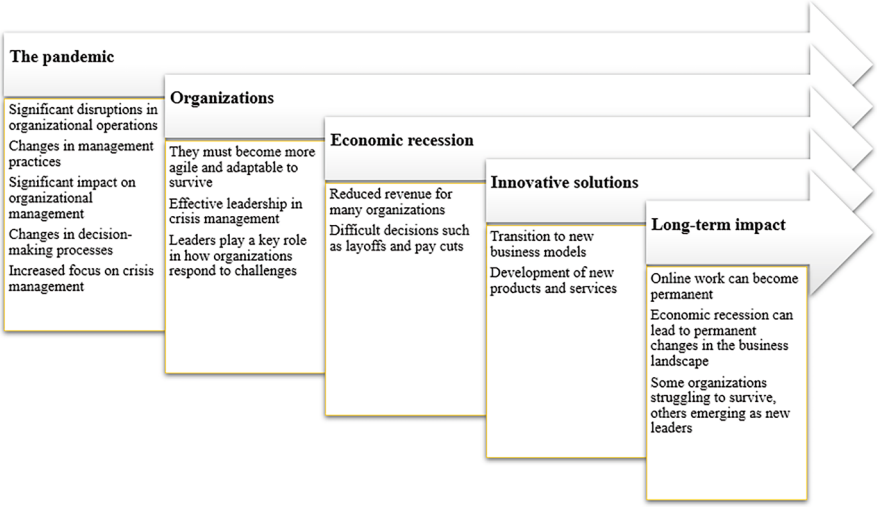

Fig. 2.4 The repercussions of the pandemic on the economic environment. (*Source:* Made by the authors)

2.3 The Covid-19 Pandemic's Impact on Organizational Meritocracy

Organizations that can recognize and reward great performers are more likely to be successful in the face of adversity. Meritocracy enables firms to guarantee that the greatest individuals are placed in the appropriate roles and have the resources and assistance they require to succeed.

Meritocracy is the idea that people should advance in their careers based on their knowledge, abilities, and performance rather than on things like seniority or personal ties. The COVID-19 epidemic, however, has significantly altered organizations, causing modifications to the way meritocracy is applied. The epidemic and the responses taken will probably have a long-term effect on the meritocracy inside the company.

According to a study by Park et al. (2021) that was published in the Journal of Business Research, the pandemic caused a decline in meritocracy in organizations because businesses were forced to make quick decisions and implement cost-cutting measures, which made mandates more important than performance. Further lowering meritocracy in the workplace, it was discovered that working online during the pandemic made it more challenging for supervisors to evaluate employee performance.

Another research by Chen et al. (2021a) indicated that the pandemic caused changes in organizational culture, including a stronger emphasis on teamwork and adaptation as well as a move toward virtual communication. This study was published in the Journal of Management and Strategy. The epidemic has altered

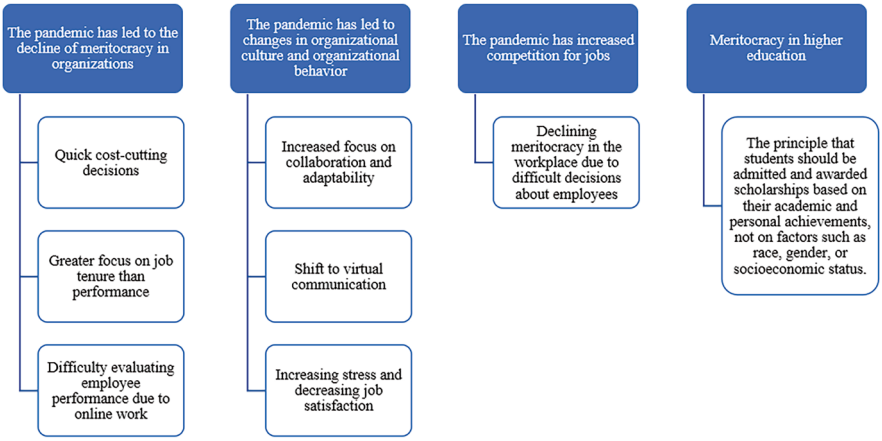

Fig. 2.5 The effect of the pandemic on meritocracy in organizations. (*Source:* Made by the authors)

organizational behavior, including increased workplace stress and lower job satisfaction, which may have an impact on workplace meritocracy, according to the study (Fig. 2.5).

The pandemic has increased competition for jobs, according to a study by Gao, Liu, and Wang that was published in the Journal of Business Research in 2021. This is because businesses have been compelled to downsize because of the uncertain economic climate. Because businesses have had to make difficult judgments about who to keep and who to fire because of the increasing competition, meritocracy in the workplace has decreased.

Meritocracy in higher education refers to the idea that admission decisions and scholarship awards should be made on the basis on an applicant's academic and personal accomplishments rather than their race, gender, or socioeconomic standing (Bowen & Bok, 1998).

In universities, policies like admissions standards that prioritize academic achievement and test results as well as financial aid guidelines that grant scholarships based on merit are frequently used to foster meritocracy (Chung & Espenshade, 2015). Students who have excelled academically, exhibited leadership potential, and established a history of community involvement are given merit-based scholarships (Fig. 2.6).

Although students from more fortunate backgrounds may have greater possibilities to obtain excellent academic performance and test scores, there are worries that higher education elitism may worsen already-existing inequities.

Some academics contend that higher education meritocracy can maintain privilege by neglecting to consider structural disparities that may limit students' possibilities, such as limited access to high-quality instruction, resources, and support (Feldman & Newfield, 2019).

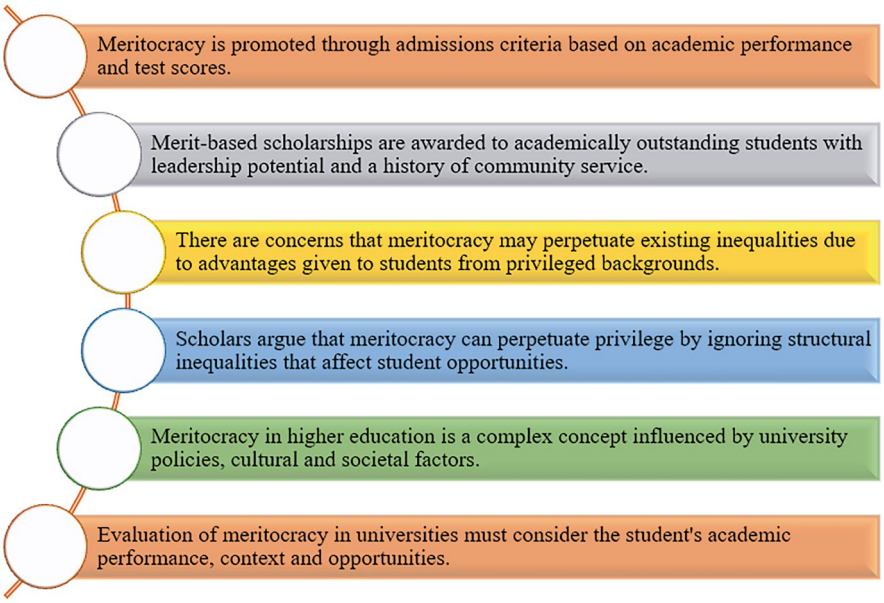

Fig. 2.6 The effect of the pandemic on meritocracy in universities. (*Source:* Made by the authors)

The notion of meritocracy in higher education is complicated and varied, and it can be impacted by a number of different things, including institutional regulations and socioeconomic, cultural, and cultural elements. As a result, it is critical to evaluate the meritocracy at universities by considering not just academic achievement but also the student's environment and chances.

2.4 Covid-19 Pandemic's Effect on University in Modern Society

Universities are knowledge-based institutions where knowledge is created, shared, and applied. High levels of expertise and a concentration on research, teaching, and service define them. Universities are similarly intricate organizations that need excellent management and communication techniques to maintain learning continuity and support for both students and faculty.

By facilitating access to information and encouraging intellectual growth, universities play a crucial role in society. Universities play a significant role in developing future generations of leaders and professionals and are significant engines of innovation and economic growth (Fig. 2.7).

The pandemic has seriously disrupted university operations, which has changed how universities perform their function as knowledge-based organizations in

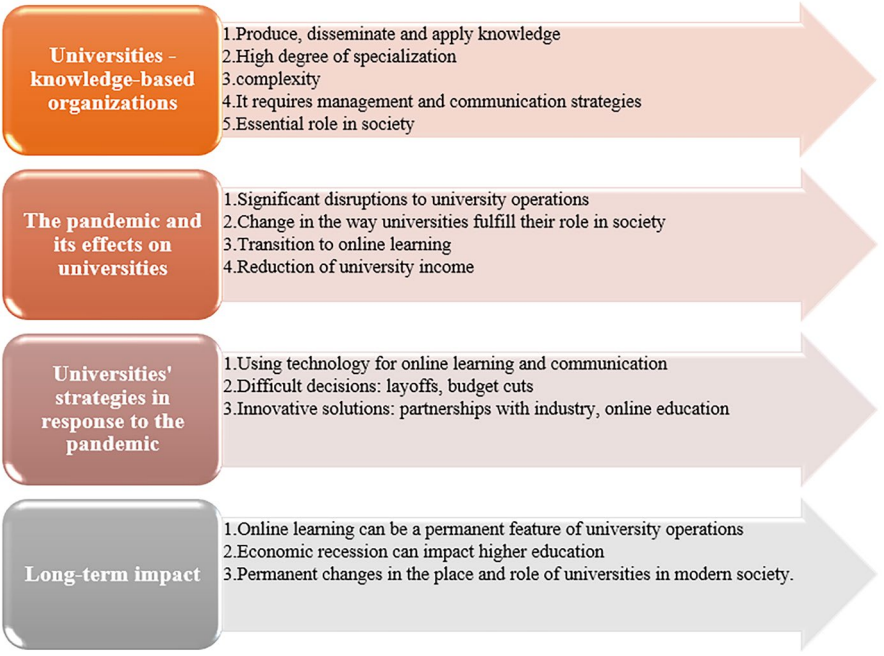

Fig. 2.7 The impact of the covid-19 pandemic on the university in modern society. (*Source:* Made by the authors)

society (Brown, 2020). For instance, the transition to online learning has caused difficulties for universities in ensuring that all students have access to education and preserving the standard of education (Smith, 2020a, b). However, the economic crisis brought on by the pandemic has decreased income for many colleges, requiring them to make challenging choices like budget cuts and layoffs (Jones, 2020).

Universities have adopted several tactics to retain their position and function in society in response to these difficulties. To support online study and communication, several colleges have resorted to technology (Smith, 2020a, b). Colleges have also had to make challenging choices, such as budget cuts, and layoffs, to stay financially viable (Jones, 2020). Several colleges have also resorted to cutting-edge techniques including industrial collaborations and hybrid education (Williams, 2020). The epidemic and the measures taken in response may have long-term effects on the positioning and function of universities in contemporary society. For instance, the incorporation of online learning into university operations may transform how universities function in society (Smith, 2020a, b).

A lasting shift in the higher education landscape may also result from the economic slump, with some institutions battling to survive while others rising as new leaders (Jones, 2020). In addition, the economic slowdown brought on by the epidemic has resulted in decreased financing for research and development, which might restrict institutions' capacity to produce and distribute new information (Johnson, 2020).

2.5 The Impact of Efficient and Effective Communication on a University-Type Organization's Functioning

Each organization, particularly one of the university kinds, must have effective and efficient communication in order to operate smoothly. Implementing a centralized communication platform for academics, staff, and students is an illustration of successful and efficient communication. This platform may be used for a number of things, such as providing information about events and services, arranging meetings, and making significant notifications.

Messaging that is concise and consistent is a crucial component of effective communication. This means that crucial information, such as updates or announcements, should be sent promptly and in a way that the target audience can readily comprehend. For instance, more specific information can be put on the internal website or LMS, while university-wide notifications can be delivered by email or text message. This can guarantee that everyone is informed of significant events and can take the necessary action (Fig. 2.8).

The usage of a learning management system (LMS), such as Blackboard, Knowledge Base, or Canvas, is a specific illustration of a centralized communication platform. Students may keep informed and on top of their work with the aid of these systems, which enable teachers to publish announcements, assignments, and grades in one convenient spot. Moreover, LMSs frequently have built-in communication facilities like email and discussion boards, which may be used to encourage dialogues between students and professors or among students. This might improve classroom cooperation and build a feeling of community. Another illustration is the usage of an intranet or internal website where personnel may locate crucial data and assets and stay informed about university activities and events. By doing so, you may improve staff participation and engagement and make sure everyone is aware of the most recent advancements at the university.

Also, regular interaction between various departments, such as that between the academic and IT departments, may guarantee that everyone is on the same page and that any problems or concerns are dealt with as soon as they arise. The practice of

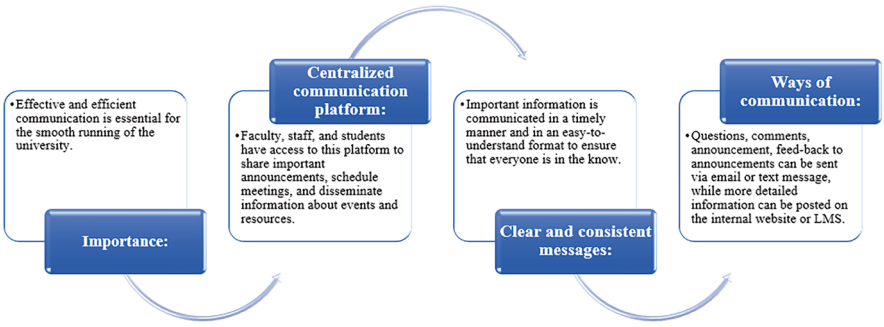

Fig. 2.8 Effective and efficient communication in the university. (*Source:* Made by the authors)

attentive listening and responsiveness is another crucial component of good communication. As a result, university personnel must be readily available to respond to inquiries and concerns. For instance, staff workers should answer emails or phone calls in a timely manner, and teachers should be accessible to meet with students during class or by appointment. The university and its stakeholders may benefit from a partnership that is based on trust and mutual respect.

Also necessary for effective communication are a high level of openness and inclusivity. This implies that, if feasible, the institution should include stakeholders in the decision-making process as well as be transparent and honest about its activities and choices. The institution may, for instance, provide open forums or gatherings where academics, staff, and students can voice their opinions and ask questions. This may guarantee that everyone feels appreciated and heard and that the institution responds to the requirements of its stakeholders (Fig. 2.9).

To eliminate duplication of effort and save employee burden, effective communication is also crucial. Implementing a clear and consistent communication strategy throughout the company is one method to do this. The channels that should be used for different sorts of information, such as updates, announcements, and emergencies, should be specified in this protocol.

The protocol should also outline who oversees transmitting specific sorts of information, as well as when and how frequently that communication should occur. By doing so, you can make sure that everyone is informed and that your resources are being used efficiently. Finally, it is critical to remember that technology may significantly enhance the efficacy and efficiency of communication in a university-type business. Key components of good communication in a university context include clear and consistent message, active listening and responsiveness, transparency and inclusion, effective communication procedures, and the use of technology. In conclusion, excellent communication is essential for a university-type organization to succeed. Universities may contribute to ensuring that everyone is informed and involved and that the organization functions well by developing centralized communication systems, fostering cooperation, and frequent contact between various departments.

2.6 Qualitative Indicators for Communication Management Improvement in Universities

Universities must manage their communications well if they are to be successful, and there are certain qualitative measures that may be used to enhance communication at these institutions. They include using technology effectively, communicating clearly and consistently, being transparent and open, and evaluating the efficacy of communication initiatives via feedback and assessment tools. Also, a top focus should be given to safeguarding the mental and emotional well of both instructors and children. Universities are intricate organizations that rely largely on good

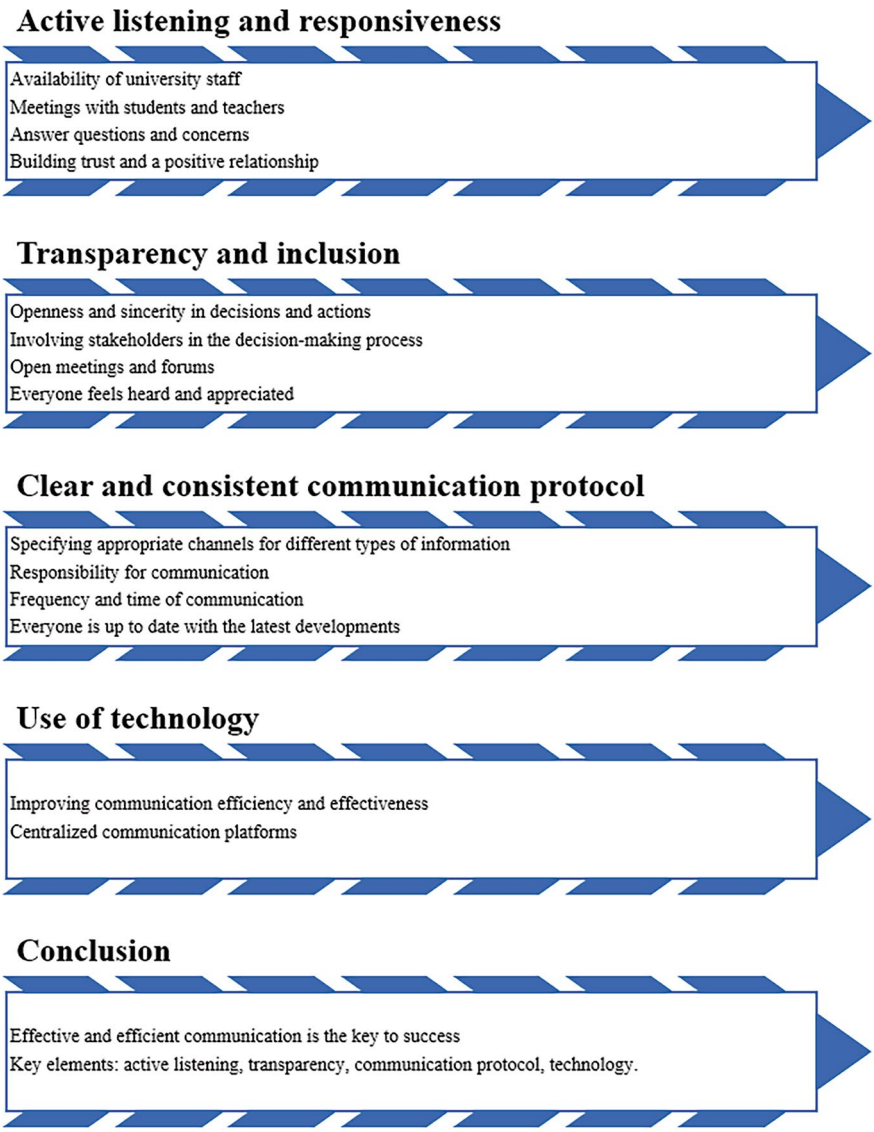

Fig. 2.9 The influence of efficient and effective communication on the functioning of a university-type organization. (*Source:* Made by the authors)

communication to ensure information flow, activity coordination, and organizational goals are met.

A university-type company can adopt several qualitative indicators to enhance communication management. According to Fig. 2.10, they comprise the following:

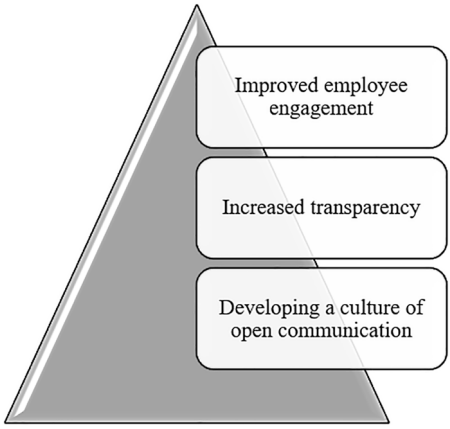

Fig. 2.10 Qualitative indicators that can be implemented to improve communication management in a university-type organization. (*Source:* Made by the authors)

- Increased Employee Engagement: In every firm, effective communication management depends on improved employee engagement. Universities should develop a collaborative atmosphere, open communication, and chances for feedback to increase employee engagement (Kirschner, 2020a, b).
- Improved Transparency: Effective communication depends on transparency. By regularly updating students on significant topics, fostering an atmosphere of openness, and promoting information exchange, universities may increase transparency (Chen, 2020a, b).
- Developing an Open Communication Culture: Effective communication management requires the development of an open communication culture. Universities may encourage an environment of open communication by promoting the sharing of ideas, offering venues for criticism, and cultivating a culture of trust (Zheng, 2020).

A university-type organization may get various advantages by implementing these indicators. Figure 2.11 illustrates some of these advantages.

To guarantee that communication management is enhanced in a university-type company, it is critical to assess the efficacy of these qualitative indicators.

According to Fig. 2.12, there are several ways to assess efficacy

- Interviews and surveys: They may use interviews and surveys to get the opinions of the staff on how the company handles communications.
- Focus groups: Focus groups can be used to get in-depth input on facets of communication management, such as employee engagement and transparency.
- Communication pattern analysis: Universities can assess organizational communication patterns, including frequency and efficacy, to identify opportunities for development.
- Benchmarking: Universities might evaluate their communication management procedures against those of other businesses to pinpoint opportunities for development.

Fig. 2.11 Benefits of implementing qualitative indicators in a university-type organization. (*Source:* Made by the authors)

Fig. 2.12 Effectiveness measurement methods. (*Source:* Made by the authors)

2.7 Conclusions

Organizational behavior, culture, and management have all been significantly impacted by the SARS-CoV-2 epidemic. Even during hardship, organizations that are able to recognize and reward high-performing people are more likely to prosper. The SARS-CoV-2 epidemic had a significant effect on corporate behavior as well. Organizational behavior has been faced with numerous difficulties because of the

abrupt move to online work and virtual communication, and businesses have had to change in order to survive and grow. The epidemic has also brought attention to the need of good and clear communication, employee well-being, crisis management, and emergency preparation.

Organizations have been pushed to reevaluate and even reinvent their cultures to preserve productivity and cohesiveness as the emphasis on flexibility and adaptation has increased. The epidemic also made clear how crucial good communication is to preserve a solid company culture and workforce engagement.

It is also feasible that these changes will have a long-term effect on organizational management since firms have had to modify their management techniques to survive. Also, to maintain fairness and equity, corporations have had to modify their management procedures. These modifications have a long-term effect on the meritocracy inside the firm. University, which is the most intricate institution in contemporary society, facilitates access to knowledge while encouraging intellectual growth and critical thinking. Universities are facing tough problems because of the SARS-CoV-2 epidemic, including the move to online learning and the requirement to adopt new technology.

To promote learning continuity and support for both students and teachers, it is important to note the significance of good communication management in higher education settings. Universities may enhance their communication management by putting qualitative indicators into place, such as clear and consistent communication strategies, efficient technology usage, transparency, openness, and the use of feedback and assessment procedures.

Universities and their position and function in contemporary society face substantial difficulties because of the SARS-CoV-2 epidemic. Universities have had to modify the way they do business to guarantee access to education and preserve the quality of that education, and these changes are likely to have an ongoing effect on how universities are seen in contemporary society.

For a university-type company to operate well, efficient communication management is seen to be essential. There are several possible advantages for the business from implementing qualitative indicators including better employee engagement, increased transparency, and the creation of an open communication culture. To guarantee that communication management is enhanced, it is important to assess the efficacy of these indicators.

A direction for further research would involve examining the long-term consequences of the SARS-CoV-2 outbreak on organizational behavior, culture, and management and how companies might adapt to these changes in the future.

Other research directions are looking at how the meritocracy system affects organizations in times of adversity and how it might be applied to find and promote top performers. It could also investigate the impact of the SARS-CoV-2 epidemic on employee well-being and mental health and how companies could help staff members in difficult situations. It could examine how technology could be used to improve continuity of learning and support for students and instructors and how it affects communication management in universities and other companies.

A final proposed research direction would be to examine how management techniques within firms could use transparency and a culture of open communication to promote employee engagement and maintain a strong corporate culture.

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Chapter 3
Stakeholders-Based Management: A Company-Relevant Alternative

Ovidiu Nicolescu and Ciprian Nicolescu

Abstract The purpose of this paper is to present a new management system, company-relevant stakeholders-based management system or CRSBMS, that is able to valorize to a high level the potential of the most important internal and external stakeholders to generate many business, social, and ecological benefits. This system is conceived taking into consideration the opportunities and challenges generated by industrial revolution 4.0, digital transformation, and other megatrends.

3.1 Introduction

There have been many and rapid changes in all fields during the last 30 years, including the fields of scientific, technique, economic, management, social, ecology, and politics. Among these, we mention digitalization (Kiron & Unruh, 2018; Weill & Woerner, 2018; Ready et al., 2020; Satell et al., 2021; Schrage et al., 2021; Lindell et al., 2022), industrial revolution 4.0 (Rifkin, 2016; Schwab, 2016; Jedynak et al., 2021; Ackermann et al., 2021), and transition to the smart economy (Bouchez, 2012; Mallovan et al., 2015; Iansiti & Lakhani, 2017; World Economic Forum, 2017; Mokyr, 2020).

The economic and social environment is characterized by VUCA. In this context, companies face an increasing number of diversified opportunities, threats, and challenges. Their capacity to valorize the opportunities, resist threats, and face challenges has proved to be rather limited. Although some companies have been successful in certain fields, for the most part, they have been confronted with difficulties and even with survival problems. The recent COVID-19 pandemic has enhanced these aspects in the largest companies all over the world. A review of recent management and business literature and practice allow us to identify two major trends:

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The first consists in asking for radical changes in companies and company management. Many specialists (Weill & Woerner, 2018; Levenson, 2020; Teece et al., 2020) have asked for new business models that are capable of attracting and using better intellectual capital and opportunities generated by digitalization, transition to the knowledge-based economy and even to reinvent management. More than this, a large number of renowned management specialists and top managers from prestigious companies have launched appeals to radically remodel an organization's management. Among these, we mention the Renegade Brigade Manifesto (Hamel, 2009) in which 136 leading professors, executives, and top consultants from North America and Europe concluded that modern management (management 1.0), which dates to the late nineteenth, has reached the limits of improvement. They designed a road map for reinventing management by proposing to build management 2.0, taking into consideration 25 management grand challenges. At the Davos Forum in 2017 (World Economic Forum, 2017), 100 leading business presented and adopted "The Compact for Responsive and Responsible Leadership – A Roadmap for Sustainable Long-Term Growth and Opportunity," which contains a demand to remodel company leadership and management and indicates some radical changes.

The second trend refers to the stakeholder field as able to make a major contribution, even a determinant one, to the radical changes in company management and its reinvention. One of the first steps is an awareness that the success of a firm is determined by its ability to establish and maintain relationships with its entire stakeholder network. According to Ignatius (2019), companies are being pushed to consider the interests of all their stakeholders, including employees, customers, and the community, and not just those of their shareholders. The renowned Freeman (2017, p. 7) formulated that there is "the need for a new era of management thinking based on the idea of stakeholders. We need to rewrite management theory and practice." More recently, 185 CEOs from the United States (USA) adopted a Statement on the Purpose of Cooperation (International Council for Small Business, 2019) in which they stated "We share our fundamental commitment to all our stakeholders… Each of our stakeholders is essential. We commit to deliver value to all of them, for the future success of our companies, our communities, and our country."

The COVID-19 pandemic has increased public awareness of the need to make profound changes in all of society's components, including businesses and the business environment. The Global Risk Report 2020 presented at the World Economic Forum (2020) stressed the need for a multistakeholder approach to addressing the world's greatest challenges. The focus at the World Economic Forum's 50th annual meeting was "stakeholders for a cohesive and sustainable world."

Many specialists (Valentinov & Hajdu, 2021; Romeo et al., 2020; Tarabishy & Carayannis, 2020) have stressed that the main option for remodeling society, business, and especially companies is to give more attention and consideration to stakeholders.

Joly (2021)—the CEO of one of the best American companies—considers the company to have started the stakeholder era in which we need a refoundation of business and capitalism as well as business leaders who prioritize the common good and recognize the humanity of all stakeholders.

The elements presented in the preceding paragraph regarding the focus of a company and businesses on stakeholders can be found in the management literature. Concomitantly, we can see that in certain companies, especially large ones, the very important external stakeholders (customers, suppliers, investors, local communities, etc.) are being reconsidered. Some companies have elaborated specialized and successful management mechanisms. The most known mechanisms are Customer Relationship Management (CRM; Burnett, 2001; Payne, 2005; Nguyen, 2012; Santos & Castelo, 2018), Supply Chain Management (SCM; Blanchard, 2010; Sanders, 2017), and Corporate Social Responsibility (CSR; Carroll, 1991; Schrempf-Stirling et al., 2016; Flammer & Luo, 2017; Freeman & Elms, 2018; Luu, 2020; Wickert, 2021; Caulfield & Lynn, 2022). These mechanisms have demonstrated that the construction of special relationships with stakeholders is very beneficial for both the company and the stakeholders, increasing their performance and satisfaction. CRM, SCM, and CSR represent very valuable arguments for management focused on a company's main stakeholders.

It is also necessary to outline that the impact of these managerial mechanisms on the functionality and performance of a whole company has been rather weak. This is because of the following:

- Many important stakeholders are neglected.
- The mechanisms used (CRM, SCM, and CSR) cover only a small part of the company's resources and activities.
- They are used in a relatively small proportion of companies, usually corporations.

All the elements mentioned motivated us to project a new system—CRSBMS. It is an original managerial mechanism that intensively integrates into a company's systemic vision the major internal and external stakeholders in the organization's activities based on the win–win approach, leading to the generation of much better performance for the company and each relevant stakeholder.

3.2 Method

By its content, the study is mainly theoretical, but by its objectives and implications, it is very pragmatical. It seeks to provide a new vision and an innovative company management system built on the existing literature related to organizational management, stakeholders, social responsibility, and the best practices in CRM, SCM, and CSR as well as the authors' extensive theoretical and practical research as management professors and consultants. The research has included an analysis of five fields.

A. Analysis of CRM, SCM, and CSR, which are successful managerial mechanisms (Rampersad, 2017; Wieland & Durach, 2021) that have been developed in companies over the last decades to cultivate better relationships with very

important external stakeholders, such as customers, suppliers, and communities. These managerial mechanisms have demonstrated as follows:

- They are more successful than previous company management approaches to stakeholders, and this explains the reason their use is expanding fast in many companies, especially large ones.
- The negotiation of a win–win scenario between a company and each stakeholder, which is the major innovative element in CRM, SCM, and CSR, amplifies the relationship of company–external stakeholders, increases the benefits to each party, and increases the continuity of joint activities based on a long-term approach.

B. Analysis of the major difficulties faced by company management in relationships with internal and external stakeholders regarding the following:

- Frequently weak motivation, implications, and participation of the two main categories of internal stakeholders—executants and low and middle managers—in the company's activities, with most of these employees use to a small extent their potential. A recent investigation fulfilled by ADP Research Institute (2019) involving 19 countries and 19,000 employees found that only 16% were fully engaged.
- A company's insufficient use and valorization of capitalization of its internal stakeholders' knowledge and other resources—clients, suppliers, investors, local communities, consultants, researchers, etc. (Nguyen, 2012; El Akremi et al., 2018).

C. Analysis of the hierarchy impact on the relationship of a company with its internal and external stakeholders, which frequently reveals that a company's hierarchy is based on a manager's excessive power and on the "command" approach (Bailey et al., 2019; Repenning et al., 2018), with priority given to formalized elements, subordinates who are less often consulted, and not enough consideration of the new ideas and knowledge of employees, which does not stimulate an increase in initiative and creativity.

This represents a very big handicap to the motivation and participation of the company's internal and external stakeholders in the accomplishment of the organization's objectives. The effect consists in the fact that a large part of an internal stakeholder's information, knowledge, intellectual capital, and other financial and material resources—and to a large extent, also that of external stakeholders—is not used and valorized in the interest of the company and often not in the interests of the stakeholders either. Not infrequently do relationships with internal and external stakeholders become tense, which generates decisions, actions, and behaviors with negative effects on the company's functioning and performance.

D. Analyses of the implementation of social responsibility in companies, which indicates two distinctive situations:

- In large companies, the practice of CSR is more frequent, but to a large extent, the implementation is formal and superficial, which often does not

generate good results (Carroll, 2004; Baden, 2016; Rampersad, 2017; Eden & Ackermann, 2021).
- In small- and medium-sized companies, social responsibility is rarely used and less intense; in typical small- and medium-sized companies, social responsibility does not represent a concern for managers and executants.

E. Analysis of the corporate governance functioning and performance used in large companies, which indicates that although corporate governance frequently generates more functionality and performance, it presents numerous limitations. Among these are the following:

- A focus on shareholders and top managers, without taking into consideration other important stakeholders.
- The appearance of frequent misconduct among top managers and large shareholders, such as illegal insider trading, illegal stock options, financial manipulation, backdating, and bribery (López-Iturriaga & Santana-Martín, 2015; Fauver et al., 2017; Schwarzmüller et al., 2017; Connelly et al., 2017), thereby reducing the positive impact of the implementation of CSR. According to a study of 312 FTSF representative companies from Great Britain, only 11 companies (4% from all organizations) have truly embraced the spirit of corporate governance (Grant Thornton, 2015).

Starting from this analysis, we have conceived of a new company management system—CRSBMS—which refers to all companies and not only to large ones. This innovative management system is different from other company management systems, such as management by objectives, management by projects, or management by budgets, because:

- It is focused on the main internal and external organizational stakeholders, not only on owners and top managers.
- It uses a set of rigorous criteria to identify the relevant internal and external stakeholders for each organization, which shall be permanently and intensively implicated in company management.
- It reshapes relationships with relevant stakeholders, moving from the primacy of the rigid "classical hierarchy" based on a manager's excessive power and authority to the new type of win–win management relationship focused on the achievement of common objectives, similar to relationship management in performant CRM, SCM, and CSR.
- It replaces CSR with company social responsibility that takes into consideration all companies because each company, regardless of its size, should have the same rights and obligations within the economy and society.
- It extends the realm of social responsibility beyond economic, social, legal, and moral elements (Carroll, 1991; Baden, 2016), incorporating the ecological element as the fifth item.
- It shapes the ensemble of company management relationships and processes within a new management system that is based on relevant company stakeholders, common objectives, win–win relationships, collaboration, motivation,

flexibility, and social responsibility, which makes it able to better valorize the knowledge, intellectual capital, and other resources of each relevant stakeholder.

This new management vision and system are conceived with the aim of valorizing the great opportunities provided by digital transformation and the transition to a "smart" economy as well as to better respond to grand societal challenges.

3.3 Company-Relevant Stakeholders-Based Management System

3.3.1 Premises

This innovative company management system focused on relevant internal and external company stakeholders is based on nine premises, which shall shortly be presented in this section.

– Holistic approach for all internal and external company stakeholders based on the new concept of stakeholder relevance and relevant stakeholder.

A relevant stakeholder can be defined as a company stakeholder who exercises a substantial direct and indirect influence, now and/or later, on the company's functionality, development, and performance that should be taken into consideration in achieving organizational competitiveness and sustainability. A set of criteria has been elaborated to determine the relevance of stakeholder (Nicolescu & Nicolescu, 2022):

– Approach by the company as a multi-objective company, having economic, ecologic, moral, and legal responsibilities and performances.
– Extending the stakeholders approach from large companies to all companies, because each company has internal and external stakeholder.
– Valorization of the innovative mechanisms developed in many large companies in reference to the main external stakeholders—important clients (CRM), essential suppliers (SCM), active local communities, and other social and ecological stakeholders (CSR).
– Extending CSR from large companies to all companies as well as reshaping it.
– Introducing a new concept of "pentagon of relevant responsibilities" (Nicolescu & Nicolescu, 2022) instead of Carroll's pyramid (Carroll, 1991).
– Taking into consideration the focus on information, knowledge, and intellectual capital that exists in society, the economy, and companies, which is determined by the industrial revolution 4.0, the transition to the knowledge-based economy, and the fast digital transformation that have multiple impacts on an organization's functioning and performance.
– Center company management on human values and behaviors, on the new approaches of human resource management provided by humanistic management, which has rapidly proliferated in the last decades.

3.3.2 Definition and Structure of the CRSBMS

Premises enumerated above regarding company management and relevant stakeholders represent the background for the definition and the conception of the new company management system.

The CRSBMS incorporates the ensemble of the management processes and relationships that foresee, organize, coordinate, motivate, and evaluate the relevant stakeholder's work processes based on the intense and participative sharing of information, knowledge, and other resources for joint and harmonized decisions, actions, and behaviors, thereby achieving the common, multidimensional objectives of the organization and relevant stakeholders. Like other company management systems—management by objectives, management by budgets, and management by projects—CRSBMS has a holistic construction that approaches the company as an open system and has an increase in its functionality and performance as a priority.

The system is designed to meet the sustainable multidimensional interests and objectives of the organization and its relevant internal and external stakeholders. It aims to achieve two main goals:

– The fulfilment of the common and/or complementary purposes of the company and its relevant internal and external stakeholders, as reflected in common objectives.
– The establishment of a collaborative mechanism that is able to determine a high level of accomplishment of joint objectives.

The CRSBMS is a structured mechanism of management for diversity (Vito & Sethi, 2020; Albert & Lazzari Dodeler, 2022) that recognizes the contributions made to the company by different stakeholders and in which each participant can influence the others.

The system has three main components:

(a) Managerial synapse is the specific and most important component of the new system, the basic managerial unit, which has two constituents—the manager and the managed person, who could be an internal or external relevant stakeholder. Managerial synapse achieves an intense exchange and sharing of information and knowledge based on the joint and/or harmonized decisions, actions, and behaviors of the two components, with the aim to fulfil the joint objectives that were win–win negotiated between them. Managerial synapse represents the basic managerial mechanism involving one manager and one relevant stakeholder, characterized by strong motivation of both parties, intense collaboration and cooperation, mutual trust, and reciprocal benefits. These characteristics explain why managerial synapse is much more motivative and efficacious than the classical relation of manager–subordinate, which is frequently too hierarchical, formalized, and rigid but not enough motivational and innovative. Managerial synapse should be carefully designed and implemented to generate high performance both for the company and relevant stakeholders and to be

long-run sustainable. A specific methodology for its construction has already been elaborated (Nicolescu & Nicolescu, 2022).

(b) An autonomous relevant stakeholder represents the second major component of the new managerial system. There are situations in a company in which certain relevant stakeholders will not be part of the managerial synapse for different reasons: he/she is not informed enough and is not open to accepting to be part of the managerial synapse; he/she is not for the time being influential enough on the company's functionality and performance, and the company does not want to make the effort to construct managerial synapse in the present period. However, the interests of the company are to cultivate relationships with this category of relevant stakeholder. In this situation, a company develops special relationships based on collaboration, the sharing of certain information and knowledge, increasing trust, and preparing for more common work and performance in the near future for the integration in a managerial synapse. At the time the implementation of this new system starts in a company, the number of autonomous relevant stakeholders would be rather large.

(c) Company participative relevant stakeholders' council. The high specificity and impact of relevant stakeholders involves specific coordination and harmonization of all elements implicated at the level of the entire company. For this reason, a company participative relevant stakeholders council should be created in the organization with members from all relevant stakeholder categories. The main objectives of the council are to facilitate the reshaping of company management, taking into consideration the relevant stakeholders' particularities and interests, to continue improvement of the relevant stakeholders-based management system, and to amplify the trust of internal and external stakeholders of company management and vice versa.

Council activity is based on the yearly plan, and each of the periodic meetings will have a specific agenda. The activity of the company-relevant stakeholders council should be participative, and it should be very strongly connected with the administration council and/or company management committee. A close cooperation between these bodies is necessary and beneficial for company and relevant stakeholders.

One last remark; the CRSBMS could be constructed in two variants:

– Integral CRSBMS, the optimal variant, which integrates all of the organizations internal and external relevant stakeholders, structured in managerial synapses. This variant valorizes at a high level the potential of all relevant stakeholders and the company.
– Partial CRSBMS, which has as components both managerial synapses and autonomous relevant stakeholders. The implementation of the CRSBMS will frequently start with this variant.

It is recommended that each company uses the CRSBMS variant that better satisfies the necessities and requirements of the company and relevant stakeholders, taking into consideration the company's internal and external context.

3.3.3 Main Characteristics of the Management System

CRSBMS is very different from the previous organizational management systems. The following main characteristics demonstrate this and help to understand its specificity, functioning, and performance.

1. The company is thought of as a grouping of stakeholders, who are treated as essential for its functioning, development, and performance.
2. The CRSBMS is focused on the identification, evaluation, and cultivation of the internal and external relevant stakeholders. Each relevant company stakeholder is considered very important; special attention is paid to all relevant stakeholders, and they are integrated using a variety of methods and tools.
3. The areas of the CRSBMS are not limited to the company—as is the case in all previous organizational management systems—it goes beyond the frame of the company to include the relevant external stakeholders (suppliers, customers, investors, designers, informaticians, local communities, etc.) that are direct participants in the company's virtual value chain.
4. The CRSBMS is focused on the establishment and implementation of common objectives for the company and relevant stakeholders using win–win negotiations, which allows the company and the stakeholders to take into consideration the essential interests of both parties. The common objectives established are multidimensional—economic, social, ecological, educational, etc.—reflecting the specific nature and the essential interests of relevant stakeholders, harmonized with those of the company.
5. The managerial synapse, which is constructed for each internal and external relevant stakeholder based on a win–win negotiation, represents the essential element in the building ad functioning of the new system.
6. A main feature of the CRSBMS is constant and intensive individual and organizational collaboration and cooperation. Collaboration and cooperation have triple dimensions—decisional, actional, and behavioral—that are permanently interrelated. Intensive collaboration with management amplifies stakeholder perceived control, which according to recent findings increases their trust, willingness, and capacity to change.
7. The decisions, actions, and behaviors through which this system works are constantly harmonized in each managerial synapse and at the level of the whole CRSBMS. This avoids major dysfunctionalities and conflicts and amplifies the understanding, collaboration, and sustainability in the company and at the level of relevant external stakeholders. Special attention is paid to each relevant stakeholder's information and knowledge, which are considered as essential assets for the company, encouraging sharing and common use and generating higher productivity and quality of products and services.
8. Design, implementation, and functioning of this company management system is based on reasonable and sustainable compromise. Reasonable compromise represents an approach, an agreement, and/or a solution that is not optimum for any constituent of the CRSBMS, but it represents a satisfactory and acceptable

result for all parties, taking into consideration the most important interests and other essential elements of each of them. The use of change agents with a good reputation (Gallagher et al., 2020) could contribute to the building of stakeholder trust in the organization and the achievement of a reasonable compromise.

9. The system has a very strong motivational dimension based on joint objectives, win–win negotiation, dialogic communication, permanent collaboration and cooperation, mutual trust, respectful relationships, etc. Its strong motivational dimension determines more effort, implication, creativity, and co-work, and it is able to generate higher functionality and performance at the level of each relevant stakeholder and at the level of the entire company.
10. The system has a very strong participative dimension based on the continued participation of each relevant stakeholder in establishing joint objectives to be fulfilled as well as permanently adopting and implementing the common and/or harmonized decisions by the binomial couple manager–relevant stakeholder. As a result, there will be an increase in the degree of sharing and the use of the company's and each internal and external relevant stakeholder's intangible resources (information, knowledge, networking, etc.) and tangible resources (equipment, buildings, money, etc.) and, of course, an increase in productivity, sales, turnover, etc.
11. Compared to other company management systems, the complexity, dynamism, and difficulty of the managerial processes and relationships are amplified in the CRSBMS; it is more demanding for managers and individual internal and external relevant stakeholders because it involves more innovative approaches and greater implication and effort.
12. In the CRSBMS, there are numerous informal elements tightly connected with formal elements, thereby facilitating more flexibility, initiative, creativity, and adaptability in the organization. These generate a substantial impact on the effectiveness of the managers' and internal and external relevant stakeholders' approaches, decisions, actions, behaviors, performances, and sustainability.
13. Efficient functioning and development of this system involves periodic, rigorous evaluation at the level of the entire company and the level of the main components, eliminating the deficiencies and valorizing the new organizational internal and external opportunities.
14. The CRSBMS is a holistic mechanism determined by the company's approach, and it is an open system, tightly bound to many other independent entities that involve external stakeholders in establishing common organizational objectives and by intensive participation of all internal and external relevant stakeholders in the accomplishment of the objectives.

CRSBMS by its content and characteristics can prevent and/or eliminate the paradoxical tensions between a company and its stakeholders that relate to multiple conflict areas about what is good for the company and its stakeholders (Thomas et al., 2021).

The characteristics presented, which are not exhaustive, argue that the CRSBMS is very complex and demanding, involving many innovative elements compared to

previous organizational management systems. For this reason, the design and implementation of the management system should be professionally fulfilled, using the services of high-quality consultants and trainers.

3.3.4 Benefits and Limits of the New System

CRSBMS can generate many benefits. They can be grouped in *three categories* based on who benefits.

A. Benefits for the Company

- Increasing the motivation of company employees—managers and executants—for more effort, constructive behavior, initiative, creativity, and performance.
- Better harmonization between company and employee objectives, decisions, actions, and behaviors and, implicitly, higher individual and group performance.
- Enhancing the quality of work processes so that they become more innovative, humanistic, and better correlated and they make use of supplementary intangible and tangible resources.
- Attracting and sharing more resources—information, knowledge, technology equipment, etc.—from internal and external relevant stakeholders.
- Increasing the company receptivity and potential to valorize the opportunities provided by digitalization, industrial revolution 4.0, decolorization, etc.
- Amplifying the company capacity to network and to build external networks with its relevant stakeholders.
- Straightening the virtual value chain of the company with the strong implication of the relevant external stakeholders.
- Increasing the quality of products and services, individual and organizational productivity, and size of company value added.
- Strengthening the company's sustainable competitive advantage supported by all previous benefits.

B. Benefits for the company's internal and external relevant stakeholders. These benefits should be divided into two categories:

(a) Benefits for external organizational relevant stakeholders (company suppliers, organization buyers, etc.). These benefits are similar to the company benefits presented in A. For this reason, it is not necessary to mention them again. Referring to these benefits, it is useful to outline that their intensity is usually lower because they are not at the level of organization of the CRSBMS. They benefit only in the areas in which they work together with the company based on CRSBMS.

(b) Benefits for individual internal and external relevant stakeholders. The main potential benefits for this group are the following:

- Working for the achievement of common objectives win–win negotiated by the relevant stakeholder.
- Higher consideration and protection given to relevant stakeholder interests and special requirements.
- Attracting and using supplementary resources—information, knowledge, equipment, etc. from the company and other stakeholders.
- Increasing the size and value of personal intellectual capital of the individual relevant stakeholder by attraction, assimilation, and use of supplementary information and knowledge.
- Acting in more innovative, entrepreneurial, and humanistic work processes.
- Obtaining better and frequent multidimensional performances at the individual level and team level.
- Increasing the relevant stakeholder's prestige, straightening his/her position inside the organization and amplifying the chances to be promoted.

C. Societal and business benefits.

- Increasing the multidimensional sustainable performances in the industry and economy at the local, national, and international levels where the company operates.
- Multidimensional, greater, and more profitable integration of the company in the business, social, and ecological environment.
- Contributing directly and through relevant stakeholder activities and multidimensional performance to increasing societal well-being.
- Representing a collective organizational alternative to the typical present capitalist companies that are frequently criticized.
- Amplifying and accelerating the development of the innovative organizational forms—ecosystem, cluster, networking, hubs, digital platform, mesh-up, etc.—better valorizing of the opportunities provided by digitalization, industrial revolution 4.0, and transition to the knowledge-based economy.

Normally, CRSBMS also presents some limitations. Among these, we mention the following:

- The difficult identification, evaluation, and integration in the system of a large number of stakeholders from inside and outside the company that are very heterogenous.
- The high specificity and complexity of the new management system, which makes its design, implementation, and functioning rather difficult.
- The long duration necessary for the full implementation of CRSBMS due to the previously stated limitations.
- The relatively high cost involved in the design, implementation, and functioning of CRSBMS, which is determined by its large scope, numerous stakeholders, and the consideration of stakeholder interests.

These limitations are similar to the limitations faced by other well-known company management systems, such as management by objectives or management by projects, and the efforts to overcome them are fully justified by its multiple advantages for companies, stakeholders, business, and society.

3.4 Practical Implications

Practical implications of CRSBMS derive from its content, characteristics, benefits, and limitations, taking into consideration two main elements:

- The present context and megatrends in companies, the economy, science, and society that reveal an increasing number and intensity of opportunities and grand social challenges; the amplification of the impact of external and internal stakeholders on companies' functionality and performance; the rise of demand for social responsibilities in organizations; and the necessity of rapid organizational changes (Oswick et al., 2005; Al-Haddad & Kotnour, 2015; Rosenbaum et al., 2018) to support company survival and sustainability.
- The status of present management theory and practice development, reflected in the insufficient capacity to solve current and future difficulties and challenges in numerous companies, in increasing limitations and in the necessity to "reinvent" management, as emphasized by prestigious bodies and specialists that we have already cited (Hamel, 2009; Freeman, 2017; World Economic Forum, 2017; International Council for Small Business, 2019; Joly, 2021).

The pragmatic implications of CRSBMS, considering company practices with stakeholders and social responsibilities, can be grouped in two categories:

(a) For companies that are practicing CRM, SCM, and CSR, to make one step more in two respects: to improve CRM, SCM, and CSR mechanisms using the innovative elements incorporated by CRSBMS and to make the next step by passing the construction of this new management system to either the entire company or a part of it and valorizing to a higher level the potential of the relevant internal and external stakeholders. This means not only increasing the number of external stakeholders integrated in the organization but also, for the first time, to have an entirely new approach to most important internal stakeholders. Concomitantly, there are necessary, profound changes in the entire company management system, which should be reshaped according to the characteristics of CRSMBS.
(b) For companies that have not thus far used CRM, SCM, or CSR, the implementation of CRSBMS should start with the rigorous identification and evaluation of the relevant stakeholders and careful organizational planning of the construction of the new system. The numerous benefits of the system presented in the paper represent solid arguments to do this. The CRSMBS is feasible for use

not only in large enterprises but also in all categories of companies. In our opinion, this system is easier to use in small and medium companies because the organization is less complex, and these companies have better knowledge and relationships with their main stakeholders.

Implementation of the CRSMBS is a very complex undertaking, involving innovative organizational changes that are justified by the numerous advantages for company stakeholders, business, and society.

3.5 Conclusions

The CRSMBS shortly presented in this paper could be characterized by the following features:

- It is very innovative, incorporating several new concepts and approaches, such as relevant stakeholder, company social responsibility, new managerial paradigm, manager relevant stakeholder, pentagon of relevant responsibilities, and managerial synapse.
- It provides a new type of collaborative management system for a company based on joint objectives, win–win negotiations with all relevant internal and external stakeholders, intensive collaborative and cooperative relationships and networking, and joint and/or harmonized decisional, operational, and behavioral processes involving profound organizational changes.
- It is very contextual and very open societally, taking into consideration the important managerial implications of the latest changes in the economy and society, the transition to a "smart" economy, digitalization, and other grand social challenges.
- It is realistic and feasible; the organizational changes incorporated in the CRSBMS are based on some of the best practices developed, such as CRM, SCM, and CSR or humanistic management, which in large companies has been performant.

Of course, CRSBMS as presented in this paper represents a variant that should be further tested and developed based on the valorization of the substantial potential of the relevant internal and external stakeholders and on the amplification of the social responsibilities of the company and its stakeholders, taking into consideration the megatrends and grand societal challenges.

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Chapter 4
Aggregate Planning for Services: Challenges and Opportunities

Cosmin Dobrin and Adriana Dima

Abstract This article delves into the intricacies of aggregate planning for services, exploring its challenges and opportunities. Aggregate planning, a crucial aspect of organizational strategy, aligns production capacity with customer demand. Unlike manufacturing, services present unique challenges due to their perishable nature and inability to be inventoried. The article outlines the general model of aggregate planning and discusses its application in the service industry. Through a case study of ACCOUNTING EXPERT, the article demonstrates how organizations can perform aggregate service planning under various scenarios. It analyzes the impact of demand fluctuations on required workforce and explores strategies for optimizing resource utilization. Moreover, the article highlights the importance of efficient workforce scheduling, on-call labor forces, and flexible production hours in service aggregate planning. Overall, the article emphasizes the need for tailored approaches and adaptive strategies in service aggregate planning to navigate the dynamic service landscape effectively.

4.1 Introduction

Numerous strategies are employed by organizations to satisfy consumer demands, reduce costs, and increase income. Aggregate planning represents one method that companies use to align their production capacity to demand from customers (Gansterer, 2015). Aggregate planning encompasses predicting the anticipated demand for a company's goods or services and planning the business to meet that need (Moldoveanu & Dobrin, 2016). With this technique, managers may efficiently coordinate the proper number of resources to meet demand without producing too much or too little. It often uses data such as sales targets, existing production capabilities, available inventory, and client backlogs to ascertain how to satisfy customer

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demand at the lowest possible cost (Heizer & Render, 2008; Jay & Barry, 2016; Moldoveanu & Dobrin, 2016).

The general model of aggregate planning is based on three main variables: the quantity of supply in period t (Q_t^S), the level of demand in period t (Q_t^D), and the level of the stock of finished products at the end of the period t (S_t). The relationship between the three variables is

$$S_t = S_{t-1} + Q_t^S - Q_t^D$$

The model variables involve the existence of several categories of costs, different from the quantities reflected in the company's accounting, which allows them to be defined as extra costs: the cost of finished products stock, the cost of additional work, the cost of employees' inactivity, the cost of the product shortage, and the cost of hiring and firing employees (Moldoveanu & Dobrin, 2016).

The same processes are used for aggregate planning in services, although demand management plays a much more active part. In the case of services, demand and capacity needs are challenging to forecast. The effects of daily scheduling are reduced when aggregate planning is effectively carried out (Chary, 2017).

There are various aspects of aggregate planning for services that need to be taken into consideration (Slack et al., 2010; Reid & Sanders, 2023):

1. Businesses that focus on services do not benefit from retaining stock of stocks during the times when there is low demand in the market because there is no such thing as inventory or stock in the case of services. In aggregate planning, services are treated as perishable, and any underutilized capacity is viewed as waste. An empty seat on a plane or a theater, for instance, cannot be kept and later sold.
2. Given frequent and significant fluctuations, it is challenging to estimate the demand for services. The exponential distribution is used to increase the demand for the erratic service. Client service levels are set by management and reflect the percentage of demand that must be satisfied. It is a crucial component in overall service planning.
3. It is challenging to develop an effective capacity measurement for services. It is complicated to assess capacity due to the wide range of services offered and its personalized structure. Measures of capacity can vary. For example, in order to define the capacity of a hospital, should we refer to the size of the staff, the number of clients, or the number of beds?
4. Numerous service providers have multiple locations. Aggregate planning includes determining the number of employees and services for every location.
5. Labor is the resource that is most constrained in the case of services. By using temporary labor on a part-time base, demand fluctuations can be handled.

Because most service businesses depend heavily on labor, labor is the resource that is most limited. Reducing labor costs becomes a crucial concern as a result (Klimberg & Van Bennekom, 1997). Several strategies for reducing the cost of labor can be taken into consideration (Türkay et al., 2016; Nugraha et al., 2020):

(a) Efficient workforce scheduling can ensure quick reaction to changes in client demand.
(b) On-call labor force can handle unforeseen demand. For example, in case of an emergency, police and fire departments can call in staff who are not on duty and extend their business hours.
(c) Resources can be moved around using skilled labor that is adaptable. For example: staff that is cross-trained can be used for various tasks within the organization.
(d) Flexible production and working hours can be used to adapt to shifting demand. For example: if there are not many customers, restaurants can send staff members home early.

4.2 Case Study

ACCOUNTING EXPERT is a company that offers accounting services based on individualized solutions through a team of 12 specialists who are permanent employees of the company. Intending to make an aggregate planning for the next quarter, the company developed three forecasts, i.e., scenarios: optimistic, realistic, and pessimistic, regarding the billable hours for each of the six categories of services it offers to its customers, as shown in Table 4.1.

Based on an analysis of the available working weeks (excluding legal holidays and leave granted to employees), it is considered that the working week has 40 h and all hours worked are invoiced for each individual employee. Also, for the quarter in question, 800 billable hours are considered available per employee. For each category of services offered by the company, Table 4.1 specifies the number of employees who have skills in the respective field and who can perform the activity.

Tasks

1. Perform an aggregate service planning in the case of ACCOUNTING EXPERT for each of the three scenarios.

Table 4.1 Forecasted demand for each of the three scenarios

Services provided	Optimistic scenario	Realistic scenario	Pessimistic scenario	Number of qualified employees
Accountancy	6400	4000	2400	12
Payroll	2400	1200	800	8
Fiscal consultancy	1600	800	400	1
Business consultancy	1200	800	600	4
Auditing	1200	800	400	2
European funds	800	400	200	3

Source: Made by the authors

2. What will happen to the required number of employees if, in the realistic scenario, business consultancy services increase to 2400 hours per quarter?

Solution

1. In order to carry out the aggregate planning of the services offered by ACCOUNTING EXPERT, initially the total billable hours requested by customers for all services (the product demand correspondent in the case of aggregate scheduling in production) will be carried out for each individual scenario. The next step is to divide the obtained values by the total hours that the employees can work during the planning period. In the present case, it refers to the 800 available billable hours/employee, which represents the work capacity of each specialist. Following this division, the number of employees needed to cover the existing demand at the level of the period considered for each of the three scenarios will be highlighted. The calculations performed are shown in Table 4.2.

$$\textbf{Optimistic scenario} = \frac{6400 + 2400 + 1600 + 1200 + 1200 + 800 \text{ h}}{800\,\text{h / employee}} = 17\,\text{necessary employees}$$

$$\textbf{Realistic scenario} = \frac{4000 + 1200 + 800 + 800 + 800 + 400\,\text{h}}{800\,\text{h / employee}} = 10\,\text{necessary employees}$$

$$\textbf{Pessimistic scenario} = \frac{2400 + 800 + 400 + 600 + 400 + 200\,\text{h}}{800\,\text{h / employee}} = 6\,\text{necessary employees}$$

Table 4.2 Total hours and employees necessary for each of the three scenarios

Services provided	Optimistic scenario	Realistic scenario	Pessimistic scenario	Number of qualified employees
Accountancy	6400	4000	2400	12
Payroll	2400	1200	800	8
Fiscal consultancy	1600	800	400	1
Business consultancy	1200	800	600	4
Auditing	1200	800	400	2
European funds	800	400	200	3
Total hours	***13,600***	***8000***	***4800***	
Necessary employees	***17***	***10***	***6***	

Source: Made by the authors

After performing the calculations, the resulting capacity is 17, 10, and 6 employees for the optimistic, realistic, and pessimistic scenarios, respectively. Next, the company must determine whether it has enough specialized employees to perform the services in the portfolio. In this sense, the maximum demand for each service category will be calculated, i.e., the maximum number of specialists that the company must have in order to satisfy the entire demand from customers. This is calculated by dividing the maximum number of hours requested by customers by the number of hours an employee can work.

A. Optimistic Scenario

Initially, the calculation method will be detailed for the optimistic scenario. This contains the maximum number of hours requested by customers for each service. For each of the types of services provided by ACCOUNTING EXPERT, the number of employees required will be calculated. Afterwards, the values obtained will be compared with the number of existing employees in the company who have the necessary qualification to perform the respective service.

If the number of existing employees is greater than the necessary, the company has a surplus of personnel and can consider options to increase the demand for services or to reduce capacity: reducing prices for certain services to gain more customers for short periods of time, advertising and promoting the services to increase demand, cross-training for the specialization of some employees and the use of their work in other services where the demand is higher, the dismissal of a number of employees or the reduction of the work program for some of the employees who accept this situation, etc.

When the number of existing employees is lower than the necessary, the company has a shortage of personnel and can consider options to decrease the demand for services or to increase capacity: increasing prices for certain services for short periods of time, hiring employees or increasing the work program for some of the employees who are willing to work more, subcontracting some of the services, etc.

$$\text{Accountancy} = \frac{6400\,\text{h}}{800\,\text{h / employee}} = 8\,\text{necessary employees}$$

$$\text{Payroll} = \frac{2400\,\text{h}}{800\,\text{h / employee}} = 3\,\text{necessary employees}$$

$$\text{Fiscal consultancy} = \frac{1600\,\text{h}}{800\,\text{h / employee}} = 2\,\text{necessary employees}$$

$$\text{Business consultancy} = \frac{1200\,\text{h}}{800\,\text{h / employee}} = 1.5\,\text{necessary employees}$$

$$\text{Auditing} = \frac{1200\,\text{h}}{800\,\text{h / employee}} = 2.25\,\text{necessary employees}$$

$$\text{European funds} = \frac{800\,\text{h}}{800\,\text{h / employee}} = 1\,\text{necessary employee}$$

Table 4.3 includes the information presented above. The column which contains the number of qualified employees at the company's disposal presents the service categories where there is a shortage of personnel or those in which the specialists will have periods of inactivity.

It can be seen that all 12 employees of the firm are qualified to perform accounting services, so this skill benefits from maximum flexibility. The qualifications with the largest number of employees are payroll, with 8 specialists, and business consultancy, with 4 specialists. However, the forecast of the best scenario highlights the fact that the company does not have enough qualified personnel in services such as fiscal consultancy or auditing, where the demand is for 2 and 2.25 specialists, respectively, and the available employees who can perform the mentioned services are in number of 1 and 2, respectively, for each separate category.

In this situation, the company can ask qualified employees to work overtime in order to cover the existing deficit, but as the business expands, it is necessary to hire qualified personnel, or some of the existing ones to be sent to training courses in order to gain extra skills. Available staff covers the demand for accounting, payroll, tax consultancy, and European funds, but to the extent that those employees do not have to work overtime. In the optimistic scenario, the ACCOUNTING EXPERT company forecasts a 41.66% increase in workload:

$$\frac{17\,\text{needed employees} - 12\,\text{existing employees}}{12\,\text{existing employees}} \times 100 = 41.66\%$$

Table 4.3 Number of employees necessary for each service—optimistic scenario

Services provided	Optimistic scenario	Number of needed employees	Number of qualified employees
Accountancy	6400	8	12
Payroll	2400	3	8
Fiscal consultancy	1600	2	1
Business consultancy	1200	1.5	4
Auditing	1200	2.25	2
European funds	800	1	3
Total hours	***13,600***		
Necessary employees	***17***		

Source: Made by the authors

B. Realistic Scenario

Table 4.4 includes the calculation for the realistic scenario. The services with the largest number of qualified employees are accountancy with 12 specialists, payroll with 8 specialists, and business consultancy with 4 specialists. The forecast of the realistic scenario highlights the fact that the company has unused capacity for all services.

In the realistic scenario, it is found that, in a percentage of 16.66%, the talent of the employees will be unused:

$$\frac{10\,\text{needed employees} - 12\,\text{existing employees}}{12\,\text{existing employees}} \times 100 = -16.66\%$$

C. Pessimistic Scenario

Table 4.5 includes the calculation for the pessimistic scenario. The forecast of the pessimistic scenario highlights the fact that the company has unused capacity for all services, and the difference between number of qualified employees and number of needed employees is significant. In this case, the option that would generate cost savings for the organization is to lay off the extra employees.

Also, in the pessimistic scenario, it is found that, in a percentage of 50%, the talent of the employees will be unused:

$$\frac{6\,\text{needed employees} - 12\,\text{existing employees}}{12\,\text{existing employees}} \times 100 = -50\%$$

2. If, in the realistic scenario, tax consulting services will increase to 2400 h per quarter, the values included in Table 4.6 will be recorded, based on the calculation method presented above.

Table 4.4 Number of employees necessary for each service—realistic scenario

Services provided	Realistic scenario	Number of needed employees	Number of qualified employees
Accountancy	4000	5	12
Payroll	1200	1.5	8
Fiscal consultancy	800	1	1
Business consultancy	800	1	4
Auditing	800	1	2
European funds	400	0.5	3
Total hours	***8000***		
Necessary employees	***10***		

Source: Made by the authors

Table 4.5 Number of employees necessary for each service—pessimistic scenario

Services provided	Pessimistic scenario	Number of needed employees	Number of qualified employees
Accountancy	2400	3	12
Payroll	800	1	8
Fiscal consultancy	400	0.5	1
Business consultancy	600	0.75	4
Auditing	400	0.5	2
European funds	200	0.25	3
Total hours	***4800***		
Necessary employees	***6***		

Source: Made by the authors

Table 4.6 Number of necessary employees for each service in the case of increased demand

Services provided	Realistic scenario	Number of needed employees	Number of qualified employees
Accountancy	4000	5	12
Payroll	1200	1.5	8
Fiscal consultancy	2400	3	1
Business consultancy	800	1	4
Auditing	800	1	2
European funds	400	0.5	3
Total hours	***9600***		
Necessary employees	***12***		

Source: Made by the authors

The company will need a total of 12 employees, and 3 specialists will be needed for the tax consulting service. Therefore, the company will either require employees specialized in fields where the demand is not very high (e.g., accounting, payroll, business consulting, European funds) to participate in qualification courses and specialize in tax consulting, and then carry out extra hours, or will hire qualified personnel to supplement the required specialists.

4.3 Conclusion

The process of designing, overseeing, and maintaining an organization's operating calendar is defined as aggregate planning. Aggregate planning aids organizations in determining how to use their resources and develop future consumer demand. It organizes corporate divisions including targeted sales forecasting, levels of

production, customer backlogs, and stock levels. When aggregate planning is done well, the effects of daily scheduling are lessened. Manufacturing aggregate planning functions well since stocks can be produced, held, and sold at any time, but aggregate planning in services is very challenging due to the fact that services cannot be inventoried. Producing the service in advance in anticipation of greater demand later on is almost impossible since most services are perishable. The service sector has created its own strategies and options throughout the last few decades in order to have a successful aggregate plan. There is no particular mathematical model that exclusively applicable to the services sector, even though services are rapidly becoming the dominant sector in the economic world. In reality, it is exceedingly difficult to create an all-encompassing planning and decision model that can account for all the complexities of the modern service sector's highly dynamic environment.

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Chapter 5
Barriers to the Development of Integrated Risk Management Within Health Insurance Entities in Central and Eastern Europe

Bogdan-Stefan Stoica and Carmen Nadia Ciocoiu

Abstract More than a decade after the implementation of the first specific elements of ERM (Enterprise Risk Management), organizations in Central and Eastern Europe face barriers in the development of Integrated Risk Management systems. Since Health Insurance Entities (HIEs) fall into the above statement, the purpose of the study is to identify the main specific barriers and their importance in developing an ERM system. In order to achieve the goal, this study used a research methodology based on a questionnaire sent to over 200 targeted entities from the Central and Eastern European countries. The results reflect an order of importance of the eight selected barriers, starting from the lack of an IT program for risk analysis, which hinders the development of ERM the most, to poor collaboration between internal departments, that presents itself as a minor obstacle. The research allows the proposal of a conceptual, logical-theoretical model that can be a solution for improving ERM within the HIEs by acting on the identified barriers.

5.1 Introduction

Health Insurance Entities (HIEs) represent the most comprehensive phrase that manages to encompass the different names under which these entities operate: funds, houses, companies etc. Whether private or state-owned, HIEs are self-governing, having the dual role: buyer of services and third-party payer (Vlădescu et al., 2016). In essence, from the contributions of the insurance fund, the state budgets or other sources, HIEs pay the insured persons for the health services provided by the suppliers, based on multi-year contracts. Being entities of public utility, HIEs have gradually implemented risk management (RM) systems, and recent

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empirical research shows that in Central and Eastern Europe HIEs are in a transition towards an intermediate ERM level (Stoica, 2022: 220).

Concerned about the HIEs study, M.J. Rudolph gives one of the definitions of ERM: *ERM is the discipline by which an organization in any industry assesses, controls, exploits, finances and monitors risks from all sources for the purpose of increasing the organization's short- and long-term value to its stakeholders* (Society of Actuaries, 2005, cited by Rudolph, 2009: 8).

Both in the implementation and in the development stages, ERM faces various barriers. Authors who approach the implementation of ERM in different fields, such as SMEs (Ciocoiu, 2015; Ciocoiu et al., 2015) or construction (Renault et al., 2016), identify some barriers that are almost identical to those who are concerned with the ERM barriers in the development stage, such as those in HIEs (Rudolph, 2009), in the ICT field (Røberg, 2013), and in insurance (Shang, 2018). These include lack of management team support, of sufficient resources, of RM training, etc. This fact shows that most of the barriers are cross-sectorial and are perpetuated from the implementation stage to the development stage of ERM. Other authors have reached similar conclusions: the results of empirical studies on barriers can be used, from the perspective of practical implications, both by organizations that want to adopt ERM and by those that have already adopted it (Røberg, 2013: 60).

We have not identified in literature a definition for the barriers to the development of ERM in HIEs. The term is not retained by *ISO Guide 73: 2009—Risk management Vocabulary*, and previous research focuses on measuring, ranking, and explaining the barriers that hinder the process or the key factors that facilitate it regardless of the stage in which it is. ERM specialized literature uses the figurative meaning of the word: "obstacle in the way of achieving something" and synonyms such as "difficulty," "impasse," "impediment," etc., associated with erroneous practices, lacks, factors etc., aspects presented below. It is therefore deduced that, in the area of risk management (RM), traditional (TRM), or integrated (IRM/ERM), barriers are any kind of obstacle that hinders the process and/or system, regardless of the stage in which they are. After the introduction, the study continues with the literature review, followed by the presentation of the research methodology, the results obtained, and the proposed model. It ends with conclusions and presents the limitations of the research.

5.2 Literature Review

According to the literature in the domain, the barriers regarding the development of ERM are among the most diverse and of the order of dozens, having countless sources, typologies, and formulations. The case of Poland is also representative for the other Central and Eastern European countries: insufficiently promoted ERM, dominated by governance requests, human attitude is the main natural ERM barrier, management teams' perception of not being seen as incompetent leads to avoiding discussions about risks seen as negative elements, the need for reports, tools, etc.

(Buczkowski, 2021: 153–155). Rarely, HIEs from the Central and Eastern European area have been analyzed from the RM perspective, so recent studies have tangentially treated financial risks (Tambor et al., 2021) or the RM profile, but in various entities from the targeted countries (FERMA, 2021). Although a decade and a half has passed since the study carried out by the Economist Intelligence Unit (2007), it can still be added to the above affirmations and the statement that the availability of time and resources is recognized as the biggest barrier.

From a practical perspective, in the case of public entities in Romania, RM guidelines are focused more on audit activities, accounting, procedures, etc. This fact was also noted by Rosenblatt and Segal (2012) in the case of ERM practices in HIEs in the USA. Other barriers relate to untranslated COSO and ISO updates (language as a barrier), lack of feedback after the transmission of risk indicators, the RM structure integrated in other departments, differently understood terminology (SGG, 2018), etc. However, without the elimination of barriers and support with other resources, there is a risk that the RM requirements of the authorities will remain formal (Shang, 2018). Gottwald and Mensah (2015) mention barriers such as inadequate structures for holistic approaches, resistance to change, poor understanding of how to incorporate a new framework, inadequate resources, bureaucracy, closed discussions, etc.

Some studies deal with the barriers at the same time as the determining factors regarding ERM implementation related to internal or external environments, regulations and legal requirements, etc. and identify obstacles as lack of management support, discussions on sensitive issues, common language, data and access, sufficient resources, perception of ERM benefits, internal knowledge, adequate training, and qualified RM staff (Ciocoiu, 2015; Ciocoiu et al., 2015; Renault et al., 2016).

Ogutu et al. (2018) treat the barriers comparing TRM and ERM, in the latter case being related to communication, collaboration, transparency, appetite etc., and identify 23 obstacles. Also in a dual approach, Røberg (2013) proposes six barriers: complex framework and lack of top management support, understanding, competence, resources, and harmonization. To mitigate the barriers, the same author proposes facilitating factors such as simplicity, visualization, prioritization, awareness, etc. A similar binary barrier–response approach is also found in Cho's (2016) dissertation, which dwells on 14 barriers, many already listed by other authors in this section. Another type of approach regards barriers as erroneous practices: sophisticated and technical RM initiatives, reactive response, lack of mitigation plans, and non-involvement of all stakeholders (Shang, 2018).

Studies on direct or indirect HIEs have revealed erroneous ERM practices in HIEs as barriers: lack of combining fundamental and emerging risks, autocratic CEOs inhibiting employees from telling the truth, insufficient risk and organizational culture, and avoidance of consulting external experts (Rudolph, 2009). At the opposite pole are best practices proposed by the same author, but also by Ogutu et al. (2018) and, more recently, by Krishna (2020) that can be reliable solutions for mitigating barriers. These are represented by good communication, improved engagement, awareness of ERM capabilities, *inter pares* evaluation, RM training, heat maps, dashboard, etc. Other sources and factors that could lead to risks and

implicitly ERM barriers in HIEs are the types like financial, operational, technological, social, legal, market, etc. (Orros & Smith, 2012; Barros, 2015).

The acceptance that critical success factors (CSFs) oriented in erroneous directions can become barriers in the implementation and development of ERM has also led to the introduction of a part of this type of approaches in the review presented in Table 5.1. In the studies on this subject (Na Ranong & Phuenngam, 2009; Hosseini et al., 2016; Kikwasi, 2018; Gumay et al., 2020) frequently appear as important: management commitment and support, communication, organizational structure, training MR, and the availability of resources (Stoica, 2022: 191).

The survey realized by Prof. Beasley et al. and by the ERM Initiative at North Carolina State University for the Association of International Certified Professional Accountants (cited by Amato, 2014) reveals a *Top-five* of ERM barriers, ranked according to the percentage of respondents: competing priorities (51%), insufficient resources (43%), lack of perceived value (41%), perception that ERM adds bureaucracy (33%), and lack of board or senior executive ERM leadership (30%).

Our review of the literature on barriers to ERM progress includes 15 titles published between 2009 and 2020 and presented in Table 5.1. These titles continue and complement the list of 17 other titles published between 2000–2006 on barriers to ERM implementation by Renault, Agumba, and Balogun (2016: 405-406).

Studies on the obstacles to effective RM are quite rare, which makes it difficult to group them into categories. An attempt in this sense is shown in Fig. 5.1. Cho (2016) identified certain important themes related to barriers to effective RM that can be categorized as strategy, organizational structure, organizational culture, communication, etc. Moreover, in the RGF (Risk Governance Framework) model, proposed by Cho (2016), the barriers are divided into readiness, execution and administrative, according to the three phases of RM systems/practices and after compensation practices, the banking environment, and the state financial-economic one. At a closer look, only in Cho's study (2016) can be found at least three criteria for classifying barriers.

Harner's research (2010) on the case study of Citigroup Inc., in the context of the 2008 financial crisis, examines only two possible types of barriers to effective RM: individual biases (e.g., in the board) and cultural norms (corporate, of risk, etc.). While the former could be characterized by personal subjectivism, the latter are somewhat impersonal, regulated, and collective.

Ogutu et al. (2018: 45) identify 23 obstacles that they classify into two broad categories: governance (cultural conflicts, non-allocation of resources for high risks, etc.) and strategic (inconsistent messages from top management, lack of a structure that puts the risk in functional plans, etc.). A third category of barriers related to collaboration is added to them: poor collaboration between departments, redundancy and inefficiency, etc.

We consider that a division of barriers exceeds the ERM framework (themes, phases, stages etc.) and can be classified, according to their sources, into three large classes, exemplifying: human (e.g., erroneous perceptions, prejudices, insufficient RM knowledge, etc.), organizational (e.g., inadequate organizational structure, insufficient resources, erroneous practices, etc.), and those related to the complexity

Table 5.1 Synthesis of literature review on barriers to ERM

No.	The work paper: authors, years, type	Purpose and domain	Methodology	Observations result
1	Rudolph (2009) (study)	Identification of best ERM practices applied in HIEs	Survey: 22 responses from senior managers	Best practices and erroneous practices (as barriers)
2	Na Ranong and Phuenngam (2009) (Master thesis)	Exploring the importance of the CSFs for effective RM procedures in financial institutions in Thailand	34 respondents to the questionnaire	7CSFs: commitment and support from top management; communication; culture; IT; organization structure; training; trust
3	Harner (2010) (study)	Analyzing the potential benefits of improved ERM and the potential barriers to implementing ERM at US firms	Case study: Citigroup Inc.	Solutions for the barriers of individual biases and cultural norms
4	Røberg (2013) (Master's thesis)	Exploring RM enablers and barriers in Norwegian public sector ICT	11 interviews with managers, consultants etc.	6 barriers and 8 enablers
5	Gottwald and Mensah (2015) (study)	Relationship exploration CRO–AC–TM in ERM implementation in North American companies	Survey: 134 RM professionals from survey monkey audience Service database	Different barriers specific to ERM
6	Ciocoiu (2015) (study in collective volume)	Evaluation of the important factors for the implementation of IRM in SMEs in Romania	Literature review, AHP method	Top 3 barriers according to the resulting percentage
7	Ciocoiu et al. (2015) (scientific article)	Analyzing the determinants of the behavior of SMEs in Romania in the implementation of RM	Questionnaire addressed to SMEs, processing the answers through a fuzzy model	3 factors that influence the behavior of SMEs towards the implementation of RM
8	Fraser and Simkins (2016) (scientific article)	Exploring the challenges companies face in implementing ERM	Case study of a Canadian electricity transmission and distribution company (hydro one)	8 internal challenges and solutions for companies designing and developing an ERM system

(continued)

Table 5.1 (continued)

No.	The work paper: authors, years, type	Purpose and domain	Methodology	Observations result
9	Hosseini et al. (2016) (study)	Investigating the perceptions of CSFs for the implementation of RM systems	87 construction professional respondents in Iran	Top 4 CSFs: support from managers; inclusion of RM in education and training courses; attempting to deliver projectssystematically; awareness and knowledge for implementing RM
10	Cho (2016) (dissertation)	Exploring barriers to effective RM in the banking field	Survey: 137 respondents—risk managers and regulatory authorities	14 barriers classified in three categories; RGF model
11	Renault et al. (2016) (scientific article)	Investigating causes and obstacles towards the implementation of ERM in construction companies	Identification and review of literature in the field	17 studies on obstacles to ERM implementation
12	Ogutu et al. (2018) (scientific article)	Understanding the difference between TRM and ERM at large employers	Survey: respondents—risk managers, claims managers, HR managers, etc.	23 obstacles classified into three categories
13	Kikwasi (2018) (study)	Identifying the CSFs for an effective RM in the construction industry	Survey: 100 practitioners responding to the questionnaire	9CSFs: management approach; goals and objectives of the organization; RM policy and experts, etc.
14	Shang (2018) (study)	Understanding ERM practices of stakeholders involvement in insurance companies	Survey: 117 stakeholders and CRO responded to questionnaires	Different barriers regarding attitude, resources, trening etc.
15	Gumay et al. (2020) (article in the conference volume)	Identification of CSFs for IT projects	Case study: Telco company in Indonesia; AHP method	Top 3 CSFs: customer involvement and effective communication; the capability and motivation of the team

Source: Made by the authors
Acronyms: AC audit committee, *AHP* analytic hierarchy process, *CRO* chief risk officer, *CSFs* critical success factors, *ERM* enterprise risk management, *HR* human resources, *SMEs* small and medium enterprises, *IRM* integrated risk management, *RM* risk management, *RGF* risk governance framework, *ICT* information & communication technology, *TM* top manager

of ERM, such as difficult to understand, implement, and develop general frameworks that are too theoretical, which must be adapted to the needs of the entities (Rudolph, 2009: 5; Gottwald & Mensah, 2015: 9; Sap, 2017: 12, 59). The classifications of ERM barriers have a theoretical utility in the case of the construction of conceptual models.

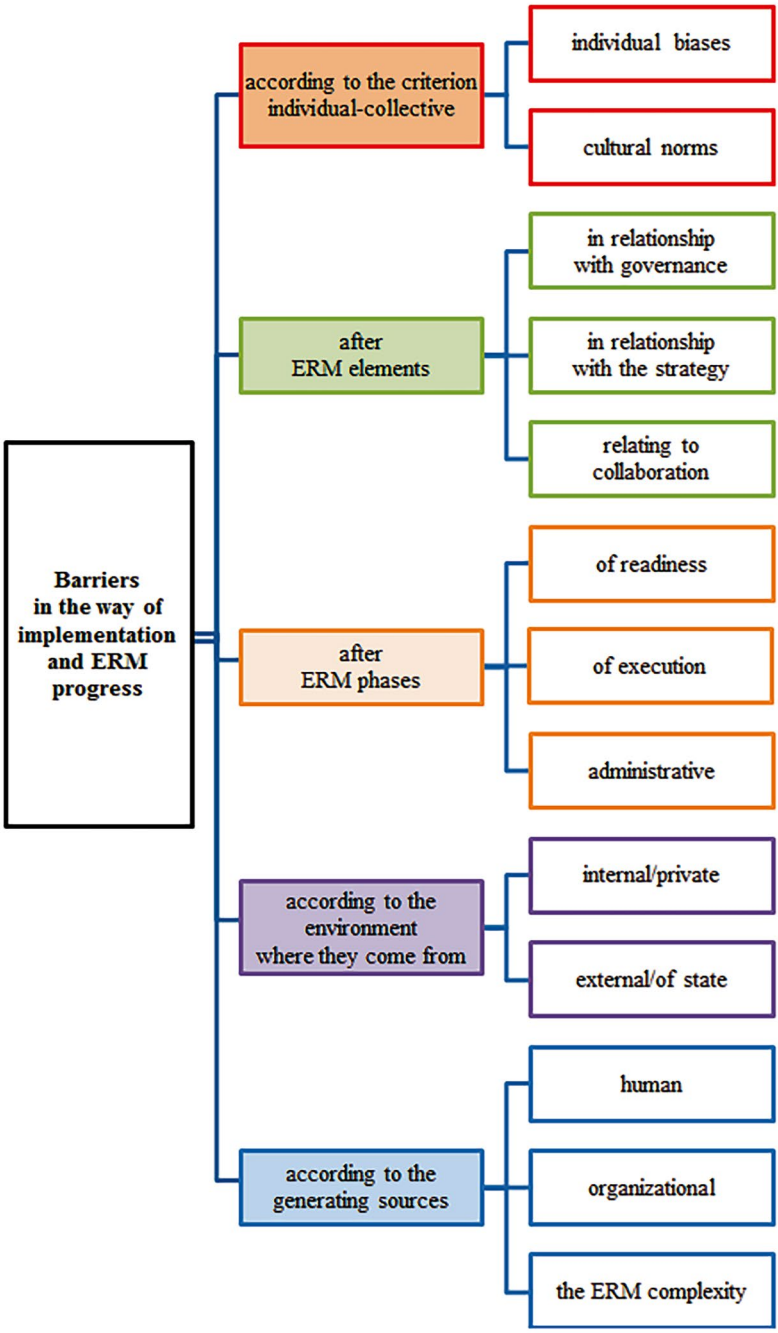

Fig. 5.1 Classification of ERM barriers according to various criteria. (*Source*: Authors' adaptation from: Harner, 2010; Cho, 2016; and Ogutu et al., 2018)

5.3 Research Methodology

The general objective of this research is to establish to what extent certain barriers affect the implementation, respectively, the development of ERM in HIEs. To achieve this objective, the method of statistical research was used by survey on a stratified sample consisting of approx. 270 HIEs, of which 20 central (6 private, 14 state-own) and 250 territorials from 12 Central and Eastern Europe states: Bulgaria, Czech Republic, Croatia, Estonia, Latvia, Lithuania, Poland, Republic of Moldova, Romania, Slovakia, Slovenia, and Hungary.

A number of 233 questionnaires—a semi-structured, anonymous tool with 20 items, identifying and specific RM—in easy technical language, were sent in 10 languages understood in the mentioned states, to eliminate the language barrier. The research tool was addressed to managers, executive directors, and risk responsible in HIEs. The collection, centralization, processing, and interpretation of data took place during the years 2021–2022.

The part of interest in this research is contained in item 17: *Indicate to what extent the following barriers affect the implementation and/or improvement of risk management in the entity* and was formulated on a 5-point Likert scale (from 1—Not at all to 5—Very large), with 8 barriers being selected. This is an average number, considering that other authors have reached 3, 5, 14, and 23 barriers (Ciocoiu, 2015; Beasley, in Amato, 2014; Cho, 2016; Ogutu et al., 2018). Formulated in the form of lacks and in accordance with the specifics of HIEs, all eight selected barriers are found, in one form or another, in other authors: dysfunctional risk culture (Rudolph, 2009), the perception of a bureaucratic ERM (Beasley, in Amato, 2014), insufficient resources (Renault et al., 2016), poor communication between internal departments (Ogutu et al., 2018), lack of RM knowledge and training (Shang, 2018), etc.

5.4 The Results and the Proposed Conceptual Model

As a result of the centralization of the answers, 128 valid questionnaires resulted, representing 63% of the number of questionnaires that reached the recipients. The statistical aspects reveal a sufficient coverage in percentages of over 90% regarding the responding states (no answers were received from a single state) and central state-owned HIEs, as well as coverage percentages of 60%, related to territorial HIEs, and over 80%, related to private HIEs. Regarding the profile of the HIE respondents, the centralization of the results shows a diversity of them that contributes to the objectivity of the research (Table 5.2).

In the stage of centralizing the answers, mathematical formula 5.1 was used.

$$TR = No.R1 + No.R2 + No.R3 + No.R4 + No.R5 \tag{5.1}$$

Table 5.2 Profile of responding HIEs

Categories	Characteristics	Number	Percent
The age of the HIE in the health insurance market	>25 years	48	37.50%
	20–25 years	72	56.25%
	15–20 years	7	5.46%
	5–15 years	1	0.79%
	<5 years	0	0.00%
	Total	*128*	*100%*
The level of activity	National-central	19	14.84%
	Regional/territorial	52	40.63%
	District/county	50	39.06%
	Municipal/in the country's capital	7	5.47%
	Total	*128*	*100%*
The type of budgeting	State public budget	122	95.3%
	Private capital	6	4.7%
	Mixed capital	0	0.00%
	Total	*128*	*100%*
The size of the HIE according to the number of insured persons	<100,000	3	2.34%
	100,000–500,000	59	46.09%
	500,000–1,000,000	41	32.03%
	1,000,000–2,000,000	12	9.38%
	> 2,000,000	13	10.16%
	Total	*128*	*100%*

Source: Authors' calculations based on centralized responses

The processing stage was based on the assignment of values on the Likert scale for the recorded responses (from −2 for Not at all to +2 for Very large), and the mathematical formula 5.2 was applied to calculate the total values.

$$\mathrm{TV} = \left(-2 \times \mathrm{No.R1}\right) + \left(-1 \times \mathrm{No.R2}\right) + \left(0 \times \mathrm{No.R3}\right) + \left(1 \times \mathrm{No.R4}\right) + \left(2 \times \mathrm{No.R5}\right) \quad (5.2)$$

Finally, the interpretation of the answers was made on the basis of the global score, related to all HIEs, regardless of size (small, medium, and large), by using the mathematical formula 5.3.

$$\mathrm{GS} = \frac{\mathrm{TV}}{\mathrm{TR}} \quad (5.3)$$

where

TR—represents the total number of responses.
No. R1…5—the number of responses related to each measure of the scale.
TV—total values assigned to the answers.
GS—the global score obtained as a result of the calculation.

Table 5.3 Centralization of final results, total values, and global score obtained

No.	Barriers	Not at all (1)	Small (2)	Moderate (3)	Large (4)	Very large (5)	TR	TV	GS
1	The lack of a culture of RM in the entity	1	12	69	46	0	128	32	0.25
2	Lack of RM knowledge at top management level and at lower levels	1	19	71	37	0	128	16	0.13
3	Lack of necessary financial resources	7	63	44	14	0	128	−63	−0.49
4	Lack of a computer program for risk analysis	1	8	46	68	5	128	68	0.53
5	Lack of collaboration between internal departments	19	65	41	3	0	128	−100	−0.78
6	Lack of management's interest in attracting qualified RM human resources	0	20	77	29	2	128	13	0.10
7	Personnel reluctance to change	15	45	36	31	1	128	−42	−0.33
8	Personnel perception of RM activities as an "extra work"	28	29	14	48	9	128	−19	−0.15

Source: Authors' calculations based on questionnaire responses

Table 5.3 presents the final results as a result of the application of mathematical formulas 5.1, 5.2, and 5.3 for the answers to item no. 17: "Indicate to what extent the following barriers affect…".

For an easy visualization of the ranking of barriers from the one that affects ERM the most at the HIE level to the one that affects the least, the graph in Fig. 5.2 was realized. Based on this, it can be seen that the Top-3 barriers include three major shortcomings: the lack of a computer program for risk analysis, the RM culture in HIEs, and RM knowledge at the management level, but also at the lower levels. It can also be noted that the last two are closely related, knowledge being the basis of the RM culture, and that all three recorded positive scores (0.13—0.53).

Ranking of the barriers allows an overview for the construction of the proposed model, called **RMBarr** (Response for the Mitigation of Barriers). In the theoretical model, for an easy understanding and a logical order of the stages (from simple to complex), the barriers were included in the reverse order of their importance, respectively from the one that hinders the progress of ERM the least to the one that affects most.

The conceptual model, presented in Fig. 5.3, was guided by proposals from previous studies, such as ERM stages (Shang, 2018); the main types of resources that can be engaged in responses to barriers (Nicolescu & Nicolescu, 2011); integrated risk management models, applicable to HIEs, from own previous research (Stoica,

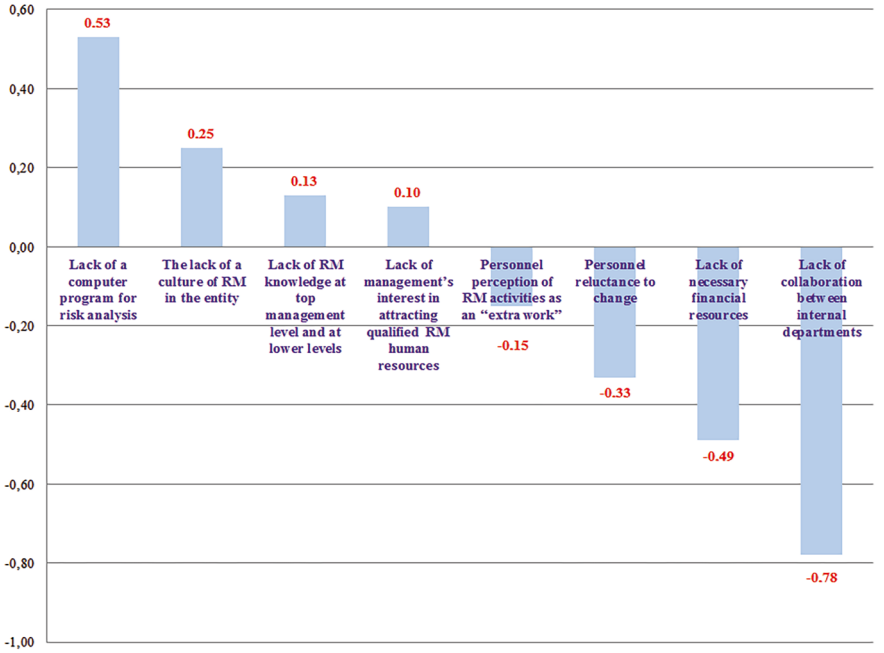

Fig. 5.2 Hierarchy of the barriers according to the global scores obtained. (*Source:* Authors' calculations based on centralization of results)

2022); etc. The scientific character of the RMBarr model is given by the simplified logical presentation of a complex reality, namely, the abstraction of ERM systems from HIEs, and integrates a set of existing RM concepts, such as stages, responsible, allocated time, etc., and the relationships between them. At the same time, since it involves the sequence or logical causality of some system components, the model is a logical-theoretical one.

Discussions, clarifications, and explanations regarding the proposed RMBarr conceptual model are presented below. For the first of the barriers, the lack of collaboration between internal departments, which, according to the obtained score, affects the least ERM in HIEs, the most appropriate is the internal benchmarking technique. This allows for benchmarking of ERM practices across departments, followed by borrowing from the best. It is advisable to repeat it every 90 days, for any of the stages of the process (identification—risk control), and is the responsibility of the heads of offices, compartments, or departments. The selection of human resource types was inspired by methodologies for risk management in which decision-makers and other personnel involved in the RM process in public entities are indicated (SGG, 2018). Considering the difficulties of ERM, it is necessary to specify that internal benchmarking does not exclude a possible external benchmarking, which is also recommended; thus the appropriation of good practices from one entity to another as well as the consultation of external experts are welcome.

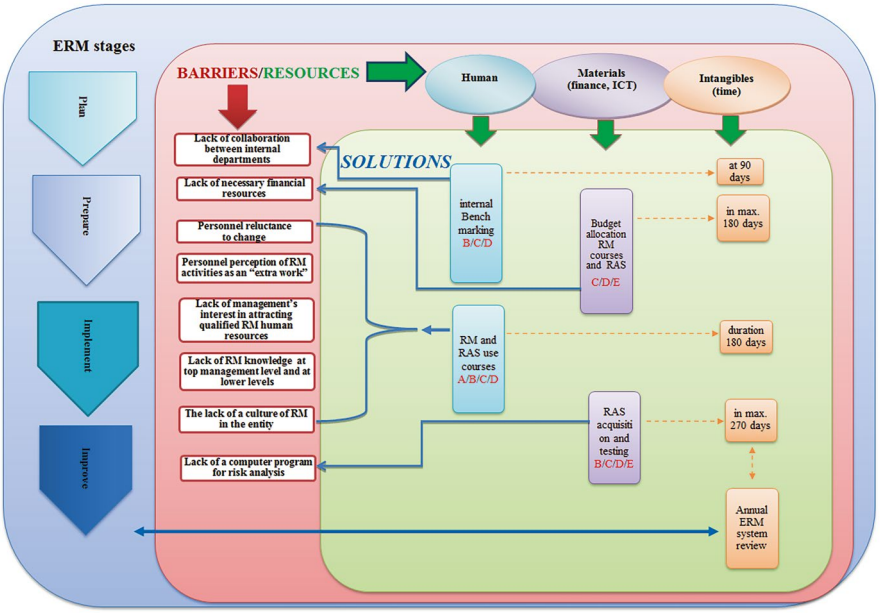

Fig. 5.3 The RMBarr model for the development of ERM in HIE. (*Source:* Authors' contribution)
Acronyms: A executive staff, *B* risk responsible for a compartment, *C* head of the department, *D* head of the RM structure in HIE, *E* the leader of the HIE, *ERM* enterprise risk management, *RM* risk management, *RAS* risk analysis software, *ICT* information and communication technology

The interpretation of the second barrier: the lack of financial resources, which from the empirical research showed that it does not greatly affect the development of ERM, must be understood in the sense that the respondents considered that the allocation of budgets is sufficient for carrying out the daily activity including the one regarding RM (materials, salaries, etc.). However, strictly related to other ERM needs (additional allocations for RM courses, acquisition, and training for risk analysis software—RAS), the same survey revealed a lack of resources oriented to new needs. The mentioned allocations are the responsibility of both the heads of departments and the head of the HIE and are estimated, considering the budget proposals and corrections, to be received after at least a maximum period of 6 months. Of course, the right moment (e.g., closing of the annual balance sheet) in which these steps are initialized is of particular importance.

In relation to these technical-material resources are even the selection, acquisition procedures, testing, and integration of RAS, as a response to the last barrier: the lack of a risk analysis computer program, stages whose duration is recommended not to exceed 270 days (9 months). This type of dual approach, included in the RMBarr model in the form of barrier–response, respectively, factors that facilitate appropriate responses, was used by other authors who were concerned with the topic of ERM barriers (Røberg, 2013; Cho, 2016 etc.).

The remaining five barriers regarding reluctance, perceptions, RM knowledge, risk culture, and staff interest mostly belong to the class of human barriers, and the response to their mitigation can be embodied in RM training courses for employees at all levels. With a minimum duration of 6 months, these courses can take different forms, especially at the workplace, in collective (by groups), with interactive learning, for training purposes, especially through simulation exercises, based on applied manuals and with specialized RM trainers. Also, a RAS usage module must be included in the RM courses. In order to attract qualified RM people, the HR department of EAS can create a database made up of external experts and start recruitment procedures, at least for a fixed period.

Implicitly, all the above measures, confirmed in empirical results from previous research (Stoica, 2022), will contribute not only to the development of RM culture in HIE (mitigating the barrier of a weak risk culture) but to the development of the entire ERM system. It should be noted that the time periods proposed for the responses to the barriers are not necessarily consecutive but can be interspersed. We rally to the recommendation of annual review of the ERM system, proposed by da Silva Etges et al. (2018: 107), which involves updating the risk register, aligning it with the organizational strategy and reexamining the risk team, included in the RMBarr model, as a logical consequence of the evaluation of the entire ERM system at the HIE level.

5.5 Conclusions

The identification in this study of the important barriers to the development of ERM allows not only the management but also other types of staff in HIEs to have an overview of the ERM challenges and to take the necessary measures to reduce or eliminate some unwanted effects. However, this research can also be used by other organizations or developers of ERM applied standards. By reporting on a relatively average sample, the study only constitutes a basis for future ERM research and contributes to a better understanding, as well as to the *corpus* of theoretical-empirical knowledge, at least at the European level (considering the unit of analysis), regarding ERM in HIEs.

The existence of barriers confirms that ERM remains a challenge, due to human and organizational barriers, but also the complexity of ERM frameworks, processes, and systems. Also, the identification of similar barriers, in the specialized literature, demonstrates that there is a common field of them—related to financial resources, RM culture, HR training, etc.—regardless of the functional level of ERM and the field in which it is applied. The empirical study focused on HIEs finds a hierarchy of barriers according to how much they hinder the progress of ERM, with the first place being the lack of a risk analysis computer program and the last being the collaboration between internal departments.

Increasing management attention and support, awareness of the value and benefits of ERM by all employees, good communication, adaptation of RM frameworks,

easy to understand, and suitable to the challenges in EAS facilitate the solutions to overcome the barriers, as much as possible, proposed in the model. Although it is a non-experimental model, RMBarr is the result of its own documentation and investigations and integrates elements from other similar models. Being a structural model, RMBarr formally describes the solutions to the barriers identified in the HIEs, in an easy-to-understand representation of the details, through the process diagram. In conclusion, the model fulfills the purpose of transmitting the basic principles and its functionality, improves the knowledge of the system, and constitutes a reference for the efficiency of the ERM process, through the optimal use of all the resources engaged.

5.6 Limitations of the Study and Directions for Future Research

Having the same principles, components, values, etc., the RM culture is somewhat homogeneous in HIEs, regardless of the country, but it is possible that other elements may be different and specific to the culture of the analyzed countries and influence ERM barriers. For example, there are factors that affect the time resource (schedule and working days, legal and local holidays, different vacation periods, etc.). Considering the pre-war development of this research, it is likely that the effects of the unwanted war in the vicinity of some countries such as the Baltic countries, the Republic of Moldova, Romania, and Poland and the raising of the alert level may lead to the emergence of other barriers that were not analyzed in this study. We refer to those related to classification, anonymization, and security regarding documents, data, access, means of communication, etc., some of which, in the mentioned context, exceed in importance those addressed in this research.

The present study examines only eight of the various barriers that stand in the way of the development of ERM in EAS, being based on the responding entities from only 12 European states. In future research, both the number of study barriers and countries, as well as research methods, can be expanded. In agreement with Røberg (2013: 60) we believe that, following the research on the barriers related to ERM in HIEs, complementary studies can be carried out in similar organizations; on other challenges, risk culture, change management, etc., which would confirm the present results, would offer the possibility of correcting the shortcomings represented by the barriers and a better vision of the opportunities represented by certain determinants for the improvement of ERM.

Acknowledgments This work represents a small part of the extensive empirical study carried out in order to develop the PhD thesis of the main author, research coordinated by the second author whom the first author thanks along this way for all the recommendations and suggestions. However, in the PhD thesis finalized and presented in 2022, a chapter dedicated to the barriers that appear in the development of ERM was not developed, these being approached only tangentially. Thus, on this occasion, both authors considered it appropriate to elaborate the present study, focused on ERM barriers, specific to HIEs.

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Chapter 6
The Virtuous Innovation-Internationalization-Performance Circle: Evidence from the Romanian ICT Sector

Aurel Burciu, Rozalia Kicsi, and Alexandra Danileț

Abstract Innovation and internationalization are key drivers of competitiveness and performance of business organizations. This study aims to investigate the manifestation of the "virtuous circle" innovation—internationalization and the mediating effect exerted by performance in this circle in business practice, based on the results of a statistical survey of affiliates of multinational companies and domestic companies operating in the ICT sector in Romania. Overall, the results of the study suggest that in both domestic and multinational companies there is a dynamic bidirectional relationship between innovation and internationalization, and part of this relationship is mediated by performance. The study broadens the area of knowledge primarily by exploring this virtuous circle in knowledge-intensive sectors such as ICT, where innovative activity differs from that in traditional industrial sectors. Although there is a quite vast body of literature on the topic, previous studies have focused almost exclusively on manufacturing sectors. Second, the study explores this relationship within the particular context of an emerging economy that has undergone a long and painful process of economic, social, and political adjustment and is looking for new drivers of economic growth. Thirdly, the comparative approach is likely to capture strategic elements in the behavior of multinational companies, which can become models of good practice for domestic companies. Therefore, the findings of the study have management implications at micro and macro level. Thus, the relationship emerging among innovation, internationalization, and performance may concern macroeconomic policymakers in support of sectors with significant growth potential such as ICT. At the same time, managers should consider the potential for increasing competitiveness, both directly and indirectly, that this virtuous circle entails.

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6.1 Introduction

One of the mega-trends modeling the profile of capitalist economies in recent decades is the emergence of knowledge-intensive sectors in both industry and services. In general, innovative activity differs considerably across industries, but knowledge-intensive sectors are more particularized in this line than traditional sectors when it comes to the sources of knowledge, the role of different types of knowledge (tacit and explicit), the nature of the linkages between this knowledge, innovation-oriented organizational culture, and spatial concentration in networks/clusters (Sareen & Pandey, 2022; Tödtling et al., 2006; Tödtling & Trippl, 2007; Whittington et al., 2009). Thus, by their nature, traditional industries are typified by the innovative application or combination of existing synthetic knowledge, lower levels of research and development, and a stronger focus on solving specific customer problems. In these industries, learning by doing and interaction, practical skills, and tacit knowledge are very important, leading to an incremental innovation model. Knowledge-intensive sectors, including ICT, are grounded in analytical knowledge bases; in these sectors scientific and explicit knowledge input is the key determinant of innovation processes; knowledge creation is governed by widely shared and accepted scientific methods and principles, processes are formally structured (e.g., in R&D departments), and results are recorded in reports or technical descriptions of patents. In these sectors, the rate of product and process innovations, usually of a radical nature, is high, and research is largely conducted in-house, although these companies are also relatively dependent on external sources of knowledge.

The ICT sector has experienced significant growth in Romania over recent years, and the pandemic crisis has reaffirmed the critical role of technology and digitization in economy and society. Business organizations are intensively exploiting the advantages afforded by information technologies to increase their competitiveness in local, regional, and international markets. As the traditional engines of growth are perishing, Romania needs to pursue new pathways to sustainable growth, and the ICT sector can become a key driver in this process. Recent studies consider this sector as a "digital challenger" with significant prospects for increasing its global competitiveness at regional and European scale (Filip et al., 2022; Novak et al., 2018). The accession to the EU area, the highly qualified workforce, the adequate ITC infrastructure, moderate taxation, etc. make Romania a preferred destination for world-renowned multinational companies; alongside them, Romanian companies are becoming increasingly important players not only on the domestic market but also on the international market.

In this context, the aim of the present study is to explore the dynamic virtuous circle between innovation and internationalization and the mediating effect of performance in this complementary relationship. This study broadens the area of knowledge from several perspectives. First, it explores this virtuous circle in knowledge-intensive sectors such as ICT, where innovation behavior differs from that in traditional industrial sectors. We note that, although extensive, the literature

addressing this topic is predominantly dedicated to manufacturing. Secondly, it focuses on the case of an emerging economy in Central and Eastern Europe, partly exploring the contextual and historical factors that make it unique, whereas most previous studies examine this relationship in the case of developed economies or highly dynamic emerging economies such as China. Thirdly, the study examines multinational and domestic companies in a comparative fashion, creating a context for observing strategic elements and conceptualizing good practice models.

The findings and conclusions would provide useful insights for managers at the micro and macro scale. In business organizations, exploiting the advantages stemming from the dynamic relationship between innovation and internationalization is likely to be an important source of competitive advantage. At the same time, this synergy and its growth potential can be leveraged through macroeconomic adjustment policies (Freixanet, 2014, 2022; Love & Roper, 2015).

The structure of this study is as follows. Next, we will highlight a number of major contributions in this area of knowledge. The third section describes the research methodology, while the fourth section discusses the main results. In the last section, the principal conclusions of the study and some future research directions are drawn.

6.2 Brief Synopsis of the Literature

The literature on the relationship among innovation, internationalization, and performance is dominated by a number of basic themes that are highly relevant to this area of knowledge. The early approaches seek to explain the international expansion of firms, and in this respect, Vernon (1966) advances a theory that transposes the focus from the comparative cost doctrine to the dynamics of innovation, the effects of economies of scale, the role of information lack and uncertainty, and the product life cycle in shaping trade patterns. In general, firms tend to expand their international operations and commitments incrementally as they accumulate, integrate, and use new knowledge about foreign markets and operations, with experience being considered the most important determinant of the pattern of international expansion (Johanson & Vahlne, 1977, 1990, 2009). Dunning (1980, 1988a, b; Dunning & Lundan, 2008) develops and refines a holistic framework consecrated in the literature as the OLI (Ownership-Location-Internalization) eclectic paradigm to facilitate the recognition and assessment of the importance of factors influencing both initial overseas production operations and their expansion.

A number of studies from the 1990s onwards highlight the critical role that the ability to recognize, absorb, and exploit knowledge from the external environment plays in innovation, regardless of the organizational level at which the innovative unit is set (Cohen & Levinthal, 1990; Zahra & George, 2002). This ability to recognize the value of new external knowledge, to absorb and apply it, known as absorptive capacity, depends largely on the level of related prior knowledge. The knowledge-based model of the firm partly exploits this paradigm, arguing that firms

grow domestically and internationally and gain advantages based on their ability to create and integrate new knowledge (Nonaka et al., 2008; Von Krogh et al., 2000) and to replicate this knowledge to expand their market more efficiently than other firms (Grant, 1996; Kogut & Zander, 1992, 1993).

Grounded in the theses of Vernon (1966) and Rugman (1980), research exploring the implications and strategic importance of international diversification, in terms of the number of different markets in which the firm operates and their importance to it, suggests that diversification has a low positive effect on multinational performance (Tallman & Li, 1996) or is even in a non-linear relationship with firm performance (Contractor et al., 2003; Hitt et al., 1997; Lu & Beamish, 2004) and is dependent on a number of firm-specific factors such as the intensity of R&D and marketing activities (Kotabe et al., 2002). Most of these approaches have their roots in the view that the firm can be understood as a comprehensive set of resources (knowledge, technology, skilled human resources, etc.) enabling it, under specific conditions, to maintain a certain superior position compared to other firms (Wernerfelt, 1984) or a sustained competitive advantage (Barney, 1991).

The literature generally addresses the dynamic relationship between innovation and internationalization somewhat independently. Thus, a large corpus of studies has explored and argued the positive influence of innovation on internationalization and especially on internationalization via exports (Ayob et al., 2022; Becker & Egger, 2013; Burciu et al., 2023; Cassiman, 2007; Cassiman et al., 2010; Filippetti et al., 2009, 2011). Most of these studies seek to understand the drivers of this relationship and explain the involvement of more productive firms in export operations by virtue of the sunk cost hypothesis, according to which entry or expansion in international markets requires substantial capital that leads to self-selection of more productive firms into foreign markets (Cassiman & Golovko, 2011). Accordingly, the innovative capabilities of firms positively influence the decision to internationalize. A strategically important question is whether the reverse relationship is also occurring and which are its determinants.

Over the past decades, several driving themes have addressed the issue of early internationalization and of firms that enter international operations at an early stage of their development (*born-global* or *new ventures*). Despite the financial, human, and material constraints that affect most new businesses, these precociously internationalizing firms exploit innovation, knowledge, and capabilities to outperform in international markets at an early stage of their development (Cavusgil & Knight, 2015; Knight & Cavusgil, 2004; Knight & Liesch, 2016). Moreover, studies exploring the vectors of fast-track internationalization of new firms point to the critical role of the ability to learn, to actively seek knowledge about the international environment, and to adapt the management of their operations to unfamiliar environments (Yeoh, 2004). In this case, the learning by exporting assumption is underpinned by the use of innovation as an indicator. Firms can strategically access external knowledge bases and benefit from this knowledge transfer to accelerate innovation by engaging in export activities; in other words, exporting is linked to ex-post growth in innovation (Chiva et al., 2014; De Clercq et al., 2012; Freixanet et al., 2021; Love & Ganotakis, 2013; Salomon & Shaver, 2005).

Evidence-based approaches also argue that innovation and internationalization are complementary activities in the sense that the returns, in terms of firm growth, from engaging in one activity are increased if the firm also engages in the other activity. The idea of the innovation-internationalization "virtuous circle" portrays this complementarity and suggests that innovation and exporting/internationalization dynamically support/enhance each other (Golovko & Valentini, 2011).

6.3 Research Design

We conduct an analysis of the occurrence of the innovation-performance-internationalization "virtuous circle" in a panel of firms operating in the Romanian ICT sector, including both domestic companies and affiliates of multinational companies (MNCs). The features and nature of this research are briefly depicted in Fig. 6.1.

Two questionnaires were designed, one addressed to domestic companies and one addressed to MNC affiliates operating in the ICT sector in Romania (according to NACE classification). Pre-testing was carried out in September–November 2019 with the help of experts from companies in the main ICT hubs. Subsequent to the pre-testing, formal and substantive changes were made, most of them aimed at conceptual clarifications. The questionnaire was administered online in December 2019–June 2020, targeting professionals in management or executive positions.

Firms were sampled in the panel after a stratified selection according to the following criteria:

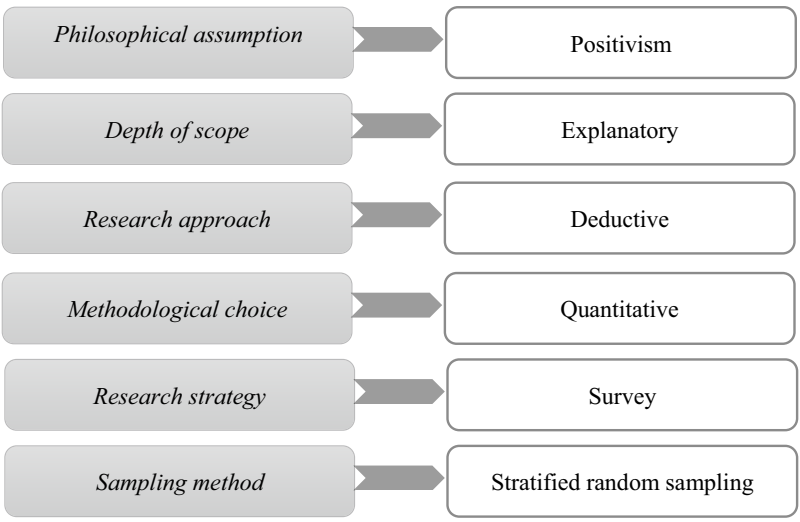

Fig. 6.1 Research methodology. (*Source:* Made by the authors)

– Geographical criterion. Twenty counties where there is an educational offer for ICT engineers were selected.
– Object of activity criterion. For each activity specific to the ICT sector, according to NACE Rev. 2, the top 10 companies in each county were selected, resulting in 2222 companies.
– Firm size criterion. Firms with at least two employees were included in the sample, resulting in 1543 entities, of which 800 that reported profit were selected to administer the questionnaires. The response rate was 25%, namely, 103 questionnaires for domestic firms and 109 questionnaires for affiliates of multinational companies.

We have employed a mediation effect analysis, i.e., according to Baron and Kenny (1986), we tested the mediating role of a third variable, which is the generative mechanism by which the dominant independent variable is likely to influence the independent variable. The basic model of mediation is depicted in Fig. 6.2.

This model considers a three-variable system in which there are two causal paths influencing the outcome variable, namely, the direct impact of the independent variable (path c), the impact of the mediator (path b), and the impact of the dominant independent variable on the mediator (path a). The parameters a, b, and c are estimated using a set of regression models that allow the estimation of the direct effect (c′) as well as the indirect effect a^*b, the total effect resulting from the sum of the two effects ($c = c' + ab$), as follows (Agler & De Boeck, 2017):

$$Y = i_1 + cX + e_1 \tag{6.1}$$

$$M = i_2 + aX + e_2 \tag{6.2}$$

$$Y = i_3 + c'X + bM + e_3. \tag{6.3}$$

For the relationship between innovation and internationalization, the dominant predictor variable is innovation (INN) and the outcome variable is internationalization (INT). In the relationship between internationalization and innovation, the dominant predictor variable is internationalization (INT) and the dependent variable is innovation (INN). In both cases, performance (P) is the mediator. All variables were measured by five-point Likert scale responses. Innovation concerned the quality of human resources, types of innovations (product, process, organizational),

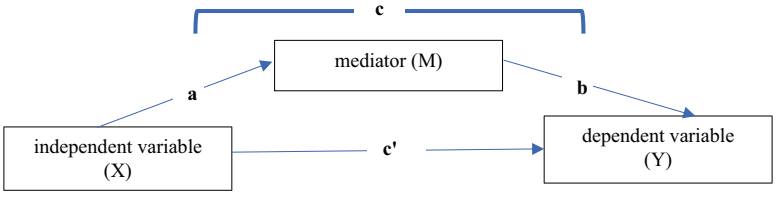

Fig. 6.2 General model of simple mediation. (*Source:* Based on Baron & Kenny, 1986)

knowledge acquisition and processing, managerial vision, financial support, cultural specificities, etc. Internationalization was assessed by item responses on a number of endogenous factors (internal resources, managerial strategy, general competencies and key competencies, etc.). Performance was scored by responding to items on factors influencing firm profitability and competitive advantage.

For the variables described, it is plausible to hypothesize the following:

(H1) Firms operating in the ICT sector tend to internationalize for more when their innovative activity intensifies and at least part of the innovation-led internationalization is mediated by innovation-driven performance gains.

(H2) Expansion into international markets stimulates innovation and at least part of this internationalization-led innovation increase is mediated by the performance gains related to internationalization.

(H3) The mediating effect of performance is stronger in the relationship between innovation and internationalization than in the one between internationalization and innovation.

6.4 Results and Discussions

We explored the innovation-performance-internationalization virtuous circle for domestic firms and affiliates of multinational companies, and we tested the hypotheses through a simple mediation effect analysis according to the model described above (Baron & Kenny, 1986); in addition, a bootstrap confidence interval for the indirect effect was computed (Warner, 2012). The findings are discussed below.

6.4.1 Domestic Companies

Given that the research was based on the administration of a single test, we estimated reliability in a Bayesian framework, which offers advanced computational capabilities and the advantage of operating with limited test data (Pfadt et al., 2022); the results, reported in Table 6.1, indicate good internal consistency of the items.

Table 6.1 Bayesian reliability tests of individual items for domestic companies

	Cronbach's α (if item dropped)				
Item	Posterior mean	Lower 95% CI	Upper 95% CI	Mean	SD
INN	0.895	0.850	0.931	3.456	0.829
INT	0.852	0.793	0.907	3.463	0.901
P	0.861	0.805	0.911	3.620	0.826

Source: Made by the authors

Table 6.2 Analysis of the relationship between innovation and internationalization and the mediating effect of performance on it

					95% confidence interval	
	Estimate	Std. error	*z*-value	*p*	Lower	Upper
Direct effects						
INN → INT	0.380	0.085	4.458	<0.001	0.104	0.636
Indirect effects						
INN → P → INT	0.451	0.075	6.013	<0.001	0.269	0.687
Total effects						
INN → INT	0.831	0.069	12.031	<0.001	0.627	0.993
Path coefficients						
P → INT	0.606	0.086	7.074	<0.001	0.359	0.896
INN → INT	0.380	0.085	4.458	<0.001	0.104	0.636
INN → P	0.744	0.065	11.414	<0.001	0.554	0.881

Source: Made by the authors
Note: Delta method standard errors, bias-corrected percentile bootstrap confidence intervals, ML estimator

As can be seen, the Romanian companies surveyed scored high in both innovation and internationalization as well as performance.

The occurrence of the mediating effect of performance on the relationship between innovation and internationalization is provided in Table 6.2.

In this case, all three relationships are judged to be statistically significant. Since the bootstrap confidence intervals do not include 0, we can state that a mediation effect is present in this model. In addition, the indirect effect is greater than the direct effect of innovation on internationalization. These results suggest that for Romanian-owned firms, a larger part of the effect of innovation on internationalization is mediated by performance.

In the reverse relationship, as can be seen in Table 6.3, the total effect of internationalization on innovation is also statistically significant, but smaller than that of innovation on internationalization.

Statistically significant direct and indirect effects are also found, supporting evidence of a mediating role of performance on this relationship, with the observation that in this case the indirect effect is smaller than the direct one. In other words, a smaller part of the internationalization effect on innovation is mediated by performance in the sampled Romanian firms.

6.4.2 Multinational Companies

For multinational affiliates, like Romanian firms, data were collected by a single test administration; reliability estimation based on Bayesian logic, reported in Table 6.4, reveals a good internal consistency of items.

Table 6.3 Analysis of the relationship between internationalization and innovation and the mediating effect of performance on it

					95% confidence interval	
	Estimate	Std. error	*z*-value	*p*	Lower	Upper
Direct effects						
INT → INN	0.426	0.095	4.458	<0.001	0.096	0.723
Indirect effects						
INT → P → INN	0.278	0.080	3.459	<0.001	0.075	0.522
Total effects						
INT → INN	0.703	0.058	12.031	<0.001	0.521	0.864
Path coefficients						
P → INN	0.371	0.104	3.564	<0.001	0.092	0.678
INT → INN	0.426	0.095	4.458	<0.001	0.096	0.723
INT → P	0.748	0.052	14.338	<0.001	0.628	0.871

Note: Delta method standard errors, bias-corrected percentile bootstrap confidence intervals, ML estimator

Table 6.4 Bayesian reliability tests of individual items in multinational companies

	Cronbach's α (if item dropped)				
Item	Posterior mean	Lower 95% CI	Upper 95% CI	Mean	SD
INN	0.872	0.827	0.917	3.655	0.641
INT	0.859	0.805	0.907	3.594	0.636
P	0.862	0.810	0.913	3.690	0.764

At the same time, we note high average scores for all variables, but with a more uniform distribution than for domestic companies.

The effect of innovation on internationalization and the influence of performance on this relationship in multinational companies is summarized in Table 6.5.

In this case, *p*-values and bootstrap confidence intervals are the criteria that confirm the statistical significance of the relationships among variables. The total effect of innovation on internationalization is significant and is partly mediated by performance, although no substantial differences appear between the direct and indirect effects.

The results reported in Table 6.6 also evidence a significant relationship between internationalization and innovation and the occurrence of the mediating role of performance, although a smaller part of this relationship is mediated by performance.

When we compare the manifestation of the "virtuous" circle of innovation-performance-internationalization in Romanian companies and multinational companies operating in the Romanian ICT sector, the results reveal a number of interesting aspects. In both categories of firms, innovation exerts significant overall effects on internationalization, but in domestic companies this influence is stronger. At the same time, part of these effects is mediated by performance, which supports the first hypothesis. However, it is observed that in domestic companies the mediation effect

Table 6.5 Assessment of the relationship between innovation and internationalization and the mediating effect of performance on it

					95% confidence interval	
	Estimate	Std. error	*z*-value	*p*	Lower	Upper
Direct effects						
INN → INT	0.373	0.084	4.458	<0.001	0.205	0.565
Indirect effects						
INN → P → INT	0.382	0.071	5.369	<0.001	0.259	0.525
Total effects						
INN → INT	0.755	0.062	12.256	<0.001	0.620	0.870
Path coefficients						
P → INT	0.417	0.070	5.942	<0.001	0.282	0.567
INN → INT	0.373	0.084	4.458	<0.001	0.205	0.565
INN → P	0.916	0.073	12.538	<0.001	0.777	1.051

Note: Delta method standard errors, bias-corrected percentile bootstrap confidence intervals, ML estimator

Table 6.6 Analysis of the relationship between internationalization and innovation and of the mediating effect of performance on it

					95% confidence interval	
	Estimate	Std. error	*z*-value	*p*	Lower	Upper
Direct effects						
INT → INN	0.413	0.093	4.458	<0.001	0.210	0.613
Indirect effects						
INT → P → INN	0.354	0.078	4.548	<0.001	0.211	0.515
Total effects						
INT → INN	0.767	0.063	12.256	<0.001	0.639	0.898
Path coefficients						
P → INN	0.373	0.077	4.832	<0.001	0.223	0.528
INT → INN	0.413	0.093	4.458	<0.001	0.210	0.613
INT → P	0.949	0.071	13.463	<0.001	0.835	1.069

Note: Delta method standard errors, bias-corrected percentile bootstrap confidence intervals, ML estimator

of performance on the relationship between innovation and internationalization is stronger than in multinational companies.

Internationalization, which is understood as the expansion of firms' operations into foreign markets, significantly increases innovation, but this influence is more pronounced in multinational companies. Performance mediates less of this influence in both categories of firms, an observation that is consistent with the second hypothesis. In addition, it is evident that the mediating role of performance on the relationship between internationalization and innovation is smaller for domestic firms than for multinationals.

Last but not least, we also found that in both categories of firms, performance mediates a larger share of the effect of innovation on internationalization than of the reverse effect of internationalization on innovation, which also confirms the third hypothesis.

However, some differences emerge between Romanian firms and multinationals that shape their strategic innovation-internationalization behavior (Burciu et al., 2023). Thus, from their status as newcomers in the sector, domestic companies pursue innovation-driven internationalization strategies. Knowledge acquisition, continuous learning, flexible organizational structures, product innovation, development of R&D networks, and organizational culture are factors that support internationalization. On the other hand, multinational companies, many of them as well-established global players within this sector, mainly follow the internationalization strategy developed by top management, in which innovation also plays an important role.

6.5 Conclusions

The aim of this research was to explore the dynamic virtuous circle between innovation and internationalization and the mediating effect that performance exerts in this complementary relationship. It is substantiated by data collected through the administration of two customized questionnaires addressed to multinational companies and domestic companies operating in the Romanian ICT sector.

Overall, the findings of the research suggest that in both domestic and multinational companies, there is a bidirectional dynamic relationship between innovation and internationalization, and part of this interaction is mediated by performance. This mediating effect of performance varies, however, according to the focus of the relationship and by category of firm. In domestic firms, compared to multinationals, innovation has a stronger influence on internationalization, and, at the same time, the mediating effect of performance is higher. Conversely, internationalization is a predictor of innovation in both categories of firms, but more robustly in multinationals. It is also observed that performance mediates less of this influence in both categories of firms, with a more modest mediating role on the relationship between internationalization and innovation in domestic firms than in multinationals.

The main limitation of this research stems from its cross-sectional nature relying on the administration of a single test, which does not allow a causal relationship to be established. At the same time, the research was not disaggregated by modes of entry foreign markets. The questionnaire mainly aimed at collecting information on the vision and strategy of companies operating in a knowledge-intensive sector in terms of innovation and internationalization and did not focus on capturing conjunctural factors. Such approaches carry a certain degree of subjectivity and have their limitations especially when generalization is concerned.

Some of these limitations can be overcome in more detailed future research, structured by different business groups (SMEs, large companies), preferred ways of entering foreign markets, age of the firm, etc.

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Chapter 7
Modern Instrument for Nonconformities' Management Within Quality Management Systems

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Abstract Nonconformities represent a frequently encountered factor in the operation of a company. It is imperative to constantly investigate the causes and sources of irregularities. For this purpose, for nonsatisfaction of the specified requirements, Kaizen management methods and tools can be used, which offer solutions to improve the nonconformity management process. In industry, regardless of the activity field, software applications that deal with and manage nonconformities can be created, depending on the potential or actual severity of the problem. The paper presents a modern tool, designed to manage nonconformities within a company. Entitled Auto-Quality Matrix, the application was developed and tested in a food industry unit whose field of activity is spring water bottling. The application can be constituted in a standardized process, which can work both on material and information flow, contributing to the visualization of the "quality level" of each individual section and its evolution. On the other hand, it helps to identify nonconformities as close as possible to the area that generates them. The results of the study highlight the advantages of using the new tool, while also exposing the conceptual approach that substantiates its design and validation.

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7.1 Introduction

Within an organization, in addition to the implementation and certification of one or more management system models, it is necessary to develop techniques and tools of excellence in the competitive environment, which lead the organization to exceptional performances, regarding quality, costs, and deadlines, so that the expectations of all interested parties are met (Dinu, 2017). In many organizations, quality is understood as a standardized measure of excellence or synonymous with the concept of "zero defects." To achieve the desired quality of a product, the performance of the quality system must be monitored and improved continuously (Sicoe et al., 2017). Quality can be measured in several terms, such as durability, reliability, and usability. Total quality management is a structured effort by employees to continuously improve the quality of products and services through appropriate feedback and research. Ensuring the superior quality of a product or service is not the responsibility of a single member, requiring the involvement of all employees (Oprean, 2006).

The quality management system represents an integrated set of activities to establish and control work processes, manage resources, perform evaluations, and improve them continuously (Carey, 2018). This system is standardized by the International Organization for Standardization (ISO), which develops a wide range of standards and guidelines for the implementation of such a system, for example, ISO 9001 (Montoya et al., 2018). The implementation of a SMC is achieved by involving the entire organization, respectively, each department and each person, in activities aimed at meeting quality requirements, both those related to employees and those related to customer satisfaction (Hădărean Șomlea et al., 2014).

Voluntary standards have emerged as global regulatory mechanisms to address the quality, sustainability, health and safety of products, services within organizations, and their supply chains (Büthe & Mattli, 2011; Tuczek et al., 2018). The implementation and certification of standards, respectively, the use of tools or applications designed to manage nonconformities, is currently optional. However, they are all developed with the aim of helping organizations to identify and keep nonconformities under control and implicitly to have a good risk management (Smits et al., 2020).

The characteristics of a product, service, or activity are evaluated and compared to the requirements of a specification or reference standard in order to determine conformity. This system does not focus on preventing the occurrence of nonconformities, nor on identifying the causes of their occurrence (Oprean et al., 2012). The operators are the ones who carry out the self-control of the products by using specific techniques and tools, thus contributing to the reduction of the occurrence of nonconformities, as a result of a more rigorous control of the processes (Oprean & Kifor, 2008). However, there are a number of external forces (customer requirements, high competition, visibility of products or services on the market, etc.) that lead to the implementation and certification of quality, safety, and security systems that use specific tools to manage nonconformities or risks. The motivations that

determine this decision are generally of an internal nature (Dickson et al., 2016). In our country as well as in the entire world, there is a growing desire to implement the most efficient management tools and systems, which aim to maintain and improve the quality of all processes/systems (Maiorescu, 2008).

In the context of the current concerns regarding implementation, maintenance, improvement, and certification of the organizations' quality management systems, a risk analysis is carried out that leads to an efficient management system, whose corrective actions once initiated and implemented lead to the elimination of the causes of nonconformities. Evaluation and learning from previous mistakes lead to the possibility of improving the company's quality system, its processes, and the products and services it offers (Atanase, 2011). Taguchi combines advanced engineering methods and techniques with probability and statistics to reduce quality costs (Taguchi et al., 1989; Antony & Kaye, 2000; Jaques, 1999).

A company's concern for quality costs gives information about the maturity of the organization's management. Its objective is not to reduce the costs of nonconformities, through higher costs of prevention and measurement, but to continuously reduce these costs. Thus, for the quality management system to be effective, it should cost less than the losses it prevents. The approach of the overall engineering process of products in an organization is complex due to the high variety of technical production requirements. Any functional process presents nonconformities, which in turn generate losses (Titu & Oprean, 2006).

The causes and sources of nonconformities must constantly be sought in any organization. For this, recognized or innovative quality management tools and methods can be used. In this way, key irregularities can be identified, and then solutions can be sought for corrective actions and improvement. By achieving high reliability of services and products, companies can fully respond to the needs of their consumers (Midor et al., 2020).

For any organization, the resolution of nonconformities of any nature (material or informational) requires the existence of an instrument called the Auto-Quality Matrix whose purpose is to keep the problems that arise under control; for product/products, there are standards for verification and quality assurance. The Auto-Quality Matrix is a "tool" that helps to visualize the quality level of each section/service and its evolution. The Auto-Quality Matrix is a technique to identify where the defect is created and detected in the manufacturing process (Daniyan et al., 2022; Sicoe et al., 2017).

The scientific context of the addressed topic is based on an important element, namely, the consideration of disruptive factors with direct or indirect action that can destabilize the activity in an organization, thus leading to the impossibility of achieving the proposed objectives. The specific activities of an organization inevitably involve nonconformities, which must be managed through identification, evaluation, and treatment/elimination, along with the establishment of control/monitoring measures to limit the consequences and with the setup of actions in the short or long term. The improvement of the quality management system, at the level of any type of organization, is based on the development and implementation of specific tools

for evaluation, report, and analysis of nonconformities, as well as through the development of a new methodology for their evaluation.

Starting from this premise, the aim of the paper is to conceptually present this system called Auto-Quality Matrix (AQM), as a tool for managing nonconformities in a water production and bottling process, which is based on the visual inspection of the quality level of the product, service, or production line. At the same time, it helps to identify nonconformities as close as possible to the section/area that generates them and makes staff aware of the concept of auto-quality. At the same time, nonconformities are directly dealt with in GEMBA (a Japanese term meaning "at the source"), together with the personnel involved.

7.2 Material and Methods

7.2.1 Auto-Quality Matrix as a Tool of the Kaizen Management System

By implementing a nonconformity management strategy, the paper highlights the main specific Kaizen management techniques, namely, strategic thinking of profit on activities, management of consumer needs, visionary control strategies at the level of processes in the organization, and supply chain management. The Kaizen policy is based on the process oriented towards the development of continuous improvement techniques and strategies, with the help of all the organization's personnel from all departments and hierarchical levels. Kaizen's motto is "not a day should go by without some kind of improvement being made somewhere in the company" (Imai, 1986; Omotayo et al., 2020). The term "Kaizen" appeared in 1986 for the first time in a book written by M. Imai and entitled "Kaizen" (Hamrol, 2018). Over time, this philosophy has been used in various fields of activity, industry being the main one.

The path to be followed is the gradual and continuous improvement of quality in "small steps," both of products and services, as well as of productivity and competitiveness, with small investment efforts, with the participation of all personnel. This modern vision of the Kaizen strategy assumes the "umbrella" concept that combines techniques, methods, and tools to optimize production and increase efficiency: company-wide quality control (CWQC), Kanban, quality circles, suggestion system, mechanization, automation, work discipline, total productive maintenance, etc., as an integrative and cross-functional strategy of the organization (Imai, 2013).

Key elements of the Kaizen concept are (Stoller, 2015) quality first, market in, the next process is your customer, speak with data, and key quality checkpoints. The Kaizen philosophy aims to solve key problems related to logistics and strategy, considering continuous progress in improving workplace activities (Sutherland & Bennett, 2007). The adoption of the Kaizen method improves the results of the organization by solving problems; by identifying and implementing small

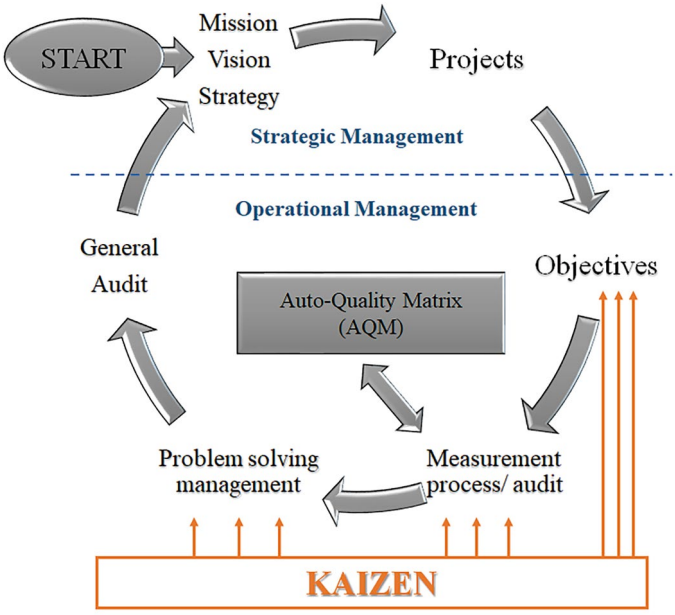

Fig. 7.1 Kaizen management within the organization. (*Source:* Own contribution)

improvements in the process, product, and system; and by involving the participation of the entire staff (Panwar et al., 2015; Singh et al., 2010).

Given these premises, the strategic and operational management was elaborated adapted to the needs of the organization, considering the project development cycle (Fig. 7.1). The stages based on Kaizen principles are presented in detail which aim at continuous improvement, innovation, measurement, and improvement in the daily activity of each employee and the organization (Suárez-Barraza et al., 2011, 2018; Suárez-Barraza & Miguel-Davila, 2020). Among the mechanisms and techniques used in industrial engineering, the Kaizen strategy of continuous improvement is classified as an adaptive system with interconnections, managing nonconformities and simplifying the organization of activities, with the aim of directing and optimizing material and information flows (Bulat, 2018; Cernăianu, 2015).

In the case of nonconformity or inexistence of procedures, the results may be random and can lead to undesired scenarios. Starting from the needs identified within an organization, respectively, a spring water production and bottling unit in the Transylvania region, the problems related to quality were systematically addressed, through the conceptual treatment of risk in the integrated management system of quality, security, and food safety, as well as health, safety, and security at work, combined with the particular aspects regarding the management system. Discussions took place on elements regarding the need for the development and experimental implementation of risk signaling, analysis, and resolution tools, at the

level of the production unit, through the design of the AQM application (Auto-Quality Matrix), respectively, of a sheet for the treatment and management of non-conformities, using the concept "5M" (man, method, material, machine, medium). At the same time, a new risk assessment methodology was developed for the spring water bottling technological process, by applying Ishikawa diagrams in conjunction with the improved Hazard Analysis and Critical Control Point (HACCP) system.

On the material flow, four categories of problems can be encountered that may appear during the performance of the activities in the departments involved in this flow:

- Problems related to quality.
- Problems related to the non-realization of production/planned daily activities.
- Technical problems.
- Problems related to 5S—sorting (seiri), setting in order (seiton), cleaning (seiso), care (seiketsu), discipline (shitsuke), and food safety and administrative issues.

The collection of data from the organization related to each type of problems identified on the information and material flow can be achieved using the tools shown in Table 7.1.

Three types of problems can be encountered in the information flow:

- Problems related to the quality of the performed services or the provided information.
- Problems resulting from the performance of the activities in a department.
- Technical problems.

The collection of data related to each of the types of problems identified in the information flow can be done using the work tools presented in Table 7.2.

The problems (nonconformities) that may arise during the activities on the two flows are identified by any operator in the area where they carry out their activity. The operator will complete the nonconformity in the AQM application for quality-related problems and technical problems and/or inform the line manager for the remaining types of problems. The problems reported and classified in one of the three categories will be addressed and resolved according to the competence and resources of the department where they occurred. The determination of the competences and the necessary measures are carried out based on the matrix of competences presented in Tables 7.3 and 7.4.

Table 7.1 Nonconformities in the materials flow

Quality problems	Production failure	Technical problems	Process analysis
Notification on AQM (Auto-Quality Matrix) material flow	IT system, production reports	Equipment Maintenance Sheet Technical intervention sheet	Records resulting from audits and classified by types of nonconformities and areas

Source: Own contribution

Table 7.2 Nonconformities in the information flow

Quality problems	Departmental problems	Technical problems
Notification in AQM information flow	Analysis of the achievement of daily objectives at the daily meeting	Technical problem reporting sheet Technical intervention sheet

Source: Own contribution

Table 7.3 Establishing the competences and measures to be taken on the material flow

		Place		
Time	Resources	Department meeting	Administration council	
3 weeks	Maximal resources	Collection of data to solve problems Implementation of new standards and techniques Improvement projects	Improvement projects Collection of data to remediate problems Implementation of new standards and techniques Remediation of technical defects	Corrections/ changes of standards at the customer's request Training Remediation of technical defects
1 week	Medium resources	Remediation of problems resulting from the "Process Analysis" Revision of standards (analysis and comparison) Training on new or revised standards & monitoring	Remediation of problems resulting from the "Process Analysis" Problem of the day Training / retraining on food safety (standards, techniques) Remediation of technical defects	Corrections/ changes of standards at the customer's request Training Remediation of technical defects
1 day	Minimal resources	Restore stage 5S/ ergonomics Correction of operating standards (equipment, operators, departmental standards) Remediation of product or information nonconformities Remediation of food safety nonconformities Training Maintenance remediations	Analysis of the problem of the day Training Remediation of technical defects	Training Remediation of technical defects
		Solution in the department	Interdepartmental	External
		Escalation of problems		

Source: Own contribution

Table 7.4 Establishing the competences and measures to be taken on the information flow

		Place		
Time	Resources	Department meeting	General meeting	
3 weeks	Maximal resources	Collection of data to solve problems Implementation of new standards and techniques Improvement projects	Improvement projects Collection of data to remediate problems Implementation of new standards and techniques Remediation notifications from other departments Remediation of technical defects	Corrections/changes of standards at the customer's request Training Remediation of external notifications Remediation of technical defects
1 week	Medium resources	Remediation of problems resulting from the "Process Analysis" Revision of standards (analysis and comparison) Training on new or revised standards & monitoring	Remediation of problems resulting from Kaizen activities/improvement actions Problem of the day Training / retraining on operational standards, inspections Remediation notifications from other departments Remediation of technical defects	Corrections/changes of standards at the customer's request Training Remediation of external notifications Remediation of technical defects
1 day	Minimal resources	Remediation of incorrect, incomplete, unclear, or delayed information Remediation of erroneous, qualitatively unsatisfactory, delayed services Review and/or training employees regarding operating, ordering and inspection standards Restore stage 5 S Establishing/restoring the appropriate communication channel	Notification of the supplier department or client regarding the nonconformities identified in the AQM Analysis of the problem of the day Remediation notifications from other departments Training Remediation of technical defects	External notifications regarding incorrect, incomplete, unclear, or delayed information or services Remediation of external notifications Training Remediation of technical defects
		Solution in the department	Interdepartmental	External
		Escalation of problems		

Source: Own contribution

Practically, the designed tool proposes the organization of the activity, aiming to optimize the material and information flows (Kumar et al., 2017). The Kaizen strategy, aimed at continuous improvement and innovation, is based on the principle that no day should pass without an improvement in the activities of employees and within the organization. At the same time, to adapt some innovative actions, it is necessary to act immediately, to achieve radical changes for the better, compared to the state before the application of the measures. It can be done through renovations, staff training, etc. (Ratcenco & Munteanu, 2016).

Analyzing the problem and starting from the hypothesis of the need to prevent and signal nonconformity at the place of detection, the contribution that the use of the AQM software application (Auto-Quality Matrix) can bring must be emphasized. We consider the reduction of scraps, the elimination of quality defects, practically nonconformities with direct effects on total costs and on quality. This contribution will positively influence the information circuits that ensure the information connection, both within the organization that implements it and in relation to external partners.

7.3 Results and Discussions

7.3.1 Principles and Description of the Quality Assurance Matrix

For the continuous improvement of productivity in manufacturing units in the food sector, the Auto-Quality Matrix was built on the material flow (Productive Gemba AQM), on the information flow (Services Gemba AQM), respectively, monitoring the maintenance of technological equipment on machines, machinery, and work installations that exist in the production unit (Micieta et al., 2021). The Auto-Quality Matrix is built on the Kaizen principle: "Don't get it, don't make it, don't send it!" (Imai, 1997). The Auto-Quality Matrix not only shows the formation and detection of defects but also provides a visual basis for acting on them. A company using AQM for every defect/nonconformity they encounter will not only help gain deeper insights but also force them to map or model their processes and value flows.

Figure 7.2 shows the logogram of the process of managing and solving nonconformities within the Auto-Quality Matrix at the department/section level.

The Auto-Quality Matrix is an effective and efficient tool in preventing nonconformities. The purpose of designing the application is the stabilization of processes and product quality, as well as the accountability of the company's staff, in ensuring a constant level of service quality offered to external or internal customers (Kaizen Institute, Ltd., n.d.).

Thus, for the continuous improvement of Auto-Quality in companies, the Auto-Quality Matrix can be built on two flows:

- Auto-Quality Matrix on the material flow (Productive Gemba AQM).
- Auto-Quality Matrix on the information flow (Service Gemba AQM).

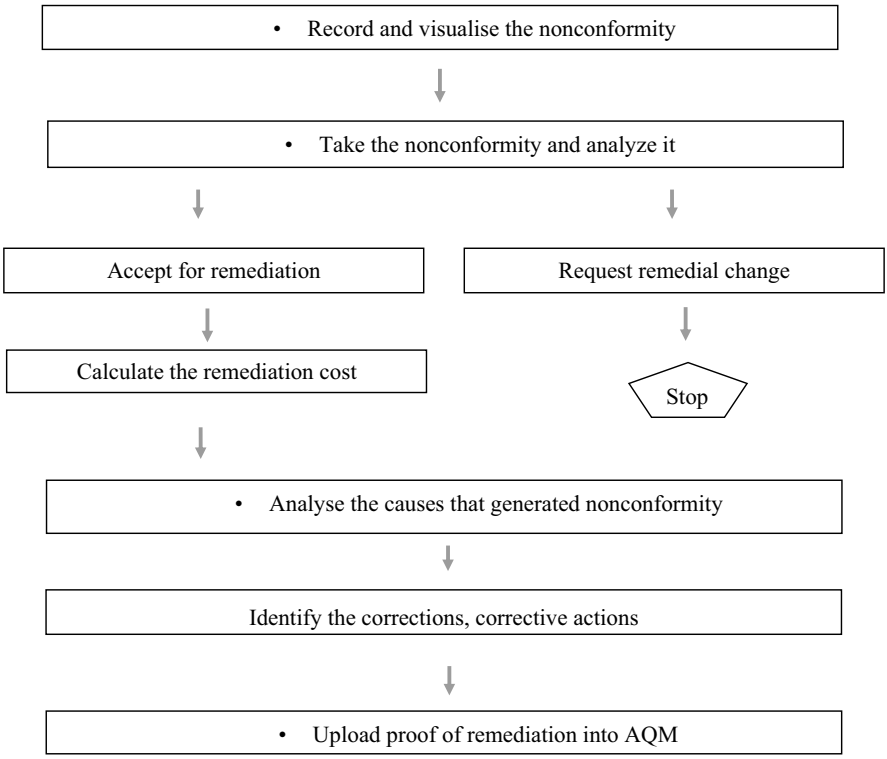

Fig. 7.2 Logigram of the nonconformities' management process at the department/section level. (*Source:* Own contribution)

To design the Auto-Quality Matrix, the following steps must be followed:

- Identification of the main "suppliers" of nonconformities, of the involved departments on the material flow, on the supplier-client relationship ("Where did the nonconformity occur?")
- External suppliers—suppliers of nonconformities from outside the organization.
- Internal suppliers—indirect internal suppliers of nonconformities.
- Identification of the main "customers" of the nonconformities ("Where was the nonconformity found?")

Table 7.5 shows the structure by areas/departments of the spring water bottling unit and the possible areas/sources where nonconformities can be identified.

Table 7.6 shows the classification of the main types of AQM nonconformities, which can be identified on material and information flow.

The Auto-Quality Matrix on material flow works with daily collection by data operators related to the identified nonconformities, accessing the "Auto-Quality

Table 7.5 Structure/areas within the organization

RAMW	Raw and auxiliary materials warehouse
Production	PET preforms blowing department
Bottling	Bottling department
FPW	Finished products warehouse
QCD	Quality control department
Internal Customer	Research and Development, Logistics, and others
External customer	The final customer

Source: Own contribution

Table 7.6 Types of AQM nonconformities on the material and information flow

Nr.	AQM nonconformities on material flow	AQM nonconformities on information flow
1	Product loss	Missing of basic information
2	Nonconforming documents	Missing/atypical information, incomplete information
3	Product with strange taste and smell	Incorrect information
4	Product with impurities	Unclear information
5	Contaminated product	Delayed information
6	Nonconforming product due to the machine	Delayed order/product in stock
7	Insufficiently carbonated/ozoned product	Delayed order/missing finished product/raw material in stock
8	Nonconforming packaging	Delayed order/missing finished product/missing raw material
9	Nonconforming labels	Delayed order for raw material/ delayed order
10	Product with different color	Missing documents
11	Lack of quality documents	Missing customer information
12	Nonconformity when placing, palletizing	Delayed customer information
13	Missing in inventory	Miscellaneous
14	Missing labels/double labelling	Information overload
15	Failure to meet admissibility criteria	Erroneous services
16	Technical nonconformity	Unsatisfactory service quality
17	Other defects	Delayed services
18	–	No Service
19	–	Errors in operation

Source: Own contribution

Matrix (AQM)" application and adding the nonconformities in the "Material Flow AQM window." Afterwards, the "problem of the day" can be selected and analyzed together with the operators involved in the flow and training, and the periodic analysis of nonconformities can be carried out together with the heads of departments.

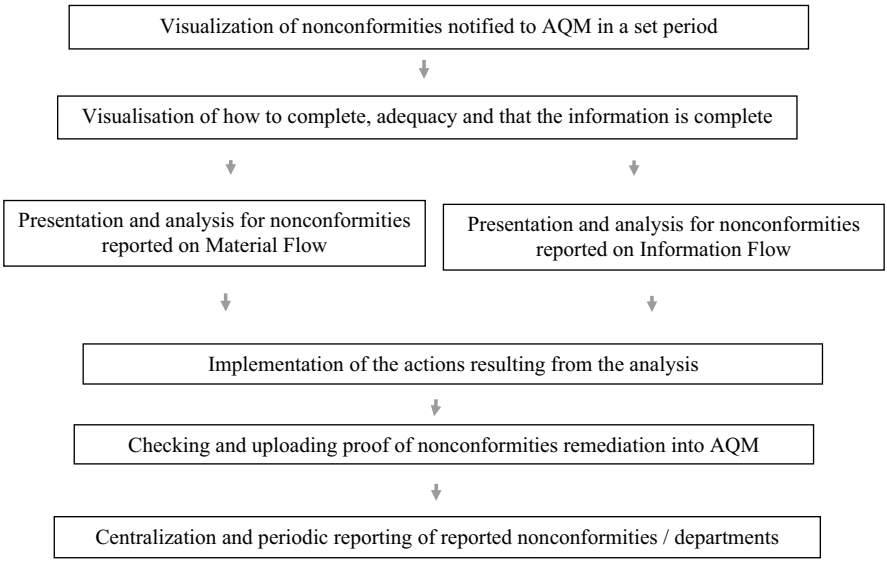

Fig. 7.3 Schematic of the nonconformity monitoring process by the AQM administrator. (*Source:* Own contribution)

The Auto-Quality Matrix on information flow works similarly with daily collection by employees of the data related to the identified nonconformities, accessing the "AQM" application and adding the nonconformities in the "Information Flow AQM window/per department." A bimonthly analysis of the data collected on the Information Flow Auto-Quality Matrix is carried out, along with the selection of problems that repeatedly generate nonconformities, their analysis, together with the operators involved. Figure 7.3 shows the logic diagram of the monitoring process of the nonconformity's resolution by the AQM administrator.

The software application "Auto-Quality Matrix (AQM)" is designed in the Visual Basic (VB) programming language that creates a Microsoft Access database for Windows. The description of the process of notification and resolution of nonconformities is presented through the graphic interfaces of this software, in the form of "print screens." The purpose and opportunity of this application derive from the need to adapt organizations to the surrounding reality, in an increasingly informational, technological, and automated era, all with the aim of reducing the costs of nonconformities.

The user's login in the "Auto-Quality Matrix (AQM)" application with the specific user and password can be done in real time, on any PC, tablet, or smartphone. Figure 7.4 shows the Main Panel of the "Auto-Quality Matrix (AQM)" application. Within the menu in the Main Panel, there is the possibility for any person within the organization to enter a notified nonconformity. Within this "Main Panel" menu, one can find the option to choose the type of nonconformity that one wants to add. The Main Panel includes the option to select the "Material Flow" or "Information Flow" nonconformity from the "Add nonconformities" section.

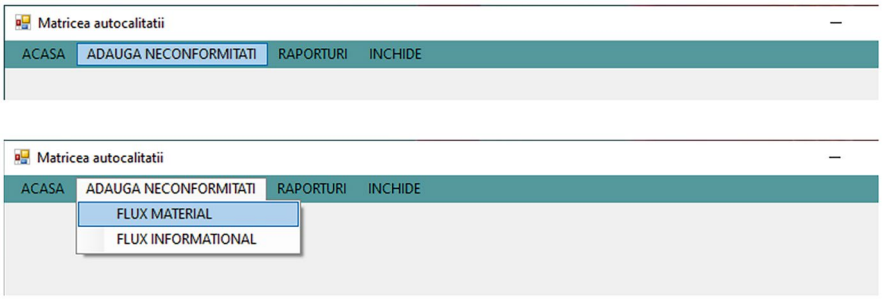

Fig. 7.4 Menu bar for adding nonconformities. (*Source:* Print screen from software)

In the case of a "Material Flow" problem identification, in the open window there are several sections that provide information about the person reporting the nonconformity and details about the place where it was reported and its description. This data refers to the identification data, namely: Name and surname, Shift, Where the nonconformity was found (select the department/area reporting the nonconformity), Product name, Batch, estimate of the place where the nonconformity occurred, Description of the nonconformity, A picture of the nonconformity, Quantity on nonconforming goods, Remarks with additional information about the nonconformity, Measures taken for remediation or actions to be taken, a suggestion for Who remediates? (With the department that can remediate the problem) and the Date it was reported.

If the "External Client" field is chosen, the name of the client will also be filled in that field. If the "External Supplier" field is chosen, the name of the supplier will also be filled in the field to the right. Figure 7.5 shows the window for entering the information related to the identified material flow nonconformity and the related evidence in the "Auto-Quality Matrix (AQM)" application.

Each information about the reported nonconformity has a section where more data can be entered regarding the nonconformity for easy identification. The insertion of the picture with the nonconformity is done by pressing the "choose the file" button. The description of the problem is also done through option buttons, respectively, checkboxes to simplify data entry (Nonconformity detected and Who remediates it?), but also text areas (boxes). These are useful for multi-choice forms and when the user has only one good choice.

After completing the form, the entered data is validated. Confirmation of the addition in the "Auto-Quality Matrix (AQM)" application is done by pressing the "ADD DATA" button. Later, to be able to track the added nonconformity, from the menu bar of the application, it is necessary to access the "Reports"—"Material Flow" box. Figure 7.6 shows the menu bar with access to "Reports" related to material flow, respectively, to information flow.

After accessing "Reports"—"Material Flow," the window shown in Fig. 7.7 opens, which centralizes the nonconformities reported so far.

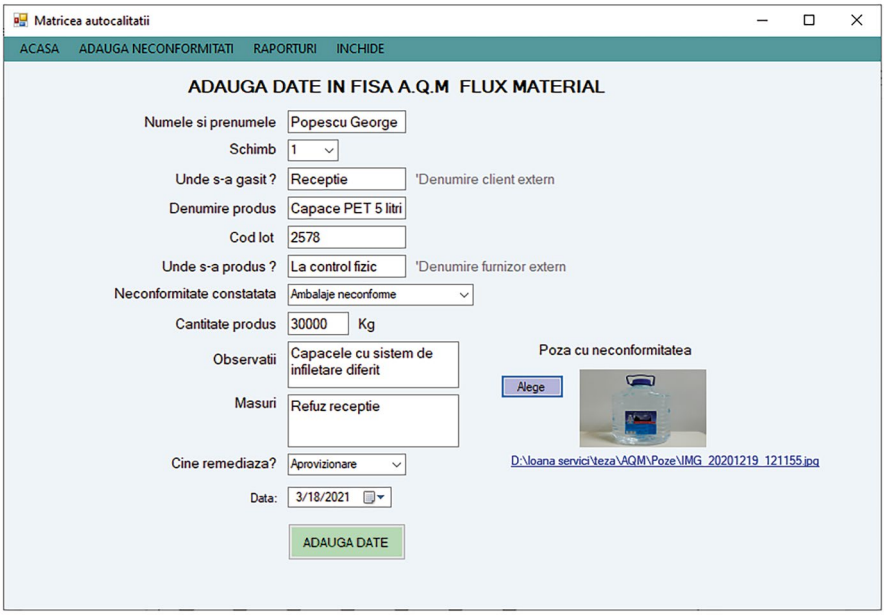

Fig. 7.5 Completed window for adding a nonconformity on material flow. (*Source:* Print screen from software)

Fig. 7.6 Menu bar for viewing nonconformities. (*Source:* Print screen from software)

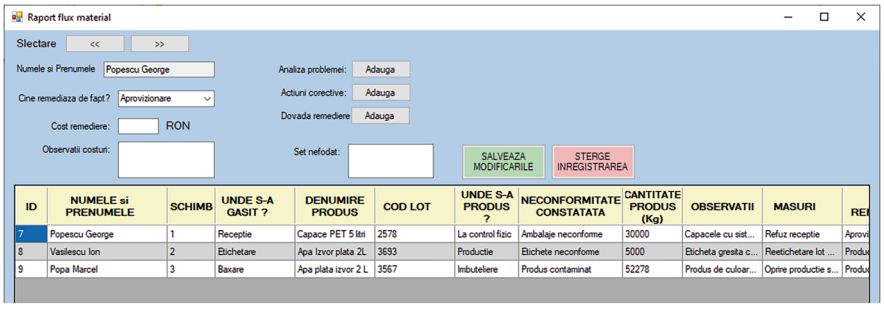

Fig. 7.7 Window for viewing reported nonconformities. (*Source:* Print screen from software)

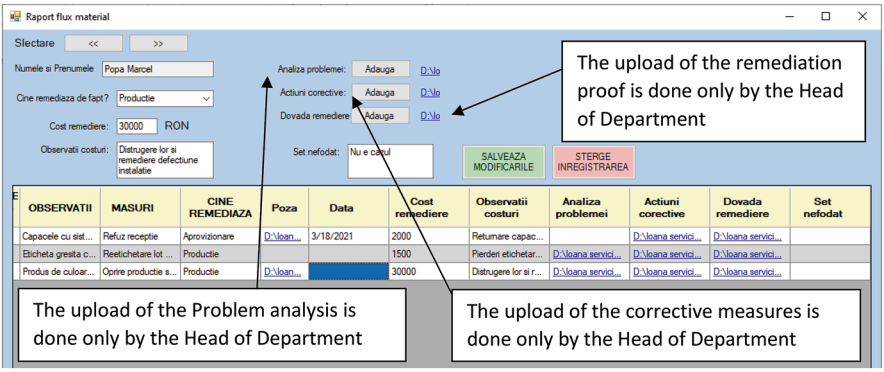

Fig. 7.8 Window for adding proof of nonconformity analysis. (*Source:* Print screen from software)

The next step is to upload the "Problem Analysis" into the application to remediate and avoid the recurrence of the reported nonconformity. After finding the solution, the corrective action is loaded into the "Auto-Quality Matrix (AQM)" application, as in Fig. 7.8. This is done by means of the command buttons in the window. Clicking on such a button leads to the immediate execution of the command associated with the button, i.e., the loading of the document or the text related to the action.

The resolution of reported nonconformities can be done by department heads by accessing the documents uploaded under the headings "Problem analysis" and "Corrective action." Afterwards, the proof of nonconformity remediation is uploaded onto the "Auto-Quality Matrix (AQM)" application, and the nonconformity remediation is visualized.

The operators of the departments that produce or identify nonconformities during activities are responsible for recording the identified nonconformity in the "Auto-Quality Matrix (AQM)" application. Heads of departments can monitor reported nonconformities in real time from any PC, tablet, and smartphone, and they are responsible for taking the problem to their department and for analyzing it. Following the analysis, two situations can result:

- The nonconformity was generated in their own department, and in this case, they take it over for remediation. In this case, they check "Accept" in the "CHOOSE" column and then press the "Accept/Request another responsible" button.
- The nonconformity was not actually generated by their department, and in this case, they request the AQM application to change the person responsible for the remediation, specifying the department that they consider having generated the nonconformity. In this case, they will choose "Request new responsible person" from the "CHOOSE" column and then press the "Accept/Request another responsible person" button. The final decision regarding the change of the person responsible for remediation can be taken in the general meetings.

For nonconformities that the heads of department have accepted as occurring in their own departments, the department manager will have to calculate a cost of remediation. Two situations can be encountered:

– Remediation of the nonconformity is done in own departments, without involving other departments and without asking for help from outside the department. In this case, the cost of fixing the nonconformity is internal and will not be deducted from the department's budget but will be calculated and entered in the AQM application.
– Remediation of the nonconformity is done with the involvement of other departments or they ask other departments to remediate the generated nonconformity. In this case, the head of the department who will take over the remedy of the nonconformity will calculate a cost of the remediation according to the formula "remedial cost = actual cost with the remedy × 2.25." The coefficient of 2.25 represents the time allocated to current tasks (1) + the time allocated to remedy the nonconformity (1) + penalty 0.25. After calculating the cost of the remediation, the head of department will upload it to AQM, by completing the columns "At what cost?" and "Cost Observations," where they will upload a copy of the document justifying the cost of the remediation (preferably a non-editable file: pdf, jpeg, etc.).

If a head of department has accepted that its own department generated the nonconformity, it will have the responsibility of remediating it, and it will establish measures so that the reported nonconformity will not occur in the future. In this case, the cost of remediating the nonconformity will be deducted from the department's budget (representing a hypothetical expense), but the same amount will be added (representing a hypothetical income) to the budget of the department that will carry out the remediation.

For this, the head of department will determine the main causes that generated the nonconformity following an analysis that may involve more elaborate techniques ("5 x why" or "Cause effect method"). For each identified cause, the head of department will take remedial measures ("corrections") and, subsequently, measures ("corrective actions") to stop the recurrence of the respective nonconformity. Proof of nonconformity remediation (corrections, corrective actions, training minutes, problem analysis) will be sent to the AQM application administrator for upload.

The "Main Panel" menu bar of the application also includes a user section where any member of the organization can access the "Add Nonconformities" window of the "Information Flow." A suitable "Information Flow" represents help for the staff from the organizational departments in the way of carrying out their tasks, namely, a coherent flow of documents.

Within the open window, nonconformities observed in the multitude of elements, situations, material and information flows, and circuits, the use of internal procedures, the use of information storage, and transfer means can be notified, all with the aim of achieving the objectives of the organization.

First, the person notifying the "Information Flow" problem determines whether it is unidirectional or bidirectional (Fig. 7.9). Information flow dysfunctions can

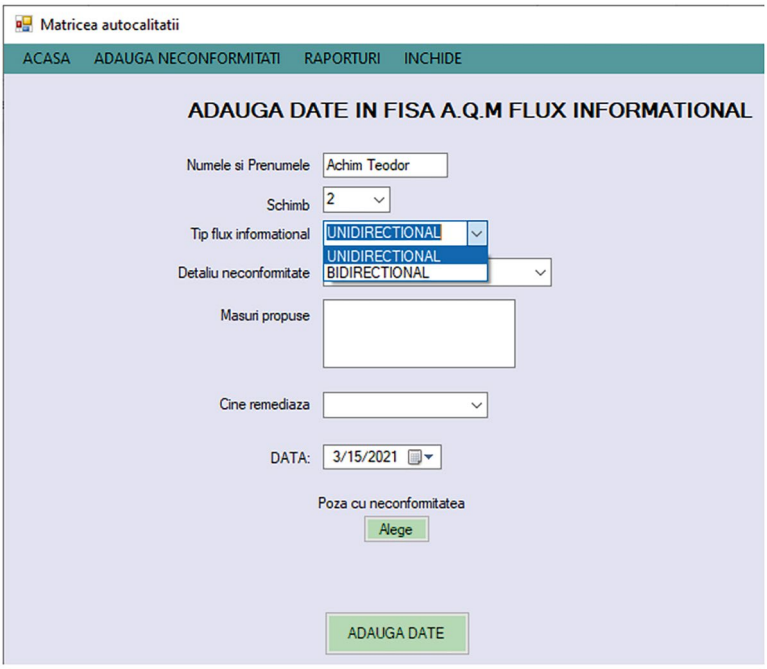

Fig. 7.9 The window related to the introduction of the nonconformity on the information flow. (*Source:* Print screen from software)

exist from the point of view of unidirectional communication, usually from management to employees, where information is blocked in terms of feedback.

The efficiency of the bidirectional information flow requires good communication among the structures of the organization, respectively, with the partner organizations. It is most often necessary for an information exchange to exist to and from departments and management of the organization, respectively, with the external partners.

In the "Information Flow" menu of the software for reporting and managing nonconformities, the following will be mentioned: "Name and surname," "Shift," "Type of information flow," "Details about the nonconformity," "Proposed measures," "Who remediates," and, if possible, a picture of the nonconformity.

Nonconformity detail requires choosing from the options in the check box. This link helps to classify/structure the nonconformities, respectively, to simplify data entry (Fig. 7.10).

After completing the window, the entered data is validated. Confirmation of the addition in the "Auto-Quality Matrix (AQM)" application is done by pressing the "ADD DATA" button. Later, the added nonconformity can be traced in "Reports"—"Information Flow," as in Fig. 7.11.

As in the case of material flow nonconformities, from the "Reports"—"Information Flow" window, one continues with the "Problem Analysis" performed

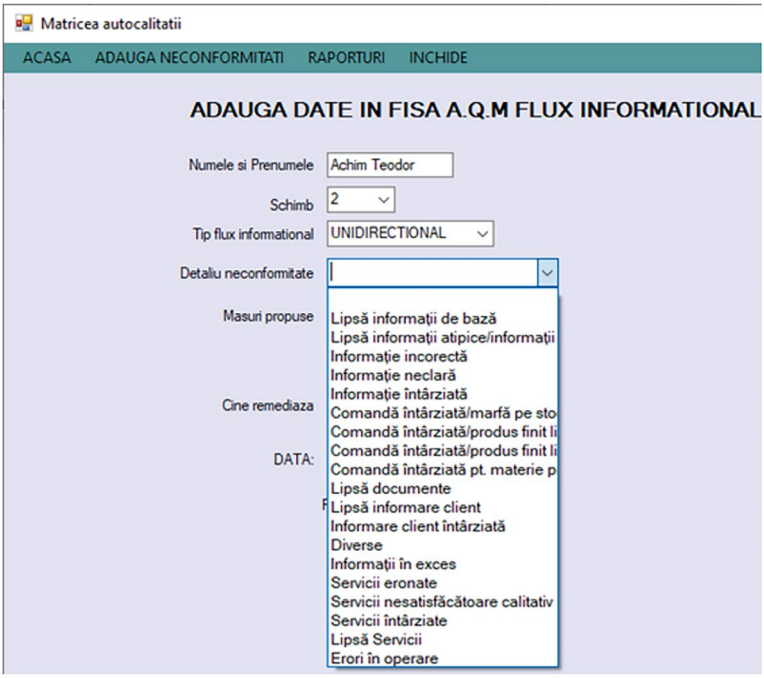

Fig. 7.10 Nonconformity check box window on the information flow. (*Source:* Print screen from software)

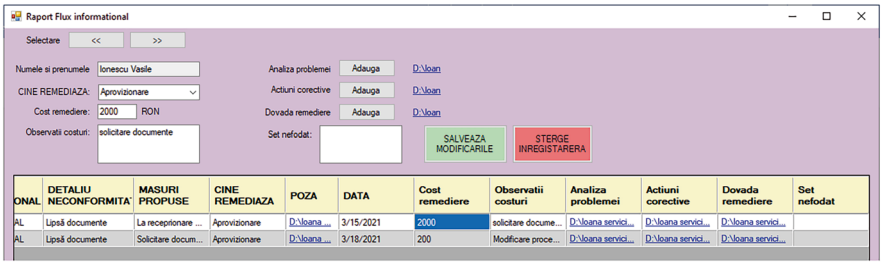

Fig. 7.11 Window for visualizing and adding reported information flow nonconformities. (*Source:* Print screen from software)

to remediate and avoid the recurrence of the nonconformity. Later, after finding the solution, the corrective actions and proof of nonconformity remediation are uploaded (Fig. 7.11).

The AQM application administrator is the person designated to manage this application being responsible for verifying the correctness of the information uploaded into the AQM and for checking if the data is complete, if the

nonconformities are correctly attributed to the generating departments, and if the reported nonconformities are founded. The administrator will also operate the rigorous changes, so that all the information in the AQM is complete and correct, notifying the heads of departments of any delay in completing the information at AQM.

The nonconformities reported to the Material Flow AQM are presented in the general meeting, where they are analyzed together with the heads of departments. The nonconformities reported to Information Flux AQM are presented and analyzed during the bimonthly meeting of Information Flux AQM. Daily, the AQM application is checked against reported nonconformities if they have been remediated and if proof of remediation (Problem Analysis, Corrective Action, and proof of remediation report) has been uploaded into AQM. The limitations of this tool are related to the possibility of reporting nonconformities only by employees, not by external control authorities.

7.4 Conclusions

The scientific context of the topic addressed was based on an important element, namely, the consideration of disruptive factors, with direct or indirect action, that can destabilize the activity in an organization, thus leading to the impossibility of achieving the proposed objectives. Inevitably, nonconformities appear, which must be managed through identification, assessment, and treatment/elimination, along with the establishment of control/monitoring measures, to limit the consequences and actions in the short or long term. The development of systems and applications in the field of nonconformity management is necessary, due to the rapid development of techniques and programming languages, with the possibility of retrieval, modern graphic presentation, and adequate data processing. The use of specific digitized tools allows the collection, resolution, and memorization of reported nonconformities as well as the creation of their database. The proposed solutions to remediate the nonconformities can be a starting point in the case of their subsequent reporting. Starting from the hypothesis of the need to prevent and signal nonconformity at the point of detection, the Auto-Quality Matrix was designed and developed on the material flow (Gemba Productive AQM) and on the information flow (Gemba Services AQM), as well as a graphic interface, using the Visual Basic programming language (VB). The proposed application is approached as a tool for dealing with nonconformities, for solving the identified problems on the material or information flow. The results of the study highlight the validation of the created tool, through the possibility of monitoring the maintenance of the equipment related to the technological flow, in the sector of machinery, equipment, and work facilities existing in the production unit. On the other hand, the Auto-Quality Matrix helps to visualize the quality level of each section/service/department separately and its evolution. It helps to identify nonconformities as close as possible to the section/area/department that generates them, as well as to raise staff awareness on the Auto-Quality concept. Practically, it involves dealing with nonconformities directly in GEMBA (a Japanese

term meaning "at the source") together with the staff involved. In perspective, it is necessary to test the new tool in other production units; to realize the customization of the AQM application (Auto-Quality Matrix), for other industries; and, finally, to create a commercial software product. On the other hand, for the assessment and treatment of nonconformities related to food safety, within the specialized organizations, it is proposed to develop a methodology, by applying the Ishikawa diagrams combined with the improved HACCP system. As novelty, the methodology will include the consideration of additional risks in the analysis stage, such as allergens, fraud/sabotage, Kosher/Halal, Covid-19, GMOs (genetically modified organisms), irradiation, HPA (polycyclic aromatic hydrocarbons), ASF (African swine fever), etc., depending on the specifics of the technological process. The methodology will follow the identification of nonconformities as well as the causes for each operation in the technological flow, based on the analysis of the 5M (man, method, material, machine, medium). For each nonconformity and cause that will be identified, the impact of the nonconformity will be established according to the severity and probability of occurrence. The final effect will be defined as a risk class, being established as the arithmetic mean of the resulting impact on each stage of the process, based on risks and causes. The limitations of this tool are related to the possibility of reporting nonconformities only by employees, not by external control authorities.

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Chapter 8
Effective Urban Management for Green Energy Transition: An Approach Based on the Scientific Research Analysis

Claudiu Cicea and Corina Marinescu

Abstract The aim of this paper is to analyse knowledge related to urban management developed to sustain the energy transition, to reveal their relationship under three structures: conceptual, intellectual, and social. In this regard, the authors synthesized key aspects that define both concepts, through an extensive literature review, establishing in this way the first items for conducting a search within the Web of Science database. The configuration of the search is described within the research methodology, which is a fundamentally sound section of the paper, well-structured, and detailed. The most relevant findings that may be emphasized are related to the following: revealed low degree of international collaboration for authors, distribution of scientific productivity that follows Lotka's law, and "management" as an emerging theme, while "energy", "transitions", and "cities" as motor themes. The knowledge structure analysis also generates keywords and thematic maps, a dendrogram, a co-citation network, and a country collaboration map, all revealing insights of the research in question. The contribution brought by this paper consists in providing useful information for future review studies using bibliographic data, in shaping a view of the urban management—energy transition nexus in the scientific world and in creating a path for further studying their dynamic.

8.1 Introduction

Energy, water, sanitation, transport, and telecommunication systems represent basic utility networks which are able to support urban areas in terms of operation and, furthermore, performance (Monstadt, 2007). However, they also generate profound transformations of cities as a response to societal and environmental struggles of the century and to sustainability issues. In present, cities are said to be home for more than half of the world's population, space for diverse economic activities, large

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consumers of energy (given that they are responsible for around 65% of the global energy use (Metropolis Energy Governance, 2019)), places suffocated by traffic jams, and great polluters as they generate more than 75% of greenhouse gas (GHG) emissions (Verdeil, 2018). At the same time, they transform themselves into cities of the future, the so-called smart cities, taking serious action and setting ambitious goals in an urban response to sustainable development (Cicea et al., 2019a). In this regard, Bulkeley (2019) argued that cities are seen as "both part of the problem and part of the solution" to tackle all these issues concerning climate change, sustainability, and environmental and energy challenges. Within this paper, we will focus on a great energy challenge, which is also called the Great transition: the energy transition. The energy transition envisages transformations in the energy sector (to use cleaner and greener energy sources, to obtain low-carbon systems) that may be enabled and accelerated by cities through effective, innovative urban management. Accordingly, the objective of this paper is to analyse the research on urban management in the energy field, to highlight key aspects regarding their relationship in the scientific world. With no doubt, they are strongly connected in the real world, as Rutherford and Coutard (2014) explain, influencing each other as follows: the energy transition process is achieved through a set of urban processes and practices, while the urban experience and condition are reshaped by energy transformation. As both concepts "urban management" and "energy transitions" include a multitude of social, economic, and environmental aspects, the need to find the most suitable words to refer to them arises. An extensive literature review is useful in providing definitions and facilitates query words selection, which is essential in starting the analysis, as explained in the methods section. The present paper has a well setup research methodology (widely described in the related section), followed by a conclusive presentation of the results and a relevant discussion upon them.

The novelty of the research is based on two major aspects. On the one hand, it is the research methodology, which involves for the first-time research chanelled in two main directions. The first one envisages the descriptive analysis of the scientific field, based on articles, authors, and sources (journals). This analysis is particularly useful to observe the evolution over time of scientific production. The second one refers to the analysis of the knowledge structures in the field, broken down into conceptual structure analysis (which considers the study of keywords and other elements of semantics, as well as the relationship between them), intellectual structure (which refers to how an author or a journal influences a certain field, based on the citations it records), and social structure (which takes into account the way collaborating authors, institutions, or countries contribute to scientific production). On the other hand, the second aspect that reflects the novelty of the undertaken research refers to the use of certain software in the development of the research. In the literature, there are numerous articles that perform bibliometric analyses based on the use of specific software such as VOSviewer (Baffoe, 2020; Yu et al., 2020; Xie et al., 2020; Diaconeasa et al., 2019; van Eck & Waltman, 2017), Bibliometrix (Rodriguez-Soler et al., 2020), Citespace (Zhang et al., 2020; Wang et al., 2020), HistCite (Buchanan & Shen, 2020; Bommann & Marx, 2012). Moreover, there are articles that use several software simultaneously: VOSviewer and Citespace (Cicea &

Marinescu, 2020; Meng et al., 2020), HistCite and VOSviewer (Shah et al., 2020), or Citespace and Histcite (Zhao et al., 2020; Tho et al., 2017). From this point of view, it is for the first time when VOSviewer and Biblioshiny are simultaneously used in research to structure the knowledge related to urban management for the energy transition.

8.2 Literature Review

The concept of urban management is said to be born in the 1980s from the older term of "local government" and characteristic to "city administration" (Bačlija, 2011). In their trials to define urban management, researchers reveal a lack of convergence which rises from the multiple facets the concept has, according to several disciplines, such as architecture, urbanism, political science, sociology, management itself (Bačlija, 2011), and circular economy (Lehmann, 2018).

A growing body of research points out that urban management overlaps with "urban governance" (Lange, 2010; Ioan-Franc et al., 2015) and in a more obtuse assent with "urban development" (Werna, 1995), while others resume the concepts' content to one of its functions from a total of five (planning, organizing, staffing, leading, and controlling (Chakrabarty, 2001)), namely, "urban planning" (Chen, 2009; Engin et al., 2020). It is also worth noting that more recent debates show urban management is better implemented and more considered by smart cities' administrations (Yigitcanlar, 2015; Weiss et al., 2015; Mukhametov, 2019), in sustainable cities' operations (Shoja & Heidari, 2015), in green cities' functioning (Mingaleva et al., 2020), or in achieving ecological cities (Van Dijk, 2008; Vasishth, 2015).

Furthermore, urban management targets transportation, housing, waste, energy, and land use issues that generate environmental and social problems (Vardoulakis & Kinney, 2019). The urgent need for removing all existing threats or simply diminishing their harmful effect has led to the development of concepts such as waste management (Marinescu et al., 2015), energy management, transportation management, water management (Weber et al., 2018), and land use management (Zeng et al., 2017). For the envisaged theme of this paper, the energy issue will be treated, and from all related aspects, one with a major role in combating global climate effects will be addressed: the transition to a new energy era. An energy transition refers to "a change in the primary form of energy consumption of a given society" (Cutler & Morris, 2015). The current energy transition refers to a series of processes meant to ensure the shifting to clean energy (green or renewable energy) within an endangered and unstable global climate. Even if it has received the name of the Great transition, the new energy transition is relatively slow, as well as its predecessors (from biomass to coal and then to oil and gas). Grubler et al. (1999) explain that even though there are factors slowing down the entire process, such as market size, technological interrelatedness, and infrastructure needs, there are also enablers speeding it up (for instance, the pre-existence of niche markets, the competitive

advantage in terms of performance and costs (Grubler, 2012)). Likewise, sharing common characteristics with previous historical transitions, the current energy transition may be governed by the same laws, as mentioned in Bashmakov (2007): (1) the law of stable long-term energy costs to income ratio, (2) the law of improving energy quality, (3) the law of growing energy productivity. In the same time, there are country-specific energy transitions, with particular aims and motivations, in accordance with each country's motivation and efforts.

After separately presenting the two concepts of interest for the present paper, "urban management" and "energy transitions," another general notion, combining the two of them, can be mentioned: "urban energy transition". It refers to cities' involvement in energy transition, to their role in driving energy sustainability, and to their commitment in achieving environmental, energy, and climate targets. In this regard, cities will need four types of initiatives to meet established targets: for transportation, related to services, for buildings, and for urban consumption (Monitor Deloitte, 2019). According to the Deloitte's study, in Spanish cities, for instance, transport and buildings account for the highest proportion of emissions, so great attention should be paid to implementing energy sustainability initiatives. Among the multitude of initiatives, the following ones are increasingly important measures: the shift to public transport and non-motorized or greener vehicles to the detriment of personal, older, and more polluting cars; smart mobility (carsharing and carpooling); appliances, lighting, windows, and heating devices replacements; and various forms of buildings insulation to prevent energy loses through walls, roofs, and floors. Few examples of cities that have successfully implemented sustainable energy policies will be further presented (Cicea et al., 2019a; World Economic Forum, 2021; Vukovic & Nekhorosheva, 2022): Vilnius in Lithuania has 40% of the city's heating needs covered by using bioenergy; Lodz in Poland managed to develop electricity and heat supply network, serving 60% of the city's inhabitants; Malmo in Sweden plans to run entirely on renewables by 2030, currently operating on an around 50%; a strategy to reach carbon neutrality by 2050 has been developed and implemented in Seoul, Republic of Korea; municipal operations in Adelaide, Australia, run entirely on green energy for almost 3 years now; Vienna, in Austria, uses as its main energy source the waste incinerators; Stockholm in Sweden is considered a pioneer city when it comes to renewable energy in transportation, and this is because buses operate on biogas, biodiesel. and bioethanol; in Toronto, Canada, in the last 20 years a huge work has been done for installing renewable energy systems in all city buildings. To relate the two major concepts, the present paper will develop a methodology based on bibliometric analysis and knowledge structure analysis. Widely used for studying bibliographic data, the bibliometric analysis conducted with a fitting software can provide so many insights related to a topic of interest from a specific field (Verbeek et al., 2002; Cuccurullo et al., 2016; Fusco et al., 2020). As related to urban areas, the variety of scientific documents describes the complexity of the field and at the same time the multitude of research pathways a bibliometric analysis creates. Among them, there are some quite remarkable, debating special subjects, such as the rural-urban nexus in the academic field (Baffoe, 2020), or neighbourhood sustainability (Grazieschi et al., 2020),

optimization techniques applied to the design and the refurbishment of low-energy buildings (Longo et al., 2019), and crowdsourcing techniques applied in urban planning (Liao et al., 2019).

8.3 Methods

The analysis within this manuscript was conducted following the research methodology described below, containing four major phases:

1. Search configuration.
2. Data management.
3. Software tools selection.
4. Bibliometric analysis.

The research methodology was designed based on a structure found in Janik et al. (2020) and on science mapping on knowledge structures as developed by Aria and Cuccurullo (2017) and is represented in Fig. 8.1.

The first three mentioned phases will be discussed here, within the methodology section, as they refer to particular steps to follow in order to start the analysis, while the fourth phase will be included in Results and Discussion section as it refers to the

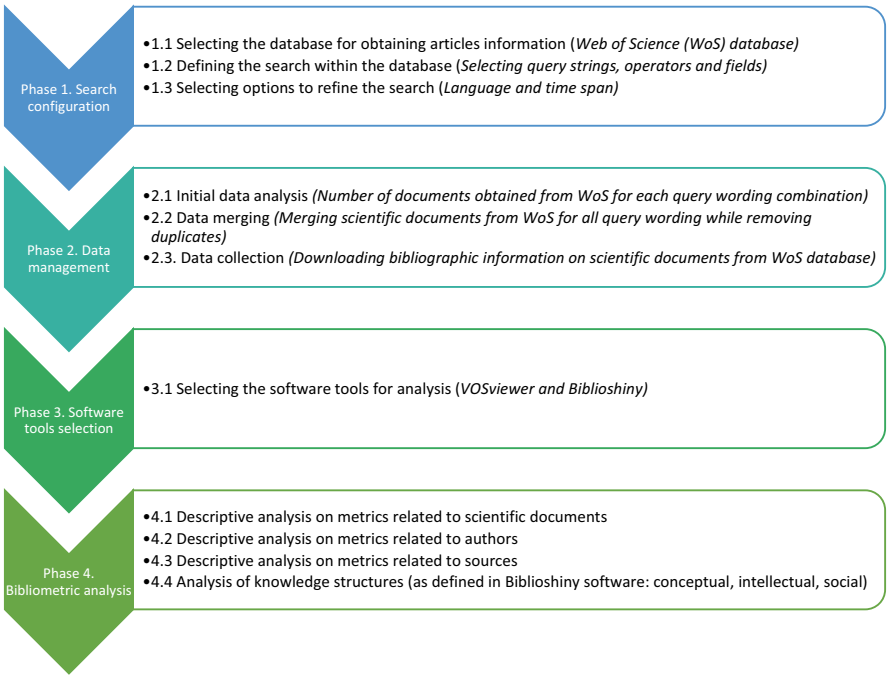

Fig. 8.1 Research methodology. (*Source*: Authors)

analysis itself and provides salient findings on research related to urban management as applied for supporting energy transitions.

The Search configuration phase starts with the first step referring to *database selection*. We selected Web of Science (WoS) database to obtain bibliographic information from several reasons: (1) WoS database falls into the Multidisciplinary category of databases; (2) as Aria and Cuccurullo explain, WoS database is preferable to others in terms of data quality; (3) it serves as standard data set for journals' impact metrics found in the Journal Citation Reports; and (4) it represents "the world's most trusted citation index for scientific and scholarly research" (Web of Science Group, 2020).

The second step called *Defining the search within the database* includes the selection of query strings, operators, and fields which might appear as an easy task to complete, but in fact it is one of the most significant. The great importance of it comes from the authors' ability of choosing the most suitable words to capture salient features for "urban management" in relation to the "energy transitions". Based on the detailed explanations and examples given in the literature review section, the authors decided to use the following wording query:

1. For "urban management": "urban management", "urban planning", "urban development", "urban governance", "smart city", "smart cities", "sustainable city", "sustainable cities", "green city", "green cities".
2. For "energy transitions": "energy transition", "energy transitions", "renewable energy", "energy efficiency", "energy savings", "decarbonisation", "energy sector", "electricity", "heat and power".

In the third step, referring to *refining the search*, authors used a filter referring to Language, so only English-written articles were chosen.

The Data management phase not only provides information on the number of documents gathered after the search (Table 8.1) but also facilitates data merging (with removing duplicates) and allows for bibliographic data downloading (necessary for a further step in the bibliometric analysis).

Table 8.1 shows all existing combinations for search, according to the location of query strings (in Title or in Topic). Words related to urban theme were searched only in titles in order to set the priority field of study, while words related to energy were set to look up for in topic, to determine the subfield of the search. After saving all searches' results, combining them and removing duplicates while merging, a total of 1437 documents were obtained. The documents' bibliographic records were saved in BibTeX file format.

The third phase refers to selecting the software tools which will help us conduct the bibliometric analysis. After searching among a series of science mapping tools (Cobo et al., 2011; Moral-Muñoz et al., 2020), we took into consideration all advantages of using a particular tool (with offered types of analyses and indicators) and main characteristics of it (data source, operative system, user interface). The exploration of available options determined us to choose two software tools:

Table 8.1 Number of documents obtained after query wording combination search

Query string	"Urban management"	"Urban planning"	"Urban development"	"Urban governance"	"Smart city" OR "smart cities"	"Sustainable city" OR "sustainable cities"	"Green city" OR "green cities"
"Energy transition" OR "energy transitions"	12	38	38	30	40	47	8
"Renewable energy"	27	76	53	6	129	58	26
"Energy efficiency"	55	68	85	10	276	88	60
"Energy saving" OR "Energy savings"	43	38	49	0	90	41	38
"Decarbonisation"	2	3	2	1	6	3	1
"Energy sector"	30	56	52	12	71	53	21
"Electricity"	39	57	50	5	143	33	16
"Heat and power"	8	20	12	1	21	13	3

Source: Authors with WoS database

1. *VOSViewer* (VOS standing for "visualization of similarities"), developed recently by Waltman, Van Eck, and Noyons (2010) in Leiden University from the Netherlands.
2. *Biblioshiny* developed by Aria and Cuccurullo (2017) in University of Naples Federico II and University of Campania's Luigi Vanvitelli (Italy) as a web-based application, part of a larger package of tools.

This last step is a prerequisite for starting and conducting the bibliometric analysis, which will be further presented and discussed.

8.4 Results and Discussion

8.4.1 Descriptive Analysis on Metrics Related to Scientific Documents

The 1437 documents are covering a period of 40 years, from 1981 to 2020, and are comprised of a total of 844 sources (journals, proceedings, books, book chapters, reviews, editorial material), with a load of 45,517 references. About 49% of them are articles and around 42% are proceeding papers. Data reveal an increase in the scientific production, starting with 2007, then a jump from 2012 till the level of 2017, describing a turning point in the interest of researchers regarding urban management and energy transitions. This growing interest may be attributed to the fact that in many parts of the world, organizations such as European Commission or the US Congress decided to enact and enforce through legislations, at local, regional, and federal levels, a series of energy policies and directives, meant to adapt the production, distribution, and consumption of different energy sources in accordance with the present social, economic, and environmental needs.

8.4.2 Descriptive Analysis on Metrics Related to Authors

Among all 3962 authors contributing to this collection of articles, 180 of them are authors of single-authored documents (the total number of single-authored documents is 195). The Collaboration Index computed as the total number of authors of multi-authored articles divided to the total number of multi-authored articles (Secinaro et al., 2020) is of 3.05, a value which describes high collaborative practices. However, this relatively high degree of collaboration does not trigger a high productivity (meaning great collaborations do not have a high frequency of publications). Lotka's law explained by Aria and Cuccurullo (2017) referring to authors' productivity states that "as the number of articles published increases, authors producing that many publications become less frequent". As can be seen in Fig. 8.2, the dotted line represents the theoretical distribution of scientific productivity through

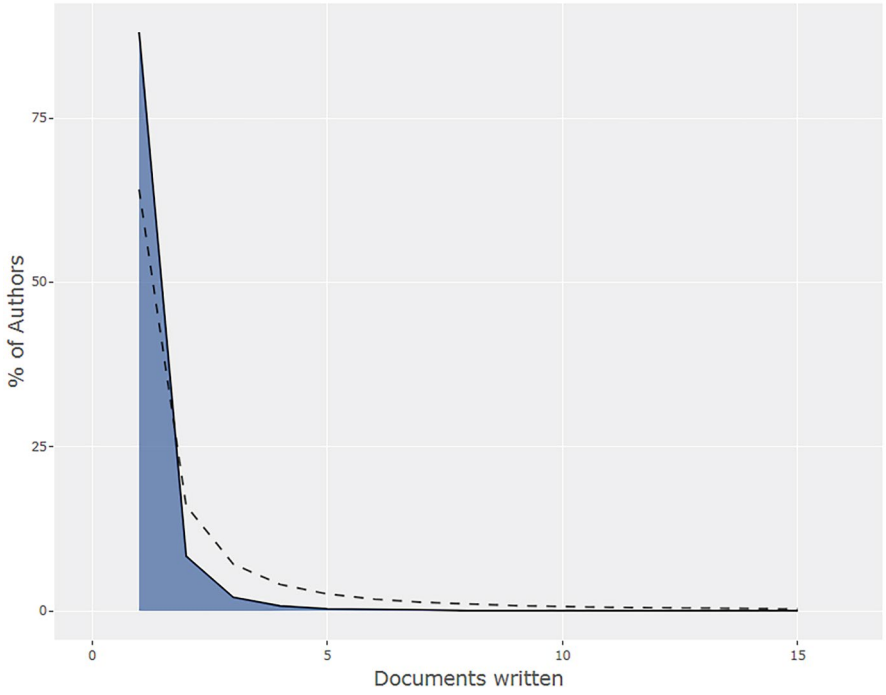

Fig. 8.2 The frequency distribution of scientific productivity. (*Source*: Authors with Biblioshiny)

Lotka's law, while plotted with blue is the distribution associated to our collection of 1437 articles. About 88% of the authors contributed with only 1 article to the collection (a level higher even than the theoretical distribution given by the Lotka's law), a fact which propels them in the category of "occasional" authors. In the right-hand side of the representation, one can observe the distribution of authors who have published at least 5 documents (a total of 34 authors, out of which 1 author with 15 documents) describes them as core authors.

The authors with the highest number of documents are identified as the most relevant on the researched theme, contributing to the collection of documents used within this paper. However, relevance of authors may be highlighted not only by scientific production but also by scientific impact, but this is an aspect to be discussed within a further section of this paper.

The first reported author as being more relevant in terms of publications (15 documents) has one of the longest timelines along with the third reported author (with 11 documents). The representation in Fig. 8.3 tries also to highlight aspects regarding the time spread of publications (by drawing in accordance the specific number of bubbles), the annual number of publications (suggestively shown by the size of the bubbles), and the received citations (emphasized through an intense blue colour).

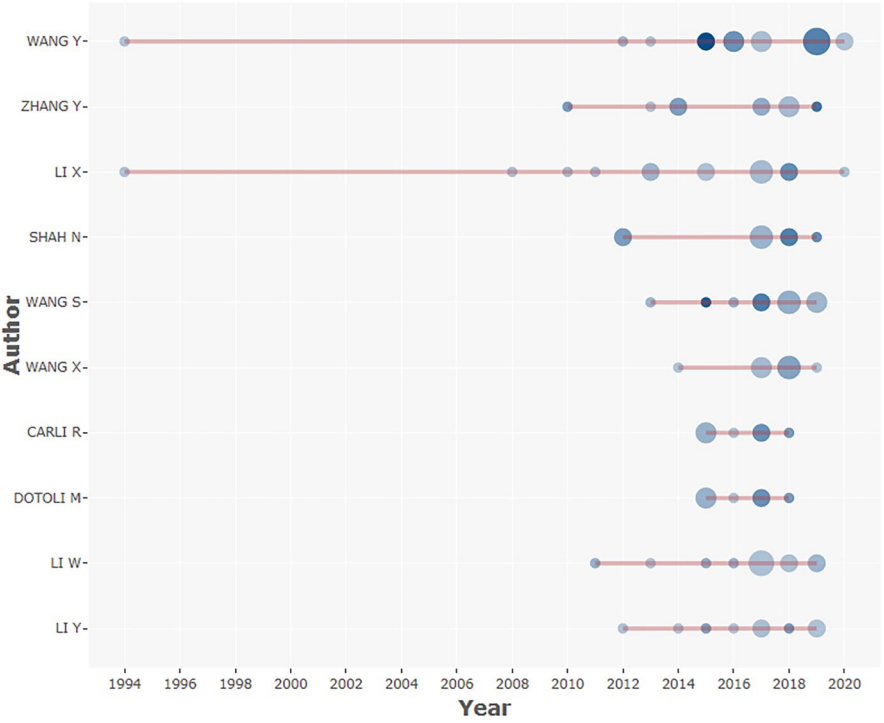

Fig. 8.3 Top 10 most relevant authors and their publications over the time. (*Source*: Authors with Biblioshiny)

The first 20 countries with the highest number of publications (with single corresponding author or multiple authors among whom one is the corresponding author) are displayed in Fig. 8.4. MCP stands for multiple country publications and refers to documents having at least one co-author from a different country, while SCP is the acronym for single-country publications, referring to documents with co-authors from the same country. For instance, ranked first, China gathers 65 documents as MCP and 179 documents as SCP. This ranking not only shows which country contributes the most to the collection but also gives a hint on international collaboration, through MCP and SCP measurements. Even if China is a great contributor, it is characterized by low international collaboration, given by a reduced MCP ratio, of only 26.64%.

8.4.3 Descriptive Analysis on Metrics Related to Sources

According to results, top 10 most relevant sources are all journals, accounting together for 18% of the total scientific papers of the sample. The relevance is understood in terms of number of published papers. The ranking contains mainly journals

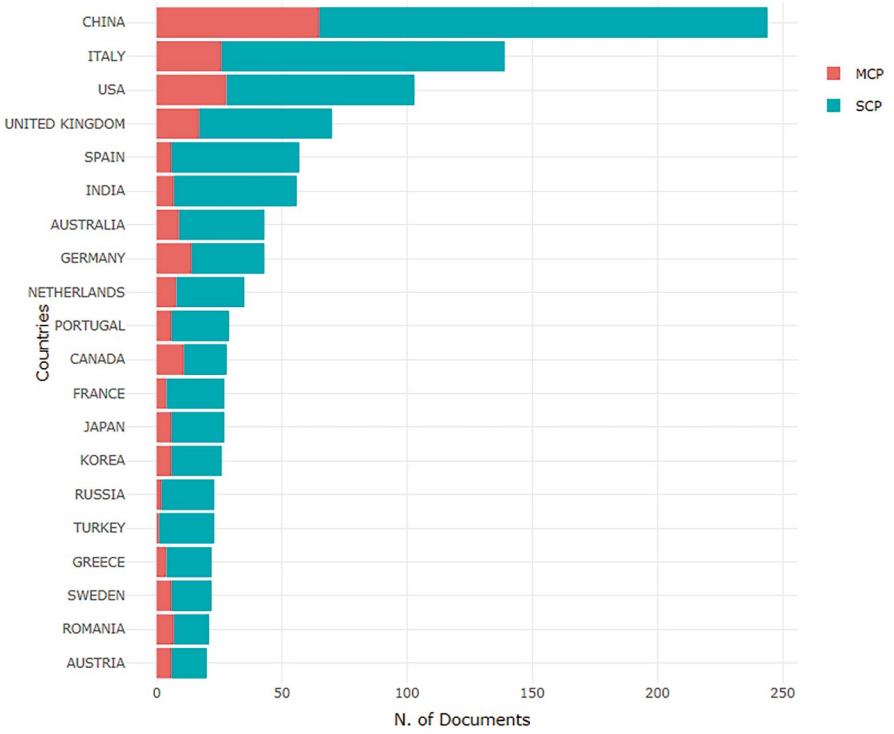

Fig. 8.4 Corresponding author's country. (*Source*: Authors with Biblioshiny)

belonging to the energy field. Journal of Cleaner Production is ranked first with the highest number of scientific papers published on the theme of interest.

The second ranking refers to the most local-cited sources, and by local, one should understand the analysed sample of documents. Local-cited sources are sources cited by documents included in the reference lists of all documents. This is the main reason why it is said this indicator measures the impact of a source. Thus, the most cited source is Energy Policy, receiving citations from 1072 documents.

So, the Biblioshiny app offers a unique way of measuring the impact of a source: by searching it among collection's references. The classic approach is based on measuring impact of a source by looking to citations received by articles (within the whole database) belonging to the source. One can observe that the most relevant sources are mainly also in the second ranking of most local-cited sources, so the authors admit that the expectation was to find one of those journals with documents receiving the largest number of citations over time in the entire database. This expectation was totally correct as Table 8.2 explains it. The most cited source is Journal of Cleaner Production which received a total of 840 citations for its all 49 contributions to the collection, since 2010.

What is more and prolific is that there are two journals reported by the application as having singular contributions to the collection which managed to gather a

Table 8.2 Most relevant sources versus most local-cited sources

Most relevant sources	Articles	Top	Articles	Most local-cited sources
Journal of Cleaner Production	49	1	1072	Energy Policy
Sustainability	40	2	969	Renewable & Sustainable Energy Review
Sustainable Cities and Society	32	3	864	Applied Energy
Applied Energy	28	4	840	Journal of Cleaner Production
Renewable & Sustainable Energy Reviews	25	5	774	Energy
Energy	21	6	738	Energy and Buildings
Energy Policy	20	7	317	Cities
Energies	18	8	313	Building and Environment
IEEE Access	14	9	296	Renewable Energy
Energy and Buildings	13	10	282	IEEE T Smart Grid

Source: Authors with Biblioshiny

Table 8.3 Top 10 most global cited sources

Rank	Source	Number of documents	Citations	Publication year—start	The highest number of citations received by a document
1	Journal of Cleaner Production	49	874	2010	97
2	Renewable & Sustainable Energy Reviews	25	747	2006	169
3	Sustainable Cities and Society	32	709	2011	208
4	Applied Energy	28	637	2003	120
5	Energy Policy	20	559	2008	123
6	Habitat International	10	408	2005	199
7	Energy and Buildings	13	379	2005	73
8	Journal of Urban Economics	1	339	2010	339
9	IBM Journal of Research and Development	1	314	2010	314
10	Energy	21	301	1996	66

Source: Authors with Biblioshiny

huge number of citations (as seen in Table 8.3). The first one is Journal of Urban Economics with its singular contribution to the collection, a 20-year-old article of Glaeser and Kahn (2010). The second one is IBM Journal of Research and Development which has a similar number of citations for an article published as well in 2010, of authors Harrison et al. (2010).

These results are remarkably in terms of citations received in the same length of time by the first ranked journal and by these two with only one article each. The situation imposes a closer look to the articles in case, to find their contributions to the literature and, in accordance, the reasons they gathered researchers' attention.

Within the first article, authors Glaeser and Kahn (2010) conduct a comprehensive analysis for establishing the amount of carbon dioxide emissions generated by different sectors (public transportation, home heating, household electricity) in various urban areas of the USA. After measuring emissions, authors develop a comparison among central cities and suburbs for 48 metropolitan areas and estimate the carbon dioxide emissions' impact in several major cities. They stress out the idea that spatial distribution of population affects the emissions production and that appropriate carbon taxes could influence individuals' decisions on residential locations (because of strong negative association between emissions and land use regulations).

The second article of Harrison et al. (2010) explores three fundamental principles or founding descriptive concepts for "Smarter Cities": instrumented, interconnected, and intelligent. Taking them into consideration means obtaining operational efficiency and enhancing quality of life through city services transformation and available infrastructure and resources usage.

8.4.4 Analysis of Knowledge Structures

Structuring knowledge related to a specific theme or field in the scientific world is based on science mapping, which allows the analysis of the literature from a statistical point of view. Aria and Cuccurullo (2017) refer to three types of knowledge structures which envisage the main themes and trends (the conceptual structure), the influence authors (or sources) exert on the scientific community (the intellectual structure), and the interaction among authors or sources or countries (the social structure).

8.4.4.1 The Conceptual Structure

The conceptual structure refers to trying to identify the main topics by looking for keywords that appear together in different scientific documents and by using either a network approach or a factorial approach. To reveal topics related to urban management for energy transitions, but also the connections among them, the network approach is the most appropriate one.

The graph in Fig. 8.5 contains all keywords (meaning both the keywords selected by authors to better define the content of their work and Keywords Plus), and it is seen as a map. Within the map, keywords (the nodes) are assigned to specific clusters (marked by different colours) by the VOS clustering technique (Cicea et al., 2019b).

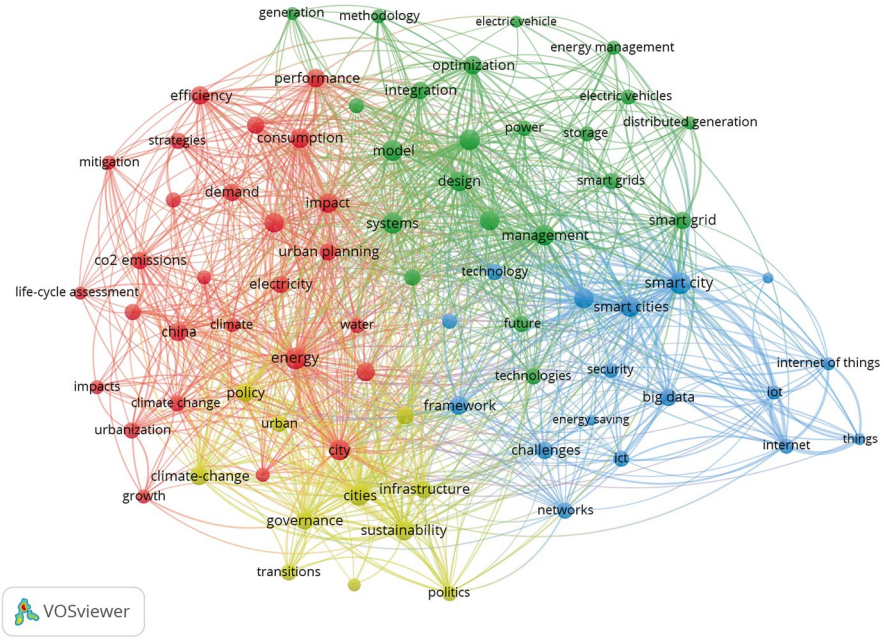

Fig. 8.5 Keywords map. (*Source*: Authors with VOSviewer)

There are 77 keywords within the network graph from Fig. 8.5, sharing a common characteristic: the number of occurrences of at least 15 (appearing in at least 15 documents). The size of a node corresponds to the number of links created with other keywords. The higher the links' number, the larger the size of a node. The highest total link strength, given by all links created by a keyword, is associated to "energy" (408 links as reported by VOSviewer). This keyword is followed by similar powerful words: "smart city" (with 383 total link strength), cities (368 created links), and management (with 302).

If we examine the components of all four clusters, one can observe that keywords from the blue cluster tend to substantiate a defining characteristic of the "smart city" concept, namely, innovation in terms of information and communication technology. Moreover, within the most crowded cluster, a keyword referring to a country appears ("China"), in fact the only country encountered as a keyword. It is to be noted that the cluster also includes a method for analysing the environmental impact of a product, process, or service ("life-cycle assessment") and a concept aiming to define the relationship among human activities developed within an urban area and the natural environment ("urban metabolism").

As compared to the network approach, the factorial approach has the advantage of reducing data dimension and representing it by using specific methods (correspondence analysis, multiple correspondence analysis, multidimensional scaling). One result of such approach is the topic dendrogram (as can be seen in Fig. 8.6). It

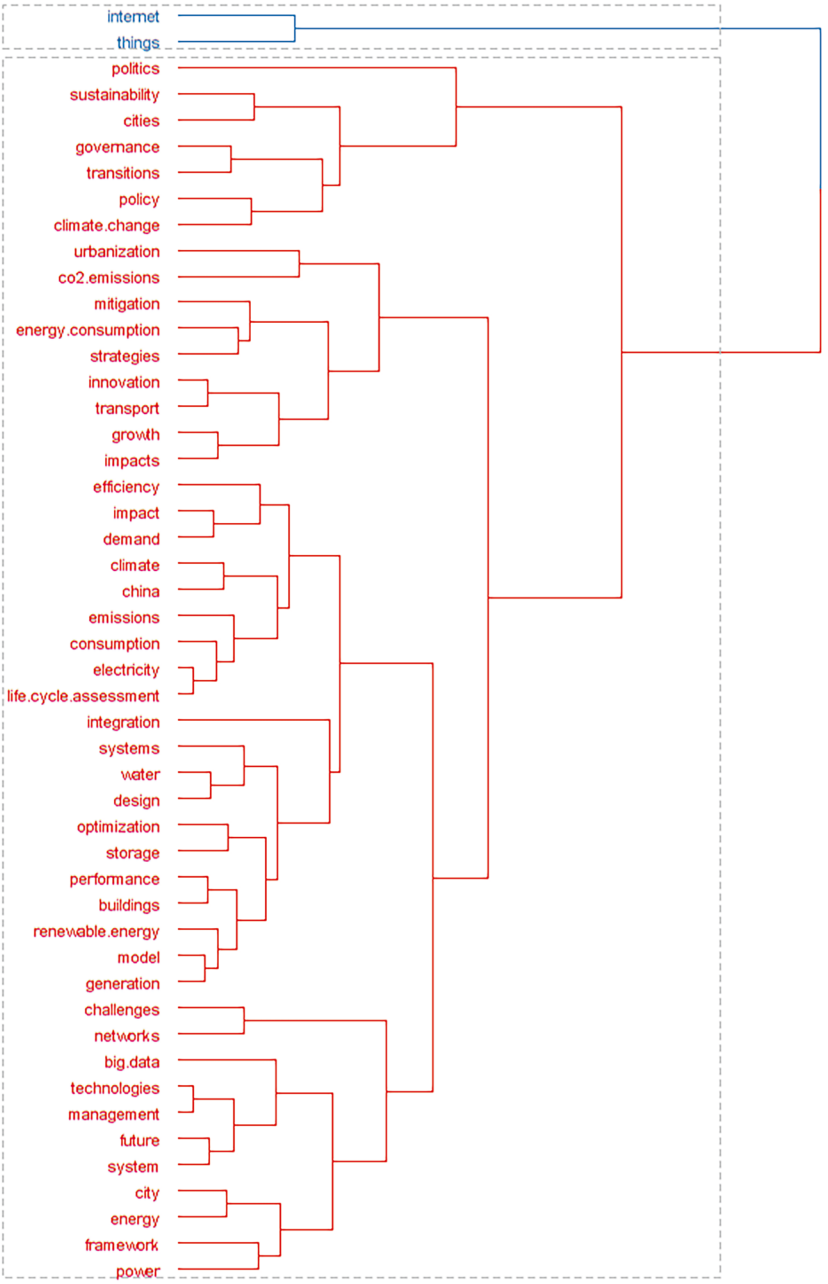

Fig. 8.6 Topic dendrogram. (*Source*: Authors with Biblioshiny)

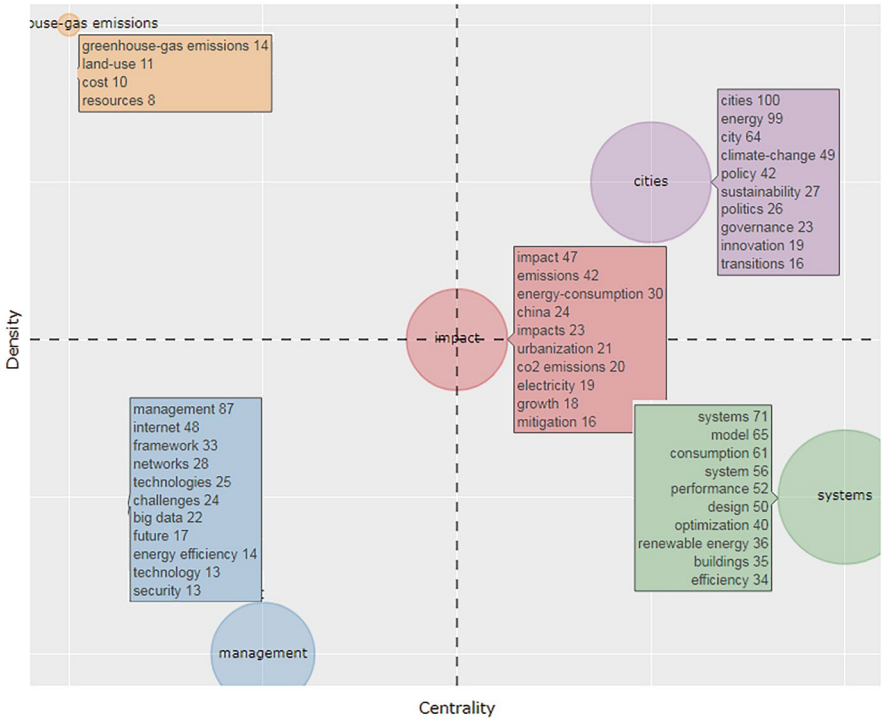

Fig. 8.7 Thematic map. (*Source*: Authors with Biblioshiny)

contains two types of items grouped after the distance between them in distant and similar items. For instance, words such as "integration", "systems", "water", "design", "optimization", "performance", "buildings", "renewable energy", "model", and "generation" are similar words explaining a similar topic, while "Internet" and "things" from the "Internet of things" collocation are distant words, referring to a different topic.

The third type of approach is the one combining both network and factorial analyses. The result can be represented as a thematic map (for instance in Fig. 8.7), designed as a graphic with two dimensions (centrality and density). Density gives an idea of the degree of subject's development, while centrality focuses on the importance of the subject within the research field (Cobo et al., 2011). Within the thematic map, each bubble is named after the keyword with the highest frequency in that group. The size of the bubbles is correlated with the keyword's frequency.

The quadrants that appeared in the thematic map refer to the following: (Sott et al., 2020; Cobo et al., 2012; Lopez-Robles et al., 2019; Xie et al., 2020):

(a) "Motor themes" (with both high centrality and density) in Q1. The themes in this quadrant grouped under the "cities" bubble are also called the mainstream themes.

(b) "Basic and transversal themes" (with high centrality and low density) in Q2, comprising topics relevant for the analysed field, but which are insufficiently developed.
(c) "Emerging or declining themes" in terms of researcher's interest (both low centrality and density) in Q3, comprises "management" group of themes.
(d) "Highly developed and isolated themes" (with low centrality and high density) comprising mature topics, but with low importance for the analysed field. The "greenhouse gas emissions" theme behaves as a niche (well developed, but of interest for a specific category of researchers).

Going further with the analysis for each quadrant, one can see that among the motor themes are found keywords such as "city", "cities", "energy", "climate change", "policy", "sustainability", "governance", and "politics". While the first three are not surprising in terms of frequency (they are query string of the search in WoS database), the last five keywords are determinants in the investigated field, with a major influence on the performance of urban management for energy transition. Moreover, within the second quadrant, one can find those topics that are relevant for the analysed field, but that are insufficiently developed, expressed by keywords such as "systems", "performance", "design", "model", "optimization", and "efficiency".

What is more, the central position in Fig. 8.7 (at the intersection of the centrality and density axes) of the "Impact" group of themes highly characterizes the ecological side (environmental protection) of the researched field. This group comprises keywords such as "impact", "emissions", "energy consumption", "CO2 emissions" (with obvious connections to environmental protection), but also "China" (the world's largest polluter). Through its central position, "Impact" group expresses a constant average level of interest for experts.

8.4.4.2 The Intellectual Structure

The second type of analysis as a part of knowledge structures refers to the intellectual class, which aims to depict how an author's work or a publication's documents may influence the scientific community. By studying such a network, one can observe authors inspiring other authors' work (by a co-citation network) or journals or other kind of sources with strong mutual relations and core sources for a specific field (they are co-cited in a third source because they contain conceptually similar documents).

Within Fig. 8.8, relationships among cited references that have been co-cited by other publications may be observed. Each node represents a cited reference source, while the branches refer to the number of co-cited relations among sources.

Each source is represented in yellow, intense, in accordance with the number of items (here citations) in that point. The density visualization illustrates the main co-cited sources. The minimum number of citations of a source was set to 150, so 31 sources meet the threshold. The closer the nodes are to each other, the more

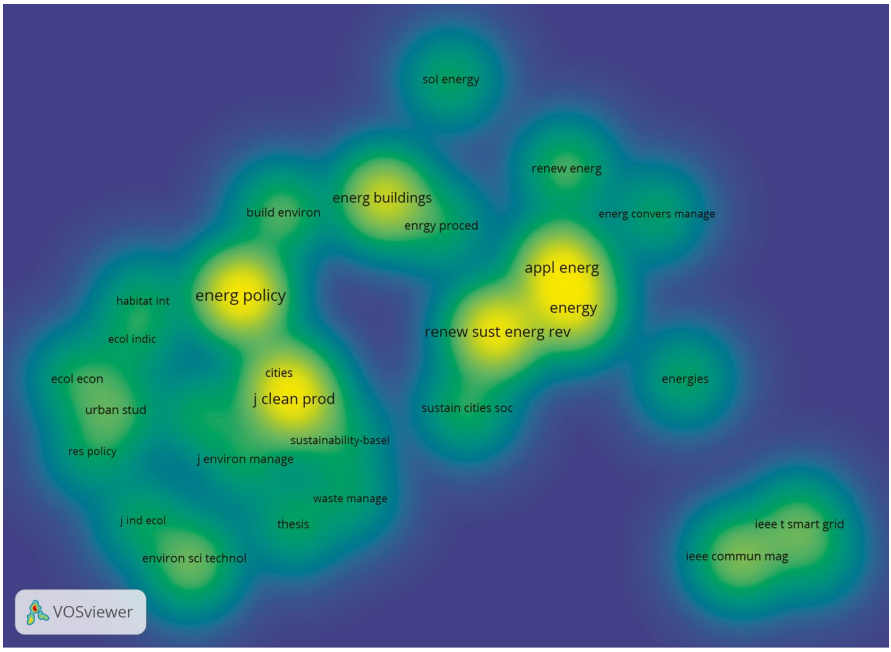

Fig. 8.8 Co-citation network of reference sources (density visualization). (*Source*: Authors with Biblioshiny)

co-citations appeared between them. So, applied energy, Energy and Renewable, and sustainable energy review are all in the same cluster and with the highest link strength (the highest number of total co-citations). Journal of cleaner production joins the same cluster with Energy Policy and Cities, while IEEE Transactions on Smart Grid connect with IEEE Communications Magazine in a more distant cluster.

8.4.4.3 The Social Structure

This third analysis reveals how authors or countries or institutions relate one other. Within this paper, we selected to present the country collaboration network, designed within a worldwide map, in Fig. 8.9.

The country collaboration map exposes through its colour intensity the number of written and published documents of each country, so the darker the map, the higher the number of documents. (the greatest contributor is China, followed by Italy, the USA, and the UK, as previously shown in the paper).

The branches connecting countries are thicker or thinner, according to the number of collaborations. In this regard, the most influent country is China, as it manages to establish the first three greatest collaborations: China-USA (with 36 encountered collaborations), China-UK (with 16), and China-Japan (with 12). China is followed by two European countries: Italy and Romania with 12

Fig. 8.9 Country collaboration map. (*Source*: Authors with Biblioshiny)

collaborations and then the USA and the UK with 10. Africa and South America stand out with small communities of authors interested in the field of urban management and energy transition, counting 13 collaborations for South Africa, 23 for Brazil, and 10 for Colombia. In a way, this concern of the authors to study the connections between the two concepts ("urban management" and "energy transition") is natural for these three major geographical areas (China, European Union, and the USA), as long as they occupy the first three places in a ranking of developed economies, high energy consumers, both in urban and rural areas.

8.5 Conclusions

Implementing sustainable energy policies in urban areas has as many benefits as they have challenges. It is believed that acceptability of such policies depends on the extent in which individuals have benefits from the policy (Zawadzki et al., 2022). Environmental, economic, and social benefits of implementing them, felt both at a microeconomic level and at a macroeconomic level, are varied and support a more sustainable future within cities. Financing and supporting urban energy policies means shaping transportation, buildings, land use, and so many other areas from the cities.

Considering that urban establishments have many challenges to face in the coming years (among them the growing number of city inhabitants and of their needs for

basic utilities, energy, in particular), response actions in the form of effective and innovative urban management are expected to lighten transformations of urban activities for a greener and less polluted future. For this reason, the present paper is focusing on energy transitions as supported by cities through urban management, but from a scientific literature view. Many researchers contributed with publications to this field for a very long time, governed by a series of varied motivations. To find specificity of the written and published literature on this theme and establish the link between urban management and energy transition, the developed analysis is based on bibliometrics. A bibliometric analysis can reveal insights on science, researchers, sources (journals, books, proceedings) through a systematic review process comprising descriptive analysis on metrics related to them and also through the analysis of three knowledge structures (conceptual, intellectual, and social).

The studied collection of documents obtained from WoS database contains mainly articles and proceedings papers and covers 40 years of scientific literature. An impressive increase of those research documents was found within the last 10 years and was shaped by authors affiliated to institutions and organizations from China, Italy, the USA, and the UK.

The descriptive analysis on metrics related to sources revealed more interesting findings. Three distinct approaches were used for measuring the impact of a source: (1) by looking at the number of documents of a source (the most relevant sources were found), (2) by looking at the whole database at citations received by articles belonging to a source (the most global cited sources were found), and (3) by looking at citations received by searching a source among collection's references (the most local-cited sources were found).

In the second part of the study, the knowledge structures analysis provided also a plenitude of visual elements, presenting results related to concepts, authors, sources, and countries, namely, a keyword map and a co-citation network of reference sources (in density visualization), both obtained by using VOSViewer software, and a topic dendrogram, a thematic map, and a country collaboration map, all obtained by using Biblioshiny app from Bibliometrix package.

Among the noteworthy results, which are not few at all, the following stand out: (1) evidence provided by the thematic map supporting "energy" and "transitions" is among the motor themes while "management" is an emerging theme related to this field; (2) the most relevant source is Journal of cleaner production, the most local-cited source is Energy Policy, while the article reporting the highest number of citations received by a document within the collection belongs to Journal of Urban Economics; and (3) the increasing interest and turning points in the research regarding urban management and energy transitions may have a correspondent in or may be triggered by the energy policies and directives released by competent organizations.

Even though authors made efforts to establish a detailed and comprehensive methodology in order to conduct the analysis, the study has some limitations. First, the documents collection was based only on WoS database, as a merge with other databases' documents is the most difficult task to complete. Still, WoS database is widely recognized for data quality and preferable for all reasons already mentioned

within the methodology section. Second, the word query may by enriched with other terms related to urban management and energy transition, in order to include even more documents able to provide new relations. Third, the selection of software tools to enable the bibliometric analysis is critical phase, as each tool has its own configuration and capability of providing results. For instance, in our conception and for this particular theme, VOSViewer provided a more accurate keywords map including clusters than Biblioshiny. Finally, authors did not focus at all on the trend of the relationship between urban management and energy, but the fact that may constitute a future research direction.

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Chapter 9
Importance of Teamwork and Analysis of Employer-Employee Relationship in the COVID-19 Context

Suzana Demyen

Abstract In the context where there is increasingly intense discussion about the need for a humanistic approach or about people-oriented management, teamwork is more and more encouraged in all aspects of professional life. The coronavirus pandemic has hampered the activity of organisations, raising challenges not thought of until then, but it has also created the opportunity to bring to light individual qualities and team features which had not been exploited before. The question can be asked—how has the period of the last 2 years affected the performance of the teams and how has the employee-employer relationship evolved? Can we talk about a real partnership? We find, from empirical data, that the relationship between the two parties has generally improved, and employees' mental health has begun to represent a priority for employers, who have begun to pay more attention to the needs of individuals working in the organisations they coordinate. The success or failure of an organisation depends to a great extent on how business leaders understand how to manage the work of teams, but also how employees initiate responsible behaviour towards the performance of individual and group tasks.

9.1 Introduction

Teamwork has acquired new valences in terms of importance over the last few years. In organisations, there is an increasing emphasis on this aspect: the ability to work effectively in teams of various formats is even becoming a skill required by employers from candidates for a position; it is also being specified in the employment ads as essential for obtaining good results at work. Also, teamwork is one of the cross competences that is emphasized since school years, training in this sense being pursued through various group activities in which pupils or students are

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expected to contribute to a common project, also through creativity and communication, other skills that have become essential for the progress of the organisation.

But in what way is teamwork encouraged at the level of organisations and, above all, how was it promoted during such a difficult period for all entities as was the period of the coronavirus pandemic? In the context in which many authors believe that, under the influence of COVID-19 (OECD, 2020), work experience has changed for "the vast majority of employees" (Collings et al., 2021), could we say, perhaps, that in the business environment a real partnership between employer and employees was formed during this time? In the literature, we find numerous works addressing the topic of partnership between the two parties, but confusion can often occur regarding the terminology used. Thus, we note that the notion of "partnership" is regarded by certain authors (Saif et al., 2013) through the lens of relations with unions within organisations, while other specialists understand by this term the close nature of the relationship between employer and employee, to deepen the connection between the two parties, respectively, in order to make work more efficient. If in the first case we find a "hard", much more formal approach, the second direction mentioned rather has in mind an analysis of the behaviour of the two parties, along with the relationship between them, although both approaches, at a closer look, converge towards the same goal, that is establishing a better cooperation between employers and employees, improving the results obtained by workers, minimizing or avoiding conflicts, streamlining the communication process within the organisation, and ensuring an optimal framework for work, from the point of view of both the work equipment and the general atmosphere.

The Institute for Employment Studies defines the notion of "partnership" through the prism of characteristics such as reciprocity, plurality, mutual respect, and trust, along with level of involvement (Reilly, 2001), while recognizing the difficulty of delimiting this concept through the means of specialized terminology. It also summarizes ideas about the meaning of the term as being "a set of principles and practices rather than theory based on custom".

We will further refer to the concept of "partnership" from the perspective of the relationship of reciprocity, help, and win-win that can be established between employer and employee in an organisation, in the idea that the employer is the one who creates the general framework necessary to achieve performance and the employee contributes to sustaining this partnership by their increased level of involvement and dedication.

9.2 Review of the Literature

In the context in which we carry out our activity in a society based on knowledge and which is, at the same time, an increasingly digitized society, at the level of any organisation a series of expectations are formulated from the people trained in its internal activities, in in this case from employees. In this sense, hard skills are essential, but in a future economy, soft skills become vital.

In this respect, the LinkedIn platform (according to www.linkedin.com/pulse/most-valuable-soft-skills-work-get-hired-by-linkedin-news/) presents a top of the most requested soft skills on the labour market, mentioning communication (highlighted also by www.michaelpage.co.uk/advice/management-advice/development-and-retention/importance-good-communication-workplace), time and project management, innovation, cultural sensitivity, responsibility and initiative, critical thinking, ability to remain visible even during virtual work, resilience and integrity, efficiency, and, last but not least, teamwork and relationship management.

Most of these are also comprised in a list prepared by Forbes magazine (according to www.forbes.com/sites/forbescoachescouncil/2019/01/22/15-soft-skills-you-need-to-succeed-when-entering-the-workforce/) regarding essential soft skills for the jobs of the future, given that artificial intelligence is increasingly becoming an integral part of organisational life. Furthermore, others such as empathy, emotional intelligence, creativity, flexibility, cultural intelligence, and continuous learning are also considered important, highlighting, again, the ability to work effectively in sometimes even multicultural teams.

Given that teamwork can be a challenge for some employees, the last 3 years' period has subjected to additional testing the solidity and, at the same time, the solidarity of the teams within the organisations, as they were forced by the circumstances to adapt to the new working conditions (PWC, 2022), to ensure the continuity of the activity.

"In the business world, crises are inevitable" (Hamouche, 2021). We may state, however, that the coronavirus pandemic has also subjected the business environment to additional tests, not only the sanitary one (Fernandes et al., 2021), bringing to light, at the same time, both problems not identified until that moment and characteristics or qualities perhaps ignored until then. We are therefore talking about a very dynamic period and dominated by uncertainty (Deloitte, 2020), in which the most vulnerable companies are the small firms (IFC, 2021).

Technology is already omnipresent in businesses and everyday life, manifesting "transformative effects" on work (CIPD, 2020), in conditions where, to achieve team performance, it is necessary to ensure both human and non-human resources (Tedla, 2016). The transfer of the activity, partially or totally, to the online environment, determined, among other things, the formation of virtual teams (Stanca & Tarbujaru, 2021) or the remodelling of old teams by adapting to the new dimensions, an activity facilitated by technological evolution, but made difficult in some places, at least in the beginning, due to the lack, in the case of some organisations, of the appropriate endowments. In this sense, Hamouche (2021) believes that the essential role that technology played during the pandemic should be translated into an element of motivating managers to identify some methods of integrating digital into the life of the organisation, adapting it to its needs. IBM (2020) also proposes a big picture for the "post-pandemic business landscape" through the following considerations:

- Digital transformation is not only about technology.
- One of the essential elements for achieving success is represented by human resources.

– The strategy formulated at the enterprise level is endangered in terms of results by the stress generated by the pandemic.
– The business environment will exhibit both failure and success, but ecosystems and partnerships will be built in this sense.
– Achieving positive results is conditioned by the efficiency of the health sector (World Health Organization, 2021)

Also, significant challenges arose regarding the efficiency of communication, the ability to correlate activities in the virtual environment, but also regarding the ability to acquire a series of technical knowledge quickly and correctly, which until then had not similarly justified its need, all in the conditions where the known reality was "turned upside down" (Caligiuri et al., 2020) by the earthquake represented by COVID-19. The mentioned period was therefore translated into a learning resource, "communication and interaction", contributing to the discovery and sharing of "team spirit" (Stratone et al., 2022), in the conditions where the managers of the organisations were forced in some cases to even manage a crisis in this sense (Chen, 2021).

We must not ignore the idea that, at least for a part of the employees, as also highlighted in the reports prepared by Deloitte (2020), the coronavirus pandemic has determined a rethinking of professional life, in the spirit of resilience, adaptability, and the integration of artificial intelligence in everyday actions (Fig. 9.1).

Some authors (Madero Gomez et al., 2020, in Scherling & Lind, 2021) also describe a series of reactions arising from mutations regarding work during the pandemic, namely, "stress, anger, annoyance, fear, frustration", in direct relation with the activities performed in the virtual medium, the pandemic period representing a constant source of concern and trials. Other sources in the specialized literature (Godfree et al., 2021) express a concern regarding the impact on the psychological well-being and mental health of employees, both in the short and long term. Tannenbaum Scott et al. (2021) mention in this regard a series of so-called stressors determined by COVID-19, which can affect to a greater or lesser extent the performance of teams. They are classified into four broad categories, as follows:

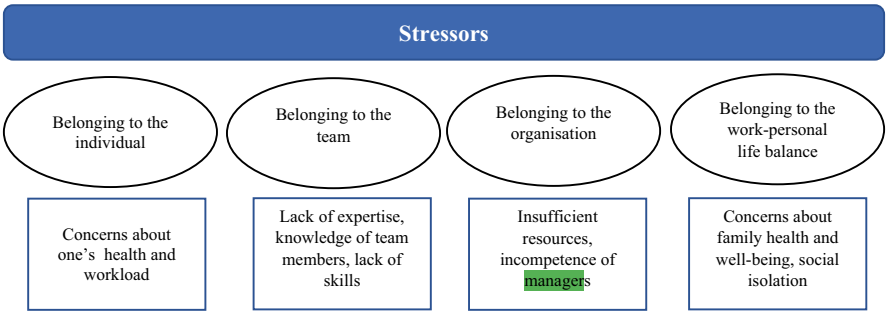

Fig. 9.1 Stressors. (*Source*: Adapted from Tannenbaum Scott et al., 2021)

On the other hand, other authors (Canibano et al., 2020) state that, in a society where we are always connected through technology, the quality of work can decline precisely because of physical distance and on the background of informal interactions. As a result, the International Labour Organisation (ILO, 2020) points out that it is necessary to consider several aspects regarding the organisation of work, so that safety and health regulations regarding employees are observed, also ensuring access to the necessary trainings, in order to maintain the expected level of performance (Tănase & Tănase, 2019). The role of management is therefore amplified.

Consequently, we argue that to counterbalance all these negative perceptions of the period, how organisations reacted to change mattered greatly. In this respect, a major role was played by the level of employer's endeavours in the role of supplier of the right equipment, training/improvement courses for human resources, as well as the binder of the organisation and mediator of the parties involved in the work processes. At the same time, the previously existing "goodwill and camaraderie" (Emmett, Schrah, Schrimper, & Wood, 2020) mattered a lot in obtaining effective responses to the challenges that arose in the context of COVID-19.

From the perspective of the results, Stanca and Tarbujaru (2021) believe that virtual teams can also be very productive (Kozlowski Steve & Ilgen, 2006), even surpassing classic teams in certain situations, the COVID-19 pandemic bringing important lessons, beyond all the negative aspects it implied (Godfree et al., 2021). Regardless of how the teams functioned during the pandemic, we cannot deny the fact that the psychological well-being of employees has been put in the balance, naturally raising the question of whether and to what extent employers have shown concern regarding this aspect, respectively, if and to what extent they tried to ensure employees the optimal level of psychological comfort, in order to make their work more efficient.

A study prepared by the Centre for Responsible Business (Forbes et al., 2020) states that, under the conditions of the coronavirus pandemic, "working from home has led to isolation", breaking the connection between employees. However, to support the staff within the organisation, 36.3% of the British managers oriented themselves towards offering specialized advice to the employees within the organisations, this concern for the well-being of those under their command entering the daily life of the coordinated entities. Thus, even after the pandemic, 55.7% of managers declare they are preoccupied to provide their employees with the best possible professional life.

9.3 Research Methodology

To study the work performance of teams in the context of the pandemic, namely, the quality of the employer-employee relationship, we conducted research aimed at identifying the main coordinates that can determine the achievement of better results among teams at the organisational level. The working tool used in this sense was the questionnaire, applied to a segment of employees. The main objective of the study

Table 9.1 Objectives of the study

Item	Criterion	Corresponding objective	Corresponding question
I1	General employee-employer relationship	Identifying the dynamics of the relationship between the employer and employees in the context of the pandemic, i.e. studying the degree of their concern regarding ensuring the balance between professional and private life	Q1, Q2, Q3, Q4
I2	Employees' motivation	Studying employers' concerns regarding the stimulation of employees during the pandemic, in order to achieve a higher level of performance	Q5, Q6, Q7
		Studying the effectiveness of teamwork and the relationship between employees	Q8, Q9, Q10, Q13
		Studying the degree of concern of the organisation's management regarding the valorisation of human resources	Q11, Q12
I3	Focus on digitization	Identifying the degree of concern of the organisation regarding investments in technology and infrastructure to facilitate telework, respectively improving the digital skills of team members	Q14, Q15, Q16
I4	Employees' adaptability team and organisation	Analysing the organisation's concerns regarding the team's adaptation to new working methods, in the context of the pandemic	Q17, Q18, Q19
		Identifying the professional retraining needs of team members in the context of the pandemic	Q20, Q21, Q22
		Analysing team members' willingness to accept relocation as a career strategy	Q23, Q24, Q25, Q26

Source: Authors

was intended to analyse the respondents' perception of the importance of teamwork and the employer-employee relationship, but some secondary research directions and subordinate objectives were also proposed. To support the achievement of these objectives, four categories of study items were structured, to which the questions in the questionnaire correspond, as shown in Table 9.1.

The list of 26 content questions was completed by questions meant to identify the respondents, in number of five, the sample of respondents comprising a total number of 112 people, the analysis of the socio-demographic characteristics indicating the following structure (Table 9.2).

The questionnaire was applied online to the respondents between March and May 2022, using a form created in Google Forms. As for the respondents, they were selected randomly, the questionnaire being sent to residents of Reșita Municipality. The level of representativeness of the sample of respondents can be determined by statistical methods; in this sense, specific statistical indicators can be calculated.

Table 9.2 Sociodemographic characteristics

Criterion	Number of respondents	Variables	Absolute values	Relative values
Gender	112	Male	40	35.7%
		Female	72	64.3%
Age	112	Under 30	34	30.4%
		Aged between 30 and 40	36	32.1%
		Aged between 40 and 50	34	30.4%
		Over 50	8	7.1%
Length of service	112	Under 5	33	29.5%
		Aged between 5 and 10	18	16.1%
		Aged between 10 and 15	22	19.6%
		Aged between 15 and 20	18	16.1%
		Over 20	21	18.8%
Status on the labour market	112	Employed student	19	17%
		Active person on the labour market, but not falling within point a)	53	47.3%
		Entrepreneur	7	6.3%
		Currently not employed but having been employed for the past 2 years	16	14.3%
		Self-employed	13	11.6%
		Currently retired, employed during the pandemic	4	3.6%
Level of studies	112	High-school studies		33%
		Post-secondary studies	8	7.1%
		Undergraduate studies	41	36.6%
		Masters	22	19.6%
		Doctoral studies	4	3.6%

Source: Authors

9.4 Results and Discussion

In the questionnaire, as previously specified, part of the questions contained predefined answer options, from which the respondents could select the one closest to their personal situation, while part of the questions involved the use of a 5-point scale, where 1 was the equivalent of the minimum grade (total disagreement) and 5 the equivalent of the maximum grade (total agreement).

Within item no. 1, we had in mind the study of the general employee-employer relationship at the level of the organisations to which the respondents belong. As an associated objective, we proposed OS 1—*Identifying the dynamics of the relationship between employer and employees in the context of the pandemic, namely studying the degree of their preoccupation regarding ensuring the balance between professional and private life*. Subject to this objective, we included a number of four questions in the questionnaire, aiming to study, on the one hand, how the COVID-19

pandemic affected the performance of teams and, on the other hand, how the employer-employee relationship evolved in the organisations from which the respondents come, the level of concern of the organisation regarding the well-being of employees. Out of the four questions asked in this item, three had predetermined answer options, the results revealing the following situation:

From the 112 responses, most respondents (36.6%) believe that during the pandemic the performance of the teams improved, even creating a strong bond between employees. On the other hand, a smaller percentage of people who answered the questionnaire (11.6%) also show an improvement in team performance, but without creating a strong bond between colleagues. The share of those who identify a level of performance similar to that of the period before the pandemic, without significant changes, is 27.7%, not missing the situations in which, in the context of the challenges raised by the pandemic, performance decreased (24.1%).

In this context, it becomes interesting to study how the employer-employee relationship has also evolved. Thus, from the data collected, we generally find an improvement or a stagnation of the relationship between the two parties, 44.6% of the subjects having a favourable position in this regard, while a similar percentage identifies a stagnation of the relationship. However, 10.7% indicate a worsening of the relationship between employers and employees, amid the challenges of COVID-19.

Although the well-being of employees should be an important criterion for managers, not everyone pays much attention to this aspect. As a result, when asked to what extent employee mental health was a priority for managers within the organisation during the pandemic, subjects' responses varied. Thus, less than half of the respondents (45.5%) state that this aspect was very much a priority for employers. 15.2% identify a high degree of priority, while 26.8% declare an average level of concern of employers regarding this aspect. At the opposite pole are 12.5% of respondents, who identify a low level of concern of managers for the psychological well-being of employees.

Regarding the employer's level of concern regarding ensuring the balance between employees' professional and private life, 54.4% of respondents identify a high level of concern in this regard, 16.1% indicate a low level of concern in this regard, while 29.5% is positioned at a neutral level in this regard (Fig. 9.2).

Within item no. 2, regarding employee motivation, we had in mind, as secondary objectives, the following:

- OS 2*: Studying employers' concerns regarding the stimulation of employees during the pandemic, to achieve a higher level of performance*—objective to which three questions from the questionnaire were associated.
- OS 3*: Studying the effectiveness of teamwork and the relationship between employees*—objective to which four questions were subordinated.
- OS 4*: Studying the degree of preoccupation of the organisation's management regarding the valorisation of human resources*—objective in relation to which 2 questions were asked.

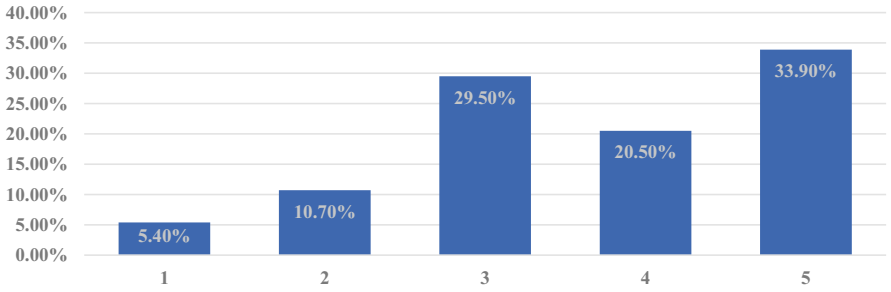

Fig. 9.2 Level of the employer's preoccupation for ensuring a balance between employees' professional and private life. (*Source*: Authors)

The conclusions drawn following data processing reveal that the level of employer's preoccupation for the stimulation of employees differs from one organisation to the next, with positive attributes predominating, with most respondents giving marks of 4 and 5 to this aspect. Thus, 55.4% of the respondents believe that their employers are concerned to a great or very great extent about stimulating their work. 30.4% indicate an average level of concern, while 14.3% identify a low level of interest in this regard.

Opinions also differ regarding the definition of what constitutes a stimulating work environment for the respondents. The uniqueness of everyone determines differences in perception in this regard, with the largest share of respondents (34.8%) indicating a pleasant atmosphere and a healthy organisational culture as the equivalent of a stimulating work environment. 28.6% of the respondents instead mention financial stimulation as the basic element of motivation. Close percentages indicate the presence of feedback and performance recognition (18.8%), respectively, the clarity of the team role and long-term formulated objectives (17.9%) as factors that essentially contribute to shaping a stimulating work environment.

Returning to the aspects of financial remuneration, respondents were asked to indicate to what extent, in the organisation where they work, financial motivation determines employee loyalty and a higher level of performance. In this sense, 40.2% of the surveyed subjects believe that the two aspects are determined largely by the level of remuneration, in addition to which we can mention the 23.2% of respondents who believe that the influence of financial aspects manifests itself to a large extent (Fig. 9.3).

To study teamwork, several basic coordinates were proposed, considered essential for achieving performance: perseverance, desire to achieve, self-control, communication, flexibility, listening ability, time management, critical thinking, collaboration, responsibility, and leadership (Fig. 9.4).

In most cases, as we can see on the graph above, the score 5 takes precedence, which shows a high level of awareness of the importance of these elements for effective teamwork. 48.21% of respondents consider perseverance to be very important; the desire to achieve is mentioned by 47.32% and self-control by 40.18%. More than half of the respondents consider communication (56.25%), listening

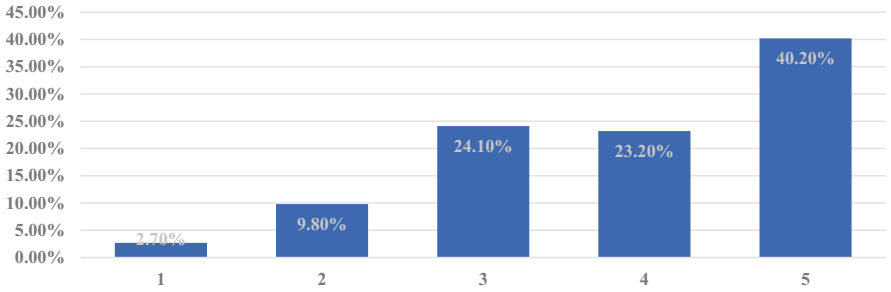

Fig. 9.3 Level from which financial motivation determines employee loyalty. (*Source*: Authors)

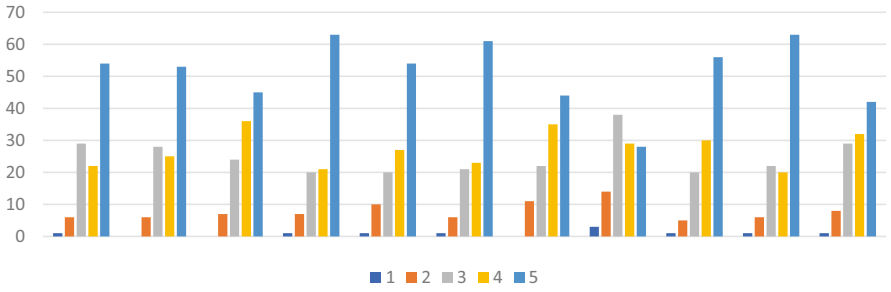

Fig. 9.4 Basic coordinates on obtaining performance. From left to right: Perseverance; Desire of achievement; Self-control; Communication; Flexibility; Listening capacity; Time management; Critical thinking; Cooperation; Responsibility; Leadership. (*Source***:** Authors)

ability (54.46%), collaboration (50%), and responsibility (56.25%) as very important, while the same qualifier is attributed to flexibility by 48.21% of the surveyed subjects, time management by 39.29%, and leadership by 37.5%. The only criterion that records a higher percentage of responses indicating medium importance is the critical thinking criterion.

As for the importance of the equal contribution of team members to the fulfilment of performance indicators, we note that 61.6% of the respondents consider this aspect very important, only 2.7% being of the opposite opinion. On the other hand, the way employees act in the performance of individual and team tasks contributes to the success or failure of the organisation, 56.3% of respondents considering this aspect very important. Asked to what extent, in order to avoid failure, the manager of the organisation acts to motivate employees, 32.1% of respondents state that this happens to an average extent, while 50% of respondents believe that such measures are taken to a large or even very large extent.

The importance of human resources is recognized by the respondents, who in proportion of 26.8% indicate that human resources are very important for the organisation in which they work, 15.2% assigning a high importance. There are not a few situations in which the respondents identify an average level of importance of

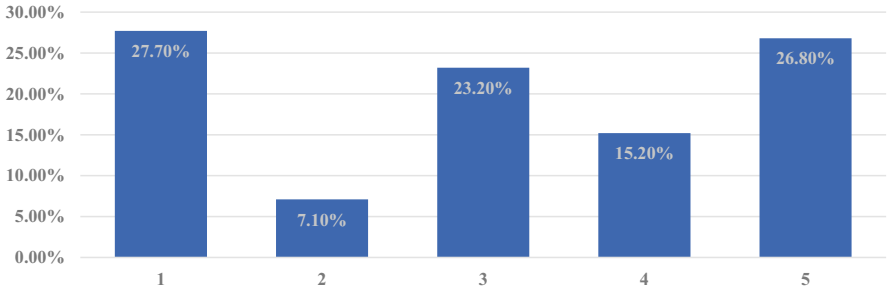

Fig. 9.5 Team work efficiency during the pandemic. (*Source*: Authors)

human resources for the organisation they belong to, 34.8% expressing a contrary opinion (Fig. 9.5).

When asked how well the employees worked as a team in the context of the pandemic, the opinions expressed were split, but most respondents pointed to the fact that during the pandemic the teams united and worked well (38.4%) or even very well (38.4%). A percentage of 23.2% of the respondents specified that the team members achieved only the minimum required regarding the assigned tasks.

Within item no. 3, the focus on digitization was studied. As an associated objective, we proposed OS 5—*identifying the degree of preoccupation of the organisation regarding investments in technology and infrastructure, to facilitate telework, that is, improving the digital skills of team members*. Subject to this objective, we included in the questionnaire a number of three questions, aiming to study, on the one hand, the respondents' perception of the importance of investments in technology and infrastructure and the importance of IT skills of the staff, respectively, the relationship between team development and IT skills of team members.

Investments in technology and infrastructure are highly important by 69.6% of respondents. However, this aspect largely depends on the type of organisation, namely, on its field of activity. Thus, 26.8% of the 112 respondents consider investments in this sense as unimportant, the remaining 3.6% indicating them as not at all important in the fields in which they work. As regards the level of importance assigned to the IT skills of the staff within the organisations where the respondents work, 44.6% perceive them to be important to a high or very high extent. A medium level of importance is attributed by 19.6% of the respondents, while a low level of importance is perceived by 35.7% of the people who answered the questions in. We note that this percentage is higher than that of respondents who, in the previous question, mentioned IT investments as unimportant. This indicates that, in an organisation, investments in technology and infrastructure do not necessarily condition the possession of IT skills by staff in all areas of activity.

A 27.7% share of the respondents believe that the IT skills of the members influence the development of the team to a great extent. On the other hand, a similar percentage indicates this relationship to be highly important, while a higher percentage, 28.6%, identifies an average level of influence between the two factors. Within item no. 4, we aimed to study the aspects regarding the adaptability of the

employee, the team, and the organisation. As associated objectives, we forwarded OSs 6, 7, and 8—aiming, on the one hand, *to analyse the organisation's preoccupation for the team's adaptation to new working methods, in the context of the pandemic*, as well as *the identification of the professional retraining needs of the team members in the context of the pandemic*, respectively, *the analysis of the team members' willingness to accept relocation, as a strategy of career*.

To study the aspects related to OS 6, we remark certain elements about the quality of communication between employees, their adaptation to the new working methods, that is, efficiency of the protocols of the new working methods with reference to the pandemic context. Thus, 42% of respondents state that, in the context of the pandemic, communication between the employees of their organisations has improved, an opposite situation being found in the case of 17.9% of respondents, who mention a worsening of communication. In this sense, where there is an improvement, an important role is also played using specific communication tools, with an emphasis on those specific to the online environment. About 40.2% of respondents believe that there have been no changes regarding communication in the context of the pandemic.

We cannot deny that these past 3 years have been a period of great challenges for humanity. However, the adaptability of human resources in organisations was high, as the results obtained in the research reveal. The respondents (72.3%) believe that the members of the teams they were or are a part of have largely adapted to the new work methods. There are few situations in which the adaptation was achieved to a small extent (26.8%) or not at all (0.9%). In the context of the pandemic, there were certainly situations in which the respondents had to rethink their professional path. In this respect, we studied the aspects regarding the need to identify the professional retraining needs of team members in the context of the pandemic.

As new protocols regarding working methods have been imposed during the pandemic, fears of the unknown have sometimes arisen. In this sense, the respondents, in weight of 50.9%, believe that these protocols have succeeded in combating the fear of employees to a great extent, while 49.1% consider them effective to a small extent or even not at all. Professional retraining, on the other hand, can in certain situations represent an option for the career evolution. 39.3% of respondents express full agreement with the fact that professional reconversion can be an option in the sense of changing the field of activity with the help of training and training courses or internships. 26.8% express partial agreement, while 21.4% have a neutral attitude. 12.5% of respondents disagree in this sense (Fig. 9.6).

Next, we tried to identify which were the most important criteria in the context of COVID-19 which may have influenced the choice of the field of work, identifying in this respect the benefits related to the effects of the pandemic, the possibilities of training, advancement and development, financial benefits, the relevance for the desired professional path, the organisational culture and values of the organisation, and the salary offer (Fig. 9.7).

Analysing the graph above, we can see that, in the future, the most important criterion in choosing a job remains the salary offered, in this respect most respondents opting for the maximum score. This criterion clearly stands out from the

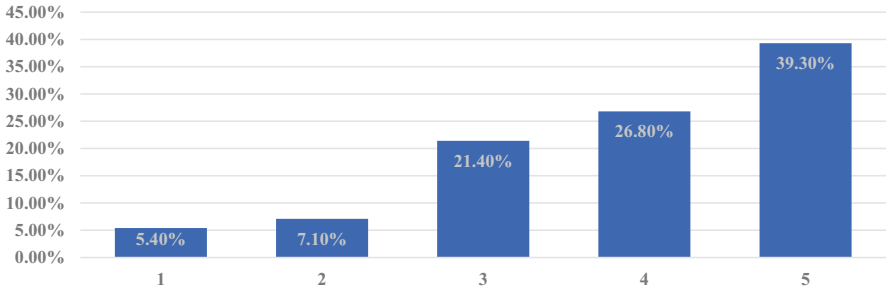

Fig. 9.6 Professional conversion as career development option. (*Source*: Authors)

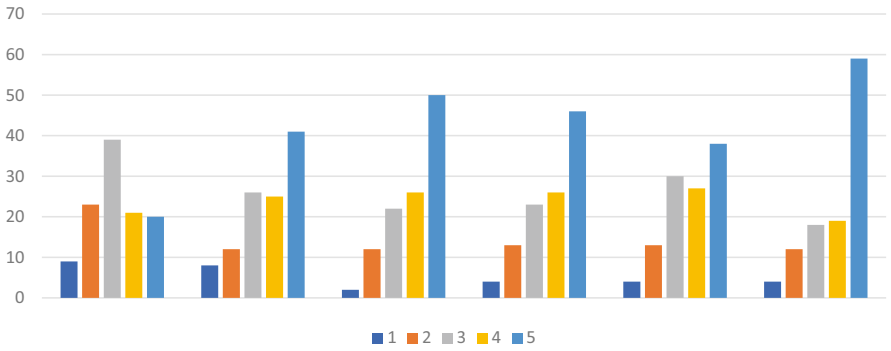

Fig. 9.7 Criteria in choosing a job. From left to right: Benefits related to pandemic effects; Opportunities of training, promotion and development; Financial benefits; Relevance for the intended career path; Organisational culture and organisation's values; Salary offered. (*Source*: Authors)

others, gathering the most responses for the "most important" attribute. At the opposite pole, we encounter the "benefits related to the effects of the pandemic" criterion, this being considered a period that generated mostly negative effects, less benefits for the business environment. Financial benefits are also cited as a criterion of major importance in choosing the field of work, but the relevance for the desired professional path, in turn, gathers a significant number of responses, which demonstrates the fact that employees no longer want to perform insignificant work times that cannot be considered for the evolution in a future career.

Given that the coronavirus pandemic has raised new and serious challenges to the business environment, some of the respondents are considering the option of professional retraining to be able to face the new situations. 40.2% of the surveyed subjects consider this action to be very necessary, 38.4% consider such a professional development strategy important to a high extent, while the percentage of those who express a contrary opinion is relatively modest—only 6.3% of the respondents consider that professional reconversion is not useful at all. The remaining 15.2% of respondents are undecided.

Even if part of the respondents would not choose the option of retraining, when it came to their willingness to accept relocation, we again remark a dispersion of answers. Thus, 35.7% of respondents would accept relocation, while 23.2%, although open to this idea, would only accept such a professional move under certain conditions. 26.8% of individuals would reject such an idea, being not at all or only slightly willing to analyse such a proposal in perspective, while 14.3% declare themselves undecided. However, organisations resort to such actions, with 48.2% of respondents stating that the companies they work in are used to relocating employees on certain occasions. However, there are situations where employees would accept such an option in exchange for certain benefits. Thus, the decisive element in making the decision is the flexible working hours of the employees, indicated as a decisive factor for 43.8% of the respondents. 31.3% mention reduced costs (rent, maintenance, transport) as advantages. Adapting to the new conditions can be easier or more difficult, depending on the characteristics of the person in question, the physical change of workplace being considered very difficult by a percentage of 13.4% of respondents, difficult by 38.4% of respondents, in time what 39.3% consider it a little difficult, and 8.9% not difficult at all.

9.5 Conclusions

The way in which the pandemic period changed the functional architecture of organisations depends on each entity, but certainly the years when COVID-19 was present everywhere cannot be ignored in terms of the mutations produced.

The work of teams in general has been rethought, in some places even reaching a reorientation in terms of how to evaluate individual and organisational performances. If, following the study, most respondents believe that during the last 3 years the performance of the teams has improved, strengthening the relationship between colleagues, a rather optimistic perspective was also expressed regarding the relationship between employers and employees. This demonstrates that the importance of human resources for the good running of the organisation is appreciated by the top management of the entities, the challenges encountered contributing to a more careful analysis of the personnel management method. Securing a balance between professional and personal life of employees, as well as the concern for their psychological well-being, was considered more carefully, against the background of the general stress induced by the presence of COVID-19. This is a condition where social changes represent a strong importance, which also determines the level of proactivity of individuals in organisations, as previous studies have already demonstrated (Vyas, 2022).

The results of the survey conducted indicate a high importance given to perseverance, communication, and responsibility, the three being largely considered pillars that are the basis of teamwork, but the ability to contribute equally to activities is valued as essential for achieving performance. The work during the pandemic, although it faced many challenges, especially in the initial period, was evaluated as

effective by the respondents, with the results obtained bringing their contribution not only to the skills demonstrated by human resources but also to the endowments, respectively, the investments in technology made by the management of the organisations.

According to the answers given by the respondents, the members of the teams adapted largely to the new working methods, which also demonstrates the flexibility of the employees, although the fear of the unknown was naturally present. Of course, a total return to life as we knew it before the pandemic is not possible, because the mutations produced in the course of 3 years have caused significant changes in organisations. These did not appear only in the employee-employer relationship or in the relationship between colleagues, but also in terms of the perception of work, respectively, the need to integrate digital tools in daily activities. Therefore, in the future, an increasing emphasis will be placed on the digitization of processes, managers perhaps realizing to a greater extent the importance of making investments in this direction, even in a preventive sense.

We are therefore talking about a paradigm shift, even a rethinking or redesign of the organisation, as some sources in the literature have already anticipated (Hou et al., 2021), while others (Vyas, 2022) even forwarded the "new normal" concept as a reference for the future of work in organisations. Although the situation remains in many cases uncertain regarding the professional development of some individuals, given that the "earthquake" represented by the Coronavirus has produced a series of irregularities regarding a difficult labour market, certainly every organisation has gone through an important learning process. The way in which each entity reacted was different, a significant contribution bringing here the double perception of the problems, both from the point of view of the employees and from the point of view of the employers.

A simple classification of the directions to follow in this regard would cover two components:

- A hard component—meaning the need to properly equip companies with all the necessary tools in the context of work digitalization, from computers and related peripherals to ensuring an infrastructure indispensable for achieving performance. This is important not only at an individual level but also for better teamwork, actively contributing to improving communication and facilitating the transfer of information.
- A soft component—targeting the relations in the organisation, both among employees and between employees and employers, to build a positive culture, meaning that teambuilding activities would be necessary. Beyond the employment contract, in any organisation we could even talk about a psychological contract, in which the organisational culture acquires an essential role, to encourage good collaboration between the members of the organisation (Zheng, 2020) and provide the necessary support to obtain the best results.

One of the main limitations for the present study may be considered the very relatively small sample of respondents. As future research directions, aspects that we consider relevant to be studied further on this topic would be the way in which

digitization, as in the remote execution of some activities, influences the building of the sense of belonging to the organisation, namely, the way in which the new work habits contribute to increasing professional stress.

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Chapter 10
A Humanistic Approach to Recommender Systems: Implications for 5.0 Marketing Management

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Abstract In the producer-customer interaction, humanistic management places a strong emphasis on the end-user interests. This perspective embraces a number of more focused philosophies that highly value human development, potential, and dignity. A reaction to the emerging mega-trend that calls for reevaluating marketing is humanistic marketing. Recently, 5.0 marketing management was created by integrating conventional theories of consumer behavior with fundamental concepts from humanistic psychology, such as the ability for self-actualization, self-direction, and choice. Currently, research on online consumer behavior examines how customers select products from e-commerce platforms, and recommendation engines are crucial to this process. A sort of information filtering system called a recommender system makes suggestions for products or services based on the user's areas of greatest interest. The present cross-sectional research will further investigate how the main types of recommender systems—social-aware recommender systems, robust recommender systems, and explainable recommender systems—are perceived by individuals depending on three psychological characteristics: trust, suspiciousness, and fast and slow thinking decision-making system. A sequential mediation analysis was employed, and a significant indirect effect was observed, results indicating the impact of anchoring effect. Implications are discussed with regard to an efficient 5.0 marketing management strategy.

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10.1 Introduction

Humanistic management is an approach to business and organizational management that puts the welfare of people and society as a whole above profit and efficiency (Melé, 2016). This management approach recognizes that businesses function within a larger social context and that their actions have an impact on the environment, employees, clients, and other stakeholders. Examining an individual's full potential, their fundamental human rights and dignity, as well as the ongoing growth or decline that person's experience as a result of organizational and working conditions are all part of humanistic management (Melé, 2013). The person sees themselves as self-aware, liberated beings with intrinsic dignity.

Marketing 5.0 is based on Marketing 3.0's emphasis on the customer and Marketing 4.0's technological prowess. It is the use of technologies that mimic human behavior to design, communicate, deliver, and improve the total customer experience. It begins with mapping the customer journey and finding the marketing technology that can enhance the performance of human marketers (Kartajaya et al., 2021; Wongmonta, 2021). Unlike Marketing 4.0, which stresses technology and innovation, Marketing 5.0 promotes human values and sustainability. Marketing 5.0 aims to solve social and environmental problems and improve quality of life without sacrificing profit. Marketing 5.0 requires consumer centricity, which means understanding consumer needs and meeting them, valuing customer loyalty since customers are partners in creating value and accomplishing social and environmental goals. Customer-centric marketing in Marketing 5.0 suggests building strong customer ties to increase consumer loyalty. Understanding customers' requirements, interests, and habits can help businesses tailor their marketing to meet their expectations and enhance customer satisfaction and loyalty. Marketing 5.0 emphasizes using social media, data analytics, and AI to better understand and communicate with customers. This technology can help companies personalize their marketing and deliver more focused content to customers, enhancing consumer loyalty. Marketing 5.0 helps companies understand their customers, tailor their marketing to their needs, and use technology to create a more personalized and engaging customer experience. This can boost customer satisfaction, loyalty, and profits (Chantamas, 2021).

One sort of information filtering system is the recommender system, an application of AI, that the main scope is to analyze user behavior and make suggestions that are probably going to be of interest to them. Recommender systems are nearly ubiquitous nowadays, and their potential benefit to enterprises in terms of several key performance metrics has been proved in a variety of application contexts (Chen et al., 2013). These systems are widely employed in a multitude of industries, including e-platforms, social networks, and entertainment. In e-commerce, for example, AI is typically implemented in the form of recommender systems (RSs), which produce content suggestions for customers (Chen et al., 2013). The impact of recommender systems on shaping consumer behavior is significant, as they have the potential to influence the way people make decisions and interact with products and services.

One of the primary methods in which recommender systems shape consumer behavior is by increasing the relevance and personalization of recommendations, by introducing users to new items or services they may not have otherwise discovered.

In addition to improving the relevance and diversity of recommendations, recommender systems can also shape consumer behavior by influencing the way users perceive and evaluate items (Baum & Spann, 2014). For example, by highlighting certain features or attributes of a product, a recommender system can increase its perceived value and appeal. Similarly, by framing recommendations in a particular way, such as emphasizing social proof or scarcity, these systems can influence users' perceptions of the recommended item. Another way in which recommender systems can shape consumer behavior is by promoting certain items or services over others. Even in cases where the recommender system is designed to prioritize user satisfaction, the act of recommending certain items over others can have an impact on how users view and use such goods. Finally, recommender systems can shape consumer behavior by creating a feedback loop between users and the system itself. As users interact with recommendations, the system can gather additional data on their preferences and behavior, leading to further refinement and personalization of recommendations. This can in turn affect how system users view and interact with it, as well as the items or services it recommends.

Overall, the impact of recommender systems on shaping consumer behavior is complex and multifaceted, with both positive and negative implications (Scholz et al., 2017). While these systems can improve the relevance and personalization of recommendations, introduce users to new items, and influence their perceptions and evaluations, they can also promote certain items over others and create feedback loops that may reinforce existing biases or preferences. Thus, it is crucial to approach the architecture and implementation of recommender systems with a careful consideration of their potential impacts and trade-offs.

Numerous studies demonstrate that when making an online purchase, trust is a crucial consideration (Kim et al., 2008; Ba et al., 2003; Cho et al., 2002; Gefen, 2002; Jarvenpaa et al., 2000; Urban et al., 2000). To be willing to purchase from the website, customers must have faith in both the seller and the e-commerce platform. Additionally, elements like the brand, the seller's reputation, and other customers' ratings and reviews might have an impact on trust.

Online shoppers' trust and decision-making processes can be influenced by human characteristics like personality and attitudes. Additionally, customers' perceptions of risk and trust in online shopping may be influenced by ambient factors like culture and social conventions. Overall, the evidence points to a relationship between trust and decision-making processes when it comes to completing an online purchase. Trust is a crucial component of online shopping and can be affected by a variety of personal and environmental factors. There are also a number of decision-making models that apply to the setting of online shopping (Karimi et al., 2015, 2018).

People's judgments during the online shopping process and their reactions to the possibilities suggested by recommendation systems can be influenced by personality factors like trust and suspiciousness. Generally speaking, those with more

trusting personality traits are more inclined to follow the system's recommendations and make purchases more quickly, whereas those with more suspicious personality traits may be more skeptical and need more information or time to decide (Verhagen & Van Dolen, 2011).

The way a person thinks can also affect how they respond to recommendation systems. Fast and slow thinking are the two main categories of thought. Slow thinking entails a conscious, analytical, and rational process that involves a careful assessment of the material, whereas fast thinking is a quick, intuitive, and subconscious process based on prior experiences and emotions (Punj, 2012). Both ways of thinking can have an impact on consumers when they shop online. A consumer might, for instance, be attracted to a quick recommendation from the recommendation system based on their prior preferences and make a purchase right away. On the other hand, a different customer can be more dubious and employ deliberate thought to carefully review the product details before making a purchase (Mishra et al., 2021). In conclusion, personality characteristics and thought patterns can significantly influence how consumers respond to recommendation systems when they shop online. Understanding these factors is crucial for businesses and service providers so they may modify their suggestions and assist clients in making more informed choices.

Because choosing to make an electronic purchase is inherently hazardous, trust may play a significant role in providing customers the confidence they need to make such transactions. Nevertheless, many studies have not systematically examined how perceived risk and trust interact to affect such choices or what kinds of risk and trust antecedents are important in the process of gaining the trust of consumers. This research will further investigate through the use of sequential mediation analysis performed in SPSS Process Macro model number 6 whether fast thinking and trust represent significant sequential mediators in the relationship between social suspiciousness and trust in robust, explainable, and social aware recommender systems, placing an increased emphasis on the role of humans in shaping the current approach to recommender systems from a humanistic management perspective. The primary objective of the study is to investigate how fast and slow thinking may mediate between the personality trait of social suspiciousness and overall confidence in the three distinct types of recommender systems. The article will also provide a literature review, research methodology, results, and a discussion and conclusion section.

10.2 Literature Review

Humanistic management can be defined as an approach to management that emphasizes the well-being of employees, customers, and society as a whole, rather than solely focusing on profit and efficiency. This approach is grounded in humanistic psychology, which emphasizes the importance of individual growth, self-realization, and the development of human potential. The evolution of humanistic management may be dated to the middle of the twentieth century when humanistic psychology

emerged as a response to the behaviorism and psychoanalytic approaches that dominated psychology at the time. Humanistic psychology emphasized the importance of personal growth and self-actualization and rejected the deterministic and reductionistic assumptions of behaviorism and psychoanalysis.

In the 1960s and 1970s, the humanistic psychology movement began to influence management theory and practice. Management thinkers such as Douglas McGregor, Abraham Maslow, and Frederick Herzberg emphasized the importance of employee motivation, satisfaction, and well-being and advocated for a more people-centered approach to management (Lilienthal, 1967; Swart, 1973; Daley, 1986). In the 1980s and 1990s, the humanistic management approach continued to evolve, with the emergence of new management theories and practices that emphasized employee empowerment, engagement, and development. These theories and practices included Total Quality Management, which emphasized the importance of continuous improvement and employee involvement, and the Learning Organization, which emphasized the importance of continuous learning and adaptation.

The concept of humanism in management was adopted by academics studying organizational behavior, human resource management, and leadership around the end of the twentieth century, positing that firms should prioritize human centrality (Pfeffer, 1998). The idea that people are more than their belongings has been underlined by the concept of humanism from the early 2000s. Humanistic management proponents emphasize the importance of maintaining human dignity and improving the standard of living via essential components of humanistic management (Spitzeck et al., 2009).

In recent years, the humanistic management approach has gained renewed attention, as organizations and society face new challenges related to sustainability, social responsibility, and employee well-being. This has led to the emergence of new approaches to humanistic management, such as Conscious Capitalism, which emphasizes the importance of purpose, stakeholder orientation, and conscious leadership. Overall, the evolution of humanistic management has been shaped by a range of factors, including developments in psychology, changes in the nature of work and organizations, and shifts in societal values and expectations. While the humanistic management approach continues to face challenges and obstacles, it has the potential to contribute to a more humane and sustainable approach to business and organizational management.

Philosophers and academics have made several efforts throughout the years to build attractive humanistic research and practice routes. Humanistic practice is gaining traction in business ethics as well as management. Acevedo (2012) and Melé (2016) provide examples. Several academics in business ethics and management highlighted the need for a fresh and strong humanistic synthesis as well as a more humanistic and complete view of business and management (Grassl & Habisch, 2011). Humanistic economic reforms that emphasize managerial autonomy and corporate accountability, it has been said, should take precedence over mechanical economics that focus simply on financial growth (Dierksmeier, 2011). It is strongly advocated in business to transition from capitalism's mechanisms of increasing profits to humanistic focus (Pirson & Dierksmeier, 2014).

Given the concept's significance, it is vital to analyze both its features and the conceptual environment in which it is focused. There is still a dearth of understanding regarding how management techniques are developed when seen from the standpoint of humanistic business (Arnaud & Wasieleski, 2014; Acevedo, 2012). A type of content technology known as a recommender system may suggest goods or information to users based on their preferences or prior actions. These technologies are commonly utilized to boost user engagement and happiness in e-commerce, social networking, and other online applications.

One type of recommender system is the robust recommender system. This system is designed to be resilient to outliers or unusual data points and can provide accurate recommendations even when there are missing or incomplete data. Robust recommender systems often use advanced statistical techniques such as matrix factorization, clustering, or regression to provide accurate and reliable recommendations.

The social-aware recommender system is another sort of recommender system. This sort of technology considers user social connections and can recommend products or information depending on the preferences or behavior of the user's social network. Social-aware recommender systems can be especially beneficial in social media applications, as users are frequently affected by their friends' and followers' thoughts and conduct. Recent study has found that the use of online social networks is expanding, leveraging social contextual information to reduce sparsity and increase suggestion efficacy. Latent component models for socially conscious recommendation initially include social data (Liu et al., 2020; Ma et al., 2011; Jamali & Ester, 2010; Ma et al., 2008; Guo et al., 2015; Jiang et al., 2014). Most latent factor approaches use linear operations, but user-item interactions are complex. Deep learning can improve CTR prediction, top-k recommendation, and session-based recommendation jobs. Deep learning-based models include rich contextual information from prior studies, such as visual (Liu et al., 2020; Lei et al., 2016; Hou et al., 2019) and linguistic (Liu et al., 2020; Kim et al., 2016; Wang et al., 2018) contents of things. Dynamic social influence, which shows how user profiles change, has not been used enough.

The explainable recommender system is designed to provide clear and transparent explanations for its recommendations, so that users can understand why a particular item or information was suggested. Explainable recommender systems can be particularly important in settings where trust, fairness, and accountability are important, such as in healthcare or financial applications. Since recommendation systems inherently involve humans, explainable AI is a vital area of AI and machine learning research, and the recommender system community has been at the forefront of this research (Zhang et al., 2014). This has led to a broader breadth of explainability research in additional AI and machine learning sub-domains (Ge et al., 2022; Confalonieri et al., 2021; Zhang & Chen, 2020). The aim of explainable recommendations is to provide additional explanations for predicted results, allowing for a deeper comprehension of the inference and thought processes that go into black-box prediction models.

Overall, recommender systems are a powerful tool for improving user engagement and satisfaction in a wide range of online applications. By using advanced statistical and machine learning techniques, these systems can provide accurate and customized suggestions that are made in accordance with each user's requirements and preferences. The creation of novel recommender system kinds, including robust, social-aware, and explainable systems, is likely to further enhance the effectiveness and utility of these systems in the future.

10.3 Research Methodology

By using sequential mediation analysis performed in SPSS Process Macro model number 6, this research will further investigate whether fast thinking and trust represent significant sequential mediators in the relationship between social suspiciousness and trust in robust, explainable, and social aware recommender systems, placing a greater emphasis on human key role in shaping current recommender systems approach under a humanistic management perspective. The study's primary objective is to investigate how fast and slow thinking might mediate between social suspicion as a personality feature and overall confidence in the three distinct types of recommender systems.

The three hypotheses of this research are as follows:

H1: Fast thinking and trust sequentially mediate between suspiciousness and trust in explainable recommender systems.

H2: Fast thinking and trust sequentially mediate between suspiciousness and trust in robust recommender systems.

H3: Fast thinking and trust sequentially mediate between suspiciousness and trust in social aware recommender systems.

This study employs an opportunistic sampling technique and a quantitative cross-sectional methodology. A total of 487 legitimate and informed responses to an e-questionnaire that was disseminated over social media were received. The demographic breakdown of the respondents shows that 65% of them are women and 35% are men, with a mean age of 27. In terms of the respondents' educational backgrounds, 50% have a high school diploma and 50% have higher education degrees.

Social suspicion, fast and slow thinking, and trust in three different recommender systems were the three key factors that were measured in this study using a total of three approaches. The Social Suspiciousness Scale (SSS) (Linett et al., 2019), a 22-item instrument rated on a Likert scale from 1 to 5, was used to evaluate social suspicion. For trust assessment, we have used the trust NEO-PI-R Facet Scales (Goldberg et al., 2006; Iliescu et al., 2015). The 10 items used were rated on a 1 to 5 Likert scale, with 1 standing for total disagreement with the statement and 5 standing for total agreement. Fast and slow thinking were assessed using a 10-item questionnaire (Hardy et al., 2020), with the thinking styles conceived using dual processing theories of reasoning. We created an original 10-item measure for

assessing trust in recommender systems using the same 1–5 rating scale, similar to other studies reported in the literature (O'Donovan & Smyth, 2005; Guo et al., 2014).

In terms of overall means, standard deviation, and Cronbach's alpha coefficients for the scales used in this research, the results are reliable. For trust in recommender systems, we have obtained a mean of 34.79 with a standard deviation (SD) of 6.17 and a Cronbach's alpha coefficient of 0.81. For social suspiciousness, we have obtained a mean of 60.97 with a SD of 14.80 and a Cronbach's alpha coefficient of 0.90. For fast and slow thinking questionnaire, we have obtained a mean of 34.72 with a SD of 5.25 and a Cronbach's alpha coefficient of 0.64. For trust, we have obtained a mean of 32.25 with a SD of 6.35 and a Cronbach's alpha coefficient of 0.83.

In terms of correlations, among all subscales we have received significant positive correlation coefficients, ranging from 0.161 to 0.739, correlation being significant at 0.01 level and 0.05 level.

10.4 Results

In the next section, we will describe the key findings from the study of the three sequential mediations.

H1: Fast thinking and trust sequentially mediate between suspiciousness and trust in explainable recommender systems.

The results revealed a significant indirect effect of suspiciousness on trust in explainable recommender systems through the mediators: fast thinking and trust ($b = 0.008$, $t = 1.977$) supporting our hypothesis. Furthermore, the direct effect of suspiciousness on trust in explainable recommender systems in the presence of the mediators fast thinking and trust was also found significant ($b = 0.117$, $t = 1.9654$, $p < 0.05$). Hence, there is partial sequential mediation of fast thinking and trust on the relationship between suspiciousness and trust in explainable recommender systems. Mediation summary is presented in Table 10.1.

A significant amount, 10%, of confidence in explainable recommender systems was overall explained by the sequential mediation model. Several studies on the topic of trust in recommender systems back up this conclusion (O'Donovan & Smyth, 2005; Dong et al., 2022; Cheng & Hurley, 2010; Mobasher et al., 2007; Fu-guo & Sheng-hua, 2007).

Overall, the two mediators partially mediated the relationship between suspiciousness and trust in explainable recommender systems (IE = 0.0087, 95% CI: LL = 0.002 to UL = 0.019), indicating that individuals with high social suspiciousness, highly fast thinking decisional system functioning, and also high trust were more likely to have higher levels of trust in explainable recommender systems.

H2: Fast thinking and trust sequentially mediate between suspiciousness and trust in robust recommender systems.

Table 10.1 Sequential mediation summary

Total effect (Suspiciousness → Explainable Rec. Sys.)	Direct effect (Suspiciousness → Explainable Rec. Sys.)	Relationship	Indirect effect	Confidence intervals		*t = Indirect Effect/ SE*	Conclusion
				Lower Bound	Upper Bound		
0.010 *p > 0.05*	0.117 *p < 0.05*	H1: Suspiciousness → fast thinking →trust → explainable rec. Sys,	0.0087	0.002	0.019	1.977	*Partial mediation*

Source: Authors

The results revealed a significant indirect effect of suspiciousness on trust in robust recommender systems through the mediators: fast thinking and trust ($b = 0.009$, $t = 2$) supporting our hypothesis. Furthermore, the direct effect of suspiciousness on trust in robust recommender systems in the presence of the mediators fast thinking and trust was also found significant ($b = 0.127$, $t = 2.4918$, $p < 0.05$). Hence, there is partial sequential mediation of fast thinking and trust on the relationship between suspiciousness and trust in robust recommender systems. Mediation summary is presented in Table 10.2.

A significant proportion of 13% overall trust in robust recommender systems was explained by the sequential mediation model. Several studies on the subject of confidence in recommender systems confirm this finding (O'Donovan & Smyth, 2005; Dong et al., 2022; Cheng & Hurley, 2010; Mobasher et al., 2007; Fu-guo & Sheng-hua, 2007).

Overall, the two mediators partially mediated the relationship between suspiciousness and trust in robust recommender systems (IE = 0.009, 95% CI: LL = 0.024 to UL = 0.019), indicating that individuals with high social suspiciousness, highly fast thinking decisional system functioning, and also high trust were more likely to have higher levels of trust in robust recommender systems.

H3: Fast thinking and trust sequentially mediate between suspiciousness and trust in social aware recommender systems.

The results revealed a nonsignificant indirect effect of suspiciousness on trust in social aware recommender systems through the mediators: fast thinking and trust (IE = 0.004, 95% CI: LL = −0.0001 to UL = 0.012) infirming our hypothesis. Hence, there is no mediation of fast thinking and trust on the relationship between suspiciousness and trust in social aware recommender systems. Mediation summary is presented in Table 10.3.

Thus, our research results show that, overall, the two mediators—suspiciousness and fast thinking—partially mediated the relationship between suspiciousness and trust in robust and explainable recommender systems, but no significant indirect effect was found in the case of social aware recommender systems.

10.5 Conclusions

In the producer-customer interaction, humanistic management places a strong emphasis on the end-user interests. This perspective embraces a number of more focused philosophies that highly value human development, potential, and dignity. A reaction to the emerging mega-trend that calls for reevaluating marketing is humanistic marketing. Recently, 5.0 marketing management was created by integrating conventional theories of consumer behavior with fundamental concepts from humanistic psychology, such as the ability for self-actualization, self-direction, and choice.

Table 10.2 Sequential mediation summary

Total effect (Suspiciousness → Robust Rec. Sys.)	Direct effect (Suspiciousness → Robust Rec. Sys.)	Relationship	Indirect effect	Confidence intervals		*t = Indirect Effect/SE*	Conclusion
				Lower Bound	Upper Bound		
0.013 *p > 0.05*	0.127 *p < 0.05*	H1: Suspiciousness → fast thinking →trust→ robust rec. Sys.	0.009	0.0024	0.0194	2	*Partial mediation*

Source: Authors

Table 10.3 Sequential mediation summary

Total effect (Suspiciousness → Social Aware Rec. Sys.)	Direct effect (Suspiciousness → Social Aware Rec. Sys.)	Relationship	Indirect effect	Confidence intervals		*t = Indirect Effect/SE*	Conclusion
				Lower Bound	Upper Bound		
0.090 *p > 0.05*	0.138 *p < 0.05*	H1: Suspiciousness→ fast thinking →trust→ social aware rec. Sys.	0.004	−0.0001	0.012	1.2941	No mediation

Source: Authors

Currently, research on online consumer behavior examines how customers select products from e-commerce platforms, recommender systems being crucial to this strategy. A way in which recommender systems shape consumer behavior is by increasing the relevance and personalization of recommendations, by introducing users to new items or services they may not have otherwise discovered. People's judgments during the online shopping process and their reactions to the possibilities suggested by recommendation systems can be influenced by personality factors like trust and suspiciousness. Thus, those with more trusting personality traits are more inclined to follow the system's recommendations and make purchases more quickly, whereas those with more suspicious personality traits may be more skeptical and need more information or time to decide.

The present cross-sectional research has investigated how the main types of recommender systems—social-aware, robust, and explainable recommender systems—are perceived by individuals depending on three psychological characteristics: trust, suspiciousness, and fast and slow thinking decision-making system. A sequential mediation analysis was employed, and a significant indirect effect was observed, results indicating the impact of anchoring effect.

As a result of these findings, the research of recommender systems changed its focus from accuracy-oriented recommender systems to trustworthy recommender systems. Further study is necessary on the subject of how human decision-making processes affect consumer behavior under the new paradigm of recommender systems since there is, unfortunately, a shortage of comprehensive literature evaluations and debates among academics in this novel and quickly increasing field.

Overall, recommender systems are a powerful tool for improving user engagement and satisfaction in a wide range of online applications. By using advanced statistical and machine learning techniques, these systems can provide accurate and personalized recommendations that are customized to each user's requirements and interests. The effectiveness and value of these systems will probably be further improved in the future with the development of new types of recommender systems, such as robust, social-aware, and explainable systems. Our research has thus demonstrated that the accuracy and robustness of recommendations may profit from having trust models included in the recommendation process, mainly in explainable and robust recommender systems.

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Chapter 11
Adapting Strategies of Portfolio Management to VUCA Environments: The Case of Romania

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Abstract The recent multiple crises of the 2020–2023 imposed the integration of the concept of VUCA environments (volatility–uncertainty–complexity–ambiguity) at the level of the capital markets, as an indisputable reality. These processes have, in fact, led to major changes in the perception of the markets impacting the understanding of new problems, respectively, the action of the managers and the implementation of the portfolio management strategies. Managing portfolios in VUCA environments involves reconsidering portfolio management objectives that must be better adapted to investors' requirements in a dynamic spectral context. Portfolio managers must now anticipate these demands and needs and design new strategies and products, better adapted to these changes. In addition, there are a number of problems specific to emerging markets: the lack of major essential market structures or dysfunctions (futures, options), the reduced liquidity of the capital market and the inconsistent structure of stakeholders, and insufficient or even lack of knowledge in the field of capital markets. In emerging markets, there are investment funds (open and closed) focused only on instruments listed in the first category of the stock exchange, respectively, treasury and high quality corporate bonds. The investment funds are generally oriented towards passive management, with only extremely few examples of strategic orientation towards active portfolio management. The lack of essential infrastructures (futures, options) is somehow compensated by the development of pension funds that are becoming major players with presence and performance in the markets. The number of retail investors remains extremely small, but the good news is given by the possibilities of further increase in the near future. The research methodology starts from the design, configuration, implementation, and

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interpretation of questionnaires addressed to investors, respectively, fund managers. Starting from the resulting conclusions, the future intentions regarding the active management of portfolios and the design of new products such as ETFs (exchange traded funds) or the implementation of new strategies are deciphered. To incorporate the dynamic aspects, the real options paradigm and the dynamic capabilities paradigm are also integrated. The possible contributions refer to deciphering the current aspects of portfolio management, understanding strategies and adaptation solutions, like portfolio rotation (growth-value-bonds), and understanding how to design products better adapted to current market conditions.

11.1 Portfolio Management Strategies in VUCA Environments

In the current context, portfolio management strategies start from understanding the changing nature of competition, manifested by rapid access to multiple sources of data at low costs and access to new optimization technologies. Portfolio managers benefit from a quick understanding of the picture of the possibilities of diversifying portfolio elements and how to separate performance factors at the level of components and sub-portfolios, respectively, new tools for measuring and decomposing risk components.

Also, the effective design and construction of portfolios considers new strategies for prudent diversification of portfolio elements and efficient dynamic allocation solutions for liquidity niches, deepening the way of re-evaluating risks in the context of falling within the limits of risk tolerance and setting investment levers.

Stock and bond markets have been analyzed in the specialized literature starting from the need to forecast a series of performance elements (expected returns, associated risks or volatilities, and correlations between portfolio elements) in the context of setting the proposed risk attitude. In modern portfolio theory, Fama and French (1995) and Fama (1997) highlighted the efficient risk-return frontier and defined efficient allocations based on maximizing return for a given level of risk. Later, through the capital asset pricing model (CAPM), it attracted the attention of researchers and practitioners, highlighting the beta factor resulting from the risk index (Aggarwal et al., 2002; Brunnermeier, 2001). Later, Barberis et al. (2001) proposed the APT model as a generalized version of the CAPM. Practitioners drew attention to the limits of the assumptions within the utility theory, and Kahneman and Tversky proposed a new version of the prospect theory called Cumulative Prospect Theory (CPT) with implications on the CAPM. The focus of the research was strictly limited on stock or mixed (stock-bond) portfolios without the integration of alternative assets (Daniel et al., 1998).

The integration of alternative assets in classic portfolios (shares-bonds-government securities) can offer a series of interesting benefits, obtained through the link of diversification with assets uncorrelated with traditional markets. Chen et

al. (2003) and Chan and Lakonishok (2004) proposed a simple, pragmatic method of strategic allocation of expanded portfolios with alternative assets in which, starting from the allocation on the sub-portfolios shares-bonds, the allocations on internal and, respectively, global instruments are considered, and finally, the integration is proposed of alternative asset classes to this share-bond mix (venture capital/private equity VC/PE, real estate, commodities, and hedging funds, in which case the integration of alternative strategies is also noteworthy). Although these alternative asset classes are generally unlisted and, therefore, illiquid, they do not benefit from a benchmark, and the lack of data is often a problem. There is the possibility of designing a strategic allocation that translates the efficient frontier of the newly expanded portfolio towards higher returns and without significant growth of risks. These benefits must also be considered through the idea of additional costs (direct costs expressed through management and performance commissions, liquidity costs, and additional costs of monitoring complex processes).

The recent multiple crises of the period 2020–2023 imposed the integration of the concept of VUCA environments (volatility-uncertainty-complexity-ambiguity) at the level of the capital markets, as an indisputable reality. These processes have in fact led to major changes in the perception of the markets with an impact on the way of deepening the new problems, respectively, the action of the managers and the implementation of the management strategies of the diversified portfolios (Alquist et al., 2018; Goyal & Jegadeesh, 2018).

Managing portfolios in VUCA environments involves reconsidering portfolio management objectives that must be better adapted to investors' requirements in a dynamic spectral context. Portfolio managers must now anticipate these demands and needs and design new strategies and products better adapted to these changes. Persistence of inflation and high rates of benchmark yields create a sense of complacency with risk-free returns, while risk premiums are hard to predict and put pressure on growth stocks (Choueifaty & Coignard, 2008; Gerding, 2007; Kaufman, 2000).

Identifying and understanding risk categories becomes more complicated. In addition to the risk of portfolio management, asset allocation, market timing, and synchronicity, there is a new set of systemic risks with an impact that is difficult to predict. Measuring and ranking individual risks becomes more delicate in terms of accuracy, and risk prioritization can change at an atypical pace. Clarity in communicating objectives is essential in today's turbulent and volatile context. Governance risk refers to investment decisions that are not always the anticipated ones, inaccuracy in assessing investment beliefs, harmonization, and trust risk, respectively, risks related to information and data reporting. Another type of risk that changes is asset allocation risk in the context of alignment with overall portfolio objectives and proposed risk aversion. The purpose of the fund must be clearly formulated through investment objectives and restrictions. Timing risk becomes much more difficult to manage during periods of volatility and crises. Due to the inherent forecasting and analysis errors, there may be periods of under/over exposure or lags regarding the accumulation or reduction of holdings on some asset classes in relation to the strategic allocation.

The harmonization of managerial strategies with investment beliefs is being reconfigured in the current context because the level of consistency in the management of beliefs changes with the evolution of weights on various generations of investors, and this fact has implications on the options for index blocking or in the portfolio rotation process. Investment beliefs represent a consistent way of understanding the markets, an essential aspect in the management of mechanisms for switching to other investment strategies or other asset classes. Investors can often be swayed by the short-term success or recent performance of a particular asset class. Changing strategies too frequently can have high transaction costs and impact how efficient strategies are aligned with risk tolerance. Thus, creating strong anchors to prevent value-destroying behavior requires caution in deviations from agreed-upon long-term strategies. Concretely, portfolio managers must carefully adjust their set of core beliefs so as to resist temptations to frequently reconfigure strategies, especially by avoiding asset classes that are not aligned with the risk profile.

Key investment beliefs (Blitz et al., 2014) can be adapted to current VUCA environments:

- Investment beliefs support long-term strategies (markets display the predictability of long-term performance, while in the short-term, there is an unpredictable TS character; variations in the level of risk premiums have increased and now also target significant variations in the long-term approach).
- The long-term returns of illiquid assets (e.g., unlisted shares or some alternative assets VC/PE, RE) are correlated with the associated markets (fundamental factors are similar) being useful the selection of an index benchmark oriented on listed shares; changing the dynamics at the level of risk premiums does not change this hypothesis.
- Markets are imperfectly efficient with an impact on the complexity of asset class selection; the incorporation of information into the price in the context of the reduction of information costs and the expansion of the range of assets is compensated by the turbulence and the change in the behavior of investors in terms of the propensity to abandon some losing positions.
- The portfolio managers' focus on reducing trading costs and maintaining diversification principles is justified by focusing on risks in the context of the increasing complexity of anticipating yield developments.

There is currently a reconfiguration of the weight and hierarchies of investment biases and beliefs:

- Investors still appreciate the importance of a disciplined and systematic investment process (Swart, 1973).
- The purpose of the investment fund must be justified by clear investment objectives, the details in the issue prospectuses having a decisive role in increasing transparency.
- The selection of the manager is often based on previous performances, although these performances would not be relevant for the future; in the case of fund/ETF

families, diversification by managers is practiced which, similar to portfolio diversification, reduces risk.
- The time horizon of portfolio investments will remain long-term, and the competitive opportunity must be further analyzed from this perspective.
- The strategic allocation of assets remains a process oriented on performance indicators such as the market reference index or a relevant mixed index.
- The tactical allocation of assets is still influenced by the imprecision of short-term forecasts; the volatile and turbulent environment accentuates this aspect with implications for liquidity as well:
- The structure of the asset classes aims an increasing diversification, focusing on assets with liquidity and generally higher quality; in the case of emerging markets, a diversification is also observed through the orientation towards international investments.
- The possibilities of accessing some active portfolio management mechanisms could bring more refinement and value, with a reduced increase in portfolio risk; this belief is in contradiction with the classical theory in the conditions where the management benefits from new possibilities of information and evaluation of situations in the markets.
- There are attempts to anticipate style bias rotations (value-growth and return or vice versa) and event movements (large-small-large type).
- The securities selection process incorporates the hypothesis that markets tend to be efficient, and inefficiencies can also exist in active management (high transactional costs, wrong rotations such as timing or sectors).
- In the execution mechanisms, implementation is essential (as a cost minimization factor).
- The review and monitoring processes of the manager, portfolios, and markets still remain essential elements in risk management.

The design of portfolio management strategies in VUCA environments starts from the deepening of the dynamics of the evolution of investment beliefs.

The evolution of investment beliefs starts from understanding the mechanisms of development of investment beliefs (Beveratos et al., 2014):

(a) Understanding the fundamentals of risk-return starting from the new possibilities of measuring risk and understanding the connection with the expected return; incorporating new asset valuation methods of any type and considering implementation costs.
(b) Adapting the market functioning mechanisms by reinterpreting the way competitive markets function and the mechanisms to eliminate inherent inefficiencies, embedding strategy design, and implementation costs (Chan & Lakonishok, 2004; Chui et al., 2008).
(c) Ensuring the harmonization of investment beliefs with the fund/portfolio considering the specific characteristics of the fund/portfolio and risk tolerance, performance horizon, and liquidity level (Brau et al., 2005; Hegde & McDermott, 2003).

Starting from these aspects, the design of portfolio management strategies in VUCA environments must be adapted so that the following aspects are considered:

- Understanding the limits of knowledge in the evaluation of investment opportunities with implications at the level of isolation of portfolio elements in relation to the macroeconomic and investment environment as a whole; solutions to improve the risk management process stem from this, starting from the anticipation of specific elements of the risk of the external environment and hedging (Beveratos et al., 2014).
- The appropriate sizing of positions in portfolios (if in index management this problem does not arise considering the tracking of the benchmark in mixed stock-bond portfolios, or in the case of active management, this aspect can determine performance differences) (Grundy & Martin, 2001; Lesmond et al., 2004).
- The lessons learned give capabilities to anticipate and adapt or adjust decisions, an essential aspect in the selection of the constitutive elements of portfolios, their weighting, timing aspects, including the creation of liquidity buffers in certain turbulent periods (Blitz et al., 2014; Novy-Marx, 2012).
- An additional focus on the efficiency of trading processes, namely, the control of trading costs by avoiding or at least limiting aggressive strategies or the persistence of efforts to exploit specific events with informational asymmetries.
- Creating a set of rules that allow the expression of risk management and control ideas (Petkova, 2006).
- Creating mechanisms for controlling losses that exceed certain critical levels and protecting capital (e.g., stop-loss techniques) and deepening the implications on performance.
- Deepening the understanding of decisions involving leverage (exploiting the viability-attractiveness-prudence triad) (Bradley et al., 2004);
- Increasing the efficiency of implementing new data analysis methods and increasing the skills to extract the value of relevant information in a timely manner (AI, ML, advanced statistics) (Schulmerich, 2012).

11.2 Issues Specific to Emerging Markets in the Current Context

In addition, there are a number of problems specific to emerging markets: the lack of major essential market structures or functions (futures, options), the reduced liquidity of the capital market and the deficient structure of stakeholders, and insufficient or even lack of knowledge in the field of capital markets.

In emerging markets, there are investment funds (open and closed) that mainly focus on shares listed in the first category of the stock exchange, respectively, state and corporate bonds. The products are generally oriented towards passive management, indicative being extremely few examples of orientation towards active management of portfolios. The lack of essential infrastructures (futures, options) is

somehow compensated by the development of pension funds that become major actors with presence and performance in the markets. Although transaction volumes and the number of retail investors remain extremely low and the appetite of pension funds for equity investments has decreased, there are possibilities for development in the near future starting from the upcoming IPO for the Property Fund and the transition of the Romanian stock market to a category superior, followed by global investors.

Funds in Romania have experienced an increase in assets, the number of investors, and the propensity towards equity portfolios. These propose simple, clearly formulated and quite realistic investment objectives, in the context where there are extremely few actively managed funds (BT-Energy, BT-Technology, BT-Real Estate, and BT-Agro are relatively new funds, with performances very good but with low assets and few investors). The formulation of the objectives should explain the mechanism of achieving the returns and the associated sources of risk, respectively, some clarification on the risks of recording losses. These funds do not specify benchmarking objectives because of the high management fees (0.2–0.25% of the asset value per month). The ranking of objectives and priorities is also important, especially in the case of balanced funds with different sub-portfolios of stocks versus bonds. The formulation of risks is expressed in the general way in the fund prospectuses, and the prioritization of managerial objectives and priorities is also simplistic, a somewhat normal aspect in the case of index management of share portfolios and bond portfolios, respectively.

Regarding the strategic allocation of portfolios, which aims at the long-term plan to achieve performance and confer an anchor against the temptations and deviations to follow short-term developments, there are references in the specialized literature that indicate the idea that static strategies would explain 90% from performance, while decisions involving active investment approaches (mainly the selection of titles and market-timing because short-selling strategies or accessing derivatives for market reasons cannot also be considered) would be less important. Finally, the selection of appropriate portfolios considers the adaptation to the proposed objectives and ensuring the flexibility of reconfiguration and effective adjustment in relation to the movements of the markets of interest.

In the case of portfolio management in emerging markets, the following aspects should also be reconsidered:

- Adapting the general assumptions of the capital markets (return, risk, asset correlation expectations) to the current situation (high inflation and monetary policies adjusted to the macroeconomic situation against the background of investment beliefs affected by insufficient understanding or even a quasi-lack of investment culture).
- Identification of candidate portfolios focusing on the real possibilities of combining available asset classes within the efficient Markowitz frontier, by considering several scenarios and including liquidity restrictions specific to emerging markets.

– Formulation of the option for a possible integration of alternative assets and their weighting within the extended portfolio.

11.3 Research on the Selection of Active Portfolio Management Strategies

For emerging markets, there is quite a bit of relevant data for building a consistent methodology for understanding specific portfolio management mechanisms. In addition to existing strategies, classic diversification questions were also introduced related to the active management of portfolios and, respectively, the integration of alternative assets and non-conventional strategies.

The research methodology in the case of active portfolio management strategies starts from understanding the motivation of investors and the eventual harmonization of objectives with the offers proposed by fund managers.

The context in which the research was carried out refers to the extremely difficult and turbulent year 2022, the impact of rising interest rates indirectly and on risk premiums, the US banking crisis, and the contagion effects in Europe. This research was carried out using the CAWI method (computer-assisted web interviewing), and the data was collected in a 2-week interval January 16–27, 2023, based on two distinct questionnaires, distributed to 110 retail investors and 30 professional investors, respectively. The questionnaire contained six questions and aimed to understand the attitudes, opinions, and behavior of retail investors and professional investors, respectively.

Q1. Which investment strategies do retail and professional investors prefer (passive portfolio management vs active portfolio management)?
Q2. What type of investments do retail and professional investors prefer (direct investments or investments through mutual funds or other professionally managed instruments)?
Q3. What type of direct investments did investors prefer (on the Bucharest Stock Exchange; investments on international exchanges; ETFs; alternative investments)?
Q4. What type of alternative investments were preferred (real estate; cryptocurrencies; business angels; crowdfunding; venture capital/private equity VC/PE)?
Q5. How do you rate the performance of the mutual funds offered on the Romanian market (modest; good, very good)?
Q6. What performance-enhancing solutions do you propose (reducing management fees; simplified access to ETFs; simplified access to individual discretionary portfolios; accelerated access to alternative instruments)?

Following the centralization of the results, it was established that there are significant differences between the two types of investors:

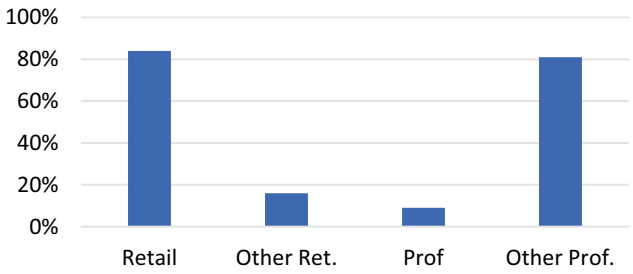

Fig. 11.1 Q1—Passive Port. Management—Retail vs. Professional. (*Source*: Authors)

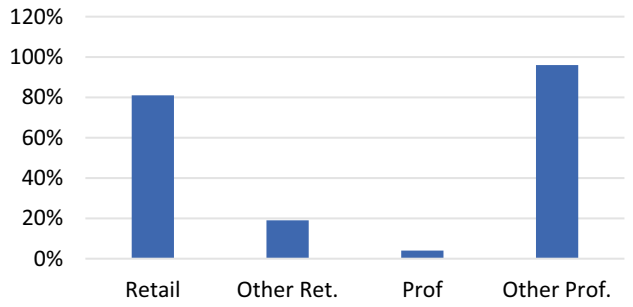

Fig. 11.2 Q2—Mutual Funds—Retail vs. Professional. (*Source*: Authors)

- Retail investors prefer passive management in proportion to 84%, while professional investors only 9% (Fig. 11.1).
- Retail investors prefer mutual funds by 81%, while professional investors only 4% (Fig. 11.2).
- For direct investments, retail investors prefer, in the context of diversification, investments in shares on the Bucharest Stock Exchange (75%), investments on international exchanges (35%), ETFs (11%), and alternative investments (9%), while professional investors prefer in the context of diversification investments in shares on the Bucharest Stock Exchange (67%), investments on international exchanges (65%), ETFs (41%), and alternative investments (9%) (Fig. 11.3).
- For alternative investments, retail prefers real estate investments (65%), cryptocurrencies (32%), and crowdfunding (8%) in the context of diversification, while professional investors accessed real estate investments (48%), cryptocurrencies (34%) (in the context of diversification), crowdfunding (18%), and venture capital/private equity VC/PE (19%) (Fig. 11.4).
- Retail investors appreciated the performance of the mutual funds offered on the Romanian market as follows: modest (15%), good (19%), and very good (66%); professional investors appreciated the performance of the mutual funds offered on the Romanian market as follows: modest (35%), good (30%), and very good (35%) (Fig. 11.5).
- Regarding solutions to increase performance, retail investors proposed reducing management fees (65%), simplifying access to ETFs (45%), simplifying access

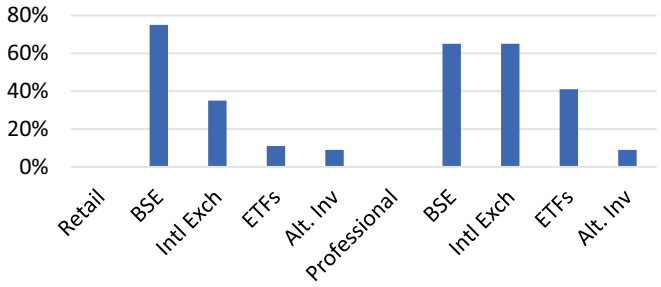

Fig. 11.3 Q3—Types of Direct Investment—Retail vs. Professional. (*Source*: Authors)

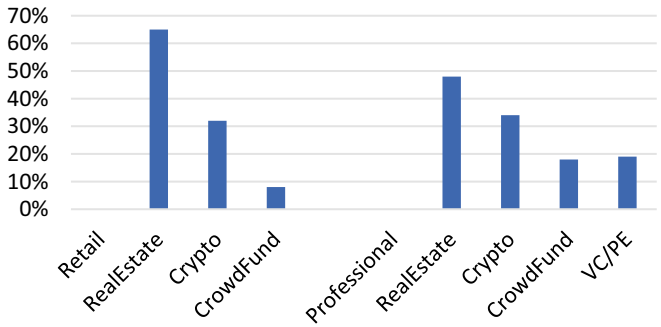

Fig. 11.4 Q4—Alternative Investments—Retail vs. Professional. (*Source*: Authors)

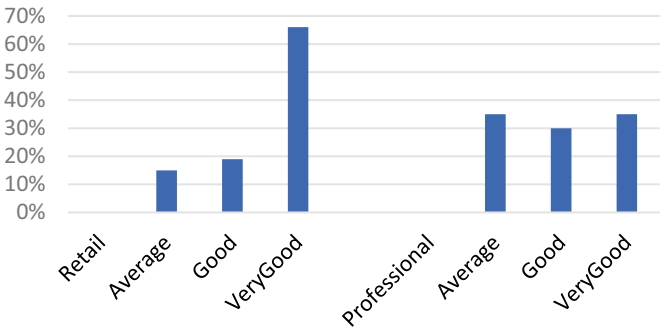

Fig. 11.5 Q5—Rating Perf. Mutual Funds—Retail vs. Professional. (*Source*: Authors)

to individual discretionary portfolios (27%), and speeding up access to alternative instruments (10%), while professionals proposed reducing administration fees (65%), simplifying access to ETFs (45%), simplifying access to individual discretionary portfolios (4%), and accelerating access to alternative instruments (10%) (Fig. 11.6).

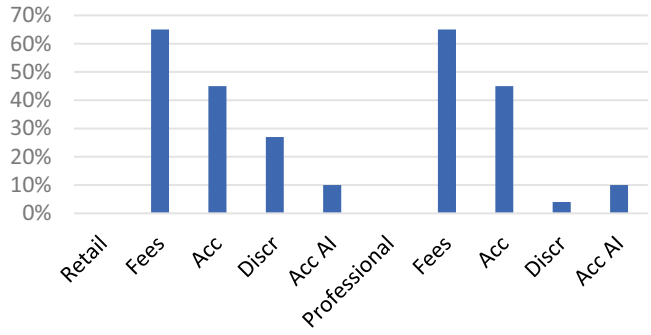

Fig. 11.6 Q6—Solution to increase Perf.—Retail vs. Professional. (*Source*: Authors)

Starting from the resulting conclusions, the investors' adaptation intentions to new market developments are interpreted. There are significant differences between the two types of investors (preference for active management; propensity for including mutual fund elements or other professionally managed instruments in individual portfolios; inclusion of alternative investments in portfolios) but also common aspects specific to our country (both categories of investors are interested in crypto and real estate investments).

Another aspect refers to managed portfolios: if retail prefers these instruments, although access to ETFs would be beneficial from a cost point of view, professionals use mutual funds strictly for the fixed-income area as a way of maintaining their buffers: liquidity.

In the future, an increase in interest in the issue of active management of portfolios and the inclusion of elements of alternative assets is foreseen. In Romania, there are only two ETFs and the interest in the design of new ETFs is low. Although access to VC/PE funds has relaxed to a certain extent, these alternative vehicles are losing ground in the context of the spectacular growth of the crowdfunding area and the maintenance of quotas for the real estate segment. It should also be mentioned the low interest in the implementation of new strategies in the context of the quasi-non-existence of the derivatives market.

The main strategy of professional investors is to focus on achieving alpha. The AGP (Alpha generation process) strategy, however, involves complex evaluation processes with the incorporation of data and estimates of the evolution of macroeconomic data, against the background of the democratization of access to alternative data (transactional data, environmental data). In the current volatile and turbulent environment, sentiment analysis (consumer confidence index, purchasing managers index) can also have a major impact, especially if the crowding effect (consensus among investors) is integrated.

11.3.1 Technology ETFs

Macroeconomic issues (inflation and high interest rates) impact stock portfolios. Tech stocks have underperformed in 2022, being particularly sensitive to benchmark interest rate hikes.

Technology ETFs in the US market offer a picture of how proper management has been able to offset the negative effects of inflation on this sector. Thus, we consider the ETFs Inveco Trust—symbol QQQ and Invesco Nasdaq 100—symbol QQQM, aligned with the Nasdaq-100 index (NDX) and which have a 50% orientation towards technology stocks (AAPL, MSFT have recognized capabilities of constant growth of the dividend rate, this being considered by investors as a measure of resilience) which is characterized by robustness at the level of financial performance in the current context. In Romania, the interest in ETFs is significant, but the offer of asset managers lags behind. Here there is the possibility of making progress, in the context of special market expectations.

11.3.2 Integrating Alternative Assets into Classic Portfolios

Alternative asset integration strategies in emerging markets can be effective if we refer to the possibilities of diversification in the conditions of restrictive markets. However, managers must also take into account the low level of confidence of these assets compared to traditional ones, the reduced liquidity with implications on the investment horizon. The expanded portfolio of alternative assets has the advantage that volatility is only slightly transferred to portfolio risk, with correlations with conventional securities being reduced. Regarding the weight of the sub-portfolio of alternative assets, the diversification of the main types of alternative assets in relation to the market must be taken into account (e.g., hedging funds with short-selling and derivative mechanisms cannot yet be functional in Romania for market reasons). For an impact on performance, the minimum allocation of the sub-portfolio of alternative assets should be above 5%, and the implementation should be gradual to give the manager the perspectives of understanding the correlations and volatility, respectively, the diversification mechanisms (Table 11.1).

(a) VC/PE Funds.

These alternative tools are anchored in entrepreneurial action. VUCA environments imply the existence of a process of identification, understanding, and operationalization of the set of uncertainties, therefore a specific analytical construction for integration in decision-making models. Defining the set of uncertainties specific to entrepreneurial action helps to understand the problems of knowledge and exploration of alternative models of entrepreneurial action, in which the spectrum of possibilities to access financing has changed radically.

Table 11.1 Summarizes a series of features, costs, and levels of attractiveness

	Expected returns	Volatility	Correlation with classic assets	Attractiveness level	Conclusions regarding integrations effectiveness
VC/PE	Above than for the listed equities	Above than for the listed equities	Strong—Equities Weak—Bonds	Low-medium	Although VC/PE are alternatives for developing innovation and markets, limited access and the lack of intermediaries significantly reduce the appetite of investors
RE	Between bonds and equities	The same as for equities	Medium for equities and bonds	Medium	The surprising preference for real estate specific to local investors
HF	Between bonds and equities	Between bonds and equities	Weak	High	There is a low level of knowledge and access possibilities only for institutional portfolios
Commodities	The same as for listed equities	The same as for listed equities	Weak—Bonds Same—Equities	Medium	High complexity implies the use of additional instruments (ETF, ETN)
Cryptocurrencies/ blockchain	Above than for the listed equities	Above than for the listed equities	Weak for all	High	Scalability offers the facilitation of integration in any type of portfolios and explains the interest in these alternatives

Source: Authors

The real entrepreneurial environment involves uncovering the practical mechanisms of value creation by accessing entrepreneurial opportunities and effectively navigating these search processes. Starting from the definition of the set of uncertainties in the financing processes of entrepreneurial businesses, venture capital represents a true engine of innovation and economic development. Unfortunately, there are very few successful examples in Romania, and the availability for interested retail investors remains extremely low.

(b) Directional Hedge Funds HF-D.

These funds aim at an active management of conventional instruments carried out in a relatively less regulated framework, specific to classic mutual funds. For hedging funds, there are also unconventional strategic approaches that are not subject to classic portfolio management, but are more difficult to apply in Romania. HF

funds are not an asset class in themselves as they encompass both diversification aspects and the integration of these unconventional strategies usually based on derivatives.

There are several types of HF strategies:

(a) In the case of focusing on strategies for ultra-diversification of assets, the risk levels can vary significantly from a risk lower than traditional investments to a very high risk that benefits from the contribution of strategies based on short sales and the leverage effect. The development aimed at creating portfolios with reduced sensitivity to the influence of the markets and reducing volatility through the design and construction of reduced correlations in relation to the markets. The ultra-diversification of portfolios involves particularly complex processes and higher transaction costs, but it offers prospects for achieving absolute-return portfolios built with low beta values. These HF-ND strategies are realized in practice through relative value mechanisms, convertible arbitrage, fixed income arbitrage, or equity market neutral.
(b) In the case of directional strategies, the focus is on the trend and starts from the selection of stocks with high beta or market-timing long and short on various markets with various levels of leverage. These HF-D strategies can target equity long/short, global macro, and leverage-long mechanisms. Some fund managers have created special strategies for emerging markets, using various innovative adaptation solutions such as portfolio rotation.

The specific characteristics of HF aim at the following:

- The diversity of objectives and specific management mechanisms (starting from absolute return or preservation of capital in turbulent periods to over-performance with commensurate risk).
- The volatility of annual returns in the context where these returns are based on managerial skills in conditions of low predictability and high portfolio management costs.
- Capabilities of leveraging effects through the use of derivatives markets (HF-ND can have some periods with even higher leverage than HF-D).
- Capabilities of fruiting flexible investment strategies (short-sales and derivatives).
- The persistence of low levels of transparency (reporting of portfolio movement is limited and delayed because portfolio managers avoid disclosing strategies precisely to avoid being imitated by other investors).

Risks specific to HF-D investments

- Risk associated with complex investment processes in which performance is often the result of managerial skills (in this case, however, there are also implications for reducing transparency levels).
- Risk reporting and measurement processes are complex because they target a large diversity of assets, and strategies based on derivatives incorporate elements of nonlinearity (Fung Hsieh highlighted five distinct styles that explain more than 50% of the variability of HFs returns in conditions where currently the

possibilities of diversification have expanded even further offering in addition a detachment of correlations with the markets).
– Event risk (convertible bonds, acquisitions, special support for insolvent companies).

Going further with diversification strategies, there is the possibility of creating hedge fund portfolios, similar to stock portfolios, the so-called HFoF (Schulmerich, 2014). Grouped around 5–10 HF, 70–75% of portfolio risk is eliminated. It should be noted, however, that the benefits of diversification are limited in the case of arbitrage funds, and diversification across strategy styles can significantly reduce overall HFoF risk.

11.4 Conclusions

In the first section, the following were presented:

– The main management strategies of classic portfolios in VUCA environments.
– Aspects of risk management, how to harmonize managerial strategies with investment beliefs, and solutions for adapting to VUCA environments.
– Solutions for reconfiguring the weight and hierarchies of investment biases and beliefs starting from the understanding of the evolution of investment beliefs; references were made for the design of portfolio management strategies in VUCA environments.

In the second section, problems specific to emerging markets were analyzed in the current context, with references to mutual funds in Romania. In the case of portfolio management related to emerging markets, aspects related to how to adapt the general assumptions of capital markets to the current situation should also be reconsidered, focusing on the real possibilities of combining the asset classes available within the Markowitz-efficient frontier, by considering more many scenarios and the inclusion of specific liquidity restrictions, respectively, the formulation of effective options for the integration of alternative assets and their weighting within the extended portfolio.

In the third section, research was presented to understand the motivation of investors and the possible harmonization of the objectives with the offers proposed by the fund managers. The context in which the research was carried out refers to the negative evolution of the markets in the year 2022 against the background of the impact of the increase in inflation and interest rates in the context of the war in Ukraine, the energy crisis, and the recent banking crisis in the USA. The analysis of the results led to a series of particularly interesting elements. First of all, there is a very high level of confidence and an openness to new tools and creative performance strategies. On the one hand, there are significant differences between retail and professional investors (preference for active management; propensity for including externally managed elements in individual portfolios; inclusion of

alternative investments in portfolios). However, there are also common aspects, specific to our country (both categories of investors are interested in crypto and real estate investments). Another aspect concerns the interest in active portfolio management and the inclusion of sub-portfolios of alternative assets where surprisingly the interest in VC/PE funds is low while there is an incredibly high interest in crowdfunding and cryptocurrencies.

The main contributions refer to the following:

– Deciphering the current aspects of portfolio management.
– Understanding the strategies and solutions for adapting to the new conditions in the markets, against the background of the lack of a functional derivatives market.

Investors in our country, although few, are becoming more and more sophisticated, more and more refined, and active pursuing new aspects such as portfolio rotation (growth–value–bonds) or strategies based on ensuring high alpha values of investments.

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Chapter 12
Enhancing Well-Being Education Through Innovative Management

Amalia Venera Todorut

Abstract Educational well-being is an innovative, multidimensional, complex, inspirational, and fluid concept, which generates performance at the individual and the institutional level, with direct effects on the quality of life. It is also a challenge and a responsibility for the management and leadership of any organization since innovative techniques, tools, and practices have to be developed and applied in order for educational well-being to be successful in the increasingly hostile, turbulent, volatile, and ambiguous environments the modern world is facing with profound and rapid transformations on all levels of social life. For these reasons, well-being has become an important field of scientific research in education. It requires a social and emotional remodeling of all actors involved, so that learning is sustainable and effective, based on achieving motivation, satisfaction of one's work and life. Thus, in the context of creating a culture of well-being in schools or universities, it is necessary to design the mechanisms, relationships, rules, resources, and managerial processes through which the activities generating well-being are well thought out and monitored, aiming for an optimal allocation of all categories of resources in order to achieve the objectives. The paper aims to develop an innovative management and leadership process, based on human values that favor the creation of an optimal social and psychological climate for the development of well-being in any school or university, as a premise that generates value, efficient learning, and sustainable development. Thus, during the work I highlighted the need to identify the objectives, priorities, and key stakeholders, leading to the development of a strategy and an implementation plan, as well as monitoring the progress regarding the improvement areas. In this respect, I developed a well-being model based on four pillars, i.e., learning, support, work, and life. The research methodology is based on scientific investigation of specialized literature, indexed in international databases, through the analysis of numerous articles, studies, and indexes related to this field, published between the years 2019 and 2022. The on-going,

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empirical investigation involved applying a questionnaire addressed to teachers from schools and universities in the South-West Oltenia region and analyzing the response data.

12.1 Introduction

The need to rethink education goals and the development of the necessary skills students need in order to succeed and thrive is increasingly important especially today, when deep and widespread changes are transforming our world and disrupting the institutional status quo in many sectors. Global trends such as digitalization, climate change, and advances in artificial intelligence, to name just three, pose fundamental challenges to both the aims and teaching methods of modern educational institutions.

According to an OECD study (2019), the twenty-first century is characterized by interdependence among nations facilitated by global communication and decentralization of power, a situation which is accelerated by social media, emerging nationalism and increasing incidents of terrorism. The study describes our world as the age of accelerating technological innovations such as cyber-physical technology, social media, artificial intelligence, robotics, the Internet of Things, and 3-D printing, which bring both opportunities and challenges, including questions of ethics and morality. The use of social media has given companies new opportunities, and business models have changed to include those based on a shared economy. Social entrepreneurship has expanded the discussion of business to include purpose, which centers around creating social value and solving society's most pressing problems. Businesses are moving from a "corporate social responsibility" model to "shared value creation" models. In addition, workplaces have become more dynamic, less hierarchical, flatter, more open, flexible, and transparent where teamwork plays a primary role.

In the education sector, some changes have already taken shape. Schools are no longer seen as closed entities in themselves, but operate as part of the wider ecosystem which involves collaboration and the formation of networks and partnerships with other schools, scientific organizations, theaters, universities, social service organizations, companies of technology, and businesses. Here, faculty and students familiarize themselves with the skills and competencies that employers and other community members consider essential and critical. These schools aspire to operate with a curriculum that recognizes the need for interdependence and expands the goals of education to include "citizenship education." Such a curriculum recognizes individual differences among students, including different prior knowledge and skills, as well as different attitudes and values, as well as the dynamics of learning in different ways. Novel methodologies ensure that these curricula are more flexible, dynamic, and personalized rather than static, allowing nonlinear learning paths rather than expecting all students to follow linear progressions along a single, standardized path. In this way, each student's unique talents are developed so that all students can achieve their full potential.

12.2 New Trends in Educational Systems

It is widely recognized that education systems influence social processes but are also influenced by social and cultural changes. In this process of evolution, it is obvious that a common responsibility for the educational system has evolved, incorporating the involvement of active stakeholders especially in the decision-making process. In recent years, all stakeholders are increasingly working together and taking responsibility for student education, thus becoming active participants and agents of change in the system alongside teachers and principals.

In this context, we speak of the need for "managerial synapse," which is based on a systemic approach to cooperative relations based on the collaboration of stakeholders and the environment (Nicolescu & Nicolescu, 2022). Educational institutions are increasingly adopting this dynamic form of organization, facilitating their agile development, which leads to increased resilience, generating better results and ensuring organizational well-being. While student learning outcomes and academic achievement traditionally define the effectiveness and quality of their school experience, student well-being and student learning experiences expressing the quality of the "learning processes" have grown in value and expanded their focus beyond that of just "results."

It is now obvious that approaches to curriculum design and learning progression have moved from a "static, linear model of learning-progression" to a "nonlinear, dynamic model," which recognizes that each student has his own learning path and is equipped with different prior knowledge, skills, and attitudes. Considering these changes, the focus and purpose of monitoring the performance of the education system today has shifted from the traditional assessment of accountability and compliance to the assessment of continuous improvement of the system through feedback at all levels.

Most importantly, the role of students in the education system changes from participating in classroom learning by just listening to teachers' instructions, to active members, responsible participants, acting in collaboration with both fellow students and teachers, thus shaping the environment of the learning space. Global trends on the role of students, his commitment, and partnership with his fellows. The fact that students are supported to actively participate in various parts and stages of the educational process increases the quality of learning and ensures that all the prerequisites for achieving well-being both at the level of each educational actor, as well as at the organizational level, are fulfilled.

The following figure (Fig. 12.1.) describes the involvement of students in the decision-making process and the way partnerships between students and other stakeholders are achieved.

Following the above trends, the concept of educational well-being has emerged and adopted. Well-being is a concept in line with new trends in education and is considered the heart of the educational process. A new model of positive education is emerging that can be seen as a road map of what people want for themselves, their

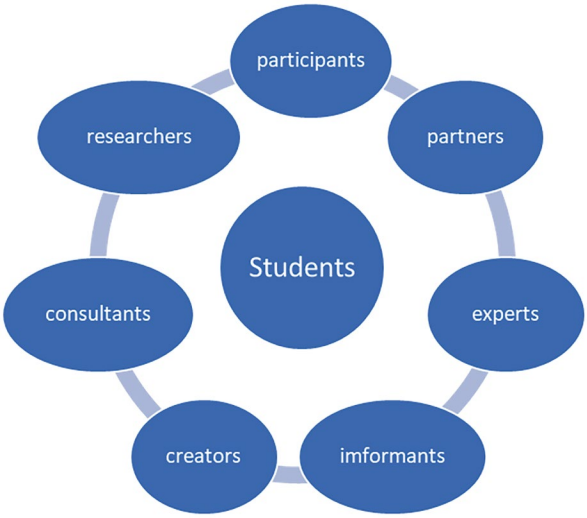

Fig. 12.1 The role of student. (*Source*: Adapted from Dixon, 2023)

children, and their community. This model is based on the concept of "flourishing," which involves living one's life in such a way that nurtures individual well-being and contributes to the well-being of others. Good health, frequent positive emotions, and supportive relationships, a purpose that gives meaning to life, a way in which a person uses his character strengths to support himself and others providing a sense of growth, provide the basis for "Flourishing" according to the Institute of Positive Education. Similar to the aforementioned, "Thriving" refers to the experience arising from when life is going well—when we feel good and function effectively (Seligman, 2011). The series of elements described in Fig. 12.2 are proposed to constitute the notions of "Flourishing" and "Thriving."

Positive education is based on the PERMA model developed by Seligman which consists of Positive Emotions (P), Engagement (E), Positive Relationship (R), Meaning (M), and Accomplishment (A) and develops what people want for themselves, their children, and their community, such as good health, frequent positive emotions, supportive relationships, and a sense of purpose and meaning. Studies show that positive mental health in adolescence has been associated with indicators of career advancement and taking on citizenship responsibilities (volunteering and civic activities). In this way, positive education is about "learning to flourish," since positive education leads to the well-being of the community in general, which is based on the total involvement of all stakeholders and the deep development of proactive practices. This involves the provision of training, consultation, and resources aimed at sharing knowledge with other institutions supporting the science of well-being in educational contexts to shape a better world.

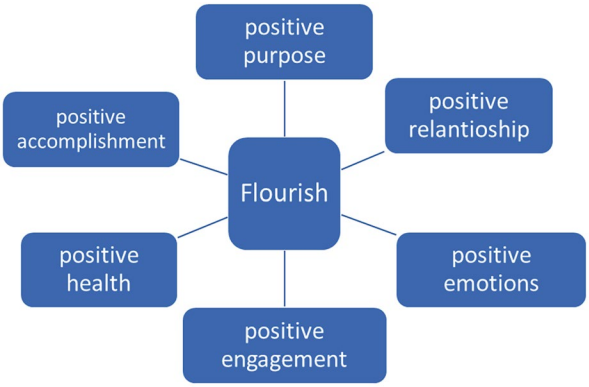

Fig. 12.2 Flowering. (*Source*: Adapted from Seligman, 2011)

12.3 Methodology

A questionnaire composed of 36 questions was formulated and distributed to high school teachers and directors in the Romanian educational system of Gorj county. The questionnaire was completed during several meetings between the school teaching staff and the researcher, usually after an educational seminar. The participants were given a debriefing page describing what the study entails and the time it takes to complete. The participants were asked to give their gender, age, position (teacher or director), and whether their school was in the town (urban) or the countryside (rural). A tick box was added for giving consent to participation. After each question and at the end of the questionnaire, space was provided for written additional information, suggestions, and views. The questionnaire was composed of 8 questions relevant to school infrastructure, 8 questions on learning procedures, and 20 questions on contextual relationships in schools. The participants were asked to answer the questions by referring to what they believe is necessary within the school environment in order to ensure social, emotional, educational well-being in their schools. A Likert-type scale of 1–5, ranging from total disagreement to total agreement, was provided as a basis for the responses. It is believed that no ethical considerations arise from this process, as total confidentiality of the data provided was ensured.

In this study there were 105 participants, with 95 being female and only 10 male. There were no missing data, and therefore, all responses were used in the results. The mean age of the 95 female participants was 38.1 (min.22 and max 55) and for the 10 males 35 (min 22 and max 28) years.

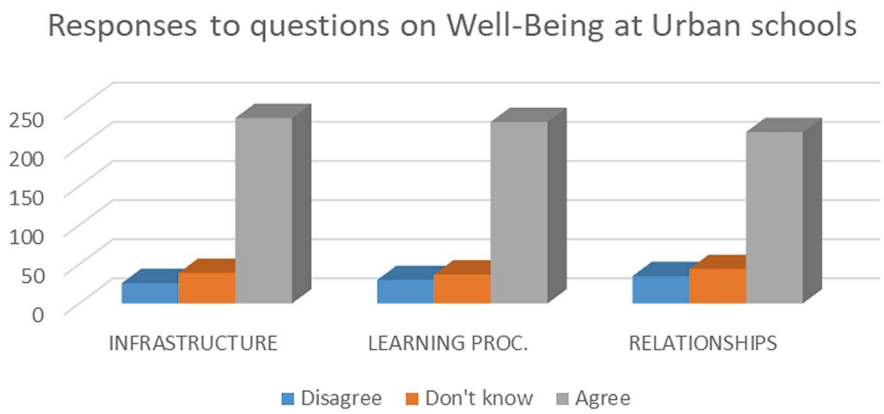

Fig. 12.3 Responses of female professors in Urban Schools—Gorj county educational area. (*Source*: Author)

12.4 Results

The descriptive statistics performed on the data collected is presented by the sum of responses grouped in the three categories of questions, i.e., infrastructure and learning procedures on contextual relationships, since the data were not sufficient to differentiate between individual questions. The responses to the questionnaire are shown in Figs. 12.3 and 12.4.

For statistical purposes, the participants were grouped according to age, creating three groups: female professors of age between 22 and 35 years, female professors of age between 36 and 45 years, and female professors of age between 46 and 55.

Analysis of the responses according to the age groups (not presented) showed no statistically significant differences indicating that age does not play a significant role in differentiating the opinions of female professors in either rural or urban schools.

12.5 Discussion

The results presented previously indicate that the professors of schools in the Gorj county area are informed and are strongly supportive of the principles and methodologies pertinent to well- being in the educational system. Their responses overwhelmingly support social, emotional, and educational relational conditions at the school level and are important in order to create and develop the well-being of both students and teachers leading to the improvement of learning outcomes and school success. There is no statistically significant difference in relation to age or whether the school is in a rural or urban setting.

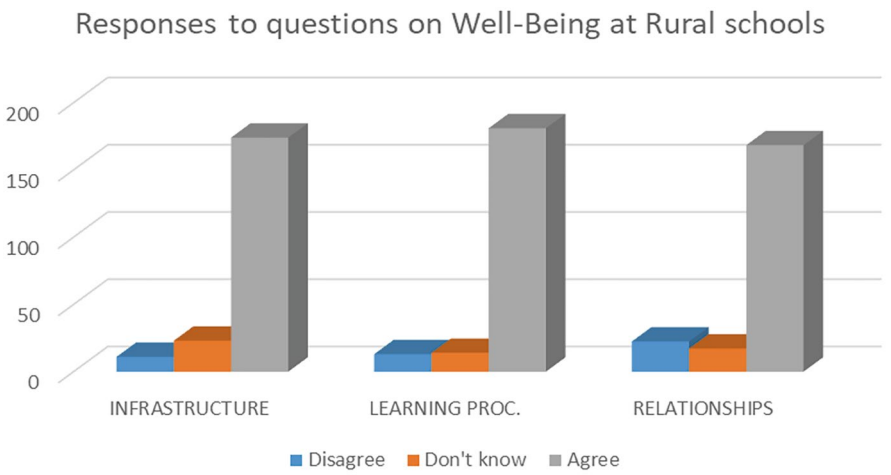

Fig. 12.4 Responses of female professors in Rural Schools—Gorj county educational area. (*Source*: Author)

This finding is highly promising indicating that teachers are eager to apply new methodologies and organizational practices and tools in their schools in order to achieve higher educational outcomes.

This research highlighted some questions, which received increase "disagree" and "don't know" responses, compared to other questions in the questionnaire. These findings, although not conclusive, indicate that issues such as classroom conditions, the existence of dedicated and properly equipped spaces for the relaxation of students, and teaching staff, regular meetings and areas for parent and teacher meetings, the involvement of parents, knowledge on how stress is created, and ways of helping students who feel stressed and how can school management improve its own managerial capacity need to be faced and tackled with novel approaches and tools. Finally, the question concerning the existence of an own system of rewards for the employed staff (such as letters of thanks, diplomas, support given for scientific activity and professional development, the awarding of honorary titles of teacher of the month/year, etc.) was highlighted as an issue that needs to be further studied in order to find ways to create a system whereby teachers are given incentives in order to apply novel systems in education and educational management in the future.

The study highlights the fact that all educational actors are aware of the need to ensure well-being in the school as a factor of school progress and increasing the performance of each educational actor and the organization in general. Organizations that have good results and where educational actors are happy are those where they have psychological safety, freedom, recognition, positive relationships and a sense of work, personal development, clarity, and support to implement different projects.

There are specialists (Phelan, 2023) who state that organizations should rely on two elements to be successful: employee happiness—which is connected to the

heart, gives us energy, and is obtained through psychological safety, freedom, recognition, and positive relationships—and employee engagement that is related to the brain and is achieved through the meaning of work, personal development, clarity, and support to implement different projects. That is why a new managerial model is required at the level of educational institutions, flexible, and adapted to current needs, which will value more the human resource, identify and apply new forms of collaboration with all stakeholders, and create a culture of quality and well-being in every organization.

12.5.1 Well-Being Management in School Organizations: Milestones in the Quality of Education

Creating and developing well-being is an essential element in improving the quality of education (OECD, 2022). Importantly, promoting the holistic development of students in both cognitive and non-cognitive domains requires a whole-school approach, encompassing all aspects of the school—i.e., curriculum, extracurricular activities, teacher training, human resources, leadership, infrastructure, operations, and processes. The whole school approach aims to cultivate positive relationships between school leaders, teachers, school staff, and students to ensure a safe and school-wide learning environment. High levels of happiness and well-being have wide-ranging benefits for young people and, more broadly, for the performance of education systems, the economy, and society. Conversely, low levels of well-being can have a negative impact on teaching and learning and endanger the present and future of young people and countries. As a result, policymakers and educators are paying increased attention to how the education system can support the well-being of students, teachers, and other non-teaching staff.

Well-being policies are based on the following aspects (OECD, 2023):

Actors/players/stakeholders: More than other education policies, the broad nature of the welfare issue involves a large number of stakeholders, teachers, school leaders, and relevant government authorities. Stakeholders can be both active agents, i.e., actors involved in the design and implementation of policies, and/or passive players, in that they are the target or beneficiaries of certain policies.

The environment/context in which it operates and coexists: the way stakeholders interact, including who leads the efforts or monitors the impact of policies, the way of collaboration between them that varies according to countries, regulations, processes, and culture that exist in the environment in which they operate.

The levers/channels on which well-being policies and practices are based can and should be increasingly used to support well-being policies and quality in education.

An effective approach to educational policies is characterized by the following dimensions:

- Smart policy design and implementation: this involves well-justified, evidence-based policy supported by relevant and properly aligned incentives and regulations.
- An enabling context: effective policy design and implementation processes recognize the influence of the existing political environment, through educational governance and the external context.
- Effective and inclusive stakeholder involvement: it is essential for the success of well-being policies that key stakeholders are actively and responsibly involved in policy design and implementation processes. It is equally important to develop their capacity and knowledge to ensure policy effectiveness.

The different policy levers are interconnected and interdependent. A successful policy approach to welfare in education requires a combination of these different channels, often at different points in the policy cycle. For example, strategies and visions can provide common direction and goals and define the roles and responsibilities of stakeholders. This is particularly relevant at the starting point of any reform process. It is important that these types of interventions are accompanied by relevant services and resources (e.g., psychological counseling and guidelines) that enable stakeholders to successfully implement this vision. Particularly suggestive is the correlation between wellness policies, their key levers, characteristics, and the level at which they are applied according to Table 12.1.

Based on the above data, a managerial model is developed regarding the main policy levers and channels used in schools to support well-being, as described in Fig. 12.5.

This model highlights the importance of strategic thinking in the field of well-being and the modification of quality standards at both pre-university and university levels to ensure the conditions necessary for the creation and development of well-being. The deeper and real involvement of all stakeholders; the collection and use of a system of data obtained through various and modern tools, including the online environment, to which are added the new positive pedagogies adapted to the current educational context; the resources involved; and the necessary training, in particular, for teachers, all these represent coordinates of an intelligent well-being policy.

The identification of stakeholders at the level of education is essential, and orientation towards stakeholders is the key to improving quality, which must be based on their expectations and requirements regarding well-being. It is interesting to identify the main stakeholders for the proposed model in order to understand more deeply their needs and the possible connections between these needs. The starting point involves the determination of stakeholders and their grouping into interest groups as shown in Table 12.2.

We observe a diversity of stakeholders, which makes the identification of needs not a very easy operation. In addition, the development of mechanisms that will allow for the identification of these needs regarding the well-being of education in a timely manner seems to become a challenge and a necessity for every organization.

Table 12.1 The relationship between policies, key policy levers, characteristics, and administration level

Dimensions	Key policy levers	Characteristics	Administration level
Intelligent policy design and implementation	Strategic vision and orientation	Visions and strategies that provide a common logic and understanding for well-being. A vision and objectives for the educational system are proposed, with roles and responsibilities	Educational system Schools and the work network between schools
	Regulatory mechanisms and standards	Rules, laws, standards, and other instruments that regulate the actions of stakeholders to support well-being	Educational system Schools and the work network between schools
	Data collection and monitoring	Surveys, assessments, and other tools that collect quantitative and qualitative data on well-being	Educational system Schools and school networks
	Research and analysis	Specific areas of interest are researched based on evidence; information is provided regarding the policies, the stages of program fulfillment	Educational system Schools and the work network between schools
Effective and inclusive stakeholder involvement	Awareness and communication	Communication mechanisms and resources for knowledge dissemination; awareness of certain welfare requirements	Educational system Schools and the work network between schools
	Training and capacity building	Tools, courses, and systems for developing skills among stakeholders	Educational system Schools and school work networks
	Stakeholder participation and collaboration	Regular and/or ad hoc committees, groups, and/or platforms to enable stakeholder engagement and collaboration	Educational system Schools and the work network between schools
A favorable context	Support services and resources	Tools and resources to promote well-being, identify problems, meet individual needs, and remove barriers	Educational system Schools and the work network between schools
	Training and pedagogy	Curriculum, assessment, and pedagogical strategies to help students develop cognitive and non-cognitive skills that support overall well-being	Educational system Schools and the work network between school

Source: adapted from OECD Well-being policies and practices in education

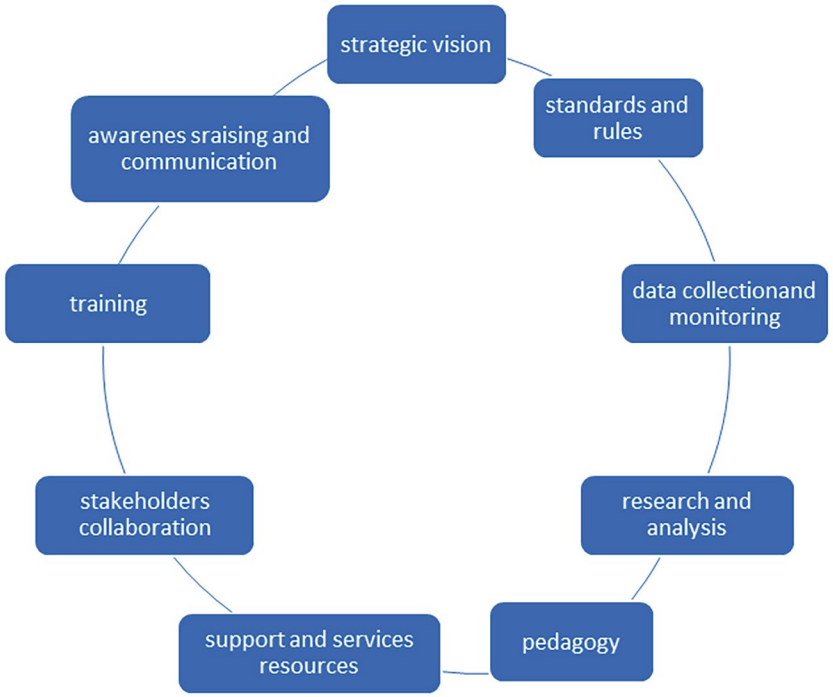

Fig. 12.5 Managerial model regarding policies to ensure well-being. (*Source*: Adapted from OECD Well-being policies and practices in education)

Table 12.2 Educational stakeholders

Internal stakeholders	External stakeholders
Students	Central government/Ministry of Education
Management of the institution	International and European bodies
Academic and administrative staff - teachers, researchers, administrative, maintenance staff, etc.	National and international academic community
	Professional associations
	Partner organizations, foundations, companies
	Employers
	Pre-university education units
	Alumni
	Parents and community
	Foreign investors

Source: adapted from Popescu and Brătianu (2004)

Table 12.3 Stakeholders involved according to the model (Fig. 12.5)

Policy levers and channels	Stakeholders
Strategic vision	Central government; International and European bodies; National and international academic community; Management and leadership of educational institutions; Partner organizations, foundations, companies, Employers
Standards and rules	Management and leadership of educational institutions; Students; Academic staff; Departments of quality
Data collecting and monitoring;	The entire staff; Students; Departments of quality
Research and analysis	Management and leadership of educational institutions; Mixed research teams; Students
Pedagogy	Teachers; Professional associations; National and international academic community
Support and service resources	Management and leadership of educational institutions; Professional associations
Stakeholder collaboration	Network of stakeholders
Training	Management and leadership of educational institutions; Professional associations; Alumni
Awareness raising and communication	Management and leadership of educational institutions; The entire staff; Students

Source: own processing

Based on the model proposed in Fig. 12.5, we can determine the main stakeholders on the trajectory of this model, as shown in Table 12.3.

Table 12.3 indicates that a variety of stakeholders are involved in ensuring well-being at a managerial level and highlights the importance of developing policies and stakeholder networks that will ensure a high level of flexibility and cooperation in order to address effectively the diversity of needs and expectations expressed by each stakeholder, thus achieving high value education and social well-being.

12.6 Conclusions

Designing and applying an innovative, collaborative, humanistic management in education, centered on the valorization of human resources, seems to be the key to the success of any educational organization, during these times when rapid social and the development and adoption of new technologies are taking place at a

dramatically accelerating pace. Especially in the increasingly digitized educational environment, management reconfigures its policies and practices with a more pronounced orientation to create and develop well-being for all educational actors, as individual and collective entities in all the educational stakeholders. Starting from a new vision, through research and analysis, through authentic collaborations with all stakeholders, promoting and applying a modern pedagogy based on visible learning, we can ensure educational well-being and the path to a healthy development of any organization. The new managerial model proposed can be a landmark in shaping strategy and policy regarding well-being, as a premise for progress, harmony and development.

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Chapter 13
The Particularities of Romanian Management

Sebastian Văduva, Igor Prisac, and Aliona Lîsîi

Abstract In the global landscape of business, effective leadership and collaboration hinge upon understanding and managing individuals within diverse cultural contexts. This article delves into the intricate tapestry of Romanian management practices, spotlighting the profound impact of culture, history, and socioeconomic factors on managerial philosophies. Positioned at the crossroads of Eastern and Western influences, Romania offers a compelling case study, showcasing a blend of tradition, innovation, and resilience in its managerial approach. Drawing on historical narratives and socioeconomic transitions, this article examines seven distinct characteristics that define Romanian management. Firstly, it explores the emphasis on relationship-oriented leadership, where familial bonds and interpersonal connections foster a supportive and cohesive work environment. Secondly, it highlights the innate flexibility and malleability ingrained in Romanian managers, enabling them to navigate through uncertainties with agility and strategic foresight. Moreover, the article sheds light on the prevalence of hierarchical structures and centralized decision-making, reflecting a cultural preference for strong leadership and clear chains of command. It also delves into the nuances of indirect communication, where diplomacy and subtlety play pivotal roles in navigating business negotiations. Furthermore, it explores the reverence for authority and formality, which permeate professional interactions, while resilience and humour emerge as hallmarks of Romanian management, enabling organizations to weather adversity with grace and determination.

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13.1 Introduction

In the dynamic and integrated world of business, understanding how to manage individuals is paramount for effective leadership and successful collaboration. In the context of people management, culture is a major ingredient that shapes management practices determined by a regions history, social norms, and economic conditions (Schühly, 2022; The World Bank, 2016). Romania, positioned at the junction of Eastern and Central Europe, stands out as an intriguing and paradoxical case study of the impact culture has upon management practices (Ţîţu et al., 2020). Romania is the most northern state in the Balkan peninsula, it speaks a Latin language, yet it is surrounded by Slavic neighbours. It is comprised of the Moldova region to the east with its Russian influence, the Walachia region to the south with its Ottoman influence, and the Transylvania region to the west with its Austro-Hungarian influence. These regions are further separated by the Carpathian Mountains in the middle. This history and geography of Romania presents a rich tapestry of managerial practices deeply rooted in its heritage and culture (Dalton & Kennedy, 2007; Medium, 2024).

Romania's history, a fusion of Eastern and Western influences, has profoundly influenced its managerial practices. From its ancient Roman and Byzantine influences, to the invasions and occupations of the middle ages, Romania's story is a mosaic of diverse cultural encounters (Gâf-Deac, 2019; Hitchins, 2014). These historical layers have shaped a distinctive managerial mindset that seamlessly blends tradition with modernity and resilience with adaptability. The foundations of Romanian management are familial ties with strong interpersonal relationships in an agricultural context. In contrast with cultures that adhere to strict hierarchical structures, Romanian managers often cultivate a familial atmosphere in the workplace, emphasizing trust, loyalty, and solidarity. This emphasis on personal connections extends beyond the workplace, affecting the decision-making process and organizational dynamics (Gâf-Deac, 2019).

From 1947 until 1989, Romania was part of the communist block established by the Soviet Union at the end of World War 2. Private property was outlawed with most managerial decisions being centrally dictated. Post-communist Romania has been in a state of redefinition, oscillating between capitalism and socialism. The transition from a state-controlled command economy to market-driven capitalism was a complex structural change (Brouthers et al., 2023; Urea, 2021). Romania's transition after communism has influenced its management practices, fostering a practical approach to problem-solving and resource allocation (European Commission, 2021; Urea, 2021). The legacy of centralized planning and state control has birthed a managerial style characterized by adaptability and a knack for improvisation. Despite bureaucratic challenges and economic uncertainties, Romanian managers have developed the art of navigating complex environments, using their creativity and resilience to steer organizations toward success (Karatepe et al., 2020).

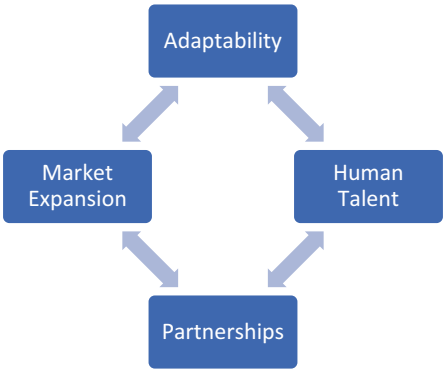

Fig. 13.1 Cultural adaptability and global success: Romanian management perspectives. (*Source*: Authors)

Romania's strategic geographical location as a bridge between East and West can infuse its management practices with a focus on international collaboration and market expansion. Romanian managers can excel at forging cross-border partnerships and seizing opportunities in global markets, leveraging their cultural adaptability to thrive in an interconnected world, while dealing with a national challenging environment (United States Department of State, 2023; Fig. 13.1).

Romanian management is a multifaceted blend of tradition, innovation, and adaptability, shaped by the country's history, socioeconomic conditions, and cultural diversity. In this chapter, we shall outline seven distinct characteristics of Romanian management, with their principles and philosophies shaped by history and traditions. They are relationship-oriented management; flexibility and malleability; hierarchy and centralized decision-making; authority and formality; resilience and humour; and the importance of foreign partnerships.

13.2 Relationship-Oriented Management

The first prominent characteristic of Romanian management is the emphasis on relationship-oriented leadership, an important component of workplace dynamics rooted in Romanian culture and tradition (Cristea, 2022). Unlike western management that prioritizes task-oriented leadership, Romanian managers place a significant emphasis on building strong personal connections with their teams. They understand that these relationships and loyalty are crucial to fostering productivity and cooperation among team members. In Romanian management, investing time and effort in cultivating interpersonal relationships is seen essential. Managers often go out of their way to connect with people on a personal level, through nonwork-related conversations and activities, mentoring sessions, or team-building activities. This relational approach can create a supportive environment where employees feel valued and respected, leading to higher morale and productivity (SAMRO, 2017).

The emphasis on relationships goes beyond the workplace. Social interactions extend beyond professional boundaries, often encompassing activities outside of work hours. It is not uncommon for Romanian managers to organize team outings, social gatherings, or even family events, further strengthening the bonds among colleagues. These informal gatherings foster a sense of camaraderie and solidarity, enhancing teamwork and collaboration in the workplace (KPMG, 2023). Furthermore, relationship-oriented leadership in Romanian management is also about fostering a sense of belonging and community. Managers understand the importance of creating a work environment where employees feel like they are part of a larger family. This inclusive approach promotes a positive organizational culture where everyone's contributions are valued, regardless of their position or background.

On a negative side, Eastern European nations are influenced by a "shaming and blaming" culture where, in the case of failure, people try to escape from the responsibility for the sake of not losing their image. This affects the creativity and innovative development of the entrepreneurship and the creation of companies that could become leaders in different fields of industry in Europe. This environment causes a set of excuses not to do or solve actual problems that will create new markets by innovative enterprises. Nevertheless, relationship-oriented leadership plays a central role in Romanian management practices, reflecting the country's cultural values of warmth, hospitality, and interpersonal connection. By prioritizing relationships and fostering a sense of community, Romanian managers create workplaces where employees feel supported, engaged, and motivated to excel.

13.3 Flexibility and Malleability

In a dynamic and often unpredictable business environment, flexibility and malleability are essential traits of successful management. Romanian managers stand out for their abilities to navigate through challenges and pivot their strategies in response to changing circumstances. This inherent flexibility is deeply ingrained in Romania's history, shaped by repeated political and economic transformations, where resilience and resourcefulness were indispensable survival skills (Demyen, 2022). Given this historical legacy, Romanian managers have a unique aptitude for improvisation, quick thinking, and strategic adjustment. They possess a knack for thinking on their feet, swiftly devising solutions to unexpected obstacles, and seizing upon emerging opportunities (Demyen, 2022; European Commission, 2021). This agility is not merely a response to external pressures but a proactive approach to staying ahead in rapidly evolving markets.

What sets some Romanian managers apart is their willingness to embrace change and innovation wholeheartedly. Rather than being daunted by uncertainty, some of them see it as an opportunity for growth and development. This proactive mindset enables the organizations under their leadership to thrive in volatile environments.

The Confidex index, calculated by Impetum Group based on a poll among 504 companies in Romania, measures managers' confidence. In the first half of 2023, this index reached its highest level in 3 years, standing at 50.2 on a scale of 0–100 (KPMG, 2023).

However, this managerial practice, rooted in Romanian history and culture, can also have the negative side effect of inconsistency. There are the risks of strategic decisions to be adopted in "declaration-only" without any intent of actual implementation. Nevertheless, Romanian managers are flexible and adaptable, considering the nation's history of resilience and the necessity to navigate through turbulent times with confidence and agility. By embracing change and innovation, managers can empower their organizations to chart a course towards prosperity in an ever-changing business landscape.

13.4 Hierarchy and Centralized Decision-Making

Despite the growing influence of modern management trends, hierarchical structures and centralized decision-making remain dominant, especially in large Romanian organizations (Mihai et al., 2016). Traditional organizational hierarchies, featuring clear lines of authority, with decision-making concentrated at the top levels of management are still common in most Romanian organizations. While this model can streamline processes and ensure efficiency, it may also lead to bureaucracy and inhibit innovation (Nicolescu & Nicolescu, 2020; Urea, 2021). In many cases, Romanian managers hold significant decision-making authority, relying upon their expertise and seniority to guide organizational strategy. While they may seek input from subordinates, the final decisions typically belong to upper management. This hierarchical approach reflects a cultural preference for strong leadership and clear chains of command, though it may pose challenges in empowering employees and fostering creativity (Zait & Zait, 2016).

Considering their history, Romanian organizations and managers are not natural prone to risk-taking. In some instances, experimentation and trial-and-error are perceived as a cover for incompetence or laziness. As a result, imitation is often the preferred, modus operandi, with many managerial principles and practices being transferred from the developed economies in the west. This was accentuated in the past three decades by many western firms established in Romania, who perceived their operations there as cost centres, not innovation centres. In those instances, decision-making was reduced to the implementation of policies stemming from western headquarters, with little or no input from local management. Nevertheless, as in the case of Dacia, the auto champion, or some information technology firms, Romanian innovation was eventually incorporated into global supply chains (Diaconu, 2018).

13.5 Indirect Communication

In the realm of communication, each culture has a unique set of customs and norms, shaping the way individuals interact and transmit information. This is further determined by individual's personality and upbringing. At the heart of Romanian communication lies politeness and evasive talk that can be transformed in tense situations in insults and exaggerations. In the intricate dance of business negotiation, Romanian managers are adept at the delicate manoeuvre of telling others what they want to hear. This strategic approach, while aimed at sidestepping confrontation and fostering agreement, underscores a cultural propensity for indirect communication (Target Romania, 2023).

Direct and wholistic communication, while valued in some managerial cultures, is approached with caution in Romania. Instead of bluntly rejecting proposals or ideas, managers employ an indirect approach, skilfully navigating the terrain of politeness and tact. By offering feedback in a nuanced manner and couching criticisms in diplomatic language, they preserve the integrity of relationships while addressing underlying concerns. The firm ground of agreement in Romanian communications may give way to fluidity and reversibility. Decisions appearing concrete are subject to the ebb and flow of circumstance and information. Adaptability in communication and especially understanding emerges as a prized trait, allowing negotiators to pivot gracefully in response to changing tides (Popovici, 2011).

To navigate the labyrinth of Romanian negotiations and communication, one must master the art of subtlety and diplomacy. The following is a list of recommendations:

1. **Build a rapport**: Invest time in cultivating relationships, as they are the bedrock of all communications.
2. **Learn to read between the lines**: Listen and understand not only words but also sounds, facial expressions, and nonverbal cues, deciphering what is not being said.
3. **Use diplomatic language:** Wrap requests in the velvet cloak of politeness, sparing neither courtesy nor respect.
4. **Be patient:** In Romania, time flows slowly, and decisions ripen slowly. Exercise patience, for haste can be the enemy of fruitful communication.
5. **Balance directness and indirectness**: Too much of either risks upsetting the delicate equilibrium, leading to discord or confusion.

Although this characteristic of the Romanian culture makes project implementation longer with more costs in terms of quality and budget, it also hinders foreign investors and managers to adapt to such environment. It makes more difficult to get the right and in time feedback which is very important on the European market and be leaders of the competition. Also, it makes the Romanian business society to think and look to the western companies as the best business models or economic models being "paralysed" by the uncertainty of indirect feedback, negotiations, approaches, and strategies of the local enterprises.

13.6 Authority and Formality

In the fabric of Romanian culture and its management practices, respect for authority and adherence to formal protocols are deeply ingrained principles, especially in large organizations with governmental influence. Romanian managers command deference and formality, particularly in professional contexts, where titles and ranks carry significant weight. Within organizations, individuals in positions of authority are accorded respect based on their seniority and expertise, creating a hierarchical structure that fosters order and stability (Vaduva, 2016).

This culture of formality extends beyond mere titles; it permeates communication styles and interaction norms. For instance, the Romanian language contains politeness pronouns utilised when addressing senior individuals. Romanian managers prioritize polite language and courteous interactions in all professional dealings. Meetings and presentations adhere to established protocols, featuring clear agendas and structured proceedings. While this adherence to formalities cultivates professionalism and decorum, it may also pose challenges, particularly in multicultural work environments, where it could inhibit open dialogue and spontaneous collaboration (Vrânceanu & Iorgulescu, 2016).

13.7 Resilience and Humour

The history of Romania bears witnesses to numerous trials, including political upheavals, economic hardships, and social challenges. Yet, in the face of adversity, Romanian managers have demonstrated a remarkable resilience characterized by perseverance, determination, adaptability, and humour. When faced with challenging situations, a reflexed response in the Romanian culture is to "make fun of hardship." Furthermore, Romanians are recognised storytellers, with a joke or an allegory ready for most situations which often enable them and their teams to pass through difficult situations more easily. Drawing strength from their experiences navigating through turbulent times, they exhibit an unwavering commitment to steering their organizations through uncertainty and crisis (Ştefănescu, 2016).

Romanian managers are adept at weathering economic downturns, regulatory changes, and external shocks, leveraging lessons learned to sustain organizational performance amidst adversity. Their resilience is not merely a survival tactic but a testament to the indomitable spirit of Romanian management. It reflects their ability to remain committed in their vision and leadership, guiding their teams towards success even in the most challenging of circumstances. By exemplifying resilience and fortitude, Romanian managers can inspire confidence and instil a sense of stability within their organizations. Their unwavering resolve serves as a beacon of hope, guiding their teams through turbulent waters towards brighter horizons (Benedek & Lembcke, 2017).

13.8 The Importance of Foreign Partnerships

Romania's geographical location, at the crossroads of Eastern and Western Europe, serves as a significant advantage for its management practices. Romanian managers possess a keen awareness of their country's unique position, which facilitates access to both Eastern and Western markets, as well as numerous cultural exchanges. This strategic orientation towards international collaboration is deeply ingrained in Romanian management practices. Recognizing the opportunities presented by globalization, Romanian managers actively seek and are comfortable in international partnerships and alliances. By capitalizing on their cultural fluency and adaptability, they navigate the complexities of cross-cultural business interactions with finesse (Vătămănescu & Mitan, 2019).

Moreover, Romanian management embraces a proactive approach to market expansion. Rather than confining themselves to domestic markets, large companies led by Romanian managers eagerly explore opportunities for growth and diversification on a global scale. This outward-looking perspective enhances their competitiveness and fosters innovation and creativity within their organizations (Burciu et al., 2023). For instance, in December 2023, Romania's Foreign Direct Investment (FDI) increases by 231.3 million dollars (CEIC Data, 2024). Whether through joint ventures, strategic alliances, or cross-border investments, Romanian management exhibits a dynamic and forward-thinking approach to international collaboration. This strategic orientation towards international collaboration is a hallmark of Romanian management, reflecting a deep understanding of the interconnected nature of today's global economy. By harnessing their cultural fluency, adaptability, and strategic foresight, Romanian managers position their organizations for success in an increasingly interdependent world.

13.9 Conclusion

The examination of Romanian management practices reveals a tapestry woven with distinctive characteristics deeply rooted in the country's rich history, culture, and societal values. From the emphasis on relationship-oriented leadership to the resilience displayed in the face of adversity, these trademarks provide valuable insights into how Romanian managers operate within their roles and responsibilities. The emphasis on familial bonds and interpersonal relationships underscores the importance of trust and solidarity within Romanian workplaces. This, coupled with the pragmatic problem-solving approach shaped by the country's post-communist transition, highlights the adaptability and resourcefulness ingrained in Romanian management practices.

However, challenges such as slow decision reversals and bureaucratic processes serve as reminders of areas needing improvement. Despite these obstacles, Romanian managers demonstrate a commitment to innovation and creativity,

evident in their efficient organization of activities and transfer of managerial know-how from other countries. The understanding and appreciating of these unique features of Romanian management can provide valuable insight both to western organizations doing business in Romania, but also to other developing nations looking for best practices and workable models to emulate.

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