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Identifying Effective Factors of Organizational Resilience: A Meta-Synthesis Study

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Abstract

All organizations inevitably must deal with various critical situations. This requires providing the necessary resilience-building infrastructure and facilities. A review of the research literature reveals that scholars have examined factors affecting Organizational Resilience (OR) from different perspectives. This paper aims to compile and synthesize qualitative findings of previous research to gain an in-depth understanding and provide a list of effacing factors to organizations on their improvement practices related to OR. In conducting a systematic literature review, 98 articles were selected for final analysis. The data were analyzed, summarized, and synthesized in a step-by-step coding process, where 14 themes were identified as factors influencing OR. The identified factors included flexibility, control, redundancy and resources, planning and preparedness, decision-making, social capital, resilience policymaking, organizational culture, staff, financial and economic viability, collaboration, customers and markets, modernization discourse, and learning. Through a meta-synthesis of qualitative findings, this study is one of the first to form a novel perspective for offering a holistic understanding of affecting factors that provide evidence to support improvement practices in OR.

Keywords: Resilience, Organizational resilience, Meta-synthesis, Effective factors, Qualitative research.

1 | Introduction

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Regardless of size, all organizations are vulnerable to external threats and disasters. Accordingly, even small threats and everyday events can influence the performance of organizations [1]. Because these threats are unavoidable, organizations must be flexible in responding to them. Flexibility (in its general manner) of organizations in the face of external threats has been interpreted as resilience in various sources. The adverse impact of natural disasters and economic crises on organizational operations highlights the need for further study of Organizational Resilience (OR) [2]. Many researchers have recently studied the concept of OR. In addition, the term resilience has been defined differently by several theorists. Scholars have generally assessed and defined resilience from the perspective of organizational capabilities, capacities, characteristics, results, processes, behaviors, strategies, approaches, performance, etc. [3].



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Sutcliffe and Vogus [4] define resilience as a process leading to organizational flexibility and yielding positive results. According to them, resilience indicates how an organization deals with various adversities to achieve a flexible and satisfactory result. Sekaran et al. [5] define OR as the ability and capacity of organizations to cope with various crises and challenges and to return to normal conditions in critical situations. They also argue that all businesses must be resilient. In today's uncertain conditions and changing environment, organizations face countless challenges; therefore, flexibility and adaptability are necessary for all organizations to develop a strong mindset [1]. Organizations would recognize the importance of OR if their work processes were disrupted by unforeseen crises such as the resignation of their knowledge workers [2].

A review of the research literature reveals that scholars have examined factors affecting OR in critical situations from different perspectives. For example, some researchers have focused on organizational viewpoints such as organizational structure and production line flexibility [6]–[8], while others have emphasized individual aspects such as employee attitudes and human resources [1], [9]. On the other hand, some researchers have examined OR from the perspective of organizational environments, such as the geographic location of an organization [10]. By further reviewing the related literature, we see the variety of findings, views, and orientations regarding the effective factors. Researchers have argued that their research results can greatly impact the organization's resilience, and it is required to pay attention to them in the improvement programs. This wide and diverse range of effective factors makes it necessary to have a coherent and concise combination. This study conducted a qualitative meta-synthesis approach to identify factors affecting OR from a holistic point of view. Thus, the research's main problem is identifying the factors that contribute to OR. This study offers a novel perspective and a holistic understanding of the factors influencing OR improvement practices, supported by evidence.

2 | Theoretical Foundations and Research Background

2.1 | Theoretical Foundations

In the literature, disruptive events and shocks are mentioned using words such as rare events, catastrophes, surprises, and crises. They can be categorized according to the type of event, time, and occurrence inside\outside of the organization, frequency, and length of the event. Furthermore, 'crisis' may be considered a pervasive term for those unexpected events hindering or barricading achieving desired performance and strategic goals [11].

The term resilience refers to the elastic property of materials. The word comes from physics and means “jumping back”. In fact, resilient organizations are able to bounce back [2]. Moin Encyclopedic Dictionary defines resilience as the ability to “tolerate” or “withstand”. It also considers “stability” and “resistance” as synonyms for the word resilience [6]. The resilience literature generally assesses an organization's ability to adapt to shocks or gradual environmental changes [12]. The word resilience is derived from the Latin verb *resilire*. It was first introduced into the environmental literature by Holling [13]. In his view, resilience is a measure of a system's ability to absorb change while maintaining the same level of resistance [14].

Resilience is primarily an expression of a point of view and a coping mechanism that helps individuals and organizations understand their surrounding environment and quickly resume their activities [15]. The concept of resilience can be considered from technical, organizational, economic, and social perspectives [6]. Neise et al. [12] argue that the concept of resilience can be analyzed at three levels, including the micro level (i.e., the resilience of independent organizations), the meso level (i.e., the resilience of an industry or a market), and the macro level (i.e., the resilience of a set of organizations and markets). In this study, we seek resilience at the organization (micro) level.

OR is may be defined in three ways: 1) the ability of an organization to absorb pressures and maintain and improve its performance despite existing difficulties and problems, 2) the ability of an organization

to return to its original state after an adverse event, and 3) not only to restoration but also to the development of new capabilities and creation of new opportunities for progress [2], [6], [16]. In critical situations, OR provides a balanced state to allow a quick return to a new stable state. Indeed, resilience implies rapid change rather than simply restoring the previous state [17].

2.2 | Research Background

At the organizational level, resilience is trackable through a portion of characteristics, routines, capacities, practices, capabilities, abilities, and processes that facilitates an organization to cope with expected and unexpected disruptions and survive [3], [18]. Many researchers have examined the issue of OR in Iran and other countries. Ebrahimi et al. [6] performed a comprehensive analysis of factors affecting OR of SMEs and ranked the identified factors using the Analytic Hierarchy Process (AHP) technique. Amiri et al. [1] adopted a mixed-methods research approach to develop a model of OR. The authors argued that the designed model could identify the strengths and weaknesses of organizations in the area of resilience. In another research, Kowsar et al. [2] used a quantitative research approach to identify components and consequences of resilience at the individual level among employees of Iran's Cultural Heritage Organization. Mohammadi Shahroodi et al. [16] adopted the grounded theory approach to present a OR model in manufacturing companies.

Rose [7] used mathematical and quantitative models to assess the economic resilience of organizations to natural and man-made disasters. Somers [19] used a quantitative approach to measure the resilience potential of organizations. In the end, he devised an adaptive strategy for organizational crisis planning. In a quantitative survey, Lee et al. [20] developed a tool to measure and compare OR. In analytical research, Sabatino [21] examined the resilience and competitiveness of some organizations and companies. Brown et al. [22] used a quantitative research approach to assess the OR of critical infrastructure providers. In another qualitative study, Duchek et al. [23] formulated a theoretical framework to investigate the impact of divergence and diversity on OR.

In recent years, many studies have examined resilience to COVID-19 and assessed strategies adopted by organizations to deal with this crisis. For example, Bassett et al. [24] examined the initial lessons learned from the COVID-19 crisis in fisheries supply chains. In addition, Marusak et al. [25] examined the resilience of the food supply chain and enumerated lessons that can be learned from the COVID-19 pandemic. In another study, Wiczorek-Kosmala [26] examined the resilience of the tourism industry during the COVID-19 pandemic. Therefore, all studies mentioned above generally examined factors that promote OR.

Researchers have concluded that the concept of OR is multidimensional and has a complex and dynamic nature. Hence it should be characterized via various features and factors [3], [18]. An issue related to current theoretical and empirical findings is that they may have a significant distance from sufficient exploring factors directed to OR [27]. The construct of the literature has passed its infancy but is not mature [3]; it seems to be an appropriate time to conduct a systematic review and meta-synthesis to get a holistic perspective.

3 | Research Method

"A paradigm is a worldview or framework through which knowledge is filtered; it is a foundational perspective carrying a set of assumptions that guide the research process" [28]. There exists a close association between interpretive paradigm and qualitative methodology. Based on the expression of various scholars, it is theoretically recognized that the interpretive paradigm shows the world through the participant's experiences and perceptions to researchers; hence it prefers to use qualitative methods for data gathering [29]. Gadamer realizes three concepts to address the interpretive process: the hermeneutic circle, the fusion of horizons, and a dialogue with the text. This way of understanding through the interpretive process is useful for associating qualitative meta-synthesis with the interpretive paradigm [30].

Critics argue that while individual qualitative researches create rich findings and insights, the lack of linkage between studies restricts their utility [31]. The rapid increase volume of qualitative research has drawn attention to synthesis as one means of combining knowledge gathered from individual studies and developing theory [32].

“Qualitative meta-synthesis serves as a design to interpret and synthesize qualitative findings across individual studies. More than a broad summary, meta-syntheses do not aim merely to summarize all available data; rather, qualitative meta-syntheses present new perspectives on topics through interpreting findings from different qualitative studies to create ‘third-level’ findings for the advancement of both knowledge and theory” [31]. A meta-synthesis approach is based on a systematic review of the research literature in which researchers analyze documents and articles related to a specific area or topic [33], [34].

Assembling the findings of multiple primary qualitative findings of studies using a systematic process may have several additional benefits, which may help to generate more comprehensive and generalizable theories, identify research gaps, add breadth of understanding to existing knowledge, present novel perspectives via interpreting findings, usefully inform the implementation of interventions and programs and provides evidence to support practice [31], [33], [35], [36].

The authors used the seven-step approach of Sandelowski and Barroso [37] to solve the research problem. This qualitative research adopted an interpretive paradigm approach to explain and interpret the concept of OR and its components. As shown in *Fig. 1*, the following seven steps were taken to achieve the research objectives:

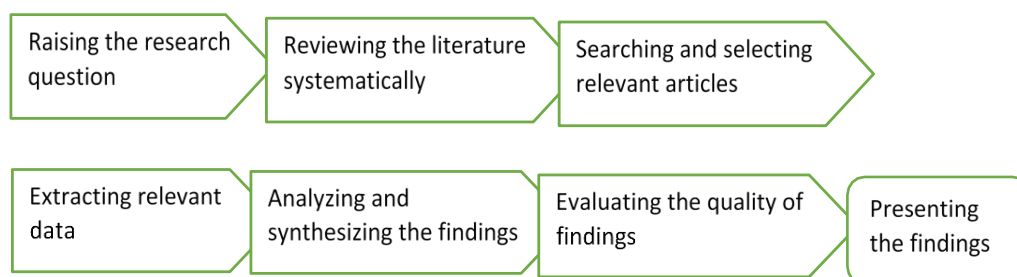


Fig. 1. Seven steps of the meta-synthesis [37].

4 | Findings

The following steps were taken to carry out this research and present its findings.

Step 1. In the first step, the research questions were raised according to the criteria of “what”, “who”, “when”, and “how”. *Table 1* explains the research questions in detail.

Table 1. Research questions.

Criterion	Question	Possible Answer
What	What factors affect OR?	To answer this question, the identified codes were categorized and summarized in a step-by-step coding process. Then, factors affecting OR were presented in the findings section (Step 7).
Who	Who does the study population include?	The authors carefully reviewed and screened relevant research articles published in reputable local and international journals and publications, as articles are more scientifically credible than other documents such as books, dissertations, and gray literature sources (usually unavailable to the public).

Table 1. Continued.

Criterion	Question	Possible Answer
When	When were the collected documents and articles written?	In domestic databases, relevant articles published since 2011 were reviewed, while in international databases, relevant articles published since 2000 were reviewed. Relevant articles were screened and selected in January 2022.
How	How do the authors solve the research problem?	In this qualitative study, the authors used a seven-step Sandelowski and Barroso [37] meta-synthesis approach to identify factors affecting OR.

Step 2. After determining the above research questions, the authors collected relevant articles. To this end, the most reputable domestic databases (e.g., Elmnet¹, Magiran², and Noormags³) and international databases (e.g., Google Scholar, Science Direct, Emerald, Scopus, Web of Science) were searched. *Table 2* shows these reputable databases and the keywords used in the search process.

Table 2. Databases and keywords.

Database	Keyword
Elmnet, Magiran, Noormags, Google Scholar, Emerald, Scopus, Web of Science, and Science Direct	“Resilience”, “OR”, “Resilience + Organization”, “Effective Factors + Resilience”, “Impact + Resilience”, “Effective Factors+ OR”, “Impact + OR”, “Model + Resilience”, “Model+ OR”

Step 3. Systematic search of the electronic databases was conducted in January 2022 using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) principles (*Fig. 2*).

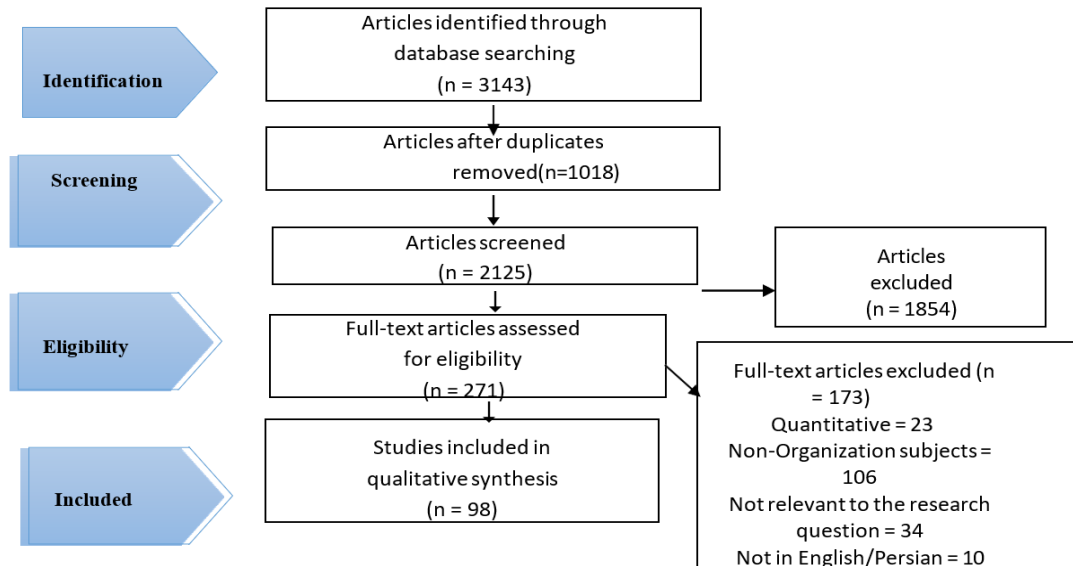


Fig. 2. Article selection process.

Aggregating two types of eligibility, related to topic and research characteristics, the inclusion/exclusion criteria can be realized as follow: related topic, language, publication year, document type, peer-review status, funding, and methodology [38]. The inclusion/exclusion criteria of this study is given in *Table 3*. Therefore, among the initially selected articles (N = 3143), 98 articles were identified for the final analysis.

¹ <https://www.elmnet.ir/>

² <https://www.magiran.com/>

³ <https://www.noormags.ir/>

Table 3. Eligibility criteria.

Inclusion	Exclusion
Research article	Quantitative funding
Were peer-reviewed	Not organization subject
Qualitative research or the qualitative part of a mixed methods study	Not related to research questions
Explicit or implicit mention of factors effacing OR	Not in English/Persian
English/Persian language	
Published from 2000 to January 2022	

There is the variety of appraisal tools for the quality assessment of qualitative research. The chosen appraisal tool depends on the aims of the finding's synthesis, the researcher's expertise, and the time and resources available. We chose Critical Appraisal Skills Programme (CASP) checklist for qualitative research to appraise the quality of included studies since it: 1) is short and easy-to- follow, 2) applies to all qualitative methodologies and 3) is most commonly used in qualitative synthesis [39]. Quality appraisal was completed by YH and MA and adjudicated by the rest of the authors. All studies were included regardless of methodological quality to avoid excluding important descriptive findings due to methodological weakness.

Steps 4 and 5. This study used the Unlu-Qureshi instrument as an analytic tool for analyzing and coding data. It comprises four consecutive data analysis steps, including developing codes, concepts, categories, and themes in sequence. Through the cyclic procedure, it can be used in all three stages open, selective (axial), and theoretical coding. The step-by-step approach of the Unlu-Qureshi instrument over the three coding stages benefits the analytical process in multiple ways as helping in organizing the data, decreasing researchers' block, strengthening the verification of the findings (helping with frequent interaction and familiarity with data), and allowing freedom to researchers by informing them of requisite steps [40].

Despite the final result of qualitative meta-synthesis as an integration of research findings, researchers may use a variety of approaches to synthesize findings. It is related to the purpose and desired result of research and the kind of findings in the reports included in the study. We decided to apply taxonomic analysis to synthesize our findings because it: 1) is an inductive form of domain analysis useful for theory development, 2) is to a great extent compatible with the axial and selective coding, and 3) allows more penetrating syntheses by showing what is not there that ought logically to be there, in addition to the explicit theoretical properties of findings [37]. In the initial (open) coding process, the researchers first extracted 814 codes; however, after correcting these codes based on expert opinions and omitting duplicate and overlapping items, 112 concepts were identified. These 112 concepts were classified into 44 categories and 14 themes using the taxonomy approach and Unlu-Qureshi tool (Table 4). This task was done in a cyclic process and in consultation with two academic experts and a resilience practitioner to enhance validity.

Table 4. Initial codes, concepts, categories, and themes.

Theme	Category	Concept	Number of Concepts	Author(S)
Flexibility	Flexibility in operation and structure	The flexibility of production line and operation based on market requirements	13	[18], [19], [56], [63], [64],[66],
		Flexibility of organizational structure	10	[69], [74], [80], [90],
		Compatibility with laws and natural resources	9	[102]
Robustness	Robustness	Appropriate design (resistance and absorption of shocks)	6	[1], [7], [9], [42], [47], [61]
		Recruitment of resilient employees	2	
Dynamic competitiveness	Dynamic competitiveness	Agility (acting quickly in crises and finding alternatives to deploy in times of crisis)	12	[7], [8], [19], [50], [105], [110], [79],
		Competitive orientation	3	[47], [80],
		Sensitivity to market risk	3	[51], [93],
				[62]

Table 4. Continued.

Theme	Category	Concept	Number of Concepts	Author(S)		
Control	Appropriate performance evaluation	Developing an evaluation checklist containing resilience indicators	5	[8], [46], [48], [49], [57], [88]		
		Compatibility of performance evaluation mechanism with the complex nature of systems	3			
		Evaluation and implementation of relevant risk management standards in all areas (financial, market, technical, safety and environmental)	10	[48], [50], [57], [61], [62], [64], [81]		
	Risk assessment and management	Monitoring and anticipating	Regular monitoring of operational status and early detection of disruptive events within the organization	18	[1], [8], [15], [20], [22], [48], [49], [52], [55], [58], [67], [68], [69], [70], [71],	
			Proactiveness and managerial and market information seeking	19	[62], [65], [66]	
			Reinforcement of the culture of reporting	4		
	Awareness and proper perception of crisis	Revenue diversity	Understanding and analyzing critical situations, their consequences, and responsibilities in times of crisis	7	[8], [9], [19], [72], [73], [68]	
			Obtaining information about legal requirements and structures (to identify potential barriers to necessary organizational changes)	1		
			Noticing the impact of different departments on each other	1		
	Redundancy and resources	Revenue diversity	Strategic investments to increase revenue diversity	5	[55], [74], [75], [70], [76], [77], [78]	
			Diversity of products and target markets	6	[1], [8], [12], [20], [22],	
			Diversity of access to resources	16	[61], [79], [80], [72], [81], [65], [48], [52], [56], [57], [58], [82], [68], [69], [83], [84], [74], [85], [86], [77], [71], [87]	
		Reserves and emergency access	Diversity of access to resources	Access to new technologies	16	[57], [58], [82], [68], [69], [83], [84], [74], [85], [86], [77], [71], [87]
				Access to material resources	14	[68], [69], [83], [84], [74], [85], [86], [77], [71], [87]
				Access to financial resources and tools such as loans	16	[84], [74], [85], [86], [77], [71], [87]
Reserves and emergency access		Reserves and emergency access	Access to experts inside and outside the organization	23	[86], [77], [71], [87]	
			Financial reserves	4	[22], [63], [80], [57], [67], [74], [71], [78]	
			Precautionary storage of raw materials, spare parts and final products	4	[71], [78]	
Locational characteristics		Operational redundancy	Manpower reserves in key positions	4		
			Other resources in times of crisis	2		
			Ability to localize the supply chains	2	[10], [15], [24], [53], [61]	
Operational redundancy		Operational redundancy	Geographical proximity in terms of access to markets and operational advantages	4		
			Redundancy of production capacity	8	[8], [12], [24], [88], [52], [58], [42], [89], [67], [69], [83], [77]	
			Redundancy of storage capacity	7		
	Redundancy (diversity) of suppliers and contractors		6			
Operational redundancy	Operational redundancy	Redundancy and diversity of distribution channels	8			
		Redundancy and diversity of distribution channels	8			

Table 4. Continued.

Theme	Category	Concept	Number of Concepts	Author(S)	
Planning and preparedness	Managing vulnerabilities	Innovative use of insurance	6		
		Management of vulnerabilities and emergencies	7	[1], [20], [22], [61], [80], [62], [81], [65], [48], [59], [83], [75]	
		Prioritization of tasks and equitable distribution of resources in times of crisis	6		
	Applying planning strategies	Integrating operations planning and ensuring business continuity	10	[8], [19], [20], [22], [61], [83], [65], [46], [48], [52], [55], [67], [70], [71], [64]	
		Considering alternative scenarios for different situations	20	[1], [61], [79], [80], [83], [73], [58], [84], [71]	
	Maintaining preparedness	Preparing and organizing to handle crises	14	[9], [19], [20], [49], [50], [52], [55], [57], [58], [59], [89], [82], [68], [70], [86], [87]	
		Holding resilience exercises and training	8		
	Decision making	Inclusive decision making	Promoting decentralized decision making and employee involvement	8	
			Delegating authority and reinforcing management autonomy	8	
			Encouraging participation of other stakeholders in decision making and planning	6	
Smart and transparent decision making		Making decisions based on up-to-date data analysis	10	[8], [9], [20], [80], [72], [62], [73], [46], [50], [57], [60], [68], [69], [90], [87], [71]	
		Obtaining expert opinions and accepting their recommendations	5		
		Encouraging transparency of roles and responsibilities	7		
Social capital	Networking and gaining public support	Government and household supports	5	[6], [16], [26], [92], [52], [53], [58], [59], [67], [93], [77], [5]	
		Information sharing and public relations management	6		
		Participation in social affairs	9		
	Measurement of social responsibility with KLD-400 social index	1	[43]		
Resilience policymaking	Leadership and commitment to resilience	Intention and commitment (alignment with goals and motivations)	11	[1], [20], [61], [83], [65], [66], [88], [46], [48], [93], [52], [54], [58], [60], [93], [86], [90], [5], [71], [94], [95]	
		Transformational leadership (strengthening communication and teamwork among employees)	16		
	Resilience policy	Adopting diverse approaches to achieve resilience	8		
		Creating a balance between goals and a balance between redundancy and productivity	2		
		Setting organization's risk appetite at a modest level	2		
	Strategic management	Strategic thinking and planning	9	[1], [61], [63], [72], [49], [43], [67], [98]	
		Diversity of skills and management methods (e.g. performance and change management)	9	[6], [12], [61], [93], [62], [65], [46], [51], [53], [56], [64], [94]	

Table 4. Continued.

Theme	Category	Concept	Number of Concepts	Author(S)	
Organizational culture	Commitment and integrity	Internal and external integration (development of intra- and extra- organizational collaboration and information sharing)	8	[46], [55], [61], [89], [99], [98], [47], [90], [88]	
		Commitment and assurance to employees and partners	6		
		Acceptance of conflict and application of normative control	2		
	Informal procedures and responses	Informal procedures and diversity of work processes	2	[20], [86], [100]	
		Sensitivity and rapid response to problems and changes	3	[8], [16], [20], [61], [50], [58], [67], [98], [71]	
	A collective approach to resilience	A shared vision of resilience	8		
	Staff	Evaluation and motivation	Common resilience goals	4	
			Incentives (e.g., a sense of worth, job security, and financial rewards)	16	[8], [16], [54], [58], [99], [82], [100], [70]
		Cooperation and teamwork	Continuous staff evaluation	8	[100], [70]
			Encouraging cooperation and teamwork	9	[8], [16], [20], [42], [46], [95], [49], [57], [60], [88], [91], [68], [71], [103], [104]
Developing participation systems			8		
Multiple competencies and skills		Developing digital and teleworking competencies	3		
		Increasing different qualifications of employees	4	[3], [9], [61], [105], [95], [101], [106], [92], [72], [84], [77], [88]	
		Increasing the ability of team members to take on multiple roles	6		
		Individual features	4		
Financial and economic viability		Appropriate pre-crisis conditions	Diversity of demographic and professional characteristics of staff	9	[3], [23], [42], [61], [89], [95], [100], [82], [75], [107], [108]
	Problem-solving, self-awareness, and self-organization abilities		9		
	Psychological resilience (positive thinking, hope, self-confidence, flexibility, and adaptability)		7		
	Possession of adequate high-quality tangible assets		9	[12], [16], [26], [50], [59], [112], [51], [92], [110], [111]	
	Higher operating profit margin		4		
	Operation and business model optimization	Desirable financial ratios	3		
		Suitable operating conditions	3		
		Company size and economies of scale	2	[8], [16], [55], [102], [75], [112], [111], [98], [62]	
		High raw material productivity and energy efficiency	5		
		Continuous revision of competitive strategies and reallocation of resources based on existing opportunities and threats	13		
Cost and debt management	Business cost structure	2			
	The ability to reduce operating and overhead costs	3	[15], [24], [26], [50], [62], [75], [85], [76], [77]		
	Correction of capital structure and expansion of leverage capacity (receiving loans and repaying debts)	3			

Table 4. Continued.

Theme	Category	Concept	Number of Concepts	Author(S)
Collaboration	Outsourcing and partnership	Prioritization of cooperation and outsourcing	7	[12], [20], [25], [59],
		Strategic partnership (being part of a larger coalition)	10	[83], [75], [86], [76],
		Collective response in times of crisis	4	[77], [5], [71]
	Networking and resource sharing	Establishing networks and cooperating with competitors and other organizations	12	[56], [59], [68], [74],
		Sharing resources between partners	8	[112], [85], [86], [99], [98], [80], [65], [63]
	Customers and markets	Optimization of sales strategy	Management of economic events and market trends on customer purchase intentions	2
Appropriate crisis-oriented sales and marketing policy (maintaining market share or increasing cash flow)			4	[85], [111], [80], [70],
Market development		Focusing on key markets	3	[73], [113]
		Discovering and developing new markets	4	
Customer orientation		Interaction with customers	5	[63], [85], [98], [50],
		Product quality and advertising	3	[80], [73], [93]
Modernization discourse	Application of new technologies in all organizational activities	Applying new technologies in production and service	13	[8], [23], [45], [50], [57], [89], [67], [82],
		Sectors (upgrading physical Assets and infrastructure)	10	[101], [83], [75], [112], [70], [76], [64]
		Applying new technologies in administrative affairs (developing teleworking technologies and digitalization)		[33], [73], [98], [113]
	Product development	Developing new products	3	
		Creating added value in the product	2	[8], [13], [20], [40],
	Entrepreneurship and creativity	Reusing resources creatively and creating value from wastes	4	[102], [71], [98], [114]
Increasing innovative and creative capacities		14	[52], [57], [68], [69], [70], [115],	
Investing in research and innovation		4	[64]	
Learning	Knowledge management	Building a culture of innovation and supporting new ideas	6	
		Documenting destructive experiences and events	9	[8], [17], [20], [49],
	Acquisition of necessary skills and qualifications	Updating protocols based on domestic and international knowledge	3	[57], [67], [83], [112], [70], [76], [5], [71], [117], [116]
Obtaining certificates from renowned organizations (e.g. ISO 14001)		3	[9], [57], [75], [64],	
		Training employees to increase their qualifications and competencies	11	[114]

Table 4. Continued.

Theme	Category	Concept	Number of Concepts	Author(S)
	Institutionalization of learning	Establishing a culture and passion about learning	6	[1], [16], [105], [40], [46], [49], [52], [59], [82], [86], [84], [74], [87], [78], [99], [116]
		Learning from positive and negative experiences	15	
		Continuous learning from partners' experiences	6	

Step 6. In this step, the quality of the synthesized findings was evaluated through validity and reliability. The following measures have been taken in this study to increase the validity according to the recommendations of Sandelowski and Barroso [37]: 1) documentation of all procedures, 2) consultation with experts in research synthesis and resilience, and 3) independent appraisal of each included article by at least two reviewers [37]. Reliability was investigated as well by calculating the Kappa agreement coefficient. For this purpose, two experts gave their opinions on the coding process. The data were then analyzed in SPSS to calculate the agreement coefficient. According to *Table 5*, the Kappa coefficient was calculated as 0.701 at a significance level of 0.000. Kappa coefficients > 0.6 are acceptable, and values > 0.8 indicate ideal inter-rater agreement [41]. P-value < 0.05; hence, the assumption of independence of the extracted codes is rejected, and the extracted codes have desirable reliability.

Table 5. Calculating the Kappa coefficient.

	Value	Symmetric Measures		
		Asymptotic Standard Error ^a	Approximate T ^b	Approximate Significance
Measure of agreement Kappa	0.701	0.042	20.268	0.000
No. of valid cases	814			

a. Not assuming the null hypothesis.
b. Using the asymptotic standard error assuming the null hypothesis.

Step 7. Finally, flexibility, control, redundancy and resources, planning and preparedness, decision making, social capital, resilience policymaking, organizational culture, staff, financial and economic viability, collaboration, customers and markets, modernization discourse, and learning were identified as major factors affecting OR. These factors, which are the main findings of the present research, are shown in *Fig. 3*.



Fig. 3. Factors affecting OR.

5 | Discussion

OR has aggressively become a vital feature of survival. Since a review of the research literature revealed that scholars have examined factors affecting OR from different perspectives, the authors did not detect an in-depth understanding of how to boost and improve OR within organizations. Aiming to fill this research gap, they did their best, utilizing broad research articles and conducting qualitative meta-synthesis research. By searching domestic and international databases, 98 articles were finally selected, and by applying the meta-synthesis, 14 effective factors were extracted. Brief descriptions of each of them are as follows:

Flexibility, considered an essential characteristic of today's organizations, has been the subject of many studies. Flexible mechanisms help organizations successfully deal with critical situations, increasing their resilience under different conditions. The three main dimensions of organizational flexibility included flexibility in operations and structure (e.g., flexibility of production line), robustness, and dynamic competitiveness.

Control was another important factor influencing OR. Appropriate organizational control consists of elements of appropriate performance evaluation, risk assessment, and management, effective monitoring and anticipating, and proper perception of a crisis and its consequences.

Redundancy and resources affected OR. This concept means that under normal conditions, excessive capacity and multiple backups are prepared for shortage or emergency [42]. Based on the results, this factor is composed of elements of revenue diversity, diversity of access to resources, reserves and emergency access, suitable geographic location, and operational redundancy (including redundancy of production and storage capacity, multiplicity of suppliers, and redundancy of distribution channels).

Planning and preparedness were found to substantially affect OR. In general, items such as applying planning strategies in organizations, managing vulnerabilities in times of crisis, and maintaining preparedness of all organizational sectors can increase the resilience of organizations and help them cope with critical situations.

Decision making was another important factor that had an impact on OR. Decision making is mentioned in many management books and articles as one of the main tasks of managers. To enhance resilience, the decision making should be inclusive to promote decentralizing and reinforce management autonomy, smart and transparent to gain the experts opinion and apply the updated data analysis.

Social capital was identified as another important factor influencing OR. Organizations can achieve desirable levels of resilience by expanding their networking activities, gaining public support, and fulfilling their responsibilities towards society. The researchers introduced the KLD-400 social index as an important quantitative measure of social capital. This index includes all major aspects of organizations, including environmental, social, and governmental factors [43].

Resilience policymaking includes leadership commitment to resilience, resilience policy, and strategic management as major components that can help organizations overcome various crises. In this regard, transformational leadership that leads to strengthening communication and teamwork among employees, the balance between redundancy and productivity, and management's ability to facilitate change should be considered.

Organizational culture was another critical factor affecting OR. Organizations can enhance their organizational culture in times of crisis through behaviors, beliefs, and norms such as commitment and integrity, informal procedures and responses, and collective approaches to resilience. It is important to be sensitive, rapidly develop alternatives, and have a common vision and goals for resilience.

Staff was another research finding, and this refers to individual and behavioral characteristics of personnel. Human resources are the most important assets of organizations; therefore, organizations must carefully enhance aspects such as cooperation and teamwork motivation, competencies and skills, and individual resilience. Nowadays, the development of digital skills and the creation of multiple competencies of employees are more paid attention.

Financial and economic viability was also concluded to influence OR. Accordingly, organizations can increase their resilience by creating appropriate pre-crisis conditions, optimizing operations and processes, and managing costs and debt. To fulfill this, in addition to paying attention to productivity and desirable financial ratios, it is vital to continuously revise competitive strategies and reallocate resources based on existing opportunities and threats.

Collaboration can help organizations better manage different crises by enhancing their resilience. The collaboration consisted of outsourcing, networking, and sharing resources with other organizations. Research has shown the need for a coalition and collective response to deal with the crisis.

Customers and markets were found to remarkably affect OR by optimizing sales strategy, market development, and customer orientation. It is crucial to adjust marketing and sales policy regarding any crisis to maintain market share and/or increase cash flow and improve interaction with customers.

Modernization discourse was another factor that had an impact on OR. The main elements of this factor included the application of new technologies in all organizational activities, product development, entrepreneurship and creativity, and institutionalization of innovation. Modernization is not only limited to physical equipment and the production line but also includes all areas such as how to manage the organization, communication and teleworking, data analysis and decision making, and handling problems. So modernization should be done in this field as well; hence the authors used "discourse" to describe it. Furthermore, creativity and entrepreneurship can be a business savior in a crisis, as well as a sustainable competitive advantage.

Learning can increase resilience by promoting knowledge management practices, updating skills and competencies, and institutionalizing a learning culture. Documenting and learning from destructive experiences and events and sharing the lessons with partners is crucial to dealing with crises. Establishing a culture and passion for learning can be advantageous in this respect.

Using an extensive range of literature to explore the multidimensional nature of OR, our research made it clear that a proper composition of affecting factors is essential to achieve resiliency and provided helpful insights into organizing resilience practices. This research provides a deep insight into the effective factors of OR. Applying detailed results (*Table 4*) as a checklist helps policymakers and managers to develop resilience improvement practices and monitor their implementation. Furthermore, they need to determine which plan should be a priority based on lessons learned from previous disruptive events.

The business and activity environment has been faced with competition, complexity, ambiguity, hazards, and continuous change since the last century as yet, therefore causing the emergence and growth of concepts such as robustness and anti-fragility along with resilience, which seek to help managers deal with these risky situations through relatively different manners [44], [45].

Robustness analysis argues there is an appropriate decision that is more stable than others in the face of alternative futures caused by uncertainty [44]. Anti-fragility does not consider failure in responding to change or crisis. According to this point of view, always a solution based on innovation, unplanned, dependent on context and time will be in access [45]. However, resilience associates stability with "flexibility" to mitigate the disruptive consequences of shocks. Furthermore, acknowledging the possibility of vulnerability, it combines creativity with learned lessons from previous failures to develop solutions.

Moreover, according to Maturity Model for OR (MMOR), resiliency develops gradually from a simple to a more complex form, robustness, resilience in the middle, and finally, antifragility [18].

6 | Limitation and Future Research

The current study contributes to the related literature by collecting the various features affecting factors that facilitate OR. Via these fourteen factors extracted, improvement practices might be more efficiently exploited in fulfilling different tasks in the OR process in an organization. Despite this, the study has certain limitations. First, this study develops an in-depth understanding of the effective factors of OR but provides no empirical support for it. Second, the findings of this study are finite, but OR research and practices about it are dynamic. Furthermore, this study just focuses on research articles that are online accessible, while there are other reports and case studies that are not generally available but might be helpful to understanding resilience. Third, monitoring newly published papers related to the research was not considered before finalizing the synthesis.

According to the findings, limits, and theoretical background of this paper, our future research streams suggestions are as follows:

- *Validating the affecting factors via empirical research using various methods such as case studies and surveys and improving them based on practical feedback.*
- *Updating the list of effective factors by applying both primary and secondary research using the newest published articles along with gray literature (in case of accessible and authentic scientifically).*
- *Exploring mutual relationships between affecting factors to find how those can be synergized within an organization.*
- *Categorizing the affecting factors in terms of their associations with different stages of the conceptual models, namely Duchek [11], to identify and validate which set of factors is appropriate for particular tasks and necessities of the different OR process stages.*
- *Conducting the same methodology to related concepts such as robustness, anti-fragility, and agility since this study highlights the usefulness of a meta-synthesis strategy toward an in-deep understanding of how organizations can deal with and survive against shocks and disruptive events.*

7 | Conclusion

To gain an in-depth understanding and provide a list of affecting factors to organizations on their improvement practices related to OR, this paper aims to compile and synthesize qualitative findings of previous research. While it is widely acknowledged that OR is crucial for facing and passing shocks, it is approximately equally recognized as a challenging and multiple issue. Through a meta-synthesis of qualitative findings, this study is one of the first to form a novel perspective for offering a holistic understanding of affecting factors that provide evidence to support improvement practices in OR.

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