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## CHANGES IN STANDARD MANAGEMENT SYSTEM PRINCIPLES IN A CRISIS SITUATION

## VÁLTOZÁSOK A SZABVÁNYOS IRÁNYÍTÁSI RENDSZER ALAPELVEIBEN VÁLSÁGHELYZETBEN

Organizations are characterized by continuous improvement, both in terms of meeting customer expectations and in their commitment to quality. This paper presents the findings of a Hungarian questionnaire-based survey examining how quality management principles supported organizations during the COVID-19 crisis. Nearly three hundred organizations responded to questions about their experiences during the pandemic. Descriptive statistics and correlation analysis were applied to assess which quality management principles had the strongest positive impact on organizational management systems in a crisis context. The results highlight the importance of people engagement, relationship management, and customer focus. These quality principles gained increased importance during the crisis. The findings may support organizations seeking to respond to future crises through standardized management systems.

**Keywords:** ISO, standard management system, crisis situation, engagement of people, relationship management, customer focus

A szervezeteket a folyamatos fejlesztés jellemzi mind az ügyfelek elvárásai, mind a minőség iránti elkötelezettség tekintetében. A tanulmány egy magyarországi kérdőíves felmérés eredményeit mutatja be. Az alábbiakban a COVID-19 pandémiára adott közel háromszáz válaszadó szervezet válaszait elemzik a szerzők. Kérdésük az volt, hogy mely minőségirányítási elvek erősítették leginkább a szervezet irányítási rendszerét válsághelyzetben. Az elemzésekhez leíró statisztikát és korrelációelemzést használtak. Az eredmények azt mutatják, hogy a megkérdezett szervezetek többek között az emberek bevonását, a kapcsolatkezelést és az ügyfélközpontúságot hangsúlyozták. A minőségirányítási elvek fontossága válsághelyzetben megnőtt. A kutatás eredményeit a mindennapi gyakorlatban alkalmazhatják azok a szervezetek, amelyek a jövőbeni válságokra szabványos irányítási rendszerekkel kívánnak reagálni.

**Kulcsszavak:** ISO, szabványos irányítási rendszer, krízishelyzet, emberek bevonása, kapcsolatkezelés, ügyfélközpontúság

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The COVID-19 pandemic, which began in 2020, presented organizations with unprecedented challenges. The pandemic had a powerful impact on the global economy, the national economy, large corporations, small and medium-sized enterprises, and especially entrepreneurs, who faced significant consequences (Castro & MGG Zermeño, 2020). According to Singh (2020), the impact of the pandemic was perceived in all sectors; this event caused harm to millions of businesses, and it has been viewed as a “major crisis” that affected several continents simultaneously and generated social, economic and health disruptions that require urgent solutions and that remain largely unclear (Bacq et al., 2020).

The concept of crisis pertains mainly to an extreme, unexpected and unforeseeable event to which organizations must respond (Doern et al., 2019). Therefore, a crisis, for which companies must prepare, requires the use of a system of tools that can enable companies to react quickly and efficiently to unexpected situations in the future. All the long-term effects of the crisis are not yet known, but there is a strong probability that companies must prepare for similar crises in the future through quick response, risk management, and, when necessary, rethinking and rethinking their processes. The global influence of companies that recognize this phenomenon will continue to increase in the future (Liguori & Winkler, 2020). According to Sawalha (2020), it is advisable to review the lessons learned from past events and understand how those lessons can be adapted to new situations to ensure that organizations can benefit from them and mitigate future impacts.

At the organizational level, standard management systems can help organizations adapt to these crisis situations and the corresponding processes of rethinking. According to Faragó (2021), different standard management systems can also help organizations overcome crises. According to Singh (2020), the International Organization for Standardization (ISO) standards can be a solution in this context by helping prevent crises from disrupting businesses and normal life. He further noted that such a crisis can be limited by the introduction of various management systems developed by the ISO. This approach, which is based on standard management systems, can be used in any organization, regardless of their size and scope of activity, both in terms of quality management principles and requirements; however, priorities may differ depending on the field in which the organization operates.

During and after a crisis, organizations must rethink their strategic objectives, e.g., those pertaining to customers, suppliers and employees. The framework provided by the quality management principles and requirements established by the ISO standard can help them manage these challenges, facilitate management and strategic planning, and ensure organizational sustainability and continuous development. These standards require, among other things, measurement, analysis and performance evaluation, and the development of effective implementation methods with regard to the organization’s management systems.

The ISO 9001 standard, which is the international standard for quality management systems (QMS), helps organizations become more efficient and improve; it also helps them exceed customer expectations and promote satisfaction through continuous development, as noted by Singh (2020). According to Singh (2020), unpredictable situations emerge in the context of crises, and organizations must develop guidelines and strategies to respond to such crises.

The present study contributes to this empirical research, among other contributions, by conducting a national survey, in which context we asked organizations about, among other topics, changes in the basic principles of the standard management system before and during the pandemic. The purpose of the investigation is to enable organizations to respond appropriately to similar crisis situations in the future on the basis of previous experience.

The principles of quality management represent the basis of the standard systems on which the requirements of the standards are based, and certified organizations must comply with these principles during their operations.

Standard management principles and systems have a *raison d’être* in crisis management. A quality management system prepares the organization to manage crises more effectively (UNIDO, 2020). In the postpandemic period, organizations must devote financial resources not only to the daily conduct of their business activities but also to the protection of both employees and customers (Biã et al., 2020).

Our goal is therefore to examine the basic principles underlying the standard management system, in relation to which standard principles have been strengthened. We can draw conclusions concerning the management of similar crisis situations in the future by identifying which management system principles became important and were strengthened for organizations during the crisis situation as well as which principles are connected and how strong such principles were before and during the crisis.

The importance of the topic is due to the fact that standard management systems were examined in the context of a crisis situation; namely, the basic principles of quality management have not yet been examined from this perspective based on a national survey of this magnitude. Additionally, previous researchers have not examined the relationship among these principles in the context of a crisis situation. Examining how these principles are related to each other can help organizations by revealing which relationships should be areas of focus or strengthened in a crisis situation. It is advisable not only to treat these relationships as a priority in the daily lives of organizations during a crisis.

## Literature review

Before presenting the quality management principles in detail, we briefly introduce the standard management systems to ensure that even readers who are not yet familiar with the quality management principles can understand how these principles provide a foundation for the operation of the standard management systems.

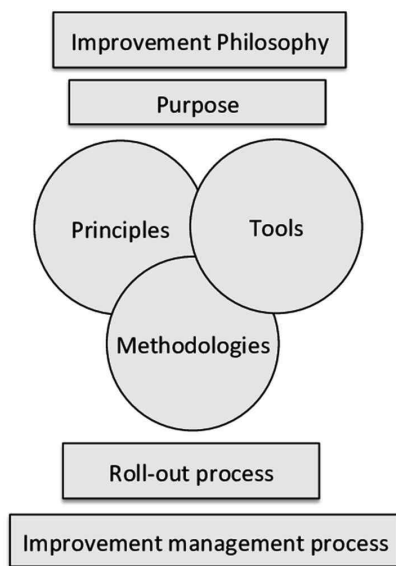
### Standard management systems

To present the specific topic on which this research focuses, it is necessary to present the standard management systems in brief. Quality is no longer a source of competitive advantage but rather the starting point of business (Rebelo et al., 2016). Among standard management systems, the ISO 9001 standard for quality management system requirements is the most widespread and has undergone significant changes in recent decades (Bernardo et al., 2015). This standard is the first to be applied by organizations seeking to operate in accordance with the requirements of a standard management system.

### Advantages of the ISO 9001 quality management system

Isaksson and Taylor (2014) claimed that the basic principles underlying quality management are included among the elements of the quality philosophy, which are illustrated in Figure 1.

Figure 1  
Elements of a quality philosophy according to Isaksson and Taylor (2014)



Source: own compilation based on Isaksson and Taylor (2014)

These authors emphasized the fact that, at the system level, methodologies and tools must be considered alongside basic principles. On the basis of the model presented in Figure 1, these quality management principles serve as a foundation for a development management process involving appropriate tools and methodology. It is important to know and use the basic principles in the systems approach because the requirements of the management system standards are based on the basic principles of quality management. Organizations that are familiar with these basic principles are able to meet the standard requirements entailed by the certification process.

These quality management principles are presented in detail below.

### Standard management system in a COVID-19 crisis situation

All the long-term effects of the COVID-19 crisis are not yet known, but it can be said with high probability that companies must prepare for such and similar crises in the future, with quick response, resilience, risk management and, where necessary, rethinking and rethinking their processes. At the organizational level, standard management systems contribute to adapting to these crisis situations and rethinking processes. According to Faragó (2021), different standard management systems can also help in overcoming crisis situations.

### ISO 45001: 2015 standard in a COVID-19 crisis situation

According to Csizmadia and Ködmönné Pethő (2020), one of the most important consequences of the emerging COVID-19 crisis is the protection of employees and the health and safety of employees at work. The COVID-19 crisis resulted in the emergence of a new function: the preparation and implementation of the corporate pandemic plan (workplace hygiene, health protection, isolation) became an area of strategic importance (Poór et al., 2021). According to Faragó (2021), the importance of the health and safety of employees increased during the pandemic, because it became one of the main pillars of the sustainable operation of companies, and therefore occupational health protection and health preservation received a prominent role in a short time as one of the strategic issues of overcoming the COVID-19 crisis, as well as the related ISO 45001 standard, which defines the requirements of occupational safety and health protection for organizations. According to De Vires (2020), the goal of companies is to protect the health of their employees and customers while maintaining their operations. In connection with this, the creators of the standard recognized the importance of the occupational health and safety management system requirement standard in a COVID-19 crisis situation, which is why the ISO/PAS 45005:2020 standard belonging to the family of standards was issued, which contains general guidelines for safe work during the COVID-19 crisis situation, as well as the ISO 45003:2021 occupational health and safety management – psychological health and safety in the workplace – Guidelines for psychosocial risk management standard.

### Quality management principles

In the following, we present the quality management principles that serve as a foundation for standard management systems, thereby illustrating their importance in crisis management.

The set of “quality management principles” refer to the basic accepted beliefs, norms, rules and values that provide a foundation for quality management, according to a publication from the ISO that presents the basic principles of quality management. According to this publication, the principles of quality management can serve as a foundation for the management of the organization and help improve performance. To facilitate the operation of

a quality management system, the standard defines basic principles that summarize the basic rules regarding the management and operation of organizations with the goal of continuously improving organizational performance while ensuring a focus on customers and taking into account the needs of other interested parties (Csizmadia, 2022).

The quality management principles according to the ISO 9000 standard are as follows:

- Customer focus
- Leadership
- Engagement of people
- Process approach
- Improvement
- Evidence-based decision making
- Relationship management

The proper application of the seven principles of quality management encourages organizations to operate and develop their management systems in accordance with the current requirements of standard systems.

### Customer focus

According to the ISO 9000:2015 standard, the primary focus of quality management is on the fulfilment of customer requirements and the goal of exceeding customer expectations. According to these basic principles, management must ensure that customer needs are defined, transformed into requirements and fulfilled with the goal of ensuring customer satisfaction. These basic principles highlight both stakeholders and customers, and they posit that meeting both the current and future needs of customers and other stakeholders can help the organization achieve lasting success. In summary, organizations can achieve lasting success when they are able to obtain and maintain the trust of customers and other important stakeholders by meeting requirements and striving to exceed expectations.

### Leadership

The ISO 9000:2015 standard requires managers at all levels to establish conditions in which employees are committed to achieving the organization's quality goals. According to the basic principles, the role of the management in the task of increasing employee commitment is strongly emphasized. According to the standard, by promoting employee engagement, leaders enable the organization to align its strategies, policies, processes and resources to achieve its goals. Management must coordinate the organization's goals, thus rendering them a unified whole, and establish the conditions in which employees become committed to achieving the organization's quality goals. In addition to facilitating the engagement of people, the basic principle of leadership involves the establishment of a culture of trust and honesty, the creation of common values and ethical standards for behaviour at the organizational level, and the promotion of exemplary behaviour among managers (ISO 9000:2015).

### Engagement of people

The ISO 9000:2015 standard describes, facilitates, and authorizes the engagement of people who play important roles at all levels of the organization. In this context, the standard highlights the important role played by such people in the organization's ability to create and provide value. To operate an organization effectively and efficiently, it is important to ensure that all employees at all levels are valued and involved. The recognition, empowerment, and development of preparedness on the part of such people promote the engagement of people in the achievement of the organization's quality goals, thereby increasing the organization's ability to create and provide value. Employee commitment does not refer solely to static 'loyalty' but rather to a higher level of attachment. Such commitment establishes relationships in which employees can identify with the organization, including in terms of its philosophy and goals. The effective implementation of quality management requires both affective (organizational culture and teamwork) and normative commitment (education and further training, leadership and senior managers' commitment, customer focus) on the part of employees (Krajcsár, 2019).

### Process approach

The process approach highlighted by the ISO 9000 standard emphasizes the fact that organizations interpret and manage activities in the form of interconnected processes that can thus function as a unified system. In many cases, however, the organization and the stakeholder system do not match this process logic but rather exhibit a functional structure. Therefore, the processes are interrupted in some places, the operations associated with some processes lack real owners, and the participants in the process take responsibility only for their own area of work and have the appropriate authority and information only in this context; thus the processes in question are insufficiently efficient. The quality management requirement standard requires process connection points to be defined and processes to be connected into process networks (Turcsányi, 2014), thus facilitating the implementation of the process approach. In the process approach, cross-functional, activity and process operations and the management of processes in the form of a unified system are emphasized. Furthermore, the application of the process approach helps people understand the relationships among individual activities and thus identify the roots of problems (Csizmadia, 2022); it also facilitates the more effective and reliable discovery and management of risks in organizations (Koszyán et al., 2020).

In the current standards for quality management requirements, the risk approach has become a fundamental characteristic of the planning, operation and development of processes (Pačaiová et al., 2018). Similarly, the ISO 9001 standard specifically addresses the application of risk-based thinking to the planning and implementation of quality management system processes. The ISO 9001

standard requires organizations to manage risk in relation to processes but allows organizations to choose how to accomplish this goal.

## Improvement

According to the ISO 9000 standard, the principle of improvement can be characterized as follows: “successful organizations constantly pay attention to improvement”. It is essential for an organization to exhibit comprehensive development throughout its operations to maintain its current level of performance, respond to changes in both internal and external conditions, and generate new opportunities. Improvement can include, for example, correction, continuous development, breakthrough change, innovation (Birkner & Máhr, 2016) and reorganization. Furthermore, in the context of improvement, the organization’s quality policy and goals must be closely related to strategic decisions.

## Evidence-based decision making

Factuality and evidence-based decisions play key roles in quality management from the outset. According to the ISO 9000 standard, the basic principle of evidence-based decision making is that efficient and effective decisions are made based on the analysis and evaluation of data and information. Namely, such decisions are more likely to achieve the desired results. The analysis of facts, evidence and data leads to greater objectivity in decision making and greater confidence in the decisions made. In its practical implementation, this approach requires the organization to collect, analyse and evaluate data that are suitable for determining the adequacy and effectiveness of the quality management system as well as for implementing development measures.

## Relationship management

The ISO 9000 standard highlights the principle of relationship management, which entails that, to achieve lasting success, organizations nurture their relationships with key stakeholders. According to the basic principle, it is important for organizations to know who their most important stakeholders are, what those stakeholders expect from the organization (i.e., what is necessary for their satisfaction), and what the organization expects from those stakeholders (i.e., how they can contribute to organizational performance and satisfaction). Thus, essential stakeholders impact the performance of the organization; these parties are mutually dependent on each other, and their ability to create value can be increased through mutually beneficial relationships. Managing interactions with these stakeholders, managing the corresponding relationships, and even paying attention to the relationships and networks among them can impact organizational competitiveness and performance. Sustained success is more likely to be achieved if an organization nurtures its relationships with its stakeholders in a way that optimizes their impact on

performance. In addition to their own performance, the success of organizations is therefore strongly influenced by the performance of relevant stakeholders (e.g., suppliers, subcontractors, intermediaries, and customers) as well as by the effectiveness and efficiency of the relationships between these parties.

According to Luburić (2015), quality management principles are the quality principles that top management uses as guidelines with respect to the organization’s management systems. In his opinion, noncompliance with any of these principles and requirements threatens the entire management system. Furthermore, in his opinion, quality management principles can help prevent crisis situations, as illustrated in Figure 2.

Figure 2  
Quality management principles pertaining to crisis prevention



Source: own compilation based on Luburić (2021)

Figure 2 illustrates the measures necessary to implement the quality management principles from the perspective of crisis prevention.

The principles of quality management are included in the crisis prevention model, which is based on the effective management of changes. Crises can rarely be resolved via predetermined procedures and plans. They require changes and innovations as well as a flexible, creative, strategic and lasting response (Luburić, 2021), to which quality management principles contribute through their efficient and effective application.

The model associates competence and personal integrity with the basic principle of the engagement of people, which is employed as a crisis prevention measure. The integrated organization operates on the basis of clarified values, goals and rules, which employees know, accept and apply. For an organization to achieve its goals and ensure that employees follow the rules, it is necessary to develop the behaviour of employees consciously, at this

point including their internal motivation, which is influenced by the organization's culture, values, norms and practices. Employees must perceive all of these factors even in a crisis situation because of their participation in the process of change and their commitment.

On this basis, it is important to evaluate the relationships among the principles on which this study focuses.

## The purpose of the research

The research objective is the examination of quality management systems in relation to which quality management principles have changed in the importance of the organizations operating quality management systems in the COVID-19 crisis.

Neither domestic nor international research has yet been done in this subject, so this research is considered unique in this regard, addressing this research gap.

## Materials and methods

The first subsection describes the data used in this research, and the second subsection describes the analytical methods we employed.

### Data

The data used in the analysis were collected from primary sources. The survey was conducted in June and July 2023. The first version of the questionnaire was tested via a trial test. The questionnaire survey was conducted online through the ORBIS database. Responses were voluntary. The questionnaire was completed by the managers of the selected companies. The central theme of the questionnaire was the changes that occur in the role of standard management systems in a crisis situation. Respondents from nearly two thousand, five hundred organizations completed the questionnaires. This survey yielded 859 evaluable surveys that had been completed in their entirety ( $n=859$ ). With respect to the principles and requirements of the standard management system, 271 evaluable samples were obtained ( $n=271$ ), which represents the number of organizations that had implemented a standard management system among the organizations whose members completed the questionnaire. In the anonymous questionnaire, we asked the respondents to answer the following closed question: Please indicate how important the following standard management system principles were for your organization before and during COVID-19 (i.e., March 2020 – December 2021). Answer options: 1- does not appear, 2- not significant, 3- moderately significant, 4- significant, 5- extremely important.

### Data analysis method

Descriptive statistics and relationship test analyses were the methods used in this research.

Focusing on the relationship between two variables, I used relationship test (Kendall's Tau) and hypothesis test (paired sample t-test).

A total of  $(7 \cdot (7-1)/2) = 21$  relationship tests can be performed among the answers to the 7 closed questions. The measurement level of the questions determines the

indicator that can be used to quantify the relationships that may exist among them. All the questions can be measured on an ordinal scale. The rank correlations among them can be revealed by the Kendall's tau ( $\tau$ ) indicator, which ranges within the  $[-1, 1]$  interval.

All relationship tests are interpreted at a 5% significance level (i.e., at a significance level of 0.05) with the assistance of SPSS software. If the p value for the study is  $< 0.05$ , it indicates a significant relationship between the two parameters under investigation. In cases involving significant relationships, the absolute value of the indicator indicates the strength of the relationship (Sajtos – Mitev, 2007): 0: no relationship,  $[0, 0.2]$ : weak relationship,  $[0.2, 0.7]$ : moderate relationship,  $[0.7, 1]$ : strong relationship, 1: deterministic relationship.

Since the  $\tau$  indicator can take both positive and negative values, the sign of this indicator (i.e., the rank correlation coefficient) can also be interpreted in this context as indicating the direction of the relationship. A negative (positive)  $\tau$  indicates that the higher the rank of one variable is, the lower (higher) the rank of the other variable is expected to be.

## Results

In this section, we present descriptive statistics, followed by the results of the relationship analysis.

## Descriptive statistics

### Distribution by organizational form

77.1% of the responding organisations, or 662 organisations, were limited liability companies. This was followed by joint stock companies with 7.9% of the respondents, representing 68 respondents, and deposit companies with 6.6% of the respondents, representing 57 organisations. On the basis of the distribution of the filling organizations according to organizational form, it can be said that the questionnaire was filled in by organizations operating in an organizational form, which are familiar with standard management systems, systems approach, operation with processes and use them in daily practice.

### Distribution of organizations by economic sector

It is typical of the economic sector distribution of the responding organizations that 18.7% of the organizations came from the Other sector, followed by the Construction Industry with 13.3%, and Wholesale and Retail Trade with 11.2%. Organizations providing accounting, management, architecture, engineering, scientific research, consulting and other administrative and support activities and services account for 9.4% of the respondents.

## Changes in the importance of quality management principles

I examine the change in the significance of the principles of quality management before and during COVID-19, and then I present the relationship of the principles of quality management to each other in the examined periods.

I used the paired sample t test for the analysis.

Table 1  
Changes in the importance of quality management principles in the examined period – paired sample t test

	Significance p-value
Customer focus	0.166
Leadership	<b>0.000</b>
Engagement of people	<b>0.029</b>
Process approach	<b>0.002</b>
Improvement	0.365
Evidence-based decision making	0.830
Relationship management	<b>0.003</b>

Source: own compilation

The results show (Table 1) that there is a significant difference between principles 2,3,4,7 at the 5% significance level.

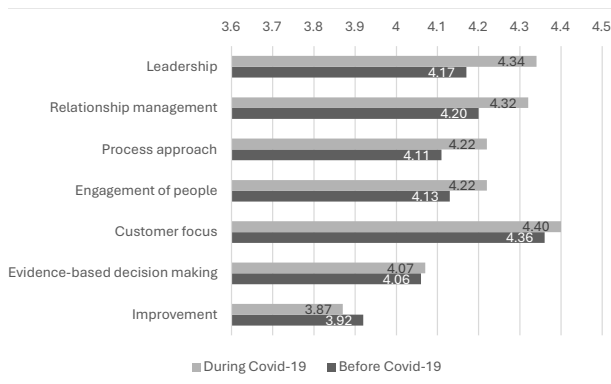
2. Leadership
3. Engagement of people
4. Process approach
7. Relationship management

In the case of principles 1 and 5, 6, there is no significant difference.

1. Customer focus (0.166)
5. Improvement (0.365)
6. Evidence-based decision making (0.830)

In Figure 3 illustrate the average results of the study in relation to the importance of the principles.

Figure 3  
Changes in the importance of quality management principles in the examined periods

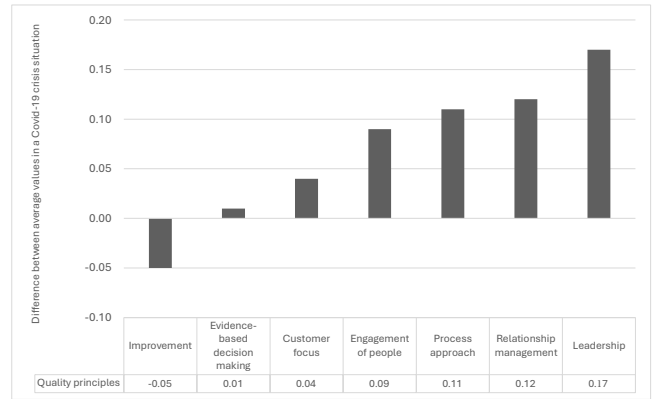


Source: own compilation

In all cases, during the COVID-19 period, the importance of the principles increased when examining the average values given to the principles, with the exception of the Development principle. It is not surprising that the importance of the Development quality management principle has decreased. As a result of the restrictive measures due to the COVID-19 crisis, strategic investments were frozen by almost a third of the companies, and innovation projects by a quarter (Poór et al., 2021).

Figure 4 shows the difference between the average values during and before COVID-19 regarding the answers to the importance of the principles.

Figure 4  
The difference between the average values in the case of organizational responses to the basic principles in the examined periods



Source: own compilation

The biggest change was in the case of Leadership involvement during COVID-19 regarding the importance of the principle, followed by the Relationship Management principle.

In the next chapter, I present the results of the research on the relationship between the principles of quality management.

### Relationship analysis

In our opinion, an examination of the relationships before COVID-19 and during COVID-19 with respect to the basic principles is necessary to answer questions regarding how the organizations experienced this crisis situation, whether their priorities regarding the basic principles of the management system were stable, or, if they were not, which relationships during COVID-19 were the most important, which basic principles were emphasized by the organizations, what changes occurred and how those changes occurred. The analysis is also important because organizations can prepare themselves to address similar crisis situations by relying on the basic principles of the management system. Understanding which principles are prioritized and which constitute areas of focus can facilitate effective crisis management, thus allowing organizations to learn from reactions to previous crises. After obtaining the descriptive statistics, section we examined the answers provided to the question regarding quality management principles with a focus on how strong the relationships among the quality management principles that serve as a foundation for standard management systems were, according to the responding organizations, before and during COVID-19. In this section, on the basis of the organizations' answers to this question, we examined the strength and direction of the relationships among

these principles. For this purpose, we use the correlation calculation, which describes the strengths and directions of the linear relationships among variables. All the questions can be measured on an ordinal scale. The rank correlations among them can be revealed by the Kendall's tau ( $\tau$ ) indicator, which ranges within the  $[-1, 1]$  interval. All relationship tests are interpreted at a 5% significance level (i.e., at a significance level of 0.05) with the assistance of SPSS software. Since the  $\tau$  indicator can take both positive and negative values, the sign of this indicator (i.e., the rank correlation coefficient) can also be interpreted here to indicate the direction of the relationship. A negative (positive)  $\tau$  indicates that the higher the rank of one variable is, the lower (higher) the rank of the other variable is expected to be.

The relationships that exhibit the highest value in terms of the quality management principles among the moderately positive relationships are presented against a background of dark grey. A light grey background indicates the least strong moderately positive relationships, which are presented at a later point.

In the following, we first describe the strength and direction of the relations regarding the basic principles during the before-COVID-19 period and present the two strongest of these relations in detail. In another section, we focus on the COVID-19 period (March 2020 – December 2021) and present the strongest relationship among the principles on the basis of the responses provided by the responding organizations. The two strongest connections are presented in further detail in this case as well.

Table 2

The results of the relationship analysis in terms of correlation coefficients and Kendall's tau  
Principles before /during COVID-19

Kendall's tau_b	Customer focus	Leadership	Engagement of people	Process approach	Improvement	Evidence-based decision making	Relationship management
Customer focus (before/during)	1.000	.517**	.444**	.388**	.353**	.404**	.512**
		.438**	.373**	.345**	.283**	.401**	.504**
Leadership (before/during)	.517**	1.000	.514**	.459**	.372**	.446**	.507**
	.438**		.440**	.439**	.290**	.333**	.471**
Engagement of people (before/during)	.444**	.514**	1.000	.532**	.402**	.376**	.443**
	.373**	.440**		.485**	.293**	.343**	.407**
Process approach (before/during)	.388**	.459**	.532**	1.000	.520**	.440**	.367**
	.345**	.439**	.485**		.439**	.456**	.320**
Improvement (before/during)	.353**	.372**	.402**	.520**	1.000	.370**	.427**
	.283**	.290**	.293**	.439**		.391**	.345**
Evidence-based decision making (before/during)	.404**	.446**	.376**	.440**	.370**	1.000	.462**
	.401**	.333**	.343**	.456**	.391**		.469**
Relationship management (before/during)	.512**	.507**	.443**	.367**	.427**	.462**	1.000
	.504**	.471**	.407**	.320**	.345**	.469**	

Source: own compilation

Table 2 presents the results of these correlation tests in matrix form, in which context the same 7 quality management principles can be seen in the rows and columns of the table.

In the table, the top row of the given square presents the before-COVID-19 value, whereas the bottom row of the given square presents the relationship results regarding the given principles during the COVID-19 period.

In the diagonal of the relationship analysis matrix, the cells with a black background indicate deterministic relationships because they present the relationship of each variable with itself, in which context the value of tau is by definition 1. The results are duplicated symmetrically on this black diagonal. All the tau values are significant and positive, thus indicating that, on the basis of their previous experience, those who consider a given principle of the management system to be strong in the responding organizations also consider the principle related to it to be strong. All relationships are at least moderately strong ( $0.2 < \tau$ ).

### Examining the relationships among the principles before COVID-19

An examination of the strength of the relationships among the quality management principles in the before-COVID-19 period reveals a moderately positive relationship, with a value of 0.532, between the engagement of people and the process approach. With respect to the relationship between these two variables, one foundation of standard management systems is the process approach. The moderately positive relationship between the engagement of people and the process approach can therefore be attributed to the fact that a standard management system cannot be imagined without committed employees who can implement these processes even in a crisis situation. The results of the analysis presented here similarly support this relationship, as described by Luburić (2015), in which context the commitment of top management in relation to management systems, who should set an example

for employee commitment, cannot be imagined without a process approach. The process approach is one of the most important requirements of management systems. In the process approach, the principle of the management system determines that consistent and predictable results can be achieved more effectively and efficiently if activities are interpreted and managed through interconnected relationships that function as a unified system. It is unsurprising that the process approach was prioritized in relation to the engagement of people by organizations operating responsive management systems, since it is not possible to operate processes or adopt a systems perspective without committed employees.

In organizations operating a management system, employee commitment does not refer solely to static “loyalty” but rather to a higher level of attachment, namely, a management system approach that enables employees to identify with the organization, including in terms of its philosophy and goals. Accordingly, employee commitment plays an important role in relation to the basic principles linked to a process approach, which is related to the operation of quality management systems, as Csizmadia (2022) noted. This finding was followed by a finding indicating the existence of a moderate strength positive relationship with a value of 0.520 between the improvement principle and the process approach as quality management principles during the period before COVID-19. According to the preceding information, the process approach remained a priority among the responding organizations as the second strongest link, but the principle of improvement ranked second (i.e., after the engagement of people) based on a moderately positive relationship with a value of 0.520. According to the rationale underlying the quality management principle, improvement is essential for an organization’s ability to maintain its current level of performance as well as to respond to changes in both internal and external conditions, thereby generating new opportunities. From a practical perspective, change indicates that improvements cannot be made without the engagement of people; thus, it is understandable that the principle of employee commitment was prioritized over the principle of improvement in terms of the strength of relationships in the before-COVID-19 period, even among the responding organizations. Without dedicated employees, the system approach and process approach cannot function in the long term—much less can improvements be made.

In the following section, on the basis of the answers given by the responding organizations during COVID-19, we present the relationship tests regarding the basic principles.

### Examining the relationship among the principles during COVID-19

Regarding the investigations of the relationships among the quality management principles during COVID-19, we also present the two strongest relationships, as identified numerically on the basis of the analyses.

During the COVID-19 period, among the moderately strong relationships identified in this research, the

relationship between management and customer focus was the strongest, with a value of 0.504. According to the guidelines for the quality of relationship management, lasting success is more likely to be achieved if the organization nurtures its relationships with stakeholders in such a way as to optimize their impact on performance. In a crisis situation, maintaining contact with interested parties and determining when and how to react to the signals and comments of interested parties appropriately are extremely important. Relevant factors include official comments, changes in relevant regulations and compliance during a crisis situation. The owners must perform activities related to meeting the owner’s expectations, since some segments grew stronger, whereas other organizations faced bankruptcy or closure, especially in cases in which the virus did not allow for personal presence and contact with external and internal stakeholders. In these organizations, the owners responded to the changed circumstances wherever and however they could

The extraordinary crisis situation, such as the change in job opportunities, the closing of borders, and the reorganization of supply chains, presented organizations with new challenges with regard to relationship management. With respect to relationship management, supply chains based exclusively on unique and mostly exclusively international relationships were damaged. In several places, these -supply chains were replaced by domestic suppliers in this crisis situation; these domestic suppliers were able to respond to the crisis quickly and to provide products and services of the appropriate quality. In this way, the organizations were able to serve their customers despite the disruption of international supply chains. In cases in which customer relationships were damaged, supply chains were unable to respond to changed circumstances, conditions and expectations. The organizations that completed the questionnaire also prioritized maintaining contact in a crisis situation, since maintaining contact with important stakeholders also affects the operation and performance of the organization.

Relationship management is connected to the quality management principle, which exhibited a moderately positive relationship with customer focus in organizations, which involves maintaining contact with customers. The relationship between relationship management and customer focus was also confirmed by Luburić (2015), according to whom customer focus is a fundamental quality management principle and vital to successful businesses. In his opinion, customer focus can lead to significant results based on identifying customer needs and meeting their expectations. The mutual relationships among all these principles are therefore important for organizations, since organizations must serve their customers even in crisis situations; in this context, changes in and the reorganization of suppliers and supply chains appeared to be issues that must be solved separately. A related point was highlighted by Singh (2020), according to whom the impact of the pandemic was felt in all sectors and affected millions of businesses, including in terms of their customer focus and relationship management.

With respect to the COVID-19 period, the responding organizations considered the relationship between the commitment of employees and the principles of the process approach to be moderately positive at a value of 0.485, thus identifying it as the second strongest of the relationships among the principles of quality management.

The commitment of employees is important because, in a crisis, attention to employees is the first step in the process approach that must be adapted to changed circumstances. As a result, compliance with these principles is also a priority in management systems. Relationship management with external and internal customers as well as interested parties was considered to represent the strongest relationship by the employees, as internal stakeholders, who were able to play this role in the management of the changed processes, and it represented the second strongest relationship for responding organizations during the COVID-19 pandemic. The strength of this relationship is also understandable because in a crisis situation, in which quick reactions and decision making are required, working according to processes helps organizations respond to crisis situations more effectively, despite the fact that such situations were not previously considered in their processes by reconsidering these approaches.

In the next section, we briefly present the relationships among the principles that were associated with the weakest relationships based on the analysis of the answers provided by the responding organizations.

In the following, the weakest relationships in the periods under examination are presented. Investigations of the relationships among the principles of quality management before and during COVID-19 revealed that in both periods, the relationships between improvement and customer focus were the weakest, obtaining the smallest value among the moderately positive relationships. Even before COVID-19, the responding organizations did not rate this principle as very significant – i.e., in the assessment, the strength of the relationship was 0.353 – but during COVID-19, this value decreased even further to a value of 0.283, thus indicating that the organizations do not consider improvements in responsiveness to be significant in terms of customer focus. In a crisis situation, the organization's primary goals are to respond to the crisis, maintain the continuity of operations, and adapt to changed circumstances. Organizations use resources for all these purposes rather than for improvement. In this case, one primary goal of organizations is to focus on the customer and to provide products and services at a suitable quality.

In the following section, we explore whether this change occurred and, if so, which principles and their relationships were affected by comparing the before-COVID-19 period with the COVID-19 period.

## Summary

The results of the survey presented in the current study reveal that with regard to the quality management principles of the before-COVID-19 period, the responding organizations emphasized the principles of customer

focus and relationship management. During COVID-19, customer focus was also ranked first among the principles in terms of importance, followed by leadership, which was identified as the primary responsibility of the leader in the context of responding to and managing the crisis. The principle of improvement was identified as the least important by the responding organizations before COVID-19, and this importance decreased even further during COVID-19. During this period, the organizations focused mostly on responding appropriately to changed circumstances and addressing crisis situations rather than on improvements. Moreover, with the exception of the improvement principle, the importance of all principles increased in a crisis situation. Organizations operating management systems consider the importance of quality management principles to be foundational for standard systems and to provide a good basis for the operation of organizations, even in such an altered situation. The results of the studies regarding the relationships among these principles reveal that before COVID-19, the relationship between the engagement of people and the principles of the process approach was the strongest, and this relationship remained strong in the subsequent period. During the COVID-19 period, this relationship was preceded by the relationships between the principles of relationship management and customer focus, which played a significant role in organizations' responses to the changed circumstances emerging after the onset of such a crisis, such as relationships with both internal (employees) and external (customers, service providers, authorities, owners) stakeholder contacts. In terms of the relationships among the principles, the greatest change and increase was observed in the relationship between the process approach and evidence-based decision making, which grew significantly stronger during COVID-19. In a crisis situation, organizations must make decisions that also affect their processes. A significant decrease was observed in the relationship between improvement and customer focus. During this period, the organizations did not focus on meeting customers' needs in terms of improvements but rather on addressing the crisis situation. The research is unique in that the quality management principles of standard management systems in a crisis situation have not yet been examined in the organizations that apply these standards.

On the basis of the results obtained thus far, the conclusions of this research can be utilized as follows. The theoretical importance of this research lies in the fact that it represents an investigation of standard-setting organizations with respect to the changes in the principles of the management system that occur in a crisis situation, and standard-setting organizations can rely on these results in the future when issuing new standards. The practical importance of this research is due to the fact that its results can be used in the future by professionals and organizations in the context of operating their management systems in similar crisis situations. A limitation may be whether all information from the responding organizations will be accurate, but since it is a matter of

standard management systems, documented information related to the processes is required, so this limitation is overcome. In the future, we aim to continue this trend by relying on the opinions provided by the organizations whose members completed the questionnaire to investigate the relationships among the standard requirements in the before-COVID-19 period and the during COVID-19 period.

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#### **Standards**

ISO 9000:2015 Quality management systems. Fundamentals and vocabulary.

ISO 9001:2015 Quality management systems. Requirements.

# THE PHOENIX EFFECT – RISING FROM CRISIS THROUGH DIGITAL COLLABORATION – HOW CRISIS AFFECTS SOCIAL ENTERPRISES’ DIGITALIZATION FOR VALUE CO-CREATION?

## A FŐNIX-EFFEKTUS – KIEMELKEDÉS A VÁLSÁGBÓL A DIGITÁLIS EGYÜTTMŰKÖDÉS SEGÍTSÉGEVEL – HOGYAN BEFOLYÁSOLJA A VÁLSÁG A TÁRSADALMI VÁLLALKOZÁSOK DIGITALIZÁCIÓJÁT AZ ÉRTÉKTEREMTÉS ÉRDEKÉBEN?

Crisis and market turbulence can cause changes in digitalization and value co-creation of social enterprises. This paper aims to identify how crisis and market turbulence affect the way social enterprises employ digitalization to enable value co-creation. To achieve this, the authors conduct Retrospective Case Studies by interviewing ten social entrepreneurs from developing countries and synthesizing their findings from primary and secondary data. Their findings reveal that social enterprises that use digital collaboration can be more resilient in the face of crises. Simultaneously, crisis affects how social enterprises use digitalization for collaboration through new phenomena which they call Crisis-Resilient Digital Ecosystem, Transformative Resilience Network, and Synergistic Economic Resilience. Finally, the authors propose the Interconnected Resilience Framework to illustrate the relationship between market turbulence and social entrepreneurship’s digital collaboration. This model and event-ordered matrix represent the main theoretical contributions to the literature on social entrepreneurship and crisis.

**Keywords:** digitalization, value co-creation, social entrepreneurship, crisis, market turbulence

A válság és a piaci turbulencia változásokat okozhat a társadalmi vállalkozások digitalizációjában és értékteremtésében. Ez a tanulmány azt kívánja meghatározni, hogy a válság és a piaci turbulencia hogyan befolyásolja a társadalmi vállalkozások digitalizációs alkalmazását az értékteremtés lehetővé tétele érdekében. Ennek eléréséért retrospektív esettanulmányokat végeztek a szerzők tíz fejlődő országbeli társadalmi vállalkozó megkérdezésével, és eredményeiket elsődleges és másodlagos adatokból szintetizálták. Eredményeik azt mutatják, hogy a digitális együttműködést alkalmazó társadalmi vállalkozások ellenállóbbak lehetnek a válságokkal szemben. Ezzel egyidejűleg a válság hatással van arra, hogy a társadalmi vállalkozások hogyan használják a digitalizációt az együttműködésre azokon az új jelenségeken keresztül, amelyeket válságálló digitális ökoszisztémának, transzformatív ellenálló képességi hálózatnak és szinergikus gazdasági ellenálló képességnek neveznek. Végül az összekapcsolt ellenállóképességi keretrendszert javasolják a piaci turbulencia és a társadalmi vállalkozások digitális együttműködése közötti kapcsolat szemléltetésére. Ez a modell és az eseményrendezett mátrix a társadalmi vállalkozással és válsággal foglalkozó szakirodalom fő elméleti hozzájárulásait képviseli.

**Kulcsszavak:** digitalizáció, közös értékteremtés, társadalmi vállalkozás, krízis, piaci turbulencia

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Techniques of social effect have drawn the attention of policymakers and professionals, explicitly in the social business field (Scheuerle & Schmitz, 2016; Bauwens et al., 2019; Maseno & Wanyoike, 2022). Social entrepreneurs foster plans of action to resolve social issues, which can have a social effect (Selsky & Parker, 2010). Social entrepreneurship is an enterprise type which is aimed to benefit society instead of only maximizing profits of individual shareholders (Roberts & Woods, 2005; Dacin et al., 2010), and it elaborates the ways of fostering innovative solutions to tackle the problems of our world (Wu et al., 2020).

While social enterprises are on the rise, digitalization is also radically changing business operations. Digitalization is the increased use of digital technology by an organization, industry, or country (Brennen & Kreiss, 2016). Even though it has benefits like value co-creation (Lin et al., 2019), allowing social enterprise and its customers to jointly shape the product or service experience to align with their needs (Pralhad & Ramaswamy, 2004), there can be digitalization's negative consequences in social and ecological sides (Elia et al., 2020). Digitalization can empower or hinder both social and economic value co-creation. For example, virtualization decreases costs but may exclude those lacking digital access, and similarly, data usage can develop efficiency but may risk mission drift (Xiao & Beckmann, 2024). Additionally, recently, AI has been a significant shift in reshaping the enterprises (Dabija & Frau, 2024). Digitalization decreases compatibility when one benefit comes at the other's expense, economic gain over social exclusion, but increases it when helping one side without harming the other (Xiao & Beckmann, 2024). Digital communication channels also facilitate value co-creation by enabling interactive dialogue between customers and enterprises, where mutual information exchange and resource sharing drive collaborative outcomes (Molnár et al., 2025). Generally, social entrepreneurs must strategize on how digitalization is embedded, not just whether to adopt it, because it isn't hybrid goals' guaranteed enhancer; it can create conflicts if not properly aligned (Xiao & Beckmann, 2024).

The COVID-19 pandemic resulted in insufficient government response, which in turn spurred a rise in social initiatives and digital entrepreneurship for enhancing stakeholder satisfaction (Muñoz et al., 2022). By linking systematic literature review findings, it becomes clear that COVID-19 accelerated digitalization, and this digitalization positively impacted the performance of social and ecological enterprises (Mursalzade et al., 2023). However, COVID-19 was not the only crisis that affected social entrepreneurship, so, there is a need for research connecting crisis, market turbulence, and social entrepreneurship's digital collaboration. Other than COVID-19 Pandemic, to the Crisis category our interviewees also include the Karabakh War of 2020, the Wildfires/Forest Fires of 2021, the ongoing Legislative Barriers Crisis, and the Intellectual Property Rights Crisis.

The Crisis is an unwanted, unexpected, unpredictable situation, which causes disbelief and uncertainty (Milašinovic & Kešetovic, 2008). For example, a crisis

can be the COVID-19 pandemic or the war in Ukraine. Similarly, market turbulence is a state of volatility and uncertainty in the market, where prices and customers' needs fluctuate rapidly and unpredictably (Bakir et al., 2021). For example, after the pandemic, the local economies in developing countries were also affected heavily, and prices increased immensely.

There is a collaborative dynamic between social entrepreneurship, digitalization, and value co-creation, which amplifies the benefits of each: Digitalization streamlines communication, enabling social entrepreneurs to co-create value with various stakeholders. This interconnectedness has the potential to drive social change, while technologies help social entrepreneurs develop innovative solutions and respond to changing needs (Goyal et al., 2021; Aisaiti et al., 2021; Chandna, 2022). So, there is an obvious impact of digital collaboration on social and ecological entrepreneurship: Digitalization can stimulate sustainable endeavors (de Bernardi et al., 2019) and social entrepreneurial performance (Wan & Liu, 2021) while cutting costs (Aisaiti et al., 2019; Goyal et al., 2021). Digital collaboration empowers accessibility, inclusion of diversity (Srivastava & Shainesh, 2015; Muñoz et al., 2022) and tends to raise the importance of social entrepreneurship (Ratten, 2022).

Although there are several separate research on the topics of crisis and market turbulence; social enterprises' digitalization and the value co-creation, yet there is limited research investigating exactly crisis effect on social entrepreneurship's digital collaboration, and there is solely one study about social digital collaboration in the context of traditional manufacturing companies (Lenka et al., 2017). Additionally, from practical side, social entrepreneurs can think that after certain crisis event startup ecosystem or industry still isn't utilizing digital collaboration very well and can level up with their digitalization and value co-creation, however many still don't understand the interconnectedness of these phenomena. Therefore, further research is important to comprehend the effects of crisis and market turbulence from new perspectives with different social and ecological ideals. *Thus, we aim to tie crisis with social entrepreneurship's digital collaboration and analyze changes in social enterprises over time: before, during and after the crises. By highlighting this research aim, we try to answer the following research question: How does crisis affect the way social enterprises employ digitalization for collaboration?*

The applied methodology of retrospective case study had the phases of conducting the interviews, transcribing, translating, editing and analyzing them via NVivo software to create new theoretical concepts. Later, we used the Event Ordered Matrix to explain the changes in social enterprises over time for 10 years: How were certain new theoretical concepts within three different periods: before, during and after the crisis. To address the research problem, the research uses dataset of 10 in-depth interviews from developing countries to conceptualize five codes: Crisis-Responsive Entrepreneurial Mindset; Digital Transformation; Value Co-Creation

within Community; Agile Work Environments; Economic and Market Considerations. After revealing these five concepts, we came up with the new phenomena of Cridieco – Crisis-Resilient Digital Ecosystem, Transrenet – Transformative Resilience Network, and Synecesi – Synergistic Economic Resilience. Finally, we recommend the Interconnected Resilience Framework, which shows the relationship between crisis and social enterprises' digital collaboration, and which is the main theoretical contribution to the respective literature. Lastly, we recommend a research agenda on crisis and social entrepreneurship's digital collaboration.

## Theoretical background

### Importance of digitalization for social entrepreneurship

Scientific research on entrepreneurship can elaborate on the reasons individuals start their enterprises, which can have a crucial impact on the economy's progress and employment (Szabo & Aranyossy, 2022). Even though there is much research on social entrepreneurship and entrepreneurship education, their essential point is exploring the relationship between entrepreneurship and knowledge management (Jáki & Huszák, 2023). Naturally, there is research focusing on management students getting knowledge from digital enterprises on how to improve an entrepreneurial mindset (Beke et al., 2023). Simultaneously, there is research with startup founders as a different entrepreneurial category (Virágh et al., 2024). However, research with social enterprise founders is rare, especially the ones focusing on crisis and digital collaboration. Additionally, there is a need for more digitalization strategies and IT support for marketing is below the average of other company activities (Keszey, 2007). Digital tools that enable communication, knowledge management, and value co-creation between entrepreneurs and consumers have fundamentally transformed how people connect (Frau et al., 2023). Digitalization addresses societal challenges (Zahra, 2021) and enhances sustainability (de Bernardi et al., 2022). Additionally, digital financing serves as a key enabler for individuals tackling societal issues (Martin, 2020; Chadna, 2022) while reducing costs (Aisaiti et al., 2019; Goyal et al., 2021). In addition, with low digitalization levels, the lack of social enterprises may negatively impact national wellbeing (Torres & Augusto, 2020). Furthermore, digitalization particularly using big data, shows a positive relationship with employee performance in social entrepreneurship (Wan & Liu, 2021). It also enhances geographical accessibility, lowers costs, and promotes inclusivity in healthcare services (Srivastava & Shainesh, 2015).

### Integration of value co-creation to digitalization in social enterprises

Social and ecological enterprises utilize value co-creation to help promote a more inclusive, accessible, and equitable society (Muñoz et al., 2022). For example, by integrating value co-creation into digitalization, OurCityLove social

enterprise and its digital application play a crucial role in addressing service gaps (Lin et al., 2019). During the pandemic, instances of value co-creation also rose, with collaborative efforts among government, social enterprises, and marginalized communities emerging, accelerating value co-creation and increasing the focus on social entrepreneurship (Ratten, 2022). In practice, there is often a collaborative dynamic among digitalization, value co-creation, and social entrepreneurship, which enhances the benefits of each: Digitalization streamlines communication, enabling social entrepreneurs to co-create value with various stakeholders, interconnection has the potential to drive social change, and technologies support social and ecological entrepreneurs in developing innovative solutions and adapting to changing needs (Loukopoulos & Papadimitriou, 2022; Chadna, 2022; Mursalzade et al., 2023).

### The role of crisis and market turbulence

In addition to digital collaboration of social enterprises, it is also interesting to observe and analyze how crisis and market turbulence may affect them. Although the initial reference to turbulence originated in physics (McDonough, 2007), this initially narrow area of study quickly broadened and gained significant relevance for economics: For example, Glazer and Weiss (1993) defined turbulent environment as constantly dynamic, volatile, and exhibiting sharp discontinuities and uncertainties. This phenomenon is primarily characterized by three factors: sharp changes, information deterioration, and difficulty in prediction. Kotler (2009) attributes the increasing influence of changes in turbulent environments on firms to the new interconnectivity of actors in the global economy which he refers to as the butterfly effect. The main challenge arising from this type of environmental impact is the unsustainability of a reactive strategy; for companies in rapidly changing markets or industries, a shift toward a proactive approach has become increasingly necessary (Fan et al., 2013). For the deterioration of information, a significant number of changes occurring within a given time frame has long been a key factor (Dess & Beard, 1984), which undermines the reliability of forecasts. Subsequent researchers have aimed to frame this in terms of the time sensitivity of information (Glazer & Weiss, 1993), relating to how information loses value from one period to the next. Paradoxically, despite a decline in quality, information may still be more valuable to managers, as uncertain environmental factors heighten the stakes of decisions, such as prior to a potential price war (Dekimpe et al., 2011). Kohli and Jaworski (1990) identified two environmental moderators that can be viewed as types of turbulence for further exploration: Technological turbulence which is the "rate of change and the instability of technology in an industry" and Market turbulence which is defined as "a change in the composition and preferences of buyers", a factor that is directly related to the level of competition (Kohli & Jaworski, 1990, p. 14). There is limited research on crisis's impact on digital collaboration of social enterprises, thus, we decided to investigate how crisis and market turbulence can affect it.

Although separate research on crisis, market turbulence and social entrepreneurship's digitalization and collaborations exist, nevertheless empirical studies precisely research crises' impact on social enterprises' digital collaboration are rare. As a result, further studies are important to comprehend the impacts and the relationship between these concepts. Due to the gap between mentioned four literature streamlines, we try to investigate underlying mechanisms that tie these four together.

## Methodology

Research had a Multiple-Case Study for theory building and Retrospective Case Study to analyze the change in social and ecological enterprises over time. Cases are examined for various hypothetical purposes, such as revealing unusual characteristics, replicating results from different cases, conducting contradictory replications, ruling out alternative explanations, and refining the evolving hypothesis (Eisenhardt & Graebner, 2007). To address the research question, first and foremost, we employ a multiple case study approach (Yin, 2009). This method facilitates a thorough analysis of complex social phenomena and enhances the generalizability of findings, as it permits the replication of results across multiple cases, thereby supporting theory development (Eisenhardt & Graebner, 2007).

Secondly, we used the methodology of Retrospective Case Studies, which are a form of research where all data such as personal narratives are gathered after the events have taken place, the incidents being analyzed have happened, and their results are already known: In this approach, we recreate a timeline of events and changes in variables that occurred during the period under review (Mills et al., 2010).

## Case selection

Our research derives its conclusions from social enterprises, as focusing on social entrepreneurship is crucial for tackling the challenges society currently faces. We utilized a theoretical sampling strategy to choose cases that would likely enhance the existing theory (Eisenhardt & Graebner, 2007). For our study, we selected cases with specific pre-defined characteristics to eliminate any selection bias. To qualify for inclusion, firms had to 1) address social or ecological issues, making them social or ecological enterprises, and 2) provide access to key informants such as founders, co-founders, or chief managers. Furthermore, we determined the specific problems these enterprises address, their profiles, and target audiences. This method enabled us to construct a more thorough and precise theoretical framework while minimizing the potential for bias in our selection process (Eisenhardt & Graebner, 2007; Yin, 2009). From a list of 30 entrepreneurs, we ultimately conducted 10 in-depth interviews. We concluded our research after analyzing these cases, having reached theoretical saturation (Saunders et al., 2018).

We selected developing countries, especially Azerbaijan, as the primary area for case selection for two main reasons. First, Azerbaijan transitioned from a socialist to a capitalist regime, characterized by its oil-rich developing economy (Aliyev et al., 2016). Given the impact of the oil economy on social and ecological enterprises, this article emphasizes cases from Azerbaijan. Second, research indicates that social entrepreneurship tends to flourish in nations with developing economies and relatively low welfare levels (Torres & Augusto, 2020). However, it is important to note that the findings primarily based on Azerbaijan may present limitations and suggest directions for future research. Moreover, we can also

Table 1

Overview of the retrospective case studies

Profile of Social Enterprise	Solved Problem	Target Group	Primary data – Interview	Secondary Data – Description
Crowdfunding for Social Projects and Social Enterprises	Education and Finance	Social Enterprises and Events	59 minutes	Owned Social Media page, Website
Handcrafts; Comics	Environment, Social Inclusion	Youngsters, Young Adults	56 minutes	Owned Social Media page
Eco-friendly Reed Bags and Cultural Community	Unemployment, Cultural Preservation	Rural Women, Ethnic Minorities	53 minutes	Owned Social Media page
Comic Book Studio	Environment, Social Inclusion	Youngsters, Young Adults	78 minutes	Owned Social Media page
Digital Support Platform	Education and Finance	Social event and Enterprises	29 minutes	Owned Social Media page, Website
Rubik's Cube Competitions	Education, Social Inclusion	Youngsters, Young Adults	84 minutes	Owned Social Media page
Eco-friendly Reed Bags and Cultural Community	Unemployment, Cultural Preservation	Rural Women, Ethnic Minorities	87 minutes	Owned Social Media page
Cashback Donations, Support Packages	Support for Charity Events	Social Fundraisers, Companies	72 minutes	Owned Social Media page, Website
Traditional Socks	Unemployment, Cultural Preservation	Rural Women, Ethnic Minorities	35 minutes	Owned Social Media page, Website
Comics Studio; Digital Support Platform	Environment, Social Inclusion	Youngsters, Young Adults	36 minutes	Owned Social Media page

Source: own compilation

underscore the influence of the Azerbaijani cultural context on the adoption and effectiveness of digitalization in social enterprises, as cultural factors could offer valuable insights into why certain digital strategies succeed or fail in certain settings.

**Data collection**

To minimize the risk of disseminating inaccurate information, it is crucial to avoid retrospective sense-making; thus, we integrated data from multiple sources (Miles & Huberman, 1994; Eisenhardt & Graebner, 2007). We conducted interviews with knowledgeable individuals who were eager to share their insights on the subject matter (Kumar et al., 1993). Specifically, 10 out of 30 social entrepreneurs based in Azerbaijan agreed to participate in our research and engaged in the face-to-face interview phase. We utilized a semi-structured interview protocol to investigate how crisis affects the way social enterprises use digitalization for collaboration. The interviews were conducted online using the Microsoft Teams platform, which facilitated the recording of both video and audio. These interviews took place in April 2024 and lasted 59 minutes on average. After transcribing the interviews, we sent the transcripts to the informants for clarification, ensuring that the edited versions accurately reflect their intended meanings. 9 out of 10 interviews were conducted in English, while one was translated from Azerbaijani.

We collected data from multiple sources, including semi-structure interviews, the enterprises’ social media pages and their own official websites. By triangulating these data sources, we aimed to produce more reliable findings (Eisenhardt, 1989; Yin, 2008) (Table 1).

**Data analysis**

With a theory building approach, case summaries of social and ecological enterprises were used based on primary data as the foundation via NVivo 10 software to progress the data from specific to general through 4 coding steps (Moi et al., 2018; Saldana, 2015; Frau et al., 2022). We had inductive and deductive methods of analysis: We had a deductive approach with existing literature to interpret the qualitative data related to crisis, market turbulence, digitalization, value co-creation and social entrepreneurship, for example, some of the codes were used both by interviewees and literature; we also had an inductive approach to lay out main fundamental themes, from which we improved new theoretical concepts (Kennedy & Thornberg, 2018) by identifying reflective patterns of the key concepts.

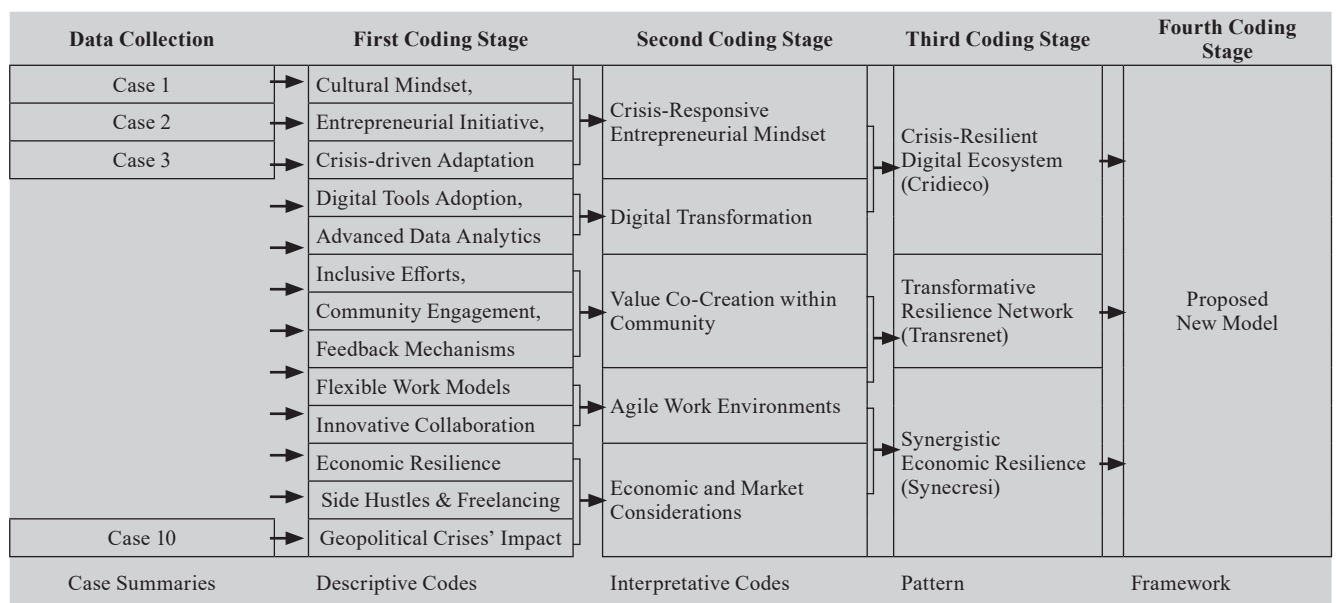
After our thorough analysis of the dataset, a detailed coding scheme has emerged out of face-to-face online interviews. By coding every relevant keyword and quote, we created initial codes. Considering our research question, subsequent analysis appeared from coding our dataset. Based on the most frequently used and peculiar quotes, insights and key results from 10 interview transcripts, we had subsequent analysis (Figure 1).

**Key elements for resilience and recovery from crisis**

In Detailed Coding Process, we reveal the summaries of multiple case studies from interview transcripts which present keywords and codes which are important for the qualitative analysis. After the qualitative analysis of case summaries, the first coding stage shows generic findings regarding the relationship between crisis, market turbulence, social entrepreneurship, digitalization,

Figure 1

Data analysis process for retrospective case studies in Social Entrepreneurship



Source: adapted from Saldana (2015), Frau et al. (2022) and Mursalzade (2024)

and collaboration. At the 1<sup>st</sup> coding stage, some of the mostly stated keywords are the basis of descriptive codes (Cultural Mindset, Entrepreneurial Initiative and others).

Since there is a gap between the four literature streams: crisis, social entrepreneurship, digitalization and collaboration, the next coding stages synthesize available knowledge and generic codes into more detailed summarizing codes. As an illustration, at the 2<sup>nd</sup> coding stage, they make up new interpretative codes such as Crisis-Responsive Entrepreneurial Mindset; Digital Transformation; Value Co-Creation within Community; Agile Work Environments; Economic and Market Considerations (Figure 1). Previous codes of Cultural Mindset, Entrepreneurial Initiative, Crisis-driven Adaptation can be combined under the theoretical code of *Crisis-Responsive Entrepreneurial Mindset*. Previous codes of Digital Tools Adoption, Advanced Data Analytics, Trust and Security can be linked under the code of *Digital Transformation*. Inclusive Efforts, Community Engagement Strategies, Feedback Mechanisms raw codes can be associated with *Value Co-Creation within Community*. Flexible Work Models, Innovative Collaboration Systems, Work-Life Balance naturally fit in with *Agile Work Environments*. Economic Resilience, Side Hustles and Freelancing, Impact of Geopolitical Crises on Markets can be associated with *Economic and Market Considerations*. By associating these raw codes into more detailed theoretical concepts, in-depth perception of underlying theoretical mechanisms and market turbulence dynamics in social and ecological enterprises, can be achieved. Thus, researchers and practitioners can investigate these phenomena in detailed ways, contributing to improvement of theoretical frameworks and managerial relevance.

Lastly, five concepts: Crisis-Responsive Entrepreneurial Mindset; Digital Transformation; Value Co-Creation within Community; Agile Work Environments; Economic and Market Considerations tailored new codes of *Crisis-Resilient Digital Ecosystem*, *Transformative Resilience Network*, and *Synergistic Economic Resilience* in the 3<sup>rd</sup> coding stage and contributed to the final proposed conceptual model – *Interconnected Resilience Framework* in the 4<sup>th</sup> coding stage.

After Multiple Case Study and its coding stages, we applied Retrospective Case Study's data analysis with the Event-Ordered Matrix (Miles & Huberman, 1994; Frau et al., 2020). We utilized a qualitative retrospective single-case study, which is appropriate for exploring "how" questions related to a series of events (Yin, 2008). The analysis spans from the social enterprises' founding in 2015 to 2025. This study utilized an event-ordered matrix (Miles & Huberman, 1994; Frau et al., 2020) to connect events suitable to the social enterprises' digital collaboration and crisis management strategies with each of three time periods: 2015-2019 – Before the Crisis: Pre-COVID, Pre-War, Pre-Wildfires; 2020-2021 – During the Crisis: COVID-19, 2020 Karabakh War, Wildfires; 2022-2025 – After the Crisis: Post-COVID, Post-War, Post-Wildfires (Table 2).

## Findings

### Analysis of primary findings

Firstly, Cultural Mindset, Entrepreneurial Initiative, Crisis-driven Adaptation combined under one code of *Crisis-Responsive Entrepreneurial Mindset*. Cultural Mindset is about attitudes towards adaptive solutions: after the crisis, there was more efficient navigation of challenges

Table 2

### Summary of Identified Concepts

Concept	Definition	Illustrative Quotes
Crisis-Resilient Digital Ecosystem (Cridieco)	Crisis-Resilient Digital Ecosystem is an ecosystem where social and ecological enterprises thrive during and after crises by embracing crisis-responsive entrepreneurial mindset and digital transformation.	<p>Q1: "COVID gave us opportunity to digitalize... But it wasn't enough, we also had a problem with the mindset of our local people. There's one project – website and in the other part there's one donor, donor doesn't believe that: "What is this website? I will pay through this; the money will arrive at the account or the idea owners? Why should I spread my ideas with others? What if someone takes it and uses it?" So, lack of entrepreneurial mindset and cultural barrier in local community, especially when it comes to mistrust." (Case 1).</p> <p>Q2: "Overall, the integration of digital tools has transformed the dynamics of collaboration within our social enterprises. It made things more efficient, particularly during difficult times. These changes made us to navigate challenges more effectively and continue driving positive impact in our mission to create meaningful social and ecological change." (Case 2).</p> <p>Q3: "People prefer to work under someone's orders. To initiate something independently, to correspond, to take responsibility, to make something is hard, even though they would see it more profitable than to wait someone's order." (Case 3).</p> <p>Q4: "Crisis can impact social enterprises a lot. Social businesses are changing their mindsets and approaches slowly and reacting to tough times. So, we need to be innovative, use more digital tools and data analytics to stimulate operational processes. Digitalization helped a lot in our work during and after crisis, and it can also help others to be more resilient towards the crisis." (Case 5).</p> <p>Q5: "During the war we had a lot of social fundraising. Overall, people got affected by both development of technology and people's mind and approach. So, people are just trying to switch traditional charity to more technological one, which is more convenient, secure and easy... A crisis gives problems and, in our case, good chances: People start caring about other people by giving more charity, by becoming kinder to each other. Thus, it makes a situation better overall." (Case 8).</p> <p>Q6: "During COVID-19, social enterprises quickly adapted to more advanced digital tools such as video conferencing for remote work or social media for outreach and fundraising, and online project management tools for better coordination. So, this evolution enabled them to stay connected, continued their mission and growth despite the challenge they faced." (Case 10).</p>

Summary of Identified Concepts

Concept	Definition	Illustrative Quotes
Transformative Resilience Network (Transrenet)	Transformative Resilience Network is a phenomenon focusing on how social enterprises' networks transform challenges into opportunities through collective resilience and empowers value co-creation within communities while adopting agile work practices for navigating crises.	<p>Q7: "The evolution of digital tools influenced how we collaborate with others to create value within our social enterprises. For example, we started to have Focus group for proof-reading from youngsters before publication, increasingly relied on online platforms, such as project management software, collaborative document sharing tools, and communication apps, to facilitate teamwork and coordination." (Case 2).</p> <p>Q8: "We have remote work tradition kept from COVID-19. And collaboration is also enhanced including virtual meetings, training sessions and design collaboration. The skills have been enhanced and adapted to the new reality. Due to this COVID-19 issue, flexible work models also developed which you have find very useful and there is no need to come every day from 9 to 5 work in case you don't have any urgent tasks to complete." (Case 3).</p> <p>Q9: "COVID also raised the issues regarding physical health, but also mental health, life-work balance. It was a digital collaboration: You didn't see the people, but still you worked together, and it was a collaborative effort – more flexible, very easier. That's when people realized that it was possible to have flexible jobs, more task oriented, way less time-consuming jobs. And it would allow them to have more free time for themselves." (Case 4).</p> <p>Q10: "AI, exactly ChatGPT boomed in 2022 and stimulated lots of business. Although in our social enterprise it is difficult to adapt to this, still it can be used for designing content for social media, designing certificates for competitions and so on. So, it can be used somehow and can be useful to save time and financial costs. It can increase work-life balance, work quality more easily." (Case 6).</p> <p>Q11: "We saw that such a crisis can happen. We must be ready, every other company can face, it's important to stay proactive, stay agile and stay flexible" (Case 7).</p> <p>Q12: "Collaborating with other brands helped us to be more effective. Especially during the war. Even the diaspora got really excited about helping Azerbaijani brands. We connected with other brands with live streams. Since then, I've become more active on social media, where before I was just posting occasionally like "this is a sock". So, this taught me the value of community and using these digital things for that. I learned through COVID and war, that it's important to stay connected with our customers by telling the stories of the women and making sure that's one of the front parts of our company." (Case 9).</p> <p>Q13: "So, we will see remote collaboration and innovative solutions. We will witness the development of innovative solutions tailored to specific industries and challenges for their optimizing workloads and creating new avenues for value creation. The feature of using digital tools to work and create a valid direction. And continued innovation and adaptation and empowering individuals and organizations to overcome challenges in an increasingly digital world." (Case 10).</p>
Synergistic Economic Resilience (Synecresi)	Synergistic Economic Resilience is defined by a synergy between agile work environments and economic market considerations, suggesting that synergy is occurring where social enterprises are creating economic resilience in the market through digitalization and value co-creation: It implies that the social entrepreneurs having digital collaboration are more resilient against the crises, thanks to agile work environments and due to economic market considerations.	<p>Q14: "COVID caused lots of layoffs, crisis in the economy. And then because of this, remote work or working from home emerged. People realized that some of the things back then weren't necessary, and now they could do many things online. Well, maybe some didn't rely on online payment or maybe some didn't have the digital skills to do so, but overall, their digital skills increased, side hustles such as dropshipping, affiliate marketing increased, and at the same time within the business environment, the IT became more task-oriented and focus on AI raised." (Case 4).</p> <p>Q15: "With agility, companies can offer many new side products or services, there can be more growth, fast entry to market, faster import and production." (Case 5).</p> <p>Q16: "After the pandemic, we had war and post-conflict stress. Everyone was worried because we are in hot pot between Russia and Iran. So, geopolitics of crisis also impacting... People used digital tools to learn trading in the cryptocurrencies, digital trading methods like dropshipping. The people started to investigate this dropshipping, and they started to sell online. Basically, you buy products from China, and you open your account in the Shopify, sell in USA because in China it's cheaper while you don't have a warehouse, but just website" (Case 7).</p> <p>Q17: "We've learned to sell things digitally, create patterns of our socks. So, it's like an actual digital download that you buy: some women could sit at home working in America and Europe. It's a certain knitting pattern – digital items that have helped passive income: we've made cards and stickers like with a sock on them. And with Azerbaijan on it, so, it's like something kind of related. But it's also like a way that we're using digital things to support our business." (Case 9).</p> <p>Q18: "I believe that scheduling regular virtual meetings or check-ins with your team using video conferencing tools helps everyone stay connected, discuss progress and address this challenge together and encourage open communication. That creates channels for open communication and idea sharing using WhatsApp or Discord. It's encouraging everyone to share their ideas and concerns freely and using Google Documents, Microsoft Teams to collaborate on projects efficiently, and foster supportive inclusive virtual environment. Social interactions and activities that promote mental and emotional wellbeing." (Case 10).</p>

Source: own compilation

(Quote 2 in Table 2). Our respondents observed that while before the crisis there were low levels of Entrepreneurial Initiatives, and risk-seeking proactive behaviors; after the crisis, the number of social and ecological initiatives increased (Quote 1, 4). Crisis-driven Adaptation is about shifts in mindset of people due to external pressures like pandemics, or wars: there was increased awareness, donations, support, inclusive and human-centric focus after

war and pandemic in several social and ecological enterprises in our retrospective case study (Quote 5).

Secondly, the codes of Digital Tools Adoption and Utilization, Advanced Data Analytics are gathered under the code of *Digital Transformation*. Digital Tools Adoption is about increased reliance on remote work technologies, digital communication, online sales, and many others (Quote 6). Advanced Data Analytics refers to the usage

of advanced analytics for decision-making, performance monitoring, and engagement assessments, cost-benefit analysis, measuring community involvement and satisfaction (Quote 4).

Thirdly, Inclusive Efforts, Community Engagement Strategies, Feedback Mechanisms raw codes can be associated with *Value Co-Creation within Community*. Inclusive Efforts are about including all and giving value to everyone based on empathy, despite marginalization. So, the social values and inclusion are the basis: it can be about women empowerment initiatives, cultural awareness, representation, accessibility, corporate social responsibility emphasis, solidarity during crises, inclusion and diversity, as they've been mentioned in most of our cases. Community Engagement Strategies refer to the importance of creating long-term social connections, community bonds via collaboration platforms and feedback. Community Engagement Strategies play a crucial part in this: strategies for managing public relations during crises reveals that Storytelling – Emphasizing personal narratives to connect with audiences are powerful (Quote 12). Lastly, Feedback Mechanisms are about utilizing focus groups, regular check-ins for continuous assessments, adjustments, transparency, open communication channels in collaboration, establishing clear protocols, communication channels for information sharing and knowledge management (Quote 7).

Fourthly, Flexible Work Models and Innovative Collaboration Systems naturally fit in with *Agile Work Environments*. Flexible Work Models stand for remote work dynamics, fast experimentation, adaptability, encouraging creativity, agility, and hybrid work arrangements (Quote 8, 9, 11). Similarly, Innovative Collaboration Systems are about the usage of digital tools for collaborations, resilience through innovation, collaborative endeavors and community support (Quote 13).

Fifthly, Economic Resilience, Side Hustles and Freelancing, Impact of Geopolitical Crises on Markets can be associated with *Economic and Market Considerations*. According to our data analysis, Economic Resilience means Ability of social enterprises to adapt and thrive despite the economic instability, adaptation to post-crisis market changes, and growth of the digital startup ecosystem (Quote 18). Moreover, Side Hustles and Freelancing is growth of alternative income sources, entrepreneurial ventures and side projects (Quote 17). Lastly, Impact of Geopolitical Crises on Markets: Effects of war and economic instability on social enterprises has also been mentioned by our interviewees (Quote 14, 16).

## Interconnected Resilience Framework

### Concepts of Crisis and Market Turbulence

Crisis is defined as an unwanted, unexpected, unpredictable situation, which causes disbelief and uncertainty (Milašinovic & Kešetovic, 2008), while Market turbulence is defined as “a change in the composition and preferences of buyers”, a factor that is directly related to the level of competition (Kohli & Jaworski, 1990, p. 14). For

example, a crisis can be COVID-19 pandemic or the war in Ukraine and Market turbulence is a state of volatility and uncertainty in the market, where prices and customers' needs fluctuate rapidly and unpredictably such as local economies getting affected heavily after COVID-19 and prices increasing immensely (Bakir et al., 2021).

Digital collaboration in social entrepreneurship is simply utilization of digitalization which is defined as a rise in computers or digital technology usage by an organization, industry or country (Brennen & Kreiss, 2016) for value co-creation which is defined as the joint creation of value by the enterprise and the customers, interacting and integrating their resources to co-construct better products and services to adjust to their needs (Prahalad & Ramaswamy, 2004).

Our main research question of how Crisis and Market turbulence affect the way social enterprises employ digitalization for collaboration is answered with our first proposition (Figure 2): Crisis and Market Turbulence increased Digital Collaboration in Social Entrepreneurship: “COVID gave us opportunity to digitalize” (Quote 1 in Table 2).

Thus, based on our findings, we introduce our first proposition:

$P_1$ : Crisis and Market turbulence increased Digital Collaboration in Social Entrepreneurship (Figure 2).

Periods of crisis and market instability, such as COVID-19 pandemic or geopolitical conflicts such as wars, force social enterprises to adopt digital tools to maintain operations and stakeholder engagement. These disruptions accelerate the necessity for remote communication, digital fundraising, and online service delivery, leading to a marked increase in digital collaboration. As observed in the interviews, crises acted as catalyst for technological adoption and adaptation, enabling social enterprises to continue their missions under challenging conditions.

### Concept of Digital Collaboration in Social Entrepreneurship

Digital collaboration in social entrepreneurship is simply using digitalization which is defined as a rise in computers or digital technology usage by an organization, industry or country (Brennen & Kreiss, 2016) for value co-creation which is defined as the joint creation of value by the enterprise and the customers, interacting and integrating their resources to co-construct better products and services to adjust to their needs (Prahalad & Ramaswamy, 2004).

According to our cases, there's positive relationship between Digital Collaboration in Social Entrepreneurship and Resilience: “Digitalization helped a lot in our work during crisis, and it can also help others to be more resilient towards the crisis” (Quote 4 in Table 2). “Overall, the integration of digital tools has transformed the dynamics of collaboration within our social enterprises. It made things more efficient, particularly during difficult times. These changes made us to navigate challenges more effectively and continue driving positive impact in our mission to create meaningful social and ecological change” (Quote 2 in Table 2).

Thus, based on our findings, we advance our second proposition:

$P_2$ : Digital Collaboration in Social Entrepreneurship increased Resilience related concepts of Cridieco, Transrenet and Syneresi. (Figure 2).

Digital collaboration fosters organizational agility and resource integration, allowing social enterprises to respond more effectively to crises. Through digital platforms, they co-create value with stakeholders, access broader support networks, and maintain continuity. The integration of digital technologies enhance adaptability, decision-making and coordination, thus reinforcing resilience related concepts of Crisis-resilient Digital Ecosystem, Transformative Resilience Networks, and Synergistic Economic Resilience. This finding is supported by empirical data where interviewees attributed operational stability and innovation to digital tools during and after crises.

### Resilience-related Concepts of Cridieco, Transrenet and Syneresi

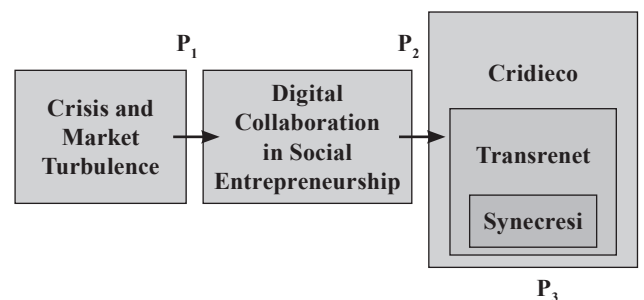
Firstly, *Crisis-Resilient Digital Ecosystem (Cridieco)* is an ecosystem where social and ecological enterprises thrive during and after crises by embracing crisis-responsive entrepreneurial mindset and digital transformation. This phenomenon can guide future research and practice in understanding how social and ecological enterprises can effectively respond to disruptions while enhancing their entrepreneurial efforts and digitalization strategies. So, Cridieco highlights the role of innovation in responding to crises. Metaphorically speaking, crisis-resilient digital ecosystem can be mentioned as *Resilience Nexus* where social entrepreneurial mindset meets digital connection in times of change or market turbulence and shows resistance towards disadvantages brought with the crisis.

Secondly, *Transformative Resilience Network (Transrenet)* is a phenomenon which is occurring within crisis-resilient digital ecosystem and is focusing on how social enterprises' networks transform challenges into opportunities through collective resilience. So, Transrenet is a network which empowers value co-creation within communities and adopts agile work practices for navigating business challenges and crises in general. Other than Transrenet being an internal part of Cridieco, the difference between them is that Transrenet implies the importance of fostering collaborations among social enterprises. It states that digitalization is not enough on its own, but rather transformative resilience requires collaboration, and in this regard, value co-creation is a must. Metaphorically speaking, Transrenet can be mentioned as *The Phoenix Network* where social and ecological enterprises are rising stronger from adversity thanks to agile work practices and value co-creation. Thus overall, metamorphosis of these enterprises is emerging through crises.

Thirdly, *Synergistic Economic Resilience (Syneresi)* is a type of resilience within transformative resilience networks and in general within crisis-resilient digital ecosystem and it is defined by a synergy between agile work environments and economic market considerations:

Syneresi suggests that synergy forge is occurring where social enterprises are crafting economic resilience within the markets through digitalization and value co-creation. Syneresi implies that the social entrepreneurs having digital collaboration are more resilient against the crises, thanks to agile work environments and due to economic market considerations. For example, during the COVID-19 pandemic, working from home with much more flexibility made it possible for many social entrepreneurs to start their side hustles or freelancing projects online both locally and globally, for thriving against the economic challenges and geopolitical crises.

Figure 2  
Interconnected Resilience Framework depicting mechanisms connecting Market Turbulence and Social Entrepreneurship's Digital Collaboration



Source: own research

Overall, we have three propositions:  $P_1$ : Crisis and Market turbulence increased Digital Collaboration in Social Entrepreneurship.  $P_2$ : Digital Collaboration in Social Entrepreneurship increased Resilience.  $P_3$ : There is an interconnected connection between Cridieco, Transrenet and Syneresi.

$P_2$ : We reveal that social enterprises using digital collaboration can have more resilience against the crisis. Thus, our main research question of how market turbulence and crisis affect the way social enterprises employ digitalization for collaboration is answered with these three phenomena or respective newly identified concepts (Figure 2): Crisis and Market Turbulence increased Social Entrepreneurship's Digital Collaboration ( $P_1$ ) which resulted with increased Resilience ( $P_2$ ).

$P_3$ : Additionally, a common feature of these three concepts as well as the main point of the Interconnected Resilience Framework is that digital tools and collaborative practices enhance the resilience of social and ecological enterprises in the face of adversity, crisis and market turbulence. Since social enterprises can rise from crisis through digital collaboration, we call the crisis's impact on them as the *Phoenix Effect*: Crisis and market turbulence can cause changes in digitalization and value co-creation of social enterprises. In this regard, we explore Cridieco, Transrenet and Syneresi – fundamental theoretical mechanisms that connect digitalization and value co-creation with each other for social enterprises within the context of crisis and market turbulence.

The conceptual constructs of Cridieco, Transrenet, and Synecresi collectively explain how digital collaboration and resilience interact in a systemic and progressive manner. These phenomena are interrelated components of the broader Interconnected Resilience Framework. Cridieco highlights the ecosystem level adaptation, Transrenet emphasizes collaborative transformation within networks, and Synecresi underlines the economic viability gained through digital innovation. Their interaction illustrates a layered process where digital engagement supports not only survival but also growth and transformation in response to adversity.

Simultaneously, analyzing these three phenomena reveals interesting peculiarities in social enterprises and how they gain more resilience over time, if they use digitalization and value co-creation during and after the crises (Table 3). Thanks to digital collaboration, we have three new concepts of Cridieco, Transrenet and Synecresi. These concepts underline the importance of using digital collaboration for social enterprises during crises, ultimately enhancing their resilience, network and overall ecosystem.

respective literatures by suggesting an Interconnected Resilience Framework (Figure 2).

Social entrepreneurship is empowered by digitalization (Goyal et al., 2021; Wan & Liu, 2021; Mursalzade et al., 2023), and value co-creation (Ratten, 2022; Mursalzade et al., 2023), yet crises' impact on social enterprises' digital collaboration is underexplored and practically, there is still need for social enterprises to increase their digital collaborations to have more resilience against the crises. We revealed that research on the relationship between market turbulence and social entrepreneurship's digital collaboration is rare and disjointed in the literature. Thus, literature has failed in its purpose of synthesizing and providing guidance to practitioners on the implementation of digital collaboration during crises. Therefore, our research has identified new concepts making social entrepreneurship more resilient during crises if they use digital collaboration: Crisis-Resilient Digital Ecosystem, Transformative Resilient Network, and Synergistic Economic Resilience. Analyzing these three phenomena reveals how social enterprises gain more resilience over time by using digital collaboration during crises. Moreover, due to crisis and

Table 3

**Event-ordered Matrix for Crises' Impact on Social Enterprises**

Theoretical Concept	Period 1: 2015-2019 (Before the Crisis: Pre-COVID, Pre-War, Pre-Wildfires)	Period 2: 2020-2021 (During the Crisis: COVID-19, 2020 War, Wildfires)	Period 3: 2022-2025 (After the Crisis: Post-COVID, Post-War, Post-Wildfires)
Cridieco	Crisis-Resilient Digital Ecosystem may be existing only for traditional corporates and big companies which have the resources. While for social enterprises which are usually small and medium, Cridieco didn't exist.	With the arrival of several crises, there was an emerging need of Crisis-resilient digital ecosystem especially for social enterprises. Thus, Cridieco started to increase gradually.	Cridieco was empowered by digitalization & crisis-resilient entrepreneurial mindset which peaked in this period. Social enterprises in ecosystem showed resistance to crises' adversities.
Transrenet	Social enterprises and communities were loosely connected and didn't have many collaborations, which made them more vulnerable in front of the crises. Thus, Transrenet didn't have any existence in ecosystem.	The need for Transrenets and thus, for value co-creation among communities started to grow by increasing resilience in network, thanks to the agile work environments.	Social enterprises within Transrenets collaborated with each other, had knowledge transfer and better work-life balance for this time. After the crises, this tendency continued to grow steadily.
Synecresi	Synergistic economic resilience didn't exist for social and ecological enterprises or rather it existed but only in low levels, thus making enterprise more financially dependent and considerably in weaker positions.	Synergistic economic resilience started to increase gradually with more and more social enterprises adopting agile work practices and considering economic market situations.	Social entrepreneurs using digital collaboration and having agile work environments became more resilient to challenges posed by crises and other geopolitical market considerations.

Source: adapted from Miles & Huberman (1994) and Frau et al. (2020)

## Discussion of Findings

### Theoretical Contributions and Managerial Implications

To meet research aims and reveal the relationship between crisis and social enterprises' digital collaboration, retrospective case study methodology is implemented. Thus, comprehensive analysis of 10 face-to-face in-depth interviews is conducted to address the key research question of "How crisis and market turbulence affect the way social enterprises use digitalization for value co-creation?" and detailed coding process is created. This research extends previous studies in

digital collaboration, we have new concepts of Cridieco, Transrenet and Synecresi which underline the necessity of digital collaboration usage in social entrepreneurship during crisis, ultimately empowering their resilience, network and overall ecosystem.

Our study contributes to social entrepreneurship literature by eliminating gaps in specific research areas, showing event-ordered matrix, and suggesting theoretical model. Interconnected Resilience Framework is the main theoretical contribution of this retrospective study. The relationship between crisis and social enterprises' digital collaboration wasn't empirically researched before, thus Interconnected Resilience Framework depicting

relationship between market turbulence and social entrepreneurship’s digital collaboration resolves inconsistencies.

Crises happened in the past and they will also happen in the future. They are inevitable. However, social entrepreneurs must be ready for those crises. Phenomena of Cridieco, Transrenet and Synecresi highlight transformative potential of digitalization and value co-creation in social and ecological enterprises, highlighting importance of digital tools adoption and collaboration in addressing difficult social and ecological problems, especially if these endeavors are happening during the crises and market turbulence. By using digital collaboration during turbulent times, social enterprises can be more resilient against the adversities brought by the crises, and they can unlock opportunities for innovation, partnerships and contribution to the solutions of social and ecological problems our communities face.

### Limitations and Future Research

This retrospective case study provides an opportunity to investigate how crisis and market turbulence affects social enterprises’ digital collaboration. Nevertheless, the study also shows several limitations which should be addressed in the future. Our choice of methodology with retrospective case study and data collection area of Azerbaijan limits generalizability of the results of this study. However,

since newly identified concepts are about social entrepreneurship in general, it can be relatable to other social enterprises too. Thus, we suggest extending research to other countries and social enterprises as well. Additionally, as newly suggested phenomena, Cridieco, Transrenet and Synecresi can benefit from quantitative testing and validation with future research developing measurement scales and assess them rigorously. By validating these phenomena, researchers can support their theoretical base.

Our findings shed light on the role of digitalization in enhancing the resilience of social entrepreneurs during crisis, but several questions remain for future investigation. First, what determines whether social entrepreneurs adopt digitalization during crisis? While digitalization’s benefits are well-documented, not all entrepreneurs embrace it which raises concerns about the barriers such as lacking digital skills, limited access to infrastructure in rural areas, financial constraints, or cultural resistance to change. In the context of developing countries, it is necessary to examine whether all entrepreneurs were equally able to integrate digitalization into their operations, or whether regional, sectoral or educational disparities influenced their decisions. Second, entrepreneurs’ post-crisis behavior remains unclear for long-term or if they return to pre-crisis practices once stability returns. These behaviors could be influenced by perceived cost-benefit trade-offs, technological fatigue, or a lack of institutional support to maintain digital operations. Thus, these two questions

Table 4

Research Agenda exploring Digital Collaboration, Crisis and Resilience

Concepts in the Future Research	Research Aim of the Future Research	Research Questions in the Future Research
Ukraine-Russian war and Digital Collaboration	To explore the impact of geopolitical conflicts on social enterprises involving Ukrainian refugees as employees, examining how they adapt their strategies to leverage digital tools and foster collaboration in turbulent environments.	How Ukraine-Russian war influenced Digital Collaboration in Europe, particularly regarding the dynamics of social enterprises’ value co-creation and digitalization strategies in response to the migration crisis from employment perspective?
Ukraine-Russian war, Energy Crisis, and Ecological Entrepreneurship	To investigate effect of geopolitical conflicts on ecological enterprises focused on renewable energy solutions.	How has Ukraine-Russian war and Energy Crisis affected the dynamics of ecological entrepreneurship in the energy sector, particularly regarding value co-creation strategies?
Cyberwarfare, Cybersecurity, Resilience Strategies, Social Entrepreneurship’s Digital Collaboration	To explore intersection of cybersecurity and social entrepreneurship, emphasizing the need for valid strategies to decrease risks associated with cyber-attacks in a digitalized environment.	How does the threat of cyberwarfare influence the cybersecurity strategies and resilience planning of social enterprises that rely on digitalization and value co-creation during the crises?
Consumer Behavior Shift, Social Entrepreneurship	To research relationship between market turbulence, attitude towards branding (ATB), social and ecological enterprises with the role of digital marketing in shaping these perceptions.	How crisis and market turbulence influence customer behavior towards social and ecological enterprises with the role of digital marketing in shaping these perceptions?
Policy and Regulatory Frameworks	To study the relationship between digitalization of social entrepreneurship and regulatory frameworks.	How does digitalization influence the regulatory landscape for social enterprises? (Policy analysis and expert interviews with policymakers and social entrepreneurs for possible methodology)
Measurement of Social Impact	To develop framework for measure impact, followed by pilot testing.	What new metrics can be developed to assess the social impact of digitalized initiatives?
Cross-Sector Partnerships	To understand relationship between digitalization and cross-sector collaborations enhancing resilience, by studying successful cross- sector partnerships.	How do digital platforms facilitate cross-sector partnerships that empower resilience? What are the outcomes of such collaborations during crises?
Innovation in Social Service Delivery	To study social enterprises longitudinally to track service delivery changes over time.	What innovative service delivery models are emerging in social enterprises as a response to crises?

Source: own compilation

can be researched in future: What factors influence the decision of social entrepreneurs to adopt or resist digitalization during crisis? Do digital transformations initiated during crises become permanent, or are they temporary adaptations? Understanding these dynamics will help policymakers and support organizations tailor more effective interventions to promote sustainable digital adoption among social entrepreneurs, not only during crises but also as long-term strategy for resilience and growth.

Current literature lacks much research about crisis and social enterprises' digital collaboration. To bridge this gap between theoretical insights and practical realities, there is a demand for research agenda exploring above-mentioned concepts more. Moreover, since this retrospective study only covered 10 years of social enterprises, research with longer periods can benefit the respective fields of literature. Since our respondents in the in-depth interviews mentioned COVID-19 Pandemic, Karabakh War in 2020, Wildfires in 2021, ongoing Legislative Barriers Crisis, and Intellectual Property Rights Crisis, we could only include these types of crises in our research. However, we can suggest the exploration of other crises (Table 4).

Crises happened in the past and they will also happen in the future. They are inevitable. However, social entrepreneurs must be ready for those crises. Phenomena of Crisis-resilient digital ecosystem, Transformative resilience networks and Synergistic economic resilience highlighted transformative potential of digitalization and value co-creation in social and ecological enterprises, importance of digital tools adoption and collaboration in addressing difficult social and ecological problems, especially if these endeavors are happening during the crises and market turbulence. By using digital collaboration during turbulent times, social enterprises can be more resilient against the adversities brought by the crises, and they can unlock opportunities for innovation, partnerships and contribution to the solutions of social and ecological problems our communities face.

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# DECODING THE COST FACTORS OF BLOCKCHAIN THROUGH DIGITAL TRANSITION – INSIGHTS FROM A SYSTEMATIC LITERATURE REVIEW OF THE YEARS 2020-2024

## A BLOKKLÁNC KÖLTSÉGTÉNYEZŐINEK DEKÓDOLÁSA A DIGITÁLIS ÁTMENET SORÁN – SZISZTEMATIKUS IRODALMI ÁTTEKINTÉS A 2020-2024 ÉVEK ALAPJÁN

The authors' research objective was to investigate the use of blockchain technology in the financial industry, considering its associated costs. They conducted a systematic literature review in accordance with the PRISMA (Preferred Reporting Items for Systematic Reviews) guidelines, selecting 74 relevant articles. Using thematic keyword analysis with VOSviewer, they developed a Conceptual Framework for Blockchain Cost Impact in the Financial Industry and categorized the costs into three categories: Technology Development and Maintenance Costs, Testing and Quality Assurance, and Compliance and Legal Costs. This framework aims to facilitate future research and practical applications by identifying cost efficiencies and navigating regulatory challenges, ultimately supporting informed decisions on blockchain's integration in the financial sector.

**Keywords:** blockchain, compliance, cost, financial industry, SLR (Systematic Literature Review)

A szerzők kutatásának célja a blokklánc-technológia pénzügyi szektorban történő alkalmazásával összefüggő költségek feltérképezése. A PRISMA (Preferred Reporting Items for Systematic Reviews) irányelvek mentén rendszerezett irodalmi áttekintést végeztek, amely során 74 releváns tanulmányt választottak ki elemzésre. A kulcsszavak tematikus elemzéséhez a VOSviewer szoftvert használták, amely alapján kidolgozták a blokklánc pénzügyi iparágra vonatkozó költséghatási koncepcionális keretrendszerét. A feltárt költségtípusokat három fő kategóriába sorolták: (1) technológiai fejlesztési és fenntartási költségek, (2) tesztelési és minőségbiztosítási költségek, valamint (3) megfelelési és jogi költségek. A keretrendszer célja, hogy elősegítse a további kutatásokat és gyakorlati alkalmazásokat a költséghatékonyság azonosításával és a szabályozási kihívások kezelésével, támogatva a megalapozott döntéshozatalt a blokklánc pénzügyi szektorba történő integrációjában.

**Kulcsszavak:** blokklánc, megfelelés, költség, pénzügyi szektor, SLR (Systematic Literature Review)

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The global economic turbulence due to the recovery from the pandemic and the unstable of political issues has catalyzed an unprecedented shift in digital behaviors and accelerating the adoption of innovative technologies across various sectors (Gupta & Kumar, 2021). Blockchain technology has emerged as a solution in this rapidly evolving context as businesses and financial institutions seek resilient, transparent, and secure systems (I. Ahmad et al., 2020; Basori & Ariffin, 2022), which are also related to the energy sector and economic adjustment in the financial sector (Rákos et al., 2022).

To address this issue, we employ a Systematic Literature Review (SLR) methodology, refining the articles from 2020 to the present using highly reputable databases. In this research, we propose a comprehensive definition of blockchain cost that transcends traditional monetary and physical expenses. Our primary research addresses the following question: “What are the specific costs associated with implementing Blockchain technology, especially in the financial industry?” By exploring this question, our research aims to dissect the cost components of blockchain implementation, identify the key drivers of its impact, and provide a comprehensive analysis to contribute to further research direction of the post-pandemic situation, which offers a mix of challenges and opportunities for embedding blockchain technology within the core of mainstream financial industry.

Blockchain’s increasing applicability in business environments is largely attributed to its distinctive technological features. As a decentralized and immutable ledger system, blockchain eliminates the need for intermediaries, thereby reducing operational costs and increasing transaction speed (Zhang & Zhang, 2022). Its transparency and auditability make it ideal for industries requiring high trust and compliance, such as finance and supply chain management (Yin & Yang, 2023). Additionally, the integration of smart contracts – self-executing contracts with predefined rules – enables automated processes and reduced administrative burdens (Shamsi et al., 2022). These features support enhanced traceability, security, and operational efficiency, which are critical for business scalability and risk mitigation. This technological foundation explains the surge of scholarly and practical interest in blockchain’s economic viability and cost structure.

Our research stems from the work of Onjewu et al. (2023), which presents a groundbreaking shift in understanding blockchain technology’s economic and strategic impacts, moving beyond its initial applications to address broader organizational and societal challenges, introducing that blockchain technology can revolutionize traditional assumptions about agency theory. The implication of blockchain across various sectors, further supported by Kumar et al. (2023), focuses on integrating blockchain with IoT in logistics and supply chains, emphasizing the potential cost savings and security benefits of adopting blockchain-IoT systems, addressing the need for a strategic approach to technology adoption that prioritizes sustainability and emerging technology maturity. Further studies go deeper into behavioral drivers of blockchain

assimilation and the challenges of digital transformation (Patil et al., 2023; Liyanaarachchi et al., 2024), proposing the importance of collaborative networks in reducing the costs associated with adopting new technologies and the need for balancing security with privacy and regulatory compliance, for minimizing the potential costs of non-compliance and consumer distrust. In our research, we concentrate on the cost implications of blockchain technology in the financial sector, drawing inspiration from a recent study by Gan and Lau (2024) and Biro et al. (2019), which underscores the essential role of trust in diminishing the costs tied to financial transactions and bolstering the adoption of blockchain technology that fostering a trustful environment can lead to significant decreases in both operational and reputational expenses for financial institutions.

Therefore, through this SLR, we anticipate offering comprehensive insights into the financial dynamics of blockchain technology during a critical period of global economic recovery.

## Materials and methods

We use the Preferred Reporting Items for Systematic Reviews (PRISMA) guidelines (Hannan et al., 2023), which offer a widely recognized standard methodology, including a guideline checklist (Mengist et al., 2020). In alignment with best practices, we have based our methodology on the original PRISMA Statement (Moher et al., 2009) and the updated PRISMA 2020 guidelines (Page et al., 2021), ensuring transparency and rigor in our systematic review process. Our approach is aligned with other technology-focused systematic literature reviews that apply PRISMA standards, such as the study by Frizzo-Barker et al. (2020), which examines blockchain adoption using a similar structured review method. We developed a review protocol that detailed our criteria for article selection, search strategy, data extraction methods, and data handling.

### Defining the focus and research question

The initial step of our systematic literature review (SLR) was to clearly define its focus, which is centered on exploring the costs associated with Blockchain technology from a corporate perspective. We concentrated on the financial implications of Blockchain in the business sector rather than delving into its detailed implementation or establishing a standard pricing model. The guiding research question was: “What are the specific costs associated with implementing blockchain technology in the financial industry?”

### Data sources and search strategies

Our research involved systematic searches in the Scopus databases, recognized for their significance in scientific research. Scopus is one of the most comprehensive and reliable abstract and citation databases of peer-reviewed literature, known for its broad coverage across disciplines and high-quality indexing (Falagas et al., 2008). The

search was conducted by two independent researchers (P.N. and J.R.T.) using the initial keyword “blockchain” within the Scopus database. The data was extracted on January 22, 2024. To maximize the relevance and breadth of our search, we expanded our terms to include “blockchain and Expenditures,” “blockchain and Company Costs,” and “blockchain and Economic Impact,” and applied Title Abstract Alignment (TAA) at the eligibility stage. Additionally, reference lists of eligible articles were manually reviewed to ensure comprehensive coverage of the literature.

Three researchers independently assessed the relevance of articles based on the TAA, using predefined criteria tailored to our research focus to ensure that the selected studies aligned with our research objectives. We excluded studies focusing predominantly on technical aspects without financial analysis, those unrelated to business applications, and non-English publications.

We established the final corpus for analysis by strictly adhering to the eligibility criteria and conducting a thorough review process. This research presents a carefully selected collection of literature that offers valuable insights into the costs of implementing blockchain technology in businesses. Figure 1 explains all the steps in the article filtering criteria derived from the PRISMA guidelines.

Figure 1

Documents filtering adapted from PRISMA

Identification	Keyword and syntax search “Blockchain” and “Financial”	Included : 1,801 documents Excluded : other not related documents
Screening	Document type: Articles	Included : 568 documents Excluded : other document type.
	Language: English	Included : 553 articles Excluded : other non-English articles
	Year of Publication: 2020–2024	Included : 451 articles Excluded : other non-English articles
Eligibility	Open Access or Accessible via University Network	Included : 235 articles Excluded : other articles not in open access.
	Title and Abstract Alignment (TAA)	Included : 74 articles Excluded : other articles not align to our research objectives.
Included	Total 74 articles are included in the further analysis	

Source: own compilation

Figure 1 illustrates a structured approach that ensures transparency and replicability in the selection process of our research, in line with the PRISMA guidelines for systematic reviews.

The identification phase began with a keyword and syntax search using “Blockchain” and “Financial,” which yielded 1,801 documents. In the screening phase, we first

refined this pool by document type, reducing the number to 568 articles. In our research, we have deliberately included only those documents classified as “articles” in our dataset. We ensure that articles undergo a rigorous double-blind peer review process to maintain objectivity and impartiality in their evaluation. After this articles filtering, we then applied language screening, further narrowing the selection to 553 articles written in English. The screening continued with a focus on the year of publication, specifically from 2020 to 2024, resulting in 451 articles. During the eligibility phase, we focused on selecting articles that were either open-access or accessible through our university’s connection, narrowing our pool to 235 articles. The Title and Abstract Alignment (TAA) screening process further refined this selection to 74 articles that met our specific criteria for titles and abstracts.

## Result and discussion

### Descriptive analysis

In this subsection, we provide a valuable snapshot of the articles used in this research encompasses of blockchain cost analysis.

Figure 2

Overview of global blockchain research landscape (2020–2024)



Source: own compilation

Figure 2 displays the bibliometric indicators derived from a systematic literature review covering the years 2020 to 2024. The review has evidently amassed a substantial corpus of 74 articles. From these articles, a total of 647 keywords have been extracted, which will be further analyzed using clustering analysis. A notable collaboration is apparent from the involvement of 207 authors with 8 single-author articles. This collective scholarship is further emphasized by the correspondence with 22 different countries, pointing to a global interest and input into the research topic. The source materials for the review have been drawn from 56 different journals. A cross-disciplinary appeal and relevance of the research topic involvement of 33 publishers further underscores the breadth of the research community’s interest in the subject matter.

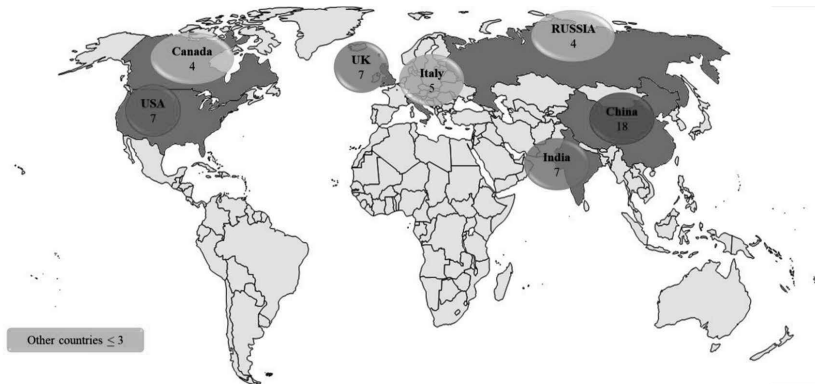
### Geographic distribution of blockchain cost research

We also conducted a geographic analysis of the research output on the costs of blockchain technology, as illustrated

by the bar chart. This analysis is based on a dataset of 74 articles related to blockchain costs, sourced from the Scopus database.

Figure 3

## Documents analysis by countries



Source: own compilation

Figure 3 illustrates that our analysis of the cost aspects in blockchain-related articles encompasses a total of 74 across 22 different countries, with certain countries contributing a larger number of articles than the rest. Notably, other countries (not listed in the provided data) cumulatively account for publications equivalent to 3 articles or fewer each. China leads with 18 articles, reflecting strong government-backed initiatives and strategic investments in digital finance and central bank digital currency (CBDC) research (Yin & Yang, 2023). The UK, US, and India each contribute 7 articles, indicating a balanced academic and industrial interest in blockchain's financial potential, often tied to their respective fintech ecosystems. Italy, Russia, and Canada follow with moderate but meaningful contributions. While the overarching motivation across these countries is the financial applicability of blockchain, the intensity and focus of research may be shaped by national policies, regulatory frameworks, or innovation funding (Artemenko & Zenchenko, 2021; Rico-Peña et al., 2023). A summary of these patterns offers a more concise view of global interest while acknowledging key contextual distinctions.

The disparity in article counts among countries may reflect several factors, including the extent of blockchain adoption in financial practices (Souissi et al., 2023; Yin & Yang, 2023), government support for technology innovation (Artemenko & Zenchenko, 2021), research funding availability, and the academic community's interest (Rico-Peña et al., 2023; Zhan et al., 2023). The predominance of certain countries suggests a more robust ecosystem supporting blockchain research, which could influence the direction of future studies and technological implementations in the financial sector.

#### Publication journal for blockchain research articles

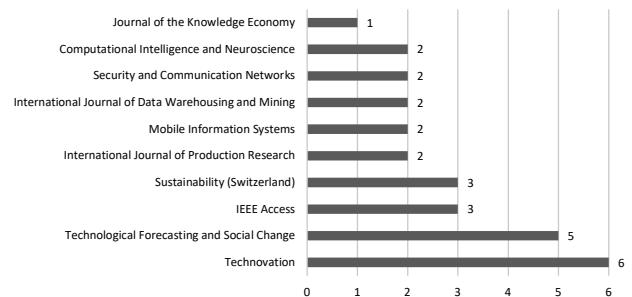
Figure 4 shows the of article distribution by journal source on blockchain technology. Technovation emerges as the

leading journal with 6 articles. This prominence could reflect the journal's focus on cutting-edge technological advancements and their impact on economic development and business practices. Technological Forecasting and Social Change follows closely with 5 articles, while IEEE Access and Sustainability (Switzerland) each contribute 3 articles.

These journals' engagement highlights the multifaceted nature of blockchain cost research, encompassing both the technological underpinnings and the sustainability aspects of its implementation in the financial sector. International Journal of Production Research, Mobile Information Systems, International Journal of Data Warehousing and Mining, Security and Communication Networks, and Computational Intelligence and Neuroscience have published 2 articles.

Figure 4

## Documents analysis by source of journal



Source: own compilation

To provide further insight into the scholarly impact of the key journals featured in our dataset, we include select metrics such as Impact Factor (IF) and Scimago Journal Rank (SJR) Quartiles. Technovation (IF: 12.0, Q1) and Technological Forecasting and Social Change (IF: 12.0, Q1) are leading journals known for their rigorous interdisciplinary focus on innovation and economic policy. IEEE Access (IF: 3.9, Q2) and Sustainability (Switzerland) (IF: 3.9, Q2) also show significant publication frequency and broad topical coverage, reflecting the interdisciplinary nature of blockchain research. These rankings indicate that the articles analyzed in this study are largely drawn from reputable, peer-reviewed sources with high visibility in their respective fields.

Nevertheless, it is essential to note that other journals not mentioned in the provided data cumulatively account for publications equivalent to 1 article or fewer each. The concentration of articles in certain journals may indicate areas of focused research interest or particular editorial policies supportive of blockchain technology studies. The involvement of a wide range of journals highlights the technology's potential impact across various sectors and disciplines, suggesting a broad academic engagement with blockchain technology. The Table 1 summarizes our findings in Figure 4.

Table 1

Impact factor and ranking of selected journals

Journal Title	No. of Articles	Impact Factor (IF)	SJR Quartile
Technovation	6	12.0	Q1
Technological Forecasting and Social Change	5	12.0	Q1
IEEE Access	3	3.9	Q2
Sustainability (Switzerland)	3	3.9	Q2
International Journal of Production Research	2	7.0	Q1
Mobile Information Systems	2	2.5	Q3
International Journal of Data Warehousing & Mining	2	1.9	Q3
Security and Communication Networks	2	2.2	Q3
Computational Intelligence and Neuroscience	1	2.3	Q3
Journal of the Knowledge Economy	1	1.8	Q3

Note: Metrics are based on Scopus and Journal Citation Reports (2023/2024)

Source: own compilation

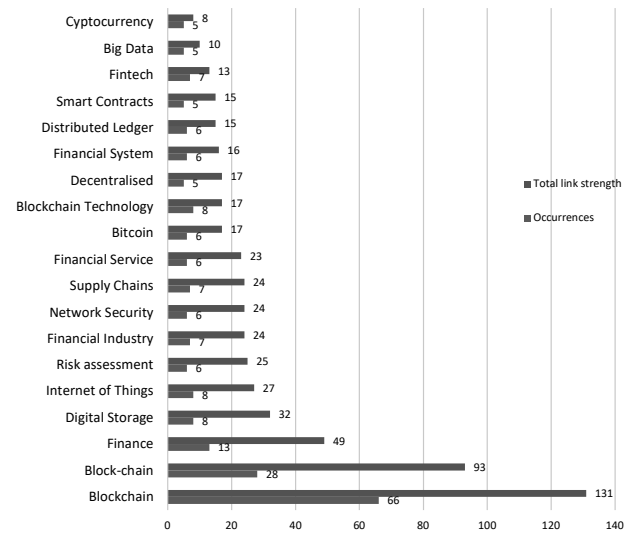
Co-occurrence network analysis of blockchain research keywords

We conducted a co-occurrence network analysis of keywords to delve into the thematic focus and interconnectedness within blockchain cost research. We utilized the VOSviewer for mapping, akin to multidimensional scaling with a rich statistical background, alongside a clustering algorithm similar to modular network division (Vysochan et al., 2021; Waltman et al., 2010). We set the threshold for the keyword co-occurrence analysis at a minimum of 5 occurrences. Out of the 647 keywords, only 19 meet this threshold. For each of these 19 keywords, using the VOSviewer, we calculate the total strength of the co-occurrence links with other keywords. The bar chart in the following figure illustrates these calculations.

Figure 5 shows the Keyword Frequency and Link Strength Analysis. In this dataset, the keyword “Blockchain” emerges as the most prevalent and interconnected term, appearing 66 times and having a total link strength of 131. Following closely behind is “Block-chain” with 28 occurrences and a total link strength of 93. Additionally, the keyword “Finance” stands out with 13 occurrences and a total link strength of 49, indicating its significance in blockchain discussions. Other notable terms include “Digital Storage” and “Internet of Things” with 8 occurrences each. Furthermore, keywords such as “Risk assessment” and “Financial Industry” demonstrate moderate occurrences (6 and 7 times) yet possess considerable total link strengths with 25 and 24. The following Figure 6 displays the clustering analysis of keyword co-occurrence.

Figure 5

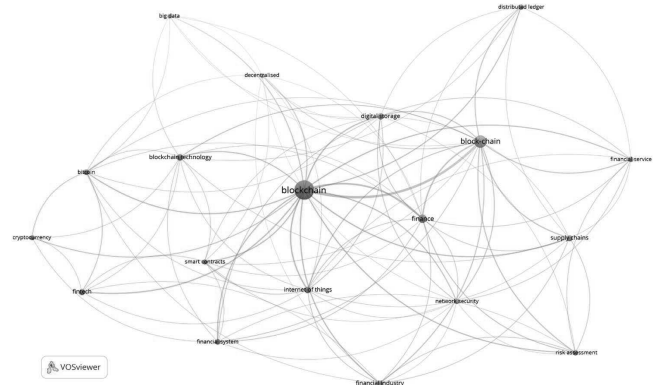
Keyword frequency and link strength analysis



Source: own compilation

Figure 6

Article analysis by keyword co-occurrence



Source: own compilation

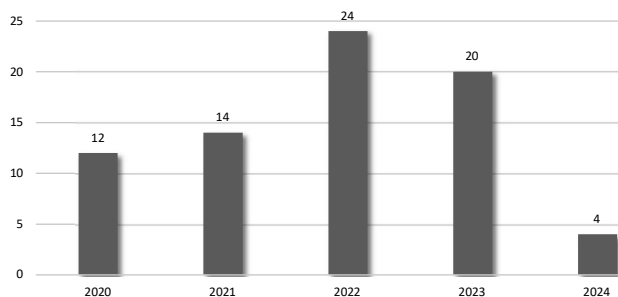
Figure 6 shows cluster analysis, which categorizes related keywords into four distinct clusters—red, green, blue, and yellow. We stem with the red cluster features ‘Blockchain’ as its most prominent term, registering 66 occurrences and a total link strength of 131, reflecting its centrality to the discourse on innovation within the financial system, especially in the COVID time (Gupta & Kumar, 2021). Terms like ‘Blockchain Technology’ and ‘Smart Contract’ are also notable, albeit with lower link strengths of 17 each. Prior research points to this term as an increasing yet more focused interest in specific blockchain functionalities in connection to the Ethereum (Massaro, 2023; Rico-Peña et al., 2023; Zheng et al., 2023). ‘Cryptocurrency’ and ‘Fintech’ follow, with occurrences and link strengths of 5 and 8, and 7 and 13. Barradas et al. (2022), Manahov & Li (2024), and Shamsi et al. (2022) indicate a growing interest in the financial technologies supporting cryptocurrency as digital currencies and the financial applications of blockchain concerning token-based systems.

The green cluster focuses on the infrastructural aspects of blockchain, with ‘Block-chain’ having 28 occurrences and a link strength of 93, indicating a strong yet distinct research focus from the primary ‘Blockchain’ term. ‘Network Security’ and ‘Distributed Ledger’, with equal link strengths of 15, reflect concentrated scholarly attention on the security and architectural facets of blockchain that are essential for its implementation in financial services (Cerchione et al., 2023; Hu, 2022; Khan et al., 2020).

In the blue cluster, ‘Finance’ stands out with 13 occurrences and a link strength of 49, denoting an established research interest that is foundational to the financial sector’s study but less directly related to the cutting-edge technologies seen in the red cluster. ‘Supply Chains’ and ‘Financial Industry’ each have a link strength of 24. According to prior research, this term has a balanced but moderate focus on applying blockchain to enhance supply chain operations and financial industry practices (Kumar et al., 2022; Lahkani et al., 2020; Wang & Wang, 2022). This keyword theme is also related to ‘Risk Assessment’ in supply chain finance, which is based on blockchain technology (Meng, 2022).

Lastly, the yellow cluster, though smaller, captures the intersection of blockchain with broader data and organizational concepts, with ‘Big Data’ at 5 occurrences and a link strength of 10 and ‘Decentralised’ at 5 occurrences and a link strength of 17. Based on the yellow clustering analysis, we found nascent research themes that are poised to gain momentum as the implications of decentralization and the utilization of large datasets in blockchain are explored more fully (Barradas et al., 2022; Zhan et al., 2023).

Figure 7  
Documents analysis by year



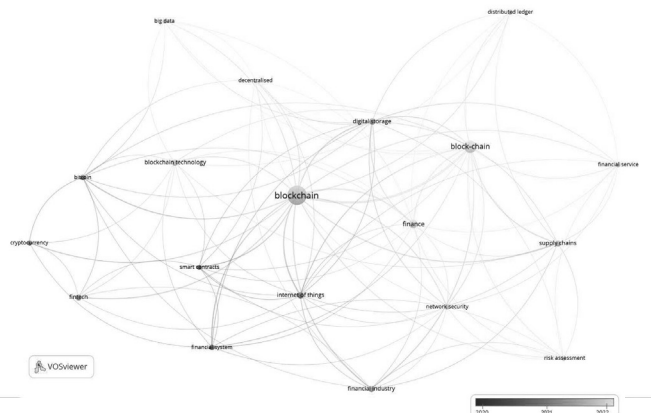
Source: own compilation

To complete our clustering analysis, we emphasize how the dataset underscores the importance of economic factors in driving the adoption and evolution of blockchain technology. Understanding the cost dynamics associated with blockchain is crucial for its broader acceptance and smooth integration into existing financial and organizational structures. We believe this analysis will contribute to future studies and provide insights into economic factors, focusing on thorough cost-benefit assessments, the impacts of evolving regulatory landscapes, and identifying new areas of application where blockchain technology can deliver substantial economic advantages. Figure

7 illustrates the frequency of articles included in our research.

Figure 7 shows the longitudinal analysis, which reveals a clear trend of increasing and then slightly decreasing scholarly interest in the cost implications of blockchain technology over five years from 2020 through 2024. The figure starts with 12 articles published in 2020 as a baseline for our filtering criteria. An increase to 14 articles in 2021 indicates a continued and slightly intensified interest in the economic analysis of blockchain. The peak in 2022 might reflect a culmination of interest driven by technological advancements. In 2023, the frequency decreased to 20 articles. This reduction might indicate that some initial questions regarding the cost of blockchain technology have been addressed, and slight normalization in research output after the previous year’s spike. Subsequently, an obvious sharp decline to 4 articles is observed in the most current year. It is also important to consider that data for 2024 might be incomplete, given the year is still ongoing or recently concluded, and more publications could emerge retrospectively.

Figure 8  
Overlay visualisation of the articles time frame



Source: own compilation

To support the analysis of the time frame analysis for a compelling graphical representation of the temporal spread and interconnection of keywords within the body of research on blockchain, we utilize the overlay visualization from 2020 to 2022 and beyond. Figure 8 shows the color gradient from purple-blue to green to yellowish hues signifies the transition of keyword prominence over time, with the purple-blue end of the spectrum representing earlier periods (2020-2021) and the yellowish tones indicating more recent occurrences (post-2022).

In the visualization, ‘Blockchain’ is the most prominent term and is centrally located, suggesting it is a foundational topic within the research corpus. Its position and size indicate a high frequency of occurrence and strong link strength across the entire timeframe, although the color suggests its peak prominence was around the 2020-2021 period.

Adjacent to ‘Blockchain’, terms such as ‘Smart Contracts’, ‘Blockchain Technology’, ‘Financial System’, and ‘Bitcoin’ share a similar coloration, implying they

were more frequently discussed in earlier research during the same period as ‘Blockchain’. Their proximity to ‘Blockchain’ suggests a strong association and relevance to the foundational technology.

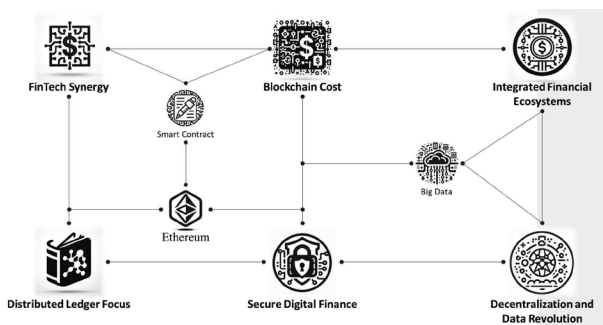
The shift towards the yellowish hues for terms like ‘Network Security’, ‘Digital Storage’, ‘Distributed Ledger’, ‘Financial Service’, and ‘Supply Chains’ indicates these topics have gained traction in the more recent phase of research, post-2022. This shift could imply a growing scholarly focus on the practical aspects of blockchain implementation and integration into various financial services and systems.

Moreover, ‘Decentralised’ and ‘Big Data’ are observed in a distinct yellow cluster. This suggests that these concepts have become particularly relevant in the latest research, potentially reflecting recent developments or shifts in focus within the blockchain discourse, possibly due to the growing appreciation of blockchain’s role in decentralization and the handling of big datasets in financial technology.

The clustering and color overlay in this visualization offer a temporal dimension to the co-occurrence analysis, allowing us to discern not only the thematic concentrations but also their evolution over time. The prominence of foundational blockchain terms in earlier periods could reflect the initial exploratory phase of blockchain research. In contrast, the emergence of terms associated with application and integration in later periods may indicate a maturation of the field, with increased attention to the challenges and opportunities of applying blockchain in various financial contexts.

The 74 articles in this study present various thematic keywords and have been synthesized into a conceptual diagram. Figure 9 simplified the interconnectedness of the four clusters with time frame discussed in this section.

Figure 9  
Conceptual framework of blockchain cost impact in the financial industry



Source: own compilation

Figure 9 presents the Conceptual Framework of Blockchain Cost Impact in the Financial Industry, synthesizing the thematic clusters identified through VOSviewer with the three aggregate cost dimensions derived from our systematic analysis. Each node in the figure represents a second-order theme (e.g., integration, security, legal compliance), while the connections

illustrate their interdependence across cost categories. For instance, ‘Integration’ links to both ‘Technology Development and Maintenance’ and ‘Compliance and Legal Costs’, reflecting how system compatibility affects not only technical but also regulatory expenditures. The red cluster, representing innovation and development, primarily maps onto the technology cost dimension. The green and yellow clusters—related to infrastructure and decentralization—intersect with legal and compliance themes, underscoring their relevance in standardization and security frameworks. This interconnected structure highlights how blockchain cost factors are not isolated but function as an integrated ecosystem within the financial sector.

### Cost analysis of blockchain implementation

Our framework draws upon the TOE model to contextualize how technological, organizational, and environmental factors shape cost-related decisions in blockchain adoption. Furthermore, agency theory provides a lens to interpret how blockchain’s promise of transparency may reduce monitoring costs and mitigate opportunistic behavior within financial ecosystems. However, we found that understanding the costs associated with blockchain technology extends beyond mere monetary and physical expenses. This condition presents a challenge in capturing its diverse aspects accurately. Nevertheless, the thematic clustering analysis helps us synthesize by extracting and interpreting the articles through specific coding techniques. We synthesize the articles into first-order categories, second-layer themes, and aggregate dimensions. The Table 2 represents the article’s categories and their attributes.

Table 2 shows our systematic analysis of the articles related to blockchain costs in the financial industry. The table is divided into four key components. To ensure analytical consistency, we categorized the data across three hierarchical levels: first-order categories, second-order themes, and aggregate dimensions. Frequencies were calculated using NVivo 12 Plus based on coded document segments from the 74 articles (Tuegeh et al., 2024). Each occurrence of a conceptually similar code (e.g., “smart contracts,” “DApp vulnerabilities”) was aggregated under a corresponding second-order theme (e.g., “Smart Contracts”). These themes were then mapped onto broader aggregate dimensions such as “Technology Development and Maintenance” or “Compliance and Legal Costs.” For example, in the case of Technology Development, high-frequency codes related to architecture and smart contract protocols were grouped into a coherent second-order theme due to their functional alignment. The bar charts in Figures 10a, 11a, and 11b represent the relative coding frequencies across document segments, providing empirical support for our category construction and its relevance within the blockchain cost landscape.

The following figures are the summarize of the relative Frequencies of Thematic Codes Across Document Segments using blindfolding method:

Table 2.

## Systematic analysis of blockchain cost in the financial industry

Key References	First-order categories	Second-layer themes	Aggregate dimensions
(Barradas et al., 2022; Cerchione et al., 2023; Cozzi, 2020; Dionysopoulos et al., 2024; Dodmane et al., 2023; Fei, 2023; Gupta & Kumar, 2021; Hu, 2022; Ji et al., 2020; Lian, 2022; T. Liu & Yu, 2022; Mosteanu & Faccia, 2021; Mvula et al., 2020; Yazdinejad et al., 2020; Zarrin et al., 2021; Zhao et al., 2023)	Blockchain architecture	Development	Technology Development and Maintenance Costs
	Engineering Business Model		
	Blockchain Platform		
	Protocol development		
	Decentralized applications (DApps)		
	Blockchain frameworks		
	Cryptocurrencies,		
	Distributed ledger technology		
(Alnuaimi et al., 2022; Artemenko & Zenchenko, 2021; Belchior et al., 2022; Brandl & Dieterich, 2023; Dodmane et al., 2023; Hu, 2022; Shamsi et al., 2022; Yazdinejad et al., 2020; Zarrin et al., 2021; Zhou et al., 2022)	scalability solutions	Infrastructure	
	communication		
	Network architecture		
	Digital storage,		
	Data architectures,		
	Integration		
(Cozzi, 2020; Glubokova et al., 2021; König et al., 2020; Manahov & Li, 2024; Massaro, 2023; Meng, 2022; Rustemi & Tuchschnid, 2020; Zarrin et al., 2021; Zhang & Zhang, 2022; Zhou et al., 2022)	Cryptographic algorithms transactions	Security	
	Decentralized-related security		
	Artificial intelligence algorithms		
	Financial security and data management		
	Integrated business intelligence		
	Secured transmission method		
	Crypto asset management		
	Information security		
	International standards		
	Security of capital flows		
(Cozzi, 2020; Duran & Griffin, 2021; Hu, 2022; Roszkowska, 2021; Shi & Huang, 2022; Souissi et al., 2023; Spanò et al., 2023)	Computational complexity and resources	Smart Contracts	
	Validate smart contract code		
	Transparency and efficiency		
	Global trade regulations		
	Deep learning		
	Equity investments		
	Smart contract vulnerability analysis		
	Ethereum		
(Artemenko & Zenchenko, 2021; Lian, 2022; Mvula et al., 2020; Rodriguez-Espindola et al., 2020; Sanober et al., 2022; Shammar et al., 2021; Xue et al., 2020)	Business systems adaptation	Integration	
	Technology alignment (IoT, PCA, AI, 3D printing)		
	Security, efficiency, and interoperability enhancement		
	Humanitarian supply chains		
	Mobile money platforms		
	FinTech and traditional institutions integration		
	Industry 4.0 business process enhancement		
	Mobile payment interoperability		
(König et al., 2020; Kumar et al., 2022; Lahkani et al., 2020; Lian, 2022; Sabour & Al-Waeli, 2023; Safiullin et al., 2020; Xue et al., 2020; Zhang & Zhang, 2022; Zhou et al., 2022; Zhu et al., 2022)	Information governance	Data Management and Storing	
	Supply chain product management		
	Product discontinuation decisions		
	Standardization in blockchain technology,		
	Financial shared service centers		
	Transparency in financial data processes		
	Blockchain for financial disclosure		
	Big data management and dissemination.		
	Blockchain in logistics and e-commerce,		
	Digital documentation efficiency.		
	Privacy and speed in data storage and transfer.”		
Industrial mortgage management			

Key References	First-order categories	Second-layer themes	Aggregate dimensions
(Barbureau & Bodó, 2023; Mosteanu & Faccia, 2021; Rico-Peña et al., 2023; Yazdinejad et al., 2020; Zheng et al., 2023)	Malware detection in decentralized applications	Software Requirements	Testing and Quality Assurance
	Fraudulent scheme identification		
	Machine learning in Ethereum		
	crypto-asset wallet software		
	Blockchain-SDN integration in IoT		
	Secure, energy-efficient software solutions		
	Predictive software in FinTech		
Quantum computing and blockchain intersection			
(Barradas et al., 2022; Fei, 2023; Khan et al., 2020; Liang et al., 2022; J. Liu & Chen, 2022; Song et al., 2023; Yazdinejad et al., 2020; Zhan et al., 2023)	Ongoing maintenance	Network Maintenance	
	Real-time data processing		
	Anomaly detection in DeFi		
	VAE-Transformer for blockchain		
	Maintenance costs for network safety		
	Blockchain and edge computing		
	Network security		
	Blockchain-based neural networks		
	Real-time big data processing		
	Cryptocurrency and social media data analysis		
K-means clustering in blockchain			
(Khan et al., 2020; Tsao & Thanh, 2021; Yazdinejad et al., 2020)	Microgrids for renewable energy	Energy-Related Expenses	
	Energy requirements		
	Energy-efficient architecture and Machine learning		
	SDN integration in IoT		
	Security energy consumption		
	Optimizing energy		
(I. Ahmad et al., 2020; Akyildirim et al., 2020; Campino et al., 2022; Hu, 2022; Kutera, 2022; Paglietti & Rabitti, 2022; Safiullin et al., 2020; Zhao et al., 2023)	Regulatory compliance in digital payments	Legal and Regulatory Compliance	Compliance and Legal Costs
	Consumer protection		
	Regulatory impartiality		
	Mitigating financial fraud		
	Money laundering		
	Ponzi schemes		
	Reduction of opportunistic behaviors		
	Blockchain for transparency,		
	Regulatory sufficiency		
	Market manipulation		
(M. S. Ahmad & Shah, 2021; Belchior et al., 2022; Pimentel et al., 2021; Roszkowska, 2021)	Blockchain audit challenges	Compliance Audits	
	Costs of blockchain compliance audits		
	Technical complexities of blockchain assets,		
	Impact on financial reporting,		
	Adaptation for auditors		
	Blockchain and AI in financial reporting		
	Transforming external audits		
Improving audit quality			

Sources: author data analysis, 2024

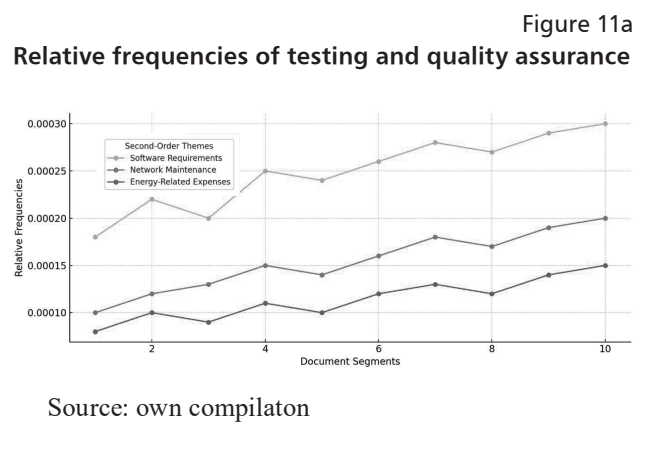
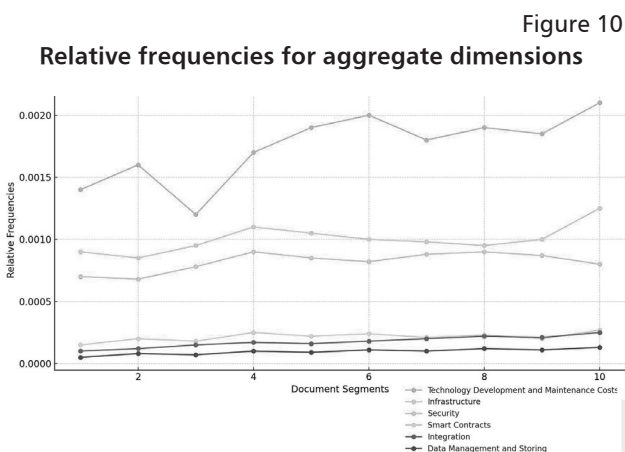
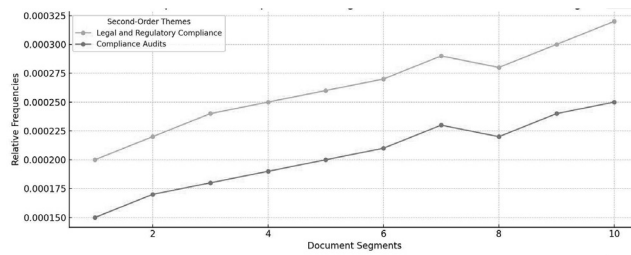


Figure 11b  
Relative frequencies of compliance and legal costs

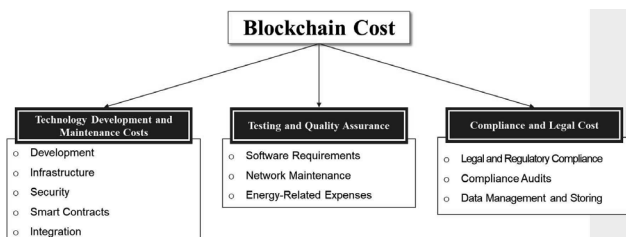


Source: own compilation

To improve clarity and alignment with our hierarchical coding structure, we present the second-order themes of blockchain cost as two separate figures based on their aggregate categories. Figure 11a illustrates the thematic frequency distribution related to Technology Development and Maintenance, while Figure 11b highlights themes associated with Compliance and Legal Costs, both offering a clearer view of the thematic emphasis across document segments.

Based on the Figures 10 and further to 11s, we present the three major cost categories: Technology Development and Maintenance Costs, Testing and Quality Assurance, and Compliance and Legal Costs. We draw the result of Table 2 into Figure 12.

Figure 12  
Comprehensive blockchain cost analysis framework (CBCAF)



Source: own compilation

Figure 12 displays a summary of our framework of blockchain cost indicators accurately constructed through a stratified analysis of coding structures. We are able to refine these costs by integrating this approach with our prior discussion on the costs associated with blockchain technology, which are deeply intertwined with various other expenses due to the blockchain system's inherent interconnectedness. We have categorized and delimited these costs based on their functionality and utility within the financial industry, informed by synthesis and coding techniques derived from earlier research. Consequently, this enables companies to consolidate potential cost categories, enhancing their ability to anticipate and prepare for possible expenses in the blockchain domain.

## Theoretical implications

This study contributes to the theoretical discourse on digital transformation and blockchain adoption by introducing

the Comprehensive Blockchain Cost Analysis Framework (CBCAF). The framework advances existing literature by integrating granular cost drivers—such as software development, energy efficiency, and compliance burdens—into a structured model that aligns with broader theoretical constructs. For instance, the Technology–Organization–Environment (TOE) framework emphasizes cost as a determinant of technology adoption, and our categorization directly informs that dimension. Furthermore, the framework builds on agency theory, where transparency and auditability reduce information asymmetry and monitoring costs—dimensions captured in our legal and compliance cost categories. Finally, by outlining the stages and domains of blockchain cost accumulation, our findings complement and extend innovation diffusion theory, highlighting barriers and incentives affecting blockchain integration in business settings.

## Conclusion and recommendation

This study provides a comprehensive synthesis of blockchain cost dynamics in the financial sector, grounded in a systematic literature review of publications from 2020 to 2024. By classifying the costs into three key dimensions which are: Technology Development and Maintenance, Testing and Quality Assurance, and Compliance and Legal Costs. This review offers a structured framework for understanding how blockchain-related expenditures evolve during and after periods of digital acceleration.

The findings hold theoretical significance by contributing to established models such as the Innovation Diffusion Theory and the Technology–Organization–Environment (TOE) framework. Specifically, our analysis extends the Innovation Diffusion Theory by identifying cost-related barriers (e.g., high software and compliance expenses) and enablers (e.g., operational efficiency and audit transparency) that influence the rate and scope of blockchain adoption. These insights complement existing literature that emphasizes technological compatibility and perceived advantage as primary adoption drivers. Additionally, through the TOE lens, our framework categorizes blockchain cost dimensions in ways that align with environmental constraints (e.g., regulatory compliance), organizational readiness (e.g., software integration), and technological maturity (e.g., infrastructure scalability), thus enriching the predictive utility of this model for emerging financial technologies. From a practical standpoint, the cost analysis framework can inform decision-making for various stakeholders:

- Policy makers can use the findings to understand the financial burdens that hinder blockchain deployment, allowing them to craft incentives or standards that reduce legal and audit-related uncertainties.
- Financial institutions and tech developers can benchmark their blockchain expenditures against categorized cost types, enabling better budgeting and risk management during implementation.
- Auditors and compliance officers can anticipate cost drivers related to transparency and security,

preparing organizations for regulatory audits and reducing friction in system integration.

Ultimately, this study addresses the research question by offering a roadmap for navigating the economic dimensions of blockchain adoption. It not only clarifies where costs are concentrated but also explains why these costs matter, namely, because they shape the trajectory of digital transformation in the financial sector. As blockchain moves from experimentation to operationalization, understanding its cost structure becomes crucial not just for technological deployment, but for strategic positioning, trust building, and long-term value creation.

While this study provides comprehensive insights into the cost dimensions of blockchain implementation through a systematic literature review, several limitations must be acknowledged. First, the analysis is based solely on documents retrieved from the Scopus database, which, although reputable and comprehensive, may exclude relevant articles from other databases such as Web of Science or IEEE Xplore. Second, the thematic coding and classification process, despite being supported by NVivo 12 Pro and Voyant Tools, inherently involves subjective interpretation, especially in aggregating first-order codes into higher-level cost categories. Third, the evolving nature of blockchain technology means that newer cost factors or implementation dynamics may emerge beyond the scope of the 2020–2024 literature window analyzed in this study. Lastly, while the study introduces the CBCAF framework, further empirical validation in real-world business settings would strengthen its generalizability and practical utility.

Future studies may benefit from expanding the data sources, incorporating expert interviews or case studies, and applying the CBCAF framework across various industries beyond finance to test its adaptability and robustness. Thus, we recommend future research to quantify blockchain implementation costs across various industries further and develop standardized metrics for financial implications assessment. We also suggest that further research should investigate blockchain's comparative effectiveness against traditional systems, and conducting sector-specific cost analyses will enhance understanding of blockchain's unique cost structures. Furthermore, exploring regulatory changes' impact on blockchain costs and studying the broader economic impact and return on investment of blockchain implementations are crucial.

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# CAREER TRAJECTORIES OF CHINESE SELF-INITIATED EARLY CAREER EXPATRIATES IN HUNGARY – TWO-STEP MIGRATION PATHWAY PERSPECTIVE?

## PÁLYAKEZDŐ KÍNAI EXPATRIÓTÁK KARRIERPÁLYÁI MAGYARORSZÁGON – KÉTLÉPCSŐS MIGRÁCIÓS ÚT PERSPEKTÍVÁJA?

This paper explores the career trajectories of Chinese self-initiated expatriates who relocated to Hungary to study and evaluate their career prospects abroad. By examining the two-step migration pathway, this paper uncovers the relative merits of three potential career choices, namely whether to return, remain in Hungary, or move to another European country. This research employs a constructivist grounded theory approach with semi-structured interviews with 22 Chinese graduates. Additional qualitative data, including observations, textual analyses of publicly available testimonies, and a research diary, complement the study. The findings reveal ambiguity in the advantages and disadvantages of each potential choice. The empirical material suggests that women face even greater challenges in this regard, as they experience considerable pressure to start a family, preferably in China. As a result, their self-initiated expatriation intentions are often played down. The study also highlights the difficulties of transferring social, cultural, and career capital into a new environment.

**Keywords:** self-initiated expatriates, early-career expatriates, Chinese expatriates, Hungary, career trajectories

Ez a cikk a Magyarországra tanulmányi céllal áttelepült kínai expatrióták karrierpályáit tárja fel, és értékeli a külföldi karrierlehetőségeiket. A kétlépcsős migrációs út vizsgálatával három lehetséges pályaválasztás egymáshoz viszonyított előnyeit és hátrányait tárja fel, nevezetesen, hogy visszatér Kínába, Magyarországon marad, vagy másik európai országba költözik. Ez a kutatás konstruktivista grounded theory megközelítést alkalmaz, félig strukturált interjúkkal 22 kínai expatriótával. További kvalitatív adatok, például megfigyelés, nyilvánosan elérhető tanúvallomások szöveges elemzése és kutatási napló egészítik ki a tanulmányt. Az eredmények azt mutatják, hogy minden potenciális választásnak egyaránt van előnye és hátránya, és a választás bizonytalan. Az empirikus anyag arra utal, hogy a nők ezen a téren még nagyobb kihívásokkal néznek szembe, mivel jelentős nyomás nehezedik rájuk, hogy családot alapítsanak, lehetőleg Kínában. Ebből kifolyólag gyakran elvetik a nemzetközi karrierterveiket. A kutatás azt is megmutatta, hogy a kínai pályakezdő expatrióták milyen nehézségekbe ütköznek a társadalmi, kulturális és karriertőke új környezetbe való áthelyezése miatt.

**Kulcsszavak:** nem vállalati kiküldöttek (self-initiated expatriates, SIE), pályakezdő külföldiek, kínai expatrióták, Magyarország, karrierpályák

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Self-initiated expatriates are typically understood as professionals moving from the Western European or Anglo-Saxon countries to any other countries of their choice, be it another Western or Anglo-Saxon country, or a developing country (Al Ariss & Crowley-Henry, 2013). Definitions mainly focus on the intention to work. While individuals moving from a developing country to a Western country often labelled as migrants, and Westerners relocating to other countries are typically referred to as self-initiated expatriates, regardless of their employment or work integration goals. Consequently, a large proportion of global mobility is excluded when self-initiated expatriation is examined. This study focuses on Chinese self-initiated expatriates who pursued employment opportunities in Hungary after having studied abroad. This investigation is specific because it considers Chinese mobile professionals as self-initiated expatriates who face visa restrictions that limit their international mobility, unlike for many Western professionals.

Self-initiated expatriation enhances global careers with international experience (Al Ariss & Crowley-Henry, 2013; Donald et al., 2018; Kanstrén & Suutari, 2021). While this could be accurate for Western self-initiated expatriates (SIEs), self-initiated expatriation from China may have a distinct effect, especially for mobile professionals from lower middle-class backgrounds, with limited social and cultural capital, where higher education only incrementally increases their prospects. This paper discusses how social and cultural capital increases for lower middle-class Chinese self-initiated expatriates, the limitations they face in deciding where to relocate, and how they can potentially enhance their social and cultural capital by choosing Hungary, located on the global semi-periphery, but still in the European Union.

This paper aims to contribute to the theories of self-initiated expatriation, particularly on the two-step migration pathway theory (Hawthorne, 2010). After defining terms and reviewing theories on career capital and two-step migration, the context of Chinese SIEs in Hungary and its influence on the theories are explained as an important element. Research questions focus on career options, career challenges, and potential cultural and social capital accumulations of Chinese SIEs. To answer the research questions, 22 Chinese early career SIEs in Hungary were interviewed, observed and their social media testimonies collected. The qualitative data were analysed in a constructivist framework. The next section presents the findings on agency in early career trajectories, including the agency of repatriation, the agency of remaining and agency of mobility, followed by the discussion. The final section summarises the paper's conclusion.

## Theoretical framework and research context

### Cultural, social and career capital theories

As part of the discourse of modernisation in China, students are encouraged to accumulate cultural and social capital via overseas tertiary education at both the individual and macroeconomic levels (Li, 2020). International

student mobility can help students accumulate multiple forms of capital, such as human (Becker, 1964; Dustmann et al., 2011), social (Nahapiet & Ghoshal, 1998), cultural (Bourdieu & Wacquant, 1992), and economic (Lu, 2015, 2018; Wong et al., 2015). Career capital – knowing-why, knowing-how and knowing-whom – is a key asset for career pursuit, especially in early stages and influenced by international mobility (Kanstrén & Suutari, 2021). Educational institutions and context[s] influence it greatly (Donald et al., 2018).

Accumulating such forms of capital is perceived as extremely important, especially in early career stages. Al Ariss (2012) argues that by acknowledging the contextual character of professions, SIEs may obtain a more nuanced view of international careers in their respective geographical, historical, institutional, and organizational contexts. This is why context-rich in-depth investigation is needed. Bamberger (2020) suggests that self-initiated expatriation can provide international students with an opportunity to develop a cosmopolitan identity by accumulating mobility capital. Upward mobility benefits individuals by allowing them to accumulate cultural capital, which is not only limited to those from affluent backgrounds (Daloz, 2013; Wong et al., 2015). Dimaggio (1982) also notes that cultural capital is a means of upward mobility.

### Self-initiated expatriation and early career trajectories

Self-initiated expatriation is widely discussed in the management literature (Dorsch et al., 2012; Finaccord, 2014; Hussain & Deery, 2018; Li et al., 2023). Self-initiated expatriation may be temporary or permanent. Some expatriates intend to return to their home country, while others move on to other countries for their professional careers. Self-initiated expatriates are those who take the initiative to relocate overseas (Andresen et al., 2014; Tharenou, 2015). The boundary between SIEs and other people with international experience is unclear, despite scholars' repeated attempts to clarify the various definitions (Andresen et al., 2014; Cerdin & Selmer, 2014). Some scholars have defined a SIE as an employee who voluntarily migrates for employment opportunities and career development (Andresen & Biemann, 2012; Carr et al., 2005; Howe-Walsh & Schyns, 2010; Tharenou & Caulfield, 2010), whereas others have defined them in more general terms. Briscoe et al. (2009) define SIEs as 'individuals who travel abroad (usually as tourists or students), but who seek work as they travel and are hired in a foreign location.' Both employability and learning are key elements of boundaryless careers, which SIEs are pursuing (Dorsch et al., 2012).

While career development can be regarded as the one major motivation for SIEs to go abroad, there has been some discussion on SIEs' early career trajectories (Pereira et al., 2016; Wechtler, 2018; Li et al., 2023). Researchers have examined the career prospects and obstacles encountered by early career SIEs who may bring fresh perspectives and enthusiasm to their new location. SIEs may encounter challenges in building their careers, including difficulties in accessing professional networks and

overcoming barriers to career advancement. McNulty and Brewster (2017) suggest that SIEs could play a role in management and leadership development, as their experiences can enhance valuable skills such as adaptability, intercultural competence, and leadership, which are sought after by organisations (Li et al., 2023).

However, early career SIEs encounter various obstacles. Waxin and Brewster (2020) examined the influence of host country factors, including culture, language, social networks, and work opportunities, on SIEs' career paths. They found that host country characteristics are critical in determining the career outcomes of SIEs. The authors highlight the importance of language proficiency and social networks in facilitating career advancement and cultivating a sense of belonging in the host country. Seok-Young and Jang (2021) examine the lack of organisational support, which can lead to awkward situations for early career SIEs. Jonbekova et al. (2021) show that international graduates face employment challenges due to factors such as socioeconomic and cultural considerations, as well as intergenerational conflicts. Overall, the transition from university to an early career is expected to influence their self-perception of employability and their prospects of entering the international employment market (Donald et al., 2018).

### **Two-step-migration pathway of international graduates' self-initiated expatriation**

The transition from university to an early career is likely to affect how SIEs view their employability and their ability to enter the global job market (Donald et al., 2018). There is evidence that foreign education is linked to better employment prospects. International education has a "signalling effect" on graduates, providing them with advantages such as English proficiency, solid content knowledge, awareness of international standards, and advanced soft skills, making graduates more appealing to employers and increasing their chances of employment (Abimbola et al., 2016; Jonbekova et al., 2021; Pham, 2020; Wiers- Janssen, 2007; Wu et al., 2020). Hawthorne (2010) coined the term "two-step migration" to describe the phenomenon of former international students seeking employment in their host country instead of returning home after graduation. This contributes to the host country's employment market by providing educated workforce. When international graduates enter the job market and start their career, they differ from local candidates. For instance, early-career SIEs have more mobility ambition and may seek entry-level professional opportunities to gain international experience (Fourage & Ester, 2007). Tharenou's study (2003) on 213 entry-level workers (with an average age of 23) concluded that early-career SIEs had high levels of personal agency and were less influenced by their families. The study used social cognitive career theory, taking age, gender, and marital status into consideration.

Global and multinational organisations consider international graduates an immediate source of labour and a group devoted to work because they gained socio-cultural capital and qualifications from their host

country while studying (Chellaraj et al., 2008; Farivar et al., 2019). Therefore, the international student experience is crucial for adapting to a foreign country during graduate studies and gaining exposure to an international setting, which in turn influences their decision to relocate (Bozionelos et al., 2015). Understanding the early career performance, suitability, selection, and development of international graduates has been recognised as crucial for international human resource management (IHRM) and training development (Israel & Cohen, 2022). Younger employees are more enthusiastic to change career boundaries within emerging new social structures, compared to older employees who may prioritise more generic skills (Currie et al., 2006). Farivar et al. (2019) suggest that foreign graduates' career mobility can be influenced by socio-cultural and working conditions; their findings motivated international graduates to remain in the host country after graduation, even if they originally planned to leave.

Although many young foreign students often have larger social circles, they are perceived as temporarily staying in the host-country and adopt coping strategies when they encounter difficulties. From an economic perspective, a competitive employment market with limited positions (Abimbola et al., 2016; Nachatar Singh, 2020), and high salary expectations in comparison to those offered in the market (Hao & Welch, 2012), make it difficult for graduates to obtain post-graduate employment. Chinese SIEs should recognise and adapt to socioeconomic differences between the host and home countries. Al Ariss & Özbilgin (2010) notes that, particularly in the context of SIE, the education and abilities of SIEs may not be enough to overcome organisational and structural barriers, which hinder their full integration into the job market. In conclusion, the perception of early career SIEs' temporary stay in the host country prompts the adoption of coping strategies to navigate difficulties.

### **Chinese SIEs in Hungary**

Chinese SIEs mainly target Anglo-Saxon and economically advanced Asian countries. While there is extended literature on middle-aged Western expatriates (Shaffer et al., 2012; Yao et al., 2014; Crowley-Henry, 2012), there has been little discussion of the large number of Chinese applicants who aim to study in Hungary. Hungary as a potential destination for the Chinese middle-class couples, whereas the primary motivation is favourable living conditions, desire to provide their children with a joyful childhood, potentially escaping the educational pressure, intense competition, and economic burdens associated with the upbringing of children in China (Beck & Gaspar, 2023; Beck & Nyíri, 2022).

While students have limited access to the employment market, a large number of Chinese professionals seek employment in Hungary. Li (2020) provides a detailed analysis of the push and pull factors that influence Chinese individuals to move to Hungary. Push factors include social and economic changes in China, leading to a highly competitive employment market. Pull

factors include the accessibility of Hungarian education system and a relatively easy access to its employment market compared to other EU and Western countries. However, Chinese students encounter various obstacles, including language barriers and potential exclusion (Primecz & Li, 2022a), as well as individual academic issues regarding “invisible academic performance in the classroom” (Li, 2020). Li and Primecz (2023) describe the socio-economic status of students who eventually enter to this market, and argue that Hungary is a compromise choice for lower middle class and working-class Chinese families, not a country attraction. Furthermore, Li and Primecz (2021) use exploratory-qualitative methods to investigate the future dilemma of Chinese students: their *in-betweenness*.

In Hungary, the number of self-initiated Chinese students saw a significant increase, rising from 725 in 2014 to 2.776 in 2019, and then slightly decreasing to 2.377 in 2022 (Hungarian Central Statistical Office, 2022). Since 2019, Chinese students have become the second-largest international student community in Hungary, following Germans, and remain the primary group among non-European students. As Chinese early-career SIEs represent a significant and fast-growing group, it is worth exploring whether Chinese students who moved to Hungary choose to remain, return to China, or select a third country for employment.

Previous research has investigated the macro and socioeconomic drivers of turnover among intra-country migrant workers, as well as personal, financial, and knowledge-related motivational factors (Carr et al., 2005; Doherty & Dickmann, 2012). But people and organisations must interact and accept their interdependencies to guarantee the long-term health of the professional ecosystem (Modise, 2016). Additionally, it is recognised that demographic factors also influence mobility. Age is usually decisive (Selmer & Lauring, 2010) and reflects the expatriate’s seniority and work experience. Therefore, most Western expatriates are between 30 and 40 years old (Shaffer et al., 2012). Moving from college to early employment is especially likely to impact self-initiated experiences (Donald et al., 2018).

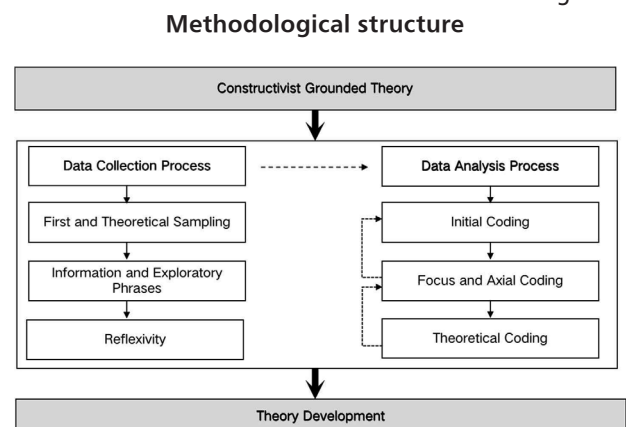
The current paper aims to address the research inquiry by advancing the understanding of career trajectories of Hungarian-graduated Chinese students and how their plans are executed when they face reality. This paper is unique in that it combines the plans and testimonies of students and their actual early career moves. It reveals that the investment in foreign studies can sometimes lead to unique career opportunities for individuals, but in other cases, newly graduated employees face limited career options. The paper aims to explore whether international mobility limits or facilitates career progression with the following research questions: (1) What career options are available to Chinese graduates who completed their studies in Hungary? and (2) What career opportunities and challenges do they face when they choose to remain in Hungary, when they return to China or when they move to another country?

## Methodology

While positivist, constructivist, and critical research traditions provide different approaches to the study of expatriation (Primecz, 2020; Szkudlarek et al., 2020), positivism continues to dominate in social sciences and management research more broadly (Symon et al., 2018). Yet, non-mainstream approaches, such as constructivist and critical studies, provide further insights, when it comes to the context-rich analysis of unexplored phenomena, while qualitative research approaches provide an obvious route to context-rich analysis, as they seek an “emic” understanding of the specific professional phenomena under investigation (Ghauri & Gronhaug, 2010; O’Kane et al., 2021; Symon et al., 2018; Richardson, 2021).

The subjective nature of individuals’ experience of global mobility (Scurry et al., 2013), and the role of qualitative researchers demands reflexivity, displaying awareness of their own experiences and preconceptions throughout the process. Wechtler (2018) suggests that diaries and blogs are rich personal accounts of lived experiences, as they are affective, spontaneous and not distorted by memories. Additionally, the author believes that cross-cultural challenges and the future career directions of Chinese early career SIEs are essentially personal matters. The research design is presented in Figure 1.

Figure 1



Source: first author's compilation

Table 1 shows the details of the sample, including their majors, gender, and length of work experience in Hungary after graduation. The participants’ average age was around 30, which is younger than the average age of other studies on expatriate populations, as the sample consisted of early-career SIEs.

The data for this study was collected from two sources. Firstly, semi-structured interviews were conducted by the first author. Secondly, further data was collected from publicly available sources, such as social media, blogs and observation of the Chinese community in Hungary. Collectively, these sources provided the initial data for the study. All research participants agreed to give interviews and provide further data about their life in Hungary, and they submitted informed consent forms. All interviews were audio-recorded

digitally, with their permission, and lasted 60-90 minutes. The anonymity of research participants was guaranteed.

Table 1  
Research participants and their demographic data

Interviewee	Gender	Age	Educational level	Major	Work experience in Hungary
F1	Female	33	Master	Economics	3
F2	Female	29	Master	Economics	3
M3	Male	29	Master	Economics	2.5
F4	Female	27	Bachelor	International Relations	2
F5	Female	29	Master	Environment	3
F6	Female	28	Bachelor	Arts	3
F7	Female	29	Master	International Business Law	2
M8	Male	31	Master	Veterinary Medicine	2
F9	Female	34	Master	MBA	2
M10	Male	30	Bachelor	Smelter Engineering	3
M11	Male	30	Bachelor	Mechanical Engineering	3
M12	Male	30	Bachelor	Agronomy	2
F13	Female	29	Master	International Economics and Business	2
M14	Male	29	Master	Medicine	2
M15	Male	35	Ph.D	Biomedical Science	3
M16	Male	33	Ph.D	Dentistry	2
M17	Male	31	Master	Public Health	2
F18	Female	31	Master	Economics	2
M19	Male	33	Master	Public Health	3
M20	Male	30	Bachelor	Economics	2.5
F21	Female	33	Ph.D	Medicine	1
M22	Male	31	Ph.D	Medicine	2

Source: own compilation

The first author’s position as a female Chinese doctoral student in Hungary, who has been living there for more than five years, influenced the research process in multiple ways. The author’s insider status helped in quickly approaching the participants and establishing trusting relationships. To recognize the value of a shared language in building relationships and minimise misunderstandings caused by translation, all interviews were conducted in Mandarin. To prevent the loss of meaning through translation, the transcripts were kept in original form for analytical purposes. Transcripts were forwarded to interviewees before the data analysis, allowing them to review and edit the transcripts for accuracy and privacy (Kaur & Sidhu, 2009), thereby ensuring credibility and legitimacy.

The audio data were transcribed into written Chinese and analysed using NVivo software for coding and categorisation. To minimise biases, the researcher kept a reflective research diary during both data collection and data analysis processes (Guba et al., 2017; Charmaz, 2006, 2020). The diary assisted the researcher in recording her research experience, including first impressions, second thoughts, instantaneous interpretations and overwhelming feelings.

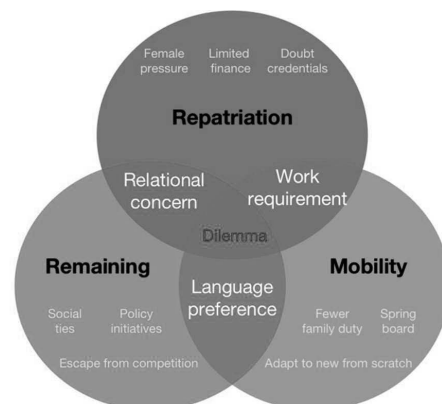
To develop the sampling criteria, the initial step was to screen potential participants and determine if they meet the criteria of being Hungarian-educated Chinese SIEs. Personal contacts were utilised to identify and approach

individuals who fit the required profile (Doherty, 2013). The criteria included: (a) initial intention and expectation of a temporary move at the time of the interview; (b) legal residence and employment in the host country; (c) voluntary move without forced displacement due to factors such as civil war, persecution, political beliefs, or famine; (d) entry to Hungary as a student with subsequent employment initiation. None had acquired the host country’s citizenship, and none had any international work experience before arriving in Hungary.

In the data analysis phase, the three steps of analysis described by Charmaz (2000) – line-by-line coding, axial coding and theoretical coding – are grouped around the researcher’s description of the analysis in this section. The first author analysed the data in Chinese and only translated relevant quotations.

Firstly, for building the *initial codes*, the texts of the transcriptions were read and, for each phrase or paragraph, a remark was provided using terms that summarized the information/concept investigated. While reading the interview transcript, a logbook was created that noted each respondent’s views of the content and the direction of the reading. Secondly, *axial coding* was developed to re-compose data and give coherence to the emerging analysis, highlighting its dimensions and properties within a context. This allowed for more precise explanations that respond to questions of when, where, why, who, how, and with what results of the phenomenon, resulting in a more comprehensive description of the studied experience. Thirdly, *classification* (theoretical codes) provided the comparison of categories on a more sophisticated level because it “provides the researcher with the logic to arrange his investigation and a means to build and enhance the theoretical links that urge him to compare the categories” (Charmaz, 2020). The constructivist grounded theory approach was employed to ask Chinese SIEs participants the three connected research questions through interviewing procedures. This resulted in the inductive identification and development of ideas from the data. Extracts of three levels of coding and theoretical coding are presented in Figure 2.

Figure 2  
Agencies of Chinese early career self-initiated expatriate in Hungary



Source: first author’s compilation

## Findings

The participants had three options for their early career after studying in Hungary: repatriation, remaining, or moving to another European country. However, regardless of the career choice made, the participants faced both career benefits and challenges.

### Agency to repatriation

One of the initial concepts that emerged was the importance of familial relationships related to the Confucianism, compared to the attachment to the host country. Many participants viewed the return to their home country as a long-term plan, primarily driven by their strong family ties. Ten participants acknowledged that, despite having severed social contacts in China and needing to repair professional relationships, they had strong relationships with family members there. F13 expressed a strong desire to return to China, stating: *“My heart will always be with my parents.”* Consequently, family duties emerged as a significant topic, linking participants to their country of origin:

*“My parents are the most central element of my life. I have been away from my parents for more than four years, and I feel terrible about being so far away. But I had to leave to work on the other side of the globe.” (F13)*

One noticeable concern among female participants was starting a family, which reflects the norms in China and reveals an intriguing common thread. As in the West, the age of marriage and first births is increasing: in China, the average is around 29 (United Nations, 2013). However, the pressure to marry and have children is outstanding and a single woman over 30 is considered “an old maid” and unlikely to find a companion. She feels the pressure to get married, as there is high expectation for women to do so in China. Several times in her social media posts, she reflected on her in-betweenness by mentioning the dilemma of whether to return or stay, especially during the COVID-19 pandemic. F1 explains a similar situation:

*“I am over thirty years old and have been in a relationship with my boyfriend in Hungary for more than two years; my family desires that we return to China.” (F1)*

While it is impossible to draw conclusions from all female SIEs’ concerns about starting a family, the results indicate a consistent pattern about the expectations of women to focus on marriage and potential childbearing, instead of pursuing a career, especially in a foreign country.

However, some dilemmas in Chinese SIEs’ repatriation exist. Firstly, international graduates’ career mobility encourages them to stay in the host country or relocate to other countries after graduation. Some of the Chinese SIEs interviewed recognised their socio-cultural status and limited financial resources, which restricted their ability to stay in the host country, which echoed Farivar et al.’s (2019) findings. M12 indicated:

*“As you know, I am from a rural part of China and come from a low-to-middle-income family. My father, in particular, was unable to work due to physical limitations, and my mother was the sole provider for the family. Despite my desire to remain abroad, at least in Hungary, where I may transform my socio-cultural capital, I must choose to return to China with my family and support them.” (M12)*

The first author had already interviewed M12 about international education and was well aware of his predicament and dilemma. M12 aspired to work for a non-profit organisation that promotes Chinese culture globally. Nevertheless, his plans were hindered as he had to return to his hometown.

Secondly, participants regarded studying or working “abroad” as preferable to studying in China, since a foreign degree could potentially provide them with a stable career in the ever-growing competitive Chinese labour market. In the wake of the COVID-19 restrictions, China has observed a rise in the number of highly qualified Western employees, who have returned to China. This has resulted in the devaluation of foreign degrees. F5 specifically expressed:

*“Ironically, the present labour market has declined. When I arrived at a university in Hungary six years ago, I believed that many overseas students of my age would have found greater employment opportunities than their Chinese counterparts. However, many individuals, like myself, could not find acceptable employment following graduation.” (F5)*

After completing a master’s degree, F5 faced a nine-month job search in the Chinese labour market. During this time, she remained in Hungary without financial support, which caused significant psychological stress. The first author maintained frequent contact with F5 on social media and noticed several posts indicating that she was on the verge of an emotional breakdown, expressing doubts about her skills, expertise and international experience.

Qualifications from lesser-known Hungarian universities are frequently subject to doubt. After the COVID-19 pandemic, many SIEs returned to China, and seven participants revealed that they lacked career advantages compared to local graduates and Western-educated professionals, even reporting lower career capital (Kanstrén & Suutari, 2021). Two respondents (M3 and M8) noted that a Hungarian degree does not guarantee a decent job, since they faced difficulties during online job interviews:

*“The interviewer distrusts my credentials and skills since I am not a graduate of a top institution; I cannot tolerate this because of the common misconception that individuals from Anglo-nations are superior to non-Anglo countries.” (M3)*

Several interviewees also questioned the value of skills and knowledge gained while they studied abroad.

### Agency to remain

Social network was developed through various social events and participation in study groups. Additionally, many networks were formed through non-work-related events. The individuals who had previous experience with expatriation had realised it was crucial to proactively establish social networks. Thus, SIEs need to develop simultaneous membership with local groups, as evidenced by F1 who developed social networks via participation in cultural organisations and activities:

*"I discuss progress with friends and may also learn from my peers. For instance, I joined the 9<sup>th</sup> district community last year to get acquainted with the local culture. On the one hand, the community is in desperate need of foreign assistance; on the other hand, it provides me with an opportunity for engagement." (F1)*

F2 honestly described the whole psychological transition from estrangement to adaptation to the local culture:

*"In the early stages of my time in Hungary, I had little contact with my local Hungarian colleagues. However, I gradually observed some changes in myself after being repeatedly invited to their homes and meeting their parents. Closer friendships with Hungarian colleagues marked a new era and way of life for me here." (F2)*

The SIEs who spoke Hungarian were inclined to stay in Hungary due to their language proficiency, which can serve as the foundation for accumulating social capital, and ultimately developing career capital in their career paths. M10 explained that his socialisation in Hungary involves going out with locals and noted Hungarian drinking culture shapes their social lives. He described his friendships and collegiality with peers who speak Hungarian and talked extensively about them and his active involvement in cultural and community activities.

The SIEs aimed to become proficient speakers of Hungarian by taking advantage of Hungarian lifestyle gradually. Some interviewees, who had already spent considerable time in Hungary, chose to stay and secure a job. They based their decisions on recent experiences and, most importantly, virtual networks connected to work and friendship. M22 reported that he enjoyed the company of his colleagues, both formally and informally. Meanwhile, the first author's research diary indicated that M22 viewed their happiness as a reflection of his social capital, as evidenced by his social media posts.

The respondents showed a strong desire to escape the competitive work environment in China and achieve psychological satisfaction in Hungary. Many of the Chinese SIEs acknowledged that they had heavy workloads and high levels of peer pressure while working in China. In contrast, staying in Hungary made F21 aware of the possibility of being temporarily free from such constraints and she appreciated the sense of relaxation and psychological well-being, rather than focusing on competition:

*"I could feel my heart calming down as I stepped away from China's competitive environment. After years of involvement in Hungarian work and life, I have gained a new perspective on the world, and my heart is becoming more peaceful." (M12)*

The work visa programme is a public policy initiative that provides opportunities for individuals to work and live in other European countries. Six respondents decided to wait nine months to search for employment options in Hungary, after not being hired immediately after graduation. This strategy may motivate them to remain in Hungary during the early stages of their employment search. However, twelve interviewees without Hungarian language skills stated their fears about "fitting into" the Hungarian job market as their primary concern because of language barriers.

### Agency to mobility

The positive impact of international experiences on career success has been documented in literature (Kraimer et al., 2009; Suutari et al., 2018). However, self-initiated expatriation is a transitional process, and individual factors, such as self-efficacy, can moderate one's interest in pursuing such experiences (Bozionelos et al., 2015). SIEs cannot rely on organisational help after their expatriation, so they must take the initiative to explore the multicultural context. As a result, early career SIEs may choose to relocate to another country.

The early career SIEs regarded their mobility as gaining transitional experiences. Cultural exposure, travel, and a desire for adventure were major motivators. The consideration of non-work-related support for SIEs is also important for human resource management (Howe-Walsh & Schyns, 2010). It is well-established that younger individuals have more international mobility because they have fewer family responsibilities (Shaffer et al., 2012). As a result, age-associated perceived duties and responsibilities have emerged. The majority of male respondents (M12, M20) indicated that the optimal period for self-initiated expatriation is age-dependent:

*"I was young and single, and I could choose the life I wanted, so I moved to Germany after graduating from Hungary, and you know what, I do not believe I would have made the same choice if I had a family." (M12)*

*"I am still young, so challenging myself is a wonderful experience." (M20)*

Respondents regarded mobility to another European country as a means of speeding up their career development. After conducting a strategic analysis of employment opportunities in their respective fields, many individuals with strong credentials identify Germany and Northern Europe as desirable destinations. Obtaining education or work experience in Hungary is a logical springboard

to access more job opportunities and social resources. F1, who completed an internship during her studies in Hungary, is getting ready to move to Denmark, where she sees an opportunity for an enhanced career trajectory and a new life. This move has also led her to settle down in Denmark with her boyfriend.

Career success is not just the result of one big breakthrough, but rather a series of incremental steps and opportunities that build upon one another. F21, a PhD candidate, has spent over a decade studying in Europe. She recently shared vacation pictures with her boyfriend, acknowledging the benefits of exploring new cultures, even at the age of 33. In addition, she emphasized the importance of not only obtaining a doctorate, but also having the opportunity to work with a well-known academic supervisor. She expects this collaboration to serve as a springboard for her academic career in the long run.

Other important drivers included seeking adventure, and immersing themselves in a global culture, so as to gain a cosmopolitan identity. For early-career SIEs, this means pursuing novelty and innovation, and it appears that youth enhanced serendipity, whereby opportunities and adventures arise unexpectedly. By venturing beyond their comfort zones and connecting with a different culture, M3 and F21 regarded change as an opportunity to expand their knowledge and abilities:

*"I have a worldwide perspective on international affairs. For instance, I rarely thought about migrants and ethnicity. They are naturally integrated into the international affairs that are currently on my mind."* (M3)

*"Compared to my former friends in China, I currently have a global consciousness. I am brave enough to travel to another European country for work and enrich my skills."* (F21)

However, the participants who made the decision to relocate due to their career goals may still face dilemmas. Graduates often perceive themselves as more employable than they actually are, leading to information asymmetries between them and employers in the job market (William et al., 2018). Therefore, they need to navigate the system, understand the language, and get access to information in order to succeed in the professional communities. M10, who had a Hungarian-speaking internship and had assimilated to Hungarian culture as a consequence of living in Hungary, was confronted with the decision of moving to another European country.

*"If I travel to another European country, I may only use Hungarian sometimes in the future."* (M10)

Despite announcing his intention to move to Germany on social media over a year ago, M10 has yet to settle on a new destination within the EU. F13 elaborated upon the same dilemma, stating that she would not be able to use the Hungarian language elsewhere.

Because of the loss of socio-cultural capital, the U-curve model in cross-cultural psychology, which describes the stages of cultural adjustment, typically characterised by initial excitement, followed by disillusionment, and eventual adaptation, does not fully apply to early-career SIEs and their adjustment process occurred over a shorter period of time, with many cycles of honeymoon phases (Pereira et al., 2016). Chinese SIEs must adjust to a new environment from scratch. When early-career SIEs conduct overseas activities, their expatriate cultural adaptation is the most important element in determining their success. F1 admits that she will need time to adjust to her new surroundings and begin a new life with her boyfriend.

*"As you know, I adore the lifestyle in Denmark; after having an internship here, I discussed our future plans with my boyfriend, and we decided to go to Denmark to make a living. However, because we have no relationships with anybody in Denmark, we must restart our life."* (F1)

The findings show that Chinese early-career SIEs in Hungary benefit from their career trajectories, but the process is unpredictable and complex. Many Chinese SIEs faced a tripartite dilemma of repatriation, remaining and moving to a Western European country, none of which is free of certain downsides. Therefore, solving this dilemma requires great self-direction, interest in internationalisation and flexibility.

## Discussion

All participants admitted the value of higher education to their personal development, future career and life aspirations, and they acknowledged their cultural, social (Bourdieu & Wacquant, 1992) and career capital development (Kanstrén & Suutari, 2021). However, many participants demonstrated a feeling of *in-betweenness* (Li & Primecz, 2021) and still faced career ambiguity when they were in the transitional period. Navigating the dilemma of repatriation, remaining or mobility requires a careful consideration of the linguistic, cultural, and professional factors (Al Ariss, 2012; Jonbekova et al., 2021) that shape Chinese early-career SIEs' personal and professional lives.

The decision whether to repatriate or remain is heavily influenced by relational factors, particularly family concerns. In contrast to earlier Western studies that suggest expatriates develop a multiple identity through mobility, this study found that Chinese early-career SIEs have a strong desire to maintain their cultural identities. A key value of filial piety related to Confucianism (Kohonen, 2005), substantially influences their career drive. The unique feature of enduring social bonds and relationships of Chinese culture led some early-career SIEs to view their academic knowledge, cultural experience, and social networks as valuable assets they could contribute to their current employment in China. At the same time, when Hungary having a relatively small employment market

and limited potential for career enhancement, it often lost its attraction for young Chinese professionals, despite its location within the EU.

Some the Chinese SIEs interviewed in this study regarded mobility as a potential springboard for career advancement, many of them faced limitations when working in other European countries, which ultimately led them to consider returning home, despite their initial desire for mobility. This refutes the dominance of two-step migration pathway (Hawthorne, 2010) among Chinese graduates in Hungary, which was observable in Anglo-Saxon and several Western countries. This can be explained by the unique cultural and linguistic context of Hungary, because only those research participants could secure potentially good employment in Hungary, who studied in Hungarian, because they could utilize their unique skills which might not be valued elsewhere in the world. Additionally, they may have developed a unique network in their host country. English-speaking SIEs or adventure-seeking individuals, who are interested in navigating diverse global contexts, may be less motivated to remain in Hungary where they may only be able to fulfil their career aspirations partially.

## Conclusion

This context-rich empirical investigation provides evidence that Chinese early-career SIEs rarely follow the two-step migration pathway (Hawthorne, 2010) identified in Anglo-Saxon countries such as Australia and observed in several other Western contexts. Eventually, only a small proportion of young professionals remain in Hungary after graduation, mainly those who studied in Hungarian and whose unique language skills could not be utilized in other contexts. Another group of Chinese early-career SIEs sought employment in other European countries with limited success, and their Hungarian education was rarely fully recognized in these new countries. Repatriation was a logical option for many, even though their education in Hungary seemed a way out from their low socio-economic status. However, this exact social background later hindered them from finding education and employment in Anglo-Saxon or in other Western countries.

In addressing the dilemma faced by Chinese graduates, including early-career SIEs, some recommendations emerge. Firstly, organisations and policymakers in Hungary should recognize and provide support for the unique challenges associated with the transitional period experienced by the Chinese individuals, including proactive measures on the linguistic, cultural, and professional supports, especially in industries with labour shortage. Additionally, recognising the influence of language proficiency, strategies can be developed to retain Hungarian-speaking graduates by emphasizing the value of their unique skills and networks, while simultaneously providing opportunities for English-speaking SIEs to navigate diverse global contexts within Hungary.

This study provides practical advice for enhancing our knowledge of the professional problems and decisions

encountered by early-career SIEs. However, certain limitations should be acknowledged. Firstly, the study did not explore the resiliency tactics used by the respondents when confronted with these challenges. Therefore, future research could examine such techniques from individual and community perspectives. Secondly, due to the exploratory character of the study, the sample size was limited and cannot conclusively indicate whether the respondents' experiences are representative of Chinese early-career SIEs in other cultural contexts. Therefore, future research is needed to further explore this topic. Thirdly, further exploration is required to delineate the distinctions between resiliency tactics and coping mechanisms across various choices. Additional demographic characteristics, such as education level and age, could potentially influence the perceived career paths of SIEs and may warrant further investigation in future studies. Lastly, the social and cultural capital accumulated by early-career SIEs may not easily transfer to employment and, therefore, the difference between early career SIEs and professional employees is crucial and requires further exploration.

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# THE WALKING DEAD STRATEGY – THE CONNECTION BETWEEN SOCIO-EMOTIONAL WEALTH AND ENTREPRENEURIAL ORIENTATION – SYSTEMATIC LITERATURE REVIEW

## A WALKING DEAD STRATÉGIA – A SZOCIO-EMOCIONÁLIS GAZDAGSÁG ÉS A VÁLLALKOZÓI ORIENTÁCIÓ KÖZÖTTI KAPCSOLAT – SZISZTEMATIKUS IRODALMI ÁTTEKINTÉS

This paper presents the current main research directions and findings concerning the relationship between socio-emotional wealth (SEW) and entrepreneurial orientation (EO). Based on the results of a keyword search in two academic databases and a snowball method of crawling, the article reviews 69 papers and structures the results in the form of an integrated model with three main dimensions: EO, SEW, and entrepreneurial performance. Contrary to the traditional view of family firms as risk-averse organizations that impose non-economic considerations in their decision-making, even at the cost of foregoing economic benefits, the review shows that the values of SEW can be most effectively protected in the long term by applying an entrepreneurial orientation. The paper proposes a strategy for family businesses with specific examples.

**Keywords:** family business, SEW, entrepreneurial orientation

Ez a tanulmány a szocio-emocionális vagyon (SEW) és a vállalkozói orientáció (EO) közötti kapcsolattal foglalkozó jelenlegi főbb kutatási irányokat és eredményeket mutatja be. Két tudományos adatbázisban végzett kulcsszókeresés és hólabdamódszerrel végzett kutatás eredményei alapján a cikk 69 publikációt tekint át, és az eredményeket egy integrált modell formájában strukturálja, amelynek három fő dimenziója van: EO, SEW és vállalkozói teljesítmény. A családi vállalkozásokat kockázatkerülő szervezetekként kezelő hagyományos nézettel ellentétben, amelyek nem gazdasági szempontokat is érvényesítenek döntéshozatalukban, akár a gazdasági előnyökről való lemondás árán is, az áttekintés azt mutatja, hogy a SEW értékeit hosszú távon a vállalkozói orientáció alkalmazásával lehet a leghatékonyabban megvédeni. A tanulmány konkrét példákkal alátámasztva stratégiát javasol a családi vállalkozások számára.

**Kulcsszavak:** családi vállalkozás, SEW, vállalkozói orientáció

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Different views exist regarding the commencement of family business research. Some authors (Phan & Butler, 2008) place the beginnings as early as the 1950s pointing to work associated with family business research (Parson, 1955) while others (Casillas & Acedo, 2007; Colli, 2003) argue that the first phase of family business research dates back to before 1983. While at that time authors from different academic backgrounds identified specific characteristics of family firms without systematising them, the second period, between 1983 and 1988, was devoted to the development of a framework for a stand-alone research paradigm. The subsequent period brought the broadening of research, and with this the emergence and chiselling out of subfields of family business literature. A relevant milestone in this process from my point of view is the contribution of Rodrigues et al. (2022). The authors specifically mapped the existing literature related to SEW and EO and the relationship. And showed furthermore that the most significant interest in the field of family business research is SEW, with a tenfold increase in the number of articles on this topic over a period of ten years. At the same time writings on EO have also been increasing, although not to the same extent. My choice of topic was guided by the fact that researchers are increasingly focusing their attention on the relationship between the entrepreneurial orientation of family businesses and their socio-emotional wealth, which currently has culminated in very different ways of portraying and perceiving this relationship.

As the volume of research is steeply increasing, it appears timely to contribute to the field with summarizing and synthesizing the results, such, to the best of my knowledge, still lacking at the moment. In addition to a systematic review of the current pool of knowledge, I consider it important to create a structured model based on the results of the review, that can be used by managers of family firms. This model illustrates how the individual dimensions of entrepreneurial orientation affect the SEW defended as the main objective, and how the individual elements of the SEW influence entrepreneurial orientation.

I would like to demonstrate to practising family business managers, through a structured synthesis of the literature, that entrepreneurial behaviour does not work against the values of family, quite on the contrary, without family values and transgenerational transmission, the maintenance and transmission of family values, as well as the long-term operation and control of the family is an almost impossible task. The EO path strengthens these positions and the model I present also provides guidance on the areas where improvements are needed to achieve this successfully.

## Research methodology and structure

The aim of this article is to identify and present in a structured way the current scientific findings, debates and research directions concerning the connection between SEW and EO, in a way that can be used by other

researchers interested in the topic, and to highlight the interrelationships between the concepts under study, as well as the current research gaps, indicating further research directions and opportunities. This provides a basis for further knowledge development and theory building (Webster & Watson, 2002). For the reasons described above, I have chosen as the genre of my work a systematic literature review, which follows predefined rules that are key to conducting a professional, transparent and replicable literature review (Pistrui & Harmat, 2022; Transfield, Denyer & Smart, 2003), and which is able to present a current segment of the discipline along the lines of research questions and synthesise its context (Hart, 2018).

During the research, I first defined the relevant articles (A), following the steps suggested by Webster and Watson (Table 1), and then categorised the articles into tables recommended by the authors for structuring, which facilitated the analysis of the articles in the third (containing definitions) and fourth (presenting relations among definitions) sections and their subsections (B). Next, I created a theoretical summary model (C), which I present in chapter 5 (D), and then I illustrate its limitations and results (E), and finally I make practical suggestions through an unusual metaphor (Webster et. al. 2002).

Table 1  
Steps of the systematic literature review as proposed by Webster & Watson

The steps of the systematic literature review proposed by Webster & Watson	
A.	Identifying the scope of relevant articles
B.	Structuring the review (using the tables suggested by the authors)
C.	Theory building
D.	Evaluation of the theory
E.	Drawing conclusions (identifying future research directions and limitations of the research)

Source: own compilation based on Webster & Watson et al. (2002)

To define the scope of the articles, first I conducted a Google Scholar search using the keywords “family business”, “SEW AND EO”, “socio-emotional wealth”, “entrepreneurial orientation”, and then a similar search in the Science Direct database using the keywords “family business OR family firms” AND “SEW” AND “EO”. The first search yielded 92 results and the second 25. Duplicates, articles not relevant to my topic, non-English works, book chapters and PhD dissertations were excluded from this sample. The remaining set was then extended by the so-called snowball method, i.e., by a targeted search of the bibliography and reference list of the scientific articles under review and the inclusion of relevant works until I could no longer find new information related to our topic, until did not yield further relevant publications (Kárpáti, 2021). The procedure resulted in a sample of 69 articles included in this literature review (Table 2).

Table 2

Breakdown of the 69 articles in the study by year of publication

Year of appearance	1983	1989	1996	2007	2008	2011	2012	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Number of articles used in the year	1	1	2	1	1	1	2	2	3	4	4	5	8	5	13	6	10	69

Source: own compilation

The selected publication span a time frame of forty years, which makes it feasible to depict the scientific evolution of the concepts we are concerned with in this article (for example, in the case of a change in the conceptual framework of entrepreneurial orientation) particularly given the fact that more than 60% of the papers in the sample are from the last five years is an indication of the actuality and freshness of the work. The Figure 1 provides more detailed information on the definition of the scope of the examined literature and its steps.

study. Next definitions of the central concepts of this paper, socio-emotional wealth (SEW) and entrepreneurial orientation (EO), are discussed. Acknowledging the fact that there is no consensus in the literature, I will discuss the typical definitions that represent the views of our research community.

**Family firms**

“The family character of a company can be defined by the family’s real personal presence in the company and its ownership, and by the family values that prevail in

The process of selecting the literature to be included in the study

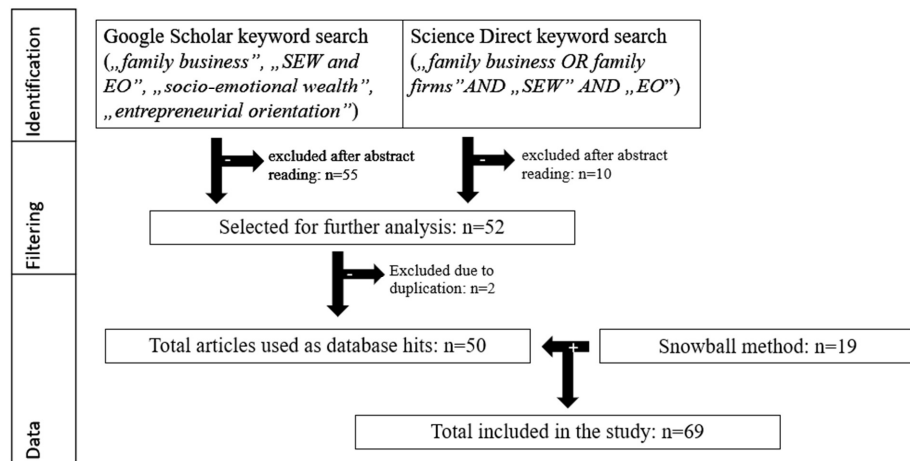


Figure 1

the company. To summarise these two aspects, a family firm (...) is any firm where one or more families either have effective dominant control over the firm or, irrespective of ownership, they perceive their influence as dominant and consider themselves to be a family firm” (Wiesz, Martos & Sallay, 2021, pp. 10). In their 2014 article Meneses et al. highlight the need for business leaders from a joint family to share the same social values, vision and practical priorities, derive from family traditions. The three overlapping subsystems of the family business are family, ownership and business, and it is through the interplay of these that the resource mix is formed

Source: own compilation based on Hofmeister-Tóth & Kisfűrjesi (2022)

The analysis of the selected publications was directed to answering the following research questions:

- 1.a How does the article define the concept of SEW?
- 1.b How does the article define the concept of EO?
2. According to the article, what is the relationship between the individual dimensions of SEW and those of EO?

After presenting the results, I will summarise them by proposing a model developed in the context of this paper which the practical aspects are laid out in detail through an illustrative, but deliberately non-corporate example.

**Definitions of terms**

In this chapter I will first define the concept of family firms as it provides the definition of the subjects of our

from which the unique capabilities of family firms are derived (Tagiuri & Davis, 1996 after Sallay, Wiesz & Marton, 2023). One of the most important goals for family managers is to maintain control in family hands, and partly as a result they take into account a myriad of non-economic aspects in running the firm (Wang, Tang, Chen & Wang, 2021). In their 2019 paper, Wiesz and Drótos (2019) specify at least 50% family ownership as a condition for dominant family control. The traditional family firm approach also emphasizes risk-averse behavior and conservative management of family firms (Singh et al., 2017; Tajeddini, Altinay & Ratten, 2017). It even prefers prudence and mistrust over sustainability change management (Csedó, 2023). However, in this paper we aim to provide a much more focused picture by reviewing the literature.

## Socio-Emotional Wealth (SEW)

### *The concept of SEW*

The definition of socio-emotional wealth (SEW) was introduced by Gomez-Mejía et al. (2007) in their highly cited paper. The authors argue that family business decision making is not limited to purely economic considerations, but is also strongly influenced by non-economic, not efficiency driven considerations that satisfy the social and emotional needs of the family in relation to the business. From a more distant perspective, it can be understood as family values, the intimate culture of family business, long-term commitment, the intention of dynastic succession, and the key role of sustainability (Zellweger & Astrachan, 2008). Socio-emotional wealth is a differentiating factor that can support the growth of family businesses (Tuirán-Álvarez, Sanabria-Landazábal & Acosta-Prado, 2019). SEW perceives how to preserve and maximise the family firm's sense of security in the face of internationalisation and risk optimisation (Haddoud, Onjewu, Nowiński & Jones, 2021). Ingram and Bratnicka-Myśliwiec, in their 2001 article, describe SEW as the emotional posture of family firms and write that while their research shows that organisational resilience has a direct and positive impact on SEW, socio-emotional wealth is also a mediator between organisational resilience and performance. Socio-emotional wealth is also changing over time, while being very high for founders, it weakens as successive generations emerge and become leaders or bring external leaders into the organization, as they become less attached to employees (Moreno-Menéndez, Arzubiaga, Díaz-Moriana & Casillas, 2022). This is somewhat contradicted by an approach that refers to SEWs as an important influencer of business relationships and decisions, with the aim of ensuring intergenerational continuity of business and ownership and keeping it in the hands of the family, which, among other things, avoids conflicts arising from differences between management and ownership objectives (Sanchez-Famoso, Cano-Rubio & Fuentes-Lombardo, 2019). In addition to the expertise and experience of firms, the greatest influence on the involvement of non-family managers is the adherence to SEW goals (Kallmuenzer, Hora & Peters, 2018).

### *The dimensions of the SEW*

There are different approaches to the content, dimensions and measurement of SEW, some of these independent or complementary. The FIBER scale (Berrone, Cruz & Gomez-Mejía, 2012) uses the following five categories. Family influence and control, which mainly refers to control over strategic decisions; family corporate identity, which refers to identification of family members with the firm, while extending this approach to external and internal stakeholders in the firm's operations; social bond, which expresses the mutual bond that enhances stability and commitment; emotional attachment, which indicates a dynamically changing state, blurring of the sharp boundaries between family and company, and underpinning the fact that current emotions strongly influence the

company's decision making mechanisms; and renewal of family ties to the firm through dynastic succession, which relates to the long-term perspective, as described by the term "patient capital". In comparison, the REI scale contains simplified dimensions, focusing on the intergenerational vision and dynastic holding of ownership positions, family retention, the retention and transmission of traditions and values within the family, the close emotional ties between family members and the close relationship between family and business, security and its effects on identity (Hauck, Suess-Reyes, Beck, Prügl & Frank, 2016). For example, besides the obvious similarity with the FIBER-scale, the REI model also reduces the role of family corporate identity, which is in line with Wieszt's study (2020), whose results show that family corporate identity has no effect on performance, and that good performance does not even strengthen family corporate identity. In contrast to the unifying effort of the above two models, the paper by Singal and Batra (2021) proposes the composing factors of the FIBER scale to be separately studied. This is confirmed by the fact that the impact of SEW on innovation, is seen by researchers as both negative and positive (Casado-Belmonte, Capobianco-Uriarte, Martínez-Alonso & Martínez-Romero, 2021), and the relationship between innovation and performance can be represented by an inverted U-shaped curve (with SEW as the starting point), which is negatively affected by the generational progress of the firm (Bauweraerts & Colot, 2023). Bujan (2020) draws attention to the importance of education as a new SEW aspect, as he considers that it helps both to integrate into local networks and to improve firm performance. Similarly to the REI scale, Debiczki et al. (2016) developed a three-element criteria, in which they focus on (1) family perception, i.e. the perception of the family firm by the community surrounding the firm; (2) family continuity, i.e., the goal of maintaining control and influence over the family firm; and (3) family enrichment, i.e., the goal of fulfilling altruistic obligations to family members and maintaining and strengthening family harmony by combining goals to involve as many family members as possible. The authors admit that there are overlaps and parallels between the FIBER scale and the dimensions they propose. With their multidimensional model, Reina et al. (2022) distinguish eleven aspects constituting SEW.

### *The impacts of the SEW*

The very originators of the concept examined what and how socio-emotional wealth affects, and since then a number of academic works have chosen it as their subject. It has been argued that SEW can be a barrier to the growth of firm performance (Gómez-Mejía et al., 2007), which is contradicted by a study published in 2019 by Ng et al. (2019), in which they report that the three dimensions of the FIBER scale act as mediators of performance when appropriate leadership skills are present. In their 2018 paper Martínez-Alonso et al. (2018) write about the negative impact of SEW on research and development (the familial nature of the leader's personality, personal risk-taking and willingness to innovate, and the need to perform), but that if the

firm's performance is below expectations, this negative effect is mitigated, as increased risk-taking at the expense of SEW is a survival strategy: both socio-emotional and real wealth are at risk when the firm's operations are jeopardised. Kraus et al. (2016) identify four combinations of SEW that have different effects on the internationalization of family firms. However, in examining family and corporate goals, it has been found that corporate goals often precede family goals in the process of synchronizing them (Brundin, McClatchey & Melin, 2023).

## Entrepreneurial orientation (EO)

### *The concept and the dimensions of the EO*

The emergence and evolution of the term entrepreneurial orientation and its content can be traced precisely in the academic discourse. Initially, an entrepreneurial firm was defined as a company that carried out product or market innovation, took some risk and was the first to come up with proactive innovations (Miller, 1983). Six years later, three specific EO dimensions are mentioned: innovativeness, proactiveness and risk-taking (Covin & Slevin, 1989). In the following decade two more aspects were added in the form of autonomy and 'competitive aggressiveness', thus forming the five aspects of assessment that are now widely agreed upon (Lumpkin & Dess, 1996). However, Le Breton-Miller and Miller (2023), argue that it is the combination of these aspects, or ultimately their convolution into a single dimension, that makes fine-tuning impossible. An alternative approach to EO examines product innovation, service innovation, location, distribution, revenue model, price, advertising and social orientation, and proposes a model that incorporates these aspects in an octagonal model (Lorti, Cox & Sproul, 2021). Zellweger et al. (2012) propose a more nuanced analytical framework, arguing that the study of EO should be extended to entrepreneurial families, which often operate not one but several enterprises, and that it is not justified to limit the study of entrepreneurial orientation to one organisation. To this end, they introduce the concept of FEO, which includes attitudes such as security, stability, control and tradition, on the one hand, and autonomy, innovation orientation, proactivity and risk-taking within the firm, on the other. In addition, Simmons and Kalantaridis (1996), examining the economy of countryside areas in Greece, show that entrepreneurship can be influenced by, a.o., a sense of security provided by strong micro-community ties, but also by the familial micro-community that may exist in the narrow environment of the firm. Looking at regional development, Woldesenbet and Murithi (2019) conclude that higher EO also leads to higher development rates. Chen et al. (2022) argue that the concept of EO is suitable to assess the entrepreneurial behaviour of a firm in terms of strategic renewal, performance and growth. Singal and Batra (2021) describe EO as a mindset that can shape the processes and culture of the firm, and thus has the ability to shape the behaviour and attitudes of all organizational members. In addition, EO contributes to the continuity, development and survival of the firm (Hernández-Linares,

Kellermanns, López-Fernández & Sarkar, 2020), while Abdelwahed et al. in 2023 report that their results suggest that it does not have a strong influence on organizational resistance (Abdelwahedet al., 2023).

### *The impacts of the dimensions of the EO and the factors affecting the dimensions*

Besides general definitions and conceptual frameworks, articles frequently examine only some of EO dimensions or one in particular, and draw conclusions, or analyse the impact of EO on other factors, or the outcome of other factors on EO. Ventel et al. (2021) identify proactiveness and autonomy as predictors of entrepreneurial performance. Others, analysing the role of environmental dynamism, conclude that it stimulates EO in three dimensions, but also conclude that it is significantly influenced by national cultures (Yildirim-Öktem, Erdogan, Calabrò & Kiratli, 2023). They conclude that the dynamics of the environment affects and moderates the relationship between the involvement of the next generations and entrepreneurial orientation, while a hostile environment stimulates risk-taking but negatively affects proactivity (Casillas, Moreno & Barbero, 2011). In a rapidly changing environment, high innovation and risk-taking generally lead to higher performance gains (Labaki & Mustafa, 2023). Calabro et al. (2023) suggest that there are several configurations of resources and entrepreneurial orientation that increase the level of family business performance. In a different setting, during and after crises, Moreno-Menéndez and Casillas (2021) conducted a study, which showed that firms with low EO values before the crisis were able to achieve higher growth after the crisis, while those with high EO values were able to maintain their pre-crisis EO values. Furthermore, they show that generational change and organisational decline as two notable periods in the life of firm, can have a decisive impact on the process above. This can be linked to the fact that the first entrepreneur in the life of the organisation is the founder who starts the business, but over time, in order to achieve long-term sustainability, this entrepreneurial spirit subsides and only becomes part of the family business strategy again when the next generation enters (Ferreira, Fernandes & Ratten, 2017). The experience is that those entrepreneurs whose parents were also family entrepreneurs have a higher risk-taking propensity than those who grew up in a non-entrepreneurial family (Denicolai, Hagen & Pisoni, 2015). Both the presence of family business owners and board confidants on the board has a positive effect on EO, but the long service term of board members has a negative effect (Le Breton-Miller, Miller & Bares, 2015). The finding regarding the presence of a family members on boards is nuanced by D'Allura (2019) who's study shows that family presence on the board of a company can have both positive and negative outcomes for EO. Succession, on the other hand, can provide a new impetus to the firm, often resulting in a more proactive and innovative spirit and even an international vision, thus promoting the internationalization of the firm (Meneses et al., 2014). It is also generally argued that high EO has a positive effect

on internationalization (Hooda et al., 2022). The relationship between success of new product introduction success and EO is positively influenced by the family nature of the firm, despite the fact that Jimenez-Jimenez et al. in their 2020 paper describe, in addition to the above, that they find no difference between family and non-family firms in terms of entrepreneurship.

## The relationship between socio-emotional wealth and entrepreneurial orientation

### SEW limits EO

The traditional understanding of the relationship between the two concepts, is that the management of family firms pursues a conservative risk-taking policy due to the family business nature of family firms and thus avoid risk factors in their operations and decision-making that could jeopardise transgenerational inheritance and their sense of long-term stability. I have nuanced this understanding earlier in this article. It follows that SEW limits EO, since one of its key dimensions is risk-taking. Kumar and Dubey (2022) report that SEW reduces the impact of EO on business growth. Zahra (2018) writes that as the wealth of entrepreneurial families becomes increasingly concentrated in the family firm over time, the risk-taking strategy of owners changes in such a way, that its goal becomes to protect accumulated wealth and inheritance at the cost of foregoing entrepreneurship. The contribution of Chandler et al. (2016) also agrees that SEW encourages risk aversion among managers and decision-makers in family firms. Van Helvert et al. (2018) maintain that SEW prioritises non-economic aspects over economic aspects in succession. They posit further that because the family business operating logic prioritises risk avoidance and the preservation of safe operations, SEW limits the inheritance of EO in generational succession.

### The relationship between SEW and EO is ambivalent

There is some divergence from the authors above, who, despite their emphasis on that a strong link between SEW and EO can be demonstrated (Ramírez-Solís, Mojarro-Durán & Banos-Monroy, 2023), the result is not clearly restrictive. Garcés-Galdeano et al. (2014) conclude in their work that although SEW preservation is indeed a key issue in family firm decision making, it cannot be stated that the process is lacking economic considerations. While they point out that SEW preservation leads to family firms generally having lower EO than non-family firms, they also point to technology-intensive sectors as an exception, where the picture created by active entrepreneurship (Singal et al., 2021) is considerably more chiselled as the key to firms' survival. In their work, the authors argue that although family control and the influence aspect negatively affect EO, it plays a crucial role in maintaining SEW goals through the positive influence of identification with the family business, social bonding and emphasis on renewal and continuity of the company. In addition, as family members interpret the value of the company by

their strong emotional attachment, this emotional bond has a pronounced positive effect up to a certain point, as they take proactive steps to preserve it, and innovate their products, services and processes. However, this may lead to adverse consequences if, for example, business information about underperforming family members is withheld or ignored because of strong emotional attachment. LeBreton-Miller et al. (2015) draw attention to Janus-faced nature of the relationship between SEW and EO, arguing that although family business owners will use the company to satisfy their socio-emotional needs, for example by providing jobs for their successors resulting in a conservative risk-taking policy, it also act as a driving force for renewal of the business in order to hand down a healthier firm.

Glowka and co-authors (2021) go so far as to conclude, from the results of their research, that family involvement does not affect innovation and performance negatively. Szabó (2023), reconciles the goals and outcomes of SEW and EO by suggesting a response to the five dimensions of the FIBER scale in the context of EO. Opposite to this, Hernandez-Linares et al. (2018), project SEW onto the five dimensions of EO. They conclude that the categories of EO have differ in their effects on performance, which are influenced differently by SEW. While risk-taking, proactivity, proactiveness, autonomy and aggressive competitiveness are positively moderated by EO, innovativeness and performance are negatively moderated by EO, and the latter can be positive even when SEW is low, i.e., in sum, SEW can have both positive and negative effects. Kallmuenzer (2015) argues that proactiveness has a positive effect on EO, while innovative ability has a positive effect on SEW and aggressive competitiveness a negative effect he further points out that besides proactiveness, of the five dimensions of EO autonomy also has a significant effect on the financial performance of family firms. While the presence of strong control mechanism may limit the positive effect of innovativeness on firm performance, also the effect of risk-taking on performance is also to be limited when family-related goals are particularly important in decision making (Kallmuenzer, Strobl & Peters, 2017). Hernández-Perlines et al. (2021) state that although some efficiency concerns are justified and some trade-offs may need to be made in the struggle to preserve SEW, these concerns may ultimately lead family firms to adopt an entrepreneurial orientation as deeply and fully as possible and thus achieve higher performance. Wegapitiya (2021) infers that entrepreneurship is a key to survival for the first generation of family firms, but that there is an inevitable decline in the second generation, while the third generation will need to bring in external non-family managers. This will only be successful if they are "SEWed", i.e. if they can act as if they were inheritors within the family.

### Alternative approaches of the relationship

Stanley and his co-authors (2019) developed a novel typology that breaks down family firms into four types in a two-by-two matrix. One axis focusing on family influence and the other one on the life cycle of the firm. The resulting

four groups have unique EO characteristics. In addition to the four firm categories, they also point out the following five factors having a strong impact on the level of EO:

- (1) the strength of family ownership allows for more particularistic decisions and thus positively affects EO,
- (2) the presence of a family manager enhances the EO-increasing effect of family ownership,
- (3) the presence of a board of directors increases the know-how of the management and allows for more multicriteria decisions, but this can have both positive and negative effects on entrepreneurial orientation,
- (4) firm size has a positive relationship with EO, as larger firms are more likely to be able to raise the capital needed for EO,
- (5) the number of generations involved also has an effect on EO, but probably in combination with a number of other influencing variables, so it is not clear whether founders or subsequent generations of managers have higher EO.

For family business owners, the most important frame of reference in company management is certainly the potential gain or loss of the SEW. Keeping the decision control of the firm in family hands is the primordial hierarchy target. The inherent uncertainty in entrepreneurial practices makes decision makers carefully consider the way its success or failure can change SEW. It might cause many variations in the EO of family firms. For all these reasons, the desire to retain control over the decisions of family firms negatively affects EO (Chen, Wu, Zhongju Liao & Chen 2022).

As pointed out repeatedly above, SEW benefits and retention often take precedence over financial considerations, yet maintaining corporate control also depends on sound financial performance. Thus, in order to protect SEW, family firms seek entrepreneurial opportunities that support the long-term sustainability of the firm, aided by their close relationship with their business environment (Debicki et al, 2016).

In their paper Rodrigues et al. (2022) capture the relationship between SEW and EO in family firms in three points following their review of the literature, as they refer to (1) the SEW and EO effects that emerge during transgenerational succession and family involvement, (2) the formation of family firm identity, and (3) the desire to perpetuate SEW, the over-valuation of which may inhibit the development of an entrepreneurial mindset.

### Building a theoretical summary model

In order to structure the results of the systematic literature review, I have prepared a table in which the effects exerted by SEW, EO and firm performance as well as the factors that affects on them are listed, with reference to the respective sources. In addition, at the end of the Table 3, the mediating role SEW plays in the impact of the EO dimensions on firm performance presented.

Table 3

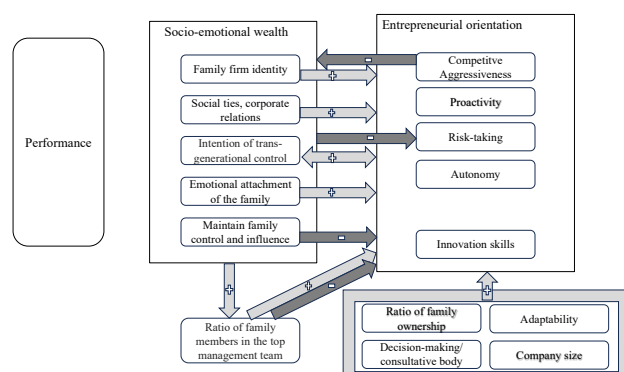
Summary of relationships between elements in the model with source labelling

The impact it causes		The impact on it
Has both negative and positive effects on innovation (Casado-Belmondo, 2021), limits risk-taking (Garces-Galdeano, 2014; Chandler, 2016; Singh, 2017; Tajeddini, 2017), reinforces family-owned management (Kallmuenzer, 2018)	SEW	Innovative skills have a positive impact (Kallmuenzer, 2015) Competitive aggressiveness has a negative impact (Kallmuenzer, 2015)
Strengthens transgenerational succession (Singal, 2021; Szabó, 2023)	EO	Family control has a negative impact (Singal, 2021; Chen, 2022) Identification with the firm is reinforced (Singal, 2021) Transgenerational succession is reinforced (Singal, 2021) Emotional attachment is reinforced (Singal, 2021) Binding social ties are reinforced (Debiczki, 2016; Singal, 2021) Existence of a decision-making board has a positive effect (Stanley, 2019) Strength of family ownership has a positive effect (Le Bretton-Miller, 2015; Stanley, 2019) Family-owned management has a positive effect (Le Bretton-Miller, 2015; Stanley, 2019) Firm size has a positive effect (Stanley, 2019)
	Firm performance	Competitive aggressiveness increases (Debiczki, 2020) Proactivity increases (Debiczki, 2020; Ventel, 2021) Autonomy increases (Kallmuenzer, 2017; Ventel, 2021) Innovation has a negative effect (Bauweraerts, 2023) Risk taking has a positive effect (Debiczki, 2020)
Relationships affected by SEW (Hernandes-Linares, 2018)	The relationship between innovation and firm performance is negatively influenced The relationship among competitive aggressiveness, proactivity, risk-taking, autonomy, and firm performance is positively influenced	

Source: own compilation

Table 3 was also the basis and starting point for the development of the flowchart below. During the development of the model, I wanted to create an integrated system that can simultaneously demonstrate (1) the impact of EO dimensions on Performance, (2) the mediating role played by SEW in this regard, (3) the effects of the SEW dimensions on EO in accordance with the FIBER-scale, as well as the feedback and interactions of it and its dimensions, and the relationship of the five additional influencing factors with SEW and EO, which I decided to include in the model. For the sake of clarity, I illustrate all of this in two flowcharts below. The positive-effect relationships are shown in light gray, while negative-effect relationships are shown in dark gray arrows.

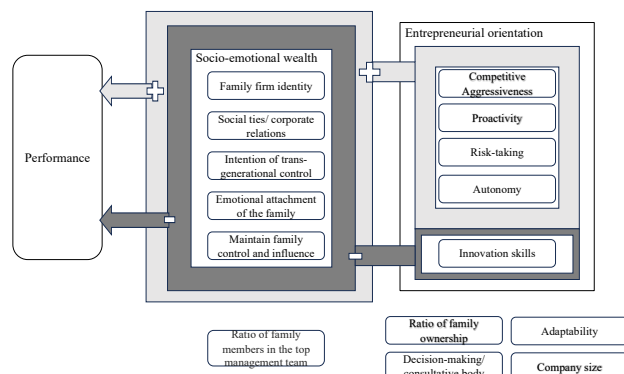
Figure 2  
Effects of SEW and EO dimensions and model inputs on and from EO and SEW



Source: own compilation

Figure 2 shows that *competitive aggressiveness* is the only one of the EO dimensions that has a negative effect on SEW. Four SEW dimensions support EO of which *intention of and transgenerational control* has a reciprocal supportive relation with EO. The dimension of *maintain family control and influence* has negative influence on EO. SEW only moderates *risk-taking*, but strengthens the *ratio of family members in the top management team*, which can have both a positive and negative effect on EO. The four impact factors in the lower right corner box all support EO.

Figure 3  
The influence of SEW on the impact of EO dimensions on performance



Source: own compilation

Figure 3 shows that among the dimensions of EO, only the relationship between *innovation skills* and performance is negatively influenced by SEW, while the other four are positively influenced.

The two models illustrate the most important results of the systematic literature review, as follows:

1. All four dimensions of SEW according to the FIBER scale strengthen EO, only *maintain family control and influence* has a negative effect on it.
2. Four of the five dimensions of EO support the increase in performance through the positive mediation of SEW, only in the case of *innovation skills* we can encounter a performance-reducing effect in addition to the negative mediating role of SEW (the outlined SEW effects are reversed in case of a weak SEW value, however, in case of a weak SEW value, the family nature of the company is questionable, so this is not relevant from our point of view).
3. Four of the additional five aspects included in the model clearly strengthen EO, and the *ratio of family members in the top management team* supported by SEW can have both positive and negative effects.

## Results, limitations of the research

The model serves as an itinerary, showing in an integrated way how certain corporate decisions and behaviours influence the protection of SEWs, which are a priority in family business decision-making, how entrepreneurial orientation can coexist and how entrepreneurial orientation can contribute to raising SEW values by increasing corporate performance.

A particular achievement and merit of the model is that it separates the individual dimensions used to measure both SEW and EO, thus allowing for a more accurate and articulated picture, while providing feedback on the impact of each variable on the performance and effectiveness of the family firm in each case.

It also looks at novel variables - complementing the traditional SEW-EO discourse - such as the strength of adaptability of family firms, or the existence of a decision-making/decision support body in the management of the family firm, or the governance of the firm by a family member.

However, research does of course have its limitations. The proposed model is not suitable for representing how strong and how significant the relationships and correlations indicated are in relation to each other.

Furthermore, it does not indicate relationships and linkages that have been shown by the literature to exist but whose nature is considered being ambiguous or complex, or whose relationships are influenced by so many other factors that further detailed, targeted investigation is recommended.

Also the model does not take the generational stage of a given family business into account, and thus does not reflect that the literature indicates that the most significant entrepreneurial activity occurs during the founding generation's management of the business, nor the diverse

scholarly perceptions concerning the behaviour of subsequent generations.

A shortcoming of the model is that it does not address special episodes such as a generational change, the preparation for it or the successor taking over the management of the company.

Moreover, it does not examine the person of the manager, inquiring whether or not he or she was socialised by parents running a family business, although the literature indicates that this is a factor of impact on entrepreneurial behaviour.

Finally, it does not examine whether the family firm operates only in its own domestic market or whether it is in a stage of internationalisation, whether the initial psychological distance (Johanson & Wiedersheim-Paul, 1975) has widened with the introduction of new markets and how this affects the intention and effectiveness of the family firm to retain control over decision-making.

The above limitations also point to suggested future research directions, especially in areas where the relationships appear as yet unexplored and complex, dependent on many variables.

### Practical suggestions - The Walking Dead Strategy

The relationship between SEW and EO should not be viewed in a static way, as a review of the literature suggests that it is more of a spiral process that replicates analogous situations from time to time, with entrepreneurial phases between each dormant state usually involving similar risks, but with greater challenges leading to greater results as the organisation strengthens. An important practical implication is that the results of the research, confirm the view that the protection of SEW can in fact be achieved by strengthening EO, which contradicts the initial perspectives in this field. I could demonstrate this by means an element-by-element analysis of the SEW and EO dimensions.

To illustrate this point, I conclude my work by drawing on the example of a popular Hollywood film - deliberately taking the theory out of the corporate context for clarity. The *Walking Dead* series follows the struggle for survival of the protagonist, Rick Grimes, and some of his fellow survivors after a zombie apocalypse. The parallel with family business is perfect, as a former police officer who wakes up in hospital after being injured finds himself in a different world, where an infection has left most of humanity (apart from the few survivors) roaming the streets as zombies. Like family businesses, Rick and his team are not concerned with growth or prosperity, but with staying safe. However, if they do not leave their campsite, in addition to being under constant siege by zombies, they cut themselves off from resources and information about the environment around them. Despite the apparent safety, this is a suicidal strategy in the medium term. Instead, like a family business, they need to be in constant motion, gaining as much knowledge as possible about their environment (proactivity, relations with the world around them, maintaining and extending their control),

and acquiring as many resources as possible, so that they can use them to guarantee their survival for as long as possible (SEW objective: long-term operation, dynastic succession). As they move between campsites, they face varying dangers along the way (this is the entrepreneurial phase in the life of a company), which can often leave them (or the company) scarred, and a badly chosen journey can even be fatal. However, by arriving at a new campsite, the risks are reduced and the investment made in a new station with greater security bears its fruits. The sense of belonging and identity of the protagonists, through overcoming challenges and successes but also through failures, which then gives rise to a growing need for autonomy that will be much needed in living with, and in many cases aggressively competing against, other surviving communities.

The above parallel was merely to illustrate the logic behind the connections laid out in the model I proposed in this paper. Yet my suggestion to practising family entrepreneurs is to consider the above ideas when managing their companies, preparing and making decisions, to undertake their business in a way that is constantly mindful, weighing up the risks, the future dangers and opportunities of each decision variation, not to fear to protect the security, profitability and future of their company through the *Walking Dead Strategy!*

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## CHALLENGES IN PROPERTY VALUATION IN SUB-SAHARAN AFRICA – A SYSTEMATIC REVIEW

### AZ INGATLANÉRTÉKELÉS KIHÍVÁSAI A SZUBSZAHARAI AFRIKÁBAN – EGY SZISZTEMATIKUS ÁTTEKINTÉS

Rapid demographic and urban transitions in the Sub-Saharan Africa (SSA) region are reshaping the demand for land, housing, and infrastructure. In this evolving context, property valuation is essential for real estate development, investment decisions, and economic planning. The article examines what factors influence property valuation practices in SSA, what the key challenges are, and what the differences are between valuation methods in SSA vs. developed economies. This study applies the PRISMA-based Systematic Literature Review (SLR) method to examine 25 peer-reviewed articles published between 2010 and 2024. To enrich the review with empirical insight, a correlation analysis was conducted using macroeconomic indicators. Findings reveal fragmented valuation systems, institutional inefficiencies, and informal land markets that distort property investment. The study recommends regulatory reform, data standardization, and digital valuation tools to improve transparency and market reliability across SSA's real estate sector.

**Keywords:** property valuation, real estate, urbanization, technological adoption, regulatory frameworks

A szubszaharai afrikai (SSA) régió gyors demográfiai és városi átalakulása átalakítja a földterületek, a lakások és az infrastruktúra iránti keresletet. Ebben a változó környezetben az ingatlanértékelés elengedhetetlen az ingatlanfejlesztéshez, a befektetési döntésekhez és a gazdasági tervezéshez. A cikk azt vizsgálja, hogy milyen tényezők befolyásolják az ingatlanértékelési gyakorlatot a szubszaharai afrikai térségben, mik a főbb kihívások, és milyen különbségek vannak a szubszaharai afrikai és a fejlett gazdaságok értékelési módszerei között. Ez a tanulmány a PRISMA-alapú szisztematikus irodalmi áttekintés (SLR) módszerét alkalmazza 25, 2010 és 2024 között megjelent, lektorált cikk vizsgálatára. Az áttekintés empirikus betekintéssel való gazdagítása érdekében korrelációelemzést végeztek makrogazdasági mutatók felhasználásával. Az eredmények széttagolt értékelési rendszereket, intézményi hiányosságokat és informális földpiacokat tárnak fel, amelyek torzítják az ingatlanbefektetéseket. A tanulmány szabályozási reformot, adatszabványosítást és digitális értékelési eszközöket javasol az átláthatóság és a piaci megbízhatóság javítása érdekében a szubszaharai afrikai térség ingatlanszektorában.

**Kulcsszavak:** ingatlanértékelés, ingatlan, urbanizáció, technológiai adaptáció, szabályozási keretrendszerek

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The International Value Standard Council (IVS) defines property valuation as the estimated sale price “between a willing buyer and a willing seller in an arms-length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion” (IVS, 2022). The reliability of property valuations plays a significant role in shaping real estate markets, influencing investment decisions, and ensuring economic stability across various regions.

Regardless of the increasing focus on property valuation in global literature, SSA countries’ property valuation practices face persistent challenges. Many methodologies employed in SSA rely on outdated models that fail to capture the region’s economic volatility, its rapid urbanization, and the prevalence of informal property markets. Furthermore, the lack of reliable data complicates valuation accuracy, undermining investor confidence and financial institutions’ ability to assess risk effectively. Addressing these gaps requires an interdisciplinary approach, integrating technological advancements to reinforce valuation precision.

Historically, real estate has demonstrated sensitivity to economic fluctuations, with significant implications for financial institutions. For example, in the 1970s, the United States, like many other economies worldwide, experienced significant inflation across various sectors, including housing inflation. This event resulted in financial challenges among lenders, reinforcing the need for longitudinal market analyses to better understand valuation trends and market variations, as suggested by Aaron (1970).

This systematic literature review (SLR) investigates these gaps by examining the challenges faced by SSA countries’ real estate market, including socio-economic disparities socio-environmental and Valuation Methods influences affecting property valuation, by exploring technological advancements and institutional reforms. This study seeks to answer the following question what factors influence property valuation practices in SSA. Bartke and Schwarze (2015) argue that certified property valuers are essential in maintaining financial stability by ensuring property prices reflect market realities. However, in many SSA countries, institutional frameworks are not well developed, leading to discrepancies in valuation reliability. This issue raises the question of how technological advancements and institutional reforms strengthen property valuation practices in SSA. This study aims to provide a contextualized understanding of the challenges in property valuation practices in SSA countries and how these challenges hamper the effectiveness of the system.

### Socio-economic considerations in property valuation

Property valuation in SSA is influenced by a number of interconnected socioeconomic, institutional, and technical aspects. Unlike developed markets, many SSA countries rely on outdated model and informal systems that fail to capture the dynamics of urban growth, financial volatility,

and land tenure complexity. Mabin et al. (2013) explain that as urban populations grow, the demand for residential and commercial properties also increases. However, informal settlements and the absence of standardized market data further exacerbate inconsistencies economic constrains in rural areas suppress valuation accuracy and limit the formalization of property rights (Isaac & O’Leary, 2017).

Institutional weaknesses such as inadequate regulatory bodies, inconsistent land titling practices, and political interference undermine valuation integrity. For instance, Cheloti and Mooya (2024) highlight how valuation heuristics and client influence result in bias and unpredictability. Chimhowu (2019) further elaborates on how customary land tenure systems complicates standardized valuation, necessitating a hybrid legal-regulatory approach. The author argues that in many rural and peri-urban contexts, land ownership and usage rights are governed not by formal statutory systems but by customary institutions chiefs, elders, or family lineages whose norms often conflict with national land laws.

In addition, technological advancements show promise to fill the gap but its adoption in SSA remains limited. Studies by Wachira (2016) and Abidoye and Chan (2017) emphasized the potential of AI tools, mobile apps and Geographic Information System (GIS) in improving valuation efficiency. However, such innovations are largely underutilized due to insufficient training and infrastructure. Mobilizing domestic revenue remains a critical priority for SSA countries, where limited fiscal capacity constrains development agendas, and weak revenue mobilization is a major driver of fiscal imbalances across the region.

In addition, domestic revenue mobilization also intersects with property valuation. Drummond et al. (2012) found that most low-income SSA countries were able to increase revenue ratios by over two percentage points of GDP in the short-to-medium term in a period of 10 year, though the sustainability of such gains remains fragile, especially in conflict-affected states. Panel estimates from the study indicate that economic indicators, including per capita GDP, inflation, degree of openness, rents from natural resources, and the share of agriculture in GDP are significant determinants of tax revenue performance

### Socio-environment and land use factors

A social environment is generally associated with a setting where people interact, which includes infrastructures natural and artificial environments; these factors align with Sunday Emmanuel (2018), who proposes the Socio-Environmental Design Factors (SEDeF) model. The research identifies social risk factors (poverty, unemployment, juvenile delinquency, illiteracy, and homelessness) and environmental design factors (natural access control, surveillance, maintenance, territorial functioning, and target hardening) as key influences on crime rates.

The study calls on the Nigerian government, policymakers, and researchers to implement crime-reduction and neighbourhood improvement strategies for sustainable

housing and property value appreciation. Similar, Krause and Bitter (2012) state that sustainable practices like eco-friendly construction and urban infrastructure investments increase property demand and value. Despite international guidelines like IVS, ineffective institutional frameworks and unregulated real estate markets make it difficult to apply these criteria in many SSA countries (Bartke & Schwarze, 2015).

According to Case et al. (2000) tax reforms and financial deregulation significantly shape real estate markets environment. However, factors like shifts in demand for urban growth and economic constraints often lead to lower property values, highly affecting rural areas, where market activity is weaker than in urban areas. For instance, property valuation assesses a property's capital value or income potential, emphasizing the economic obligations of ownership Isaac and O'Leary (2017).

Studies by Giovannetti and Tucci (2016), Muthee et al. (2022) and Labson (2016) pointed out that disparities in valuation models emphasize the need for localized approaches, according to their studies, standardized approaches like historical cost or replacement value often led to inaccuracies. For example, Baumgartner et al. (2015) note Ethiopia's rise in large-scale land acquisitions (LSLAs), is driven by external demand often neglect local needs meaning that it contrary to the common belief of the society as noted by Schoneveld (2014), the role of civil society in the diversity and risks surrounding LSLAs, from inequality to reduce local access to resources the author demonstrates that large-scale farmland investments in SSA are geographically uneven and often misunderstood in terms of investor motives and origin.

### Agricultural and environmental determinants of property valuation

Based on World Bank database (2024), agriculture plays a fundamental role in the economies of SSA countries, since it is contributing significantly to both GDP and employment. While the precise contribution varies across countries, agricultural value added typically accounts for 15–40% of GDP in many SSA nations, supporting Drummond et al. (2012) arguments particularly those with less industrial diversification. For instance, in countries such as Ethiopia, Chad, and Sierra Leone, agriculture's share of GDP exceeds 30%, reflecting the sector's centrality to economic output. Even in more urbanized or resource-driven economies like Kenya, Nigeria or South Africa, where the agricultural share of GDP is lower, agriculture remains a vital component of rural livelihoods. Furthermore, agriculture supports the livelihoods of up to 80% of the population in SSA, as of 2022, and over 50% of the total labour force was engaged in agriculture especially in rural areas where subsistence farming and informal agricultural labour dominate the employment landscape. This reliance underscores the sector's role not only as a driver of food security and income, but also as a buffer against poverty and unemployment. Unlike developed economies, where urbanization often reduces

agricultural reliance, rural communities in SSA remain heavily dependent on agricultural land for income, food, and social structure (World Bank, 2024).

Nevertheless, agricultural dynamics have a direct influence on property valuation. Valuing agricultural land requires consideration of production potential, land tenure, and access to infrastructure. The Income Approach, frequently used for investment land, becomes particularly relevant when agricultural income is the primary value driver as suggested by Mazzocchi et al. (2019). However, traditional valuation models may underestimate or overlook these dynamics, especially in regions where land is governed by customary tenure or lacks formal market data.

Environmental factors, such as land fertility, climate resilience, and water access, also affect agricultural land values. In the context of SSA, where farming conditions are often volatile and reliant on rainfall, valuation methods must integrate risk and yield variability. Additionally, policies such as subsidies or development programs significantly impact land prices. Feichtinger and Salhofer (2013) show how CAP-related support in Europe inflates land values, a phenomenon with parallels in SSA where development funding or foreign land investments influence market expectations. In addition, urban expansion encroaches on peri-urban farmland, often leading to speculative land valuation. Yet, without regulatory oversight or formal planning frameworks, such shifts may result in inflated or inconsistent pricing, complicating both taxation and compensation processes.

### Valuation methods in developed countries and comparative analysis

This section compares SSA countries with the European Union (EU) to highlight structural and institutional differences in property valuation practices. These differences illustrate the broader divide between developing and developed real estate markets, both in terms of regulatory enforcement and methodological application. In developed economies, such as those within the EU, property valuation is governed by internationally recognized standards and frameworks, notably those promoted by the Royal Institution of Chartered Surveyors (RICS) and the IVS. These valuations benefit from robust institutional frameworks, transparent governance, comprehensive market data, and advanced technological infrastructure. Common methodologies include the Cost Approach and the Income Approach, particularly the Discounted Cash Flow (DCF) model, which is widely employed for income-generating and investment properties (Pagourtzi et al., 2003; Baum, 2015). These methods assume the availability of reliable rental income data, appropriate discount rates, and a steady flow of comparable transactions conditions generally met in mature European real estate markets.

By contrast, many SSA countries face persistent challenges in adopting these valuation approaches due to institutional weaknesses, limited data availability, and the dominance of informal property markets. Furthermore,

customary land tenure systems are prevalent, especially in rural and peri-urban areas, complicating the implementation of standardized valuation practices. As Chimhowu (2019) notes, non-statutory land governance structures often hinder efforts to apply formal models consistently. Consequently, valuers in SSA tend to rely on “traditional” methods such as the cost or sales comparison approaches, which may inadequately capture market heterogeneity and dynamic property attributes.

The application of advanced valuation methodologies in SSA is further constrained by the absence of comprehensive property transaction databases, low adoption of digital tools, and limited regulatory oversight. In comparison, EU countries integrate IVS rigorously and align with EU-level directives that ensure transparency and accountability in real estate markets. Regulatory institutions such as national Chambers of Real Estate Valuers play a significant role in maintaining professional standards and methodological rigor.

In terms of methodological approaches, property valuation in SSA still leans heavily on cost-based and sales comparison methods. These approaches are often executed using assumptions or heuristics due to insufficient and fragmented market data. As Cheloti and Mooya (2024) observe, valuers frequently encounter client pressure and lack access to reliable databases. Conversely, EU countries employ hybrid valuation models that integrate income, cost, and market-based methods, supported by robust data from land registries and financial authorities.

Technological adoption also marks a notable divide. EU member states have widely implemented GIS and AVMs, and digitized land registries, enhancing valuation accuracy and traceability. While SSA countries particularly in urban centers are increasingly experimenting with GIS and mobile-based platforms (Wachira, 2016), these technologies remain underutilized due to high costs and limited technical capacity among professionals. Furthermore, market transparency further underscores the contrast between them. For example, EU countries consistently rank higher on Transparency International’s Corruption Perceptions Index, with well-defined legal frameworks that mitigate client influence and ensure procedural consistency. In contrast, SSA countries, with lower transparency rankings, often grapple with informal land transactions, bureaucratic delays, and corruption risks in property valuation processes (Transparency International, 2024).

These systemic differences highlight the important role of institutional quality, data infrastructure, and regulatory frameworks in shaping property valuation practices. While SSA can learn from international best practices, effective adoption requires context-sensitive strategies, investments in data systems, legal reforms, and capacity-building initiatives for valuation professionals.

## Material and methods

This study adopts a Systematic Literature Review (SLR) framework and adheres to the Preferred Reporting Items

for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021; Liberati et al., 2009). The aim is to ensure a rigorous, transparent, and reproducible review of the existing academic literature on property valuation in SSA.

We conducted a structured search across three major academic databases: Google Scholar, Scopus, and ScienceDirect. The search string combined keywords using Boolean operators (AND/OR), such as: “property valuation in Sub-Saharan Africa”; “real estate appraisal Africa”; “land valuation”; “macroeconomic determinants of property values”. The search was limited to peer-reviewed journal articles and academic books published in English between 2010 and 2024. Fields of focus included Social Sciences, Economics, Finance, and Urban Studies. We excluded non-academic sources (e.g., blog posts, news articles, and non-peer-reviewed reports) except where such sources provided essential regional or institutional context for SSA.

Inclusion criteria:

- published in peer-reviewed journals or academic books,
- focus on Sub-Saharan African (SSA) countries or regions,
- published between 2010 and 2024,
- written in English,
- provides relevant data on property valuation practices or macroeconomic context.

Exclusion criteria:

- non-peer-reviewed sources lacking academic rigor,
- studies not related to SSA or unconnected to real estate valuation,
- articles not written in English.

A two-stage screening process was applied; first by title and abstract, followed by full-text evaluation. The following variables were extracted from each eligible article: Author(s) and year of publication; research objectives; study area (country/region); methodological approach (qualitative, quantitative, or mixed); key findings and policy implications; and the type of valuation method used. The second stage complement the SLR and bridge theoretical findings with empirical insights, a correlation analysis was conducted using macroeconomic indicators. These indicators were selected based on both their frequency in the reviewed literature and their theoretical relevance to property valuation in SSA. The macroeconomic variables included GDP per capita (USD), urban population as a percentage of the total population, FDI net inflows as a percentage of GDP, the inflation rate, domestic credit to the private sector as a percentage of GDP, in addition included agriculture, forestry, and fishing, value added (% of GDP) as it is the one of the main share of the GDP SSA countries and corruption Perceptions Index. These variables were drawn from Transparency International Database and World Bank data covering the period from 2010 to 2022.

Correlation matrices were generated in Microsoft Excel to examine the pairwise relationships between variables. The results offer preliminary insights and serve as a

foundation for future econometric analysis (e.g., multivariate regression, panel models).

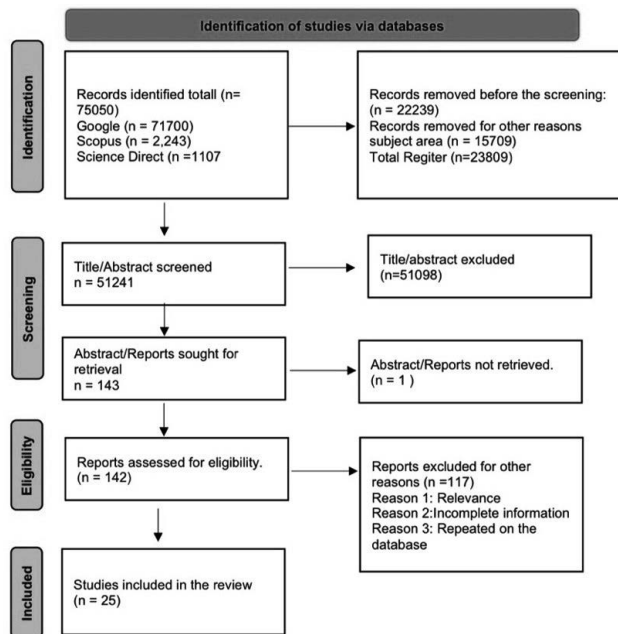
*Hypotheses tested:*

*H1: Higher domestic credit availability positively correlates with property valuation trends.*

*H2: Urbanization is positively correlated with FDI inflows.*

*H3: Inflation negatively impacts valuation reliability.*

Figure 1  
PRISMA flowchart illustrating the systematic review process, showing the number of records identified, screened, and included in the study



Source: own search from records identified through databases, Google Scholar, Scopus, and ScienceDirect

Figure 1 illustrates the systematic review process for identifying, screening, and selecting relevant articles on

property valuation in Sub-Saharan Africa. Initially, we identified 75,050 records from Google Scholar, Scopus, and ScienceDirect, but the pre-screening process eliminated 22,239. We then screened 51,241 records based on their title and abstract, excluding 51,098. After this deduction, we conducted a detailed review of 143 abstracts/reports, retrieving 142 for eligibility assessment. Following a final evaluation, we included 25 studies in the systematic review.

**Results**

Table 1 presents a comparative overview of property valuation practices in SSA and developed economies, highlighting key structural, institutional, and methodological differences. It shows that SSA countries predominantly rely on traditional methods (e.g., cost and sales comparison) supported by limited data and informal systems, while developed markets utilize data-rich, standardized, and technologically advanced approaches. The comparison underscores critical gaps in data access, land tenure formalization, regulatory enforcement, technological adoption, and valuation transparency in SSA, pointing to the need for systemic reforms to align with international best practices and enhance valuation reliability.

Table 2 presents key differences among studies on property valuation in SSA. The table summarises key findings from various academic sources related to real estate investment, property valuation, land use, taxation, and urban planning in different regions. It consists of three main columns that provide insights into each study, such as Gap Identified, which highlights the limitations or missing aspects, and Policy/Practical Implications, which suggests real-world applications or recommendations based on the findings. These range from strengthening tax regulations and integrating AI in property valuation to improving transparency in land investments. In the Region/Study Context, the analysis offers localized valuation issues.

Table 1  
Comparison: Valuation Methods – SSA vs. Developed Economies

Aspect	Sub-Saharan Africa	Developed Economies
Dominant Valuation Models	Cost Approach, sales comparison professional heuristics	Income Approach (DCFI, Cost Market, Hedonic Pricing, Hybrid models)
Data Access	Limited market Data, informal property records	Comprehensive transaction databases, digital land registries
Land tenure System	Customary, informal and often undocumented ownership	Legally registered titles, formal documentation
Regulatory oversight	Weak or inconsistently enforced regulations (e.g., VRB, struggles)	Strong legal and professional regulation (e.g., RICS, IVS)
Technological adoption	Low adoption of GIS, AVM, AI due to cost and training barriers	Independent, auditable, and legally protected valuation process
Transparency and objectivity	Valuation often influenced by client pressure or political interference	Independent, auditable, and legally protected valuation process
Methodological flexibility	Rigid reliance on traditional cost or expert judgment	Integrated hybrid methods based on property type and market segment

Source: literature context based

Table 2

## Comparison and founded gaps addressed in the articles

Author Year of publication	Gap Identified	Policy/practical implications	Region/Study context
Abidoye et al. (2017)	Lacks post-crisis market evolution environmental, social and Governance (ESG) factors	Include emerging markets, risk management and sustainability	International (USA, UK, Asia)
Bartke & Schwarze (2015)	Excludes AI, AND AVMs	Support AI-driven Valuation tools to intensify accuracy	International
Baum (2015)	Low empirical analysis on high-risk economies in Africa, Asia, and Latin America.	Strengthening legal and institutional frameworks in emerging markets to attract investment and improve transparency.	USA
Baumgartner et al. (2015)	Lacks biodiversity loss and policy impact analysis	Implement strict land-use Planning and sustainable investment models	Ethiopia
Bello (2018)	No ROI or economic trend impact passement	Introduce Zoning regulation and include investment performance indicator	Nigeria
Chelot (2022)	Lacks AI. Data integration and Valuation transparency	Strengthen regulation, data collection, and ethics enforcement	Kenya
Chelot & Mooya (2024)	No detailed study on bias types or mitigation	Introduce ethical standards and digital valuation tools.	Kenya
Chimhowu (2019)	it lacks detailed country-specific case studies or quantitative analysis of the impacts.	Policymakers need to balance statutory governance and customary land rights	Sub-Saharan Africa
Drummond (2012)	Omits external economic influences and industry roles.	Strengthen and broaden the tax base	Sub-Saharan Africa
Feichtiger & Salhofer (2013)	Lacks Policy influence, Inflation and tech integration	Align subsidies with productivity and regulate land price inflation	Europe
Giovannetti & Ticci (2016)	Lack of impact assessment on local communities and food security	Strengthen land to ensure responsible investment	Sub-Saharan Africa
Issac & O'Leary (2017)	Excludes market volatility and valuation fraud	Update with digital valuation trends and sustainability factors	International
Krause & Bitter (2012)	No analysis of investor policymakers	Create regulatory guidelines and training programs	USA
Labson (2016)	extensive normative analysis, but there are limited practical price-cost tests.	Propose a clear framework integrating regulatory economics with competition law.	South Africa and Zambia
Lindley et al. (2018)	Insufficient empirical data on effectiveness	Develop localized UGI strategies and invest in research	Sub-Saharan Africa
Mabin et al. (2013)	Lacks data comparisons and infrastructure impact	Impalement of long-term urban planning with infrastructure investment	Sub-Saharan Africa
Mazzocchi et al. (2019)	There are no specifics on climate variables or policy impact	Implement climate-resilient farming policies and zoning regulation	Northern Italy
Schoenfeld (2014).	There is no assessment of social and environmental impact.	Improve transparency, ensure fair compensation and track impact	Sub-Saharan Africa
Silva (2015)	Lacks informal settlement and infrastructure impact analysis	Integrate informal settlements and modernize urban planning	Sub-Saharan Africa
Simgelsky et al. (2014)	There is no data on economic impact or policy responses	Integrate mental health services into healthcare and policy	Sub-Saharan Africa
Sjaastad & Bromley (2017)	No empirical data validation or comparative analysis	Strengthen land tenure policies without full privatization	Sub-Saharan Africa
Sunday Emmanuel (2018)	No crime economic loss correlation or community involvement	Use urban design and social programs to reduce crime	Nigeria
Tusting et al. (2019)	No analysis of policy or affordability trends	Expand affordable housing and track policy effectiveness	Sub-Saharan Africa
Van de Niet (2021)	No industry comparison or long-term effect analysis	Improve investor education and enforce disclosure rules	South Africa
Watchira (2016)	No performance evaluation or fraud prevention mechanisms	Verification and expansion adoption	Kenya

Source: own compilation

Table 3

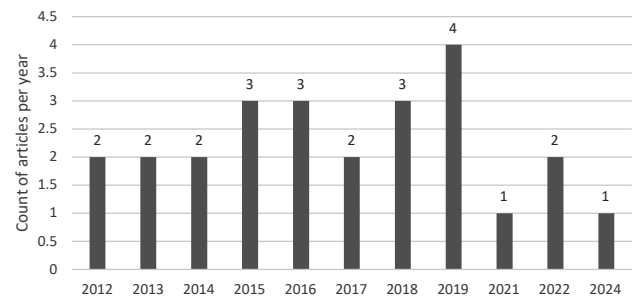
## Macroeconomic Indicators (affecting Property Valuation, Sub-Saharan Africa).

Year	Countries/Region	GDP per capita (USD)	Urban Population (% of total population)	FDI net inflow (% GDP)	Inflation rate	Domestic Credit to the private sector (% of GDP)
2010	Sub-Saharan Africa	1620.23	36.06	2.07	4.03	50.73
2011		1771.92	36.58	2.46	5.37	46.44
2012		1791.52	37.092	2.64	6.58	46.08
2013		1852.63	37.61	2.30	4.89	42.77
2014		1879.96	38.14	2.41	4.40	41.83
2015		1628.91	38.69	2.61	3.55	41.61
2016		1446.87	39.22	1.90	5.43	42.31
2017		1536.482	39.76	1.23	5.20	43.93
2018		1606.13	40.30	1.18	4.09	40.51
2019		1611.67	40.83	1.34	2.84	38.901
2020		1474.06	41.37	1.26	3.48	37.17
2021		1613.88	41.91	3.61	4.61	35.51
2022		1688.40	42.45	1.49	9.39	33.37
2023		1622.81	42.99	1.39	6.70	

Source: own search from records identified on the World Bank database

In Table 3 the data provides an overview of key macroeconomic indicators influencing property valuation in SSA from 2010 to 2023. For instance, GDP per capita fluctuated over the years, peaking in 2014 at \$1,879 before declining to \$1,446 in 2016. In more recent years, it has stabilized around \$1,600. On the other hand, urbanization trends show a consistent rise, with the percentage of the population living in urban areas steadily increasing. Meanwhile, FDI net inflows as a percentage of GDP have shown volatility, with noticeable fluctuations over the years. A significant rise in FDI occurred in 2021, reaching 3.6%, before declining again in 2022 and 2023. Inflation rates have also shown considerable variation, peaking at 9.39% in 2022. Domestic Credit to the private sector as a percentage of GDP has steadily declined in Sub-Saharan Africa, dropping from 50.73% in 2010 to 33.37% in 2022. This trend suggests tightening credit conditions due to regulatory changes, economic instability, and rising lending risks.

Figure 2  
Bar chart displaying the annual distribution of research articles on SSA (2010 to 2024)



Source: author own selection from World Bank national accounts data, and OECD National Accounts data files

Table 4

## SSA Macroeconomic Indicators correlation (Affecting Property Valuation)

	GDP per capita (USD)	Urban Population (% of total population)	FDI net inflow (% GDP)	Inflation rate	Domestic Credit to the private sector (% of GDP)
GDP per capita (USD)	1				
Urban Population (% of total population)	-0.46	1			
FDI net inflow (% GDP)	0.43	-0.36	1		
Inflation rate	0.20	0.25	-0.05	1	
Domestic Credit to the private sector (% of GDP)	0.22	-0.94	0.11	-0.21	1

Source: own calculation used excel statistics analysis from records identified on the World Bank database

Table 4 data provides a correlation among macroeconomic indicators in SSA, resulting in a negative correlation between GDP per capita and urban population of (-0.46), a positive correlation between GDP per capita and

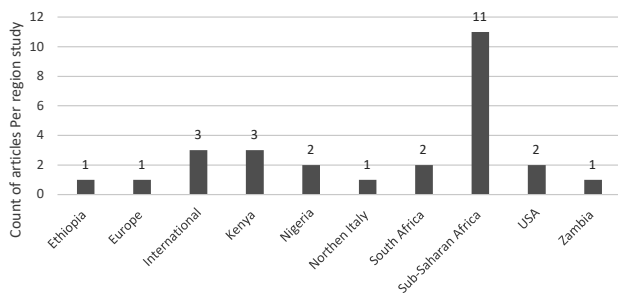
FDI inflow (0.43), a weak positive correlation between Domestic Credit to the private sector with GDP per capita of (0.22), strong negative correlation between urban population and domestic Credit (-0.935), Foreign direct

investment negatively correlates with urbanization (-0.36), Inflation weakly correlates with other indicators, including a slight positive relationship with GDP per capita (0.20), urban population (0.25) and negative correlation with domestic Credit (-0.21).

Figure 2 bar chart illustrates the annual distribution of articles on property valuation in SSA from 2012 to 2024. Research activity peaked in 2019 with four articles. The fluctuations suggest varying research interests, possibly driven by emerging challenges or regional policy developments.

Figure 3

### Geographic distribution of property valuation research in SSA (2010-2024)

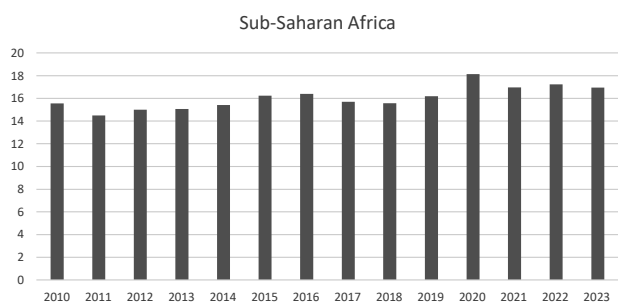


Source: author own selection from World Bank national accounts data, and OECD National Accounts data files

Figure 3 illustrates the distribution of articles on property valuation across different regions and countries. Property Valuations vary significantly in their accuracy, applicability, and reliability (Figure 4).

Figure 4

### Sub-Saharan Africa Agriculture, forestry, and fishing, value added (% of GDP)



Source: author own selection from World Bank national accounts data, and OECD National Accounts data files.

## Discussion

### Macroeconomic analysis and Property Valuation challenges

The correlation analysis conducted in this study reveals complex and, at times, counterintuitive relationships between macroeconomic indicators and property valuation in SSA countries. One key finding is the strong

negative correlation between urbanization and domestic credit to the private sector (-0.94), indicating that as urban populations grow, access to formal credit mechanisms does not increase proportionately. This suggests a significant structural constraint: while urban expansion progresses, the financial infrastructure needed to support real estate valuation remains underdeveloped. This supports Hypothesis 1, confirming that credit availability is a critical determinant of property market functionality.

Another important result is the negative correlation between urban population growth and FDI inflow (-0.36). Contrary to Hypothesis 2, this suggests that urbanization in SSA does not automatically attract foreign capital, possibly due to the prevalence of informal land markets, inadequate infrastructure, and governance challenges. In contrast to developed economies where urban growth often correlates with investment, SSA experiences a divergence that undermines valuation predictability. These valuation distortions are not solely economic but deeply rooted in institutional and legal structures land governance in SSA is characterized by dual legal systems, where customary tenure overlaps with formal law. This ambiguity limits the enforceability of property rights and hinders market-based valuation. In many cases, informal settlements lack official recognition, yet hold significant value due to proximity to urban centers. These socio-political dynamics create environments where valuations are shaped less by market logic and more by negotiation, patronage, or exclusion.

The descriptive statistics in Table 3 reflect broader structural challenges in SSA's macroeconomic environment. While GDP per capita shows moderate growth over the period, this is not matched by corresponding increases in domestic credit to the private sector, which declined significantly. Additionally, inflation volatility and fluctuating FDI inflows point to an unstable investment climate. These inconsistencies have direct implications for property valuation: for instance, inflationary pressures distort long-term projections, making income and DCF-based valuation models less reliable. The decline in credit availability also limits the effectiveness of market comparison approaches, particularly where transaction data are scarce.

Moreover, it is important to emphasize although the Cost and Comparative Methods dominate valuation practice in SSA, still DCF is a good alternative method offer greater adaptability. DCF is particularly useful in urban and peri-urban contexts where rental income data is emerging but not yet standardized. Its forward-looking nature accommodates economic volatility and investor uncertainty, especially in commercial and mixed-use developments. Valuation of commercial property in Kenya (Nairobi's central business district), for example, would benefit more from a DCF or Income Approach model due to regular rental cash flows and investor interest. In contrast, agricultural land in northern Ghana may require a hybrid model integrating local yield data and environmental risk factors.

### Financial constraints and property market limitations

Inflation shows a weak positive correlation with GDP per capita (0.20) and a weak negative correlation with credit availability (-0.21), partially supporting Hypothesis 3. While moderate inflation may not hinder economic growth, prolonged inflation erodes purchasing power, raises construction costs, and disrupts valuation reliability. This complexity suggests that valuation models must incorporate inflation variability when assessing long-term investment potential. As highlighted by Drummond et al. (2012), weak financial institutions and poor macroeconomic management intensify these pressures. Similarly, Van der Niet (2021) emphasizes that inconsistent monetary policies and inflationary volatility undermine long-term real estate profitability and valuation accuracy.

An often overlooked but essential component of the valuation landscape in SSA is agriculture. Agriculture contributes between 15% and 40% of GDP in many SSA countries and provides livelihoods for up to 80% of the population (World Bank, 2024). However, a substantial share of agricultural activity occurs in the informal economy and is not captured in GDP or valuation frameworks. This disconnect leads to the systematic undervaluation of agricultural land, especially in rural and peri-urban areas. The reliance on traditional valuation models often based on limited data and formal land ownership fails to consider land productivity, tenure insecurity, or environmental variability. Valuation of agricultural land must take into account yield potential, land tenure, and environmental inputs like rainfall and soil quality. The Income Approach becomes particularly useful here but is underutilized due to limited access to reliable data. Furthermore, urban encroachment on peri-urban agricultural land adds speculative pressures that are not reflected in formal valuation systems due to weak regulatory oversight.

Weak institutional capacity and limited legal enforcement create environments ripe (Corruption) incapacitating property valuer, for manipulation and bias, especially in areas where property rights are contested or undocumented. As Chimhowu (2019) suggest, opaque governance structures particularly those grounded in customary land tenure enable discretionary practices that compromise valuation reliability. Incorporating governance quality and corruption perception indices into valuation frameworks could provide a more accurate and transparent assessment of property values.

### Research trends and policy implications

The systematic literature review and publication trends reveal that research on property valuation SSA is often reactive, driven by macroeconomic shocks or emerging policy challenges rather than sustained scholarly engagement. This irregular pattern underscores a deeper issue the fragmented and underdeveloped state of real estate research and valuation methodologies across SSA.

As Cheloti (2022). and Sjaastad and Bromley (2015) emphasize, persistent regulatory weaknesses contribute to valuation distortions. Regional disparities in academic coverage further exacerbate the problem, with South Africa

and Nigeria receiving more attention than other dynamic markets like Kenya or Ethiopia. Isaac and O'Leary (2017) attribute these inconsistencies to limited data availability and uneven regulatory enforcement. Moreover, the limited adoption of cross-country comparative studies restricts the transfer of best practices across SSA.

The continued reliance on traditional valuation approaches such as the cost and sales comparison methods present additional challenges. Despite global trends toward digital transformation, SSA lags behind in adopting AVMs, GIS and integrated databases. Wachira (2016) and Bartke and Schwarze (2015) argue that this gap weakens the responsiveness of valuation systems to changing economic conditions. Three key challenges emerge from the synthesis of literature and empirical results:

1. Misalignment between urban growth and financial inclusion: While urbanization in SSA is accelerating, formal credit systems have not kept pace. This undermines real estate financing and distorts valuation baselines, particularly in peri-urban areas.
2. Weak regulatory enforcement and valuation standards: Inconsistent application of valuation guidelines leads to variable quality in appraisals, reducing investor confidence. As Cheloti and Mooya (2024) note, client influence and valuation heuristics often replace standardized procedures.
3. Technological underdevelopment and data scarcity: The absence of comprehensive property registries, market databases, and digital valuation tools limits the accuracy and comparability of valuations across countries and property types.

Nevertheless, in order to address these issues, this study recommends several policy and research directions. First, regulatory frameworks should be strengthened, and enforcement mechanisms improved to ensure consistency in valuation practices across SSA. The adoption of digital tools, including GIS, AVMs, and mobile-based technologies, should be expanded to modernize valuation systems. It is also essential to develop training programs for valuation professionals that emphasize ethics, the use of digital tools, and market analysis. In parallel, reforms aimed at broadening financial inclusion particularly in the areas of mortgage financing and lending criteria can help enhance access to real estate credit. Finally, future research should encourage cross-country studies that identify context-appropriate valuation models and promote regional knowledge exchange to support more standardized and effective valuation practices.

### Conclusion

This SLR points out the challenges in property valuation across SSA countries. By applying the PRISMA guidelines, the study reveals a scarcity of research on this topic among the SSA countries, although the region consists of 46 countries. Through a rigorous screening process using the guideline, 143 relevant studies were identified, of which 25 were selected for in-depth analysis. To assess how macroeconomic conditions, institutional factors, and valuation

methodologies influence valuation practices across the region. This dual approach was designed to bridge theoretical insights with empirical evidence and provide a more holistic understanding of the valuation landscape in SSA. The literature review confirmed that SSA property markets remain highly fragmented, characterized by outdated valuation methodologies, weak regulatory enforcement, informal land markets, and limited access to reliable data. These issues directly undermine valuation consistency and investor confidence. The study also met its objective of identifying how socio-economic, environmental, and institutional variables such as urbanization, credit availability, and land tenure systems influence valuation processes. These identified influences, reveals that factors such as urbanization, credit availability, land tenure complexity, and institutional weaknesses significantly impact property valuation practices across SSA.

For instance, the correlation analysis revealed several non-intuitive relationships, such as the negative correlation between urbanization and credit access, and between urban growth and FDI inflows. These findings underscore the limitations of applying conventional valuation models in SSA contexts without accounting for institutional weakness and informality. This supports the need for models that can flexibly account for market fragmentation, volatility, and governance risks.

Despite these contributions, several areas warrant further investigation. First, future research should engage in country-specific case studies to evaluate how valuation practices respond to local governance structures, economic reforms, and land use patterns. Second, econometric modelling using panel data could offer deeper insights into causal relationships between macroeconomic variables and valuation outcomes. Third, there is a need for impact assessments of regulatory reforms and technological adoption, particularly in rapidly urbanizing contexts where valuation demand is rising but institutional capacity is weak. Finally, longitudinal studies tracking valuation changes in response to investment, policy shifts, and environmental pressures could help build more adaptive and resilient valuation systems in SSA. By addressing both conceptual and empirical gaps, this study contributes to a growing body of literature calling for modernization, standardization, and contextualization in SSA's property valuation sector. Aligning valuation practices with international standards, while adapting to local realities, is essential for improving market transparency, financial planning, and sustainable development across the region.

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