Strategic management

International Journal of
Strategic Management and
Decision Support Systems
in Strategic Management

Vol. 29, No. 4
2024
ISSN 2334-6191 (Online)
UDC 005.21
University of Novi Sad
Faculty of Economics in Subotica

Strategic Management

International Journal of Strategic Management and
Decision Support Systems in Strategic Management

ISSN 1821-3448, UDC 005.21

Strategic Management is a quarterly journal addressing issues concerned with all aspects of strategic management. It is devoted to the improvement and further development of the theory and practice of strategic management and it is designed to appeal to both practicing managers and academics. Specially, Journal publishes original refereed material in decision support systems in strategic management.

Thematic Fields

- Mission and Philosophy of the Organization
- Culture and Climate of the Organization
- Effectiveness and Efficiency of the Organization
- Structure and Form of the Organization
- Strategic Analysis
- Aims and Strategies
- Process of Strategic Management
- Characteristics of Strategic Management in the New Economy
- Contemporary Ontological, Epistemological and Axiological Suppositions on the Organization and its Environment
- Analysis of the Organization and its Interaction with the Environment
- Structure and Dynamics of the Organizational Environment
- Uncertainty and Indistinctiveness of the Organizational Environment
- Synchronic and Diachronic Analysis of the Organizational Environment
- Analysis Techniques of the Organization
- Business Processes, Learning and Development within the Context of Strategic Management
- Evaluation and Measuring of the Potential and Realization of the Organization within the
- Context of Strategic Management
- Strategic Control in Contemporary Management
- Information Technologies in Strategic Management
- Business Intelligence and Strategic Management
- Decision Support Systems and Artificial Intelligence in Strategic Management
- Performance Management Process
- Performance Management System
- Improving Performance
- Strategic Marketing Management
- Strategic Global Marketing Management
- Strategic Services Marketing
- Leadership and Ethics in Strategic Management
- Human Resource Management and Strategy
- Organizational Behaviour, Strategy, and Performance

All scientific articles submitted for publication in Journal are double-blind reviewed by at least two academics appointed by the Editor's Board: one from the Editorial Board and one independent scientist of the language of origin - English. Reviewers stay anonymous. Authors will timely receive written notification of acceptance, remarks, comments and evaluation of their articles.

Strategic Management

International Journal of Strategic Management and
Decision Support Systems in Strategic Management

www.smjournal.rs

Publisher

University of Novi Sad, Faculty of Economics in Subotica

9 - 11 Segedinski put, Subotica 24000, Serbia

Tel: +381 24 628 000

Fax: +381 24 546 486

http://www.ef.uns.ac.rs

e-mail: smjournal@ef.uns.ac.rs

Proofreading
Željko Buljovčić

Prepress
Aleksandar Vugdelija

Print
Donat Graf d.o.o. Beograd

Circulation
100

The Journal is published quarterly.

Strategic Management

International Journal of Strategic Management and
Decision Support Systems in Strategic Management

www.smjournal.rs

ISSN 1821-3448
UDC 005.21
2024, Vol. 29, No. 4

Contents

STRATEGIC MANAGEMENT, Vol. 29 (2024), No. 4, pp. 005-027

DOI: 10.5937/StraMan2300060B

Received: March 17, 2023
Revised: August 22, 2023
October 09, 2023
Accepted: October 24, 2023
Published online: December 26, 2023

Boards’ strategic involvement models: past, present, and future

Tihona Bozhinovska

Ss. Cyril and Methodius University in Skopje, Faculty of Economics - Skopje, Skopje, Republic of North Macedonia
https://orcid.org/0000-0003-3350-7468

Ljupcho Eftimov

Ss. Cyril and Methodius University in Skopje, Faculty of Economics - Skopje, Skopje, Republic of North Macedonia
https://orcid.org/0000-0003-0870-4355

Abstract

Background: The research on boards’ strategic involvement has increased dramatically in the last few decades due to the need for improving boards’ strategic effectiveness as a mechanism for improving organizational performance. The corporate scandals highlighted even more that boards’ strategic decisions have sizable consequences for organizational survival, and long-term implications for organizational development.

Purpose: The main research questions in this study are: 1. Which are the main elements of the concept of boards’ strategic involvement?; 2. Which models constitute the core of the concept and how we can classify them?; 3. How has the discourse on boards’ strategic role changed over time? Our purpose is to provide comprehensive answers to these questions and draft the future research agenda in this area.

Study design/methodology/approach: Having in mind that boards’ strategic involvement is a multi-disciplinary area, we first conducted an integrative literature review, to detect the competing groups of models, and afterwards we conducted a semi-structured literature review in order to identify the most important topics in this area and to draft the future research agenda.

Findings/conclusions: This paper contributes to research by identifying the models of boards’ strategic involvement, classifying them in three competing groups of models that represent the foundation in this research area, by identifying the most investigated topics in the past five years and finally, by drafting the future research agenda. Our conclusion is that the research in this multidisciplinary area is navigating around these three groups of models and that the most explored topics around which the future research is going to be conducted are boards’ involvement in the area of strategic human resource management and decisions regarding organizations’ sustainability.

Limitations/future research: The study’s main limitations are related to the fact that the identified models on boards’ strategic involvement have been developed, mostly by authors from the USA and UK, where the one-tier board system is used. In future research, the authors should focus on proposing new framework(s)/model(s) and supporting its insights with empirical evidence.

Keywords

boards, strategy, boards’ strategic involvement models, sustainable organizational performance, strategic human resource management

Introduction

Motivation of the paper

The reason for investigating the literature on boards’ strategic involvement is in the fact that this is a mature research field that has emerged in the overlap of theories from several disciplines. Although the need for increased boards’ participation into the strategic process and strategic decision-making has been strongly argued from the beginning of the 70s in the past century, most of the empirical papers researching this concept have been published after 1990. The reason for this is in the fact that boards’ strategic role has been theoretically defined by Zahra and Pearce II in 1989. By analysing the four prevailing perspectives on boards’ roles, Zahra and Pearce II

(1989) elaborated the essence and the key constituting elements of boards' strategic role and thereby created the foundation for further empirical and theoretical research on boards' strategic involvement. Building on their previous work, the same authors empirically researched boards' strategic involvement in 1990 on a sample of US companies and created the first model on boards' strategic involvement.

In the following decades different authors investigated boards' processes related to strategy and strategic decision-making grounding their research on a variety of theoretical approaches. Namely, the authors employed different theoretical approaches from strategic management to gain more insight on boards' processes and particularly those processes related to boards' members involvement in strategy. Although different models were designed, and therefore the basis for future research in this area was created during these more than two decades, their main contribution and findings have not been properly analysed and systematized. However, since boards' work and processes, particularly those related to strategy, as noted in several papers represent a "black box" (Leblach & Schwarts, 2007; Klarner et al., 2020; Guerra, 2022), the need for thoughtful and methodological research on the literature on boards' strategic involvement is necessary for gaining clarity and laying the foundations for further empirical examination on the topic. Deepening our understanding on strategic process and the decisions that board members and top management teams make, as well as their behaviour in those processes is essential for selecting proper theoretical and methodological approaches for empirically researching boards' strategic involvement and strategic management in general.

The contribution of this paper is in the synthesis of the literature on boards' strategic involvement, the identification of the key conceptual frameworks/models, identifying the most popular topics in this research area in the period 2019-2023 and setting directions for future research. This could give some insights regarding boards' work and their participation in the strategic process that hopefully could led to a construction of a new theory on boards' strategic involvement, as some academics have already proposed (Rindova, 1999; Pye & Camm, 2003; Ghaya, 2011).

The paper intends to answer the following questions:

1. Which are the main elements of the concept of boards' strategic involvement?
2. Which models constitute the core of the concept and how we can classify them?
3. How has the discourse on boards' strategic role and boards' strategic involvement changed over time?

Finally, the main motivation for writing this paper is in the perceived lack of a study on boards' strategic involvement that explains the origins and the foundations of the concept, and how the topic has reconceptualised in the past decade. We must reflect and write on this since strategy is the most important board function (Wommack, 1979) and because the strategic directions defined at the top of the organizations determine its survival, competitiveness, and future growth. Furthermore, the behaviour of boards and top management teams members and the practices used in the strategic management process in the largest organizations, which can have enormous impact on the overall economy, remain unavailable for research for most academics.

Theoretical background

The theoretical approaches that constitute the basis for researching boards' strategic involvement includes the theories related to organizational sciences and strategic management such as agency theory, resource dependence theory, strategic choice theory, stewardship theory and stakeholder theory. Additionally, for proper investigation of this concept, the analysis of several approaches used in psychology is more that need and justified. Namely, the finding in cognitive psychology has been used for increasing the understanding of managerial cognition and the link between managerial or directors' cognition with the strategic process. Furthermore, the investigation of boards' strategic involvement is not possible without understanding the term "involvement" which is elaborated from organizational perspective in the works of Maslach and Leither (1997), who analyse involvement as a component of employee engagement (in the research on burnout, which is a very popular topic in the area of human research management). Consequently, we can conclude that the theoretical background of boards' strategic involvement incorporates the theories that have been used for defining boards' strategic role (agency theory and resource dependence theory), theories/approaches that elaborate the process of strategy making and the role of executives in this process (stewardship theory, strategic choice theory and stakeholder theory), the cognitive approach that explains how directors and managers exercise strategic thinking and strategic behaviours and the theories on employee engagement that elaborate the meaning of the term involvement.

One of the main premises of agency theory is that the firm or the corporation represents a legal entity that is constituted on a nexus of contracts and that agency costs are generated by each contractual agreement (Jensen & Meckling, 1976). Fama and Jensen (1983) analyse how the agency problems arise in private organizations and analyse the decision-making process in situation when there is separation of ownership and control. Furthermore, these authors explain the steps in the decision-making process and boards' role in this process. Additionally, they explain the decision hierarchy and decisions' agent's role in this process. Agency theory also includes some assumption regarding the human nature, such as those that humans focus on their self-interest, have bound rationality and are risk averse (Eisenhardt, 1989). Zahra and Pearce II (1989) argue that agency theory recognises and stresses boards' strategic role, which includes "boards' involvement in and contribution to articulation of the firm's mission, the development of the firms' strategy and setting of guidelines for implementation and effective control of the chosen strategy" (p. 302). The main premise of the resource dependence theory is that organizations are externally controlled and that organizational decisions reflect the environmental pressures (Pfeffer & Salancik, 2003). Furthermore, Pfeffer and Salancik (2003) argue that organizations use co-optation and executive succession as mechanisms for managing environmental influences (constrains). Zahra and Pearce (1989) highlight that resource dependence theory analyses boards as a link to the external environment and argue that boards' strategic role includes the board members' impact on the strategic initiatives of strategic choices. Therefore, the strategic choice theory should also be analysed as part of the theoretical background of the concept of boards' strategic involvement. Child (1972) argues that besides the environmental pressures, strategic choices are severely influenced by the dominant coalitions within the organisation. Therefore, the strategic choice perspective stresses that the strategic decision-making process is influenced by the distribution of power of the dominant coalitions within the organization and that strategic choices largely depend on the cognitive abilities of boards' members and managers and their interpretation of the environmental trends and organizational events (Child, 1997). Therefore, director's mind-set, power and the intra-organizational political process are critical in the phase of strategic initiatives generations, and the choices organisations make are largely impacted by strategic actors' ability to understand complexity and to implement the selected alternative (Child, 1997). Consequently, we conclude that this theory emphasises the importance of the strategic actors' (which includes boards' members and managers) power, mind-set and ability to cope with complexity as a critical component in the strategic process. In other words, board members' ability to participate in this process is highly determined by their understanding of the intra-organizational political processes. The stewardship theory has different assumptions from the agency theory and argues that executives are motivated to act as good stewards, and therefore boards' structure should be designed to enable the needed authority and discretion in the strategic process (in the formulation as well as in the implementation phase of the process) (Davis et al., 1997). This theory assumes that executives act as good stewards in any situation and, according to the terminology introduced by the proponents of the agency theory, the boards should focus more on the decision management process, rather than on the control of the executive members. The theory that dramatically changed the views about the strategic management process in the last century was the stakeholder theory, which must be analysed as part of the theoretical background of this concept. The term stakeholder (which included shareholders, employees, customers, suppliers, lenders and society) was introduced in 1963 in an internal memorandum of the Stanford Research Institute, and the main premise of this theory is that "unless executives understand the needs and concerns of the stakeholder groups" they could not formulate objectives and strategies that enable organizational survival and growth (Freeman, 1984, pp. 31-32). Furthermore, the proponents of this theory elaborate the need for incorporating stakeholder management as part of the strategic management process, for which the engagement of executives is required. Additionally, the authors suggest that firms' top executives must be included in the strategic process and work actively on harmonising their values with the values of the different groups of stakeholders to be able to properly manage the relations with the external and internal environment. Moreover, the proponents of the theory emphasise that top executives accompanied by other staff experts must be included in all strategic management processes in the organization (Freeman, 1984, pp. 66-67).

Regarding the cognitive perspective in the light of the concept of boards' strategic involvement, firstly we are going to elaborate its components, and afterwards its relationship with the strategy. According to Braisby and Gellaty (2005), cognitive psychology "is the branch of psychology devoted to the scientific study of the mind" (p. 1), which includes the study of the observable individual behaviour, as well as the unobservable processes that lead to the individuals' behaviour (each behaviour includes multiple cognitive processes). The interest in the adoption of the cognitive approach in management and strategy research has intensified at the end of the 1980s and during the 1990s. Particularly interesting insights regarding cognition and strategy (which are of primary interest for our study), were elaborated by Stubbart (1989). Stubbart (1989) argues that there are three components of cognition that are crucial for individuals' involvement in the strategic management process. These elements are: 1. *Intentions* which are related to the executives and non-executives' motivation to think about strategic issues and options; 2. *Representations* which are related to executives and non-executives knowledge about strategic management; and 3. *Computation* which refers to the processes for encoding, locating, using, changing, manipulating, sustaining or abandoning the mental representations and intentions (Stubbart, 1989, p. 331). Therefore, we can conclude that the boards' members' cognition is tightly related to boards' strategic involvement, and this is the reason why the cognitive approach has been incorporated as a theoretical background in some of the behavioural models of the concept.

Finally, the last theoretical approaches that must be analysed for fully understanding the concept of boards' strategic involvement are those related to employee engagement, which define the term "involvement". The most comprehensive definition of the term involvement in the context of organizational sciences has emanated from the proponents of the theories on employee engagement. Namely, there are two dominant theories (Saks & Gruman, 2014) in the scientific research of employee engagement: the one that relies on the research related to job burnout and employee well-being and the one that relies on the research in psychology and sociology related to the roles individuals occupy at work and to what degree. Khans' work (1990) enables us to understand how individuals occupy certain roles, how they are drawn to perform the tasks within each role they have and the so called "self-in role" processes, which is relevant for our topic since it gives an insight on how directors (or board members) are motivated for fulfilling the tasks included in the boards' strategic role and how we can analyse theirs dedication to the strategic tasks. The second theoretical approaches related to employee engagement are those that are focused on researching job-burnout (Maslach & Leither, 1997), which understand employee engagement as opposite condition to job burnout. Maslach and Leither (1997, p. 161) explain that the psychological state of engagement (or burnout) has three components – *energy, involvement and effectiveness* – and *define involvement as "degree of concern and cynicism about work*".

To sum up, the development of all these theoretical approaches has enabled the research on boards' strategic involvement as separated concepts. Basically, the theories that define the scope of boards' strategic role (agency and resource dependence theory), the theories that broaden the understanding of the strategic management process and explain how strategic choices are or should be made by the individual (stewardship theory, stakeholder theory, strategic choice theory and cognitive perspective), as well as the theories that form the foundation of the employee engagement as a separate concept must be taken into consideration for understanding boards' strategic involvement, its essence and elements.

Evolution of thought

The boards' members' strategic involvement has been driving the attention of both practitioners and academics since the early 1970s. The reasons for increased interest in boards' involvement in strategy, and the internal governance mechanisms in the 1970s were related to the fact that several large corporations in the USA, managed by professional full-time executives, experienced difficulties in operation (Cheffins, 2015). Basically, the interest in this area has increased as the pitfalls of "managerial capitalism" became more visible.

Regarding the evolution of thought on boards strategic involvement, through the analysis of 150 articles published between 1972 and 2007, Pugliese et al. (2009) identified three periods: the first one is called the emerging debate on boards' strategic involvement (1972-1989), the second one is called the heyday of input-output approaches (1990-2000) and the third one is named towards more pluralism in the board-strategy debate (2001-2007). In the last period (2008-2020), Bezemer et al. (2023) found that the authors, besides investigation of the traditional variables and constructs, also focus on the relevance of the organizational context and the underlining dynamics and processes.

Consequently, it can be noted that boards' strategic involvement in the past few decades has significantly developed and generated new insights regarding boards' tasks and behaviours. Besides, as a result of the corporate scandals and crisis, as well as of the changes in the external environment, boards' tasks and roles have also evolved, which has been particularly evident during the Covid-19 period and in the so-called post-pandemic period. Therefore, the increasing number of papers within this research area have generated a substantive knowledge base (which according to Torraco, 2005 and Snyder, 2019 are the characteristics of a mature topic), and have created the opportunity for conducting an integrative literature review. The main purpose of this integrative literature review is the synthesis of the existing knowledge and the presentation of a classification of the models that represent the essence of this topic.

Namely, the proliferation of models started when the lack of a suitable model was perceived as one of the main obstacles to boards' involvement in strategy (Rosenstein, 1987). In accordance with our understanding, other barriers for boards' involvement into strategy include: the boards members' lack of knowledge and expertise for certain issues; boards' dynamics; the CEO power and his/her perception about the role of other boards' members; and finally, the attitude boards' members have about the execution of their strategic role (do they support the active or passive school of thought as elaborated by Levrau & Van den Berghe, 2007).

Aim and structure of the paper

This paper aims to: 1. create a comprehensive overview of boards' strategic involvement models, and to systematize them accordingly, whereby the foundation of this multidisciplinary research area can be clearly identified; and 2. to identify the main topics in the articles researching boards' strategic involvement published in the past 5 years and draft the future research agenda.

The methodology employed for investigating boards' strategic involvement are explained in section 1. The key findings are elaborated in section 2. This section has three parts: the first part is dedicated to identification of the models that represent the core of the concept of boards' strategic involvement; the second part is dedicated on the identification of current research themes in this area; and the third part on drafting future research agenda. From a methodological point of view, the first part of this section represents an integrative literature review, and the second part is a semi-structured literature review. The third section of the paper includes Discussion and the fourth - Conclusion.

1. Methodology

For conducting the integrative literature review we selected papers analysing boards' strategic involvement using different theories and perspectives, from several disciplines and sub-disciplines: management, strategic management and economics. In the first step we identified eight (8) papers that developed comprehensive models on boards' strategic involvement. The following eight models were selected in the first phase of the literature review: the model of Zahra and Pearce II (1990); the model of Judge and Zeithaml (1992); the model of McNulty and Pettigrew (1999); the model of Forbes and Milliken (1999), the Rindovas' model (1999); the model developed by Pye and Camm (2003); the model developed by Drew and Kaye (2007); and the Ghayas' model (2011). All selected models were published in prominent/reputable journals from the management research area (*European Management Journal*, *Academy of Management Journal*, *Organizational Studies*, *Academy of Management Review*, *Journal of Management Studies*, *Journal of General Management* and *European Management Journal*, respectively), except for the last one, which was published in a Working Paper of the University of Strasburg, Faculty of Economics and Management.

The reason for including these eight models is in the fact that they incorporate several different perspectives/approaches for explaining the essence of the concept. Namely, as we have already mentioned, boards' strategic involvement is multidisciplinary research and therefore if the authors relied only on one theory (for example, only on agency theory without incorporating any other theory or approach used in the organizational sciences), they would fail to demonstrate the complexity of the topic. Hence, our reasoning is that only the models that *rely on* other approach besides the agency theory (although this does not mean that agency theory has to be included) ***or*** explain the relation of boards' strategic role with the overall organizational performance should be included in this analysis.

In the second step, we analysed the papers by conducting an exploratory inductive analysis to understand on which theories or approaches they rely on. This resulted in the generation of Table 1 where we present the models that constitute the core of the concept and which criteria each of them meets.

In the third step we analysed the models' elements, classified them in three categories and identified the similarities and differences between the models within each group.

The methods used in these three steps were thematic analysis and content component analysis as described by Bergman et al. (2017).

Furthermore, to investigate the current topics in this research area, we conducted a semi-systematic literature review. This approach gives an opportunity for identifying the most researched issues related to boards' involvement in strategy and drafting the future research agenda. Although the semi-systematic literature review is less rigorous than the structured literature review, it gives an overview of the existing knowledge in the field and has been used in social sciences in the past few decades (Snyder, 2019).

The semi-systematic literature review was conducted in several steps: 1. we identified the key research articles in this area published in the period between 2019 and 2023; 2. we analysed them by reading only the title and the abstract and classified them in three groups in accordance with their relevance for the research questions addressed in this study; 3. we read and analysed the full articles which resulted in their reclassification and identification of the most popular topics in this research area in the past five years. The key words identified used for selecting the articles were: boards and strategy, strategic involvement of the boards; and boards and strategic decision making. Overall, sixty-four research articles were selected in the first phase. After analysing the articles' content and the journal in which they were published the total number of articles included in this part of the study was forty-eight (48). The last phase included identification of the topics addressed in these studies, which were published in journals indexed in Scopus and SCI in the period between 2019 and 2023.

2. Key findings

2.1. Boards' strategic involvement models classification

The identified models of boards' involvement in strategic decision-making are systematized broadly in the following groups: *generic* (*basic or general) models, behavioural models, and integrative models*. Some of them were created as part of empirical studies, while others were created in conceptual papers. The identified three types of models differ in the definition of the concept, the factors identified as determinants/predictors of boards' strategic involvement and the expected outcomes of boards' strategic involvement. The classification of boards' strategic involvement models is presented in Figure 1.

The first group of models (generic, basic or general models) includes the models developed by Zahra and Pearce II (1990), and Judge and Zeithaml (1992). According to Maasen (2002), the most prominent characteristics of the general models of boards' involvement in strategy are that boards' attributes, such as boards' composition or structure are recognized as important determinants of boards' strategic involvement, models recognize external pressures; and that boards' strategic involvement impacts overall organizational performance.

Table 1 Models included in the integrative literature review and the criteria they met

Model	*Criteria*	
	Approach	Does it explains the relation of boards' strategic involvment with organizational performance?
Zahra and Pearce II, 1990	No approached/theory described in this paper. However, in their previous works on defining boards' strategic roles authors rely on agency and resource dependence theory (Zahra & Pearce II, 1989).	Yes
Judge and Zeithmal, 1992	Institutional and strategic choice perspective	Yes
McNultty and Pettigrew, 1999	Agency and resource dependance theory, as well as some approaches from organizational sociology.	No
Forbes and Millicken, 1999	Upper echelons and strategic choise perspective, cognitive approach and approaches from organizational sociology.	Yes
Rindova, 1999	Agency theory and cognitive approach.	No
Pye and Camm, 2003	Agency and transaction cost theory, stewardship theory, resource dependance theory, class hegemony, and managerial hegemony.	Yes
Drew and Kaye, 2007	Stakeholder theory.	Yes
Ghaya, 2011	Agency and transaction cost theory, stakeholder theory, class hegemony and legalistic perspective.	Yes

Source: the authors' construction

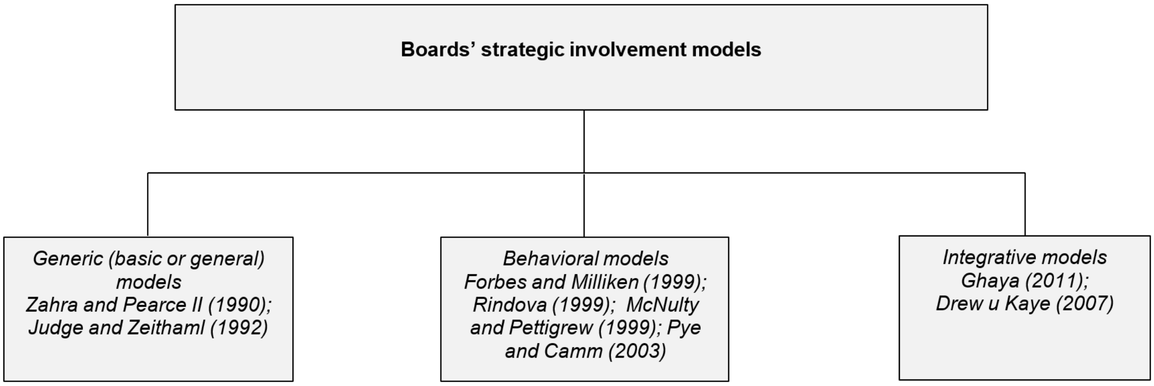

Figure 1 Classification of boards' strategic involvement models
Source: the authors' construction

The main differences between the two models refer to how authors identify the determinants of boards' strategic involvement, more specifically which boards' characteristics are analysed as determinants of boards' strategic involvement, the role of the organizational performances in the model and the methods used for testing the hypothesis. Namely, to develop the model Judge and Zeithaml (1992) use the institution and strategic choice perspective, while Zahra and Pearce II (1990) do not elaborate any theoretical approach as a foundation for the model they constructed. Furthermore, the model developed by Judge and Zeithaml (1992) includes determinants, as well as outcomes of/from boards' strategic involvement. Zahra and Pearce II (1990), in contrast, focus only on the determinants. Moreover, in the analysis of the determinants, Judge and Zeithaml (1992) use only the formal characteristics of board composition (boards size and insider representation), together with organizational age and level of diversification, while Zahra and Pearce II (1990) include several boards characteristics: representation of outsider directors, directors' experience, efficiency on internal board operations, board independence and criticality of board contribution which refers to the argument that if boards' role is perceived as more valuable, more discretion will possess (Zahra & Pearce II, 1990, p. 167). Additionally, these two models differ significantly in their understanding of the position of organizational performances in the model. Namely, according to Zahra and Pearce (1990), the organization performance gap should be investigated as predictor of boards' strategic involvement, since "…boards are likely to become more involved in the strategic process at times of major corporate crises" (Zahra & Pearce II, 1990, p. 167). On the other hand, in the Judge and Zeithaml model, organizational performance is analysed as an outcome. Regarding definition, Zahra and Pearce II (1990) explain that boards' strategic involvement covers the attention boards give to strategy, while alternatively Judge and Zeithaml (1992) understand the concept as boards' contribution in strategy formulation and evaluation. Finally, Zahra and Pearce II (1990) use a questionnaire as method for data gathering and testing the hypothesis, while Judge and Zeithaml (1992), use telephone interviews with directors.

The second group of models, the behavioural models, includes the frameworks that recognize structural characteristics of boards' composition and environmental pressures as determinants of boards' strategic involvement, but also include predictors related to boards' dynamics. Most of the models placed in this group were developed at the end of the second and the beginning of the third period, since this group includes the models constructed by McNulty and Pettigrew (1999), Forbes and Milliken (1999), Rindova (1999), and Pye and Camm (2003).

McNulty and Pettigrew (1999) conducted research on boards' involvement in capital investment decision process. The most significant contribution of this model is the identification of the levels of boards' strategic involvement. Furthermore, McNulty and Pettigrew (1999) argue that the influences that determine boards' strategic involvement can be classified in two categories: contextual (increased attention to boards' duties, crisis in business performance and directors' contracts) and processual influences (boards' agenda and meetings, informal interim dialog).

Forbes and Milliken (1999) introduce the cognitive perspective in the research of boards' strategic involvement and try to understand the determinants of boards' task performance, which include boards' characteristics (boards' demographic characteristics), boards' cognitive conflicts and boards' characteristics as a group. Forbes and Milliken (1999) argue that the influence of boards' characteristics is indirect, through their impact on the boards' processes, and recognize the relation of the tasks within the boards' roles and the impact of boards' cohesiveness on its' ability to perform the tasks. Moreover, these authors imply that boards' task performance has an impact on overall organizational performance.

Rindova (1999) published her contribution in the same year as the previous authors and according to this model, the determinants of boards' strategic involvement include: boards' size, boards' composition, boards' relationships, decision complexity and uncertainty and directors' expertise. Rindova (1999) understands boards' strategic involvement as directors' engagement and proposes that directors' strategic participation is related to better decision quality. Rindova (1999) does not claim that director's strategic involvement is related to organizational performance.

Pye and Camm (2003) developed a model that has three key elements: environmental and contextual factors that influence non-executive directors' roles and boards' roles, conceptualizations of boards' roles and conceptualization of non-executive directors' roles. The contextual and environmental factors that influence the non-executive directors' roles and boards' roles include: the extent of regulation within the industry, the presence of influential stakeholders outside the organization, commercial requirements of the organization to develop new core competencies or to enter new markets, the potential for mergers and acquisitions activity, and perceived level of risk to the organization. Pye and Camm (2003) explain the role and contribution of boards throughout the *learning board model* that they have constructed. More specifically, Pye and Camm (2003) imply that board members have two potentially conflicting agendas - performing and conforming. In the interception of these two dimensions of performance and conformance, the authors have identified four different aspects of boards' contribution. Namely, when boards are concerned with short-term performance and external conformance, they focus closely on accountability. When boards are focusing on short-term performance and internal conformance their main role is management supervision. In situations where boards' members focus on long-term performance and external conformance, they give contribution by policy formulation. And when boards focus on long-term performance and internal conformance boards' members engage in strategic thinking. Besides, Pye and Camm (2003) suggest that the key aspects of non-executive directors' role are: contribution to strategy formulation, ensuring the company has the right CEO, ensuring that business development strategies are in place, ensuring the board is focused on maximizing long-term shareholder value, ensuring that risk management strategies are in place, and ensuring that the management team is competent.

The models included in this category are attempting to explain boards' strategic involvement by simplifying their processes and boards' behaviour *as a group*, and by simultaneously emphasizing the uncertainty of the environment in which they operate. As Ginsberg (1994) explains, the strategy development process includes convergence of the available sociocognitive resource (human and organizational). For the human resources, the most important are the practical problem-solving and verbal abilities and their social competencies, while in terms of the organizational resource, the ability to implement mapping and modelling techniques and to design proper structures and incentive systems are perceived as crucial (Ginsberg, 1994). Therefore, the boards' ability for meaningful participation in strategy is largely dependent on the sociocognitive characteristics of the individual boards' members, and of the board as a group. The behavioural models of boards' strategic involvement are important, since they investigate how boards approach the grand tree problem of decision-making (identified by Levinthal & March, 1993): *ignorance, ambiguity, and conflict*. The key features of the behavioural models of boards' strategic involvement are presented in Table 2.

Table 2 Comparison of behavioural models of boards' strategic involvement

	Models' elements	Definition of boards' involvement in strategic decision-making	Expected outcomes
McNulty and Pettigrew (1999)	1. Factors influencing boards' strategic involvement 2. Boards' strategic involvement levels 3. Description of boards' behavior on each level of involvement	Defined through the levels of participation	Do not investigate the outcomes of boards' strategic involvement. Rather, they are more focused on the definition of the concept and on the determinants.
Forbes and Milliken (1999)	1. Determinants of boards strategic involvement 2. Board-level results 3. Firm-level results	Performing tasks for fulfilling boards' strategic role	Impact on boards' effectiveness and on organizational performances
Rindova (1999)	1. Determinants: boards' size, boards' composition, boards' relationships, decision complexity and uncertainty, directors' expertise 2. Determining directors' contribution in strategy 3. Directors' contribution outcomes	Directors' participation in strategy formulation, or in scanning, interpretation of the available information and choosing the most suitable alternative.	Improving decision quality
Pye and Camm (2003)	1. Factors influencing boards' strategic involvement; 2. Boards' contribution and roles; 3. NEDs' roles and contribution	Contribution to the strategy formulation process for achieving the desired level of performance in a given organizational environment.	Expected impact on organizational performances.

Source: the authors' construction

The third group of models is the group of integrative models. In this group, we have included the models of Drew and Kaye (2007) and Ghaya (2011). These models have been developed at the end of the third and in the fourth period of research in this area. Ghaya (2011) has developed an integrative model as an end result of an extensive literature review. On the other hand, the model developed by Drew and Kaye (2007) is an output of their research and broad experience. The implications of the model developed by Ghaya (2011) are more theoretical, while the model of Drew and Kaye (2007), besides the theoretical contribution, also has significant practical value.

Ghaya (2011) defines boards' strategic involvement as job (work) involvement. Ghaya's (2011) model includes the internal factors and environment characteristics as determinants of boards' strategic involvement. This conceptual framework also, classifies the results of the boards' strategic involvement in two groups: *corporate performances* (measured by both quantitative and qualitative indicators) and results related to *quality of strategic decisions*.

On the other side, the model developed by Drew and Kaye (2007) includes: *clear identification of responsibilities in the strategic process, analysis of the agenda setting process and suitable attention management*, by using the Strategic scorecard. Drew and Kaye (2007) argue that the responsibilities of the boards include: monitoring of implementation, strategic review and learning. For achieving a higher level of directors' accountability, Drew and Kaye (2007) propose implementing the Strategic scorecard. The Strategic scorecard has four quadrants. The first quadrant refers to the boards' attention on the strategy development, i.e. the boards' involvement in developing companies' vision, mission, goals, strategies and the identification of the critical success factors. The second quadrant focuses on boards' involvement in generating strategic alternatives for scope changes and offering directions for growth (Drew & Kaye, 2007). The third quadrant refers to boards' involvement in strategic implementation (developing plans, programs and selecting projects). Finally, the fourth quadrant focuses on boards' involvement in managing strategic risks (properly assessing risks and creating contingency/recovery plans). The use of the Strategic Scorecard enables examination of the key aspects in strategic management, creates a better climate for communication and learning by board members and is suitable for customization (Drew & Kaye, 2007).

The two integrative models differ by their goal in analysing the concept, the attention on the definition of the concept and the elements included. Ghaya (2011), to create the model, conducts an in-depth analysis of the theoretical debate and focuses on offering an exhaustive definition of the concept. On the other side, Drew and Kaye (2007) focus more on explaining the advantages and the use of the Balance scorecard and on explaining the key features of the Strategic scorecard. Their goal is designing a tool than can enhance boards' strategic involvement and make directors more accountable in performing their strategic tasks. The integrative models' characteristics are presented in Table 3.

Table 3 Comparison of integrative models of boards' strategic involvement

	Models' elements	Definition of boards' involvement in strategic decision-making	Expected outcomes
Drew and Kaye (2007)	1. Clear identification of responsibilities in the process; 2. Analysis of the agenda setting issues and suitable attention management; 3. Using a framework for managing boards' strategic involvement (Strategic scorecard)	Defining responsibilities within strategy process and its contribution for strategic positioning, developing strategic options, strategy implementation and analyzing strategic risks.	Expected impact on boards' effectiveness and organizational performances.
Ghaya (2011)	1. Antecedents of boards' involvement in strategic decision-making; 2. Key activities for boards' strategic involvement; 4. Effects of boards' strategic involvement.	Boards' job involvement	Expected effects of boards' strategic involvement for organizational performances (measured by using qualitative and quantitative measures) and for decisions' quality.

Source: the authors' construction

2.2. Current topics

The analysis of the forty-eight articles published in the period 2019-2023, selected as described in the section Methodology, resulted in identification of two broad topics, that were combined in some articles, and which have several sub-topics. In general, each article was classified in one of the broad topics (or so called first-level subtopics) we have identified. The first board topic is "strategic involvement" and the second one is "strategic performance". For the purposes of this literature review, we define the general boards' strategic involvement as a topic that includes all the studies related to analysis of boards' participation and influence (through several practices, processes and mechanisms) on the overall strategic process (strategy formulation, implementation and strategic control), as well as in planning and implementing strategic change (the components of the definition of boards' strategic involvement, as proposed by different authors are presented in Figure 2). The second topic, "strategic performance" includes all the studies that investigate the relation of boards' characteristics, activities and/or tasks, with firm-level strategic and/or financial performance, or boards' impact on strategic organizational performance. The second topic is more recently developed, most of all as a result of the identified gap within the existing literature on the mechanisms that connect boards strategic thinking and acting with achieving higher organizational performances. The analysis of the strategic performance on boards, *per se*, is not sufficient. Furthermore, the topics or issues in which boards take active participation in the past few decades have dramatically changed because of the changes in the organizational priorities (sustainability become a top priority), which lead to adjustment in this research area, and the development of this first-level subtopic.

Out of the 48 articles we have analysed, 37 are categorized in the first main topic – strategic involvement, while 11 area categorized in the second main topic – strategic performance. In the first round of analysis, 4 articles were classified in the both first-level subtopics, and after iterated analysis those articles were classified in one of the identified first-level subtopics.

Within the two (2) board topics (or first-level subtopics), we have identified several subtopics (or second-level subtopics). The first broad topic "strategic involvement" includes three subtopics: strategic human resource management (n=19), board processes (n=11), and sustainability (n=7). The second main topic, so-called "strategic performance", includes articles that are categorized in the following three (3) subtopics: sustainable performance, which includes articles investigating the influence of board characteristics and activities on long-term financial, social, and environmental performance (n=7); financial performance that includes articles investigating the impact of boards characteristics and activities only on the organizations' financial performance (n=3) and other performance. In the last subtopic we have classified one article that investigates other type of strategic organizational performance (the organizations' advocacy performance). The identified first level and second level sub-topics are presented in Figure 3.

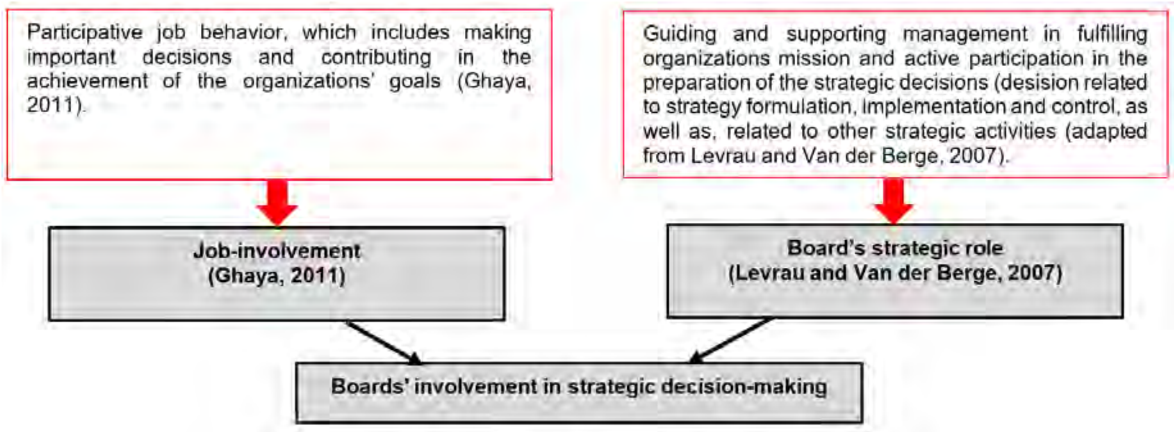

Figure 2 Components of boards' strategic involvement
Source: the authors' construction

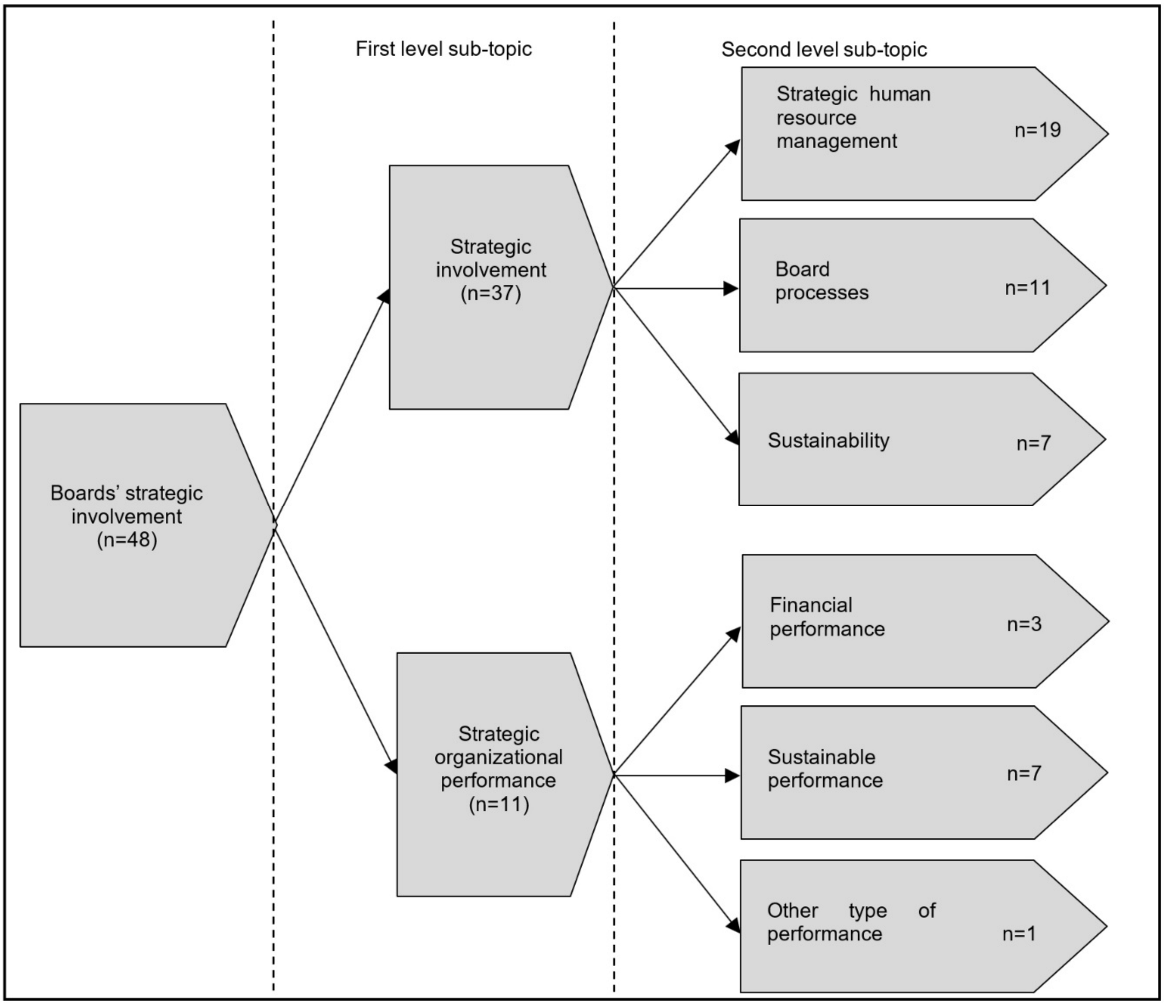

Figure 3 Boards' strategic involvement – topics and subtopics identified in semi-structured literature review
Source: the authors' construction

The most significant subtopic in the strategic involvement main topic is the topic ***strategic human resource management***. In this subtopic we have included the articles that investigate the issues related to *recruiting and selecting board members* (the succession of board members and CEOs, n=7), *the importance of boards human capital* (n=4) and *strategic leadership within the board* and of the board as a group (n=6). Separately, we are also going to discuss the findings related to boards' involvement in issues related to workplace safety (Lornudd et al., 2021) and DEI (Morgan et al., 2021).

The recruiting and selection processes are one of the most investigated subtopics in boards' involvement in strategic human resource management. Namely, some authors are interested in the determinants of boards' gender diversity (Mikkonen et al., 2021; Blommaert & Van der Brink, 2020; and Mensi-Klarbach & Seierstad, 2020), while others are interested whether the negative performance feedback influences board diversity in terms of their expertise (Jung et al., 2023). Jung et al. (2023) present evidence that the negative performance feedback leads to increased board expertise diversity, regardless of the other demographic characteristic of the boards' member candidates. Zenou et al. (2020) contribute by emphasising the importance of the boards' recruitment process and argue that this process represents a specific strategic answer that should be implemented properly in order to provide the expected outcomes. Additionally, Zenou et al. (2020) suggest that board diversity does not include only the board members' demographic characteristics and argument that board members' education, expertise and networks are critical for implementing innovation. Therefore, these authors focus on the human capital requirements as a criterion for selecting new board members. The other two articles within this subgroup investigate the CEO succession process from strategic change perspective (Zhu et al., 2020) and from the resource availability perspective (Campopiano et al., 2020). Zhu et al. (2020) present evidence that insider CEOs prioritize strategic change in situation in which they have prior board experience in other companies. Therefore, this study has significant theoretical and practical implications, since it attempts to identify how CEOs' strategic priorities are shaped. On the other hand, Campopiano et al. (2020) argued that CEO human capital represents a significant organizational resource, even in a family company, and that its importance may diminish the influence of the intentions for appointing a family member as CEO. However, this conclusion largely depends on the role of competitive strategic resources and the extent of family involvement in the management.

The other subtopic, called human capital, includes the articles that research the influence of boards' members human capital on the organization strategy formulation (Aber & Torchia, 2019; Fernandez & Sundaramurthy, 2020; Calabrò et al., 2021) and the overall strategic process (Klarner et al., 2021). Aber and Torchia (2019) investigate the relation between boards' managerial human capital (using the perspectives of the upper echelon and dynamic managerial capabilities) and boards' involvement in strategic change. Their results have showed that boards' managerial human capital have positive impact on the boards' capabilities and through them on the preparation of decisions that lead to strategic change. Fernandez and Sundaramurthy (2020) have argued that in formulation of international merger and acquisition strategy, the boards' international experience and expertise can be used only when the CEO has his/her own international experience. Calabrò et al. (2021) have investigated the association between boards' family members' human capital and innovation strategy. Klarner et al. (2021) have introduced the capabilities-based view of boards' actions and imply that boards' members capabilities are crucial for executing the activities that are integrated in the boards' strategic role. In the capabilities-based view of boards' actions, the knowledge, skills, abilities, and other characteristics (KSAO) of board members are crucial for fulfilling boards' roles. In their conceptual framework, Klarner et al. (2021) distinguish 3 types of KSAOs: task-specific, team-generic and firm-specific KSAOs. By introducing this approach Klarner et al. (2021) imply that boards' work is an organizational issue that should be addressed by using the same approaches that are used for researching other phenomena within organizations.

Closely related to the *human capital* research issues are those related to *strategic leadership*. Namely, within this group we have included the articles that are investigating which managerial or leadership capabilities should be demonstrated by the board members (especially board chair) for achieving a higher level of boards' strategic involvement (Castellanos & George, 2020; Luciano et al., 2020; Nahum & Carnelli, 2019; Morais et al., 2020; Kanadli et al., 2020; Sidhu et al., 2021). Castellanos and George (2020) distinguish the terms strategic leadership and strategic management and suggest that CEOs are more occupied in the activities related to strategic management, while the whole board (as a team) should be engaged in practicing strategic leadership. Luciano et al. (2020), on the other hand, analyse the board and top management team as a strategic-oriented multiteam system or a *strategic leadership system* and theorize that fulfilling the boards' strategic role implies that boards are working as part of this kind of systems. Furthermore, Luciano et al. (2020) stress that boards' effectiveness in fulfilling this task depends on boards' capacity to work independently and interdependently with the top management team on strategic management. On the other side, Nahum and Carnelli (2019) attempt to investigate the reasons for differences in directors' individual participation in the strategic process. The findings presented by Nahum and Carnelli (2019) suggest that boards' leadership style (their sources and influence on board dynamics) is a key predictor of directors' individual contribution in strategy. One of the main conclusions in the Nahum and Carnelli (2019) study is that directors increase their lever of strategic decision-making involvement when board chairs' influence is based on expertise and referent power and when he displays a professional, non-ego driven and open-minded behaviour. Morais et al. (2019) investigating the consequences of discontinuous change as a predictor of the type of leadership demonstrated by the board chair. Namely, Morais et al. (2019) concluded that when the organization is faced with relational internal problems because of disruptive change, the board chair is more likely to demonstrate relational leadership, while when faced with relational external problems the chairman and CEO are both more prone to demonstrating disruptive leadership.

On the other side, if the problems are less complex (performance changes or new products/market are identified) the adoption of transformational and entrepreneurial leadership style is more likely (Morais et al., 2019). Kanadli et al. (2020) argue that directors’ job-diversity can increase board strategic involvement only when the chairperson is capable of exercising leadership behaviour. To be specific, when the chairpersons are capable of displaying their talents during board meetings, when they achieve higher levels of leadership efficacy and when they have previous experience as a CEO, it is more likely that the board is going to increase its participation in the strategic process. Findings of Sidhu et al. (2021) indicate that the leadership demonstrated by a female chairperson has the ability to reverse the negative impact that greater board gender diversity has on introducing novel strategies. Finally, Calabrò et al. (2021) suggest that family members in family-owned companies’ boards display specific type of strategic leadership that is focused on greater valorisation of the human capital and therefore creates an environment that stimulates innovation.

In this second-level subgroup, we also include articles that discuss the boards’ strategic involvement in DEI initiatives (Morgan et al., 2021) and issues related to human resource workplace safety (Lornudd et al., 2021). Morgan et al. (2021) argue that boards have to understand the interests of several groups of shareholders and that they have the capability and authority to work on designing DEI related policies and procedures. Meanwhile, Lornudd et al. (2021) argue that the boardroom represents a “social arena”, and that board members have significant impact on CEOs’ priorities and that are able to impose the strategic and healthy issues as a strategic imperative. These authors introduce the term “strategic health and safety” and suggest that organizational health and safety issues should represent a top-level board priority. Lornudd et al. (2021) support this thesis with the argument that health and safety issues affect employee’s well-being and in turn their productivity and that are important for building the employer brand.

Board processes also represent one of the second-level subtopics, which includes the articles investigating boards’ dynamics, roles, and tasks, as well as board processes and practices, and boards overall effectiveness. Regarding boards’ strategic involvement, Bezemer et al. (2023) have identified key component/elements that this concept comprises: boards’ strategic-decision making, other boards decisions and activities tightly related to strategic decision-making (such as: executive compensation, CSR disclosure, joint venture activities, CEO strategic behaviour, etc.) which constitute boards’ strategic role, determinants of boards’ strategic involvement, and boards’ strategic performance (or effectiveness in executing the strategic role). The findings of Benzemer et al. (2023) indicate that in the period between 2008 and 2020 most of the scholars have focused on analysing boards’ strategic performance (boards’ effectiveness in executing the strategic role). However, focusing only on boards’ roles and processes and their effectiveness is not sufficient if it cannot be aligned with the overall organizational performances. Slomka-Golebiovska et al. (2023) argue that the increased presence of women in Italian boards has an effect on the way the strategic tasks are executed. One of the conclusions in this study is that women are more critical when accessing organizational performance, and more willing to articulate their views during meetings since they are less likely to be developed in environments in which the CEO and other board members have been building their career path. Beshlawy and Ardroumli (2021) are researching boards’ decision-making process and turbulent times. *Boards’ decision-making process is just one of the processes that boards’ strategic involvement includes*. However, although episodic in nature (Klarner et al., 2021), it is essential in strategy formulation and taking corrective action when necessary. The findings of Beshlawy and Ardroumli (2021) indicate that boards’ strategic decision-making processes has significantly changed after the 2008, and that boards’ practices related to making strategic choices have evolved. Namely, board members have become more aware of the importance of this process and more conscious in analysis of the available alternatives. Furthermore, they find it necessary to distinguish their responsibilities and managements’ responsibilities in this process (Beshlawy and Ardroumli, 2021). Squires and Elnahla (2020) depict boards’ roles from the agency and stakeholder theory aspects. The integration of these two perspectives in explaining boards’ roles is one of the most significant contributions of this study. The concept proposed by Squires and Elnahla (2020) incorporates all tasks related to strategy in the so-called service role. Hamidi and Machold (2020) investigate boards’ task related to value co-creation and introduce the concept of so-called service-dominated logic. In the service-dominated logic as a concept, Hamidi and Machold (2020) highlight the importance of service, collaboration and systems thinking in the value creation process (which in broader context refers to the strategic process). Similarly, with the previous authors point to the primacy of the servant role over the strategic board role. However, the findings in our research, and especially the models designed to deepen the understanding of the concept of boards' strategic involvement, firmly argument the need for separate analysis of the board's strategic role. Looking for the answer to the question "what boards do/should do", Boivie et al. (2021, p. 1), have found that "directors view themselves as strategic partners with their firms' executives". Boivie et al. (2021) make theoretical contribution by using qualitative research methods and argument that board members' main duty is to be a strategic partner in the value creation process. The term *strategic partner* assumes that board members are constantly focused on the organizations' strategies, the changes in the external and internal environment, and their contribution to the value creation process (Boivie et al., 2020), which makes this the most important boards' function. Watson and Ireland (2020), on the other hand, investigate which processes and practices are included in the boards' "strategizing" task. According, to Watson and Ireland (2020) the term *'strategizing'* or setting strategic direction includes all the processes related to strategic planning, and discussions generated on board meetings and in informal settings related to making the appropriate strategies choices, understanding ambiguities and managing them towards favourable outcomes. Therefore, boards' strategizing represents a group work and requires mobilization of all the resources available to directors. Goldstein (2022) also introduces an interesting perspective by analysing the strategic mapping process and boards' and managements' role in it. Goldstein's (2022) contribution in this research area is in the confirmation that board members and top management teams are included in the process of setting the organizations' strategic direction and creating the tools for implementation (or creating the strategic map). The use of these tools enables the companies' strategists to align the interest of different groups of stakeholders, to communicate the strategy within the organization properly and to measure the achievements. Consequently, we can conclude that the boards' strategizing task also includes the activities related to developing the strategic map, following strategy execution, and discussing the organizational performances. The involvement of both teams included in the so-called strategic leadership system in the process of 'depicting the strategy' is expected to have positive impact on fulfilling the task related to strategy executions, as well as monitoring. Findings of Hermanson et al. (2020) indicate that if the tensions in the management-directors relation are higher, then boards require more formal approach to strategic planning, although this leads to creation of certain paradoxes in boards' functioning. Finally, Hermanson et al. (2020), conclude that the organizations' size and board members' experience are key factors for determining which approach to strategic planning is going to be acceptable for the board. Klarner et al. (2020) analyse boards' involvement only in a particular strategic aspect – innovation. These authors' contribution is in the analysis of the nature of directors' involvement in innovation and the synthesis of its key dimensions: direction, timing, and formality. Klarner et al. (2020) have identified two types of boards' strategic involvement: differentiated and structured board involvement. They describe the differentiated board involvement as involvement that occurs in spontaneous interaction, in different timing and enables sharing different types of information and knowledge, while the structured board involvement is one characterized by higher formality, which implies sharing certain type of expertise/knowledge in fixed and pre-planned meetings. Minciullo and Pedrini (2019) research the predictors and consequences of boards' strategic involvement on a sample of non-profit organizations. Their findings indicate that the higher level of bureaucratic control from the founding organization leads to increased levels of directors' involvement in all boards' tasks and that the main consequence of the increased boards involvement is higher organizational effectiveness.

Regarding the next second-level subtopic, sustainability, it can be noted that this concept has emerged in the end of the 80-ties and in the past five years its popularity has increased, due to the challenges modern societies face. Contemplating on corporate sustainability research, Bergman et al. (2017) have constructed a typology that enables deeper understanding of all the layers that the concept embodies. Namely, Bergman et al. (2017) distinguish between three types of corporate sustainability and nine subtypes: 1. corporate sustainability in relation with corporate responsibility; 2. mono-focal corporate sustainability; 3. inclusive approaches to corporate sustainability. For our research purposes, we argue that the mono-focal corporate sustainability, which analyses this concept as a strategy, is the most relevant subtype. This type of corporate sustainability highlights the activities related to defining sustainability priorities, its implementation and communication, and the importance of the directors' capability for implementing the strategies that would make the organization sustainable (Bergman et al., 2017). However, some authors investigate corporate sustainability in relation to the concept of corporate social responsibility. Most of the articles classified within this topic address the social and environmental aspects (Gaio & Concalves, 2022; Yarram and Adapa, 2021; Peng et al., 2021; and Issa and Bensalm, 2022), while Kanadli et al. (2022), Amorelli and Garcia-Sanchez (2020) and Amorelli and Garcia-Sanchez (2023) investigate all three aspects of sustainability as a strategy or strategic activities upon which boards can act. Gaio and Cancelves (2022) investigate the relation between board gender diversity and the adoption of the corporate social responsibility concept, and their findings indicate that the larger proportion of women in the board is related to the adoption of the CRS practices that lead to the creation of more sustainable companies. Yarram and Adapa (2021) argue that the mere presence of one woman in a board is not sufficient for influencing the company's strategy, and in particular for influencing the adoption of the CSR practices. Their findings support the existence of the effect of tokenism and argue that women are exposed to the performance pressure. Therefore, the adoption of the CSR practices is related to board gender diversity, but one female director cannot have the influence that several women would have. Peng et al. (2021) are interested in investigating the determinants of corporate social responsibility practices in multinational companies. The results presented by Peng et al. (2021) indicate that boards' gender diversity is positively related to environmental and social disclosure, and that tenure diversity is positively related to social disclosures of the multinational companies. Issa and Bensalem (2022) suggest that boards' gender diversity has an impact on eco-innovation, and that this impact is indirect, through the adoption of the CRS strategy. On the other hand, Kanadli et al. (2022) have conducted a literature review in which they conclude that women directors are more sensitive to the issues related to all three aspects of sustainability (economic, social and environmental) and that their ability to influence board agenda depend on boards' openness and its structural leadership (board chair). Furthermore, Amorelli and Garcia-Sanchez (2023) concluded that companies with higher representation of women in their boards are more likely to adopt sustainable practices and that women can give significant insight in the debates related to sustainability as a strategy. In general, it can be noted that most of the studies categorized under this second-level subtopic are focused on investigating the factors that lead to greater boards' involvement in strategic decisions regarding sustainability, and especially in investigating the effects of the boards' gender diversity. The findings of Amorelli and Garcia-Sanchez (2020) indicate that organizations are more prone to implement strategies improving CRS disclosure if female presence on the board is stronger.

Strategic performance is the second main topic (or first-level subtopic) within this research area that has been gaining significant popularity in the past 5 years. Although the number of articles classified in strategic performance subtopic is smaller (n=9) it gives significant insights regarding the development of the future research agenda. According to our understanding, and for the purposes of this study, we define sustainable performance as a system of measures of the organizations' financial results, and the measures of the effect of corporate social responsibility activities and strategies on organizations' reputation and finally, financial performance. Therefore, we can conclude that these articles investigate the concept of sustainability from the triple bottom line (TBL) perspective (also described by Bergman et al. 2017 as one of the nine subtypes of sustainability), and analyse how boards' characteristics and processes influence corporate sustainability performance. In a study of UK listed companies in the period between 2009 and 2016, Orazalin (2019) found that the existence of sustainability committees within the boards' structure can increase the effectiveness of companies' sustainability strategy, and consequently has a positive impact on organizations' sustainable performance. On the other hand, Orazalin and Baydauletov (2020) examine the impact of corporate social responsibility strategy on organizations' social and environmental performance, and include board gender diversity as a moderator of this relation. Orazalin and Baydauletov (2020) concluded that corporate social responsibility strategy and board gender diversity are positively related to corporate social and environmental performance, and that the positive relation between CSR strategy and environmental performance is negatively moderated by board gender diversity. Similarly, Moussa et al. (2019) have found evidence that suggest that boards have direct and indirect impact on organizations environmental performance (or carbon performance in particular) and that in this relation the mediating role of the carbon strategy is crucial. Naciti (2019), on the other hand, investigated the influence of board diversity, independence and CEO duality on organizations' sustainability performance and concluded that higher level of boards' diversity and the separation of CEO and board chair role are positively related to the sustainability performance components, while greater board independence is negatively related to sustainability performance. Chams and Garcia-Blandon (2019) study the effect of several board structural characteristics on organizations' overall sustainable performance. Their findings indicate that board size, number of board committees and board gender diversity are positively related with organizations' sustainable performance and that the relation between board age and organizations sustainable performance is curvilinear. Martinez-Jimenez et al. (2019) have investigated how boards gender diversity and board effectives influence business performance (in which they include indicators regarding beneficial consequences, perceived quality, competitive advantage, survival of the company) and have concluded that there is a positive and statistically significant relation between board effectiveness and business performance, although they could not identify positive and statistically significant relation between board gender diversity and board effectiveness or business performance. Bannò et al. (2021) suggest that board gender diversity impact organizations sustainable activities (including sustainable disclosure) and through them the organizations sustainable performance, which in turn determines firm performance and value. Their research indicates that the relation between boards' gender diversity and organizations' overall sustainability is mediated by several variables.

The second group of articles examines the relation of boards' characteristics and strategies with organizations' financial performance. Carmo et al. (2022) found that the positive effect of female directors on companies' financial performance is evident only when a critical mass of women is reached. Baghdadi et al. (2020) concluded that there is a positive and statistically significant association between board composition (independence and impartiality) and corporate default risk. Bayo-Moriones et al. (2020) have studied the effect of completive strategy on the performance system (for assessing performance on individual level, e.g. the performance of the employees) and their join influence on the organizational performance. Bayo-Moriones et al. (2020) findings indicate that the proper alignment of corporate strategy with the performance appraisal system has positive and statistically significant relation with several measures of financial performance (such as, ROE and sales per employee). Therefore, designing proper performance appraisal system for the adopted completive strategy can lead to improved organizational performance.

And the *last paper* that is included in this topic – strategic performance is the one that analysis the determinants of the organizations' advocacy performance (which represents their ability to influence citizens; opinions, media agendas, political parties' and politicians' agendas, parliamentary decisions and governmental decisions). The study that address this issue was developed by Vehka and Vesa (2023) on a sample of 507 board member in 140 associations (or interest organizations). Vehka and Vesa (2023) have found that there is a positive relation between board meetings, board members' (or managements') political experience and most importantly boards performance in strategic task with the organizations advocacy performance.

Most of the findings in the paper within this first-level subtopic (strategic performance) indicate that board impact on organizations performance largely depends on their ability for effective execution of their strategic task and for formulating strategies (completive strategies, CRS strategies, or carbon strategies) that highlight the importance of certain type of performance (Orazalin, 2019; Orazalin & Baydauletov, 2020; Moussa et al., 2019; Bayo-Moriones et al., 2020; Vehka and Vesa, 2023).

2.3. Future research agenda

Although the boards' strategic involvement has been analysed in numerous papers with the application of different approaches, some aspects seem to remain not sufficiently researched. For example, it is evident that there is a lack of models on boards' strategic involvement in two-tier boards system. Also, some of the models are designed to answer the question how boards fulfil their strategic role (Zahra & Pearce II, 1990; Judge and Zheithaml, 1992, Forbes and Milliken, 1999), while others focus on the question how directors fulfil their strategic role (McNulty & Pettigrew, 1999; Rindova, 1999). Those models that incorporate both levels of involvement (the strategic involvement of boards as a group and of directors as individuals, such as the works of Pye and Camm, 2003; Drew and Kaye, 2007; Ghaya, 2011) are mostly conceptual and prescriptive, and on individual level cover only strategic involvement of non-executive directors (Pye and Camm, 2003) or strategic involvement of executive directors (Drew and Kaye, 2007). Some of the relations/conclusions in the conceptual models should be further empirically tested. Additionally, none of the models that focus on directors' strategic involvement as individual, incorporates the theoretical propositions of the literature related to employee engagement, directly.

Therefore, our recommendation regarding future research on models of boards' strategic involvement should focus on generating models that incorporate the theoretical propositions of the theories on employee engagement, where the term involvement is clearly defined, and models that incorporate both levels of the concept of boards' strategic involvement (the strategic involvement of boards as groups and of directors as individuals). Furthermore, future research should focus on generating models that explain how both boards (the management and the supervisory board) fulfil their strategic role in the two-tier board system.

Additionally, by synthetizing the most researched subtopics within the main topic - boards' strategic involvement, we suggest that further studies on this topic should focus on answering the following questions:

I. In relation to the *strategic human resource management sub-topic*: 1. How do boards select new directors? 2. Which criteria are used for selecting new directors? 3. How do boards prepare the organization for CEO change? 4. How do boards manage the situation in case of CEO turnover? 5. How can all board members demonstrate strategic leadership and when is it expected?

II. In relation to *board processes* sub-topic: 1. Does directors' impact on strategy differ in accordance with their participation in the ownership structure? 2. How do boards in organizations with two-tier board system collaborate in fulfilling the strategic role? 3. What can boards do to create a context that support and enhance the strategic involvement of all their members? 4. Can the increased level of formalization of several strategy related processes lead to greater board strategic involvement?

III. In relation to *sustainability*: 1. How do board members understand sustainability, as a strategy or as a concept related to CSR? 2. Does the adoption of sustainability as a strategy by the board lead to achieving sustainable organizational performance?

IV. In relation to *strategic organizational performance* (as a first level sub-topic): 1. How do boards' members define sustainable organizational performance? 2. How and when should boards initiate the discussion regarding achieving a level of performance (financial, social, and environmental) that is sustainable in the long run? 3. When are boards in the position to influence strategic choices in order to ensure the achievement of sustainable organizational performance?

Discussion

In order to achieve the paper's purposes, we conducted an integrative literature review and a semi-systematic literature review, whose insights are reported in the section Key findings. The main outputs of the integrative literature review are the identification of the core models that shape the foundations in this research area and the proposition of their classification. The core models on boards' strategic involvement are: the model of Zahra and Pearce II (1990), the model of Judge and Zeithaml (1992), the model of McNulty and Pettigrew (1999), the model of Forbes and Milliken (1999), the Rindovas' model (1999), the model developed by Pye and Camm (2003), the model developed by Drew and Kaye (2007) and the Ghayas' model (2011). The models were classified in the following three groups: generic (basic or general) models, behavioural models, and integrative models. In the group of generic (basic) models we included the models developed at the beginning of the second period of the evolution of thought, in which scientific approaches were used for addressing these issues for the first-time. These models try to generate a comprehensive definition of the concept and investigate the relation of boards' strategic involvement and organizational performance. The second group of models, the behaviour models, were developed at the end of the second period of the evolution of thought in this area, incorporate the cognitive approach in the research of boards' strategic involvement (Rindova, 1999) and broadly investigate boards' processes and dynamics (McNulty & Petigrew, 1999; Forbes and Milliken, 1999; Pye and Camm, 2003). These models also analyse the relation of boards' strategic involvement with decision-quality (Ridova, 1999) and organizational performance (McNulty & Petigrew, 1999; Forbes and Milliken, 1999; Pye and Camm, 2003). The last groups of models are the so-called integrative models that summarise the previous knowledge on boards' strategic involvement and add the stakeholder theory postulates in the theoretical explanation. In this group we have classified the model developed by Drew and Kaye (2007) and Ghaya (2011).

To understand how the research on boards' strategic involvement has evolved over time we conducted a semi-structured literature review and identified the main subtopics in this area in the period between 2019 and 2023. According to the thematic analysis of 48 research papers published in journals indexed in Scopus and SCI in the period between 2019 and 2023, we have identified the following sub-topics: strategic involvement which includes studies on issues related to strategic human resource management, board processes, and sustainability; and strategic organizational performance, which includes research on the relation of boards' strategic involvement with financial performance, the relationship of boards' strategic involvement with sustainable performance and with other types of organizational performance (such as advocacy performance). The main trends within the second level subtopics, especially the finding in the studies related to issues in the area of strategic human resource management and sustainability and sustainable organizational performance are expected to shape the future research agenda in this area.

Conclusion

In conclusion, we can suggest that this paper has achieved the defined aim by answering the three research questions defined in the introduction.

Regarding the question "*Which are the main elements of the concept of boards' strategic involvement?*" we conclude that it includes research on: the understanding of the boards' strategic role, the theories that explain the strategic process or the strategic management as organizational process, the link of the strategic management process with organizational performance and sustainability, boards' process and working style as a group, the understanding about directors' (managerial) cognition and its link to strategic management, and the understanding of the involvement as construct that has been researched through the lens of the employee engagement theories.

Regarding the question related to the *foundation of this topic*, we have identified that the core of the concept consists of eight models that deconstruct different aspects of the concepts' elements. Namely, after defining the boards' strategic role (in their work published in 1989), Zahra and Perce II (1990) analyze the factors that determine boards' strategic involvement. Judge and Zeithmal (1992) focus on the antecedents of boards' strategic involvement, as well as on the impact of boards' strategic involvement on organizational financial performance. McNultty and Pettigrew (1999) focus on the impact of boards' chairman and non-executive directors on the strategic process. Rindova (1999) incorporates the cognitive perspective in the research on this topic and assumes that directors' participation is directly related to decision quality. Pye and Camm (2003) focus on researching the boards' strategic involvement of the board as a group, and of the non-executive directors, and analyze the contextual factors influencing boards' strategic involvement. Relying on the literature on Balanced Scorecard, Drew and Kaye (2007) developed the Strategic Scorecard as a tool for measuring boards' involvement in the strategy making processes. Ghaya (2011) united the findings in the existing literature and created a new integrative model on boards' strategic involvement.

Regarding the *third question*, we can conclude that while at the beginning of the 1990s the models of boards' strategic involvement address the question how boards fulfill their strategic role (Zahra & Pearce II, 1990; Judge & Zeithmal, 1992), at the end of the 1990s, with the proliferation of the so-called behavioral models on boards' strategic involvement, the focus shifted and directors' strategic involvement also gained attention (McNulty & Petigrew, 1999; Rindova, 1999; Pye & Camm, 2003). In the first decade of the 21st century the main interest was directed towards the issues related to board effectiveness, as visible from the Drew and Kaye (2007) model which focuses on developing a tool for measuring how boards perform their strategic role. However, at the beginning of the second decade of the 21st century, the focus is on the research of the impact of boards' strategic involvement on the different types of organizational performance, as proposed by Ghaya (2011). Namely, Ghaya (2011) argues that boards' strategic involvement is related to organizations' strategic decisions (their origin, nature, importance, rapidity, and novelty), and different quantitative indicators (financial performance indicators) and qualitative indicators (achievement of strategic objectives, position of the company in the market, firm survival, product cost control, serenity of the social climate) of corporate performance. At the end of the second decade of the 21st century and the beginning of the third, most of the research on boards' strategic involvement relates to the issues of strategic human resource management (such as the practices for recruiting and selecting board members, CEO succession, the importance of the human capital and what strategic leadership includes etc.) and how boards' strategic involvement can contribute to generating sustainable organizational performance.

As elaborated in the introduction the main motivation for writing this paper was to identify what constitutes the foundation of this concept and how the research on this topic has evolved over time. We may conclude that by assessing the existing literature critically, by classifying fundamental works in this research area and by systemizing the key finding in the recent research we have uncovered most of the elements of the concept, explained some of the existing ambiguities and set the directions for future research.

Although we have fulfilled the paper's aim and answered the key research questions, we should also note that the study has several limitations. Firstly, the study incorporates only articles published in English and most of them written by authors from the USA and Western European countries. Secondly, although we elaborate how the discourse on the topic has changed in the past few decades, we do not propose a new conceptual framework since that was not the purpose of this study and we believe that this should be done in future research. The purpose of this study was to assess the existing literature critically, interpret the understanding of the elements of the concept and identify the ongoing trends in the research on this topic.

References

Åberg, C. & Torchia, M. (2019). Do boards of directors foster strategic change? A dynamic managerial capabilities perspective. *Journal of Management and Governance*, 24, 655-684. https://doi.org/10.1007/s10997-019-09462-4

Amorelli, M. F. & García-Sánchez, I. M. (2020). Trends in the dynamic evolution of board gender diversity and corporate social responsibility. *Corporate Social Responsibility and Environmental Management*, *28*(2), 537-554. https://doi.org/10.1002/csr.2079

Amorelli, M. F. & García-Sánchez, I. M. (2023). Leadership in heels: women on boards and sustainability in times of COVID-19. *Corporate Social Responsibility and Environmental Management*, 30(4), 1987-2010. https://doi.org/10.1002/csr.2469

Baghdadi, G. A., Nguyen, L. H. G. & Podolski, E. J. (2020). Board cooption and default risk, *Journal of Corporate Finance*, *64*, 101703. https://doi.org/10.1016/j.jcorpfin.2020.101703

Bannò, M., Filippi, E. & Trento, S. (2023). Women in top echelon positions and their effects on sustainability: a review, synthesis and future research agenda. *Journal of Management and Governance,* 27, 181–251. https://doi.org/10.1007/s10997-021-09604-7

Bayo-Moriones, A., Galdon-Sanchez, J. E., & Martinez-de-Morentin, S. (2021). Business strategy, performance appraisal and organizational results. *Personnel Review*, *50*(2), 515-534. https://doi.org/10.1108/PR-09-2019-0498

Bergman, M. M., Bergman, Z., & Berger, L. (2017). An empirical exploration, typology, and definition of corporate sustainability. *Sustainability*, *9*(5). 753-766. https://doi.org/10.3390/su9050753

Beshlawy, H. E. & Ardroumli, S. (2021). Board dynamics and decision-making in turbulent times. *Corporate Governance and Organizational Behavior Review*, *5*(1), 57-68. https://doi.org/10.22495/cgobrv5i1p6

Bezemer, P. J., Pugliese, A., Nicholson, G. & Zattoni, A. (2023). Toward a synthesis of the board-strategy relationship: a literature review and future research agenda. *Corporate Governance: an International review*, *31*(1),178-197. https://doi.org/10.1111/corg.12481

Blommaert, L., & Van den Brink, M. (2020). Gender equality in appointments of board members: the role of multiple actors and their dynamics. *European Mangement Review*, *17*(3), 633-647. https://doi.org/10.1111/emre.12381

Boivie, S., Withers, M. C., Graffin, S. D. & Corley, K. G. (2021). Corporate directors' implicit theories of the roles and duties of boards. *Strategic Management Journal*, *42*(9), 1662-1695. https://doi.org/10.1002/smj.3320

Braisby, N. & Gellatly, A. (2005). *Cognitive pshychology*., London, UK: Oxford University Press.

Calabrò, A., Torchia, M., Jimenez, D.G. & Kraus, S. *(2021).* The role of human capital on family firm innovativeness: the strategic leadership role of family board members. *International Entrepreneurship and Management Journal, 17*, 261–287. https://doi.org/10.1007/s11365-020-00657-y

Campopiano, G., Calabrò, A., & Basco, R. (2020). The "Most Wanted": the role of family strategic resources and family involvement in CEO succession intention. *Family Business Review*, *33*(3), 1-26. https://doi.org/10.1177/0894486520927289

Carmo, C.; Alves, S. & Quaresma, B. (2022). Women on boards in Portuguese listed companies: does gender diversity influence financial performance? *Sustainability*, *14*(10), 6186. https://doi.org/10.3390/su14106186

Castellanos, J. D. & George, B. (2020), Boardroom leadership: the board of directors as a source of strategic leadership. *Economic and Business Review*, *6*(20-1),103-119. https://sciendo.com/article/10.18559/ebr.2020.1.5

Chams, N. & García-Blandón, J. (2019). Sustainable or not sustainable? The role of the board of directors. *Journal of Cleaner Production*, 26, 1067-1081. https://doi.org/10.1016/j.jclepro.2019.04.118

Cheffins, B. R. (2015). Corporate governance since the managerial capitalism era. *Business History Review*, *89*(4), 717-744. https://doi.org/10.1017/S0007680515000690

Child, J. (1972). Organizational structure, environment and performance: the role of strategic choice. *Sociology*, *6*(1), 1-22. https://doi.org/10.1177/003803857200600101

Child, J.(1997). Strategic choice in the analysis of action, structure, organizations and environment: retrospect and prospect. *Organization Studies*, *18*(1), 43-76. https://doi.org/10.1177/017084069701800104

Claessens, S., & Yurtoglu, B. (2012). *Corporate Governance and Development — An Update*. Washington: International Finance Corporation.

Davis, J. H., Schoorman, F.D. & Donaldson, L. (1997), Toward a stewardship theory of management, *Academy of Management Review*, *22*(1), 20–47. https://doi.org/10.5465/amr.1997.9707180258

Eisenhardt, K. M. (1989). Agency theory: an assessment and review. *The Academy of Management Review*,*14*(1), 57-74. https://doi.org/10.5465/amr.1989.4279003

Fama, E. F. & Jensen, M. C. (1983), Separation of ownership and control. *Journal of Law and Economics*, *26*(2), 301–325.

Fernandez, W. D. & Sundaramurthy, C. (2020). Boards' relevant experience and international strategy: a recipe for success or a case of too many cooks?. *Global Strategy Journal*, *10*(4), 726-749. https://doi.org/10.1002/gsj.1392

Forbes, D. P., & Milliken, F. J. (1999). Cognition and corporate governance: understanding boards of directors as strategic decision-making groups. *The Academy of Management Review*, *24*(3), 489-505. https://doi.org/10.2307/259138

Freeman, E. J. (1984). Strategic *Management: A Stakeholder Approach*. London, UK: Pitman Publishing Inc.

Gaio, C. & Gonçalves, T. C. (2022). Gender diversity on the board and firms corporate social responsibility. *International Journal of Financial Studies 10*(15), 1-16. https://doi.org/10.3390/ijfs10010015

Ghaya, H. (2011). *Board of directors' involvement in strategic decision making process: definition and literature review.* Working Papers of BETA 2011-22, Bureau d'Economie Théorique et Appliquée, UDS, Strasbourg. Retrieved May 9, 2021 from: https://ideas.repec.org/p/ulp/sbbeta/2011-22.html

Ginsberg, A. (1994). Minding the Competition: From Mapping to Mastery. Strategic Mangement Journal, 15, 153-174. https://doi.org/10.1002/smj.4250150911

Goldstein, J. C. (2022). Strategy maps: the middle management perspective. *Journal of Business Strategy*, 43(1), 3-9. https://doi.org/10.1108/JBS-09-2020-0191

Guerra, S. (2022). *The black box of corporate governance.* New York: Routledge.

Hamidi, D. Y. & Machold, S. (2020). Governance, boards and value co-creation – changing perspectives towards a service dominant logic. *European Management Journal*, *38*(6), 956-966. https://doi.org/10.1016/j.emj.2020.06.001

Hermanson, D. R., Tompkins, J. G., Veliyath, R. & Ye, Z. S. (2020). Strategic planning committees on U.S. public company boards: axiomatic or paradoxical?. *Long Range Planning, 53*(5), 101967. https://doi.org/10.1016/j.lrp.2020.101967

Issa, A. & Bensalem, N. (2022). Are gender-diverse boards eco-innovative? The mediating role of corporate social responsibility strategy. *Corporate Social Responsibility and Environmental Management*, *30*(2), 742-754. https://doi.org/10.1002/csr.2385

Jensen, M. C. & Meckling, W.H. (1976). Theory of the firm: managerial behavour, agency cost and ownership structure. *Journal of Financial Economics*, *3*(4), 305-360.

Judge, W. Q., & Zeithaml, C. P. (1992). Institutional and strategic choice perspectives on board involvement in strategic decision process. *The Academy of Management Journal*, *35*(4), 766-794. https://doi.org/10.2307/256315

Jung, H., Lee, Y. G. & Park, S. H. (2023). Just diverse among themselves: how does negative performance feedback affect boards' expertise vs. ascriptive diversity?. *Organization Science 34*(2), 657-679. https://doi.org/10.1287/orsc.2022.1595

Khan, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, *33*(4), 692-724. https://doi.org/10.5465/256287

Kanadli, S. B., Alawadi, A., Kakabadse, N. & Zhang, P. (2022). Do independent boards pay attention to corporate sustainability? Gender diversity can make a difference. *Corporate Governance*, *22*(7), 1390-1404. https://doi.org/10.1108/CG-09-2021-0352

Kanadlı, S. B., Zhang, P. & Kakabadse, N. K. (2020). How job-related diversity affects boards' strategic tasks performance: the role of chairperson. *Corporate Governance*, *20*(4), 583-599. https://doi.org/10.1108/CG-08-2019-0267

Klarner, P., Probst, G. & Useem, M. (2020). Opening the black box: Unpacking board involvement in innovation. *Strategic Organization*, *18*(4), 487-519. https://doi.org/10.1177/1476127019839321

Klarner, P., Yoshikawa, T. & Hiit, M. (2021). A capability based view of boards: a new conceptual framework for board governance. *Academy of Management Perspectives*, *35*,(1), 123-141. https://doi.org/10.5465/amp.2017.0030

Leblach, R. & Schwarts, M. S. (20070. The black box of board process: gaining access to a difficult subject. *Corporate Governance*, *15*(5), 843-851. https://doi.org/10.1111/j.1467-8683.2007.00617.x

Levinthal, D. A. & March, G. A. (1993). The myopia of learning. *Strategic Management Journal*, Special Issue: Organization, Decision-making and Strategy, *14*, 95-112. https://doi.org/10.1002/smj.4250141009

Levrau, A., & Van den Berghe, L. (2007). *Corporate governance and board effectiveness : beyond formalism*. Vlerick Leuven Gent Working Paper Series 2007/03. Retrieved December 15, 2022 from: https://repository.vlerick.com/bitstream/handle/20.500.12127/2267/Levrau_A_WP_CorporateGovernanceandBoardEffectiveness.pdf?sequence=1&isAllowed=y

Lornudd, C., Frykman, M., Stenfors, T., Ebbevi, D., Hasson, H., Sundberg, C. J. & Von Thiele Schwarz, U. (2021). A champagne tower of influence: an interview study of how corporate boards enact occupational health and safety. *Safty science*, 143, 1-33. https://doi.org/10.1016/j.ssci.2021.105416

Luciano, M. M., Nahrgang, J. D. & Shropshire, C. (2020) Strategic leadership systems: viewing top management teams and boards of directors from a multiteam systems perspective*. Academy of Management Review*, *45*(3), 1-62. https://doi.org/10.5465/amr.2017.0485

Maassen, G. F., (2002), *An International Comparison of Corporate Governance Models, 3ed.* Amsterdam: Spencer Stuart.

Martinez-Jimenez, R., Hernández-Ortiz, M.J. & Cabrera Fernández, A. I.. (2019). Gender diversity influence on board effectiveness and business performance. *Corporate Governance*, *20*(2), 307-323. https://doi.org/10.1108/CG-07-2019-0206

Maslach, C., & Later, M. P. (1997). The truth about burnout: how organizations cause personal stress and what to do about it. San Francisco, USA: *John Willey & Sons*.

McNulty, T., & Pettigrew, A. (1999). Strategist on the board. *Organization Studies*, *20*(1), 47-74. https://doi.org/10.1177/0170840699201003

Mensi-Klarbach, H., & Seierstad, C. (2020). Gender Quotas on Corporate Boards: Similarities and Differences in Quota Scenarios. *European Management Review*, *17*(3), 615-631. https://doi.org/10.1111/emre.12374

Mikkonen, M. , Stenvall, J. & Lehtonen, K. (2021). The paradox of gender diversity, organizational outcomes, and recruitment in the boards of national governing bodies of sport. *Administrative Sciences 11*(4), 141-157. https://doi.org/10.3390/admsci11040141

Minciullo, M. & Pedrini, M. (2019). Antecedents of board involvement and its consequences on organisational effectiveness in non-profit organisations:a study on European corporate foundations. *Journal of Managemnt and Governance*, *24*,531-555. https://doi.org/10.1007/s10997-019-09480-2

Morais, F., Kakabadse, A. & Kakabadse, N. (2020). Leading through discontinuous change: a typology of problems and leadership approaches in UK boards. *Long Range Planning*, 53(2). 101870. https://doi.org/10.1016/j.lrp.2019.02.003

Morgan, D. L., LePeau, L. A. & Commodore, F. (2022). Observable evidence and partnership possibilities for governing board involvement in diversity, equity, and inclusion: a content analysis. *Research in Higher Education, 63*, 189–221. https://doi.org/10.1007/s11162-021-09651-x

Moussa, T., Allam, A., Elbanna, S. & Bani-Mustafa, A. (2019). Can board environmental orientation improve US firms' carbon performance? The mediating role of carbon strategy. *Business Strategy and the Environment, 29*(1), 72-80*.* https://doi.org/10.1002/bse.2351

Naciti, V. (2019). Corporate governance and board of directors: The effect of a board composition on firm sustainability performance. *Journal of Cleaner Production*, *237*, 117727. https://doi.org/10.1016/j.jclepro.2019.117727

Nahum, N., & Carmeli, C. (2019). Leadership style in a board of directors: implications of involvement in the strategic decision-making process, *Journal of Management and Governance*, *24*, 199-227. https://doi.org/10.1007/s10997-019-09455-3

Orazalin, N. (2019). Do board sustainability committees contribute to corporate environmental and social performance? The mediating role of corporate social responsibility strategy. *Business Strategy and the environment*, *29*(1), 140-153. https://doi.org/10.1002/bse.2354

Orazalin, N. & Baydauletov, M. (2020). Corporate social responsibility strategy and corporate environmental and social performance: the moderating role of board gender diversity. *Corporate Social Responsibility and Environmental Management*, *27*(4), 1664-1676. https://doi.org/10.1002/csr.1915

Peng, X., Yang, Z., Shao, J. & Li, X. (2021). Board diversity and corporate social responsibility disclosure of multinational corporations. *Applied Economics*, *53*(42), 4884-4898. https://doi.org/10.1080/00036846.2021.1910620

Pfeffer, J. & Salancik, G. R. (2003). The External Control of Organizations. Stanford, California: Stanford University Press.

Pugliese, A., Bezemer, P. J., Zattoni, A., Huse, M., Van den Bosch, F. A. J., & Volberda, H. W. (2009). Boards of directors' contribution to strategy: a literature review and research agenda. *Corporate Governance: An International Review*, *17*(3), 292–306. https://doi.org/10.1111/j.1467-8683.2009.00740.x

Pye, A., & Camm, G. (2003). Non-executive directors: moving beyond the 'one-size-fit-all' view. *Journal of General Management*, *28*(3), 52-70. https://doi.org/10.1177/030630700302800304

Rindova, V. P. (1999). What corporate boards have to do with strategy: a cognitive perspective. *Journal of Management Studies*, *36*(7), 953-975. https://doi.org/10.1111/1467-6486.00165

Rosenstein, J. (1987). Why don't boards get more involved in strategy?. *Long Range planning*, *20*(3), 30-34. https://doi.org/10.1016/0024-6301(87)90069-0

Saks, A. M., & Gruman, J. A (2014). What do we really know about employee engagement?. *Human Resource Development Quarterly*, *25*(2), 155-180. https://doi.org/10.1002/hrdq.21187

Sidhu, J. S., Feng, Y., Volberda, H. W. & Van Den Bosch, F. A. J. (2021). In the shadow of social stereotypes: gender diversity on corporate boards, board chair's gender and strategic change. *Organization Studies*, *42*(11), 1677-1698. https://doi.org/10.1177/01708406209445

Slomka-Golebiowska, A., De Masi, S. & Paci, A. (2023). Board dynamics and board tasks empowered by women on boards: evidence from Italy. *Management Research Review*, *46*(3), 390-412. https://www.emerald.com/insight/content/doi/10.1108/MRR-09-2021-0678/full/html

Snyder, H. (2019). Literature review as a research methodology: an overview and guidelines. *Journal of Business Reserach*, 104, 333-339. https://doi.org/10.1016/j.jbusres.2019.07.039

Stubbart, C. I. (1989). Managerial cognition: a missing link in strategic management research. *Journal of Management Studies*, *26*(4), 325-347. https://doi.org/10.1111/j.1467-6486.1989.tb00732.x

Squires, B. & Elnahla, N. (2020). The roles played by boards of directors: an integration of the agency and stakeholder theories. *Transnational Corporations Review*, *12*(2), 126-139. https://doi.org/10.1080/19186444.2020.1757340

Torraco, R. J. (2006). Writing integrative literature reviews: guidelines and examples. *Human Resource Development Review*, *4*(3), 356-367. https://doi.org/10.1177/1534484305278283

Vehka, M. & Vesa, H. (2023). Internal governance of interest organizations: the role of boards of directors in advocacy performance. *Non-profit and Voluntary Sector Quartely*, *52*(2), 474-492. https://doi.org/10.1177/08997640221091529

Watson, C. & Ireland, A. (2021). Boards in action: processes and practices of 'strategizing' in the boardroom. *Journal of Management and Governance* 25, 933–966. https://doi.org/10.1007/s10997-020-09545-7

Wommack, W. W. (1979). The board's most important function. *Harvard Business Review*, *57*(5). https://hbr.org/1979/09/the-boards-most-important-function

Yarram, S. R. & Adapa, S. (2021). Board gender diversity and corporate social responsibility: Is there a case for critical mass?. *Journal of Cleaner Production*, *278*, 123319. https://doi.org/10.1016/j.jclepro.2020.123319

Zahra, S. A. & Pearce II, J. A. (1989). Boards of directors and corporate financial performance: a review and integrative model. *Journal of Management*, *15*(2), 291-334. https://doi.org/10.1177/014920638901500208

Zahra, S. A., & Pearce II, J. A. (1990). Determinants of boards directors' strategic involvement. *European Management Journal*, *8*(2), 164-173. https://doi.org/10.1016/0263-2373(90)90082-H

Zenou, E., Allemand, I., Brullebaut, B., & Galia, F. (2020). Board recruitment as a strategic answer: Do companies' strategies for innovation influence the selection of new board members?. *Strategic Change, Special Issue: Organizational Design Products*, *29*(1), 127-139. https://doi.org/10.1002/jsc.2316

Zhu, Q, Hu, S. & Shen, W. (2020). Why do some insider CEOs make more strategic changes than others? The impact of prior board experience on new CEO insiderness. *Strategic Management Journal*, *41*(10), 1–19. https://doi.org/10.1002/smj.3183

✉ **Correspondence**

Tihona Bozhinovska

"Ss. Cyril and Methodius" University in Skopje,
Faculty of Economics – Skopje, Skopje
Bul. Goce Delchev, 9V, 1000 Skopje,
Republic of North Macedonia

E-mail: tihona@eccf.ukim.edu.mk

STRATEGIC MANAGEMENT, Vol. 29 (2024), No. 4, pp. 028-038

DOI: 10.5937/StraMan2300064K

Received: September 20, 2023
Revised: December 04, 2023
Accepted: January 03, 2024
Published online: January 29, 2024

Financial inclusion and inflation in Southeast European countries

Meldina Kokorović Jukan

University of Tuzla, Faculty of Economics, Tuzla, Bosnia and Herzegovina
https://orcid.org/0000-0002-4954-5437

Emira Kozarević

University of Tuzla, Faculty of Economics, Tuzla, Bosnia and Herzegovina
https://orcid.org/0000-0002-5665-640X

Vesna Zukić

University of Tuzla, Faculty of Economics, Tuzla, Bosnia and Herzegovina
https://orcid.org/0009-0000-7815-8033

Abstract

Background: As a complex socio-economic concept, financial inclusion is related to the improvement of access and use of formal financial products and services (such as bank deposits, loans, insurance, etc.) by all participants in the financial system. More inclusive financial systems contribute to poverty reduction, decrease in inequalities among different income groups leading to economic growth, and economies more resilient towards macroeconomic shocks.

Purpose: This paper aims to assess the relationship between financial inclusion and inflation in Southeast European countries, focusing on Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Montenegro, North Macedonia, Romania, Slovenia, Serbia, and Turkey in the period from 2011 to 2021.

Study design/methodology/approach: The financial inclusion index was constructed using Principal Component Analysis (PCA). The connection between the financial inclusion index and inflation was investigated using panel regression modeling (OLS, fixed-effect, and random-effect models).

Findings/Conclusions: The research showed that countries with higher levels of financial inclusion are more resilient to inflation. This finding is consistent with other research implying that policymakers and other stakeholders within a financial system should contribute to promoting financial inclusion and building more inclusive financial systems.

Limitations/future research: The main limitation of the research is related to data availability for multidimensional index construction. Future research should be directed to providing a better understanding of whether the relationship between financial inclusion and inflation is under the influence of other monetary policy instruments, such as interest rates.

Keywords

financial inclusion, inflation, Southeast European (SEE) countries, Principal Component Analysis (PCA), panel regression

Introduction

As one of the main focuses of policy makers of developed and developing economies, financial inclusion ensures that there are no obstacles to access and use of basic financial products/services that are most needed by poor individuals within the financial system (Allen, Demirguc-Kunt, Klapper, Soledad & Peria 2016; Ozili, 2018). Financial inclusion contributes to the achievement of sustainable goals (Sahay et al., 2015; Demirguc-Kunt, Klapper & Singer, 2017). There is evidence that it contributes to the social inclusion of the poor (Bold, Porteous & Rotman, 2012) and poverty alleviation (Neaime & Gaysset, 2018).

Most importantly, financial inclusion contributes to economic growth, and therefore it improves health and education and reduces income inequalities. A functional financial system creates equal opportunities by enabling excluded individuals to integrate into the economy, contribute to economic growth, and protect themselves from macro-economic shocks. Many studies prove that financial inclusion and an inclusive financial system play a major role in promoting growth and alleviating poverty. For this reason, financial inclusion has great potential to integrate poor individuals into formal financial flows and break the downward spiral of poverty and income inequality. Of course, financial systems in the real world are far from inclusive; the financial infrastructure in developing countries is underdeveloped, inefficient and does not provide much choice.

Although the financial systems in the South-East European counties (SEE) have changed significantly in the recent past, the share of individuals who are financially excluded is still high. Financially excluded individuals have a limited access to financial products and services (such as loans and savings) and are unable to adequately participate in the growth and development of their economies, and are thereby deprived of the opportunity to effectively contribute to economic growth and poverty alleviation.

In contrast to most of the research that focuses on understanding the relationship and contributions of financial inclusion towards economic growth and poverty alleviation, this paper turns the attention to understanding the relationship of financial inclusion and inflation (inflation rates). In the new "normal" after the COVID-19 pandemic, governments are put to the new challenge of battling inflation resulting from expansionary monetary policies in the aftermath of the pandemic and the war between Russia and Ukraine.

The main goal of this paper is to provide more insight into the relationship between the level of financial inclusion and inflation. The research hypothesis is that countries with a higher level of financial inclusion (higher level of inclusiveness of financial systems) have a lower level of inflation. The research covers the period from 2011 to 2021 and is focused on the countries of SEE including Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Montenegro, North Macedonia, Romania, Slovenia, Serbia, and Turkey.

The rest of the paper is organized as follows. The second section provides previous research on the relationship between financial inclusion, economic growth, and inflation. The third section provides an overview of the methodology used while in the fourth part the research results are presented and discussed. Concluding remarks, policy implications and recommendation for future research are given in the final section of the paper.

1. Theoretical background and previous research on nexus between financial inclusion and inflation

Academic research papers on financial inclusion mostly focus on promoting growth, development, and financial stability (Sarma & Pais, 2011; Cull, Demirgüç-Kunt & Lyman, 2012; Ghosh, 2013, Kim, Yu & Hassan, 2018). Also, it is worth mentioning that some studies (Kpodar & Andrianaivo, 2011; Ghosh, 2013; Fungáčová & Weill, 2015; Gabor & Brooks, 2017; Ozili, 2019; Vasile, Panait & Apostu, 2021; Apostu, Panait, Vasile, Sharma & Vasile, 2023) focus on government practices, financial system innovations in terms of introducing new financial institutions (i.e., microfinance institutions and credit unions), technological approaches (i.e., mobile accounts, FinTech) to promote financial inclusion, and the impact of the COVID-19 pandemic on financial inclusion.

Claessens & Perotti (2007) identify financial inclusion as a key driver of economic growth, while Sethi (2018) finds that financial inclusion can contribute to economic growth. Access to financial products and services at low prices improves the living standards of the poor. Individuals with low incomes are granted low-budget loans that are used to start their small businesses, especially in rural areas. Business activities stimulated in this way contribute to production growth at the state level resulting in higher macroeconomic growth, increasing the living standards of individuals with low incomes.

Improving access to bank deposits and insurance by the population that is financially excluded leads to the accumulation of financial sources in the financial market. Financial markets are then able to fulfil one of their main functions of efficient funds allocation into profitable long-term investments. A sound financial infrastructure can directly affect economic growth. Mehrotra & Yetman (2014) prove that the access of individuals to banking products and services brings benefits that create inclusive growth. The absence of adequate access to loans, both for individuals and for small and medium-sized enterprises, leads to negative consequences for the overall growth of employment. Also, Bruhn and Love (2014) reveal that financial access has a positive impact on poverty and the income level of the poor. Park and Mercado (2015) find that financial inclusion contributes towards poverty alleviation and reduction of income inequalities. Harley, Adegoke and Adegbola, (2017) investigate the role of financial inclusion towards achieving economic growth and poverty alleviation in developing countries using the panel data analysis. They prove that the number of ATMs and bank branches are the most important indicators of increasing the level of financial inclusion. Gretta (2017) also proves the impact of financial inclusion on economic growth. Okoye, Adetiloye, Erin and Modebe (2017) investigate the impact of financial inclusion on economic growth and development in Nigeria showing that financial inclusion has impacted poverty reduction in Nigeria through the delivery of rural credits.

While financial inclusion is complementary to economic growth, there is mixed evidence on the connection between financial inclusion and inflation. As the theory suggests, one of preconditions of economic growth is an expansionary monetary policy which stimulates an economy by boosting demand through monetary and fiscal stimulus, but directly drives inflation. A scarcity of literature on the nexus between financial inclusion and monetary policy shows that higher financial inclusion contributes to better usability of central banks interest rate for stabilization of consumer price levels (Mehrotra & Yetman, 2014; Mehrotra & Nadhanael, 2016). In contrast to previous conclusions, Evans (2016) finds that in 16 African countries, the level of financial inclusion contributes to the effectiveness of monetary policy only in the short run, while the long-run effectiveness is achieved through interest rates management. Analyzing the correlation between financial inclusion and monetary policy on the sample of the South Asian Association for Regional Cooperation (SAARC) countries in the period from 2004 to 2013, Lenka and Bairwa (2016) find a significant correlation between financial inclusion and inflation, namely it is found that an increase in financial inclusion (accessibility) is associated with a decrease in inflation and price stability.

Several empirical studies (Arshad et al. 2021; Saraswati, Maski, Kaluge & Sakti, 2020; El Bourainy, Salah & El Sherif, 2021) find that increased financial inclusion contributes to reduction of inflation, which improves the effectiveness of monetary policy. Using the Structural Vector Autoregressive (SVAR) technique, Arshad et al. (2021) confirm the existence of the inverse correlation in which a monetary policy contributes to the increase in financial inclusion. Using the generalized Method of Moments (GMM) on the sample of 37 developing countries over the period 2009–2018, El Bourainy et al. (2021) conclude that in developing countries a financial inclusion increase contributes to lower inflation rates. Similar conclusion is drawn by Jungo, Madaleno and Botelho, (2022), who test the effectiveness and efficiency of monetary policy in controlling inflation in respect to an increase in financial inclusion. A comparative analysis shows that financial inclusion increases the effectiveness of monetary policy in Sub-Saharan Africa countries, while in Latin America and the Caribbean countries financial inclusion improves the efficiency of monetary policy.

2. Methodology of empirical research

2.1. Data sources and variables

The research data for the study were obtained from several different databases, namely the World Bank Global Findex Survey database (WB-FAS), the International Monetary Fund Financial Access Survey database (IMF-FAS) and the World Bank - World Development Indicators database (WB-WDI). The research was focused on the countries of SEE, including Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Montenegro, North Macedonia, Romania, Slovenia, Serbia, and Turkey and covers the ten-year period from 2011 to 2021.

The description of the variables is presented in Table 1. Inflation was measured by the annual change in consumer prices, while financial inclusion was measured by eight individual variables, through financial inclusion dimensions and the financial inclusion index (FII). The initial set of individual variables was also used for FII construction based on the literature review (Sarma 2008; Sarma 2012; Amidzic, Massara & Mialou, 2014; Sarma 2016; Cámara & Tuesta (2018); Goel & Sharma (2017); Park & Mercado (2018); Nguyen, (2021); Borhan, Muda & Mohamad, 2021; Gupte, Venkataramani and Gupta (2012), and data availability for SEE countries.

Table 1 Data and variables description

Variable label	Variable	Description	Data source
z_inf	Inflation	Inflation rate, consumer prices (annual %)	WB-WDI
FII	Financial inclusion index - FII		
racun	Account at financial institution	Percentage of respondents having a bank account at financial institutions (% +15 age)	WB-GFS
n_racun	Deposit accounts	Number of deposit accounts at commercial banks per 1,000 adults	IMF-FAS
posudba	Borrowing from financial institution	Percentage of respondents who borrowed money from financial institutions (% +15 age)	WB-GFS
kor_deb	Use of debit or credit card	Percentage of respondents who used debit or credit cards (% +15 age)	WB-GFS
stednja	Savings at financial institution	Percentage of respondents who saved money at financial institution (% +15 age)	WB-GFS
ne_depo	Outstanding loans	Outstanding loans from commercial banks % GDP	IMF-FAS
filijala	Number of branches	Number of commercial bank branches per 100,000 adults	IMF-FAS
bankomat	Number of ATMs	Number of ATMs per 100,000 adults	IMF-FAS

Source: the authors

2.2. Methods used

2.2.1. Construction of financial inclusion index

For constructing a multidimensional FII for SEE countries, the exploratory two-stage PCA was used as suggested by Amidzic et al. (2014), Cámara and Tuesta (2018), Park and Mercado, (2018), Nguyen (2021), and Borhan et al. (2021). As proposed by Sarma (2008) and used by Amidzic et al. (2014), Nguyen (2021) and others, the variables used for the index construction were normalized using the min-max normalization method. Normalization was used to scale data to fall in the range between 0 and 1.

The first-stage PCA was used for identifying and grouping the variables in relevant dimensions. Then, the weights of the indicators representing dimensions were extracted and estimated. The estimation of factors loading was obtained using the rotation of the axes using the varimax technique. Based on the results of the first-stage PCA, two dimensions (factors) were extracted.

In the second-stage PCA, the weights for each dimension were calculated using unrotated matrix and by using the aforementioned dimensions as explanatory variables, the FII was created.

To further verify adequate correlations among the selected indicators of financial inclusion, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was used before conducting Factor Analysis.

2.2.2. Model specification

For the purpose of evaluating the relationship between financial inclusion and inflation, three panel models were used. We tested three regression models using pooled OLS, fixed and random effects estimators to assess which regression model fits the data. The estimators were tested using the Hausman test and the Breusch–Pagan test of model adequacy.

(1) Regression model at the level of individual variables of financial inclusion: For the purposes of determining the connection between inflation rate and financial inclusion, the following panel regression model was formulated at the level of individual variables of financial inclusion:

$$Z\_inf = \alpha_{it} + \beta_1 racun_{it} + \beta_2 n\_racun_{it} + \beta_3 posudba_{it} + \beta_4 kor\_deb_{it} + \beta_5 stednja_{it} + \beta_6 ne\_depo_{it} + \beta_7 filijala_{it} + \beta_8 bankomat_{it} + u_{it} \sum_{k=0}^{n} \binom{n}{k} x^k a^{n-k} \tag{1}$$

where:

z_inf	Inflation	Inflation rate, consumer prices (annual %)
racun	Having an account	Percentage of respondents who have an account at a financial institution (% aged 15+)
n_racun	Holding deposit accounts	Number of deposit accounts with commercial banks per 1,000 adults
posudba	Lending	Percentage of respondents who borrowed money from a financial institution (% age 15+)
kor_deb	Using a debit or credit card	Percentage of respondents using a debit or credit card (% age 15+)
stednja	Savings	Percentage of respondents who save at a financial institution (% age 15+)
ne_depo	Outstandin g deposits	Percentage of respondents who have unpaid deposits at a financial institution (% of GDP)
filijala	Branches of commerci al banks	Number of commercial bank branches per 100,000 adults

bankomat	ATMs	Number of ATMs per 100,000 adults
i	Country	Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Montenegro, North Macedonia, Romania, Slovenia, Serbia, and Turkey
t	Time/ years	2011, 2014, 2017, and 2021

(2) Regression model at the level of factors obtained through the construction of the FII: For the purposes of determining the connection between economic growth and financial inclusion, the following panel regression model was formulated at the level of factors obtained through the construction of the FII:

$$y = \alpha_{it} + \beta_1 s\_FII\_f1_{it} + \beta_2 s\_FII\_f2_{it} + u_{it} \tag{2}$$

where:

s_FII_f1	Availability and Use	Factor 1 Financial inclusion
s_FII_f2	Access	Factor 2 Financial inclusion
i	Country	Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Montenegro, North Macedonia, Romania, Slovenia, Serbia, and Turkey
t	Time/ years	2011, 2014, 2017, and 2021

(3) Regression model at the level of the FII: For the purposes of determining the connection between economic growth and financial inclusion, the following panel regression model was formulated at the level of the FII:

$$y = \alpha_{it} + \beta_1 s\_FII_{it} + u_{it} \tag{3}$$

where:

s_FII	Index of financial inclusion	Index of financial inclusion
i	Country	Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Montenegro, North Macedonia, Romania, Slovenia, Serbia, and Turkey
t	Time/ years	2011, 2014, 2017, and 2021

3. Results and discussion

3.1. Descriptive statistics

Table 2 shows the overall descriptive statistics on inflation rate and individual indicators of financial inclusion for all the observed SEE countries.

Table 2 Descriptive statistics of indicators of financial inclusion and for observed SEE countries aggregated

Variables	Obs	Mean	Std. Dev.	Min	Max
Inflation	48	3.050666	3.666394	-1.418184	19.59649
Account at financial institution	47	64.11277	22.5944	10.57	99.05
Deposit accounts	33	1845.737	965.4469	596.33	3926.25
Borrowing from financial institution	47	20.5666	10.39704	4.55	42.84
Use of debit or credit card	35	39.454	20.42749	5.81	89.83
Savings at financial institution	47	14.86617	9.257208	3.17	39.85
Outstanding loans	48	56.57188	14.68935	31.02	97.6
Number of branches	44	28.87545	11.17838	11.63	60.4
Number of ATMs	44	66.50477	28.67434	25.68	140.7

Source: WB-WDI, IMF-FAS and WB-GFS databases, the authors' calculation

Data show that the average inflation rate for all SEE countries in the analyzed period was 3% with standard deviation of 3.6%. On average, 64% of adults in the SEE countries observed had an open account at financial institutions, over 39% of them used debit cards. Just above 20% of the adults borrowed and 14% saved money. The average number of deposit accounts for the SEE countries analyzed per 1,000 adults was 1,845 accounts, meaning that on average one person had more than one account opened at financial institutions. There were approximately 29 bank branches and 66 ATMs per 100,000 inhabitants in these SEE countries.

Given that the descriptive statistics on inflation rate presented in the previous table represent consolidated data for observed years for SEE countries, Table 3 shows more in-depth data on the level of interest rate within the SEE region, disaggregated by year, while Table 4 presents descriptive statistics on inflation rates, disaggregated by the SEE countries observed.

Table 3 Descriptive statistics of inflation in observed SEE countries, disaggregated per year

Indicators per year	Obs	Mean	Std. Dev	Min	Max
2011	12	4.73463	2.593056	1.802852	11.1374
2014	12	.7853703	2.771865	-1.418184	8.854573
2017	12	2.453879	2.811806	.8101333	11.14431
2021	12	4.228785	4.952595	1.223825	19.59649

Source: WB-GFS databases, the authors' calculation

As the table shows, there was a decrease in the average inflation rate for these SEE countries, which was 4.73% in 2011, to 0.79% in 2014, and 2.45% in 2017. As the inflation rates increased worldwide due to the COVID-19 and Russia - Ukraine war, in 2021 the inflation rate was increased in the SEE region and it was at the level of 4.23%.

Table 4 Descriptive statistics of inflation disaggregated by SEE country

Indicator per country	Obs	Mean	Std. Dev.	Min	Max
Albania	4	2.289265	.7859318	1.625865	3.429123
Bosnia and Herzegovina	4	1.391457	1.925412	-.8971941	3.67125
Bulgaria	4	2.040265	2.469372	-1.418184	4.219903
Croatia	4	1.435353	1.261169	-.2151962	2.554507
Greece	4	1.090668	1.897954	-1.312261	3.329853
Montenegro	4	1.882667	1.798895	-.7105141	3.450143
North Macedonia	4	2.051354	1.893749	-.281705	3.904754
Romania	4	3.312228	2.455763	1.06831	5.789253
Serbia	4	5.109003	4.101309	2.082448	11.1374
Slovenia	4	1.337092	.7866042	.1993438	1.917065
Turkey	4	11.51681	5.714276	6.47188	19.59649

Source: WB-WDI, IMF-FAS and WB-GFS databases, the authors' calculation

The access dimension was represented by three indicators: percentage of individuals with an opened account at financial institutions, number of deposit accounts per 1,000 inhabitants, and outstanding loans, while the other dimension was represented by the set of two indicators related to availability (the number of branches and the number of ATMs per 100,000 inhabitants) and usage (usage of debit account, borrowing, and saving).

3.2. Financial inclusion index for SEE

The results of the first-stage PCA used for FII construction are presented in Table 5. Dimensions extracted for the researched SEE countries, "access" and "usage and availability", are consistent with the dimensions extracted by Borhan et al., (2021).

Table 5 First-stage factor analysis – factor correlation (varimax rotation)

Variable	Factor 1 loadings (availability and usage)	Factor 2 loadings (access)	Uniqueness
Account at financial institution	0.5228	0.4349	0.5376
Deposit accounts		0.5375	0.6998
Borrowing from financial institution	0.7807		0.3485
Use of debit or credit card	0.7516	0.4130	0.2645
Savings at financial institution	0.7991	0.3448	0.2426
Outstanding loans		0.8340	0.2792
Number of branches	0.3741		0.8210
Number of ATMs	0.9621		0.0734

Source: the authors' calculation

The "Access" dimension was represented by three indicators: percentage of individuals with an opened account at financial institutions, number of deposit accounts per 1,000 inhabitants, and outstanding loans, while the "Usage and availability" dimension was represented by the set of two indicators related to availability (the number of branches and the number of ATMs per 100,000 inhabitants) and usage (usage of debit account, borrowing, and saving).

The second-stage PCA results and obtained loading factors are showed in Table 6.

Table 6 Second-stage factor analysis – factor correlation

Variable label	Factor label	Factor loadings	Uniqueness
s_FII_f1	Usage and availability	0.5249	0.7245
s_FII_f2	Access	0.5249	0.7245

Source: the authors' calculation

The KMO statistics for the first-stage PCA was 0.573, which was more than the minimum required threshold (0.50). This confirms that the indicators were correlated and suitable for structure detection using factor analysis.

Table 7 presents the computed FII values for SEE developing economies for the years 2011-2021. As it can be observed from Table 7, Slovenia had the highest level of financial inclusion with the average value of 0.903 and Romania's level was the lowest, with the value of 0.235.

Table 7 Descriptive statistics of FII disaggregated by SEE countries, 2011-2021

SEE country	2011	2014	2017	2021	Avg.	Std. dev.	Rank
Slovenia	0.800	0.883	0.928	1.000	0.903	0.084	1
Greece	0.855	0.734	0.682	0.991	0.815	0.138	2
Croatia	0.620	0.841	0.889	0.859	0.802	0.123	3
Bulgaria	0.592	0.704	0.761	0.785	0.711	0.086	4
Turkey	0.214	0.471	0.689	0.607	0.495	0.208	5
Montenegro	0.374	0.445	0.515	0.598	0.483	0.096	6
Serbia	0.255	0.361	0.356	0.566	0.385	0.131	7
North Macedonia	0.179	0.366	0.366	0.409	0.330	0.103	8
Bosnia and Herzegovina	0.192	0.233	0.264	0.457	0.287	0.117	9
Albania	0.288	0.319	0.221	0.258	0.272	0.042	10
Romania	0.019	0.251	0.239	0.431	0.235	0.169	11

Source: the authors' calculation

As it can be observed from the previous table, there is an evident increase in the level of financial inclusion among all the SEE countries observed. While Slovenia, Greece and Croatia had the highest level of financial inclusion with the FII of 0.903, 0.815, and 0.802 respectively, Bosnia and Herzegovina, Albania and Romania had the lowest level of financial inclusion.

3.3. Results of panel regressions

Table 8 shows the results of panel regression model 1.

Table 8 Results of panel regression - association of financial inclusion variables with inflation

Variables	OLS model (a)	Fixed-effect model (b)	Random-effect model (c)	Hausman's test Sigmamore *Differences (b) – (c)*
racun	.0063009 (0.850)	.1081472 (0.106)	.0063009 (0.848)	.1018463
n_racun	.0013549 (0.067)+	.0020174 (0.399)	.0013549 (0.047)**	.0006625
posudba	.0787971 (0.535)	-.470063 (0.012)**	.0787971 (0.525)	-.5488602
kor_deb	-.0655963 (0.293)	.0009003 (0.975)	-.0655963 (0.275)	.0664966
stednja	.1200331 (0.388)	.1736287 (0.054)*	.1200331 (0.373)	.0535956
ne_depo	-.1061255 (0.156)	.0730674 (0.159)	-.1061255 (0.134)	.1791929
filijala	-.1362461 (0.061)*	-.0639219 (0.567)	-.1362461 (0.041)**	.0723242
bankomat	.0296787 (0.563)	-.0903165 (0.222)	.0296787 (0.554)	-.1199953
F statistic/ Wald chi2(*s)*	F(8, 14) = 2.21 (0.0928)	F(8,6) = 6.58 (0.0169)	Wald chi2(8) = 17.69 (0.0237)	
R-squared	0.5582	0.0548	0.5582	
Adj. R-squared	0.3057			
sigma-e		.78553205	.78553205	
Prob>chi2				0.0994

Note: confidence level: *** p<0.001 ** p<0.05, * p<0.01

Source: the authors' calculation

The Hausman test showed that the random effects model was more appropriate for testing the model's contribution to explaining the variance of the dependent variable. The F statistic showed that the random effects model was statistically significant ($p<0.05$) and that 0.5582% of the variance of the change in the dependent variable was explained in the model.

The model showed that there was a positive correlation between holding deposit accounts and the inflation rate, meaning that the higher level of financial inclusion measured by the percentage of adults holding accounts was related to the increase in inflation rates. In contrast, the research showed a negative correlation between the number of branches and inflation, meaning that the higher number of bank branches was related to a decrease in inflation rates.

Table 9 shows the results of regression model 2 - the relation between financial inclusion factors and inflation.

Table 9 Results of panel regression - association of financial inclusion factors with inflation

Variables	**OLS model (a)**	**Fixed-effect model (b)**	**Random-effect model (c)**	**Hausman's test Sigmamore *Differences (b) – (c)***
s_FII_f1	-1.461839 (0.513)	2.240042 (0.645)	-.1755683 (0.953)	2.415611
s_FII_f2	-.7166514 (0.798)	-.9832857 (0.878)	-.6444125 (0.867)	-.3388731
F statistic/ Wald chi2(*s)*	F(2, 45) = 0.38 (0.6891)	F(2,34) = 0.11 (0.8920)	Wald chi2(2) = 0.05 (0.9753)	
R-squared	0.0164	0.0103	0.0113	
Adj. R-squared	-0.0273			
sigma-e		2.7740969	2.7740969	
Prob>chi2				0.7413

Note: confidence level: *** p<0.001 ** p<0.05, * p<0.01

Source: the authors' calculation

The Hausman test showed that the random effects model was more appropriate (Prob>chi2 =0.7413<0.05) for testing the contribution of the model to explaining the variance of the dependent variable. However, the random effects model did not explain a statistically significant part of the variance of the dependent variable, so it can be concluded that the factors of financial inclusion did not explain changes in inflation. Furthermore, it must be noted that the practical significance of the obtained results proves that a higher level of financial inclusion factors (Usage and availability and Access) contributed to a lower level of interest rates.

Table 10 shows the results of the regression model 3 - the association of the financial inclusion index with inflation.

Table 10 Results of panel regression - association of financial inclusion index with inflation

Variables	OLS model (a)	Fixed-effect model (b)	Random-effect model (c)	Hausman's test Sigmamore *Differences (b) – (c)*
s_FII	-1.649774 (0.419)	.2679605 (0.930)	-.7254393 (0.757)	.9933998
F statistic/ Wald chi2(*s)*	F(1, 46) = 0.66 (0.4193)	F(1,35) = 0.01 (0.9298)	Wald chi2(1) = 0.10 (0.7568)	
R-squared	0.0142	0.0142	0.0142	
Adj. R-squared	-0.0072			
sigma-e		2.7430785	2.7430785	
Prob>chi2				0.5947

Note: confidence level: *** p<0.001 ** p<0.05, * p<0.01

Source: the authors' calculation

The Hausman test showed that the random effects model was more appropriate (Prob>chi2 =0.5947<0.05) for testing the contribution of the model to explaining the variance of the dependent variable. However, the random effects model did not explain a statistically significant part of the variance of the dependent variable, so it can be concluded that the FII did not explain changes in inflation. The practical significance of the obtained results shows negative association between the FII and inflation, meaning that a higher level of financial inclusion contributed to a lower level of inflation.

Conclusions

This paper contributes to the body of knowledge on the nexus between financial inclusion and inflation rate in SEE countries. Using panel regression models, the research aimed to establish the connection between the level of financial inclusion and inflation rate measured by the consumer prices index.

Using PCA, the FII was constructed for all the observed SEE countries. Based on the previous research and taking into account the availability of data, eight indicators were identified to be included in FII construction. The FII was created according to the methodology used by Sarma (2008, 2010, 2012), Amidzic et al. (2014), and Borhan et al. (2021).

Descriptive statistical analysis showed that in the observed period from 2011 to 2021, there was an increase in the inflation rates in all the observed SEE countries. The measures of financial inclusion included: (1) measures at the level of individual variables of financial inclusion, (2) measures at the level of factors obtained through the FII, and (3) measure at the level of the FII. For the evaluation of the nexus between financial inclusion and inflation, three panel regression models were constructed for each level of financial inclusion measurement.

Overall, all three models proved that increased financial inclusion, measured by individual indicators, factors or index, was contributing to lower inflation rates. The first regression model showed that there was a positive correlation between having deposit accounts and the inflation rate, and a negative correlation between the number of branches and inflation. The analysis of the correlation between financial inclusion factors and inflation led to the conclusion that higher availably and usage of financial services/products as well as access are associated with lower level of inflation. These findings are consistent with El Bourainy et al. (2021) research.

While the main limitation of the research is related to data availability for multidimensional index construction, it can be concluded that financial inclusion in SEE countries is positively related to a lower level of inflation. Further research should be direct to provide better understanding of whether this relationship is under the influence of other monetary policy instruments, such as interest rates. Based on the obtained results, it can be recommended that governments in SEE countries should consider incorporating financial inclusion as a tool for interest rate reduction in their policy agendas.

References

Allen, F., Demirguc-Kunt, A., Klapper L., Soledad M. & Peria M. (2016). The foundations of financial inclusion: understanding ownership and use of formal accounts. *Journal of Financial Intermediation*, *27*, 1–30. https://doi.org/10.1016/j.jfi.2015.12.003

Amidzic, G., Massara, A. & Mialou, A. (2014). Assessing countries' financial inclusion standing — a new composite index. *IMF Working Paper*, WP/14/36. https://doi.org/10.5089/9781475569681.001

Apostu, S. A., Panait, M., Vasile, V., Sharma, G. D., & Vasile, R. (2023). FinTechs and financial inclusion—Balkan experience: digital perspectives on financial markets. *The Electronic Journal of Information Systems in Developing Countries*, *89(2)*, e12257. https://doi.org/10.1002/isd2.12257

Arshad, M.U., Ahmed, Z., Ramzan, A, Shabbir, M.N., Bashir, Z. & Khan. F.N. (2021) Financial inclusion and monetary policy effectiveness: a sustainable development approach of developed and under-developed countries. *PLoS ONE, 16(12)*: e0261337. https://doi.org/10.1371/journal.pone.0261337

Bold, C., Porteous, D. & Rotman, S. (2012). Social cash transfers and financial inclusion: evidence from four countries. *CGAP focus note, No. 77*. Washington, D.C.: World Bank Group. Retrieved June 20, 2023, from http://documents.worldbank.org/curated/en/538351468330277429/Social-cash-transfers-and-financial-inclusion-evidence-from-four-countries

Borhan, N.A., Muda, R. & Mohamad, S. (2021). Measuring financial inclusion in developing economies: a multidimensional index. *Asia-Pacific Management Accounting Journal*, *16(3)*. Retrieved June 20, 2023, from https://ir.uitm.edu.my/id/eprint/56532/1/56532.pdf

Bruhn, M. & Love, I. (2014). The real impact of improved access to finance: evidence from Mexico. *The Journal of Finance*, *69*, 1347-1376. https://doi.org/10.1111/jofi.12091

Cámara, N. & Tuesta, D. (2018). Measuring financial inclusion: a multidimensional index. In: Bank for International Settlements (ed.), *The role of data in supporting financial inclusion policy, vol. 47*. Retrieved June 20, 2023, from https://EconPapers.repec.org/RePEc:bis:bisifc:47-18

Claessens, S. & Perotti, E. (2007). Finance and inequality: channels and evidence. *Journal of Comparative Economics*, *35(4)*, 748–773. https://doi.org/10.1016/j.jce.2007.07.002

Cull, R., Demirgüç-Kunt, A. & Lyman, T. (2012). Financial inclusion and stability: what does research show? *Consultative Group to Assist the Poor*, 71305, 1-3. Retrieved June 24, 2023, from https://www.cgap.org/sites/default/files/CGAP-Brief-Financial-Inclusion-and-Stability-What-Does-Research-Show-May-2012.pdf

Demirguc-Kunt, A., Klapper, L. & Singer, D. (2017). Financial inclusion and inclusive growth: a review of recent empirical evidence. *Policy Research Working Paper; No. 8040.* World Bank, Washington, DC. Retrieved June 24, 2023, from http://hdl.handle.net/10986/26479

Goel, S. & Sharma, R. (2017). Developing a financial inclusion index for India. *Procedia Computer Science*, *122*, 949-956. https://doi.org/10.1016/j.procs.2017.11.459

El Bourainy, M., Salah, A. & El Sherif, M. (2021). Assessing the impact of financial inclusion on inflation rate in developing countries. *Open Journal of Social Sciences*, *9*, 397-424. https://doi.org/10.4236/jss.2021.91030

Evans, O. (2016). The effectiveness of monetary policy in Africa: modeling the impact of financial inclusion. According to CGAP *20(3)*, 327–337. Retrieved May 12, 2023, from https://ier.ut.ac.ir/article_58961_7b8e37e5e5fb73a949f9048b0a04650c.pdf

Fungáčová, Z. & Weill, L. (2015). Understanding financial inclusion in China. *China Economic Review*, *34*, 196-206. https://doi.org/10.1016/j.chieco.2014.12.004

Gabor, D. & Brooks, S. (2017). The digital revolution in financial inclusion: international development in the fintech era. *New Political Economy*, *22(4)*, 423-436. https://doi.org/10.1080/13563467.2017.1259298

Ghosh, J. (2013). Microfinance and the challenge of financial inclusion for development. *Cambridge Journal of Economics, 37(6)*, 1203-1219. https://doi.org/10.1093/cje/bet042

Gretta, S. (2017). Financial inclusion and growth. *The Business and Management Review*,*(8)4*, 434-441. https://doi.org/10.19044/esj.2022.v18n22p225

Gupte, R., Venkataramani, B. & Gupta, D. (2012). Computation of financial inclusion index for India, *Procedia-Social and Behavioral Sciences*, *37*: 133-149. https://doi.org/10.1016/j.sbspro.2012.03.281

Harley, TW., Adegoke, AJ. & Adegbola, D. (2017). Role of financial inclusion in economic growth and poverty reduction. *Internal Journal of Research in Economics and Social Sciences* (IJRESS), 265-271.

Jungo, J., Madaleno, M. & Botelho, A. (2022). The relationship between financial inclusion and monetary policy: a comparative study of countries' in Sub-Saharan Africa and Latin America and the Caribbean. *Journal of African Business*, *23(3)*, 794-815. https://doi.org/10.1080/15228916.2021.1930810

Kim, DW., Yu, JS. & Hassan, MK. (2018). Financial inclusion and economic growth in OIC countries. *Research in International Business and Finance*, *43*, 1-14. https://doi.org/10.1016/j.ribaf.2017.07.178

Kpodar, K. & Andrianaivo, M. (2011). ICT, financial inclusion, and growth evidence from African countries (No. 11-73). *International Monetary Fund Working Paper*, WP/11/73. https://doi.org/10.5089/9781455227068.001

Lenka, SK. & Bairwa, A. (2016). Does financial inclusion affect monetary policy in SAARC countries? *Cogent Economics and Finance*, *4*, Article ID: 1127011. https://doi.org/10.1080/23322039.2015.1127011

Mehrotra, AN. & Yetman, J. (2014). Financial inclusion and optimal monetary policy. *Bank of International Settlements Working Papers*, No. *476*, 1-26.

Mehrotra, A. & Nadhanael, G. (2016). Financial inclusion and monetary policy in emerging Asia, in *Financial inclusion in Asia*. Springer. p. 93–127. https://doi.org/10.1057/978-1-137-58337-6_4

Neaime, S. & Gaysset, I. (2018). Financial inclusion and stability in MENA: Evidence from poverty and inequality. *Finance Research Letters*, *24*, 230-237. https://doi.org/10.1016/j.frl.2017.09.007

Nguyen, T.T.H. (2021). Measuring financial inclusion: a composite FI index for the developing countries, *Journal of Economics and Development*, *23(1)*, 7-99. https://doi.org/10.1108/JED-03-2020-0027

Okoye, LU, Adetiloye, KA, Erin, O., & Modebe, NJ. (2017). Financial inclusion as a strategy for enhanced economic growth and development. *Journal of Internet Banking and Commerce*, 1-12.

Ozili, PK. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, *18(4)*, 329-340. https://doi.org/10.1016/j.bir.2017.12.003

Ozili, PK. (2019). Blockchain finance: questions regulators ask. Disruptive innovation in business and Finance in the digital world. *International Finance Review*, *Vol. 20*. Emerald Publishing Limited, 123-129. https://doi.org/10.1108/S1569-3767201920

Park, CY. & Mercado, R. (2015). Financial inclusion, poverty, and income inequality in developing Asia. *Asian Development Bank Economics Working Paper Series*, No. 426, 1-18. https://doi.org/10.2139/ssrn.2558936

Park, C. Y. & Mercado, R. V. (2018). Financial inclusion: new measurement and cross-country impact assessment, *ADB Economics Working Paper Series,* No. 539, Asian Development Bank (ADB), https://doi.org/10.22617/WPS189270-2

Sahay, R., Cihak, M., N'Diaye, P.M., Barajas, A., Mitra, S., Kyobe, A.J., Mooi, Y.N. & Yousefi, R. (2015). Financial inclusion: Can it meet multiple macroeconomic goals? *IMF Staff Discussion Notes*, No. *15/17*, 1-33. Washington, DC: International Monetary Fund https://doi.org/10.5089/9781513585154.006

Saraswati, B. D., Maski, G., Kaluge, D. & Sakti, R. K. (2020). The effect of financial inclusion and financial technology on effectiveness of the Indonesian monetary policy. *Business: Theory and Practice*, *21(1)*, 230-243. https://doi.org/10.3846/btp.2020.10396

Sarma, M. (2008). Index of financial inclusion. *Indian Council for Research on International Economic Relations*, Working Paper No. 21. Retrieved January 10, 2023, from https://EconPapers.repec.org/RePEc:ind:icrier:215

Sarma M. (2010). Index of financial inclusion. *CITD Discussion Paper* 10-05. Retrieved January 10, 2023, from https://www.jnu.ac.in/sites/default/files/citd/DP05_2010.pdf

Sarma, M. & Pais, J. (2011). Financial inclusion and development. *Journal of International Development*, *23(5)*, 613-628. https://doi.org/10.1002/jid.1698

Sarma, M. (2012). Index of financial inclusion – a measure of financial sector inclusiveness. Working Paper No. 07/2012, *Berlin Working Papers on Money, Finance, Trade and Development*. Competence Center "Money, Finance, Trade and Development.

Sarma, M. (2016). Measuring financial inclusion using multidimensional data. *World Economics*, *17(1)*, 15-40.

Sethi, D. (2018). Financial inclusion and economic growth linkage: some cross country evidence, *Journal of Financial Economic Policy*. *10(3)*, 369-385. https://doi.org/10.1108/JFEP-11-2016-0073

Vasile, V., Panait, M. & Apostu, S. A. (2021). Financial inclusion paradigm shift in the postpandemic period. digital-divide and gender gap. *International Journal of Environmental Research and Public Health*, *18(20*), 10938. https://doi.org/10.3390/ijerph182010938

✉ Correspondence

Meldina Kokorović Jukan

University of Tuzla, Faculty of Economics,
Urfeta Vejzagića 8, 75000 Tuzla, Bosnia and Herzegovina

E-mail: meldina.kokorovic@untz.ba

STRATEGIC MANAGEMENT, Vol. 29 (2024), No. 4, pp. 039-060

DOI: 10.5937/StraMan2400001A

Received: September 28, 2023
Revised: December 04, 2023
January 08, 2024
Accepted: January 24, 2024
Published online: February 07, 2024

Effects of compulsive buying on debt avoidance and self-esteem: Can brand addiction serve as a socially responsible mediator?

Adi Alić

University of Sarajevo, School of Economics and Business, Sarajevo, Bosnia and Herzegovina
https://orcid.org/0000-0002-9623-6872

Ahmed Kadrić

University of Sarajevo, School of Economics and Business, Sarajevo, Bosnia and Herzegovina
https://orcid.org/0009-0003-7711-8621

Abstract

Background: Despite its controversial features, compulsive buying is gaining increasing attention in recent scientific marketing literature. A particular emphasis is focused on the overlap between compulsive purchasing and addiction to the brand, as well as an analysis of the combined effects of these two forms of addictive consuming on consumers.

Purpose: This study aims to investigate the connection between brand addiction and compulsive buying, as well as the individual and combined effects of these constructs on self-esteem and debt avoidance. Testing differences between consumers of different genders was also carried out.

Study design/methodology/approach: Data were gathered using a questionnaire in the form of a self-assessment that included demographic questions as well as questions about compulsive buying, brand addiction, avoiding debt, and self-esteem. Upon gathering online data in Bosnia and Herzegovina, partial least squares analysis was performed to analyze the data using structural equation modeling.

Findings/conclusions: The study's findings show that brand addiction and compulsive buying are positively associated. Brand addiction serves as a beneficial mediator between compulsive buying and the goals of debt avoidance and self-esteem, acting as a counterbalance to the detrimental effects of compulsive buying. The study's findings indicate that there are no appreciable differences in the aforementioned correlations between men and women. This study offers empirical proof that compulsive buying and brand addiction are separate but related behaviors. These findings improved the conceptual implications of these two crucial ideas and provided brand managers and marketers with a useful tool for strategic brand management and strategic marketing management in general.

Limitations/future research: Future research can develop conceptual models that are more appropriate, containing characteristics that predict addictive behavior, as well as models for marketing strategies that are sensitive to addictive consumption.

Keywords
compulsive buying, brand addiction, debt avoidance, self-esteem, gender

Introduction

Exposed to daily stressful situations and constant mental and physical tension, people often find a way out by buying various commodities. Although compulsive purchases can create a feeling of satisfaction, happiness and good mood, usually these are short-term and actually camouflaged feelings. On the other hand, the long-term consequences of this behavior can be very negative and lead the individual into an even greater abyss, both in psychological and real aspects of life, thus creating a domino effect. Compulsive buying, in this sense, can be seen as a form of addiction and represents a purchase that exceeds the needs and available means of the individual. It represents an ethical issue, as it has negative consequences for customers, their families and creditors.

Compulsive buying disorder was first described by the Swiss psychiatrist Eugen Bleuler in 1915, describing it with the word oniomania (from the Greek words: *onios* (= "for sale"), and *mania* (= "madness")). Compulsive buying occurs as a consumer's reaction to an uncontrollable desire or urge to feel the pleasure of buying a product. Given that it is often repeated, it takes on negative consequences, both for the individual and for society as a whole (O'Guinn & Faber, 1989), since compulsive buyers buy more often and spend more, usually on unnecessary things (Kukar-Kinney, Ridgway, & Monroe, 2012). Both immediate and long-term effects can result from compulsive buying (O'Guinn & Faber, 1989; McElroy, Satlin, Pope, Keck, & Hudson, 1991; Faber & O'Guinn 1992; Dittmar, 2005). The act of buying is accompanied by contentment and happiness, relief from stress, a short-term feeling of satisfaction, strengthening of self-confidence and escape from the feeling of loneliness. The long-term consequences are negative, and they are mainly: growth in indebtedness, subjective feeling of loss of control, and uncertainty. The resulting debts create material and psychological problems. After the purchase, a person may become aware of the consequences of his own behavior and then remorse, euphoria, guilt, anxiety, depression, self-criticism, shame and despair appear. Compulsive shoppers try to hide and forget everything they have bought and try to hide their behavior from others (Hassay & Smith, 1996; Ridgway, Kukar-Kinney, & Monroe, 2008; Kukar-Kinney et al., 2012).

Previous studies have demonstrated that compulsive shoppers are more cognizant of pricing, are more sensitive to product brands and prestige products, and are more price sensitive (Faber & O'Guinn, 1992). Compulsive buyers buy without planning and are impulsive in their purchases (Shoham & Brenčič, 2003; Billieux, Van Der Linden, & Rochat, 2008). Compulsive buying frequently coexists with other addictive behaviors like alcoholism, excessive internet use, gambling disorders, and substance abuse conditions (Faber, Christenson, de Zwaan, & Mitchell, 1995; Mueller, Mueller, Silbermann, Reinecker, Bleich, et al., 2008; Mueller, Mitchell, Peterson, Faber, Steffen, et al., 2011; Kesebir, İşitmez, & Gündoğar, 2012; Granero, Fernández-Aranda, Steward, Mestre-Bach, Baño, et al., 2016; Weinstein, Maraz, Griffiths, Lejoyeux, & Demetrovics, 2016), creating in that way a phenomenon of comorbidity. Mrad & Cui (2020) point out a gap in the research and ambiguous findings about how compulsive purchasing is associated with consumers' connection with brands, despite early research suggesting that brand addiction has detrimental effects comparable to those of other types of various pathological (dysfunctional) forms of addiction (Fournier & Alvarez, 2013). In this sense, the cited authors preliminarily introduce and test a model that looks at the effects of associated addictions on a person's happiness, ability to avoid debt, and self-esteem. However, the authors do not take into account differences that may occur between individuals of different genders or ages. Namely, previous research suggests that the trait of compulsive buying is significantly more prevalent among women (Faber & O'Guinn, 1992; Zadka & Olajossy, 2016), showing that the prevalence rate of female compulsive buyers ranges from a low of 74 percent (Hanley & Wilhelm, 1992) to a high of 93 percent (Black, Repertinger, Gaffney, & Gabel, 1998). Additionally, studies have indicated that younger people tend to make purchases more compulsively than older people (Myers, 2000). The primary purpose of the current study, which is based on the model developed by Mrad & Cui (2020), is to examine whether brand addiction has an effect on compulsive buying and whether it mediates the relationship between compulsive buying, debt avoidance, and self-esteem, while also examining the differences between respondents of different genders.

Since consumer research has long recognized the significance of comprehending the relationship between compulsive purchasing and other addictive behaviors (e.g., Faber, Christenson, de Zwaan, & Mitchell, 1995; Faber & Christenson, 1996; Kwak, Zinkhan, & Lester Roushanzamir, 2004), the current study significantly adds to the body of knowledge regarding addictive consumption and the consumer-brand relationship. The results of the current study can therefore serve as a valuable knowledge base for marketers to develop strategic marketing approaches and practices to prevent adverse effects on consumers and to promote consumers' healthy consumption and mental health. Customers appear to be ravenous when it comes to compulsive and impulsive buying, according to a Nielsen (2016) survey; this type of behavior and desire needs to be studied, especially in emerging countries. According to Lavuri and Thaichon (2023), consumers originating from emerging countries present a promising avenue for businesses to address issues related to lifestyle, technology, and financial inclusion. Their impact can be profound and transformative. The consuming environment in Bosnia and Herzegovina, a developing nation, and emerging market, served as the backdrop for the current study.

The rest of the paper is organized as follows. The next section begins with a review of the relevant literature on compulsive buying, brand addiction, debt avoidance and self-esteem, and then explains the proposed theoretical linkages. After that, we present the methodology and main findings. The last section concludes the paper with a discussion on theoretical and managerial implications, avenues for future research and limitations.

1. Literature review

Compulsive shopping is a type of addiction and represents purchasing that exceeds the needs and available means of the individual. Unlike impulsive buying, it is unethical because it can have serious negative effects on consumers' families or creditors in addition to them as consumers. Numerous researchers have given their own interpretation of the concept of compulsive buying. Krueger (1988) states the following definition of compulsive buying: "Compulsive buying is an addictive and/or compulsive trait that results from a series of repetitive buying motives that disrupts the normal functioning of a person." O'Guinn & Faber (1989) define compulsive buying as "chronic, repeated buying that occurs in response to negative events and feelings", while Scherhon (1990) states that negative experiences, boredom, stress, tension and anxiety, are conditions that they lead a person to release negative feelings by shopping, reduce dissatisfaction and frustration, and increase self-confidence. Accordingly, purchasing addiction is characterized by excessive shopping-related thoughts and buying actions that cause injury or discomfort. Compulsive consumers also exhibit fixation with shopping, pre-purchase anxiety, and relief after a purchase (Black, 2007). What can be concluded is that it is an addictive behavior, which has the property of repetition, and is usually the result of negative feelings that occur in an individual, where the solution to the problem is compulsive buying.

Compulsive buying or oniomania is a disorder often associated with obsessive-compulsive disorder, and arises as a consequence of some other psychological disorder (e.g. depression). Due to the loss of control over one's own behavior or some event, in order to avoid or reduce the feeling of tension and helplessness, one tends to establish some other form of control, in the specific case of repeated shopping (Goldenson, 1984). When a person is in a bad mood, they often try to improve that situation by going shopping, which in most cases ends up being that way. However, in the case of compulsive buying disorder, this act gives people a feeling of satisfaction and happiness, but it lasts very short, because shortly after that, feelings of guilt and awareness that the act of shopping was wrong and unnecessary appear. Despite the negative financial and psychological effects of compulsive purchasing, such as credit card debt, little to no savings, anxiety, depression, irritability, interpersonal conflict, and low confidence (O'Guinn & Faber, 1989; McElroy, Keck, Pope, Smith, & Strakowski, 1994; Roberts, 1998), when anxiety recurs and a person's mood dips, they turn to shopping once more (Workman & Paper, 2010). On the other hand, there is general agreement that compulsive buying is not necessarily pathological (dysfunctional), but rather a severe form of purchasing habits related to attitudes to money and ways to manage finance for some people (Demetrovics & Griffiths, 2012; Müller, Mitchell, & de Zwaan, 2015; Granero et al., 2016). DeSarbo and Edwards (1996) noted that many buyers with compulsive behaviors may be more responsive to their present situation than reflecting an essential psychological difficulty. For example, Johnson and Attmann (2009) and later Aksoy, Akpınar and Özkara (2023) found that consumers with neuroticism are more likely to indulge in obsessive purchasing.

Psychiatrists Kraepelin (1915) and Blueler (1930) established that there are people predisposed to the development of addictive behavior, whether it is uncontrolled shopping, alcohol addiction, pathological gambling, etc. These predispositions can be hereditary (positive family history of depressive disorder, mood disorder or addiction), and can also be a consequence of low levels of the happy hormone in the brain (serotonin). In fact, a distinction can be made between two basic groups of factors that influence the development of compulsive buying:

external (environmental) influences and internal (psychological) influences. Psychological influences coincide with human traits, such as emotional instability, anxiety, low self-esteem and depression, and are considered a key factor in the development of compulsive behavior. Many recent studies have focused on a more detailed consideration of the connection between different personality characteristics and compulsive buying (Tarka, Harnish, & Babaev, 2022; Tarka, Kukar-Kinney, & Harnish, 2022; Otero-López, 2022; Moon, Faheem, & Farooq, 2022; Rizzo, Sestino, Pino, Guido, Nataraajan, & Harnish, 2023; Ali, Tauni, & Ali, 2023; Mert & Tengilimoğlu, 2023; Aquino & Lins, 2023). The genesis of compulsive buying behavior is linked to external factors like pricing, product promotion, and credit cards (Workman & Paper, 2010). Recent research also takes a detailed look at external factors (Nanda, Banerji, & Singh, 2023; Lavuri & Thaichon, 2023). Although both factors can individually lead to the emergence of shopping disorders, in most cases it is their mutual interaction.

It is also important to emphasize the difference between the concepts of compulsive and impulsive buying, bearing in mind that the existing marketing literature mainly dealt with issues of impulsive buying. The terms impulsive and compulsive buying differ in one very important characteristic: compulsive buying represents a form of chronic behavior, caused by a person's internal state, in contrast to impulsive buying, which represents an occasional hasty form of behavior (Black, 2010). Despite the fact that compulsive and impulsive purchasing behaviors are strongly correlated (Shahjehan, Qureshi, Zeb, & Saifullah, 2012), compulsive purchasing involves an "inability to control the urge" (Faber et al. 1995) and "leads to extreme negative circumstances" (Ridgway, Kukar-Kinney, & Monroe, 2006). Conversely, impulsive purchasing happens "when a buyer senses a quick, frequently powerful, and persistent want to acquire something right away." The desire to purchase is hedonically complicated and can cause emotional struggle; also, the will to purchase is often accompanied by a lack of consideration for its effects (Rook, 1987).

The truth is that as marketing as a discipline has developed, it has had unforeseen repercussions that have led to consumers spending more money and purchasing unnecessary items, creating serious problems for their well-being that include debt, depressive symptoms, and poor health. Several studies have demonstrated that a variety of marketing strategies can take advantage of shopping addiction to influence consumers' purchasing decisions. Marketers can increase profits and sales by implementing effective segmentation techniques that consider compulsive behaviors, gender-based variables, and purchasing propensities (Zarate, Fullwood, Prokofieva, Griffiths, & Stavropoulos, 2022). Previously, Kaur, Maheshwari, and Kumar (2019) recommended that marketers think about using different markup techniques for different visible places. In general, the external elements found in the store setting and the attributes of the products can be quite influential in promoting consumers' compulsive buying behavior (Lavuri & Thaichon, 2023). However, it is crucial to recognize that excessive shopping can also have negative effects through the process of negative reinforcement. As such, marketers must actively encourage responsible spending habits rather than take advantage of consumers' trust (Guo, Liang, & Wang, 2023). A growing body of study in marketing, consumer behavior, and psychology has revealed that, of all the frameworks that examine the negative consequences or side effects of purchasing, compulsive buying behavior poses one of the biggest dangers to consumer well-being. Because compulsive buying has a negative impact on people's life, it is considered to be a rising problem that requires attention (Müller et al., 2019). Furthermore, a study suggests that the negative impacts of purchasing extend to one's family, social life, and finances in addition to one's own well-being (Sirgy, Lee, & Yu, 2020). Therefore, for responsible marketers and future research to find ways to focus on preventing the emerging challenges around compulsive buying behavior and how the strategies and techniques should be implemented in a socially responsible way, it is imperative that recent studies show how consumers' buying or purchasing behavior is associated with consumer well-being or ill-being (Nanda et al., 2023). An additional issue stems from the fact that, as the proportion of consumers who shop online has been steadily rising, it is imperative that the issue of compulsive buying in both online and offline channels be examined more thoroughly (Olsen, Khoi, & Tuu, 2022). A change from traditional offline to online compulsive buying behavior disorder has occurred as a result of the increase in e-commerce and the number of individuals making purchases and shopping online (Adamczyk, 2021; Augsburger et al., 2020; Baggio et al., 2022; Fineberg, et al., 2022). Online purchasing and buying may have an increased addictive potential due to certain internet characteristics and e-marketing (Clark & Zack, 2023).

Finally, as a way to comprehend the concept of compulsive buying in the business context, it is necessary to clarify what the meaning of possession is for a person. For individuals, to own something means to accept it as a part of oneself (Belk, 1988). In 1890, the philosopher and psychologist William James pointed out in his book *The Principles of Psychology* that a person's personality is not only made up of his physical and psychological characteristics, but also includes their family, work, material things, finances, etc., and if they are listed elements on the increase, the man himself feels that he is successful, and if there is a loss of them, he falls into despair. It does not need to be explained, how much this phenomenon of possession is related to brands in the modern consumer society. Shopping is motivated by the need to acquire tangible possessions, which has a beneficial effect on the relationship between brand engagement and purchasing (Goldsmith, Flynn, & Clark, 2011, 2012), eventually resulting in the development of brand fanaticism and brand addiction (Le, 2020). Affluenza theory, as stated by De Graaf, Wann and Naylor (2005), who first coined the term *affluenza*, describes compulsive buying behavior as a psychological and social illness marked by a focus on cultural consumerism and the idea that "more is always better". In other words, it is a destructive habit and an addiction that is firmly established in the constant pursuit of more. Workman and Paper (2010) claim that this theory could serve as an analytical structure for understanding the connection between compulsive buying and brand consumption. In fact, marketing is seen to be a contributing factor to compulsive buying because of the pervasive messaging it uses to encourage materialism and stoke consumer cravings (see Damon, 1988; Roberts & Manolis, 2000). More specifically, compulsive buying is defined by Chinomona (2013) as "an uncontrollable and emotional addiction that is socially and externally induced, for example, through brand advertisements", suggesting that the behaviors of compulsive buyers and branding phenomena may interact. Using three pairs of notions related to "asset (benefit) or liability," i.e., appealing or aggravating the self, enabling or obstructing the self, and enriching or empowering the self, Fournier and Alvarez (2013) developed an attachment-aversion relationship (AA Relationship) model. They argue that when self-relevant advantages (enticing the self, enabling the self, and enriching the self) materialize, the consumer-brand relationship reaches a level equivalent to other close human relationships. Their model takes into consideration both the good and the bad. Inferring from this justification, this study claims that brand addiction and compulsive shopping are two closely related conceptions in terms of frequent comorbidity, and examines their effects on self-esteem and debt avoidance.

2.1. Compulsive buying and brand addiction

With regard to consumer-brand interactions, emotions run the gamut from light-hearted feelings to strong affection that leads to compulsive obsession (e.g., Fehr & Russell, 1991; Fournier, 1998; Sternberg, 1986). To understand the relationship between consumers and brands along a continuum resembling that of human relationships, starting with non-intense emotions and progressing through moderate emotions, friendly emotions, passionate love, and addictive obsession, Fournier's theory (1998) draws on interpersonal theories. According to Fournier's (1998) empirical research, there are some "dark side" interactions between customers and brands, including "dependence, hostility, servitude, and covert affairs". These connections appear to be connected to general concepts of addiction (Hirschman, 1992). However, if an addictive consumer-brand relationship is sustained by the advantages of luring oneself, enabling oneself, and enriching oneself, it is unlikely that the relationship is inevitably dominated by the "dark side" features (Fournier & Alvarez, 2013).

Research indicates that, despite some overlaps, brand addiction and brand loyalty are two separate concepts in the context of consumer-brand relations (Cui, Mrad, & Hogg, 2018). Brand addiction actually covers a higher degree of brand loyalty (Mrad & Cui, 2017). According to Cui et al. (2018), brand addiction is seen positively as a combination of several appetitive effects, including contentment, gratification, and tranquility. On the other hand, Fournier and Alvarez (2013) looked at the negative aspects of brand addiction and described it as a very intimate relationship where customers may lose their sense of self as they grow more attached to a brand. As a result, the addictive relationship develops into a highly obsessive and destructive one that pushes customers to engage in risky behaviors like compulsive tendencies. These behaviors can have detrimental long-term effects on the company's operations. On the other hand, although there are studies that show that brand loyalty can lead to detrimental outcomes, such as price unfairness (for example, Riquelme, Roman, Cuestas-Diaz, & Iacobucci, 2019), the generally accepted view is that consumer-brand loyalty leads to favorable behavior.

Brand addiction has developed as one of the most prominent ways in which consumers connect with brands since Fajer and Schouten (1995) first brought addiction up in the context of consumers' interactions with companies. According to Mrad and Cui (2017), brand addiction is a psychological condition in which a consumer is "mentally and behaviorally preoccupied with a specific brand, driven by irrational urges to own the brand's products, involving positive affectivity and gratification." It is a brand concept that refers to consumers' compulsive buying of the brand's items (Cui, Mrad, & Hogg, 2018; Weinstein et al., 2016) and their addicted behavior toward the brand in general. Their constant thoughts and intense emotions are directed toward the brand (Das, Agarwal, Malhotra, & Varshneya, 2019). Brand addiction has been demonstrated to result in a higher level of devotion compared to other brand constructs (Estévez, Jáuregui, Sánchez-Marcos, LópezGonzález, & Griffiths, 2017; Flores, 2004).

Brand addiction and acquisitive desire (AD), or the need to obtain status and pricey possessions, may exhibit some similarities. According to Kottler, Montgomery, and Shepard (2004), an excessive drive to gain, have, or collect goods characterizes AD problems, and are associated with symptoms like anxiety, sadness, and impulsivity. The demand for symbols of success is typically driven by an acquisitive desire albeit these symbols are not always seen negatively (Kottler et al. 2004).

Although brand addiction and compulsive buying are both forms of addictive behavior, there are significant variations between these two concepts (Mrad & Cui, 2020). According to research, obsessive purchasers frequently conceal their purchases and are in denial about the severity of their problems (Faber, O'Guinn, & Krych, 1987). Instead of hiding their addiction, brand addicts publicly promote their obsession with their addictive brands and take great pride in owning products from such brands (Cui et al., 2018). While brand addiction offers long-term satisfactions (Cui et al., 2018), compulsive buying offers temporary relief from dysphoric feelings (Faber et al., 1995). Additionally, their focal point (or "focality") differs: whereas compulsive buying concentrates on the process of shopping, purchasing, and spending, brand addiction concentrates on a specific brand (Mrad & Cui, 2017).

Considering the foregoing, consumers can gain insight into the hedonic, practical, and/or symbolic advantages of the brand through compulsive buying, which may help them achieve goals that are specific to them and bring the brand closer to them (Fournier & Alvarez, 2013). To avoid unpleasant outcomes, compulsive purchasers may be influenced by negative reinforcement to reduce their compulsive behavior and instead concentrate on the advantages of forging stronger bonds with specific brands. As a result, it is likely that certain compulsive buyers would consciously consider the brands they are exposed to repeatedly and grow an addiction on a specific brand (Mrad & Cui, 2020). According to what was stated above, the following hypothesis was established:

H1: Compulsive buying has a positive impact on brand addiction.

1.2. The consequences of compulsive buying and brand addiction

Compulsive buying could have devastating financial repercussions for a person. Compulsive buyers find it difficult to regulate their spending and may accumulate significant debt (Achtziger, Hubert, Kenning, Raab, & Reisch, 2015). Using loans to finance their purchases is a common habit among compulsive buyers. According to their reasoning, these people view buying things as a way of coping with negative feelings and might therefore turn to borrowing when their own resources are insufficient to cover the cost of their desire to acquire things (Black, 2007). According to prior studies, compulsive shoppers frequently lose control over their purchases and accumulate extremely high levels of debt (Black, 2007; Christenson, Faber, de Zwaan, Raymond, Specker, et al., 1994; O'Guinn & Faber, 1989; Schlosser, Black, Repertinger, & Freet, 1994; Achtziger et al., 2015; Mestre-Bach, Steward, Jiménez-Murcia, & Fernández-Aranda, 2017), whereby among the numerous forms of loan reliance takes are credit card debt, personal loans, and advances (Duh & Thorsten, 2019; Maraz, Eisinger, Hende, Urbán, Paksi, et al., 2015; Prawitz, Garman, Sorhaindo, O'Neill, Kim, et al., 2006).

Less is understood about buyers' compulsive awareness to avoid debt, though. It is reasonable to assume that most people do not aim to accumulate debt. Debt may be the result of irresponsible spending or the fact that a person's urge to spend exceeds their awareness of how to avoid it. The research in this area is a bit erratic. For instance, in contrast to earlier research by the Kukar-Kinney et al. (2012), which claimed that compulsive shoppers are more conscious of costs and more responsive to deals than non-compulsive shoppers, a subsequent study by the same authors (Kukar-Kinney, Scheinbaum, & Schaefers, 2016) refuted this notion. According to the findings of the Mrad and Cui (2020) study, compulsive buying has a detrimental effect on debt avoidance. In view of the aforementioned, we hypothesize:

H2: Compulsive buying has a negative impact on debt avoidance.

Unlike research related to compulsive buying, there is much less research on the negative financial consequences of brand addiction. Because of this, there is little evidence to prove that brand addicts will undoubtedly incur debt or file for bankruptcy. According to preliminary empirical research in the literature, brand addicts may set aside an amount of their regular earnings to purchase the goods from their preferred brands (Mrad & Cui, 2017) and "if necessary wait until they can next afford to buy the addictive brand either by saving money or by working very hard to earn sufficient money" (Cui et al., 2018). These first results imply that brand addicts are conscious of the value of avoiding debt.

It can be argued, drawing on Cheema and Soman's (2008) partitioning theory that brand addicts are actively involved in activities associated with addictive brands, drawing attention to the decision to buy, and leading to consumers choosing to put off or postpone the purchase, especially if it is expected to leave them in debts, if it is anticipated to result in debts. Also, the AA relationship model asserts that brand addicts, who are dealing with challenging debt issues, are less likely to be in a healthy psychological condition (Mrad, 2018; Mrad & Cui, 2017; Cui et al., 2018). Brand addiction recently received empirical confirmation from Mrad and Cui (2020) that it significantly improves the ability to avoid debt. Based on the aforementioned, it is reasonable to assume that:

H3: Brand addiction has a positive impact on debt avoidance.

Consumer buying behavior models typically imply that people tend to buy things that are consistent with their own sense of self or with the image they want to project. In particular, it has been claimed that a buyer might contrast a product's symbolic or perceived qualities with its potential to boost their self-esteem. Self-esteem is the degree of a person's positive self-concept and is defined as how they feel about their own value or worth (Rosenberg, 1979). According to Cooley (1902) and Rosenberg (1979), an individual's sense of their own self-worth also reflects their perceptions of what others think of them. The self-esteem motive may be one of the most powerful of all human motives (Rosenberg 1979), which might even be strong enough to override a behavior's constraints (Hanley and Wilhelm, 1992).

According to the literature, poor self-esteem and feelings of powerlessness may be the fundamental causes of compulsive/addictive behaviors in general (Krueger 1988; D'Astous, 1990; DeSarbo & Edwards, 1996; Elliott, 1994; Faber & O'Guinn, 1992; Hanley & Wilhelm, 1992). For instance, Eastman et al. (1997) suggested that status indicators other than an individual's image or professional standing should be ownership of status products. In this situation, compulsive shopping is thought to be motivated by low self-esteem.

However, it is also possible to view compulsive buying as a way for certain people to overcome their negative feelings (Ching & Wu, 2018) and regain their self-esteem (Martinez-Novoa & Hodges, 2016). DeSarbo and Edwards (1996) demonstrate that compulsive buyers engage in buying and purchasing behaviors to boost their sense of self-worth, self-assurance, and personal power. A lack of self-esteem, however, "may not only be a precursor to compulsive buying, but also an outcome of the vicious circle of addiction" (DeSarbo & Edwards, 1996) when indulging in such activities results in shopping addiction. In other words, compulsive buying and self-esteem are incompatible (Mrad & Cui, 2020). Consequently, it is also proposed in the current research that:

H4: Compulsive buying has a negative impact on self-esteem.

Consumers may "addictively get involved in the consumption of products from certain brands as a way to enhance their self-esteem through their appearance" (Mrad & Cui, 2017), as a crucial source of all-around self-esteem (Rosen & Gross, 1987). This runs counter to the vast majority of compulsive buying research findings. According to the literature, consumers buy particular goods like jewelry and cosmetics to enhance their physical appearance, which increases their sense of self-worth (Hoegg, Scott, Morales, & Dahl, 2014). According to Hanley & Wilhelm (1992), consumers are encouraged to support brands that reflect their own self-image or allow them to project their ideal selves. Additionally, there is proof that the strongest factor influencing customers' emotional brand attachment is genuine self-congruence (Huber, Eisele, & Meyer, 2018; Japutra, Ekinci, & Simkin, 2019; Malär, Krohmer, Hoyer, & Nyffenegger, 2011). According to Malär et al. (2011), "actual self-congruence reflects the consumer's perception of the fit between the actual self and the brand's personality." Brands serve as symbols of personal achievement and provide people with confidence by linking with their mental self-representations (Escalas, 2004). Given that consumers are driven in their thinking and actions based on earlier retrospective experiences involving self-awareness with some brands in compulsive buying can set off an ongoing cognitive process of selecting those brands and establishing an attachment to the brands to sustain a sense of self-esteem (Mrad & Cui 2020). Empirical evidence supports the association between brand addiction and self-esteem (Elhajjar, Kaskas, & Tlaiss, 2022; Mrad & Cui, 2020). It follows that it is conceivable to hypothesize that:

H5: Brand addiction has a positive impact on self-esteem.

The directions of the impacts of compulsive buying (all negative) and brand addiction (all positive) show that brand addiction shows competitive mediation effects (Zhao, Lynch Jr., & Chen, 2010). In particular, brand addiction acts as an inhibitor when it is triggered by compulsive purchasing experiences (Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001), causing the negative effects of compulsive buying on debt avoidance and self-esteem to be suppressed due to brand addiction's positive effects on these factors (Mrad & Cui, 2020). In this case, becoming addicted to a brand may enable a person to stop engaging in compulsive buying, and the negative impacts of compulsive buying may be mitigated by the brand addiction experience. Considering the foregoing, we recommend using the following mediation assumptions:

H6: The relationship between compulsive buying and debt avoidance in H2 is mediated by brand addiction.

H7: The relationship between compulsive buying and self-esteem in H4 is mediated by brand addiction.

Many previous studies have found that gender was related to compulsive buying behavior, where females are more prone to compulsive buying than males (Achtziger et al., 2015; Dittmar, 2005; d'Astous, 1990; Hanley & Wilhelm, 1992; O'Guinn & Faber, 1989; Roberts, 1998; Schlosser et al., 1998). According to surveys, the proportion of compulsive female shoppers varies between a low of 74 percent (Hanley & Wilhelm, 1992) to a high of 93 percent (Black et al., 1998). As a result, studies on this subject frequently concentrate solely on women (Yurchisin & Johnson, 2004).

Because they often utilize it to regulate their emotions, women are more likely to indulge in compulsive buying (Dittmar, Long, & Meek, 2004). Women place a greater emphasis on the emotional and identity-related aspects of shopping than do males (Babin, Darden, & Griffin, 1994; Dittmar et al., 2004). They typically have positive attitudes toward browsing, shopping, and social interaction and associate purchasing with a "leisure frame", whereas men typically have negative attitudes and perceive purchasing in a "work frame", as a task they want to complete with the least amount of time and effort possible (Campbell, 2000). For instance, female consumers stated the usage of apparel to promote a positive self-image and increase confidence more frequently than male shoppers (Dittmar & Drury, 2000). Clearly, for certain commodities (such tools or computer equipment), this overall tendency may be weaker or even the opposite. These results lead us to the expectation that the associations suggested by the prior hypotheses (H1 through H5) will differ in strength depending on the gender of the customer, being stronger for women than for males (H8a-H8e).

2. Research method

2.1. Data collection and questionnaire design

The research is based on a quantitative approach, using the survey questionnaire technique for the research. This method is employed for a wide range of data collection in empirical studies (Sarstedt, Hair, Cheah, Becker, & Ringle, 2019). Using an online questionnaire as a data collection tool, data were gathered. Through the unlikely snowball sampling technique, the respondents were approached via email and social media sites Facebook, Instagram, and LinkedIn. A total of 270 complete online questionnaires were collected by adults from the Sarajevo Canton, Bosnia and Herzegovina. Detailed breakdown of the sample characteristics is shown in Table 1.

Table 1 Demographic characteristics

Variable	Frequencies	%	Variable	Frequencies	%
Gender			Education		
Female	192	71.1	High school or below	65	24.1
Male	78	28.9	College or vocational school	31	11.5
Age			Bachelor's degree	103	38.1
Less than 25	136	50.4	Master's degree or higher	71	26.3
26 - 45 years	105	38.9	Socio-economic status		
46 and more	29	10.7	Student	85	31.5
Income			Unemployed	26	9.6
Under BAM* 1,000	92	34.1	Employed	152	56.3
BAM 1,001 – 1,500	60	22.2	Retired	7	2.6
BAM 1,501 – 2,000	48	17.8			
BAM 2,000 +	70	25.9			

Note: * The Bosnia-Herzegovina Convertible Mark (BAM) is the national currency of Bosnia and Herzegovina
Source: the authors' own research

The questionnaire comprised of thirty-three questions, divided into two sections. The sociodemographic information of respondents was gathered in the first phase of the survey. The questionnaire's second segment included items measuring the following constructs: (1) compulsive buying – five items adapted from the work of Faber and O'Guinn (1992); (2) brand addiction and debt avoidance – 13 items adapted from the work of Mrad and Cui (2017); and (3) self-esteem – a shortened version of Rosenberg's (1965) RGSE scale (Rosenberg General Self-Esteem Scale) was used, whereby five items were taken, while the negative items of the RGSE scale were not included, considering that they are associated with "self-discrepancy " (Alessandri, Vecchione, Eisenberg, & Łaguna, 2015), which is not the focus of this study. A seven-point Likert scale, with a range of 1 to 7, was used to score statements that were positive in nature and related to each concept. The original questionnaire was in English, so we translated it and adapted it to the official language of Bosnia and Herzegovina. A pilot study was run with 40 participants, in order to ensure that the participants would understand each and every item used in the final questionnaire.

2.2. Data analysis

To test study hypotheses, partial least square structural equation modelling (PLS-SEM) was used. First, we looked at measurement models for reliability metrics including factor loading, Cronbach's alpha, rho_A, and composite reliability. Convergent and discriminant validity were additionally guaranteed. Prior to modelling structural equations, we also looked at model fit, collinearity, and R-square. Fourth, we tested the structural model, and presented the results of structural modelling. For data analysis, we utilized SPSS (version 24.0) and SmartPLS (version 3.3.3) software.

3. Results

Following the aforementioned steps proposed by Hair, Hult, Ringle, and Sarstedt (2018), a factor loading test was first performed. The construct in this scenario describes more than 50% of the variation of the indicator, which ensures the indicator has an adequate level of dependability. Therefore, factor loading values above 0.7 are advised (Hair et al., 2018). The factor loading values in our research are presented in Table 2 and as we can see, the values for all items meet the previously mentioned criteria.

Table 2 Scaling and measurement properties

Constructs	Code	Dimensions and manifest variables	λ	Cronbach alpha	rho_A
Compulsive buying (CB)	cb1	If I have any money left at the end of the pay period, I just have to spend it.	0.813	0.868	0.876
	cb2	I felt anxious or nervous on days I didn't go shopping.	0.826		
	cb3	I bought things even though I couldn't afford them.	0.880		
	cb4	I made only the minimum payments on my credit cards.	0.452*		
	cb5	I wrote a check when I knew I didn't have enough money in the bank to cover it.	0.864		
Brand addiction (BA)	ba1	I try very hard to get everything from my favorite brand.	0.779	0.923	0.938
	ba2	I often fail to control myself from purchasing products of my favorite brand.	0.755		
	ba3	I often find myself thinking about my favorite brand.	0.807		
	ba4	I tend to give up some life activities and duties such as the occupational, academic and familial in order to fulfil some activities related to my favorite brand.	0.747		
	ba5	I tend to allocate certain portion of my monthly income to buy the products of my favorite brand.	0.789		
	ba6	I usually remember fondly the previous experience with my favorite brand.	0.701		
	ba7	I experience a state of impatience immediately before I can get hold of the products of my favorite brand.	0.789		
	ba8	I follow my favorite brand's news all the time.	0.778		
	ba9	I usually plan when the next purchase of my favorite brand will be.	0.718		
	ba10	I would invest my money in some way to my favorite brand in order to support it.	0.768		
Debt avoidance (DA)	da1	I only spend as much as I can afford.	0.875	0.843	0.854
	da2	I will not purchase things I like if I know this will put me into debt.	0.889		
	da3	It is important to live within my means.	0.851		
Self-esteem (SE)	se1	I feel that I am a person of worth, at least on an equal plane with others.	0.796	0.914	0.927
	se2	I take a positive attitude towards myself.	0.881		
	se3	I have a number of good qualities.	0.894		
	se4	I am able to do things as well as most people.	0.861		
	se5	On the whole, I am satisfied with myself.	0.873		

Note: *This item was excluded in further research
Source: the authors' own research

The Cronbach alpha coefficient and composite reliability (CR) ratings were used in the second step to verify the measurement scales' dependability, as advised by Hair, Sarstedt, Ringle, & Mena (2012). As shown in the previous table (Table 2), Cronbach's alpha coefficients are above the minimum predicted threshold of 0.7 (Nunnally, 1978). Additionally, all of the study's constructs were found to be sufficiently trustworthy, with scores for the overall reliability measure exceeding the advised cut-off point of 0.70 (Fornell & Larcker, 1981) (see Table 3).

The third step involves assessing the convergent validity of the measurement scales. Average variance extracted (AVE) is the metric used to evaluate convergent validity. According to Hair, Black, Babin, and Anderson (2010), AVE values greater than 0.5 signify good convergent validity. As can be seen in Table 3, the AVE values for our measurement model are greater than 0.5, which indicates good convergent validity.

The fourth step refers to the assessment of discriminant validity, which shows the extent to which each construct is empirically different from other constructs in the model. Fornell and Larcker (1981), as a traditional assessment of discriminant validity, suggest that the AVE values of each construct should be compared with the construct's squared correlation with all other constructs in the model (as measures of shared variance), whereby the shared variance should not be greater than associated AVE values. Table III shows indicators of discriminant validity, which point to acceptable values and satisfactory discriminant validity.

Table 3 Discriminant validity of constructs

Construct	CR	AVE	DA	CB	BA	SE
Debt avoidance (DA)	0.905	0.760	**0.872**[a]			
Compulsive buying (CB)	0.910	0.716	-0.413	**0.846**		
Brand addiction (BA)	0.933	0.581	-0.107	0.487	**0.762**	
Self-esteem (SE)	0.935	0.743	0.387	-0.152	0.034	**0.862**

Note: [a]Square root AVE values are in diagonals (bold) and correlations (r) are off-diagonal values

Source: the authors' own research

The structural equation modelling technique requires the elimination of multicollinearity problems. The variance inflation factor (VIF) is most often used for this purpose. When the VIF values are higher, the level of multicollinearity is higher. VIF values of 5 or more indicate multicollinearity problems among constructs (Huang, 2021). VIF values should ideally be below or near to 3. The VIF values in our study are less than 5, which puts them in the range of 1.000 and 1.311, and it shows that the variables are not collinear.

We used SRMR and NFI indicators of representativeness of the model. Acceptable values of SRMR range between 0 and 1, and those less than 0.008 can be considered ideal for good representativeness of the model (Bentler & Bonett, 1980). The acceptable range of values for the NFI indicator is between 0 and 1, and values greater than 0.90 are the most acceptable in the context of the representativeness of the overall model (Bentler & Bonett, 1980; Hu & Bentler, 1998). In our research, the SRMR value is 0.073, which is less than 0.08. The NFI value is 0.815, and it is less than 0.9, but shows a slight deviation from the cut-off value.

The bootstrapping approach was used to evaluate the structure based on the favorable outcomes. The main results of the study are presented in Table 4 below. As can be seen, the findings support hypothesis H1's prediction that compulsive buying and brand addiction have a positive and highly significant connection ($B = 0.487$, $p < 0.001$). The compulsive buying was also found to be negatively associated with the debt avoidance ($B = -0.473$; $p<0.001$) and self-esteem ($B = -0.221$; $p<0.01$), providing support for hypotheses H2 and H3. It was also found that brand addiction is positively related to debt avoidance ($B = 0.124$; $p<0.05$), supporting hypothesis H4. In addition, brand addiction and self-esteem were found to be statistically significantly correlated ($B = 0.142$; p 0.05), confirming hypothesis H5.

An assessment of model explanatory power was also performed. The R-Sq values for the endogenous variables ranged between 0.031–0.245 across the samples (Female, Male, and Complete sample) in the study. The R-Sq values can be described as weak to substantial (Hair, Ringle, & Sarstedt, 2013). Predictive relevance was assessed using Q-Sq value. The Q-Sq values of the endogenous constructs ranged from 0.005–0.235. The Q-Sq values in the study can be described as weak to substantial (Hair et al., 2013).

3.1. Mediation analysis

In order to evaluate the mediating function of brand addiction in the connections between compulsive buying and avoiding debt as well as the connections between compulsive buying and self-esteem, mediation analysis was conducted. The results (see Table 5) revealed a significant indirect effect of CB on DA ($B = 0.060$, $p < 0.05$). The direct effect of CB on DA was significant ($B = -0.473$, $p < 0.001$), and with the inclusion of the mediator (BA), the total effect of CB on DA was still significant ($B = -0.413$, $p < 0.001$). This shows that brand addiction partially mediates the relationship between CB and DA. Hence, H6 was supported. The findings also showed that brand addiction played a significant moderating influence in the association between compulsive buying and self-esteem ($B = 0.069$, p 0.05). As a result, hypothesis H7 was supported because brand addiction serves as a partly mediating factor in the link between compulsive shopping and self-esteem.

Table 4 Direct relationships

	Female				Male				Complete			
Hypotheses	**B**	**T**	***p***	**Results**	**B**	**T**	***p***	**Results**	**B**	**T**	***p***	**Results**
H1: CB → BA	0.463	5.434	0.000	Accepted*	0.503	4.852	0.000	Accepted*	0.487	9.496	0.000	Accepted*
H2: CB → DA	-0.501	6.080	0.000	Accepted*	-0.371	4.852	0.000	Accepted*	-0.473	7.531	0.000	Accepted*
H3: CB → SE	-0.258	2.589	0.010	Accepted*	-0.212	2.002	0.046	Accepted*	-0.221	3.025	0.003	Accepted*
H4: BA → DA	0.215	2.537	0.011	Accepted*	0.210	2.152	0.032	Accepted*	0.124	2.033	0.042	Accepted*
H5: BA → SE	0.234	2.494	0.013	Accepted*	0.059	2.577	0.010	Accepted*	0.142	2.322	0.020	Accepted*
	R-Sq	Q-Sq			R-Sq	Q-Sq			R-Sq	Q-Sq		
BA	0.209	0.193			0.245	0.235			0.234	0.225		
DA	0.187	0.135			0.085	0.045			0.176	0.154		
SE	0.053	0.005			0.038	0.013			0.031	0.011		

Note: *Relationship is significant at $p < 0.05$, B = Beta Coefficient, T = t – Statistics, p = Probability (P) value.
Source: the authors' own research

Table 5 Mediation analysis

	Total effect			Direct effect			Indirect effect				
Relationships	**B**	**T**	***p***	**B**	**T**	***p***	**B**	**T**	***p***	**Percentile bootstrap 95% confidence interval**	
										Lower	**Upper**
CB → BA → DA	-0.413	6.724	0.000	-0.473	7.531	0.000	0.060	1.927	0.027	0.014	0.117
CB → BA → SE	-0.152	2.229	0.013	-0.221	3.025	0.001	0.069	2.135	0.016	0.007	0.116

Note: *Relationships are significant at $P < 0.05$, B = Beta Coefficient, T = t – Statistics, P = Probability (P) value.
Source: the authors' own research

4.2. Multi-group analysis

We examined the significant differences between male and female regarding the effects of compulsive buying on brand addiction, debt avoidance, and self-esteem, as well as the effects of brand addiction on debt avoidance and self-esteem. This is in line with the research hypotheses. The results showed that none of the differences were statistically significant, indicating that there is no statistically significant distinction in the path coefficients for males and females. In this sense, our results do not support hypotheses H8a to H8e. Table 6 lists the outcomes of the multi-group analysis.

Table 6 Multi-group analysis

Relationships	Difference (Male – Female)	*p*-value
H8a: CB → BA	-0.040	0.155
H8b: CB → DA	-0.130	0.359
H8c: CB → SE	-0.047	0.373
H8d: BA → DA	0.005	0.487
H8e: BA → SE	-0.025	0.426

Source: the authors' own research

5. Discussion

The primary goal of this study was to determine how compulsive buying and brand addiction are related, as well as their relationships with two consumers behavioral outcomes, debt avoidance and self-esteem. The current study also looked at the mediating function of brand addiction in the connections between compulsive buying and self-esteem and compulsive buying and debt avoidance. Finally, gender differences are explored.

The study's findings revealed that brand addiction is significantly impacted by compulsive buying. This result is consistent with a study by Mrad & Cui (2020), which showed that some consumers might change from compulsive purchasing to brand addiction. In this study, brand addiction was observed as an outcome of compulsive buying, in contrast to earlier studies where compulsive buying was regarded as a brand addiction consequence (e.g. Cui et al., 2018; Francioni, Curina, Hegner, & Cioppi, 2021; Reimann, Castaño, Zaichkowsky, & Bechara, 2012). These results could be seen as showing how the short-term rewards of compulsive buying lead people to seek out the long-term rewards of brand satisfaction, making them brand addicts (Faber et al., 1995). As a result, the detrimental impacts of compulsive buying (Faber & Christenson, 1996; Faber & O'Guinn, 1992; Hassay & Smith, 1996; O'Guinn & Faber, 1989) may be lessened due to the potential that brand addiction coexists with compulsive buying (Mrad & Cui, 2020). This raises new questions about the underlying causes of compulsive buying.

The findings further support the predictions made by our model about the detrimental impacts of compulsive buying and the beneficial effects of brand addiction on self-esteem and debt avoidance. Providing support for previous findings about positive consequences of brand addiction (e.g., Cui et al., 2018; Elliott, Eccles, & Gournay, 1996; Mrad & Cui, 2017; Mrad & Cui, 2020), and negative consequences of compulsive buying (e.g. Achtziger et al., 2015; DeSarbo & Edwards, 1996; Mestre-Bach et al., 2017; Mrad & Cui, 2020), these results also empirically confirm the separation of brand addiction from compulsive shopping, even though both fall under the umbrella of consumption addiction. The outcomes of these associations improved the conceptual meanings of these two important concepts in this way and helped to clarify the differences between the two types of addictive consumption.

In an effort to understand in more detail the coexistence and combined action of the concepts of compulsive buying and brand addiction, mediation analysis was performed. This analysis shows that brand addiction positively influences the relationship between compulsive buying and self-esteem, as well as the relationship between compulsive buying and avoiding debt. In other words, there is a possibility that brand addiction could mitigate or even erase the negative effects of compulsive buying behavior. These findings are in line with those of the Mrad and Cui (2020) study as well. As such, to avoid or reduce harmful addictive behavior like compulsive buying, treatment programs may be improved by better understanding the comorbidity effects between these two linked forms of addiction (e.g. Faber et al., 1995). Brand addiction may be a non-pathological addiction in terms of avoiding debt and maintaining one's self-esteem, according to Mrad and Cui (2020), and it may coexist with compulsive buying as a pathological addictive habit in some consumers.

Ultimately, the multi-group analysis was carried out to investigate differences between males and females in the study's context, in line with many prior studies that have found that gender plays a significant role in compulsive buying behavior (e.g. Achtziger et al., 2015; Black et al., 1998; Dittmar, 2005) or consumers' connections to brands (e.g. Basu Monga, 2002; Beck, 1988; Wood, 2000). The research findings, however, did not show that there is a statistically significant difference when it comes to gender in any of the hypothesized relationships in this research. The reasons for such findings probably lie in the fact that this is a general study, with the investigation of general attitudes about the constructs of interest in the research. In this sense, the pattern of behavior of men and women is not significantly different, and the intensity and direction of the relationships between the constructs that are investigated in this research can be generalized for consumers, regardless of their gender. However, it is to be expected that with the analysis of purchase motives within different categories of products or services, or research related to a specific brand, the findings would be gender biased.

The study's findings improved the conceptual implications of these two important concepts and gave brand managers and marketers a useful tool for strategic brand management and strategic marketing management in general by providing empirical evidence that compulsive buying and brand addiction are distinct but related behaviors. It is common knowledge that businesses are up against more competition than ever before, and marketers confront a challenging challenge in trying to comprehend consumer behavior. In order to create, communicate, and deliver products that add value to customers in exchanges with organizations, organizations must first understand organizational, interorganizational, and environmental phenomena. These phenomena are critical to an organization's long-term performance. Additionally, organizations must understand how they behave in the marketplace and in their interactions with competitors, customers, and other external constituencies. Lastly, organizations must understand the general management responsibilities of the marketing function to fulfil its boundary-spanning role (Varadarajan, 2015). Due to the fact that the consumer serves as the user, buyer, and payer in the process, consumer behavior is crucial to strategic marketing. When the variables that impact consumer behavior change, so does the behavior of the consumers. In this regard, it is crucial for marketing decision-making at the strategic level to summarize consumer behavior both generally and in the current context of very prevalent, concerning, and addictive shopping behaviors. While your brand undoubtedly shapes how the outside world perceives your company, it also serves as a tool for self-identification and self-understanding for consumers. The company's brand is its reputation and primary differentiator. It is unquestionable that strategic brand management is essential to attracting and retaining customers. Therefore, to support the strategic marketing planning process, the strategic brand management must carefully align the company's global marketing strategy with the intended brand image and plan the brand's medium- and long-term goals (Erdil, 2013). The significance of the study's findings increases when we consider how commonly accepted it is that marketing plays a significant role in our corporate environment and that businesses have social obligations related to corporate social responsibility. The idea of corporate social responsibility challenges excessive consumption and environmental harm brought on by businesses. It is predicated on the notion that, in addition to being profit-driven, market offerings ought to uphold moral and social principles for the good of the populace. Corporate Social Responsibility (CSR) is being pushed as a business model to assist corporations in self-regulation, realizing that their actions affect a variety of stakeholders, including the public (Armstrong & Kotler, 2008). It is accurate to discuss the idea of social marketing, which maintains that companies should provide pertinent information about their goods to minimize the negative environmental effects of their products and safeguard public health and the environment as a whole. It further asserts that marketing initiatives must be planned with consideration for both environmental and societal responsibility. According to Sârghie (2021), "social marketing may be one of the few avenues (if not the only) to effectively and broadly confront this problem, a problem with serious consequences for the affected people, their families and social networks, as well as society at large".

6. Conclusion

The theoretical framework for the present study was provided by theoretical viewpoints on compulsive buying, which viewed it as a particularly extreme instance of psychologically motivated purchasing that is characteristic of modern consumer culture. The current study departs from this long-held conventional wisdom and requires examination of this contentious subject from a marketing viewpoint, despite the increasing acceptance of compulsive buying behavior as a serious clinical issue that requires psychological and psychiatric assistance (Black, 2007; Croissant, Klein, Löber, & Mann, 2009; Mueller et al., 2011; Palan, Morrow, & Trapp, 2011). This study made a successful effort to link compulsive buying behavior to branding phenomena or the interaction between the two. The current study focused more carefully on determining how brand addiction and compulsive buying are related, as well as how these factors affect consumers' ability to manage their debt and feel confident in themselves. More interesting, the study considered gender differences in the patterns of association between four mentioned constructs (compulsive buying, brand addiction, debt avoidance, and self-esteem). Additionally, the current study looks into these controversial problems in the perspective of developing economy research, Bosnia and Herzegovina. Therefore, it is anticipated that both academics and practitioners will benefit from the outcomes of this empirical study in terms of fresh insights and implications.

6.1. Theoretical and managerial implications

By methodically examining the effect of compulsive buying behavior on branding addiction and their concomitant influence on debt avoidance and self-esteem in the context of Bosnia and Herzegovina, one of the developing counties on the European continent, this study significantly contributes to the body of knowledge in the academic fields of brand management, marketing, consumer study, and clinical psychology. In particular, in terms of their effects on consumers, current research shows variations between compulsive buying and brand addiction. These findings provide important evidence that it is crucial to distinguish between distinct types of addiction, some of which may have negative consequences whereas others may not (O'Guinn & Faber, 1989). One important implication is that the concept of addiction in consumer study needs to encompass excessive but non-pathological (i.e., not leading to dysfunctional outcomes) addictions. Without assuming that all addictions are pathological or akin to substance addiction, research into these addictions should be done.

Additionally, this study shows how brand addiction acts as a helpful mediator in the connections between compulsive buying, self-esteem, and debt avoidance. The possibility that brand addiction may coexist with compulsive buying raises new questions about what underlying factors may help turn an individual's tendency for compulsive buying into brand addiction for more advantageous consumption, even though compulsive buying can have negative effects (Faber & Christenson, 1996; Faber & O'Guinn, 1992; Hassay & Smith, 1996; O'Guinn & Faber, 1989). There is still much to learn about the advantages and disadvantages of brand dependency as well as how the coexistence of the two addictions influences consumers' thoughts and behavior in response to their encounters in life and the marketing environments. The literature currently available describes many negative effects of compulsive buying, but there is still much to learn about the positive and negative aspects of brand addiction. In this sense, the study argues that clinical psychologists aiming to treat compulsive buying behavior should start to think about this issue as involving both marketing and branding as well as the interaction of psychological and societal elements.

From the managerial perspective, the findings of this study present a significant ethical conundrum for businesses or business marketers. For many years, the persistently negative connotation of addicted consuming makes it difficult for businesses to promote their goods and brands without running the risk of ethical marketing issues. However, there has been an evident change in business strategy in recent years, as a result of significant changes in consumer behavior as well as the introduction of new digital and communication technologies. In the hierarchy of significance, the client now takes precedence over the product rather than the other way around. Therefore, it has become essential that businesses develop plans that aid in the development of solid, long-lasting relationships with their customers. Because of this, marketing today serves a number of purposes in addition to generating quick profits, such as giving people access to healthy options, improving their quality of life, and benefiting society as a whole (e.g. Horváth & Adgüzel, 2018; Horváth & Birgelen, 2015). Based on the findings of this study, which demonstrate that brand addiction has beneficial impacts on consumers' self-esteem and debt avoidance and that compulsive buying may have a less negative impact on these results when brand addiction is present, marketing specialists can examine techniques for improving customer-brand interactions that could lessen or possibly eliminate some of the adverse impacts of compulsive consumer purchase.

Marketing practitioners can use guilt-inducing reminders of the negative effects of overspending and accruing debt from compulsive buying in their marketing communications to improve the evaluation of bad consumer behavior and promote good, healthy consumption through strong relationships with brands. Brands can defend themselves against accusations that their marketing strategies encourage out-of-control spending in this way. For example, marketing professionals can develop effective strategies to inform consumers, boost consumers' positive mind-sets and actions in these features, and send clear messages on avoiding undesirable behaviors like excessive spending through the brand's touchpoints, such as marketing, sales campaigns, narratives in new product releases, and social media platforms. For instance, the information could include a phone number or internet address, where obsessive purchasers can call to obtain assistance for their issue (Shulman, 2015).

Certainly, the question is justified: Why would companies do this? In this context, one must not forget that one of the fundamental strategic postulates of marketing is the maintenance of long-term relationships with consumers. In addition, the fact that new generations are much more sensitive to the ethical and social responsibility of companies (Yamane & Kaneko, 2021) and accordingly oriented towards ethically responsible consumption, must be taken into account when making decisions about strategic marketing and in general business goals of companies.

6.2. Limitations and future research

Regardless of the evident academic and practical contributions of the study, some limitations are worth acknowledging. First, the generalizability of our findings may be limited, given that this study adopts a convenience sample with relatively small sample size (N = 270). To validate the findings of the current study, additional research using bigger, probability-based samples should be encouraged. In addition, future research can be done by focusing on specific brands, which can certainly help determine potential differences in the mentioned addiction phenomena, in terms of gender. Second, the current study did not examine the causes of the two types of addiction and their impacts on other outcomes outside the current research's scope of debt avoidance and self-esteem. In order to improve our understanding of the potential causes and interactions that arise when compulsive buying and brand addiction coexist within a consumer's addictive consumption, additional studies—especially experimental and longitudinal studies—can extend our research by examining other pertinent antecedents and consequences of compulsive purchasing and brand addiction. Future researchers are encouraged to investigate the theory in various nations, cultural contexts and with different product categories, with the option of using observational techniques to gauge the participants' emotional and behavioral reactions (for example, experiments). Considering the growing trend of older adults using the internet, comparing different generations could also be a topic of future research. Empirical studies should assess compulsive customers' perceived or real vulnerability and how it affects their susceptibility to marketing campaigns.

References

Achtziger, A., Hubert, M., Kenning, P., Raab, G., & Reisch, L. (2015). Debt out of control: the links between self-control, compulsive buying, and real debts. *Journal of Economic Psychology*, *49*, 141-149. https://doi.org/10.1016/j.joep.2015.04.003

Adamczyk, G. (2021). Compulsive and compensative buying among online shoppers: an empirical study. *PLoS ONE 16*(6), e0252563. https://doi.org/10.1371/journal.pone.0252563

Aksoy, B., Akpınar, A., & Özkara, B. Y. (2023). The impact of neuroticism on compulsive buying behavior: the mediating role of the past-negative time perspective and the moderating role of the consumer's need for uniqueness, *Journal of Marketing Theory and Practice*, *31*(3), 352-367. https://doi.org/10.1080/10696679.2022.2076247

Alessandri, G., Vecchione, M., Eisenberg, N., & Łaguna, M. (2015). On the factor structure of the Rosenberg (1965) General Self-Esteem Scale. *Psychological Assessment, 27*(2), 621–635. https://doi.org/10.1037/pas0000073

Ali, A., Tauni, M. Z., & Ali, A. (2022). The Big Five dyad congruence and compulsive buying: a case of service encounters. *Journal of Retailing and Consumer Services*, *68*(2), 103007. https://doi.org/10.1016/j.jretconser.2022.103007

Armstrong, G, & Kotler, P. (2008). *Principles of Marketing. 12th ed*. New Jersey: Pearson Education.

Aquino, S. D., & Lins, S. (2023). The personality puzzle: a comprehensive analysis of its impact on three buying behaviors. *Frontiers in Psychiatry*, *14*, 1179257. https://doi.org/10.3389/fpsyt.2023.1179257

Augsburger, M., Wenger, A., Haug, S., Achab, S., Khazaal, Y., Billieux, et al., (2020). The concept of buying-shopping disorder: comparing latent classes with a diagnostic approach for in-store and online shopping in a representative sample in Switzerland. *Journal of Behavioral Addictions*, *9*(3), 808–817. https://doi.org/10.1556/2006.2020.00051

Babin, B. J., Darden, W. R., & Griffin, M. (1994). Work and/or fun: measuring hedonic and utilitarian shopping value. *Journal of Consumer Research*, *20*(4), 644–656. https://doi.org/10.1086/209376

Baggio, S., Starcevic, V., Billieux, J., King, D. L., Gainsbury, S. M., Eslick, G. D., et al. (2022). Testing the spectrum hypothesis of problematic online behaviors: a network analysis approach. *Addictive Behaviors*, *135*, 107451. https://doi.org/10.1016/j.addbeh.2022.107451.

Basu Monga, A. (2002). Brand as a relationship partner: gender differences in perspectives. In S. M., Broniarczyk & K. Nakamoto (Eds.), *Advances in Consumer Research*, Volume 29 (pp. 36-41). Valdosta: Association for Consumer Research.

Beck, A. T. (1988). *Love is Never Enough*. New York: Harper & Row.

Belk, R. (1988). Possessions and the extended self. *Journal of Consumer Research*, *15*(2), 139–168. https://doi.org/10.1086/209154

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, *88*(3), 588–606. https://doi.org/10.1037/0033-2909.88.3.588

Billieux, J., Van Der Linden, M., & Rochat, L. (2008). The role of impulsivity in actual and problematic use of the mobile phone. *Applied Cognitive Psychology*, *22*(9), 1195-1210. https://doi.org/10.1002/acp.1429

Black, D. (2010). Compulsive buying: clinical aspects. In E. Aboujaoude & L. Koran (Eds.), *Impulse Control Disorders* (pp. 5-22). Cambridge: Cambridge University Press. https://doi.org/10.1017/CBO9780511711930.002

Black, D. W. (2007). A review of compulsive buying disorder. *World Psychiatry: official journal of the World Psychiatric Association (WPA)*, *6*(1), 14–18.

Black, D. W., Repertinger, S., Gaffney, G. R., & Gabel, J. (1998). Family history and psychiatric comorbidity in person with compulsive buying. *American Journal of Psychiatry*, *155*(7), 960-963. https://doi.org/10.1176/ajp.155.7.960

Bleuler, E. (1930). *Textbook of psychiatry*. New York: Macmillan.

Campbell, C. (2000). Shopaholics, spendaholics, and the question of gender. In A. Benson (Ed.), *I shop, therefore I am: compulsive buying and the search for self* (pp. 57-75). New York: Aronson.

Cheema, A., & Soman, D. (2008). The effect of partitions on controlling consumption. *Journal of Marketing Research*, *45*(6), 665-675. https://doi.org/10.1509/jmkr.45.6.665

Ching, B. H. H., & Wu, X. (2018). Parental conflicts and materialism in adolescents: emotional insecurity as a mediator. *Journal of Adolescence*, *69*(1), 189-202. https://doi.org/10.1016/j.adolescence.2018.07.019

Chinomona, R. (2013). An empirical examination of the predictors of consumer compulsive buying as an "Impulse control disorder not otherwise specified": a branding perspective. *Journal of Applied Business Research*, *29*(6), 1689–703. https://doi.org/10.19030/jabr.v29i6.8207

Christenson, G. A., Faber, R. J., de Zwaan, M., Raymond, N. C., Specker, S. M., Ekern, M. D., Mackenzie, T. B., Crosby, R. D., Crow, S. J., & Eckert, E. D. (1994). Compulsive buying: descriptive characteristics and psychiatric comorbidity. *The Journal of clinical psychiatry*, *55*(1), 5–11.

Clark, L., & Zack, M. (2023). Engineered highs: reward variability and frequency as potential prerequisites of behavioural addiction. *Addictive Behaviors*, 140, 107626. https://doi.org/10.1016/j.addbeh.2023.107626

Cooley, C. H. (1902), *Human Nature and the Social Order*. New York: Scribner's.

Croissant, B., Klein, O., Löber, S., & Mann, K. (2009). A case of compulsive buying--impulse control disorder or dependence disorder? *Psychiatry Research, 36*(4):189-192. https://doi.org/10.1055/s-2008-1067522

Cui, C. C., Mrad, M., & Hogg, M. K. (2018). Brand addiction: exploring the concept and its definition through an experiential lens. *Journal of Business Research*, *87*, 118-127. https://doi.org/10.1016/j.jbusres.2018.02.028

Damon, J. (1988). *Shopaholics: Serious help for addicted spenders*. Los Angeles: Price, Stern and Sloan.

Das, G., Agarwal, J., Malhotra, N. K., & Varshneya, G. (2019). Does brand experience translate into brand commitment?: A mediated-moderation model of brand passion and perceived brand ethicality. *Journal of Business Research*, *95*, 479-490. https://doi.org/10.1016/j.jbusres.2018.05.026

d'Astous, A. (1990). An inquiry into the compulsive side of "normal" consumers. *Journal of Consumer Policy*, *13*, 15-31. https://doi.org/10.1007/BF00411867

De Graaf, J., Wann, D., & Naylor. T. H. (2005). *Affluenza: The a/l-consuming epidemic.* 2nd ed. San Francisco: Berrett-Koehler.

Demetrovics, Z., & Griffiths, M. D. (2012). Behavioral addictions: past, present and future. *Journal of Behavioral Addictions*, *1*, 1-2. https://doi.org/10.1556/JBA.1.2012.1.0

DeSarbo, W. S., & Edwards, E. A. (1996). Typologies of compulsive buying behavior: a constrained clusterwise regression approach. *Journal of Consumer Psychology*, *5*(3), 231-262. https://doi.org/10.1207/s15327663jcp0503_02

Dittmar, H. (2005). Compulsive buying - a growing concern? An examination of gender, age and endorsement of materialistic values as predictors. *British Journal of Psychology*, *96*(4), 467-491. https://doi.org/10.1348/000712605X53533

Dittmar, H., & Drury, J. (2000). Self-image - Is it in the bag? A qualitative comparison between "ordinary" and "excessive" consumers*. Journal of Economic Psychology*, *21*(2), 106-145. https://doi.org/10.1016/S0167-4870(99)00039-2

Dittmar, H., Long, K. & Meek, R. (2004). Buying on the internet: gender differences in on-line and conventional buying motivations. *Sex Roles*, *50*, 423–444. https://doi.org/10.1023/B:SERS.0000018896.35251.c7

Duh, H., & Thorsten, T. (2019). Preventing compulsive shopping among young South-Africans and Germans. *Young Consumers*, *20*(1), 29-43. https://doi.org/10.1108/YC-08-2018-0842

Eastman, J. K., Fredenberger, B., Campbell, D., & Calvert, S. (1997). The relationship between status consumption and materialism: a cross-cultural comparison of Chinese, Mexican, and American Student. *Journal of Marketing Theory and Practice*, *5*(1), 52-66. https://doi.org/10.1080/10696679.1997.11501750

Elhajjar, S., Kaskas, M., & Tlaiss, S. (2022). Investigating the causes and consequences of addiction to high-tech brands. *Technology Analysis & Strategic Management*, *34*(8), 974-987. https://doi.org/10.1080/09537325.2021.1934438

Elliott, R. (1994). Addictive consumption: function and fragmentation in postmodernity. *Journal of Consumer Policy*, 17, 159-179. https://doi.org/10.1007/BF01016361

Elliott, R., Eccles, S., & Gournay, K. (1996). Revenge, existential choice, and addictive consumption. *Psychology & Marketing*, *13*(8), 753-768. https://doi.org/10.1002/(SICI)1520-6793(199612)13:8<753::AID-MAR3>3.0.CO;2-E

Erdil, T. S. (2013). Strategic brand management based on sustainable-oriented view: an evaluation in Turkish home appliance industry. *Procedia-Social and Behavioral Sciences*, *99*, 122–132. https://doi.org/10.1016/j.sbspro.2013.10.478

Escalas, J. E. (2004). Narrative processing: building consumer connections to brands. *Journal of Consumer Psychology*, 14(1-2), 168-180. https://doi.org/10.1207/s15327663jcp1401&2_19

Estévez, A., Jáuregui, P., Sánchez-Marcos, I., López-González, H., & Griffiths, M. D. (2017). Attachment and emotion regulation in substance addictions and behavioral addictions. *Journal of behavioral addictions*, *6*(4), 534–544. https://doi.org/10.1556/2006.6.2017.086

Faber, R. J., & Christenson, G. A. (1996). In the mood to buy: differences in the mood states experienced by compulsive buyers and other consumers. *Psychology & Marketing*, *13*(8), 803-819. https://doi.org/10.1002/(SICI)1520-6793(199612)13:8<803::AID-MAR6>3.0.CO;2-J

Faber, R. J., & O'Guinn, T. C. (1992). A clinical screener for compulsive buying. *Journal of Consumer Research*, *19*(3), 459-469. https://doi.org/10.1086/209315

Faber, R. J., O'Guinn, T. C., & Krych, R. (1987). Compulsive consumption. In M. Wallendorf, & P. Anderson (Eds.), *Advances in consumer research* (Vol. 14) (pp. 132–135). Provo: Association for Consumer Research.

Faber, R., Christenson, G., de Zwaan, M., & Mitchell, J. (1995). Two forms of compulsive consumption: comorbidity of compulsive buying and binge eating. *Journal of Consumer Research*, *22*(3), 296–30. https://doi.org/10.1086/209451

Fajer, M. T., & Schouten, J. W. (1995). Breakdown and dissolution of person-brand relationships. *Advances in Consumer Research*, *22*(1), 663-667.

Fehr, B., & Russell, J. A. (1991). The concept of love viewed from a prototype perspective. *Journal of Personality and Social Psychology*, *60*(3), 425– 443. https://doi.org/10.1037/0022-3514.60.3.425

Fineberg, N. A., Menchon, J. M., Hall, N., Dell'Osso, B., Brand, M., Potenza, M. N., et al. (2022). Advances in problematic usage of the internet research - a narrative review by experts from the European network for problematic usage of the internet. *Comprehensive Psychiatry*, *118*, 152346. https://doi.org/10.1016/j.comppsych.2022.152346

Flores . P. J. (2004). *Addiction as an Attachment Disorder*. Oxford: Jason Aronson.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39-50. https://doi.org/10.1177/002224378101800104

Fournier, S. (1998). Consumers and their brands: developing relationship theory in consumer research. *Journal of Consumer Research*, *24*(4), 343-353. https://doi.org/10.1086/209515

Fournier, S., & Alvarez, C. (2013). Relating badly to brands. *Journal of Consumer Psychology*, *23*(2), 253-264. https://doi.org/10.1016/j.jcps.2013.01.004

Francioni, B., Curina, I., Hegner, S. M., & Cioppi, M. (2021). Brand addiction: brand characteristics and psychological outcomes. *Journal of Consumer Marketing*, *38*(2), 125-136. https://doi.org/10.1108/JCM-02-2020-3678

Goldenson, R. M. (1984). *Longman dictionary of psychology and psychiatry*. New York: Longman.

Goldsmith, R. E., Flynn, L. R. & Clark, R. A. (2012). Materialistic, brand engaged and status consuming consumers and clothing behaviors. *Journal of Fashion Marketing and Management*, *16*(1), 102–119. https://doi.org/10.1108/13612021211203050

Goldsmith, R. E., Flynn, L. R., & Clark, R. A. (2011). Materialism and brand engagement as shopping motivations. *Journal of Retailing and Consumer Services*, *18*(4), 278–284. https://doi.org/10.1016/j.jretconser.2011.02.001

Granero, F., Fernández-Aranda, T. Steward, G. Mestre-Bach, M. Baño, A., et al. (2016). Compulsive buying behavior: characteristics of comorbidity with gambling disorder. *Frontiers in Psychology*, *7*, 625. https://doi.org/10.3389/fpsyg.2016.00625

Guo, L., Liang, A., & Wang, Z. (2023). The psychology of shopping addiction in consumer behaviour. *Journal of Psychology Research*. *13*(9). 425-435. https://doi.org/10.17265/2159-5542/2023.09.004

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis*. 7th ed. Upper Saddle River: Pearson Prentice Hall.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2018). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM).* Thousand Oaks: Sage.

Hair, J. F., Jr., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: rigorous applications, better results and higher acceptance. *International Journal of Strategic Management*, *46*(1-2), 1–12. https://doi.org/10.1016/j.lrp.2013.01.001

Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012) An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, *40*, 414-433. https://doi.org/10.1007/s11747-011-0261-6

Hanley, A., & Wilhelm, M. S. (1992). Compulsive buying: An exploration into self-esteem and money attitudes. *Journal of Economic Psychology*, *13*(1), 5-18. https://doi.org/10.1016/0167-4870(92)90049-D

Hassay, D. N., & Smith, M. C. (1996). Compulsive buying: an examination of the consumption motive. *Psychology & Marketing*, *13*(8), 741-752. https://doi.org/10.1002/(SICI)1520-6793(199612)13:8<741::AID-MAR2>3.0.CO;2-F

Hirschman, E. C. (1992). The consciousness of addiction: toward a general theory of compulsive consumption. *Journal of Consumer Research*, *19*(2), 155- 179. https://doi.org/10.1086/209294

Hoegg, J., Scott, M. L., Morales, A. C., & Dahl, D. W. (2014). The flip side of vanity sizing: how consumers respond to and compensate for larger than expected clothing sizes. *Journal of Consumer Psychology*, *24*(1), 70-78. https://doi.org/10.1016/j.jcps.2013.07.003

Horváth, C., & Adıgüzel, F. (2018). Shopping enjoyment to the extreme: hedonic shopping motivations and compulsive buying in developed and emerging markets. Journal of Business Research, 86, 300-310. https://doi.org/10.1016/j.jbusres.2017.07.013

Horváth, C., & Birgelen, M. V. (2015). The role of brands in the behavior and purchase decisions of compulsive versus noncompulsive buyers. *European Journal of Marketing, 49*(1/2), 2-21. https://doi.org/10.1108/EJM-10-2012-0627

Hu, L.-t., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: sensitivity to underparameterized model misspecification. *Psychological Methods*, *3*(4), 424–453. https://doi.org/10.1037/1082-989X.3.4.424

Huang, C-H. (2021). Using PLS-SEM model to explore the influencing factors of learning satisfaction in blended learning. *Education Sciences*, *11*(5), 249. https://doi.org/10.3390/educsci11050249

Huber, F., Eisele, A., & Meyer, F. (2018). The role of actual, ideal, and ought self-congruence in the consumption of hedonic versus utilitarian brands. *Psychology & Marketing*, *35*(1), 47-63. https://doi.org/10.1002/mar.21070

James, W. (1890). *The principles of psychology,Vol 1.* New York: Henry Holt and Co. https://doi.org/10.1037/10538-000

Japutra, A., Ekinci, Y, & Simkin, L. (2019). Self-congruence, brand attachment and compulsive buying. *Journal of Business Research*, *99*, 456-463. https://doi.org/10.1016/j.jbusres.2017.08.024

Johnson, T., & Attmann, J. (2009). Compulsive buying in a product specific context: clothing. *Journal of Fashion Marketing and Management: An International Journal*, *13*(3), 394-405. https://doi.org/10.1108/13612020910974519

Kaur, M., Maheshwari, S. K., & Kumar, A. (2019). Compulsive buying behavior and online shopping addiction among health science teachers. *International Journal of Nursing Care*, *7*(1), 74–80. https://doi.org/10.5958/2320-8651.2019.00014.0

Kesebir, S., İşitmez, S., & Gündoğar, D. (2012). Compulsive buying in bipolar disorder: Is it a comorbidity or a complication?. *Journal of Affective Disorders*, *136*(3), 797-802. https://doi.org/10.1016/j.jad.2011.09.037

Koran, L. M., & Aboujaoude, E. (2010) *Impulsive Control Disorders.* Cambridge: Cambridge University Press.

Kottler, J., Montgomery, M., & Shepard, D. (2004). Acquisitive desire: assessment and treatment. In T. Kasser & A. D. Kanner (Eds.), *Psychology and Consumer Culture: The Struggle for a Good Life in a Materialistic World* (pp. 149–168), Washington: American Psychological Association.

Kraemer, H. C., Stice, E., Kazdin, A., Offord, D., & Kupfer, D. (2001). How do risk factors work together? Mediators, moderators, and independent, overlapping, and proxy risk factors. *American Journal of Psychiatry*, *158*(6), 848-856. https://doi.org/10.1176/appi.ajp.158.6.848

Kraepelin, E. (1915). *Psychiatrie*. 8th ed. Leipzig: Barth.

Krueger, D. W. (1988). On compulsive shopping and spending: a psychodynamic inquiry. *American journal of psychotherapy*, *42*(4), 574–584. https://doi.org/10.1176/appi.psychotherapy.1988.42.4.574

Kukar-Kinney, M. M., Ridgway, N., & Monroe, K. B. (2012). The role of price in the behavior and purchase decisions of compulsive buyers. *Journal of Retailing, 88*(1), 63-71. https://doi.org/10.1016/j.jretai.2011.02.004

Kukar-Kinney, M., Scheinbaum, A. C., & Schaefers, T. (2016). Compulsive buying in online daily deal settings: an investigation of motivations and contextual elements. *Journal of Business Research*, *69*(2), 691-699. https://doi.org/10.1016/j.jbusres.2015.08.021

Kwak, H., Zinkhan, G. M., & Lester Roushanzamir, E. P. (2004). Compulsive comorbidity and its psychological antecedents: a cross-cultural comparison between the US and South Korea. *Journal of Consumer Marketing*, *21*(6), 418-434. https://doi.org/10.1108/07363760410558681

Le, M. T. H. (2020). Social comparison effects on brand addiction: a mediating role of materialism. *Heliyon*, *6*(11), e05460. https://doi.org/10.1016/j.heliyon.2020.e05460

Lavuri, R., & Thaichon, P. (2023), "Do extrinsic factors encourage shoppers' compulsive buying? Store environment and product characteristics". *Marketing Intelligence & Planning*, *41*(6), 722-740. https://doi.org/10.1108/MIP-03-2023-0097

Malär, L., Krohmer, H., Hoyer, W. D., & Nyffenegger, B. (2011). Emotional brand attachment and brand personality: the relative importance of the actual and the ideal self. *Journal of Marketing*, *75*(4), 35-52. https://doi.org/10.1509/jmkg.75.4.35

Maraz, A., Eisinger, A., Hende, B., Urbán, R., Paksi, B., Kun, B., Kökönyei, G., Griffiths, M. D., & Demetrovics, Z. (2015). Measuring compulsive buying behaviour: psychometric validity of three different scales and prevalence in the general population and in shopping centres. *Psychiatry Research*, *225*(3), 326–334. https://doi.org/10.1016/j.psychres.2014.11.080

Martinez-Novoa, L. M., & Hodges, N. N. (2016). Beyond shopaholism: a socio-cultural examination of compulsive clothing buying behavior. *International Textile and Apparel Association Annual Conference Proceedings*, *USA*, *73*(1), 379-384. https://doi.org/10.31274/itaa_proceedings-180814-1412

McElroy, S. L., Keck, P. E., Jr, Pope, H. G., Jr, Smith, J. M., & Strakowski, S. M. (1994). Compulsive buying: a report of 20 cases. *The Journal of clinical psychiatry*, *55*(6), 242–248.

McElroy, S. L., Satlin, A., Pope, H. G., Keck, P. E., & Hudson, J. I. (1991). Treatment of compulsive shopping with antidepressants: a report of three cases. *Annals of Clinical Psychiatry*, *3*(3), 199-204. https://doi.org/10.3109/10401239109147991

Mert, M., & Tengilimoğlu, D. (2023). The mediating role of FoMO and the moderating role of narcissism in the impact of social exclusion on compulsive buying: a cross-cultural study. *Psicologia: Reflexão e Crítica*, *36*, 33. https://doi.org/10.1186/s41155-023-00274-y

Mestre-Bach, G., Steward, T., Jiménez-Murcia, S., & Fernández-Aranda, F. (2017). Differences and similarities between compulsive buying and other addictive behaviors. *Current Addiction Reports*, *4*(3), 228-236. https://doi.org/10.1007/s40429-017-0153-z

Moon, M. A., Faheem, S., & Farooq, A. (2022). I, me, and my everything: self-conceptual traits and compulsive buying behavior. *Journal of Retailing and Consumer Services*, *68*(C), 103075. https://doi.org/10.1016/j.jretconser.2022.103075

Mrad, M. (2018). Brand addiction conceptual development. *Qualitative Market Research: An International Journal*, *21*(1), 18-38. https://doi.org/10.1108/QMR-06-2016-0050

Mrad, M., & Cui, C. C. (2020). Comorbidity of compulsive buying and brand addiction: an examination of two types of addictive consumption. *Journal of Business Research*, *113*(4), 399-408. https://doi.org/10.1016/j.jbusres.2019.09.023

Mrad, M., & Cui, C. C. (2017). Brand addiction: Conceptualization and scale development. *European Journal of Marketing*, *51*(11/12), 1938-1960. https://doi.org/10.1108/EJM-10-2016-0571

Mueller, J. E. Mitchell, L. A. Peterson, R. J. Faber, K. J. Steffen, R. D., et al. (2011). Depression, materialism, and excessive internet use in relation to compulsive buying. *Comprehensive Psychiatry*, *52*(4), 420-424. https://doi.org/10.1016/j.comppsych.2010.09.001

Mueller, U., Mueller, A., Silbermann, H., Reinecker, S., Bleich, J.E., et al., (2008). A randomized, controlled trial of group cognitive-behavioral therapy for compulsive buying disorder: posttreatment and 6-month follow-up results. *The Journal of Clinical Psychiatry*, *69*(7), 1131-1138. https://doi.org/10.4088/JCP.v69n0713

Müller, A., Brand, M., Claes, L., Demetrovics, Z., de Zwaan, M., Fernández-Aranda, F., et al. (2019). Buying-shopping disorder-is there enough evidence to support its inclusion in ICD-11?. *CNS Spectrums*, *24*(4), 374-379. https://doi.org/10.1017/S1092852918001323.

Müller, A., Mitchell, J.E., & de Zwaan, M. (2015). Compulsive buying. *The American Journal on Addictions*, *24*(2), 132-137. https://doi.org/10.1111/ajad.12111

Myers, D. G. (2000). The Funds, Friends, and Faith of Happy People. *American Psychologist*, *55*(1), 56-67. https://doi.org/10.1037/0003-066X.55.1.56

Nanda, A. P., Banerji, D., & Singh, N. (2023). Situational factors of compulsive buying and the well-being outcomes: what we know and what we need to know. *Journal of Macromarketing*, *43*(3), 384-402. https://doi.org/10.1177/02761467231180091

Nielsen. (2016). *"Global online consumer confidence", Concerns, and Spending Intentions*. New York City, NY: SAD.

Nunnally, J. C. (1978). *Psychometric Theory.* 2nd ed. New York: McGraw-Hill.

O'Guinn, T. C. & Faber, R. J. (1989). Compulsive buying: a phenomenological exploration. *Journal of Consumer Research*, *16* (2), 147-157. https://doi.org/10.1086/209204

Olsen, S. O., Khoi, N. H., & Tuu, H. H. (2022). The 'well-being' and 'ill-being' of online impulsive and compulsive buying on life satisfaction: the role of self-esteem and harmony in life. *Journal of Macromarketing*, *42*(1), 128-145. https://doi.org/10.1177/0276146721104

Otero-López, J. M. (2022). What do we know when we know a compulsive buying person? Looking at now and ahead. *International journal of environmental research and public health*, *19*(18), 11232. https://doi.org/10.3390/ijerph191811232

Palan, K. M., Morrow, P. C., & Trapp, A. (2011). Compulsive buying behavior in college students: the mediating role of credit card misuse. *The Journal of Marketing Theory and Practice, 19*(1): 81-96. https://doi.org/10.2753/MTP1069-6679190105

Prawitz, A., Garman, E. T., Sorhaindo, B., O'Neill, B., Kim, J., & Drentea, P. (2006). InCharge Financial Distress/Financial Well-Being Scale: development, administration, and score interpretation. *Journal of Financial Counseling and Planning*, *17*(1), 34-50. https://doi.org/10.1037/t60365-000

Reimann, M., Castaño, R., Zaichkowsky, J., & Bechara, A. (2012). How we relate to brands: psychological and neurophysiological insights into consumer–brand relationships. *Journal of Consumer Psychology*, *22*(1), 128-142. https://doi.org/10.1016/j.jcps.2011.11.003

Ridgway, N. M., Kukar-Kinney, M., & Monroe, K. B. (2008). An expanded conceptualization and a new measure of compulsive buying. *Journal of Consumer Research*, *35*(4), 622-639. https://doi.org/10.1086/591108

Ridgway, N., Kukar-Kinney, M., & Monroe, K. (2006). New perspectives on compulsive buying: its roots, measurement and physiology. In: C. Pechmann, & L. Price (Eds.), *Advances in consumer research*, *vol. 33* (pp. 131-133). San Antonio: Association for Consumer Research.

Riquelme, I., Roman, S., Cuestas-Diaz, P. J., & Iacobucci, D. (2019). the dark side of good reputation and loyalty in online retailing: when trust leads to retaliation through price unfairness. *Journal of Interactive Marketing*, *47*, 35-52. http://dx.doi.org/10.2139/ssrn.3425986

Rizzo, C., Sestino, A., Pino, G., Guido, G., Nataraajan, R., & Harnish, R. J. (2023). A hierarchical personality approach toward a fuller understanding of onychophagia and compulsive buying. *Psychological Reports*, *126*(3), 1322–1338. https://doi.org/10.1177/00332941211061696

Roberts, J. (1998). Compulsive buying among college students: an investigation of its antecedents, consequences, and implications for public policy. *Journal of Consumer Affairs*, *32*(2),295–319. https://doi.org/10.1111/j.1745-6606.1998.tb00411.x

Roberts, J., & Manolis, C. (2000). Baby boomers and busters: an exploratory investigation of attitudes toward marketing, advertising, and consumerism. *Journal of Consumer Marketing*, *17*(6), 481–97. https://doi.org/10.1108/07363760010349911

Rook, D.W. (1987). The buying impulse. *Journal of Consumer Research*, *14*(2), 189-199. https://doi.org/10.1086/209105

Rosen, J. C., & Gross, J. (1987). Prevalence of weight reducing and weight gain in adolescent girls and boys. *Health Psychology*, *6*(2), 131-147. https://doi.org/10.1037/0278-6133.6.2.131

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton: Princeton University Press.

Rosenberg, M. (1979). *Conceiving the self*. New York: Basic Books.

Sarstedt, M., Hair, J. F., Cheah, J. H., Becker, J. M., & Ringle, C. M. (2019). How to specify, estimate, and validate higher-order constructs in PLS-SEM. *Australasian Marketing Journal*, *27*(3), 197-211. https://doi.org/10.1016/j.ausmj.2019.05.003

Sârghie, M. M. P. (2021). Using social marketing to tackle compulsive buying. *Social Marketing Quarterly*, *27*(1), 3-12. https://doi.org/10.1177/1524500420988263

Scherhon, C. (1990). The addictive trait in buying behavior. *Journal of Consumer Policy*, *13*(1), 33-51. https://doi.org/10.1007/BF00411868

Schlosser, S., Black, D. W., Repertinger, S., & Freet, D. (1994). Compulsive buying. Demography, phenomenology, and comorbidity in 46 subjects. *General hospital psychiatry*, *16*(3), 205–212. https://doi.org/10.1016/0163-8343(94)90103-1

Shahjehan, A., Qureshi, J. A., Zeb, F., & Saifullah, K. (2012). The effect of personality on impulsive and compulsive buying behaviors. *African Journal of business management*, *6*(6), 2187–94. https://doi.org/10.5897/AJBM11.2275

Shoham, A., & Brenčič, M. M. (2003). Compulsive buying behavior. *Journal of Consumer Marketing*, *20*(2), 127-138. https://doi.org/10.1108/07363760310464596

Shulman, T. (2015). *Shopaholics anonymous*. Retrieved May, 15, 2023 from: http://www.shopaholicsanonymous.org/

Sirgy, M. J., Lee, D. J., & Yu, G. B. (2020). Shopping-life balance: towards a unifying framework. *Applied Research in Quality of Life*, *15*(1), 17-34. https://doi.org/10.1007/s11482-018-9662-8

Sternberg, R. J. (1986). A triangular theory of love. *Psychological Review*, *93*(2), 119–135. https://doi.org/10.1037/0033-295X.93.2.119

Tarka, P., Kukar-Kinney, M., & Harnish, R. J. (2022). Consumers' personality and compulsive buying behavior: the role of hedonistic shopping experiences and gender in mediating-moderating relationships. *Journal of Retailing and Consumer Services*, *64*, 102802. https://doi.org/10.1016/j.jretconser.2021.102802

Tarka, P., Harnish, R. J., & Babaev, J. (2022). Hedonism, hedonistic shopping experiences and compulsive buying tendency: A demographics-based model approach. *Journal of Marketing Theory and Practice*, 31(2), 197-222. https://doi.org/10.1080/10696679.2022.2026791

Weinstein, A., Maraz, A., Griffiths, M. D., Lejoyeux, M., & Demetrovics, Z. (2016). Chapter 98 - Compulsive buying – features and characteristics of addiction. In V. R. Preedy (Ed.), *Neuropathology of drug addictions and substance misuse* (pp. 993-1007). Cambridge: Academic Press. https://doi.org/10.1016/B978-0-12-800634-4.00098-6

Wood, J. T. (2000). Gender and personal relationships. In C. Hendrick & Hendrick, S. S. (Eds.), *Close Relationships-A Source Book* (pp. 301-313). Thousand Oaks: Sage Publications.

Workman, L., & Paper, D. (2010). Compulsive buying: a theoretical framework. *Journal of Business Inquiry*, *9*(1), 89-126.

Yamane, T., & Kaneko, S. (2021). Is the younger generation a driving force toward achieving sustainable development goals? Survey experiments. Journal of Cleaner Production, 292, 125932. https://doi.org/10.1016/j.jclepro.2021.125932

Yurchisin, J., & Johnson, K. K. (2004). Compulsive buying behavior and its relationship to perceived social status associated with buying, materialism, self-esteem, and apparel-product involvement. *Family and Consumer Sciences Research Journal*, *32*(3), 291-314. https://doi.org/10.1177/1077727X03261178

Varadarajan, R. (2015). Strategic marketing, marketing strategy and market strategy. *AMS Review*, *5*, 78–90. https://doi.org/10.1007/s13162-015-0073-9

Zadka, Ł., & Olajossy, M. (2016). Compulsive buying in outline. *Psychiatria Polska*, *50*(1), 153-164. https://doi.org/10.12740/PP/44010

Zarate, D., Fullwood, L., Prokofieva, M., Griffiths, M. D., & Stavropoulos, V. (2023). Problematic shopping behavior: an item response theory examination of the seven-item Bergen shopping addiction scale. *International Journal of Mental Health and Addiction*, *21*, 4108–4126. https://doi.org/10.1007/s11469-022-00844-8

Zhao, X., Lynch, J. G., Chen, Q., Jr. (2010). Reconsidering Baron and Kenny: myths and truths about mediation analysis. *Journal of Consumer Research*, *37*(2), 197-206. https://doi.org/10.1086/651257

✉ **Correspondence**

Adi Alić

University of Sarajevo, School of Economics and Business, Sarajevo, Bosnia and Herzegovina
Trg oslobođenja - Alija Izetbegović 1, 71000 Sarajevo, Bosnia and Herzegovina

E-mail: adi.alic@efsa.unsa.ba

STRATEGIC MANAGEMENT, Vol. 29 (2024), No. 4, pp. 061-069

DOI: 10.5937/StraMan2200021A

Received: May 09, 2022
Accepted: June 10, 2022
Published online: September 29, 2022

The impact of corporate social responsibility on the environmental performance of large organizations in Serbia

Marko Aleksić

University of Novi Sad, Faculty of Economics in Subotica, Subotica, Republic of Serbia
https://orcid.org/0000-0002-4488-4472

Nemanja Berber

University of Novi Sad, Faculty of Economics in Subotica, Subotica, Republic of Serbia
https://orcid.org/0000-0002-1433-6416

Maja Strugar Jelača

University of Novi Sad, Faculty of Economics in Subotica, Subotica, Republic of Serbia
https://orcid.org/0000-0002-6707-5942

Radmila Bjekić

University of Novi Sad, Faculty of Economics in Subotica, Subotica, Republic of Serbia
https://orcid.org/0000-0002-7263-8025

Abstract

Background: Modern business operations, which have resulted in a significant growth of major companies, both those operating within their national boundaries and multinational ones, have contributed to an increased exploitation of natural resources, environmental pollution, harmful gas emissions, drinking water scarcity, deforestation and many other negative consequences for the entire environment. This resulted in the emergence of the concept of CSR, first in large multinationals, which had sufficient funds to address this issue, and, in most cases, had contributed to environmental pollution.

Purpose: The authors of this paper investigate whether there is a relation between the concept of Corporate Social Responsibility (CSR) and environmental performance in Serbia.

Study design/methodology/approach: The research was conducted from November 2019 to August 2021 in large organisations on a sample of 165 companies. The author used Smart PLS software for data processing.

Finding/conclusions: The research results show that the application of the concept of CSR influences significantly the environmental performance in large organisations in Serbia.

Limitations/future research: The authors only investigated large companies, while the relationship between CSR and environmental performances in SMEs is a potential for future research.

Keywords

corporate social responsibility, environmental performance, large organizations, PLS-SEM, Serbia

Introduction

The concern of individuals, groups, organisations and the general public for the environment has been growing increasingly over time, and, consequently, resulted in the growth of environmental protection activities, as the issues of global warming, ozone layer depletion and decrease and loss of biodiversity have boosted the awareness of the necessity to implement sustainable development patterns that will allow companies to grow and earn profit without endangering the environment or diminishing its quality for future generations. (Cianconi, Betrò & Janiri, 2020). Modern companies implement specific environmental management systems, since they provide opportunities and directions for companies to reduce negative impact of their business activities on the natural environment (Zdravković & Peković, 2020).

Public awareness of the impact of the concept of CSR in companies on the environment has grown, and consequently, the demands by the public from companies in their environment. (Halkos & Nomikos, 2021). This resulted in the emergence of the concept of CSR, first in large multinationals, which had sufficient funds to address this issue, and, in most cases, had contributed to environmental pollution. In addition, public awareness of the importance of the environment and companies endangering grew rapidly owing to the internet and the media, which used to be much less accessible to the broad masses.

Globally successful companies had been using this approach a decade before multinationals brought it to Serbia. Application of this concept in Serbia was initiated owing to foreign companies, who, arriving to Serbia, continued social responsibility practices they had been implementing in their countries of origin (Aleksić, Bjekić & Rodić, 2020). The international companies having started promoting their social responsibility to the community, environs, environment etc., public conscience in Serbia started perceiving a new picture related to this issue, so that the application of this concept was initiated in companies located on the territory of Serbia as well.

The research encompassed 165 large companies operating on the territory of Serbia. In this paper, the authors researched the relationship between the application of CSR and environmental performance.

The relationship between the dimensions of CSR and environmental performance was established using Smart PLS program. Research results have shown that there is a positive correlation between environmental performance and the dimensions of corporate social responsibility. The paper consists of three parts. The first part presents an overview of relevant literature in this area; the second part describes the applied research methods, and the third segment is based on the results of the conducted research, discussion on the results, conclusions and recommendations for future research.

1. Theoretical background

The concept of corporate social responsibility is a dynamic category, changing and growing constantly, so that defining corporate social responsibility varies, and there is no unified definition of this concept (Cherian & Pech, 2017). One of the definitions of corporate social responsibility is a company's endeavour to provide incentives to the community it operates in. Implementation of the CSR concept is based on interaction between a company and various stakeholders (community, environment, employees, customers, suppliers, investors and many others). The concept of corporate social responsibility enables organisations to achieve balance between their economic, social and environmental objectives (Hopkins, 2005; Dahlsrud, 2006).

The principal objective that all companies strive for is to maximise performance and profit, but, apart from their basic reason for existence, they should also take account of environmental protection, bearing in mind the fact that they make a direct negative impact due to exploitation of resources, soil and energy, as well as pollution caused by harmful gas emissions and leakages into soil, water and air during the production (Ienciu & Napoca, 2009). Due to increasing business changes, market and competition growth in the modern business conditions, as well as growing customers' and consumers' demands, the introduction of new technologies and raised awareness of consumers and other individuals about the importance of environmental protection have resulted in various activities conducted by those individuals, groups and organisations and thus, essentially, forced some companies to take responsibility and become involved in these initiatives (Berber, Slavić & Aleksić, 2019).

In addition to economic objectives, a socially responsible company takes into account environmental objectives, causing the managers of such companies to take into account the company's environmental performance, measuring it and managing it appropriately. A company's environmental performance represents an organisation's commitment and willingness to take environmental responsibility. (Judge & Douglas, 1998). "The concept of CSR itself has been modified and re-evaluated over the years, and many companies are faced with demands for more comprehensive changes in the domain of their approach to society and the environment" (Marić, Berber, Slavić & Aleksić, 2021, p.2).

In companies driven by the concept of corporate social responsibility, whose human resources strategy is driven by it, a positive correlation was established between the human resources strategy and impact on the growth in the organisations' environmental performance (Berber, Slavić & Aleksić, 2021).

Application of the concept of corporate social responsibility has prompted many companies to change technologies used in the production of their goods and services, especially if these technologies contributed to environmental pollution, where some companies were not content only to reduce pollution, but proceeded to change their technologies completely and manufactured green products such as environmentally safe, recycled and biodegradable goods, replace operations with more energy efficient ones, implement efficient waste management and preservation of cultural assets (Zhang, Oo, & Lim, 2019; Dragičević-Radičević, Stanojević, Milanović, Katanić & Todosijević-Lazović, 2020).

In view of the business changes that have been emerging, it is necessary to implement new business models so that companies achieve sustainable development and maintain their competitiveness (Berber et al., 2019). Companies implementing the concept of corporate social responsibility guided by environmental protection and adopting environmental standards gain prominence with their competitiveness on the international market, and the consumers awareness of the importance of environment is greatly increased (Berber et al., 2019).

Companies conducting activities of importance for the environment get accepted much faster in society and the environment they operate in, and their products penetrate the market raster, gaining popularity more easily, owing to media stressing the importance of environmental protection and informing the public about the companies implementing CSR and their products (Martín-Peña, Díaz-Garrido & Sánchez-López, 2014).

Environmental performance plays an important part in socially responsible business operations. Numerous studies have been conducted, establishing that there is a positive correlation between corporate social responsibility and environmental performance of business operation, and special attention has been paid to pollution emissions, energy consumption, as well as the harmful substances and waste companies release into the environment (Alam, Atif, Chien-Chi & Soytaş, 2019).

Corporate social responsibility is not only focussed on stakeholders within organisations; their focus goes further beyond, encompassing stakeholders outside organisations as well as results that are not limited only to financial ones.

This would mean that organisations operating in accordance with the concept of corporate social responsibility do not set making profit as the only objective; their objectives are broader and, in addition to economic performance, they also attach importance to others, including the environmental, which points to a positive correlation between organisations' corporate social responsibility and environmental performance (Aguinis & Glavas, 2019).

Environmentally sustainable, that is, green supply chain management emerged as a way of running companies that, in addition to earning profit as the objective it seeks, has other objectives as well, such as reducing environmental risks and impact on improving economic efficiency of an organisation and its partners (Van Hoek, 1999).

Green supply chain management has enabled companies to take care of environmental protection starting from square one, that is, purchase of raw materials etc. from socially responsible suppliers, and thus influence their market competitiveness, especially in a period of ever-growing consumer pressure for environmental protection. This way, apart from earning profit, companies also improve their environmental performance, which provides them with competitiveness and profitability (Zhu & Sarkis, 2004). To protect nature and reduce negative environmental impact, companies have launched continuous activities meeting relevant players' demands regarding the environment. A strong and well-set-up orientation of corporate social responsibility among stakeholders, essentially, motivates companies and organisations to involve into environmental activities to the greatest possible extent (Zhu & Sarkis, 2004).

Based on a research study conducted in Malaysia, encompassing 297 large companies, a positive correlation was established with environmental strategy and green innovation, which definitely influence environmental performance, that is, influence its growth and thus act as intermediaries between environmental performance and corporate social responsibility. (Kraus, Rehman & Garcia, 2020). A direct impact on environmental performance was not established it the above mentioned study; however, studies conducted pointed to the shortcomings of previous studies, showing that they had not produced relevant data, as they conducted their research viewing solely financial performance.

In research conducted in Serbia on a sample of transport companies, the authors argue that the application of the concept of corporates social responsibility influences the environment, that is, that care of the external dimension of CSR is most directly related to transport business (Žarevac Bošković, Lakićević & Pantović, 2021).

Although corporate social responsibility influences companies' organisational performance, some of the studies produced incomplete results, as their research did not include non-financial benefits of corporate social responsibility, such as, for instance, the reputation that a company acquires owing to its approach to the environment. If all other aspects were excluded, viewing financial aspect only, it would be difficult to establish a direct and positive impact of corporate social responsibility on an organisation's performance.

A research study conducted in Spain encompassing 133 companies produced results pointing out that there is a direct positive effect between corporate social responsibility and impact on a company's performance. Reverte, Gómez-Melero and Cegarra-Navarro (2016) argue that, in addition to non-financial benefits brought by corporate social responsibility, the potential intermediary effect of innovation were omitted when viewing the relation between corporate social responsibility and performance. In their research, these authors supplemented the analyses they regarded as incomplete by taking into account both financial and non-financial indicators in their research, and, additionally, attaching importance and studying the intermediary role that innovation can play in the relation between corporate social responsibility and performance.

Analysing previous studies, which do not take into account both financial and non-financial benefits as well as the intermediary role of innovation, what is noticeable is the importance of managing the concept of corporate social responsibility for companies wishing to improve their environmental performance, build goodwill and reputation and in influence profitability, thus pointing to a positive correlation between corporate social responsibility and impact on the company's reputation and profitability (Khojastehpour & Johns, 2014).

Both in developing countries and Serbia, application of the concept or corporate social responsibility started with the advent of multinationals, which prompted local companies to adopt the application of this concept (Stojanović, Mihajlović, Safronova, Kunev & Schulte, 2021). The spread of this concept in Serbia has led to a noticeable growth in the environmental performance of companies applying the same concept. The following section of the paper presents research into the relation between the concept of social corporate responsibility and environmental performance in large organisations in Serbia.

2. Research methodology

For the purpose of this research, the authors conducted field research in large organisations in Serbia. The research covered the period from November 2019 to August 2021. The total number of companies participating in the research was 165, that is, one questionnaire per company. The survey was conducted on management teams of large companies, that is, the questions were answered solely by managerial staff members familiar with the companies' overall operations, who had valid information and were authorized to access such data. The questionnaire is structured in three parts. The first section of the questionnaire is based on basic information about the company, such as total employee count (total numbers of male and female employees), which industry the company is operating in, which sector (public or private) it belongs to, which markets it serves, etc. The second section of the questionnaire is related to the dimensions of corporate social responsibility by stakeholders' approach, and is divided into six groups of questions. The first segment (consisting of four questions labelled: Comm1, Comm2, Comm3 and Comm4) is related to responsibility to the community, followed by responsibility to the environment (consisting of four questions labelled Envi1, Envi2, Envi3 and Envi4). Questions and labels related to responsibility to employees are HRM1, HRM2, HRM3 and HRM4, while responsibility to investors contains questions labelled Invest1, Invest2, Invest3 and Invest4. The fifth segment is related to responsibility to suppliers and consists of five questions labelled Supp1, Supp2, Supp3, Supp4 and Supp5, whereas the sixth segment, related to responsibility to clients, contains four questions labelled Cust1, Cust2, Cust3 and Cust4. The last, third section of the questionnaire is based on the outcomes of CSO, that is, the organisation's environmental performance. The questions and labels in the questionnaire are as follows: "Has the organisation reduced the amounts and emissions of pollutants?" (EnvPerf1); "Has the organisation reduced the consumption of dangerous, harmful and toxic substances?" (EnvPerf2); "Has the organisation reduced the frequency of environmental incidents?" (EnvPerf3), "Has the organisation reduced energy consumption?" (EnvPerf4) "Has the organisation improved its environmental situation?" (EnvPerf5). All questions in the questionnaire are structured in the form of closed-ended questions on a five-point Likert scale (1 – strongly disagree; 2 – disagree; 3 – neither agree nor disagree; 4 – agree; 5 – strongly agree). The questionnaire that was created based on previous studies (Rettab, Brik & Mellahi, 2009; Turker, 2009; Xu & Peng, 2018).

As stated above, the total number of large organisations was 165. Given that a total of 566 companies with 250 or more employees operate on the territory of Serbia, representativeness of the sample is justified, amounting to 29.15% of the basic set (Popović, 2020).

Based on the theoretical research presented above and research methodology, the authors propose the hypothesis:

H1: *Corporate social responsibility influences positively environmental performance in large organisations in Serbia*.

3. Results and discussion

The authors performed an internal consistency analysis in order to verify the sample. Internal consistency was verified by calculating Cronbach's Alpha, Composite reliability (CR) and Average variance extracted (AVE) for each construct of the model (Grubor, Berber, Aleksić & Bjekić, 2020; Hair, Risher, Sarstedt & Ringle, 2019; Bjekić, Strugar-Jelača, Berber, & Aleksić, 2021). Variable with values under 0.708 were excluded before the analysis. In this paper, the authors excluded indicators HRM1, Invest3, Cust3 and Cust4. Based on the above, the authors presented the model in Figure 1.

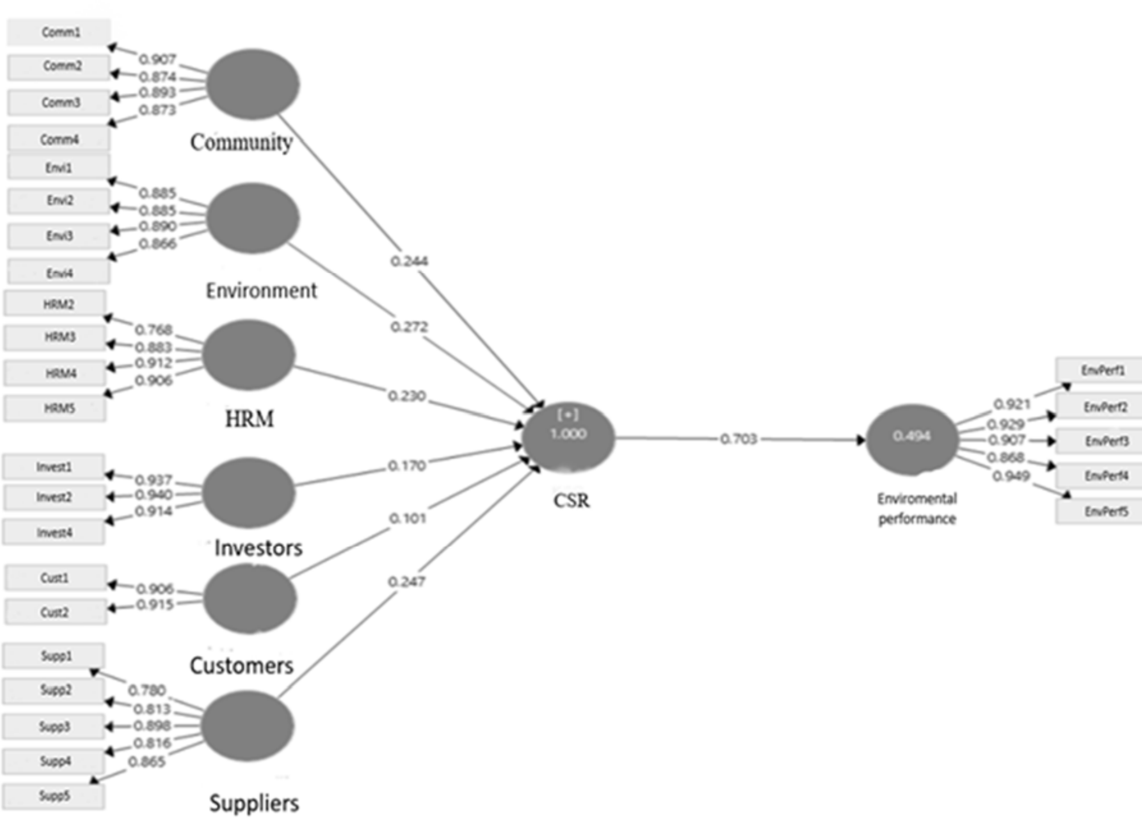

Figure 1 Path coefficient estimates
Source: the authors' research

Table 1 Indicator reliability and construct reliability and validity

	Cronbach's Alpha	Composite Reliability	AVE
Suppliers	0.891	0.920	0.698
Environment	0.905	0.933	0.777
HRM	0.890	0.925	0.755
Community	0.909	0.936	0.786
Investors	0.923	0.951	0.866
Customers	0.794	0.907	0.829
Env. perf	0.951	0.963	0.838

Source: the authors' calculation

Table 1 presents testing results related to internal consistency in order to perform an evaluation of questionnaire validity. Internal consistency was verified by calculating Cronbach's Alpha, Composite Reliability (CR) and Average Variance Extracted (AVE) for each construct of the model.

Based on the result obtained in Table 1, it can be concluded that Cronbach's Alpha values range from 0.890 to 0.951. According to Hair et al. (2017), acceptability threshold is considered to be 0.7. The indicator related to composite validity is one of the reliability indicators, as different factor loadings are taken for each item. Based on the values shown in Table 1, composite reliability ranges 0.907 from to 0.963. Based on the above stated it can be concluded that Composite Reliability criterion is met, given that acceptability threshold is 0.7 (Hair, Hunt, Ringle & Sarstedt, 2017). The last criterion in Table 1 is the analysis of Average Variance Extracted (AVE) that is, expresses what percentage of variance a latent variable in the structural model shares with other variables (Matić, 2014, p. 219). Measurement values in the paper range from 0.698 to 0.866. Based on the above stated, as the acceptability threshold of AVE is 0.5 (Hair et al., 2017, p. 118), it can be concluded that convergent validity is met for both stated construct.

The following presented criterion represents Discriminatory Validity by means of Heterotrait-monotrait ratio of correlations (HTMT) (Ab Hamid, Sami & Sidek, 2017, p. 2). HTMT is an indicator showing that all the ratio values below 0.9 are acceptable, that is, it shows that the defined components are sufficiently mutually different and present different phenomena (Hair et al., 2019). Results shown in Table 2 show that all values below are 0.9. Based on the stated data, it can be concluded that the Discriminatory Validity criterion by means of HTMT criterion is fully met**.**

Table 2 Discriminant Validity: Heterotrait-monotrait (HTMT)

	Suppliers	Env perf	Environment	HRM	Community	Investors	Customers
Suppliers							
Env perf	0.513						
Environment	0.544	0.797					
HRM	0.647	0.624	0.700				
Community	0.578	0.583	0.760	0.669			
Investors	0.582	0.488	0.558	0.433	0.582		
Customers	0.609	0.470	0.637	0.505	0.596	0.516	

Source: the authors' calculation

Table 3 shows results of Variance Increase Factor (VIF). It can be concluded based on the obtained results that there is no multicollinearity problem between formative constructs.

Table 3 Collinearity Statistics

	VIF
Suppliers	1.943
Environment	2.443
HRM	2.076
Community	2.339
Investors	1.672
Customers	1.639

Source: the authors' calculation

The following section of testing relates to the application of the concept of CSR and environmental performance in large organisations in Serbia. Based on the determination quotient (R2), it can be concluded that 0.494, that is, 49.4% of variance of the dependent variable (environmental performance) is accounted for by the independent latent variable (CSR).

Table 4 Mean, Standard Deviation, T-statistics, P-values

		Original Sample	Sample mean (M)	Standard Deviation	T statistics	p values
H1	**CSR-> Environmental performance**	0.703	0.697	0.076	9.286	0.000

Source: the authors' calculation

Results shown in Table 4 show that there is a positive statistically significant relation between corporate social responsibility and environmental performance (T=9.286; p= 0.000) in large organisations in Serbia. Based on the above, the results of this study are in the line with the result of Reverte et al. (2016), who found that corporate social responsibility positively affects the environmental performance of the organization on a sample of 133 companies in Spain. Also, the research conducted in China has shown that the application of the CSR concept has a positive impact on the community, employees and the environment as the dimensions of CSR (Xu & Peng, 2018; Grubor et al., 2020; Anser, Yousaf, Majid & Yasir, 2020). Also, the author Suganthi (2020) proved in his research that the adoption of CSR initiatives has significant positive effects on the market, costs and environmental performance. Based on all of the above, it can be concluded that the application of the concept of CSR in large organizations in the Republic of Serbia has significant positive effects on environmental performance.

Conclusion

Globalisation on the world market, increase in the use of all natural resource, opening large companies whose harmful gas emissions, waste release and deposits endanger the environment they operate in have resulted in severe permanent and negative consequences for the environment, causing the greenhouse effect, global warming, decreased biodiversity, various climate changes, and also deteriorated health condition of the population due to highly harmful air polluted by harmful substance emissions. All of these effects have prompted individuals, groups, organisations and companies to start addressing these issues seriously and taking required actions to reduce the harmful effects on the environment by controlling or eliminating actions that cause them. Many companies have started taking preventive measures to reduce negative effects on the environment, and many of the measures have developed into standards.

Some companies have been allocating significant funds for environmental protection, and thereby achieved popularity very quickly, given the consumers awareness of environmental protection has been growing increasingly. Soon, corporate social responsibility as a concept started spreading worldwide, especially in globally renowned companies.

The practical implications of the research are based on empirical evidence showing that there is a positive correlation between the concept of CSR and environmental performance in Serbia. The growing application of corporate social responsibility contributes to the level of companies' environmental performance and sustainability. Companies should carefully investigate CSR activities and implement them in order to make their business more responsible, and to support their environmental performances.

Taking into account the possibilities provided by the application of the concept of CSR and its impact on environmental performance, it can be concluded that this model and their mutual impact can provide a positive long-term effect on companies in the Republic of Serbia to improve business.

Acknowledgement

This research received a financial grant from the Provincial Secretariat for Higher Education and Scientific Research of Autonomous Province of Vojvodina, the Republic of Serbia, during the project "Financial, marketing and management aspects of energy efficiency in the function of sustainable development of AP Vojvodina" (number: 142-451-2537/2021).

References

Ab Hamid, M. R., Sami, W., & Sidek, M. M. (2017). Discriminant validity assessment: use of Fornell & Larcker criterion versus HTMT criterion. *Journal of Physics: Conference Series, 890* (1), 012163. https://doi:10.1088/1742-6596/890/1/012163

Aguinis, H., & Glavas, A. (2019). On corporate social responsibility, sensemaking, and the search for meaningfulness through work. *Journal of Management, 45*(3), 1057-1086. https://doi.org/10.1177%2F0149206317691575

Alam, M. S., Atif, M., Chien-Chi, C., & Soytaş, U. (2019). Does corporate R&D investment affect firm environmental performance? Evidence from G-6 countries. *Energy Economics,* 78, 401-411. https://doi.org/10.1016/j.eneco.2018.11.031

Aleksić, M. Bjekić, R., & Rodić, M. (2020) Application of corporate social responsibility and companies environmental performances. *Journal of Engineering Management and Competitiveness, 10*(2), 81-89. https://doi.org/10.5937/jemc2002081A

Anser, M. K., Yousaf, Z., Majid, A., & Yasir, M. (2020). Does corporate social responsibility commitment and participation predict environmental and social performance?. *Corporate Social Responsibility and Environmental Management, 27*(6), 2578-2587. https://doi.org/10.1002/csr.1977

Berber, N., Slavić, A., Aleksić, M. (2021). Corporate social responsibility in contemporary organizations: evidence from Serbian processing industry. *Ekonomske teme, 59*(2), 227-241. https://doi.org/10.2478/ethemes-2021-0013

Berber, N., Slavić, A., Aleksić, M., (2019). The relationship between corporate social responsibility and corporate governance. *Ekonomika, 65*(3), 1-12. https://doi.org/10.5937/ekonomika1903001B

Bjekić, R., Strugar-Jelača, M. , Berber, N., & Aleksić, M. (2021). Factors affecting entrepreneurial intentions of faculty students. *Management: Journal of Sustainable Business and Management Solutions in Emerging Economies, 26*(2), 1-14. https://10.7595/management.fon.2020.0024

Cherian, J., & Pech, R. (2017). The impact of corporate social responsibility on the workforce of selected business firms in the United Arab Emirates: a nascent economy. *Sustainability, 9*(11), 2-3. https://doi.org/10.3390/su9112077

Cianconi, P., Betrò, S., & Janiri, L. (2020). The impact of climate change on mental health: a systematic descriptive review. *Frontiers in Psychiatry, 11*, 74. https://doi.org/10.3389/fpsyt.2020.00074

Dahlsrud, A. (2006). How corporate social responsibility is defined: an analysis of 37 definitions. *Corporate Social Responsibility and Environmental Management, 15*, 1–13. https://doi.org/10.1002/csr.132

Dragičević-Radičević, T., Stanojević, L., Milanović, V., Katanić, Z., & Todosijević-Lazović, S. (2020). Corporate social responsibility and new technologies in food industry, the public perception: case study of Vojvodina. *Ekonomika poljoprivrede, 67*(2), 329-343. https://doi.org/10.5937/ekoPolj2002329D

Grubor, A., Berber, N., Aleksić, M., & Bjekić, R. (2020). The influence of corporate social responsibility on organizational performance: a research in AP Vojvodina. *Anali Ekonomskog fakulteta u Subotici*, (43), 3-13. https://doi.org/10.5937/AnEkSub2001003G

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European business review*, *31*(1), 2-24. https://doi.org/10.1108/EBR-11-2018-0203

Hair, J., Hunt, T., Ringle, C. & Sarstedt M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. (Second Edition) Los Angeles: Sage.

Halkos, G., & Nomikos, S. (2021). Corporate social responsibility: Trends in global reporting initiative standards. *Economic Analysis and Policy*, 69, 106-117. https://doi.org/10.1016/j.eap.2020.11.008

Hopkins, M. (2005). Measurement of corporate social responsibility. *International Journal of Management and Decision Making, 6*(3-4), 213-231. https://doi.org/10.1504/IJMDM.2005.006549

Ienciu, I. A., & Napoca, C. N. (2009). Environmental performance versus economic performance. *International Journal of Business Research, 9*(5),125-131.

Judge, W. Q., & Douglas, T. J. (1998). Performance implications of incorporating natural environmental issues into the strategic planning process: An empirical assessment. *Journal of Management Studies, 35*(2), 241-262. https://doi.org/10.1111/1467-6486.00092

Khojastehpour, M., & Johns, R. (2014). The effect of environmental CSR issues on corporate/brand reputation and corporate profitability. *European Business Review, 26*(4), 330-339. https://doi.org/10.1108/EBR-03-2014-0029

Kraus, S., Rehman, S. U., & García, F. J. S. (2020). Corporate social responsibility and environmental performance: the mediating role of environmental strategy and green innovation. *Technological Forecasting and Social Change,* 160, 120262. https://doi.org/10.1016/j.techfore.2020.120262

Marić, S., Berber, N., Slavić, A., & Aleksić, M. (2021). The mediating role of employee commitment in the relationship between corporate social responsibility and firm performance in Serbia. *SAGE Open, 11*(3), 1-17. https://doi.org/10.1177%2F21582440211037668

Martín-Peña, M. L., Díaz-Garrido, E., & Sánchez-López, J. M. (2014). Analysis of benefits and difficulties associated with firms' Environmental Management Systems: the case of the Spanish automotive industry. *Journal of Cleaner Production*, 70, 220-230. https://doi.org/10.1016/j.jclepro.2014.01.085

Matić, D. (2014). *Uticaj organizacione klime i liderstva na prenošenje znanja između zaposlenih u organizaciji* (Nepublikovana doktorska disertacija). Fakultet tehničkih nauka, Novi Sad.

Popović, D. (2020). Enterprises in the Republic of Serbia by size, 2019 [Unpublished paper]. Statistical Office of the Republic of Serbia.

Rettab, B., Brik, A. B., & Mellahi, K. (2009). A study of management perceptions of the impact of corporate social responsibility on organisational performance in emerging economies: the case of Dubai. *Journal of Business Ethics, 89*(3), 371-390. https://doi.org/10.1007/s10551-008-0005-9

Reverte, C., Gomez-Melero, E., & Cegarra-Navarro, J. G. (2016). The influence of corporate social responsibility practices on organizational performance: evidence from eco-responsible Spanish firms. *Journal of Cleaner Production,* 112, 2870-2884. https://doi.org/10.1016/j.jclepro.2015.09.128

Stojanović, A., Mihajlović, I., Safronova, N. B., Kunev, S., & Schulte, P. (2021). The multi-criteria analysis of corporate social responsibility: a comparative study of Russia, Bulgaria and Serbia. *Journal of Management & Organization*, 1-21. https://doi.org/10.1017/jmo.2020.40

Suganthi, L. (2020). Investigating the relationship between corporate social responsibility and market, cost and environmental performance for sustainable business. *South African Journal of Business Management*, *51*(1), 1-13. https://doi.org/10.4102/sajbm.v51i1.1630

Turker, D. (2009). Measuring corporate social responsibility: a scale development study. *Journal of Business Ethics, 85*(4), 411–427. https://doi.org/10.1007/s10551-008-9780-6

Van Hoek, R. I. (1999). From reversed logistics to green supply chains. *Supply Chain Management: An International Journal*, 28-33. https://doi.org/10.1108/13598549910279576

Xu, Y., & Peng, Q. (2018). An empirical study on the relationship between green supplier development and firm performance. *American Journal of Industrial and Business Management*, 8, 930-945. https://doi.org/10.4236/ajibm.2018.84064

Žarevac Bošković, M., Lakićević, M., & Pantović, D. (2021). Promotion of socially responsible business in transport companies in Serbia. *Anali Ekonomskog Fakulteta u Subotici, 57*(45), 27-40. https://doi.org/10.5937/AnEkSub2145027Z

Zdravković, S., & Peković, J. (2020). Analiza faktora koji utiču na izbor zelenog hotela od strane turista. *Menadžment u hotelijerstvu i turizmu, 8*(1), 69-78. https://doi.org/10.5937/menhottur2001069Z

Zhang, Q., Oo, B. L., & Lim, B. T. H. (2019). Drivers, motivations, and barriers to the implementation of corporate social responsibility practices by construction enterprises: a review. *Journal of Cleaner Production*, 210, 563-584. https://doi.org/10.1016/j.jclepro.2018.11.050

Zhu, Q., & Sarkis, J. (2004). Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises. *Journal of Operation Management, 22*(3), 265-289. https://doi.org/10.1016/j.jom.2004.01.005

✉ Correspondence

Nemanja Berber

University of Novi Sad, Faculty of Economics in Subotica
Segedinski put 9-11, 24000, Subotica, Republic of Serbia

E-mail: nemanja.berber@ef.uns.ac.rs

STRATEGIC MANAGEMENT, Vol. 29 (2024), No. 4, pp. 070-081

DOI: 10.5937/StraMan2300062A

Received: September 27, 2023
Revised: November 22, 2023
December 08, 2023
Accepted: December 11, 2023
Published online: January 30, 2024

Future-shaping themes: digital age foresight in Turkish university strategic plans

Oğuzhan Aytar

Karamanaoglu Mehmetbey University, Faculty of Economics and Administrative Sciences, Karaman, Turkey
https://orcid.org/0000-0003-3799-0952

Rukiye Arslan

Karamanaoglu Mehmetbey University, Institute of Social Sciences, Karaman, Turkey
https://orcid.org/0000-0002-1681-3394

Abstract

Background: Universities affect their communities and ecosystems both directly and indirectly. The strategic plans of all Turkish universities with Higher Education Council accreditation were thoroughly examined within this context. An ecosystem where digital technologies are used more efficiently and extensively is necessary for the ideal of a more sustainable environment and a world with happy people.

Purpose: This study's main aim was to discover how universities in Türkiye predict the digital age via the emphasis they place on digital themes in their future plans.

Study design/methodology/approach: The content analysis technique utilised within the scope of document analysis was chosen as the best method to satisfy this study's objectives.

Findings/conclusions: The study found five main themes regarding the future of higher education based on codes obtained from university strategic plans. Digital transformation, digital campus, digital education, digital infrastructure, and future-focused units were these themes. We analysed the content of these five areas in connection with four types of universities around the country to see if there was a significant difference in attitude towards the digital age. Only future-focused units significantly distinguished these four types of universities, it was found.

Limitations/future research: The research primarily examined the digital age themes that are evident in the strategic plans of universities. Academic studies for future research may involve an examination of the content of strategic plans in relation with different themes and categorizations. The collected results might be subjected to comparisons in order to assess the effectiveness of strategic plans.

Keywords

strategic plans, universities, digital age, digital transformation, content analysis

Introduction

Companies, public institutions, health institutions, and universities must reorganise and take positions in response to the world's global technological transformation (Fukuda, 2020). Higher education institutions have repositioned themselves and reconsidered their goals in light of the notion that the only way to survive is to acquire the capacity for environmental adaptation (Abad-Segura, González-Zamar, Infante-Moro & Ruipérez García, 2020; Murphy & Costa, 2019). During this time, universities, academics, and students are contemplating how to make better use of the opportunities they have (Taşkıran, 2017). In accordance with the expectations and needs of stakeholders, they are attempting to create a digital ecosystem and develop a variety of solutions in this context by employing technological approaches rather than conventional ones (Aavik, 2019; Sandkuhl & Lehmann, 2017). Future higher education will require more than the implementation of the current trend of digitising academic materials. In addition, it is crucial to establish a technological infrastructure capable of meeting future demands.

There are direct and indirect effects of universities on the communities and environments in which they are situated. They have a tremendous capacity to contribute to the cultural, scientific, and economic growth of the societies in which they operate (Hanssen & Solvoll, 2015; Schoellman & Smirnyagin, 2021; Taebi, Hoven & Bird, 2019). It has been noted that countries with the most successful universities in the world also enjoy social and economic prosperity (Lukovics & Zuti, 2017). The ecosystem of higher education is evolving and changing. In light of recent advancements in sectors such as computing, networking, artificial intelligence, and virtual realities, educational technologies continue to evolve and advance at a rapid rate (Bonfield, Salter, Longmuir, Benson & Adachi, 2020; Cheung, Kwok, Phusavat & Yang, 2021).

The variables that cause change in higher education can be categorised into three broad groups: global, national, and institutional (Odabaşı, 2006). The diffusion and utilisation effect of technology places global norms and practises on the agenda and further accelerates the shift. The growing potential of internet technology in particular offers new aspects to educational processes. To professionalise schools of the future, contemporary higher education institutions place a great emphasis on strategic planning (Fumasoli, Barbato & Turri, 2020; Mampaey, Huisman & Seeber, 2015). The extent of an institution's understanding significance of strategic planning as reflected in digital publications, compared to traditional official explanations, is viewed as a fascinating topic of inquiry. The main goal of the present research was to establish how institutions of higher education interpret digital age forecasts and how they prioritise digital subjects in their future plans.

This study aimed to determine both how universities in Türkiye reference elements of the digital age and what their future intentions for these elements are. In this regard, the strategic plans of all universities in Türkiye were evaluated in terms of digital age topics mentioned. The focus was on the digitalization features and components that universities emphasised in their strategic plans, as well as the perspective of the digital age taken according to the type of university. The foresight of universities and the viewpoints of their graduates have the power to shape the environment. Universities, which are the most significant elements of Turkey's higher education system, have the power to help steer the process of digitisation.

1. Digital age ecosystem

The current age, in which the social, economic, and cultural world changes its dimensions by becoming virtual as a result of the Internet, is known as the digital age (Saykili, 2019). It is observed that this age is founded on different living principles from previous eras, and its principles are heavily influenced by the Internet and an ever-proliferating information technology environment (Ismagilova, Hughes, Dwivedi & Raman, 2019; Levin & Mamlok, 2021; Sharma & Behl, 2023). With the so-called knowledge economy – the most accessible, most generated, most stored, and most valued element of this age – the role of information in human life has expanded (Erceg & Zoranović, 2022; Karabulut, 2015; Sillence, Dawson, McKellar & Neave, 2022).

Integration of digital transformations from technologies such as the Internet of Things (IoT), artificial intelligence (AI), and robotics technology inspire fundamentally new approaches in both public and private sectors and their operations (Newman, Mintrom & O'Neill, 2022). Technologies involved in education processes in our digital age, including cloud computing, massive open online courses, games and gamification, virtual reality, and mobile technology are cited as forces that can expedite business life (Hashim, 2018). Therefore, like in other organisations, digitalisation has become one of the most important priorities of higher education institutions (Moldagali, Sultanova, Akhtayeva, Suleimenova & Akimbekova, 2022; Kuzu, 2020). These institutions can help lead the revolution that is occurring in our digital age due to their unique characteristics. Higher education institutions must arguably take on more responsibility as a result of this goal and adopt a far more consistent and forward-looking outlook.

With their assets and intellectual resources, universities are seen to have a significant potential to digitally transform (Rof, Bikfalvi & Marquès, 2020). Peer teaching material and technological advancements offer tremendous chances and possibilities. In the light of the prospects presented by the future and the technology available now, it is evident that the digital transformation of higher education institutions is inevitable (Kuzu, 2020; Parlak, 2017). This transformation presents opportunities for universities and academics to provide more effective and productive education than in times prior (Taşkıran, 2017).

2. Strategic plan phenomenon

In addition to being a mystery for everyone, the future is a phenomenon that necessitates accurate forecasts that evaluate new opportunities for future success. A strategy's primary objective is to contribute analytically to an accurate estimation procedure. Strategy is the process of occupying a unique position in which various combinations are attempted along an axis of being distinct (Drucker, 1996; Porter, 1996; Huang & Rust, 2021). The word *strategy* has entered the literature of business and other sciences from both its Greek origin and military literature (Davies, 2000). Due to the growth of the American economy, particularly after the Second World War, strategizing has become a principal action. Chandler (1969) noted that there are numerous duties and levels in administrative management procedures pertaining to strategy, and that there are various management options. Consequently, the objective of strategic plans is to raise organisational performance to higher, and measurable levels (George, Walker & Monster, 2019). Due to the rising complexity of the global trade environment, modern firms have begun to embrace strategic management as the safest and most scientific method for understanding environments (Wheelen, Hunger, Hoffman & Bamford, 2015).

The notion of strategic planning was created in the mid-1960s in response to conventional ways of identifying new approaches (Whittington, 2019). It was initially conceptualised in such a way that it could play an essential role in the planning and acceleration of an organisation. Strategic planning refers to the process of making future decisions based on a logical and analytical examination of an external environment (Saruhan & Yıldız, 2017). Strategic plans are one of the most functional and preferred management tools for organisational continuity today (Herbane, 2019; Wolf & Floyd, 2017). Prior to determining a strategic plan, the strategic status of an institution and the selection of to-be-implemented new activities must be defined. Strategic planning is often a state- and nation-wide endeavour, not merely an activity for a single institution (Zagame, 1993). Strategic planning is a process that describes the what, why, and where of a company's future endeavours. In other words, the process determines what the organisation's primary activities will be and which of the organisation's primary policies will be followed in carrying out these tasks (Şimşek & Çelik, 2016). Moreover, strategic planning is the process of making decisions in a methodical manner, based on the most up-to-date information about the situations that might be encountered in the future, while assuming risks in the current situation; it is a continuous operation of comparing outcomes of decisions made with expectations through rules and feedback (Bryson, 1988).

The significance of strategic planning at universities has been heightened due to various factors, including global public policies, the process of globalisation, advancements in technology, changes in the working environment, reduced public funding, and the influence of students on the higher education system. The increasing emphasis on the quality agenda in higher education, which centres on the utilisation of quantitative performance indicators and institutional rankings, necessitates that institutions revise their methods to plan development and implementation (Horner, Jayawarna, Giordano & Jones, 2019; Shah, 2013).

3. Method

For our focus on the digital age, universities were selected both because their strategic plans were available to view and because of the leadership role they play in shaping modern societies. The full count approach, which enables an evaluation of all units in a population, was employed in the process of defining our sample in this study. With this framework, we conducted an in-depth examination of the strategic plans of all Turkish universities accredited with the Higher Education Council. One hundred and ninety-five out of 212 universities in Turkey have developed individual institutional strategic plans. These 195 universities' strategic plans were analysed in this study.

The aim of this study was to examine the strategic plans of universities in Turkey in terms of the digital age themes addressed therein, which would allow us to make a comparative analysis between predetermined groups. In this context, a series of important digital themes from the strategic plans were revealed, and we investigated whether there was a difference between the determined groups. The content analysis technique carried out within the scope of document analysis was used as an appropriate method to serve this study's purposes. A content analysis technique can generally deal with written documents, photographs, sound recordings, and different communication symbols in human communication forms (Bal, 2013; Lune & Berg, 2017; Renz, Carrington & Badger, 2018).

Content analysis refers to the organisation of information into categories within the scope of the basic questions of an empirical investigation; it is a research technique that aims to capture objective and regular information, usually drawn from textual artefacts (Bowen, 2009; Kıral, 2020). In addition, although there are various definitions of content analysis (Creswell, 2007), there are two notable issues that all definitions emphasise: The method benefits from "systematic" and "objective" features (Koçak & Arun, 2006). Microsoft Excel and NVivo programmes were utilised throughout the study's scope to code the universities' strategic plans, define the groups, and analyse the data.

3.1. Research process

In order to both identify the concepts that hold particular meanings from the texts and develop themes that explain these notions holistically, an inductive approach was used. In this framework, each university's strategic plan was concentrated on the future and future-related themes, and the content of the documents' titles was analysed, too. The concepts linked with the future were identified in the contents of each document's title, and these concepts were examined and highlighted throughout the entire strategic plan. Each notion was coded uniquely for each university, and the motifs expressing the codes were determined. In this procedure, the codes obtained for the digital age aspects relevant to the future forecast in all university strategic plans and the themes that described these codes holistically were determined. Figure 1 shows the procedure used in this situation.

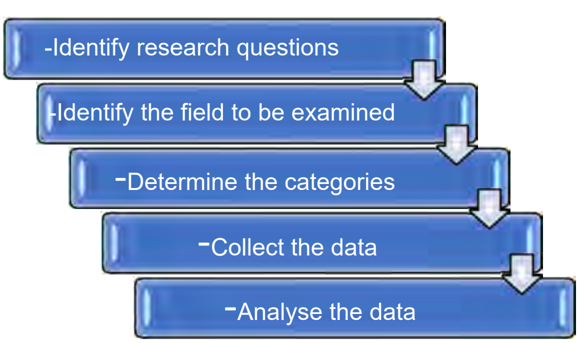

Figure 1 The content analysis process

Source: Adapted from Aytar, 2022; Aytar, 2019; Chun, 2017; Harris, 2001; Krippendorff, 2018; Popping, 2000; Weber, 1990.

3.1.1. Identify research questions

To ensure the validity of our research findings, the first step in our content analysis process was the determination of the study topic and research questions. At this stage, the basic and related questions that both suited the study's objective and would aid the discovery of key phenomena were required. In general, strategic plans exhibit longitudinal coherence by reflecting the organisation's past, current status, and future vision. The concepts found within the study's scope and the themes generated by these concepts were designed to allow for multiple analyses of collected data. The following study design-related research questions were posed:

Q1: Which future-related concepts (code) and themes are included in the strategic plans of universities within the context of the digital age?

Q2: Which concepts (code) comprise which content of the themes included in the strategic plans of universities within the context of the digital age?

Q3: Which specific units are integrated in the strategic plans of universities within the context of the digital age?

Q4: Do the concepts (code) and themes related to the digital age that universities specify in their strategic plans show any difference or similarity in terms of predetermined university groups?

Answers to these questions were to be found during the analysis of collected data, and our analysis also included defining the overall vision for the future of universities in Turkey as well as the potential of universities' strategic plans to accurately forecast the digital age.

3.1.2. Identifying the field to be examined

A strategic plan is a formal commitment that outlines both the present position of an institution under specific conditions and their future actions. The plan's structure and direction are heavily dependent on individual managers. The present research focused on the strategic plans of all Turkish universities in its higher education system. In this framework, the universities' publicly shared strategic plans were examined. University strategic plans are public pledges in which the current situation and future plans are outlined in detail. This research specifically focused on the digital age topics in the strategic plans of Turkish universities.

Turkey has 208 universities, 129 of which are state universities and 79 are educational foundations. It was established that 195 of these universities had an up-to-date strategic plan, and analyses were conducted on these strategic plans. Again, strategic planning is a component of strategic management. Long-term planning serves as the foundation of strategic planning. It comprises two fundamental components: The term "strategic" is synonymous with "of great significance" for the future (Nickols, 2016). Long-term planning relates to both far-off and long-term issues. The term planning is a top managerial function that attempts to determine the preferred means for achieving a business's desired objective.

As per the scope of this study, reference was made to the publicly available strategic plans of all Turkish universities engaged in education and training. Current university-wide strategic plans were the focus of the investigation of available resources. These materials were collected both from university strategy development departments and official university websites.

3.1.3. Determine the categories

The strategic plans investigated within the scope of this study were categorised using the websites of Higher Education Council (YOK, 2021) and Scientific and Technological Research Council of Turkey (TUBITAK, 2021). The data of state universities and foundation universities were gathered from the YOK website, and the data of research universities selected annually by YOK are discussed. The data acquired from YOK for this study are from the year 2021. On the other hand, the TUBITAK (2021) annual index of entrepreneurial and innovative universities was queried.

This study also made use of the 2021 Entrepreneurial and innovative university index. All universities in Turkey with a strategic plan were analysed, and comparisons were made between state universities, foundation universities, entrepreneurial and innovative research universities, and foundation research universities.

3.1.4. Data collection and analysis

To find answers to the questions presented at the outset of our research process, concepts relevant to future plans were scanned for in each strategic plan, and the findings of these scans were tabulated.

Figure 2 University Groups
Sources: TUBITAK, 2021; YOK, 2021

The primary objective of this procedure was to determine which themes were emphasised in universities' strategic plans. As a result of our scans, concepts were categorised and themes identified. The aforementioned concepts and themes were organised in Table 1 by matching each code with its proper theme, which was validated by two social scientists and two information and technology (IT) scientists, in addition to the researchers. This method, known as Kappa analysis, is used to examine the reliability of qualitative research procedures; the focus of Kappa analysis is to determine the similarity of observation results from multiple investigators assessing the same subject (Bıkmaz Bilgen & Doğan, 2017; Ertem Vehid & Eral, 2014).

Table 1 Digital age themes and codes in university strategic plans

Concepts (Codes)	Themes
Society 5.0, Industry 4.0, digital content, digital environment, digital resources, digital support, digital attendance, digital literacy, advanced technology, innovation, nanotechnology, new technology	(1) Digital transformation components
smart city, smart building, smart campus, smart class, smart class charts, smart access, smart transport, mobile technology, smart systems	(2) Digital campus
e-learning, e-application, e library, e-book, e-journal, virtual class, virtual reality, web-based training, web portal, information technologies, software	(3) Digital education
technology infrastructure, network infrastructure, artificial intelligence, cyber security systems, wireless, cloud computing systems, database, data security, data processing and storage, internet services, big data analysis, internet of things.	(4) Digital infrastructure
Technology Transfer Office, Digital Transformation Office, Technology Development Zone, Distance Education Centre, Continuing Education Centre, Scientific and Technological Research Application and Research Centre, National Academic Network and Information Centre, Research and Development, Techno-city, Technopark, University-Industry Cooperation, Incubation Centre	(5) Future-focused units

Source: the authors

As per our coding guidebook, the data collection phase was based on our scanning procedure. To ensure that this method was conducted objectively and consistently, it was repeated for each determined-theme group size, and data were collected to enable effective comparison, counting, computation, and evaluation. At the conclusion of this procedure, however, it was possible to discern which university groups shared similarities versus which groups differed.

4. Results

Table 2 shows the percentages and frequency with which universities in the Turkish higher education system included codes representing digital age themes in their strategic plans.

Table 2 Digital age code usage rates

Themes	Codes	%			N
	Society 5.0	2			4
	Industry 4.0	18			35
	digital content	13			25
	digital environment	53			103
	digital resources	57			111
	digital support	18			35
Digital transformation components	digital engagement	5			10
	digital literacy	11			21
	advanced technology	41			80
	innovation	90			176
	nanotechnology	33			64
	new technology	56			109
	robot technologies	21			41
	smart city	7			14
	smart building	3			6
	smart campus	14			27
	smart class	21			41
Digital campus	smart class charts	1			2
	smart access	62			121
	smart transport	7			14
	mobile technology	37			72
	smart systems	21			41
	e-learning	28			55
	e-application	50			98
	e library	19			37
	e-book	38			74
	e-journal	27			53
Digital education	virtual class	19			37
	virtual reality	12			23
	web based training	78			152
	web portal	25			49
	information technologies	78			152
	software	79			154
	big data analysis	12			23
	internet of things	11			21
	technology infrastructure	85			166
	network infrastructure	55			107
	artificial intelligence	20			39
Digital infrastructure	cyber security systems	30			59
	wireless	47			92
	cloud computing systems	10			20
	database	81			158
	data security	16			31
	data processing and storage	19			37
	internet services	81			158

Future-focused units	Technology Transfer Office	75			146
	Digital Transformation Office	3			6
	Technology Development Zone	50			98
	Distance Education Centre	86			168
	Continuing Education Centre	81			158
	BILTEM*	2			4
	ULAKNET**	48			94
	Research and Development	92			179
	Technocity	48			94
	Technopark	57			111

Source: the authors

Topic 1: Digital transformation components

Digital transformation is viewed as a business model development and technology transformation process using distinctive tools, as opposed to the utilisation of technology in business activities; many technologies that drive digital transformation provide new business process paradigms (Fukuyama, 2018; Plekhanov, Franke & Netland, 2022; Tang, 2021). This paradigm challenges the new generation of universities to higher developmental levels by emphasising efficiency and production, with an emphasis on technology and the Internet (Bygstad, Øvrelid, Ludvigsen & Dæhlen, 2022; Li, 2020). It has been discovered that universities' strategic plans place increasingly greater emphasis on the concept of "innovation," which is a component of digital transformation while communicating their future predictions and goals. In the scope of the present study, 175 (90%) of the 195 universities whose strategic plans were analysed mentioned innovation directly. Therefore, this study found that the majority of universities in the Turkish higher education system were mindful of the economic and scientific potential of the innovation concept and employ it in their future plans. And still, it was discovered that "digital source" and "new technology" were the second and third most prevalent codes in the analysed strategic plans. According to these plans, the Turkish higher education system addressed the issue of digital transformation through innovation-oriented studies, the expansion of digital resources, and the implementation of new technology.

Topic 2: Digital campus

Digital campus refers to the educational complex that enables all higher education-related physical procedures to be performed using internet-based technologies (Liu et al., 2017). This complex includes the digital environment that potentially integrates various teaching and learning systems in order to optimize education, training, and research processes (Huang, Zhang, Hu & Yang, 2012). Of the 195 colleges analysed, 62% (n = 121) whose strategic plans were reviewed as part of the study kept "smart access" – a digital campus component – on their calendars. The emphasis on smart access as a prerequisite for the achievement of the digital campus ideal is regarded as an important discovery, in terms of the frequency with which this concept appeared in plans. Hence, the majority of universities within the Turkish higher education system appeared cognisant of the fact that the mobility elements of the idea of smart access will lead to distinction in higher education. Hence, the concept of smart access is regarded as one of the most functional digital campus components that colleges can use and implement in their future plans.

Topic 3: Digital education

Although the field of digital education, which offers the opportunity to learn independently of time and space, is subject to many criticisms from different angles (e.g., Gourlay, 2021; Komljenovic, 2021), it seems the most functional solution proposal of educational institutions against developments that limit individuals (Belousova, Belousov & Narkevich, 2021; Decuypere, Grimaldi & Landri, 2021). The strategic plans studied here placed great emphasis on the digital education components of "software," "information technologies," and "web-based education" when communicating their future projections and aspirations. Of the 195 universities assessed, 79% (n = 155) of strategic plans mentioned "software"; and 78% (n = 152) contained references to "information technologies" and "web-based education." As a result, it was found that Turkish universities were typically aware of the interactive potential of software, ITs, and web-based education, and they incorporated these concepts into their future plans.

Topic 4: Digital infrastructure elements

Digital infrastructure refers to the competence and capacity to process, store, and show the data required for a healthy and efficient use of digital tools and processes (Otto, Foreman & Verra, 2008). Components of an organisation's digital infrastructure increase its operating capacity in the digital world. Of the 195 strategic plans reviewed, the concepts “technological infrastructure” (85%), “database” (81%), and “internet services” (81%) appeared in universities’ future plans for digital infrastructure implementation. Thus, the majority of universities in the Turkish higher education system appeared cognisant of the digital revolution and planned to exploit the potential of technology infrastructure, database, and internet service concepts. Among the investigated strategic plans, “cloud information systems,” “Internet of Things,” and “big data analysis” were the least prominent digital infrastructure themes mentioned. The strategic plans of only 19 universities included mentions of cloud computing systems, IoT, and big data analysis.

Topic 5: Future-focused units

There were specific work units referenced in the future plans of universities that are directly related to the digital era. Due to the specific skills that individuals in these units possess and the unique tasks they do, these units were identified with the future. Of the 195 university strategic plans examined, 92% (n = 179) designated a research and development (R&D) unit; 88% (n = 171) referenced a unit of university-industry cooperation; 86% (n = 186) mentioned Distance Education Centre (UZEM); while 81% (n = 159) identified concepts such as Continuing Education Centre (SEGEM) with the digital age.

In the future plans of these units, a direct connection was voiced with the digitalisation processes. Therefore, it was determined that the majority of universities in the Turkish higher education system were/are aware of the economic and scientific potential of R&D, university-industry cooperation, UZEM, and SEGEM, and that these concepts were used concretely in their plans for the future. Again, it was determined that 75% of the examined strategic plans referred to the concepts of Technology Transfer Office (TTO), 57% cited Technopark, and 50% of them reported Technology Development Zone (TGB) in their strategic plans, and the studied universities developed plans, policies, and strategies related to these concepts.

5. Comparisons between universities

As a result of the analyses conducted on publicly available university information, Table 3 shows the theme frequencies of the university groups for the predetermined dimensions. Table 3 displays which university group placed greater emphasis on which themes within each digital age dimension.

Table 3 Comparison of interuniversity theme content

Themes / Universities	State	Foundation	Research	Entrepreneurial and innovative
Digital transformation components	innovation (%91)	innovation (%86)	Innovation (%94)	innovation (%94)
Digital campus	smart access (%66)	smart access (%54)	smart access (%56)	smart access (%52)
Digital education	software & IT (%87)	web based training (%70)	software (%96)	software (%81)
Digital infrastructure	technology infrastructure (%91)	database (%91)	technology infrastructure /database (%91)	technology infrastructure /database (%91)
Future-focused units	research and development (%91)	continuing education centre (%91)	technology transfer office (%91)	research and development (%91)

Source: the authors

Discussion

This study’s findings suggest that the digital transformation components of the strategic plans of Turkish universities did not differ by university group. “Innovation” was the most frequent digital transformation term referenced by Turkish universities in their strategic plans. The scientific infrastructure and transformation potential of the innovation notion make it acceptable as the foundational concept of digital transformation in this country's universities.

The “smart access” theme, which was a component of the ideal “digital campus,” was the most prevalent topic among university groupings.

Smart access technology is required for both the effective usage of mobile devices and the extensive deployment of IoT technologies on campus. The fundamental requirement of the digital campus ideal is smart access. Turkish universities appeared aware of this concept's potential to facilitate the future operation of numerous procedures.

Apparently, Türkiye's universities use software, web-based education, and IT in their digital education components. In terms of these components, per the most prevalent concepts mentioned, "software" was emphasised in the strategic plans of research and entrepreneurial universities; "software" and "information technologies" in state universities' plans; and "web-based education" in foundation universities' strategic plans. Also, it was evident that "technology infrastructure" and "database" were emphasised in the strategic plans of all universities' digital infrastructure development. It was observed that there was no substantial difference in the strategic plans of the university groups regarding their technological infrastructure proposals.

It was also observed that the proportion of digital transformation-focused "units" in universities' strategic plans varied by university group. It was evident that research universities valued the "technology transfer office" subject more than other universities, and this theme was the most prevalent theme in strategic plans created by research universities. The "continuing education centre" unit was where foundation universities appeared to focus their attention, per their strategic plans. Finally, it was determined that state and entrepreneurial university organisations delegated more responsibilities to their R&D units.

Last, it was evident that studied universities were focused on supporting the quality of education with advanced technology and increasingly effective education solutions in their future plans. It was seen that the frequency of concepts such as "data," "information," "research," and "internet" from our collective text analyses was high. However, it was seen that universities appeared to undertake important tasks in their efforts to reach both their central and unit targets, and the expectations for these units were high.

Conclusion

In today's environment, where technology is continually changing, digital transformation appears inevitable. This shift is accelerated by the impact of technology (which is supposed to make our lives easier) on our lifestyle and institutions' organisational structures. Technology has tended to have a favourable impact on the creation and dissemination of knowledge. Industry 4.0, AI, big data, IoT, robots etc. are evolving quickly as a result of technology, particularly with the development of the Internet to increase mobility and ongoing digitalisation processes. It is obvious that physical constraints, such as the time and space needed to obtain information, have been substantially reduced.

The themes and concepts identified in the research findings are not merely trendy popular phrases but also encompass aims that have been highlighted by the Presidency of Turkey Digital Transformation Office and the Presidency of Strategy and Budget which conducts audits of strategic plans. Senior management places significant emphasis on implementing specific practises and processes to operationalize these notions.

The education industry is unquestionably one of the sectors most affected by digital age developments. The growth of IT ideally helps education become more efficient and creative, for example with AI, virtual reality, 3D printers, and more. With technological advances, education has reached new levels of sophistication. These advances increase the efficacy and prevalence of online education alternatives. Indeed, all facets of education are now directly affected by technological advancements. Expectations for the integration of education and technology have increased by the simple fact that the student population entering university these days is a generation born into technology.

Within the scope of the study, five fundamental themes derived from codes relating to the future of university education in Turkish strategic plans were identified. These themes included elements of digital transformation, a digital campus, digital education, digital infrastructure, and future-focused units. The substance of these five topics was reviewed in relation to four distinct university groups across the nation, and it was determined whether there was a substantial variation in the approach to our digital age based on university type. It was discovered that only future-focused units distinguished these four types of universities considerably.

We hope that our study's methodology and findings will inspire both future scientific research and improved strategic planning of universities. The ideal of a more liveable environment and society filled with content individuals necessitates an ecosystem in which digital technologies are utilised effectively, ethically, and broadly. Universities are attempting to make the future brighter by devising techniques to teach students – our human resource – how to accomplish this objective.

References

Aavik, K. (2019). Craftling neoliberal futures in the strategic plans of Estonian univesities. *Futures*, 111, 148-158. https://doi.org/10.1016/j.futures.2018.10.003

Abad-Segura, E., González-Zamar, M. D., Infante-Moro, J. C., & Ruipérez García, G. (2020). Sustainable management of digital transformation in higher education: global research trends. *Sustainability*, 12(5), 2107. https://doi.org/10.3390/su12052107

Aytar, O. (2019). Do the ethical declarations of companies consist of similar stereotypical concepts and topics? Or are they original commitments? *Business & Management Studies: An International Journal*, 7(4), 1944–1966. https://doi.org/10.15295/bmij.v7i4.1188

Aytar, O. (2022). Is digital visual isomorphism inevitable in successful companies? A Comparison of the colours used on global companies' websites. *Global Business Review*. https://doi.org/10.1177/09721509221126024

Bal, H. (2013). *Nitel Araştırma Yöntemleri*. Isparta: Fakülte Kitabevi.

Belousova, M. N., Belousov, V. A., & Narkevich, L. V. (2021). Digital Transformation of the Educational Process in University in the Context of Globalization. In Socio-economic Systems: Paradigms for the Future (pp. 1267-1277). Cham: Springer International Publishing.

Bıkmaz Bilgen, O., & Doğan, N. (2017). The comparison of interrater reliability estimating techniques. *Journal of Measurement and Evaluation in Education and Psychology-Epod*, 8(1), 63-78. https://doi.org/10.21031/epod.294847

Bonfield, C. A., Salter, M., Longmuir, A., Benson, M., & Adachi, C. (2020). Transformation or evolution?: Education 4.0, teaching and learning in the digital age. *Higher education pedagogies*, 5(1), 223-246. https://doi.org/10.1080/23752696.2020.1816847

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative research journal*. 9 (2), 27-40. https://doi.org/10.3316/QRJ0902027

Bryson, J. M. (1988). A strategic planning process for public and non-profit organizations. Long range planning, 21(1), 73-81. https://doi.org/10.1016/0024-6301(88)90061-1

Bygstad, B., Øvrelid, E., Ludvigsen, S., & Dæhlen, M. (2022). From dual digitalization to digital learning space: exploring the digital transformation of higher education. *Computers & Education*, 182, 104463. https://doi.org/10.1016/j.compedu.2022.104463

Chandler, Jr, A. D. (1969). Strategy and structure: chapters in the history of the American industrial enterprise (Vol. 120). Massachusetts: MIT press.

Cheung, S. K., Kwok, L. F., Phusavat, K., & Yang, H. H. (2021). Shaping the future learning environments with smart elements: challenges and opportunities. *International Journal of Educational Technology in Higher Education*, 18, 1-9. https://doi.org/10.1186/s41239-021-00254-1

Chun, R. (2017). How virtuous global firms say they are: a content analysis of ethical values. *Journal of Business Ethics*, 155, 1–17. https://doi.org/10.1007/s10551-017-3525-3

Creswell, J. W. (2007). Qualitative inquiry and research design. Thousand Oaks: Sage.

Davies, W. (2000). Understanding strategy. *Strategy & Leadership*, *28*(5), 25-30. https://doi.org/10.1108/10878570010379428

Decuypere, M., Grimaldi, E., & Landri, P. (2021). Introduction: critical studies of digital education platforms. *Critical Studies in Education, 62*(1), 1-16. https://doi.org/10.1080/17508487.2020.1866050

Drucker, P. (1996). *The frontiers of management*. London: Routledge.

Erceg, V., & Zoranović, T. (2022). Knowledge management and digital business transformation. *Strategic Management-International Journal of Strategic Management and Decision Support Systems in Strategic Management*, *27*(2), 57-63. https://doi.org/10.5937/StraMan2200007E

Ertem Vehid, H., & Eral, G. (2014). Statistical methods used in the evaluation of qualitative data. *Çocuk Dergisi*, *14*(2), 60-61. https://doi:10.5222/j.child.2014.060

Fukuda, K. (2020). Science, technology and innovation ecosystem transformation toward society 5.0. *International journal of production economics*, *220*, 107460. https://doi.org/10.1016/j.ijpe.2019.07.033

Fukuyama, M. (2018). Society 5.0: aiming for a new human-centered society. *Japan Spotlight*, *27*(5), 47-50.

Fumasoli, T., Barbato, G., & Turri, M. (2020). The determinants of university strategic positioning: a reappraisal of the organisation. *Higher Education*, *80*, 305-334. https://doi.org/10.1007/s10734-019-00481-6

George, B., Walker, R. M., & Monster, J. (2019). Does strategic planning improve organizational performance? A meta-analysis. *Public Administration Review, 79*(6), 810-819. https://doi.org/10.1111/puar.13104

Gourlay, L. (2021). There is no "virtual learning": the materiality of digital education. *Journal of New Approaches in Educational Research*, *10*(1), 57-66. https://doi.org/10.7821/naer.2021.1.649

Harris, H. (2001). Content analysis of secondary data: a study of courage in managerial decision making. *Journal of Business Ethics*, 34, 191–208. https://doi.org/10.1023/A:1012534014727

Hashim, H. (2018). Application of technology in the digital era education. *International Journal of Research in Counseling and Education*, *2*(1), 1-5. https://doi.org/10.24036/002za0002

Hanssen, T.-E.S. & Solvoll, G. (2015). The importance of university facilities for student satisfaction at a Norwegian University, *Facilities*, *33*(13/14), 744-759. https://doi.org/10.1108/F-11-2014-0081

Herbane, B. (2019). Rethinking organizational resilience and strategic renewal in SMEs. *Entrepreneurship & Regional Development, 31*(5-6), 476-495. https://doi.org/10.1080/08985626.2018.1541594

Horner, S., Jayawarna, D., Giordano, B., & Jones, O. (2019). Strategic choice in universities: managerial agency and effective technology transfer. *Research Policy, 48*(5), 1297-1309. https://doi.org/10.1016/j.respol.2019.01.015

Huang, MH., Rust, R.T. A strategic framework for artificial intelligence in marketing. *J. of the Acad. Mark. Sci. 49*, 30–50 (2021). https://doi.org/10.1007/s11747-020-00749-9

Huang, R., Zhang, J., Hu, Y., & Yang, J. (2012). Smart campus: the developing trends of digital campus. *Open Education Research*, *18*(4), 12–17.

Ismagilova, E., Hughes, L., Dwivedi, Y. K., & Raman, K. R. (2019). Smart cities: Advances in research — an information systems perspective*. International journal of information management*, 47, 88-100. https://doi.org/10.1016/j.ijinfomgt.2019.01.004

Karabulut, B. (2015). Bilgi Toplumu Çağında Dijital Yerliler, Göçmenler ve Melezler. *Pamukkale Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 21, 11-23.

Kıral, B. (2020). Nitel bir veri analizi yöntemi olarak doküman analizi. *Siirt Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *8*(15), 170-189.

Komljenovic, J. (2021). The rise of education rentiers: digital platforms, digital data and rents. *Learning Media and Technology, 4*6(3), 320-332. https://doi.org/10.1080/17439884.2021.1891422

Koçak, A., & Arun, Ö. (2006). İçerik Analizi Çalışmalarında Örneklem Sorunu. *Selçuk İletişim*, 22-28.

Krippendorff, K. (2018). *Content analysis: An introduction to its methodology*. SAGE Publications. https://doi.org/10.4135/9781071878781

Kuzu, Ö.H. (2020). Digital transformation in higher education: a case study on strategic plans. *Higher Education in Russia*. 29(3), 9-23. https://doi.org/10.31992/0869-3617-2019-29-3-9-23

Levin, I., & Mamlok, D. (2021). Culture and society in the digital age. Information, *12*(2), 1-13. https://doi.org/10.3390/info12020068

Li, F. (2020). The digital transformation of business models in the creative industries: a holistic framework and emerging trends. *Technovation*, 92, 102012. https://doi.org/10.1016/j.technovation.2017.12.004

Liu, D., Huang, R., Wosinski, M., Liu, D., Huang, R., & Wosinski, M. (2017). Smart learning in digital campus. *Smart Learning in Smart Cities*, 51-90. https://doi.org/10.1007/978-981-10-4343-7_4

Lukovics, M. & Zuti, B. (2017). New Functions of Universities in Century XXI Towards “Fourth Generation” Universities (October 4, 2017). academia.edu 9: Paper ID: 20371078. San Francisco, California.

Lune, H. & Berg, B. L. (2017). *Qualitative Research Methods for the Social Sciences*. Harlow: Pearson.

Mampaey, J., Huisman, J., & Seeber, M. (2015). Branding of Flemish higher education institutions: a strategic balance perspective. *Higher Education Research & Development, 34*(6), 1178-1191. https://doi.org/10.1080/07294360.2015.1024634

Moldagali, B., Sultanova, B., Akhtayeva, N., Suleimenova, A., & Akimbekova, S. (2022). Innovative technologies: digitalisation of education. *Journal of Social Studies Education Research*, 13(4), 209-224.

Murphy, M. & Costa, C. (2019). Digital scholarship, higher education and the future of the public intellectuel. *Futures*, 111, 205-212. https://doi.org/10.1016/j.futures.2018.04.011

Newman, J., Mintrom, M., & O'Neill, D. (2022). Digital technologies, artificial intelligence, and bureaucratic transformation. *Futures*, 136, 102886. https://doi.org/10.1016/j.futures.2021.102886

Nickols, F. (2016). Strategy, strategic management, strategic planning and strategic thinking. *Management Journal, 1*(1), 4-7.

Odabaşı, Y. (2006). Değişimin ve Dönüşümün Aracı Olarak Girişimci Üniversite. Girişimcilik ve Kalkınma Dergisi, 1(1), 87-104.

Otto, G., Foreman, R., & Verra, G. (2008). FIELD OF THE FUTURE digital infrastructure and IT architecture. Paper presented at the *Intelligent Energy Conference and Exhibition,* Amsterdam, The Netherlands. https://doi.org/10.2118/112149-MS

Parlak, B. (2017). Education In digital age: an analysis on opportunities and applications*. Suleyman Demirel University The Journal of Faculty of Economics and Administrative Sciences*, 22, 1741-1759.

Plekhanov, D., Franke, H., & Netland, T. H. (2022). Digital transformation: a review and research agenda. *European Management Journal*. https://doi.org/10.1016/j.emj.2022.09.007

Popping, R. (2000). Network text analysis. In Popping R. (Ed.), *Computer-Assisted Text Analysis* (pp. 97–128). SAGE Publications. https://doi.org/10.4135/9781849208741.n6

Porter, M. E. (1996). What is strategy? *Harvard Business Review*, November-December.

Renz, S.M., Carrington, J.M.,& Badger, T.A. (2018). Two strategies for qualitative content analysis: an intramethod approach to triangulation. *Qualitative Health Research, 28*(5), 824-831. https://doi:10.1177/1049732317753586

Rof, A., Bikfalvi, A., & Marquès, P. (2020). Digital transformation for business model innovation in higher education: overcoming the tensions. *Sustainability, 12*(12), 4980. https://doi.org/10.3390/su12124980

Sandkuhl, K., & Lehmann, H. (2017). *Digital Transformation in Higher Education – The Role of Enterprise Architectures and Portals*. Alexander Rossmann, Alfred Zimmermann (eds.), 49-60, Bonn: Digital Enterprise Computing.

Saruhan, S. C. & Yıldız, M. L. (2017). *Çağdaş Yönetim Bilimi*. İstanbul: Beta Basım Yayım.

Saykili, A. (2019). Higher education in the digital age: the impact of digital connective technologies. *Journal of Educational Technology & Online Learning, 2*(1), 1-15. https://doi.org/10.31681/jetol.516971

Shah, M. (2013). Renewing strategic planning in universities at a time of uncertainty. *Perspectives: Policy and Practice in Higher Education, 17*(1), 24-29. http://dx.doi.org/10.1080/13603108.2012.679753

Sharma, S., & Behl, R. (2023). Strategic alignment of information technology in public and private organizations in India: a comparative study. *Global Business Review*, 24(2), 335-352. https://doi.org/10.1177/0972150919893839

Sillence, E., Dawson, J. A., McKellar, K., & Neave, N. (2022). How do students use digital technology to manage their university-based data: strategies, accumulation difficulties and feelings of overload?. *Behaviour & Information Technology*, 1-10. https://doi.org/10.1080/0144929X.2022.2126948

Schoellman, T. & Smirnyagin, V. (2021). The growing importance of universities for patenting and innovation, SSRN, 1-48. http://dx.doi.org/10.2139/ssrn.3911375

Şimşek, M. Ş., & Çelik, A. (2016). *Yönetim ve Organizasyon* . Konya: Eğitim Yayınevi.

Tang, D. (2021). What is digital transformation?. *EDPACS*, 64(1), 9-13. https://doi.org/10.1080/07366981.2020.1847813

Taebi, B., van den Hoven, J., & Bird, S. J. (2019). The importance of ethics in modern universities of technology. *Science and Engineering Ethics*, *25*, 1625-1632. https://doi.org/10.1007/s11948-019-00164-6

Taşkıran, A. (2017). Dijital Çağda Yükseköğretim. *Açıköğretim Uygulamaları ve Araştırmaları Dergisi* , 3(1), 96-109.

✉ **Correspondence**

Oğuzhan Aytar

Karamanaoglu Mehmetbey University, Faculty of Economics and Administrative Sciences,
Urgan Mah, Karaman 70100, Türkiye

E-mail: oguzhanaytar@kmu.edu.tr

TUBITAK (2021). Türkiye Bilimsel ve Teknolojik Araştırma Kurumu, Girişimci ve Yenilikçi Üniversite Endeksi. Retrieved July 15, 2022 from https://www.tubitak.gov.tr/tr/icerik-girisimci-ve-yenilikci-universite-endeksi.

Weber, R. P. (1990). *Basic Content Analysis*. Sage University Paper Series on Quantitative Applications in the Social Sciences. 49. https://doi.org/10.4135/9781412983488

Wheelen, T. L., Hunger, J. D., Hoffman, A. N., & Bamford, C. E. (2015). *Strategic management and business policy globalization, innovation, and sustainability*. Boston: Pearson Education, Inc.

Whittington, R. (2019). *Opening Strategy: Professional Strategists and Practice Change, 1960 to Today*. Oxford: Oxford University Press. https://doi.org/10.1093/oso/9780198738893.001.0001

Wolf, C., & Floyd, S. W. (2017). Strategic planning research: Toward a theory-driven agenda. *Journal of management*, *43*(6), 1754-1788 https://doi.org/10.1177/0149206313478185

YOK (2021). Yükseköğretim Kurulu, Üniversitelerimiz. Retrieved August 20, 2022, from https://www.yok.gov.tr/universiteler/universitelerimiz

Zagame, P. (1993). Planification stratégique: Quelques réflexions pour une transposition à la planification nationale. *Revue Economique*, *44*, 13-55. https://doi.org/10.2307/3502390

STRATEGIC MANAGEMENT, Vol. 29 (2024), No. 4, pp. 082-088

DOI: 10.5937/StraMan2200023D

Received: March 29, 2022
Revised: June 06, 2022
Accepted: June 08, 2022
Published online: September 29, 2022

Banking service quality perceived by students: implications to green services

Nenad Đokić

University of Novi Sad, Faculty of Economics in Subotica, Subotica, Republic of Serbia
https://orcid.org/0000-0001-8229-8354

Nikola Milićević

University of Novi Sad, Faculty of Economics in Subotica, Subotica, Republic of Serbia
https://orcid.org/0000-0003-4834-6994

Branimir Kalaš

University of Novi Sad, Faculty of Economics in Subotica, Subotica, Republic of Serbia
https://orcid.org/0000-0002-9141-7957

Ines Đokić

University of Novi Sad, Faculty of Economics in Subotica, Subotica, Republic of Serbia
https://orcid.org/0000-0002-0920-0469

Abstract

Background: The paper examines banking service quality perceived by students as a basis for determining implications for green services. The focus was on this market segment bearing in mind its potential effects on banks' long-term profitability and students' acquaintance with environmental issues. The attention was dedicated to the green banking concept taking into account the role which banks have in creating an eco-friendly society.

Purpose: The aim of the research refers to identifying banking service quality aspects that are important for students. Later, those can be used as a starting point in determining actions regarding green services in the case of the student population.

Study design/methodology/approach: The quality of a bank service was modeled as a hierarchical reflective-formative construct, because of which the SmartPLS software was applied. Five SERVQUAL dimensions (assurance, empathy, reliability, responsiveness, and tangibles) were specified as lower-order reflective constructs which form the higher-order formative construct (banking service quality). After testing the model, separately for reflective and formative constructs, path coefficients were presented.

Finding/conclusions: The results have shown that responsiveness and assurance represent dimensions that have the largest contribution to banking service quality, i.e. the highest path coefficients to higher-order construct. In accordance with those findings, certain implications concerning green services were given.

Limitations/future research: The omission of certain variables that may be related to banking services represents the limitation of this study; hereby, in future researches, some socio-demographic characteristics (such as gender, household income, etc.) could be included in the analysis.

Keywords

service quality, green banking, environment, reflective-formative construct

Introduction

The banking sector is the area in which service quality has been drawing the attention of many researchers. Following Miguel-Dávila, Cabeza-García, Valdunciel and Flórez (2010, p. 2164), banking service can be defined as "the activity carried out by banking institutions considered as service companies; that is, everything that banking institutions do to serve their customers". Studies related to this field of interest were performed in various countries, including, among others, Spain (Marimon, Yaya & Fa, 2012), Germany (Yavas, Benkenstein & Stuhldreier, 2004), Sweden

(Strandberg, Wahlberg & Öhman, 2012), Slovenia (Korda & Snoj, 2010), Croatia (Ozretic-Dosen & Zizak, 2015), Northern Cyprus (Karatepe, Yavas & Babakus, 2005), Australia (Joseph, McClure & Joseph, 1999), China (Wang, Lo & Hui, 2003), Indonesia (Supriyanto, Wiyono & Burhanuddin, 2021), Kenya (Auka, Bosire & Matern, 2013), Pakistan (Awan, Bukhari & Iqbal, 2011), Qatar (Hossain & Leo, 2009), Jordan (Pakurár, Haddad, Nagy, Popp & Oláh, 2019) and Colombia (Miguel-Dávila et al. 2010).

The analysis of banking service quality could be used as a basis for the decision-making process related to a new market and environmental conditions. Climate change and pollution have led to the implementation of new business concepts and products, whereas the majority of stakeholders took certain actions in order to prevent or at least minimize their negative effects on the environment; among them, a special place belongs to banks, which, in addition to mitigating their negative efforts, are trying to increase positive contributions toward more eco-friendly society (Bukhari, Hashim & Amran, 2020). In this regard, banks began to expand their offers with new products and services, and undertake marketing and other activities, all in order to be more "green" (Zhelyazkova & Kitanov, 2015).

When it comes to concerns about the environment, particular attention should be dedicated to students, bearing in mind that the world's survival largely depends on their engagements and attitudes toward green products (Mohiuddin, Mamun, Syed, Masud & Su, 2018). This segment is important for banks as well. Despite the narrow range of services that can be offered to students (usually including current accounts and different kinds of loans for financing their education), this population should not be neglected bearing in mind that it is well "equipped" to cope with technological changes that became the indispensable part of banking business in nowadays conditions (Ozretic-Dosen & Zizak, 2015). According to Lewis, Orledge and Mitchell (1994, p. 3), banks and building societies suppose "that with little bank switching, attracting accounts from the young, although not profitable in the short term, should be in the longer term". In other words, by focusing on university students at the beginning of their economic life cycles, banks hope to develop sustainable relations with them, which should result in higher profits in later years (Narteh, 2013).

Starting from the above, this paper analyses banking service quality (BSQ) perceived by university students, as a basis for determining implications for green services. Before setting the model, several different approaches related to BSQ were presented in the literature review section; in addition, the concept of green banking (GB) was explained. The banking service quality model was specified as a formative higher-order construct that consisted of five reflective lower-order constructs (dimensions). After presenting the results, a section related to discussion and conclusions follows. Within it, certain implications regarding green services were presented.

1. Literature review

1.1. Banking service quality perceived by students

Banking service quality perceived by students has been investigated in a number of studies. In some of them, it was assessed on the basis of a SERVQUAL approach (Bond & Hsu, 2011; Ozretic-Dosen & Zizak, 2015; Bhengu & Naidoo, 2016; Mokhlis, Hasan & Yaakop, 2014).

Bhengu and Naidoo (2016) tested banking service quality (assurance, empathy, reliability, responsiveness, and tangibles) perceived by MBA students in South Africa. Their results pointed to the existence of students' dissatisfaction regarding the quality of retail banks' service offerings, whereby gap scores were analyzed in the context of a year of study and students' bank choices.

Students' perceptions and expectations in regard to banking service quality were examined in Croatia, in the study performed by Ozretić-Došen & Žižak (2015). The research revealed gaps in all five SERVQUAL dimensions, whereby the largest ones were observed in reliability, assurance, and responsiveness, while the smallest one was recorded in tangibles. Hereby, it should be mentioned that obtained gaps were weighted in relation to the significance of service quality dimensions evaluated by students; the most significant dimension was reliability, followed by assurance, responsiveness, empathy and tangibles as the least significant.

Mokhlis et al. (2014) examined students' assessment of bank service quality the in Malaysian banking industry. The importance-performance analysis (IPA) was used for evaluating five bank service dimensions. According to their findings, reliability and responsiveness represented the most problematic dimensions, bearing in mind that they were both, underperforming and important for students. On the other hand, there were no problems with assurance which was associated with high performance and high importance, while empathy and tangibles (although on different levels of performance) were unimportant for students, and thus didn't pose large threats to a bank.

In the research conducted by Bond and Hsu (2011), the focus was on international students and their perceptions of the service quality of UK banks. With the use of GAP analysis, they identified areas of service quality with which international students were satisfied, as well as areas with which they were not. The former referred to tangibles, such as appearance and physical layout; and the latter were related to factors associated with empathy and reliability.

Besides assessing banking service quality, the subject of the studies was relations between this phenomenon and other constructs, such as satisfaction and/or loyalty. In some of them, for measuring the quality of banking service, researchers also relied on the SERVQUAL approach, with smaller or larger changes (Hin, Wei, Bohari & Adam, 2011; Reddy & Karim, 2014; Yilmaz, Ari & Gürbüz, 2018). However, in certain studies, the approach for assessing quality was accommodated to the specific aspect of banking service. Therefore, when measuring Internet banking service quality among the student population in Pakistan, Raza, Umer, Qureshi and Dahri (2020) used the modified e-SERVQUAL model; Ganguli and Roy (2011), on the other hand, identified four quality dimensions (technology security and information quality, technology convenience, technology usage easiness and reliability, and customer service) regarding the technology-based banking services.

1.2. Green banking

As Zhelyazkova and Kitanov (2015) stated, despite its widespread application, the term "green banking", also known as sustainable banking, ethical banking, or environment-friendly banking (Tara, Singh & Kumar, 2015), does not have a commonly accepted definition. Since its first introduction by the Dutch bank, Triodos Bank, in 1980 (Zhang, Wang, Zhong, Yang & Siddik, 2022), the GB concept has been the subject of many studies.

After presenting several views of other authors, Zhelyazkova and Kitanov (2015) defined green banking as "banking in all its business aspects (deposit gathering, credit disbursement, trade finance, leasing operations, mutual funds and custodian services, etc.) which is oriented towards preservation of environment" (p. 310). Following Tara et al. (2015) green banking represents "the environment-friendly banking practices that promote their customers to reduce the carbon footprint through their banking activities" (p. 1030). Bukhari et al. (2020, p. 372) quoted the definition of the international finance corporation (IFC) according to which green banking is related to "a blend of bank's own direct environmental impact reduction, managing environmental and social risks in banks' decision-making processes and supporting businesses and industries that have a positive impact on the environment and society" (p. 372). According to Park and Kim (2020), green banking was defined as "financing activities by banking and nonbanking financial institutions with an aim to reduce greenhouse gas emissions and increase the resilience of the society to negative climate change impacts while considering other sustainable development goals such as economic growth, job creation and gender equality" (p.4). In the paper by paper by Zhang et al. (2022), it was mentioned that "GB contributes towards the development of sustainable business practices and alleviation of the negative effects of banking activities on the environment through the supply of loans for environmentally favorable initiatives" (p. 3).

Banks can directly affect the environment through their daily operations related to waste and resource managing (the use of toners, electrical energy, paper, etc.); on the other hand, indirect effects are associated with relations between banks and their clients, concerning loans and other services, as well as to activities (such as marketing and PR) that should increase the environmental awareness at a social level (Zhelyazkova & Kitanov, 2015). In order to adjust their business to eco-friendly trends, banks have started to implement green financial products and services; they can all be classified into six main categories: loan, insurance, securitization, equity investment, brokerage and market-making, and technical assistance (Park & Kim, 2020, p. 17).

Among mentioned categories, loan and equity investment could be of special interest for students. Clients can use loans for purchasing energy-efficient and climate-smart products, whereby besides different appliances and vehicles, they can buy climate-adjusted seeds and agriculture equipment; banks can also support investing in ventures and start-ups related to the development of climate-smart and green technologies (Park & Kim, 2020).

2. Research methodology

The paper analyses banking service quality (BSQ) by relying on the questionnaire presented in the research of Lau, Cheung, Lam and Chu (2013, p. 273). In addition to 15 statements regarding service quality dimensions, which respondents were supposed to rate on a scale from 1 ("strongly disagree") to 7 ("strongly agree"), it included several questions related to demographic characteristics such as gender, age and household size.

The sample consisted of 191 students from the University of Novi Sad. The majority of them were female (more than 75%); the average age was 21.3 years, and the average household size was 4.1. The data have been processed in 2021, with the use of SmartPLS 3.0 software.

The quality of service is designed as a hierarchical reflective-formative model; the second-order construct (BSQ) is formed by five reflective first-order dimensions (assurance, empathy, reliability, responsiveness, and tangibles). This type of hierarchical model was applied in line with recommendations given by Parasuraman, Zeithalm and Malhotra (2005). Hereby, for its estimation the repeated indicator approach (Becker, Klein & Wetzels, 2012) was implemented, meaning that the higher-order construct was specified using all indicators of the underlying dimensions (Figure 1).

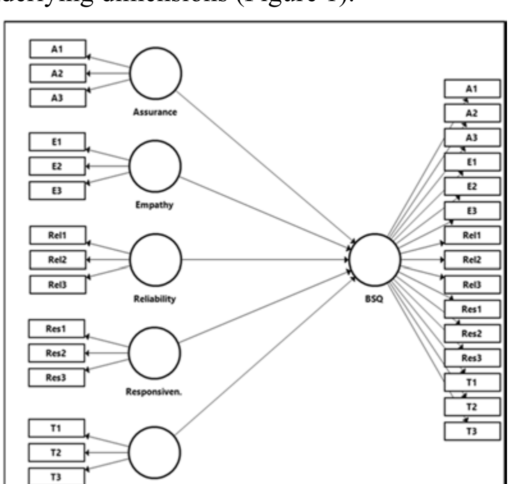

Figure 1 Conceptual model
Source: the authors

Following Hair, Hult, Ringle & Sarstedt (2017), we examined indicator reliability, average variance extracted (AVE), composite reliability (CR), and discriminant validity (by using the Fornell-Larcker criterion), when testing reflective first-order dimensions. When it comes to the second-order formative construct (BSQ), multicollinearity and path coefficients between BSQ and its first-order dimensions were analyzed (Hair et al. 2017).

Outer loadings (used for evaluating indicator reliability) were higher than 0.7 for all items; the values of AVE and CR were also satisfactory, i.e. they were above 0.5 and 0.7, respectively. However, the application of the Fornell-Larcker approach pointed to certain problems regarding discriminant validity between reliability, on one side, and assurance and responsiveness, on the other. In order to handle this issue, we performed the correlation analysis which included all indicators of previously mentioned constructs; as a result, we identified one indicator (Rel3) which was highly correlated with indicators in comparable constructs. After its elimination from both, the reliability dimension and higher-order BSQ construct, the changed model was tested.

Table 1 Outer loadings, AVE, and Composite reliability

ATTRIBUTES	Loadings	AVE	CR
BSQ			
- Assurance		0.804	0.925
A1	0.891		
A2	0.887		
A3	0.911		
- Empathy		0.749	0.899
E1	0.834		
E2	0.886		
E3	0.875		
- Reliability		0.779	0.875
Rel1	0.888		
Rel2	0.876		
- Responsiveness		0.798	0.922
Res1	0.893		
Res2	0.909		
Res3	0.877		
- Tangibles		0.694	0.872
T1	0.828		
T2	0.832		
T3	0.838		

Source: the authors

As presented in Table 1, outer loadings (for all indicators), AVE, and CR (for lower-order constructs) were higher than threshold values of 0.7, 0.5, and 0.7, respectively. In addition, the Fornell-Larcker criterion was established, bearing in mind that values presented on the main diagonal (square roots of constructs' AVE) were higher than values presented in the same columns and rows (correlations with other constructs).

Table 2 Fornell-Larcker criterion

	Ass.	Emp.	Rel.	Res.	Tan.
Ass.	**0.897**				
Emp.	0.697	**0.865**			
Rel.	0.828	0.695	**0.882**		
Res.	0.743	0.839	0.695	**0.893**	
Tan.	0.671	0.734	0.621	0.823	**0.833**

Source: the authors

In the case of the higher-order BSQ construct, all path coefficients were positive and statistically significant with a p-value lower than 0.01, while all inner VIF values were below 10, demonstrating no multicollinearity issues.

3. Research results

Because of the use of the repeated indicator approach, R^2 value equaled 1. As previously mentioned, path coefficients were positive, ranging from 0.155 to 0.264 (Figure 2).

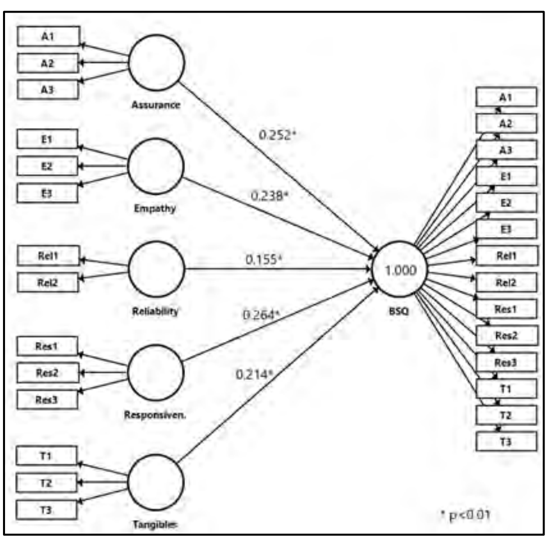

Figure 2 Path coefficients
Source: the authors

The largest path coefficient was recorded at responsiveness (0.264), followed by assurance (0.252). In the case of empathy and tangibles, their values were 0.238 and 0.214, respectively. The only path coefficient lower than 0.2 was recorded at reliability (0.155).

Discussion and conclusions

The paper examined banking service quality regarding student population in order to determine implications regarding green services. Although this segment of market may not be so attractive to banks, especially in the short term, through acquisition and retention of students, banks can expand their customer base and reap the benefits in later years (Narteh, 2013; Ozretic-Dosen & Zizak, 2015). Moreover, when it comes to green banking, it should be noted that students in emerging countries (as shown by several studies) generally have higher levels of environmental knowledge and moderate level of environmental awareness (Mohiuddin et al. 2018, p. 2). That can be taken as an additional motive for considering students as potential green service clients.

When analyzing the quality of banking service, the attention was devoted to its five dimensions, derived from SERVQUAL model: assurance, empathy, reliability, responsiveness and tangibles. Hereby, the special value of this research is the way in which banking service quality was modeled. It was set as a hierarchical reflective-formative model, which consists of one higher-order (BSQ) and five lower-order constructs (SERVQUAL dimensions); as those reflective lower-order constructs define banking service quality altogether, the higher-order construct is specified as formative.

The obtained results have shown that responsiveness and assurance were the dimensions that contributed the most to banking service quality. This is partially in a line with the research conducted by Ozretić-Došen and Žižak (2015) in which assurance was also perceived as a significant service quality dimension. In addition, in the study by Mokhlis et al. (2014) assurance had the highest importance score when it comes to banking service quality dimensions assessed by students. However, opposite to these studies, where reliability was perceived as an important dimension, in our research it had the lowest contribution. It should be noted here that due to different approaches in analyzing banking service quality, making comparisons with other studies is rather complex and should be approached with a certain caution.

When it comes to responsiveness, its contribution can be explained through the importance of contact and interaction between clients and bank staff. During studies, a significant number of people start to use banking services for the first time, and thus need more information; because of this, the initial contact with bank staff and its helpfulness and affability may be of great importance for students. Therefore, if banks offer green services, their staff should be well acquainted, not only with technical aspects of those services but with environmental aspects as well (for example, the focus may be on both personal and environmental benefits of using green services). Moreover, some organizational accommodations could be made to increase clients' awareness and facilitate the use of those services.

The significance of the assurance dimension can be reflected in the very nature of banking services; as they are directly connected to money, service accuracy and the fulfillment of promises and commitments can have special weight, not only for students but for other clients as well. The implementation of banking applications, through which clients can get the necessary information and control the service delivery process, may be of great help in increasing the level of assurance. Positive effects could also be expected from implementing assurance principles when offering green banking services.

In future researches, students' environmental awareness and intentions regarding banking green services could be analyzed; moreover, additional variables, such as students' socio-demographic characteristics, satisfaction, and loyalty could be examined as well.

Acknowledgement

The paper is a result of work on the project "Financial, marketing and management aspect of energy efficiency in the function of sustainable development of the AP Vojvodina" – long-term project of special interest for sustainable development in AP Vojvodina 2021-2024. Project number: 142-451-2537/2021.

References

Auka, D.O., Bosire, J.N. & Matern, V. (2013). Perceived service quality and customer loyalty in retail banking in Kenya. *British Journal of Marketing Studies, 1*, 32-61.

Awan, H.M., Bukhari, K.S. & Iqbal, A. (2011). Service quality and customer satisfaction in the banking sector: a comparative study of conventional and Islamic banks in Pakistan. *Journal of Islamic Marketing, 2*(3), 203-224. https://doi.org/10.1108/17590831111164750

Becker, J.M., Klein, K. & Wetzels, M. (2012). Hierarchical latent variable models in PLS-SEM: guidelines for using reflective-formative type models. *Long Range Planning, 45*(5-6), 359-394. https://doi.org/10.1016/j.lrp.2012.10.001

Bhengu, M. & Naidoo, V. (2016). Retail banking service quality: a client perception study. *Risk Governance & Control: Financial Markets & Institutions, 6*(4-1), 216-222. https://doi.org/10.22495/rcgv6i4c1art11

Bond, C. & Hsu, M.T-C. (2011). International students' perceptions of service quality in the UK banking sector: an exploratory study. *Journal of International Students, 1*(2), 50-58. https://doi.org/10.32674/jis.v1i2.553

Bukhari, S.A.A., Hashim, F. & Amran, A. (2020). Green banking: a road map for adoption. *International Journal of Ethics and Systems, 36*(3), 371-385. https://doi.org/10.1108/IJOES-11-2019-0177

Ganguli, S. & Roy, S.K. (2011). Generic technology-based service quality dimensions in banking: Impact on customer satisfaction and loyalty. *International Journal of Bank Marketing, 29*(2), 168-189. https://doi.org/10.1108/02652321111107648

Hair, J., Hult, G., Ringle, C. & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Los Angeles: Sage Publications.

Hin, C.W., Wei, C.C., Bohari, A.M. & Adam, M.Z.A. (2011). Bank selection criteria and service quality of Islamic banking: a comparison between muslim and non-muslim students and its effect on student's satisfaction. *Jurnal Ekonom, 14*(3), 104-114.

Hossain, M. & Leo, S. (2009). Customer perception on service quality in retail banking in Middle East: the case of Qatar. *International Journal of Islamic and Middle Eastern Finance and Management, 2*(4), 338-350. https://doi.org/10.1108/17538390911006386

Joseph, M., McClure, C. & Joseph, B. (1999). Service quality in the banking sector: the impact of technology on service delivery. *International Journal of Bank Marketing, 17*(4), 182-191. https://doi.org/10.1108/02652329910278879

Karatepe, O.M., Yavas, U. & Babakus, E. (2005). Measuring service quality of banks: scale development and validation. *Journal of Retailing and Consumer Services, 12*(5), 373–383. https://doi.org/10.1016/j.jretconser.2005.01.001

Korda, A.P. & Snoj, B. (2010). Development, validity and reliability of perceived service quality in retail banking and its relationship with perceived value and customer satisfaction. *Managing Global Transitions, 8*(2), 187–205.

Lau, M.M., Cheung, R., Lam, A.Y.C. & Chu, Y.T. (2013). measuring service quality in the banking industry: a Hong Kong based study. *Contemporary Management Research, 9*(13), 263-282. https://doi.org/10.7903/cmr.11060

Lewis, B.R., Orledge, J. & Mitchell, V-W. (1994). Service quality: students' assessment of banks and building societies. *International Journal of Bank Marketing, 12*(4), 3-12. https://doi.org/10.1108/02652329410057978

Marimon, F., Yaya, L.H.P. & Fa, M.C. (2012). Impact of e-Quality and service recovery on loyalty: a study of e-banking in Spain. *Total Quality Management & Business Excellence, 23*(7-8), 769-787. https://doi.org/10.1080/14783363.2011.637795

Miguel-Dávila, J.A., Cabeza-García, L., Valdunciel, L. & Flórez, M. (2010). Operations in banking: the service quality and effects on satisfaction and loyalty. *The Service Industries Journal, 30*(13), 2163–2182. https://doi.org/10.1080/02642060903289936

Mohiuddin, M., Mamun, A.A., Syed, F.A., Masud, M.M. & Su, Z. (2018). Environmental knowledge, awareness, and business school students' intentions to purchase green vehicles in emerging countries. *Sustainability, 10*(5), 1534, 1-18. https://doi.org/10.3390/su10051534

Mokhlis, S., Hasan, Z.R.A. & Yaakop, A.Y. (2014). Tertiary students' assessment of service quality in the malaysian banking industry: an importance performance analysis. *Mediterranean Journal of Social Sciences, 5*(1), 361-368. https://doi.org/10.5901/mjss.2014.v5n1p361

Narteh, B. (2013). Determinants of students' loyalty in the Ghanaian banking industry. *The TQM Journal, 25*(2), 153-169. https://doi.org/10.1108/17542731311299591

Ozretic-Dosen, D. & Zizak, I. (2015). Measuring the quality of banking services targeting student population. *EuroMed Journal of Business, 10*(1), 98-117. https://doi.org/10.1108/EMJB-01-2014-0002

Pakurár, M., Haddad, H., Nagy, J., Popp, J. & Oláh, J. (2019). The service quality dimensions that affect customer satisfaction in the Jordanian banking sector. *Sustainability, 11*(4), 1-24. https://doi.org/10.3390/su11041113

Parasuraman, A., Zeithalm, V.A. & Malhotra, A. (2005). E-S-QUAL: A Multiple Item scale for assessing electronic service quality. *Journal of Service Research, 7*(3), 213-233. https://doi.org/10.1177%2F1094670504271156

Park, H. & Kim, J.D. (2020). Transition towards green banking: role of financial regulators and financial institutions. *Asian Journal of Sustainability and Social Responsibility, 5*, 1-25. https://doi.org/10.1186/s41180-020-00034-3

Raza, S.A., Umer, A., Qureshi, M.A. & Dahri, A.S. (2020). Internet banking service quality, e-customer satisfaction and loyalty: the modified e-SERVQUAL model. *The TQM Journal, 32*(6), 1443-1466. https://doi.org/10.1108/TQM-02-2020-0019

Reddy, E.L. & Karim, S. (2014). A Study on students' perception towards quality of banking services. *IOSR Journal of Business and Management, 16*(8), 37-41. https://doi.org/10.9790/487X-16813741

Strandberg, C., Wahlberg, O. & Öhman, P. (2012). Challenges in serving the mass affluent segment: bank customer perceptions of service quality. *Managing Service Quality, 22*(4), 359-385. https://doi.org/10.1108/09604521211253478

Supriyanto, A., Wiyono, B.B. & Burhanuddin, B. (2021). Effects of service quality and customer satisfaction on loyalty of bank customers. *Cogent Business & Management, 8*(1), 1-17. https://doi.org/10.1080/23311975.2021.1937847

Tara, K., Singh, S. & Kumar, R. (2015). Green banking for environmental management: a paradigm shift. *Current World Environment, 10*(3), 1029-1038. https://doi.org/10.12944/CWE.10.3.36

Wang, Y., Lo, H-P. & Hui, Y.V. (2003). The antecedents of service quality and product quality and their influences on bank reputation: evidence from the banking industry in China. *Journal of Service Theory and Practice, 13*(1), 72-83. https://doi.org/10.1108/09604520310456726

Yavas, U., Benkenstein, M. & Stuhldreier, U. (2004). Relationships between service quality and behavioral outcomes: a study of private bank customers in Germany. *The International Journal of Bank Marketing, 22*(2), 144-157. https://doi.org/10.1108/02652320410521737

Yilmaz, V., Ari, E. & Gürbüz, H. (2018). Investigating the relationship between service quality dimensions, customer satisfaction and loyalty in Turkish banking sector: an application of structural equation model. *International Journal of Bank Marketing, 36*(3), 423-440. https://doi.org/10.1108/IJBM-02-2017-0037

Zhang, X., Wang, Z., Zhong, X., Yang, S. & Siddik, A.B. (2022). Do green banking activities improve the banks' environmental performance? the mediating effect of green financing. *Sustainability, 14*(2), 989, 1-18. https://doi.org/10.3390/su14020989

Zhelyazkova, V., & Kitanov, Y. (2015). Green banking – definition, scope and proposed business model. *Ecology & Safety, 9*, 309-315.

✉ **Correspondence**

Nikola Milićević

University of Novi Sad, Faculty of Economics in Subotica
Segedinski put 9-11, 24000 Subotica, Republic of Serbia

E-mail: nikola.milicevic@ef.uns.ac.rs

Manuscript requirements

The paper must be written in the template which can be found on the Submission of Papers page of the Strategic Management journal web site (https://www.smjournal.rs/index.php/home/about/submissions) and to be sent, together with the Copyright and Use Agreement.

Headings must be short, clearly defined, and numbered, except for Introduction and Conclusions. Apply at most three levels of headings.

All tables, graphs and diagrams are expected to back your research findings. They should be clearly referred to and numbered consecutively in Arabic numerals. They should be placed in the text at the appropriate paragraph (just after its reference).

Tables should be centered. All tables must have captions. The title of your table should follow the table number. Tables should not be wider than the margins of the paper.

Figures should be centered. All figures must have captions. The title of figures should appear immediately below the figure. The title of the figure should follow the figure number. Figures should not be wider than the margins of the paper. Figures will not be redrawn by the publisher. Figures should be high-quality grayscale graphics (please, do not use colors): vector drawings (with text converted to curves) or 300 dpi bitmaps.

Please do not supply any graphics copied from a website, as the resolution will be too low. In all figures taken or adapted from other sources, a brief note to that effect is obligatory, below the figure. One sentence at least referring to the illustration is obligatory.

Mathematical expressions should be numbered on the right side, while all variables and parameters must be defined.

Proof

Authors are responsible for ensuring that all manuscripts (whether original or revised) are accurately typed before final submission. One set of proof will be sent to authors, if requested, before the final publication, which must be returned promptly.

Strategic Management

International Journal of Strategic Management and
Decision Support Systems in Strategic Management

www.smjournal.rs

ISSN: 1821-3448
ISSN 2334-6191 (Online)

The references should specify the source (such as book, journal article or a web page) in sufficient detail to enable the readers to identify and consult it. The references are placed at the end of the work, with sources listed alphabetically (a) by authors' surnames or (b) by the titles of the sources (if the author is unknown). Multiple entries by the same author(s) must be sequenced chronologically, starting from the earliest, e.g.:

> Ljubojević, T.K. (1998). Ljubojević, T.K. (2000a). Ljubojević, T.K. (2000b).
> Ljubojević, T.K., & Dimitrijević, N.N. (1994).

The DOI number or URL of a full text version should be added if it exists.
Here is a list of the most common reference types:

A PERIODICALS

Authors must be listed by their last names, followed by initials. Publication year must be written in parentheses, followed by a full stop. Title of the article must be in sentences case: only the first word and proper nouns in the title are capitalized. The periodical title must be in title case, followed by the volume number, which is also italicized:

> Author, A. A., Author, B. B., & Author, C. C. (Year). Title of article. *Title of Periodical, volume number* (issue number), pages.

➲ **Journal article, one author, paginated by issue.**

Journals paginated by issue begin with page 1 in every issue, so that the issue number is indicated in parentheses after the
volume. The parentheses and issue numbers are not italicized, e.g.

> Seliverstova, Y. (2021). Workforce diversity management: A systematic literature review. *Strategic Management*, *26*(2), 3–11. https://doi.org/10.5937/StraMan2102003S

➲ **Journal article, one author, paginated by volume.**

Journals paginated by volume begin with page 1 in issue 1, and continue page numbering in issue 2 where issue 1 ended, e.g.

> Perić, O. (2006). Bridging the gap: Complex adaptive knowledge management. *Strategic Management, 14*, 654–668.

- **Journal article, two authors, paginated by issue.**

  Dakić, S., & Mijić, K. (2020). Regression analysis of the impact of internal factors on return on assets: A case of meat processing enterprises in Serbia. *Strategic Management*, *25*(1), 29–34. https://doi.org/10.5937/StraMan2001029D

- **Journal article, two authors, paginated by volume.**

  Ljubojević, K., & Dimitrijević, M. (2007). Choosing your CRM strategy. *Strategic Management, 15*, 333-349.

- **Journal article, three to six authors, paginated by issue.**

  Marić, S., Uzelac, O., & Strugar-Jelača, M. (2019). Ownership structure as a measure of corporate performance. *Strategic Management*, *24*(4), 28–37. https://doi.org/10.5937/StraMan1904028M

- **Journal article, three to six authors, paginated by volume.**

  Boškov, T., Ljubojević, K., & Tanasijević, V. (2005). A new approach to CRM. *Strategic Management, 13*, 300-310.

- **Journal article, more than six authors, paginated by issue.**

  Ljubojević, K., Dimitrijević, M., Mirković, D., Tanasijević, V., Perić, O., Jovanov, N., et al. (2005). Putting the user at the center of software testing activity. *Management Information Systems, 3*(1), 99-106.

- **Journal article, more than six authors, paginated by volume.**

  Strakić, F., Mirković, D., Boškov, T., Ljubojević, K., Tanasijević, V., Dimitrijević, M., et al. (2003). Metadata in data warehouse. *Strategic Management, 11*, 122-132.

- **Magazine article.**

  Strakić, F. (2005, October 15). Remembering users with cookies. *IT Review*, *130*, 20-21.

- **Newsletter article with author.**

  Dimitrijević, M. (2009, September). MySql server, writing library files. *Computing News, 57,* 10-12.

- **Newsletter article without author.**

  VBScript with active server pages. (2009, September). *Computing News,57,* 21-22.

B. BOOKS, BROCHURES, BOOK CHAPTERS, ENCYCLOPEDIA ENTRIES, AND BOOK REVIEWS

Basic format for books

Author, A. A. (Year of publication). *Title of work: Capital letter also for subtitle*. Publisher.

➲ **Book, one author.**

Ljubojević, K. (2005). *Prototyping the interface design*. Faculty of Economics in Subotica.

➲ **Book, one author, new edition**

Dimitrijević, M. (2007). *Customer relationship management* (6th ed.). Faculty of Economics in Subotica.

➲ **Book, two authors.**

Ljubojević, K., Dimitrijević, M. (2007). *The enterprise knowledge portal and its architecture*. Faculty of Economics in Subotica.

➲ **Book, three to six authors.**

Ljubojević, K., Dimitrijević, M., Mirković, D., Tanasijević, V., & Perić, O. (2006). *Importance of software testing*. Faculty of Economics in Subotica.

➲ **Book, more than six authors.**

Mirković, D., Tanasijević, V., Perić, O., Jovanov, N., Boškov, T., Strakić, F., et al. (2007). *Supply chain management*. Faculty of Economics in Subotica.

➲ **Book, no author or editor.**

Web user interface (10th ed.). (2003). Faculty of Economics.

➲ **Group, corporate, or government author.**

Statistical office of the Republic of Serbia. (1978). *Statistical abstract of the Republic of Serbia.* Ministry of community and social services.

➲ **Edited book.**

Dimitrijević, M., & Tanasijević, V. (Eds.). (2004). *Data warehouse architecture*. Faculty of Economics.

➲ **Chapter in an edited book.**

Repa, V. (2019). Deriving Key Performance Indicators from Business Process Model. In M. Pańkowska & K. Sandkuhl (Eds.), *Perspectives in Business Informatics Research. BIR 2019. Lecture Notes in Business Information Processing, vol 365.* (pp. 148–162). Springer. https://doi.org/10.1007/978-3-030-31143-8_11

➲ **Encyclopedia entry.**

Mirković, D. (2006). History and the world of mathematicians. In *The new mathematics encyclopedia* (Vol. 56, pp. 23-45). Faculty of Economics.

C. UNPUBLISHED WORKS

➲ **Paper presented at a meeting or a conference.**

Ljubojević, K., Tanasijević, V., Dimitrijević, M. (2003). *Designing a web form without tables*. Paper presented at the annual meeting of the Serbian computer alliance, Beograd.

➲ **Paper or manuscript.**

Boškov, T., Strakić, F., Ljubojević, K., Dimitrijević, M., & Perić, O. (2007. May). *First steps in visual basic for applications*. Unpublished paper, Faculty of Economics Subotica, Subotica.

➲ **Doctoral dissertation.**

Strakić, F. (2000). *Managing network services: Managing DNS servers*. Unpublished doctoral dissertation, Faculty of Economics Subotica.

➲ **Master's thesis.**

Dimitrijević, M. (2003). *Structural modeling: Class and object diagrams*. Unpublished master's thesis, Faculty of Economics Subotica.

D. ELECTRONIC MEDIA

The same guidelines apply for online articles as for printed articles. All the information that the online host makes available must be listed, including an issue number in parentheses:

Author, A. A., & Author, B. B. (Publication date). Title of article. *Title of Online Periodical, volume number* (issue number if available). https://www.anyaddress.com/full/url/

➲ **Article in an internet-only journal**

Tanasijević, V. (2003, March). Putting the user at the center of software testing activity. *Strategic Management*, *8* (4). https://www.ef.uns.ac.rs/sm2024

➲ **Document from an organization**

Faculty of Economics. (2008, March 5). *A new approach to CRM*. https://www.ef.uns.ac.rs/papers/acrm.html

➲ **Article from an online periodical with DOI assigned.**

Jovanov, N., & Boškov, T. A PHP project test-driven end to end. *Management Information Systems*, 2 (2), 45-54. https://doi.org/10.5937/StraMan213302003S

➲ **Article from an online periodical without DOI assigned.**

Online journal articles without a DOI require a URL.

Author, A. A., & Author, B. B. (Publication date). Title of article. *Title of Journal, volume number*. https://www.anyaddress.com/full/url/

Jovanov, N., & Boškov, T. A PHP project test-driven end to end. *Management Information Systems*, 2 (2), 45-54. https://www.ef.uns.ac.rs/mis/TestDriven.html

REFERENCE QUOTATIONS IN THE TEXT

➲ **Quotations**

If a work is directly quoted from, then the author, year of publication and the page reference (preceded by "p.") must be included. The quotation is introduced with an introductory phrase including the author's last name followed by publication date in parentheses.

According to Mirković (2001, p. 201), "The use of data warehouses may be limited, especially if they contain confidential data".

Mirković (2001, p. 201), found that "the use of data warehouses may be limited". What unexpected impact does this have on the range of availability?

If the author is not named in the introductory phrase, the author's last name, publication year, and the page number in parentheses must be placed at the end of the quotation, e.g.

He stated, "The use of data warehouses may be limited," but he did not fully explain the possible impact (Mirković, 2001, p. 201).

➲ **Summary or paraphrase**

According to Mirković (1991, p. 201), limitations on the use of databases can be external and software-based, or temporary and even discretion-based.

Limitations on the use of databases can be external and software-based, or temporary and even discretion-based (Mirković, 1991, p. 201).

➲ **One author**

Boškov (2005) compared the access range…

In an early study of access range (Boškov, 2005), it was found...

➲ When there are **two authors**, both names are always cited:

Another study (Mirković & Boškov, 2006) concluded that…

➲ If there are **three or more authors** the abbreviation "et al." (Latin for "and others") is employed in APA in-text citations when referencing works with three or more authors. The format is to include only the first author's last name, followed by "et al.," a comma, and the year of publication. For instance, (Dakic et al., 2024) would be used as an example.

➲ **Unknown author**

If the work does not have an author, the source is cited by its title in the introductory phrase, or the first 1-2 words are placed in the parentheses. Book and report titles must be italicized or underlined, while titles of articles and chapters are placed in quotation marks:

A similar survey was conducted on a number of organizations employing database managers (Limiting database access, 2005).

If work (such as a newspaper editorial) has no author, the first few words of the title are cited, followed by the year: (The Objectives of Access Delegation, 2007)

Note: In the rare cases when the word "Anonymous" is used for the author, it is treated as the author's name (Anonymous, 2008). The name Anonymous must then be used as the author in the reference list.

➲ **Organization as an Author**

If the author is an organization or a government agency, the organization must be mentioned in the introductory phrase or in the parenthetical citation the first time the source is cited:

According to the Statistical Office of the Republic of Serbia (1978), …

Also, the full name of corporate authors must be listed in the first reference, with an abbreviation in brackets. The abbreviated name will then be used for subsequent references:
The overview is limited to towns with 10,000 inhabitants and up (Statistical Office of the Republic of Serbia [SORS], 1978).

The list does not include schools that were listed as closed down in the previous statistical overview (SORS, 1978).

➲ When citing **more than one reference from the same author**: (Bezjak, 1999, 2002)

➲ When several **used works by the same author were published in the same year**, they must be cited adding a, b, c, and so on, to the publication date:

(Griffith, 2002a, 2002b, 2004)

➲ **Two or more works in the same parentheses**

When two or more manuscripts are cited parenthetically, they must be cited in the same order as they appear in the reference list, separated by a semicolon.

(Bezjak, 1999; Griffith, 2004)

➲ **Two or more works by the same author in the same year**

If two or more sources used in the submission were published by the same author in the same year, the entries in the reference list must be ordered using lower-case letters (a, b, c…) with the year. Lower-case letters will also be used with the year in the in-text citation as well:

Survey results published in Theissen (2004a) show that…

- To **credit an author for discovering a work** when you have not read the original:

  Bergson's research (as cited in Mirković & Boškov, 2006)…

Here, Mirković & Boškov (2006) will appear in the reference list, while Bergson will not.

- When **citing more than one author**, the authors must be listed alphabetically:

  (Britten, 2001; Sturlasson, 2002; Wasserwandt, 1997)

- When there is **no publication date**: (Hessenberg, n.d.)

- **Page numbers must always be given for quotations**:

  (Mirković & Boškov, 2006, p.12)

  Mirković & Boškov (2006, p. 12) propose the approach by which "the initial viewpoint…

- **Referring to a specific part of a work**:

(Theissen, 2004a, chap. 3) (Keaton, 1997, pp. 85-94)

- **Personal communications, including interviews, letters, memos, e-mails, and telephone conversations**, are cited as below. (These are *not* included in the reference list.)

  (K. Ljubojević, personal communication, May 5, 2008).

FOOTNOTES AND ENDNOTES

A few footnotes may be necessary when elaborating on an issue raised in the text, adding something that is in indirect connection, or providing supplementary technical information. Footnotes and endnotes are numbered with superscript Arabic numerals at the end of the sentence, like this.1 Endnotes begin on a separate page, after the end of the text. However, *Strategic Management* **does not recommend the use of footnotes or endnotes.**

REVIEWERS

Laslo Vasa, Széchenyi Istvàn University, Faculty of Economics, Győr, Hungary

Ljubiša Mićić, University of Banja Luka, Faculty of Economics, Banja Luka, Republic of Srpska, Bosnia and Herzegovina

Malči Grivec, University of Novo mesto, Faculty of Economics and Informatics, Novo mesto, Slovenia

Maria Kmety Bartekova, University of Economics in Bratislava, Faculty of Business Management, Bratislava, Slovakia

Marian Reiff, University of Economics in Bratislava, Faculty of Economic Informatics, Bratislava, Slovakia

Marianna Siničáková, Technical University of Kosice, Faculty of Economics, Kosice, Slovakia

Marijan Angeleski, University “St. Kliment Ohridski”, Faculty of economics, Prilep, North Macedonia

Marko Savković, University of Kragujevac, Faculty of Economics, Kragujevac, Serbia

Marzena Piszczek, Krakow University of Economics, Krakow, Poland

Michal Konečn, Institute of Technology and Business in České Budějovice, České Budějovice, Czech Republic

Miguel Gil, Jönköping University, Jönköping International Business School, Jönköping, Sweden

Milan Stamenković, University of Kragujevac, Faculty of Economics, Kragujevac, Serbia

Miloš Pjanić, University of Novi Sad, Faculty of Economics in Subotica, Subotica, Serbia

Mirela Panait, University of Ploiesti, Romania & Institute of National Economy, Romanian Academy, Bucharest, Romania

Miriama Blahušiaková, University of Economics in Bratislava, Faculty of Economic Informatics, Bratislava, Slovakia

Nada Milenković, University of Novi Sad, Faculty of Economics in Subotica, Subotica, Serbia

Nella Svetozarovova, University of Presov in Presov, Presov, Slovakia

Nemanja Berber, University of Novi Sad, Faculty of Economics in Subotica, Subotica, Serbia

Nina Pološki Vokić, Univeristy of Zagreb, Facluty of Economics & Business, Zagreb, Croatia

Norbert Sipos, University of Pécs, Faculty of Business and Economics, Pécs, Hungary

Oleksii Lyulyov, Sumy State University, Academic and Research Institute of Finance, Economics and Management, Sumy, Ukraine

Otilia Manta, Romanian Academy, Victor Slavescu Centre for Financial and Monetary Research, Bucharest, Romania

Otilija Sedlak, University of Novi Sad, Faculty of Economics in Subotica, Subotica, Serbia

Pawel Tadeusz Kazibudzki, Opole University of Technology, Faculty of Economics and Management, Opole, Poland

Piotr Soja, Krakow University of Economics, Krakow, Poland

Radenko Marić, University of Novi Sad, Faculty of Economics in Subotica, Subotica, Serbia

Radmila Bjekić, University of Novi Sad, Faculty of Economics in Subotica, Subotica, Serbia

Santiago Urio, Universidad Pontificia Comillas, Madrid, Spain

Sebastian L. Grüner, Ulm University of Applied Sciences, Ulm, Germany

Sergej Gričar, University of Novo mesto Faculty of Management and Business Sciences, Novo mesto, Slovenia

Serpeninova Yuliia, Sumy State University, Sumy, Ukraine

Sezana Mojsovska Salamovska, University of St Kliment Ohridski, Faculty of Economics, Prilep, North Macedonia

Slavica Mitrović Veljković, University of Novi Sad, Faculty of Technical Sciences, Novi Sad, Serbia

Syed Abdul Rehman Khan, Xuzhou University of Technology, Xuzhou, China

ЦИП – Каталогизација у публикацији
Библиотека Матице српске, Нови Сад

005.21

STRATEGIC managament : international journal of strategic managament and decision support systems in strategic managament / editor-in-chief Lazar Raković. - Vol. 14, no. 1 (2009) - . - Subotica: University of Novi Sad, Faculty of Economics, 2009-. - 30 cm

Tromesečno. - Nastavak publikacije: Strategijski menadžment = ISSN 0354-8414
ISSN 1821-3448

COBISS.SR-ID 244849927

Rešenjem Ministarstva za informisanje Republike Srbije, časopis "Strategijski menadžment" upisan je u registar javnog informisanja pod brojem 2213, od 7. avgusta 1996. Rešenjem Ministarstva za nauku i tehnologiju Republike Srbije br. 413-00-435/1/96-01 časopis je oslobođen opšteg poreza na promet proizvoda kao publikacija od posebnog interesa za nauku.

ISSN 1821-3448