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INNOVATION FOR ORGANISATIONAL PERFORMANCE: APPROACHES AND APPLICATIONS. EDITORIAL

Dear readers,

aiming to provide additional discernments into creating and sustaining innovative business practices and sustainable development, this thematic issue of INDECS represents articles and research results on several issues related to information systems and technology, circular economy, ethical and corporate social practice, as well as aspects of technological advancements, managerial and corporate performance that can help to sustain innovative business and long-term organisational sustainability.

Some of the latest trends, approaches and research results in this field were presented at the 6th Enterprise Research Innovation Conference (ENTRENOVA) virtually held in Zagreb, Croatia, from 10-12 September 2020. ENTRENOVA is an international scientific conference organised by IRENET, Society for Advancing Innovation and Research in Economy, in cooperation with the Faculty of Tourism and Hotel Management, Kotor, Montenegro and the University North, Varaždin, Croatia. It is a multi-disciplinary conference dedicated to examining, comprehending and discussing the art in the theory and application of innovation, knowledge management and R&D issues in business settings, especially related to ICTs. At ENTRENOVA 2020, more than 150 authors from 25 countries participated with 75 abstracts and 60 papers.

Besides participants of ENTRENOVA 2020, the open call for this thematic issue of INDECS was for all other interested authors, researchers and practitioners from the field of economics, organisation and management science, information technology and different managerial aspects concerning innovative business practices and sustainability.

Nine submissions for the thematic issue of INDECS were received, and some extended journal versions of short articles from proceedings. Articles in this issue were accepted after review by a guest editor and a blind review process by two independent reviewers. A short description and contribution of each article are provided in the following lines.

In the first article, Globočnik Žunac, Tišler and Sesar post the question: *Sustainable Business Communication Management – Are Negative Messages To Be Avoided Or Just Communicated Properly?* This article stresses the importance of implementing organisational communication and education on managing communication processes and their correlation to business success as crucial drivers to sustainable business management. In this regard, negative messages as part of business communication may have poor outcomes, and it is widely and wrongly considered that they should be avoided. However, negative messages are an essential element of every business organisation; they cannot be avoided and are of high importance for leading sustainable management. For that purpose, the authors note that an educated and thoughtful approach to communication is required. The main goal of this article is to determine the notion of negative messages, as well as to present the extent of negative messages in the everyday communication of an organisation, and emphasise the importance of acquiring skills necessary for a direct and indirect approach to the communication process.

In the article *Effect of Management's Competencies and Digital Skills on Digital Business Model Maturity for SMEs*, the authors note that the uptake of digital business models has been distinctly evident over recent years, causing profound changes across industries. Even though various scholarly papers attempt to investigate those developments, empirical studies of factors that influence digital business models' maturity are still scarce. The authors Zentner, Spremić and Zentner aim to address this literature gap by empirically testing the relationship between relevant managerial factors and digital business models' maturity. Through a multi-national study with 162 participating companies operating within the yachting tourism sector, followed by a qualitative and quantitative analysis of the obtained primary results, the authors find that managerial competencies, including management education and digital skills, positively affect managerial competencies, including management education and their digital skills digital business model maturity of the respective companies.

The third article, *Words Matter: School Leaders' Language in the Covid-19 Pandemic*, stresses that the coronavirus pandemic has affected all walks of life, where education has not been an exemption; in fact, it is one of the most severely hit sectors. The unknown crisis created unprecedented circumstances for all participants in the education process, and school leaders have had a double job: to navigate their institutions and look after their employees. The latter is a pretty delicate task – they have had to keep doing business and running their companies while minding the language since physical distancing necessitated the use of electronic communication, thus making room for vagueness and many misinterpretations. For this research, the authors Vaneva and Bojadjev include ten education leaders of private language schools and public primary and secondary schools in North Macedonia. These were video-interviewed on everyday COVID-19-related situations from their workplace context. Discourse completion tasks were employed as a data elicitation method. Being given the open-ended, only topically specified scenarios, the respondents were asked to recreate their language reaction to situations that happened in their newest pandemic work life, recollecting the period since 16 March 2020. The interviews were transcribed, and the leaders' language choices were analysed.

The author Moraru in the article *The Evolution of Kaufland Communication Strategy in Romania During The Pandemic*, claims that retailers strove to find a way to better communicate with consumers between 2020 and 2021. The pandemic raised some walls against their struggles because of people's fear, distrust, and new demands. In the first stage of this unusual lifestyle, buyers looked for new manners of living and even surviving. Then, they tried to adapt to unexpected opportunities to alleviate their daily existence. This study aims to analyse the evolution of Kaufland communication in terms of strategy between March 16, 2020, and December 2021. The author wanted to find out how a specific retailer organised its communication in Romania during the pandemic because, considering Kaufland is quite successful in the local market, it meets most clients' demands, whose opinion about their products is usually positive. Concerning research methods, the author conducted a multimodal discourse analysis focused on online ads delivered on Instagram, investigating them at the extralinguistic and linguistic levels. The study aimed to compare the lockdown and the post-lockdown Instagram campaigns to reveal such issues: global and local aspects, the balance between the rational and emotional approach of the retailer, tone of voice, and even main topics. The purpose of the article consisted in comparing the first pandemic year with the second one when consumers started learning how to deal with this new challenge in their life. The research outcomes confirmed that Kaufland re-considered its position in the Romanian virtual community, helping people to better cope with unexpected hardships in their lives by

using corporate social responsibility communication strategies and an emotional approach in most advertising campaigns.

The next article *Systematization of Antecedents and Effects of Workplace Incivility*, is based on a thorough literature review and presents the systematisation of antecedents and effects of workplace incivility. Variables contributing to deviant workplace behaviour (antecedents) are placed within three categories: dispositional, behavioural, and contextual. Dispositional antecedents are presented, including characteristics of targets (certain demographic characteristics and personality traits) and characteristics of instigators (position and power, attributes, attitudes, and certain personality traits). After that, behavioural antecedents of targets (such as counterproductive work behaviour, annoying or provocative behaviour, etc.) and instigators (inappropriate conflict management style, “workaholism”, response to negative emotions, etc.) are stated. Furtherly, the author Rašić Jelavić divides the contextual antecedents into organizationally-based (organisational change and downsizing, hierarchy and autocracy, lack of organisational justice, inadequate organisational culture and climate, certain negative aspects of e-communication, etc.), and work-based antecedents (job design issues, inappropriate working conditions, performance pressure, etc.) are explained at the end. Finally, negative consequences of workplace incivility on employees and the organisation are presented. The article ends with the concluding remarks, the implication of the research, and suggestions for future studies.

The sixth article with the title *Earnings Management and Dividend Payments During the Covid-19 Pandemic* focuses on the coronavirus outbreak that caused the worst global economic crisis in the last few decades. Many companies have experienced severe economic difficulties and were tempted to adjust their financial figures to reach certain business thresholds. Maintaining an existing level of dividend payments is a powerful incentive to engage in such activities. The authors Filipović, Bartulović and Šušak aim to estimate the effect of the economic crisis caused by the COVID-19 pandemic on the relationship between the estimated level of earnings management and dividend payments made by companies. Research models were estimated using panel analysis, and the Modified Jones model was utilised to assess the level of earnings management. A total of 56 companies listed on the Zagreb Stock Exchange in the Republic of Croatia with their financial data from 2015 to 2020 were included in the research sample. Unlike absolute and income-decreasing discretionary accruals, results indicated that the economic crisis caused by the COVID-19 pandemic positively affected the relationship between earnings management and dividend payments in the case of income-increasing accruals regarding companies that made regular dividend payments. In conclusion, the economic crisis caused by the COVID-19 pandemic was an additional incentive for certain companies to perform income-increasing earnings management to reach the desired level of dividend payments.

The article *The Croatian Hospital System: Insight into a Case of Financial Unsustainability* shares some unusual insights into the natural and financial operations of the Croatian hospital system. It reveals a puzzling observation: the financial indicators of costs and hospital spending are on the rise, while at the same time, natural indicators, e.g., the number of hospital days and discharged patients, are declining. Physician numbers are increasing while hospital days of treatment are decreasing, and certain drug consumption has been increasing without a corresponding increase in their patients. These are only some examples discussed in this publication, as noted by the author Bubas. Stakeholders in healthcare insist that the hospital system is underfunded. At the same time, public finance, which sees financial sustainability

through the prism of fiscal restraint, highlights uncontrolled growth of healthcare expenditures as key. Each has an element of truth, but neither is verifiably right or wrong. Due to the absence of a shared understanding of the dimensions of the problem, healthcare and public finance have created a *status quo* of hidden deficits and government bailouts. A comprehensive response to this longstanding issue requires open and sincere communication of all public sector functions stakeholders on societal priorities. No matter how much it has been generally accepted so far, healthcare should no longer be a public function whose expenditures are regularly insufficiently planned in the budget because under the pretext that the lives and health of citizens are at stake, it is irresistibly easy to cover the lack of financial resources subsequently.

The author Opila in the article *On Employing Extended Characteristic Surface Model for Tourism Demand Forecasting*, emphasises that the Extended Characteristic Surface Model is a theoretical tool of general application designed for computing coefficients in Monte Carlo stochastic simulations, in particular in multi equation stochastic econometric models. Econometric models are often used for economic analysis of large enterprises and national economies but rarely for analysis of small entities. The reason is that the costs of building and testing such large-scale models are very high. However, at this moment presented Extended Characteristic Surface Model delivers a not-so-expensive, rather intuitive, and flexible method eligible for consumer sentiment analysis and forecasting and "what-if" inferring suitable for entities of all sizes. In particular, it allows for analysis of demand variation resulting from messages concerning competing merchandise. The author focuses on the application of the Extended Characteristic Surface Model for the evaluation of sentiment and forecast of demand in tourism. In the work extended characteristic surface method is explained in thorough detail. Furthermore, the influence of factors such as demographic structure, prices, or market size on financial outcomes is analysed on the example of a small touristic entity.

The last article with the title *Accounting and Tax Regulation of Cryptocurrencies* by the authors Martinčević, Sesar, Buntak and Miloloža focuses on the digital age that creates new concepts, methods, and rules that are affecting the accounting process, which presents new challenges in accounting practice. One of the most significant changes and innovations within accounting processing and the financial industry is the emergence of cryptocurrencies that create a new financial business concept. Cryptocurrency is the equivalent of electronic money and is completely digital. Cryptocurrencies and transactions with cryptocurrencies frequently appear in today's modern business but are not fully regulated. Accounting and tax treatment in the Republic of Croatia and other European Union countries is not fully established and adjusted for doing business with cryptocurrencies. Due to the mentioned lack, cryptocurrencies and their transactions require strict regulation and adjustment operations. This article investigates the development of cryptocurrencies and their involvement in the financial industry and business environment, focusing on the accounting and tax treatment of cryptocurrencies within the accounting profession. Cryptocurrencies are rapidly developing daily and pose a significant challenge to the financial industry, especially their regulation within the accounting profession. A systematic literature review was undertaken to provide an overview of the related area of cryptocurrencies and their accounting and tax treatment. The terms ("cryptocurrency") and ("accounting" OR "tax") were used to collect data. The papers were reviewed to investigate whether a cryptocurrency control system has been established from an accounting and tax point of view and whether it functions as such, and its impact on the financial industry. Results indicate that the main problem around the concept of

cryptocurrencies and their accounting and tax treatment is insufficient regulation and inconsistencies in the implementation, monitoring, and evaluation of cryptocurrencies in the field of accounting at the local and global levels.

Zagreb 5th October, 2022

Guest Editor

Prof. Mirjana Pejić Bach, Ph.D.

SUSTAINABLE BUSINESS COMMUNICATION MANAGEMENT – ARE NEGATIVE MESSAGES TO BE AVOIDED OR JUST COMMUNICATED PROPERLY?

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ABSTRACT

Implementation of organizational communication, and education on managing communication processes and their correlation to business success are central to sustainable business management. In this regards, negative messages as part of business communication may have poor outcomes and it is widely and wrongly considered that they should be avoided. However, negative messages are an essential element of every business organization, they cannot be avoided and are of high importance for leading sustainable management. This is why an educated and thoughtful approach to communication is required. The main goal of this article is to determine the notion of negative messages, as well as to present the extent of negative messages in the everyday communication of an organization, and emphasize the importance of acquiring skills necessary for a direct and indirect approach to the communication process.

KEY WORDS

business communication, direct approach to communication, indirect approach to communication, negative messages

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INTRODUCTION

Sustainable management system recognizes importance of good communication process for achieving business success. As well, all recent editions of the Quality Standards consider business communication as a key skill, with an emphasize on two-way communication at all organizational levels with all stakeholders. Globočnik Žunac et al. [1] stated that although importance of two-way communication is recognizing, managers do not have ready-made tools or steps they could use in practice. This is the reason why managers and workers that communicate with different target groups have to manage different communication situations while searching for appropriate methods. Uneducated communication is a high-risk because it can cause great damage to personal relations and organization business. Successful and sustainable organization management involves sending both positive and negative messages through verbal and non-verbal communication. It is often considered that negative messages should be avoided, but they are an integral part of business organization's communication. For example, any refusal of some kind of request is a kind of message with negative content to a sender. Negative messages are narrowly connected to negative emotions that influence the whole range of different behaviours. Based on the idea that any message affects the emotions and provides the knowledge of the results, Ishikura [2] conducted research on the reflection of pleasant and unpleasant messages on the performance of the sportsmen. Results of this research suggest that unpleasurable messages are disadvantageous as they rise unpleasurable emotions and may negatively affect cognitive processing. Aliyev et al. [3] researched the emotions of pupils in school in accordance with messages sent by the schoolteachers and concluded that humiliation, insults, blame and threats will develop negative and unpleasurable emotions. Contrary to that, praise and encouragement lead to pleasurable emotions. Once unpleasurable emotions are raised Frederickson and Branigan [4] report narrowing of the range of attention during cognitive tasks and as well they noticed person's decrease of the thought-action repertoire. Avoidance of negative communication may be equated with a poor conflict management technique, that is unsatisfactory for both sides and disables future collaborative relationships. Therefore, a distinction between negative content of the message and negatively conveyed message should be made, because most of the communication problems are experienced due to the lack of assertive communication skills. Practicing assertive communication leads to improvement of skills that are necessary for successful conveying a negative message, while eliminating or minimizing possible negative influence of interpretation or negative feeling of receiver, for maintaining good cooperation. Obligingness, communication competencies, punctuality, consistency and tidiness are qualities that contribute to a positive experience and send positive message of an employee and of the business organization. Opposite of that, lack of communication competencies, unrepresentable correspondence, inaccurate or incorrect information will affect negative impressions, negative work performance or even interrupt communication and cooperation. Management must react to such communication and turn them into a learning situation of how to send messages of negative content and change their way of communication with internal and external public. This implies having acquired knowledge and skills of sending negative messages with positive effect, because through communication, people influence psychological and social development of individuals [5]. Regardless of other talents and abilities, the consequences of unacquired quality communication skills have negative reflection on the image of the organization and employees nor organization can have high business competitiveness. Even the choice of the inappropriate communication channel can lead to misunderstandings, as well as the process of filtering information and diversion of communication from formal to informal

communication channels. A certain tensions and possibilities of misunderstanding are present in every communications, but it increases in the case of negative messages. Conflicts related to interpersonal relationships are dysfunctional and have negative effect to mutual understanding, which can result with conflicts on a personal level. A certain level of conflict during the working process can be constructive and stimulating because intense discussion can lead to different ideas and problem solving could end up with good new ideas and solutions. Conflict is considered constructive when it improves the quality of decisions, stimulates creativity, innovation, interest and curiosity among group or team members, as well as becomes a medium for expressing problems and liberation, and cultivates a working environment suitable for evaluation and changes [5]. Among other issues that might lead to a conflict there is improper listening skill. Vodopija and Weiss [6] argue that difficulties in communication arise due to superficial or poor listening, which can result in receiving poor or misunderstood instructions, loss of important information, frustration and feelings of shame and increased risk of hurting other people's feelings.

Besides oral communication, Quality standard system finds written communication as planned activity that requires careful planning, preparation, organization and detailed design of business content, especially while sending messages contained of bad news and negative messages. Business reports and letters represent a business organization, and high standards in written communication also suggests high standards in business in general. Every business letter results in reaction from a business partner, which will depend on the letter layout as well as on the content.

All mentioned assert the need to talk about negative messages. The article should answer the question if generally accepted statement that negative messages should be avoided is correct. Other research questions to be answered are what significant research related to organization management and process of negative messages management is conducted and what are the outcomes of them. The main aim of this article is to present an overview of the theory that will primarily define the concept of negative message, and then serve for future research and determination of preferred communication methodology.

AVOIDING NEGATIVE MESSAGES AS AVOIDING CONFLICT

The conflict is a process that is based on perception of one party that the other party is having or will have negative influence on something that is important to the first party [7]. Lack or denial of information, different meanings, unsuitability of the chosen communication channel, use of informal speech, cultural differences and other obstacles in communication can be and are negative messages, as well as potential sources of a conflict. Conflicts are inevitable, both in private and in business life. The absence of conflict can often mean that it is a matter of avoiding, suppressing or denying problems. It is often called the speech of the deaf, who therefore agrees as in fact never listens or discusses about the contents [8]. Conflicts can be divided into subgroups based on [5]: content (conflict of interest and conflict of opinions or values); points of view (intrapersonal conflict and interpersonal conflict (among a group of people) and occurrence (open and covert). Tomić [9] emphasizes the quality of communication and mutual understanding as he thinks that communication is based on finding common interests and believes that results are achieved in cooperation, not in conflict.

Conflict is a form of confrontation between two or more people who disagree about facts, actions, goals and/or values. In accordance with mentioned, conflict is not an exclusively negative phenomenon. Conflict can have positive effect, such as raise of creativity, innovativeness and ideas, as well as negative – arguments, subterfuges and promotion of individual interests. Skupnjak [10] states that conflict can be constructive or destructive, and

the way of resolving conflicts is more or less effective, depending on the learned patterns of behaviour. Conflicts are increasing in case of data overloading (data dumping) or insufficient information, which can lead to misunderstandings. The amount of data is an important element in planning a negative message. This is why it is very important that sender estimate the required amount of a content so that recipient is not overwhelmed with the chaos of not interpreted information or deprivation by sparingly given information, since there is a negative content that the message conveys is itself a danger.

Transmitting messages of negative content mostly leads to destructive and not to constructive conflicts. Constructive conflict improves the quality of decisions, stimulates creativity and innovation, stimulates employees' interest, expresses problems and creates a work environment that is conducive for evaluation and changes. On the other hand, destructive conflicts can result in lack of desire to solve the problem and bring greater problems to already poor communication. The conflicts of that kind are marked by intolerance and disrespect for human values and may result with communication disruption [7].

A negative message is not necessarily a destructive conflict nor the base for such conflict. People should strive to manage communication that will lead to constructive solutions. Ways of resolving conflicts depend on two dimensions of human behaviour: cooperation or relationship building, and assertiveness, which is related to achieving the goals. Buble [11] distinguishes the following styles of conflict management: competition, collaboration, avoidance, accommodation, and compromise.

Avoidance as a style is also common when conveying negative messages. This approach is undesirable and works for a short period of time. Using this approach in communication person does not eliminate the source of the conflict, and it will lead to communicational breakdown at the first opportunity (the first new conflict) in the future. It is suitable to use this style of communication where a certain time of a delay is required to gather the necessary information that will resolve a conflict situation. Cvjetković [12] points out that use of avoidance style in conflict is justified when it comes to irrelevant or trivial issues or when the effort outweighs the benefits of resolving. Author states that this style may bring negative consequences in more difficult situation, which will eventually become more complex and the problem will not be solved. Kitić [13] believes that adapting tasks to individuals reduces conflict situations, directs employees to a common goal and their attention to cooperation. It also states that avoiding and withdrawing from a conflict situation does not lead to a solution, but postpones the conflict, as the causes of the conflict remain.

Each of the mentioned styles can be effective for the specific situation from which a person wants to get the most out of it, but these benefits will primarily depend on the communication skills of the person sending the message [14].

The purpose of sending negative messages is not to provoke conflicts and conflict situations, but to provide an opportunity to clearly express dissatisfaction, occurring problems or with inability to comply with the requests. Due to the above, it is necessary to improve communication competence in order to minimize communication conflicts and encourage mutual communication, but also to recognize signs that indicate conflict situations and tension before the conflict develops.

ASSERTIVE COMMUNICATION WITHIN THE PROCESS OF TRANSMITTING NEGATIVE MESSAGES

When conveying negative messages, both the recipient and the sender face a communication challenge. The recipient of a negative message is under the influence of emotions and may

feel heightened tension or lowered self-confidence leading to unnecessary conflict with the sender of the message. The Psychological Counselling Centre from Rijeka [15] states that in communication with others a person can communicate assertively, passively or aggressively and that the behaviour of the recipient depends on the way the sender communicates. Skupnjak [10] agrees and states that communication is often influenced by emotions, but a certain style of behaviour depends on the formed beliefs, personality traits and learned patterns of behaviour. Both the recipient and the sender of the message have a certain style of behaviour that they apply regardless of the situation and the person with whom they communicate. Kassing and Avtgis [16] conducted a study to determine the relationship between aggressive communication and the selection of communication strategies of employees and based on the results they concluded that greater argumentation and reduced verbal aggression can predict the use of articulated disagreement. The same authors state that subordinates who witness their supervisors successfully articulating dissent may be more likely and more willing to adopt similar strategies for expressing their dissent. As well their results indicate that nonmanagement status of respondents and their verbal aggressiveness contributed to the use of latent dissent. Kassing and Avtgis [16] think that employees who are high in verbal aggressiveness may lack the skills to argue well. They say that these employees when placed in situations which require rhetorical skill to be presented in the workplace, may be more likely to choose aggressive forms of expressing their disagreements or contradictory opinions. Assertive communication style is extremely important for communicating negative messages because it refers to the clear and direct expression of one's feelings, opinions, values and needs, thus sending information about oneself to accept responsibility for one's behavior, which will gain the recipient's respect. Gregov [17] states that assertiveness is the skill of actively advocating for one's rights without compromising the rights of others, where needs and attitudes are communicated confidently and directly. This means that the individual argues for himself, in a calm and cultural tone, shows active listening and respect for the other side. It also means that a person communicates concretely and directly, takes responsibility and controls the own emotions, voice and posture, taking care not to endanger or harm others and to express criticism positively [5]. Skupnjak [10] explains that the assertive style helps to gain and retain attention during communication, but also that it is an effective tool in resolving conflicts that establish balance (affirmation of one's own values and dignity while respecting the values and dignity of others). That is why the assertive form of communication enables easier and constructive communication, which is the key to sending negative messages in order to accept them in a positive way. An assertive way of conveying negative messages provides a sense of satisfaction and self-esteem, increases efficiency, and makes suggestions for solving problems rather than determining someone else's guilt. Some theoreticians suggest that individuals' feelings of helplessness, propensity to avoid conflict, and feelings of rightness also have negative effect on their willingness to disagree [16, 18, 19].

Miljković [20] believes that it is necessary to accept the five basic principles of assertiveness. The first principle talks about the importance of one's own reaction, which is the only thing a person has an influence on because influencing the behaviour of the interlocutor cannot be managed. The second principle refers to the need for a concrete articulation of a requirement or need because what remains unspoken will most likely not be taken into account by the other party since people are not mind readers. It is important to realize that because of diversity, not everyone will always approve expressed views of the individual, but caring about it will not change anything. As the last principle of assertiveness there is the importance of maximum investment in communication and striving to achieve the most favourable result for both parties, not just one. If an individual does its best and the other side remains dissatisfied, it becomes the other side's problem.

NEGATIVE MESSAGES IN BUSINESS COMMUNICATION

Business communication involves the transmission of messages related to business inside and outside the organization. In this process, negative messages are transmitted, which, although they have negative content for the recipient of the message, do not necessarily have a negative outcome for either party and do not necessarily lead to disruption of interpersonal relationships. The role of the manager is to convey negative messages with a positive effect and thus influence the possible continuation of cooperation, if it is about the external environment, or motivation and perception of employees for better performance of tasks within the organization. Thomson [21] believes that how the message will be accepted is influenced by verbal and non-verbal design, but also the chosen communication channel, listening and noticing the reactions of the interlocutor. Negative messages that are transmitted may include, for example, the rejection of a candidate for the job he/she applied for, the refusal to give a speech at a meeting, and even negative communications related to non-acceptance of business cooperation, delivery delays or inability to deliver, late payments, inability to meet customer requirements, as well as cancellations.

In order that transmission of negative messages has a positive effect on the individual, reduce the impact of tension and lowering self-confidence and avoid conflicts, communication competence and message transmission skills are important. This is most pronounced in organizations that provide intellectual services. As Pejić Bach [22] points out, if the employees of such organizations are under excessive stress and workload, the work will not be done well and customer dissatisfaction will be result of that. Furthermore, Pejić Bach [22] states that efficient human resource management is crucial for the development of such organizations and offers a human resource management model used for identification of effective ways of managing human resources. For knowledge-based companies, the most important thing is the quality of service that is achieved in this way, which is impossible without good and successful communication.

Anderson et al. [23] believe that for effective targeting of negative messages, it is important that managers understand their employee as an individual. Understanding the basic characteristics and experiences of employees will allow managers to connect with their subordinates and create a sense of trust and appreciation, which will increase the likelihood that the information received will be processed in a serious and influential way. According to Bovee and Thill [24] when sending negative messages, it is necessary to keep in mind the fulfilment of 5 goals: (1) to convey bad news, (2) to encourage acceptance of bad news, (3) to maintain better relations with employees or business partners, (4) maintain a good image of the organization and, if appropriate, (5) reduce or eliminate the need for future correspondence on the subject. If all the first four stated goals are taken into account and if all of them are realized in the communication process, the efficiency of communication will increase and the negative effect due to the unwanted content that the message brings will decrease. Because of all the risks of the disastrous outcomes of sending a negative message, it cannot be transmitted ad-hoc or routinely based on known patterns through which messages of positive content are transmitted. Negative messages need to be planned precisely and it should not be forgotten that the interlocutor often does not want to receive a message that is intended for him precisely because of the negative content. Therefore, the one experiences it on a personal level and misinterprets it. In order to harm the business relationship as little as possible while encouraging acceptance of the message, the situation should be carefully analysed in order to better understand the context in which the recipient will process the message. At the outset, the goal should be thoroughly checked - whether it is direct (rejection of a job candidate) or complicated (writing a negative assessment of business results, which gives feedback to the employees on their work so far, but also helps them to improve their

relationship towards the work in the future). At the same time, the employee profile can be simple and obvious in some situations (rejection of vacation requests) and much more complex in others (notifying the business partner of the termination of the partnership). Once the purpose and needs of the employee are clarified, the information needed by the employee or business partner to understand and accept the message should be identified and gathered. Messages that the interlocutor perceives as vague or unkind increase stress and lead to conflict and dissatisfaction. Likewise, if the manager does not have authority with the interlocutor, the interlocutor will challenge the decision, reject the message and negatively perceive what is said, which leads to frustration, dissatisfaction and spreading a negative image of the manager and the organization itself. Emington [25] believes that the development of digital technologies has increased the ability of distribution of negative messages, which he sees as a danger because it will not be seen by just one recipient, but can easily and quickly become available to a larger group of unplanned recipients. That increased the importance and influence of negative messages. The same author in his article links the formation of negative messages with the perception of the reputation of the business organization and found that the tactical approach to the formation of a negative message will have an optimal impact on reputation. In addition, he confirmed the usefulness of negative messages especially in cases of rejection of job candidates. Once the message has been planned and customized, the next step in the transfer is to be completed as well. This means that the message is clear, complete and concise, that errors are removed and that it reaches the recipient quickly and successfully. When transferring negative messages, whether they are conveyed in writing or orally, it is necessary to: (1) keep a calm and professional tone, (2) start the message by clearly stating the bad news, (3) emphasize the key thesis and put things in a particular context, (4) explain why the news is negative (depending on the situation determine whether bad news requires a detailed explanation or it would be excessive and complicated) and (5) end with a positive and optimistic prediction or opportunity, in a polite and honest way [24]. With a direct approach to transmitting negative messages, the focus should be on the bad news, not on the failures of the individual. If the message is conveyed indirectly, the purpose is to soften the shock and help the recipient of the message to accept the situation, and the message then will begin with a softening that builds a common ground with the other part (e.g., thanks, agreement, understanding, cooperation, praise, etc.) [24]. Schiemanck [26] conducted research on the impact of criticism on work performance and overall well-being for a business organization and based on exploratory analyses found that respondents show more frequent agreement with criticism when it comes to competence than when morality was the problem. Also, if respondents agreed with the criticism received, they showed a greater tendency to change their behaviour. An important finding of this research is the fact that respondents were more likely to react with negative feelings towards criticism if it came from a person outside their group, and were more likely to change their behaviours accordingly when criticism was directed by a member of their own group. Of particular importance is the preparation of a negative message that also needs to contain the necessary explanation of how the cause of negative content. This was observed by Limaye [27] who believes that the problem of negative messages is not sufficiently represented in contemporary research. She sees the reason for this in the lack of conceptualization of explanations and believes that negative messages should be viewed from two aspects. The first opportunity cost is viewed from the perspective of economic theory according to which senders of negative messages should make up for the cost incurred by bad news by offering an explanation. Another aspect discussed by this author is the adapted concept of attribution from marketing theory which states that senders of negative messages may benefit by stating reasons for their rejection of a request because, for lack of reason, the rejected persons will attribute motives and create reasons themselves. In this way, the sender of the negative

message gives the recipient the opportunity to completely deform the message, while the sender himself loses control over this communication.

Crombie and Samujh [28] view the notion of negative messages as a strategic tool. Their case study shows that although it is generally accepted that a strategic advantage in business communication is the emphasis on positivity, negative messages can also be used in this regard. By discursive analyse of the content of an annual report, they conclude that negative content achieves a threefold function: distracting from more serious problems, undermining the credibility of potential challengers, and providing a context in which the writer can present himself and other company directors as problem solvers. The authors themselves state that although their research has proven the possibility of using such messages for strategic purposes, in the long run such use raises the question of credibility and damages the reputation and directly business success in the future.

NEGATIVE MESSAGE AS CONSTRUCTIVE COMMUNICATION

Negative messages in business cannot be avoided and are a daily occurrence. What can be influenced is the way in which such a message will be conveyed. In internal communication, negative messages are sometimes necessary due to the need to draw employees' attention to mistakes or omissions made in business or in the implementation of business processes or in relations with other employees, but also in external communication, primarily customers and suppliers. Because a message that contains negative content for the recipient means rejecting or failing to achieve the goal that the one wanted or should have achieved, such messages will often be experienced on a personal level. Robinson and Smith-Lovin [29] conducted research and proved that people does not matter if they are of high or low self-esteem, negatively perceive a bad message, but also found that people with low self-esteem value criticism more and will trust it more than those with high self-esteem. Therefore, when formulating a negative message, it is necessary to show the intention to achieve a constructive goal, as much as possible. In business practice, but also in everyday life, there is often no distinction between a negative message and a message conveyed to the interlocutor in a negative or unacceptable way, and according to the theory presented in this article, the difference is significant (Figure 1). Psychological Counselling [15] highlights the benefits of assertive communication of negative messages which they see in expressing their own attitudes, opinions and feelings, while respecting their own and others' rights and increasing the likelihood that others understand well because they express it clearer. In addition, the same source states that assertive communication leads to increased satisfaction and self-confidence and to an increase in one's own efficiency in dealing with conflict and criticism. In the end, the value of assertive communication based on all of the above is in achieving sincere and open friendly, partner and working relationships.

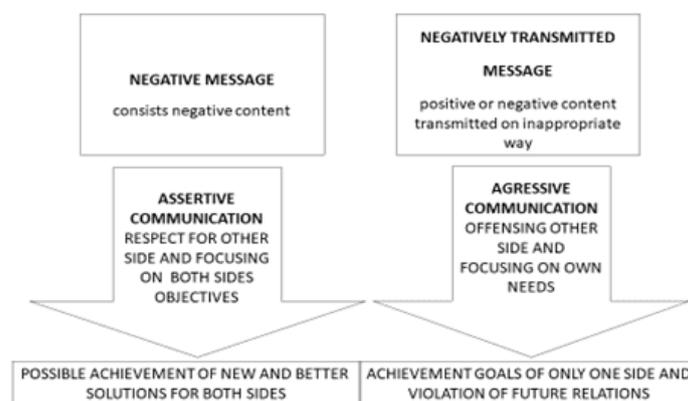


Figure 1. Distinction of negative message and negatively transmitted message.

Bovee and Thill [24] believe that the selection of the appropriate communication channel is crucial in the transmission of negative messages, since it is the channel that influences the perception and acceptance or non-acceptance of the message in a positive way. The transmission of negative messages itself is not easy and it is necessary to define the main purpose of the negative message, but also to explain why it is sent and leave room for the interlocutor to ask questions. Management nowadays uses e-mail or other electronic media to send negative messages to employees. When it comes to communicating a negative message or criticism, such a choice is not good because it can negatively affect the morale of employees. Since this is a complex communication requirement based on mutual communication and the possibility of asking questions, the proposal is to choose another communication channel to convey constructive criticism. When shaping a negative message, it is certainly necessary to make sure that it does not become a critique or at least to become a positive critique, or a constructive message that will ultimately have some other benefit for both parties as a result of the communication process. Baron [30] studied how students receive constructive criticism as opposed to destructive criticism, that is, how receiving such criticism affects their work. He conducted three studies in which constructive criticism, as a fundamental principle, was defined as specific and careful feedback that does not attribute poor performance to dispositional causes. In contrast, destructive criticism is one that is inconsistent with the basic principle of constructive criticism. Respondents who were exposed to destructive messages in the Baron's research showed a higher level of anger and tension and clearly expressed a preference for future avoidance of contact with the source of such a message, rather than the possibility of cooperation and compromise. In another study, subjects exposed to destructive criticism showed reduced goals and reduced self-efficacy compared with subjects exposed to constructive criticism. In the third study, respondents were employees of a large company tasked with listing the possible causes of the biggest conflicts in their business organization, and poor communication of critiques found itself at the top of that list, behind employee competition or even legal disputes. To move away from criticism alone, the cause of poor performance from the Baron's definition can also be transferred to an explanation of the cause that led to the negative content of the message. This means that a constructive approach will tend to move away from dispositional attribution towards situational and thus reduce the experience of criticism on a personal level at the recipient of the message.

Many authors talk about different communication strategies and techniques for which a successful manager must have acquired knowledge and developed skills and choose the right approach given the situation, but also the manager needs to recognize personality of the employee. If a person at the other side is prone to aggressive communication (provoking, insisting or attacking) when sending negative messages, the technique that can be applied is selective ignoring. Granić [31] explains that it is wiser to ignore these feedbacks so as not to create a bigger problem or to start another topic that will calm the situation. Skupnjak [10] warns that sometimes the recipient of the message expresses anger and rage, and in that case, it is best to apply the technique of neutralizing anger and rage, that is, to refuse communication until the person calms down and that needs to be made clear to that aggressive part. Tomić [32] presents a 'blurring technique' in which three options are possible: explicit expression of agreement with a part of the offensive statement or a separate fact that is contained in the offensive statement; expressing agreement with the general principle underlying the offensive statement or expressly agreeing with an aggressive comment or negative criticism (offensive statement), then taking a break (without "but"), pointing out the situation, taking into account the tone and body language as a constructive dialogue will be continually led. Forgas [33] emphasizes the importance of mood when sending and receiving

a negative message. The presented researches talk about the influence of mood on the acceptance of messages and found that people in a negative mood create better and more effective interpersonal persuasive messages than people in a positive mood. The author has found that mood affects processing style, resulting in the creation of more concrete and thus more effective messages in a negative mood, and the same author discusses the role of negative emotions in information processing and creating interpersonal strategies.

Anderson et al. [23] conducted a study on the specifics of millennials (those born between 1982 and 2000) with regard to receiving criticism. The authors chose this group of respondents because they are currently an active workforce that is still entering the labour market and as such form the basis for future forecasting and human resource management. In addition, this millennial generation shares some specifics that are different comparing to older employees. These differences mainly relate to values, attitudes, and job expectations. To ensure the effective transmission of negative messages to Millennials, they must be consistent. In addition, the results of Anderson's research show that millennials must understand the benefits of such a message that will be seen in the very moment or in the future. Therefore, according to the same authors, it is important for managers to be assertive enough to make sure that the employee understands the concerns, but also, they need to be sensitive to the fact that many Millennials have difficulty accepting such negative messages. The authors themselves state that there is a possibility of correlating the results with the cultural factor and suggest future research regard this topic within the non-American area.

Gneezy et.al. [34] start from the question of whether there are situations in which people should lie. Their research showed that respondents when they had to give negative feedback, prefer to choose lying rather than giving an honest answer. The same authors find this aversion to providing negative feedback costly because it encourages excessive investment of resources such as time or money. They show that improving participants' self-esteem is associated with the possibility of increasing their earnings, but also that honest feedback can be crucial to achieving better outcomes.

The research, based on an analysis of the content of 13 codes of ethics issued by 18 public relations associations at the international and national levels in the US and the European Union, dominantly approaches the issue of social responsibility from a public relations perspective. Kolić Stanić and Barišić [35] state that the normative imperatives of ethical codes of public relations show that the profession is moving towards a two-way symmetrical model, confirming the concept of the "ideal communicator" who establishes social dialogue. Although, compared to socially responsible behaviour, the value of loyalty is less represented (although more recognized as a principle) codes of ethics have suggested that if a PR practitioner must choose between loyalty to a client or organization and socially responsible behaviour, one should choose to be socially responsible.

NONVERBAL COMMUNICATION AT COMMUNICATING NEGATIVE MESSAGES

The manager must not only take care about what is said (or written) but needs also to take care of non-verbal communication (in the case of business letters a manager should take into account the form and appearance of the written content). In accordance to the tone and colour of the voice, pause in speech, pitch and hardness of voice, intonation, fluency, and posture and body language, the interlocutor will either find it harder to understand and not accept what was said or will accept a negative message in a positive way and extract meaning from it. If the verbal and nonverbal part of the message are inconsistent, people are more likely to trust the nonverbal part. Miljković Krečar and Kolega [36] believe that when talking to another person, people attach as much as 55 % of importance to facial expressions, gestures and

surroundings, 38 % to the voice and vocal elements that form a verbal message, and only 7 % to the person's words or the content itself. This indicates far greater importance of nonverbal communication in interpreting messages than verbal. Marot [37] points out that behavioural scientists in collaboration with experts in sociology, anthropology, pedagogy and psychiatry have estimated that as much as 80 % of the first impression created about a person is based on body language, i.e. that gestures and facial expressions have a stronger effect on a person. in relation to the words spoken. Non-verbal communication either repeats what is said verbally or contradicts the verbal statement, and therefore when sending negative messages, it is necessary to harmonize non-verbal and verbal so that possible different combinations do not occur, and to ensure prevention of misunderstanding and dissatisfaction of the interlocutor. In addition to body language and paralinguistic signals, the environment in which the message is conveyed must also be taken into account. Škarić [38] points out that the reaction of the interlocutor will be influenced by the sound, lighting, temperature, colours, internal environment and other elements in the space, as well as the distance from which he communicates and the people around the interlocutor.

Knapp and Hall [39] gave the insight into the meaning of precise nonverbal signs. They think that maintaining the eye contact with the other party in the process of transferring the message is an important rule. Significant functions of eye movement in human interaction are: showing interest in another person, enabling feedback, synchronizing speech and showing attractiveness [40]. If the interlocutor observes the person for more than 2/3 of the total time and his pupils are narrowed, he has a hostile attitude and sends a non-verbal challenge to the sender of the message. Pease [41] gives the range of different nonverbal signals that are valuable to the manager who wants to perform quality communication and says that if one conveys a negative message to the interlocutor by holding his hands on his back, where one hand holds the wrist of the other frustration is betrayed and one is trying to regain self-control. The same author says that if the closed fist rests on the face with the index finger up, the person is uninterested in what is being said, and when the index finger is up and the thumb is holding the chin, the person has a negative and critical opinion about the interlocutor and the topic. Other signs of importance when transferring negative content in the message are: a) crossed arms and clenched fists show a hostile attitude; b) holding the documents over the chest creates an enclosure in relation to the interlocutor; c) leaning fists on the table or looking into the article is a sign that a person wants to avoid talking about the topic or part of the topic; d) the hands on the hips send a certain degree of tension and aggression, as opposed to touching one's own clothing which sends signs of insecurity, discomfort and nervousness; and when a person is reclining in an armchair with the hands behind the back of the head, great superiority is shown.

All of the above reinforces the verbal utterance and is reflected in the way the negative message and reaction of the recipient will be accepted.

CONCLUSION

Negative messages are presented in this article based on the reflections of experts, and are proved to be important area of business communication. Their importance for the business of an organization is confirmed in the scientific literature. As well, the fact that they are an inevitable part of business communication for which it is necessary to have specially developed skills is proved. The transmission of negative content of a message does not require avoidance as it is often practice and as it is misperceived but requires a special approach and preparation. In addition to the importance of defining the communication channel through which the message will be transmitted and whether to apply direct or indirect access in content formulation it is important to take care of nonverbal signals that will achieve the desired goal

while eliminating or minimizing potential harm to the sender and relationship with the recipient. As for the damage to the recipient of the message, it is sometimes impossible to completely avoid it, but by properly communicating a negative message, it is possible to reduce it. This article emphasizes the importance of distinguishing a negative message that involves the transmission of a message of negative content for the recipient from a negatively transmitted message that potentially aggressively approaches the interlocutor. This article opens the door to thinking about the problem that still needs to be studied or to determine the extent to which those involved in business communication distinguish these concepts and whether they have competencies to manage the communication process in a necessary and desirable way when it comes to transmitting negative messages.

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EFFECT OF MANAGEMENT'S COMPETENCIES AND DIGITAL SKILLS ON DIGITAL BUSINESS MODEL MATURITY FOR SMEs

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ABSTRACT

The uptake of digital business models has been distinctly evident over recent years, causing profound changes across industries. Even though various scholarly papers attempt to investigate those developments, empirical studies of factors that influence digital business models' maturity are still scarce. This research article aims to address this literature gap, achieved by empirically testing the relationship between relevant managerial factors and digital business models' maturity. Through a multi-national study with 162 participating companies operating within the sector of yachting tourism, followed by a qualitative and quantitative analysis of the obtained primary results, it has been found that managerial competencies, including management education and their digital skills, positively affect digital business model maturity of the respective companies.

KEY WORDS

digital business models, digital maturity, management digital skills, digital leadership, digital transformation

CLASSIFICATION

JEL: D22, M15, O33

INTRODUCTION

As a consequence of rapid digitization, in recent years, one could have witnessed a series of radical business model shifts in numerous business sectors, particularly the flourishing of what has been denoted as Digital Business Models [1]. Such developments have caused considerable changes in business ecosystems across industries and geographies [2], resulting in how services are provided and created value [1, 3].

In a nutshell, digital business models are those business models that create and deliver value primarily by using digital technologies [4, 5]. Prior research, e.g. [6-9], has identified several distinct specificities of digital business models, such as value creation, innovation, or ability to use digital technologies, fostering their unparalleled growth and impact. Furthermore, to provide a more in-depth understanding of the development level of a particular business model, the concept of digital business model maturity has been introduced and studied (e.g. [10, 11]). In addition, a specific measurement framework for digital business model maturity has been proposed and empirically validated [12].

While previous research have stressed that the digital business model is connected with the concept of digital transformation [13] and explored various factors that may influence a company's digital business model maturity level, such as the adoption of digital technologies [14] or organizational readiness [15], this article is focusing specifically on the managerial factors identified as potentially highly relevant (e.g., [16, 17]). Therefore, the study empirically examines managerial factors that may impact the digital business model maturity, especially in the context of Small and Medium Enterprises (SMEs) as the most numerous type of business organization.

The research question is formulated as follows: What is the effect of managerial factors on the digital business model maturity of an SME? The above research question has been explored within this article through a combination of theoretical analysis and empirical research – coupled with an in-depth quantitative and qualitative study of the obtained findings and their relevant interrelations. In that context, the main scientific contribution of this article involves empirical testing and validation of the impacts of managerial factors on digital business model maturity. In addition, an important contribution is reflected in the fact that this research explores the prevailing SME segment, as opposed to the majority of earlier studies that focused predominantly on the corporate segment. As the growing number of companies are trying to shift to the digital business model, which appeared to be very important, the , especially in the Covid-19 pandemic environment, this article's results might help practitioners focus on specific factors in achieving digital business model maturity.

The remainder of this article has been outlined as follows: Section II contains theoretical background based on a structured literature review of prior studies about digital business models and their maturity and the relevant managerial factors. Section III describes the used methodology for the empirical research, including the data collection process, variables used in the study, their measurement, and the formulation of the hypotheses and the corresponding research model. Next, Section IV outlines and analyzes the obtained research results, starting with the frequency analysis and descriptive statistics, the analysis of correlations, and finally, the testing of the three hypotheses. Towards the end of the article, Section V summarizes the relevant findings and discusses their implications, pointing to the possible application in academia and practice and suggesting the potential directions of future research.

BACKGROUND

Digitalization that we are witnessing in recent years and decades represents the greatest systematic social and economic change since the time of the industrial revolution [6]. Accordingly, companies in all industries are increasingly becoming digitized and re-organized into new forms of digital organizations [16]; hence the role of digital business models are becoming ever more prominent. Such developments have spurred academic interest, including the studies of the characteristics of digital business models and their maturity and the role of leadership in that new context.

THE RISE OF DIGITAL BUSINESS MODELS

In recent years one could witness a sharp growth of research papers related to digital business models [18], following a rapid uptake of the popularity, prevalence, and market impact of such business models in practice [2]. Layers of technological innovation have enabled a galloping pace of digital transformation within business organizations [9] and the related transformation of entire industries and markets. Such developments are a part of a wider trend labeled a digital revolution [2], pointing to the broad and profound societal and organizational effects of the intense changes worldwide.

The term digital business model stands for a specific business model, where value creation and delivery are achieved mainly through digital technologies [4]. Authors have emphasized several notable characteristics of digital business models that describe them in further detail and differentiate them from the traditional business models. These characteristics have been illustrated in Table 1.

Table 1. Characteristics of digital business models.

Frequent Characteristics of Digital Business Models	Authors
Offer novel value propositions through digital technologies	Voigt and Hinz [3]
Leverage new opportunities enabled by digital technologies	Spremić et al. [5]
Improve efficiency in the use of resources	Härting et al. [6]
Lower importance of physical items and places	Weill and Woerner [27]
Enable very low marginal costs	Remane et al. [7]
Enable high scalability	Nielsen and Lund [8]
Improve customization and flexibility	Harting et al. [6]
Utilize data as a key resource	Weill and Woerner [27]
Provide next level of service to customers	Caputo et al. [9]
Accelerate business model innovation	Osterwalder and Euchner [19]
Enable exponential network effects	Remane et al. [7]
Stimulate the development of specific ecosystems	Weill and Woerner [2]
Open to “winner-takes-it-all” scenario on the market	Casadesus-Masanell & Ricart [20]
Enable disruptive business models	Ritala & Sainio [21]

Table 1 indicates that it can be inferred that they have enabled new value propositions, faster pace of business innovation, and in general, fostered the opening of completely new business frontiers and new markets, including creating specific business ecosystems [2]. Furthermore, the digital business model is tightly related to digital transformation [13]. This highly pervading concept stands for extensive organizational changes connected to the implementation of digital technologies [15], frequently resulting in a thorough transformation of the company involved [22]. In the course of digital transformation, the company is typically pursuing innovation of its services and business models [14], along with the

profound shifts of the organizational culture and a range of other effects on the entire company [23] as well as a business ecosystem [15].

Several frameworks have been in use for that purpose regarding the components of digital business models and their visual representation, as summarized in [18]. In brief, the most frequently applied framework is the Business Model Canvas (BMC) developed by Osterwalder & Pigneur [24], which can be used for representing both digital and traditional business models. The central element of BMC is the Value Proposition, around which the entire business model revolves with its 9 interrelated elements. Weill & Woerner [2] is an especially relevant framework, which depicts a digital business model as a combination of three main components. These components are i) Content – digital information about products and services, and in some business models digital-only products, ii) Experience – including digital customer interfaces, customer-facing processes, etc., and iii) Platform – including a range of internal and external technologies and data. Such components are highly relevant for digital business models, and they can be used to study their development [2] and their maturity [12].

It should be noted that digital business models are subject to continuous optimization, development, and improvement. In this context, Muzellec et al. [10] point to the concept of the Business Model Lifecycle, emphasizing that businesses should continuously review the relevance of their digital business models and adapt them dynamically to changes in customer response to their value proposition and other relevant parameters. It is, therefore, a matter of continuous business modeling and the systematic testing of the changes made. Other authors, such as Weiner & Wiesbecker [25], agree with this approach, pointing out the need to permanently design and evaluate business model alternatives and continuously check whether customers and partners perceive the value provided in the way the company envisioned it. These authors also elaborate on several targeted questions about value proposition, customers, the role of partners, and key financial aspects, which the companies should regularly evaluate in developing and upgrading their digital business model.

DIGITAL BUSINESS MODEL MATURITY

The development level of a particular digital business model in a company is called digital business model maturity [12]. Measuring and improving the maturity of one's digital business model can be of particular importance when considering its presumed links to organizational performance. According to Debkowska [26], companies with a higher business model maturity typically achieve better financial results. An analogous conclusion can be derived from the work of Weil & Woerner [2, 27].

As a relatively recent field of academic study, the concept of digital business model maturity has been most frequently observed from a predominantly theoretical perspective. At the same time, several papers contain empirical studies in that regard. Furthermore, a common approach involves grouping companies according to predefined digital maturity stages (e.g. [28-30]). Another approach compares companies' business models to an envisioned ideal development level. One such example can be found in [11], who pointed out that industrial companies' highest digital business models maturity was observed for business models based on smart services. Alvares et al. [31] state that digital business models of multisided platforms are generally more mature than those with a linear value chain. A framework for the empirical measurement of digital business models maturity has been described in [12], and it will be correspondingly used in this study, as described in the next sections.

Regarding the staged approach, Muzellec et al. [10] have identified four stages, or levels, of digital business models' maturity of two-sided platforms. Likewise, Sehnem et al. [32] have defined five stages of business model maturity from the circular economy perspective. In this research and digital maturity stages, Kane et al. [29] can find a particularly interesting perspective, whose results

indicate that the companies in the lowest digital maturity group are often characterized by an insufficient managerial understanding of digital technologies and business. Similar findings are evident from the work of Berghaus & Back [28], where managerial understanding and support are found necessary for the company to move beyond stage 1 of digital maturity. Gill & Van Boskirk [30] have emphasized the role of developing digital skills for successful mastery of mid-stages of digital maturity. Similar importance to digital skills has also been given in [29].

MANAGERIAL FACTORS

The relevant literature has increasingly mentioned the crucial role of the company's management in digital transformation and the corresponding digital business models. In particular, Promsri [33] points out that leadership is a key factor for successful digital transformation and proceeds by identifying managers' digital knowledge and literacy as one of the necessary prerequisites in that context. Similarly, Borowska [34] suggests that continuous digital leadership is required and describes the necessity for digital leaders to develop and implement adequate strategies which would ensure relevant skills development, adoption of organizational changes adjusted to the digital age, as well as the active use of digital tools across the organization. Peter et al. [35] articulate that digital leadership is one of the core strategic fields for digital transformation, which needs to provide adequate conditions for creating and utilizing dynamic capabilities within the organization.

In essence, the authors agree that there has been a substantial change in leadership styles and requirements in the digital era [36-38], whereby the later authors have outlined a specific matrix with different digital leadership styles. Furthermore, to develop an adequate digital leadership capacity, managers need to achieve a certain level of digital literacy, involving the mastery of relevant technical language and concepts [39]. These findings imply that the company management should present specific know-how about digital technologies and business models. In addition, Tanniru [40] emphasizes the close interrelation between technological and business aspects of digital leadership. Finally, according to the research conducted by Larjovuori et al. [41], formulating an adequate digital strategy is central to digital transformation success, including a clear vision, adequate objectives, and consistent managerial support during the implementation process.

The above-described results indicate that the relevant aspects of managerial competencies include acquiring specific knowledge and developing the ability to combine various business and technical aspects and successfully set and implement a winning digital strategy. Such managerial competencies and skills have been related to the success of the overall digital transformation and the company's digital maturity level. In particular, companies with strong managerial competencies were also on higher stages of digital maturity [16, 17], which indicates a connection between such managerial factors the digital maturity concept.

METHODOLOGY AND APPROACH

The empirical study was conducted using a structured online survey questionnaire on a multi-national sample of 162 companies based in 42 different countries and five continents. The companies from the same business sector were involved in the research. In particular, the selected sector was yachting tourism, which has been chosen for this study for several reasons: a high share of digital business models, the substantial role of digital business models in tourism overall according to extant research [18], authors' prior familiarity with this sector, the possibility to obtain relevant international population data, as well as the fact that the companies in this sector are usually SMEs, which further enhances their comparability in the context of this research.

DATA COLLECTION PROCESS

The core information regarding the data collection process is laid out in Table 2, summarizing the main parameters of the field research. The lists of companies were obtained from available sectors' databases and global reservation systems specialized for this particular business segment (MMK Booking Manager and Nausys). Next, those lists have been rigorously checked and amended following a structured relevance-assessment process, thus resulting in the final database of relevant companies and their contact details. In particular, the population consisted of 932 companies distributed across the world, which have all been invited to participate in the study. It should be noted that the sample included companies from all continents except Africa and Antarctica, which is because the yachting tourism sector is not present to a sufficient extent on those two continents.

Table 2. Data collection process summary.

The main research instrument used	Structured questionnaire
Primary data collection method	Online
Language of the questionnaire	English
Pre-testing the questionnaire on a small sample	Yes, in Feb 2020
Main field research period	Feb 2020 – Apr 2020
Total number of companies invited – population	932
The final number of respondents – final sample	162
Final response rate	17,38 %
Countries represented in the final sample (according to the location of the company's headquarters)	Argentina, Austria, Australia, Belgium, Belize, British Virgin Islands, Canada, China, Croatia, Czech Republic, Cyprus, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Lithuania, Malaysia, Monaco, Montenegro, Netherlands, New Zealand, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Thailand, Turkey, United Arab Emirates, United Kingdom, Ukraine, United States of America.
Continents represented in the final sample	5 continents: Europe, North America, South America, Asia, Australia

As visible from Table 2, the survey was administered online. In particular, the invited companies have been contacted primarily by e-mail, and in addition, some have been contacted through relevant social networks. The process included several professional reminders over approximately two months, resulting in 172 filled questionnaires. However, a few questionnaires had to be removed for not adhering to the required criteria (such as removing the duplicates, etc.). The final sample of 162 relevant and complete questionnaires was established. These 162 companies and their responses have been the subject of quantitative and qualitative analysis in this study. It should also be noted that the vast majority of the actual respondents were either managers or owners of those companies, which implies that they are adequately familiarized with their companies' business models and the studied managerial factors.

The collected questionnaires were first analyzed for completeness and relevance, after which several steps of statistical analyses have been performed, as described in the following sections. It should also be noted that some respondents have sent their additional comments in the form of

free text, which have been of further help to the authors to understand better the subject matter and the challenges present in the field. Finally, it needs to be mentioned that in addition to the main research instrument, the authors have also used supplementary sources such as a review of the websites and social network profiles of the studied companies and their competitors to observe a wider perspective and improve the contextualization of the obtained research findings.

VARIABLES IN THE STUDY

Table 3 summarizes the research variables, which were defined following prior literature. In particular, the upper part of the table describes the constructs that measure relevant managerial factors, while the lower part contains constructs measuring digital business models maturity and its components.

Table 3. Variables in the measurement model (In part adapted from [2, 12]).

Variable name	Abbreviation	Variable description
Managerial factors	MFA	This variable encompasses the specific managerial factors below as a second-level construct.
Managers Education	EDU	Managers’ education includes the company management’s formal and non-formal education and the aspect of their continuous learning following contemporary trends.
Managers Digital Skills	DGS	Managers’ digital skills relate to an understanding and knowledge about the relevant digital trends and technologies and the ability to apply them successfully in business.
Digital business model maturity	MAT	Digital business model maturity refers to the level of development of the company’s digital business model, which is measured following a specific framework for digital business models.
Content	CON	As one of the components of digital business models maturity, the content component includes: <ul style="list-style-type: none"> • various information presented to clients in digital formats, such as information about products and services, their characteristics, instructions, prices ... • Purely digital products (where applicable) include e-books, audio products, movies, other video products, online accounts, software products, etc. • Content generated by the end-users, such as reviews and recommendations, user photos and videos, etc.
Experience	EXP	The second component of digital business model maturity is the Experience component, which includes the complete digital processes for the customers, interfaces on computers and other user devices (e.g., smartphones, tablets), transactions history, various digital tools, etc. It should be noted that an adequate user experience implies an uncomplicated purchase process and an overall pleasant digital journey for the customers.
Platform	PLA	The third component of digital business model maturity is the Platform component, which includes technological architecture enabling business processes and relationships and delivering products and services. The Platform component includes internal elements (such as own technology, business processes, customer data, etc.) and external elements (such as partner technologies, hardware components, public networks, etc.)

As described further in the text, the study used these variables to postulate and test the hypotheses and the corresponding research model.

RESEARCH HYPOTHESES

Three hypotheses have been postulated and empirically tested in this article. The first hypothesis examines the effect of managerial factors on digital business model maturity, while the remaining two hypotheses focus on specific impacts of the particular managerial factors studied. Specifically, the first hypothesis has been developed in line with the prior work of Peter et al. [35], Borowska [34], and Promsri [33], who all articulated the highly important role of leaders in the success of their companies' digital transformation endeavours. It has been argued that digital leadership is a core strategic aspect of businesses' digital transformation [33], essential for providing adequate conditions for the organization to explore its digital capabilities successfully. Such prior findings are highly relevant in the context of this research, as the observed population consists mostly of SMEs, where the role of management is of particular importance. Likewise, Schwer et al. [17] clearly emphasize the importance of company leadership for achieving digital maturity. In this context, managerial factors can be expected to impact the maturity of digital business models positively, and therefore, the first hypothesis in this research is postulated as follows:

H₁: *Managerial factors affect the digital business models maturity.*

The second hypothesis examines the impact of management education on the maturity of their company's digital business model. Promsri [33] has identified managers' digital knowledge and literacy as one of the necessary prerequisites for a successful digital transformation. Likewise, according to [16, 17], companies with strong managerial competencies were also in higher stages of digital maturity. Considering such research, it can be reasonably hypothesized that the relevant management education will be expected to impact digital business models' maturity positively. Thus, the second hypothesis in this study is stated as follows:

H₂: *There is a positive impact of management education on digital business model's maturity.*

Finally, the third hypothesis explores the effect of digital skills of managers on their organization's digital business model maturity. According to extant research, managers need to develop sufficient digital literacy to achieve adequate digital leadership capacity, including the mastery of relevant technical language and concepts [39]. These findings imply that the company leaders should be well versed in specific know-how about digital technologies and business models. The necessity to combine technological and business aspects of digital leadership has been noted in [40]. In contrast, Gonciarski & Swiatkowski [36] have documented a substantial change in leadership styles in the digital era, which implies the utilization of specific digital skills. Based on such prior findings, the important role of managers' digital skills becomes evident. It can be reasonably expected for the management digital skills to positively impact the maturity of their companies' digital business models. Therefore, the third hypothesis in this research is formulated as follows:

H₃: *Management digital skills positively affect the digital business models maturity.*

The three hypotheses and their interrelations in the research model, are illustrated in Figure 1.

In the next sections, we summarize the empirical testing of these hypotheses on companies within the observed industry to examine the validity of the research model and enable further studies with samples from other comparable industries.

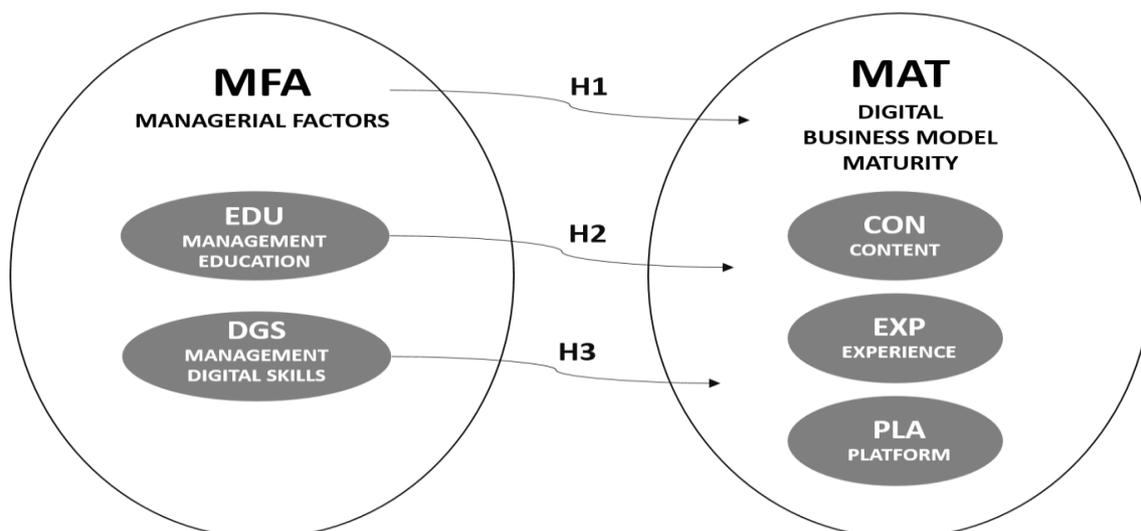


Figure 1. Research model.

VARIABLES MEASUREMENT APPROACH

Each variable has been measured with a set of specific questions in this research, using the 5-point Likert scale – a frequently applied method in comparable studies. Specifically, variables of digital business models maturity have been measured according to the framework displayed in Figure 2. As can be observed from that illustration, the digital business model maturity level was obtained by measuring the achieved development stage of each of the three components: Content, Experience, and Platform. The actual measurement questions have been analogous to [12] and based on the previous work [2].

Likewise, the variables about the studied managerial factors have also been measured through a set of specific statements – indicators, as presented in Figure 3.

Regarding the presented measurement frameworks, it should be noted that a statistical evaluation of the measurement model reliability was conducted following widely used procedures in comparable research. Specifically, the reliability of the measurement model was evaluated with the use of the Cronbach Alpha coefficient, which is one of the most frequently used measures of reliability in similar studies [42]. The results of those calculations are outlined in Table 4.

As shown in Table 4, for all maturity-related constructs, the corresponding Cronbach Alpha coefficients are around 0,9, while for managerial factors constructs, they range from nearly 0,7 to over 0,9. Such Cronbach Alpha coefficients indicate that the measurement model reliability in this research is satisfactory. It should be noted that the displayed coefficient for the EDU variable has been obtained after removing the M1 indicator. Namely, that particular indicator was insufficiently consistent with the rest of the measurement model and therefore has been removed from the corresponding structural model, following the usual procedure of comparable research. The remaining indicators were found to be reliable in the context of this measurement model, and therefore no further indicators had to be removed.

RESULTS

The statistical analysis of the collected responses has encompassed the univariate analysis (e.g., response frequency distributions and descriptive statistics) and the multivariate analysis, particularly based on the structural equations modeling technique. Furthermore, extensive correlations analyses have been performed, both at indicators and constructs. In addition, the potential improvement areas with regards to managerial factors have been identified in this study.

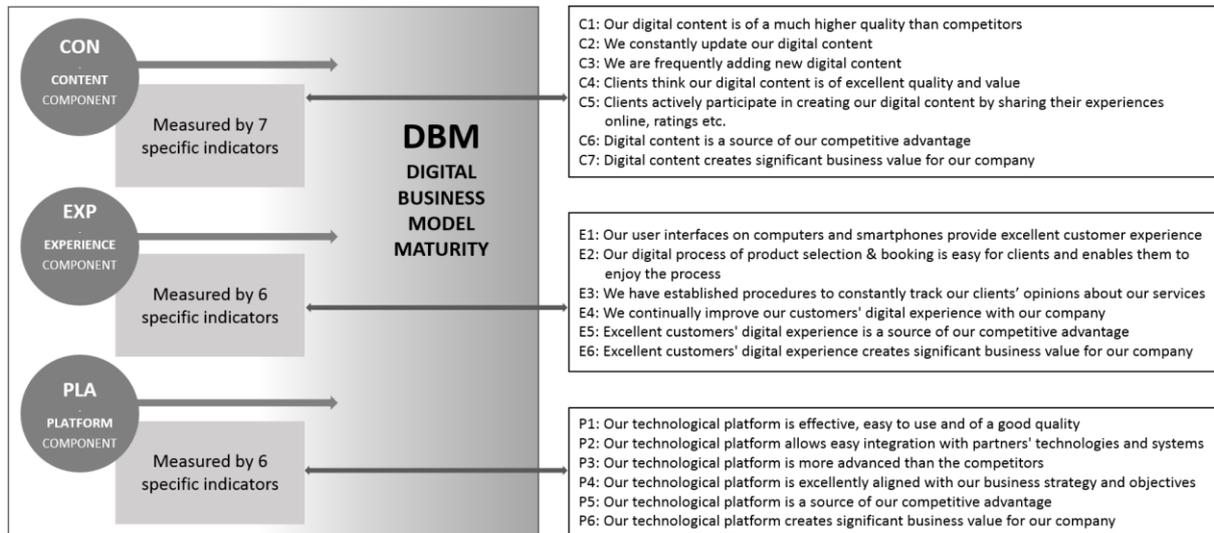


Figure 2. Digital business model maturity measurement framework (Adapted from [2, 12]).

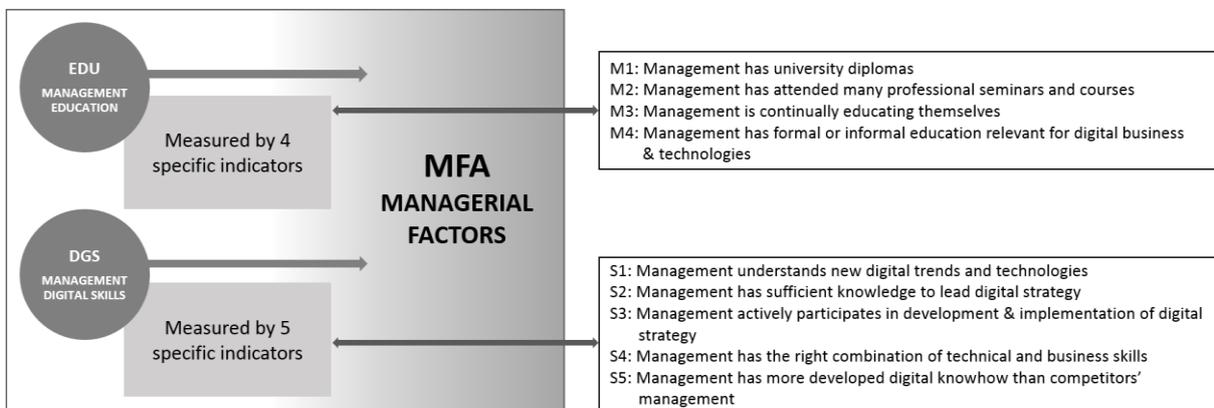


Figure 3. Measurement framework for managerial factors.

Table 4. Measurement model reliability.

Construct Full Name	Abbreviation	Cronbach Alpha
Management Education	EDU	0,794*
Management Digital Skills	DGS	0,933
Managerial Factors	MFA	0,676
Content	CON	0,905
Experience	EXP	0,892
Platform	PLA	0,932
Digital Business Model Maturity	MAT	0,904

*result after the removal of M1 indicator

DESCRIPTIVE STATISTICS

The observed frequency distributions for the studied managerial factors are presented in the Appendix. for EDU and DGS indicators. The upper part of the table contains frequency distribution for EDU – Management Education indicators. It can be observed that all of these indicators are right-skewed, which indicates that the respondents rate quite positively the educational aspects of their company management. In particular, the highest number of “I fully agree” answers has been recorded for the indicator M1 (university diplomas). In contrast, the lowest number of such responses is evident for M4 (education relevant for

digital business and technologies). It should be noted that the indicator M1 was subsequently excluded from the structural modelling part of the analysis due to the findings of the measurement model reliability analysis, as already explained in the previous section.

The lower part of the same table contains frequency distributions for DSK – Management Digital Skills indicators. It is interesting to note that the indicators S1-S4 have relatively similar distribution shapes: all are skewed positively with the highest score for the “I mostly agree” option, which over 60 respondents selected in each of those questions. However, when looking at the “I fully agree” answers, one can notice a solid difference between indicators S1 and S2. This implies that the participants have given quite higher ratings to their management’s general understanding of the new digital trends and technologies than their actual knowledge to lead a digital strategy.

It can be observed that the results for the S5 indicator differ substantially from the other four DSK indicators. The S5 frequency distribution is only mildly positively skewed, with the majority of the answers being neutral. This is logical given that this indicator tackles the managers’ digital skills compared to the competition. Most of the respondents believe to be neither particularly better nor worse compared to the digital skills of the competitor’s management.

Selected descriptive statistics for the studied managerial factors have been displayed in Table 5. Initially, it should be noted that the individual numerical values, as a base of this calculation, have been obtained by transforming the descriptive Likert-scale answers into corresponding numerical scores, ranging from 1 (for “I fully disagree” answers) to 5 (for “I fully agree” answers). Thus, obtained numerical values have been the basis for further statistical analysis. In particular, from the upper part of Table 5, about management education, one can observe that the indicators M1 and M3 have very high mean values. In contrast, the lowest mean has been recorded for the indicator M4. This may imply a certain room for improvement in managers’ education about digital business and technologies.

When it comes to DSK indicators, as visible from the lower part of the table, the highest mean score has been obtained for S1 and the lowest for the S5 indicator. The S5 means is somewhat above the middle of the measurement scale, indicating that the respondents may have assessed themselves overly positively compared to the competition. As for the remaining DSK indicators, one can notice a certain discrepancy between a general statement such as S1 and more practical statements such as S2 and S3, which may indicate a potential area for improvement when it comes to managers’ knowledge to lead a digital strategy and their actual participation in developing and implementing it.

Table 5. Descriptive statistics for the managerial factors.

	Mean	Std. Deviation	N
M1	4,06	1,32	162
M2	3,75	1,12	162
M3	4,06	0,97	162
M4	3,54	1,18	162
EDU – MANAGEMENT EDUCATION	3,85	0,88	162
S1	4,02	0,92	162
S2	3,67	1,01	162
S3	3,73	1,09	162
S4	3,80	0,99	162
S5	3,28	1,12	162
DSK – MANAGEMENT DIGITAL SKILLS	3,70	0,91	162
MANAGERIAL FACTORS	3,62	0,93	162

Overall, it can be observed that the participants rated themselves rather highly for all of the studied indicators, which is logical when considering that the vast majority of the respondents in this study were the managers themselves. Therefore, when interpreting the numerical results, one needs to consider the possibility of some bias towards more positive answers in general.

In this context, it is obvious that the surveyed managers have rated their knowledge and skills partly (and those of their other colleagues); hence the high mean values are not surprising. Considering such conditions, the identified potential improvement areas with relatively lower average scores than other indicators may be relevant, even though those scores are nominally high.

The correlations between the measured indicators have been analysed using Pearson correlation coefficients, a frequently used measure of association [43]. This part of the analysis examines the nature and the direction of mutual connections between the studied indicators and the respective constructs.

The correlations coefficients for each pair of indicators of the studied managerial factors are presented in Table 6. From the data presented, it can be observed that all those correlations are positive and statistically significant at the level of 1 %. Regarding the strength of the mutual correlations, it should be borne in mind that the closer the correlation coefficient to 1, the stronger the positive Correlation between that pair of indicators or variables [43]. This implies that most of the observed indicators have correlations of medium strength. Yet, some pairs of indicators (such as S1 and S2, for example) have a rather strong positive correlation.

Table 6. Correlations between the indicators for managerial factors.

	M1	M2	M3	M4	EDU	
M1	1					
M2	0,346***	1				
M3	0,339***	0,666***	1			
M4	0,361***	0,479***	0,578***	1		
EDU	0,699***	0,793***	0,809***	0,783***	1	
	S1	S2	S3	S4	S5	DGS
S1	1					
S2	0,814***	1				
S3	0,733***	0,757***	1			
S4	0,725***	0,792***	0,778***	1		
S5	0,668***	0,708***	0,736***	0,710***	1	
DGS	0,877***	0,911***	0,903***	0,897***	0,866***	1

***correlation is significant at the 0,01 level (2-tailed)

Next, Table 7 contains the correlation analysis between the constructs, i.e., between the studied managerial factors and digital business model maturity. It can be observed that all pairs of the constructs are mutually positively correlated, with the correlations being statistically significant at the level of 1 %. Such results imply that the companies with higher scores on managerial factors are likely also to have higher scores on their digital business model maturity.

Table 7. Correlations between the variables – Pearson's correlation coefficients.

	DGS	EDU	MFA	MAT
DGS	1			
EDU	0,510***	1		
MFA	0,849***	0,777***	1	
MAT	0,601***	0,356***	0,555***	1

***correlation is significant at the 0,01 level (2-tailed)

Overall, the presented correlation analysis results suggest that positive relationships exist between the variables in the model. This will be further examined through the formal testing of the relevant hypotheses.

STRUCTURAL MODELLING

The hypotheses postulated in this article have been tested using Structural Equations Modeling [43, 44]. Before estimating the parameters, relevant model assumptions, and the frequently used model fit indices [43, 44]. These indices for structural models related to all three hypotheses are summarized in Table 8. As can be observed, the value of each index lies within the recommended range, which implies that the model fit is adequate in all three cases.

Table 8. Model fit indices.

	RECOMMENDED	H₁	H₂	H₃
χ^2/df	< 3	2,558	2,231	2,885
GFI	> 0,8	0,977	0,979	0,975
CFI	> 0,9	0,986	0,990	0,988
NFI	> 0,9	0,978	0,981	0,982
RMR	< 0,08	0,021	0,021	0,023

Next, we present relevant structural models for the hypotheses testing, displayed in Figure 4, along with the estimated parameters. It should be noted that the model parameters were estimated using the Maximum Likelihood (ML) method. The most relevant parameters for testing the hypotheses are those in the middle of the structural model, connecting the two main constructs. In particular, the regular parameter is displayed above the arrow, while the corresponding standardized parameter is displayed in brackets below that arrow. All the estimated parameters were statistically significant at 1 % in all three structural models.

Regarding the structural model for hypothesis H₁, the obtained parameters indicate that the relationship between managerial factors and digital business model maturity is characterized by a positive and statistically significant coefficient of 0,99, corresponding to the standardized coefficient of 0,66. This means that the higher the company's score on managerial factors, the higher the expected level of its digital business model maturity. This result implies that hypothesis H₁ has been empirically confirmed in this research.

For hypothesis H₂, the estimated parameter connecting the two constructs is 0,46 (standardized 0,37), implying a positive connection between management education and digital business model maturity. The estimated parameters in the model are statistically significant. Therefore, should the score on managerial education increase, one could expect, on average, that the company's score on digital business model maturity would increase as well. This concludes that hypothesis H₂ has also been confirmed empirically in this study.

Finally, looking at the structural model for H₃, it can be observed that the constructs are connected with a positive parameter of 0,62, which corresponds to the standardized parameter of 0,63. As these estimated parameters are statistically significant, too, this implies that an increase in score for the management digital skills would lead to an expected increase in the score for digital business model maturity of the company. In light of such results, it can be inferred that hypotheses H₃ have been confirmed.

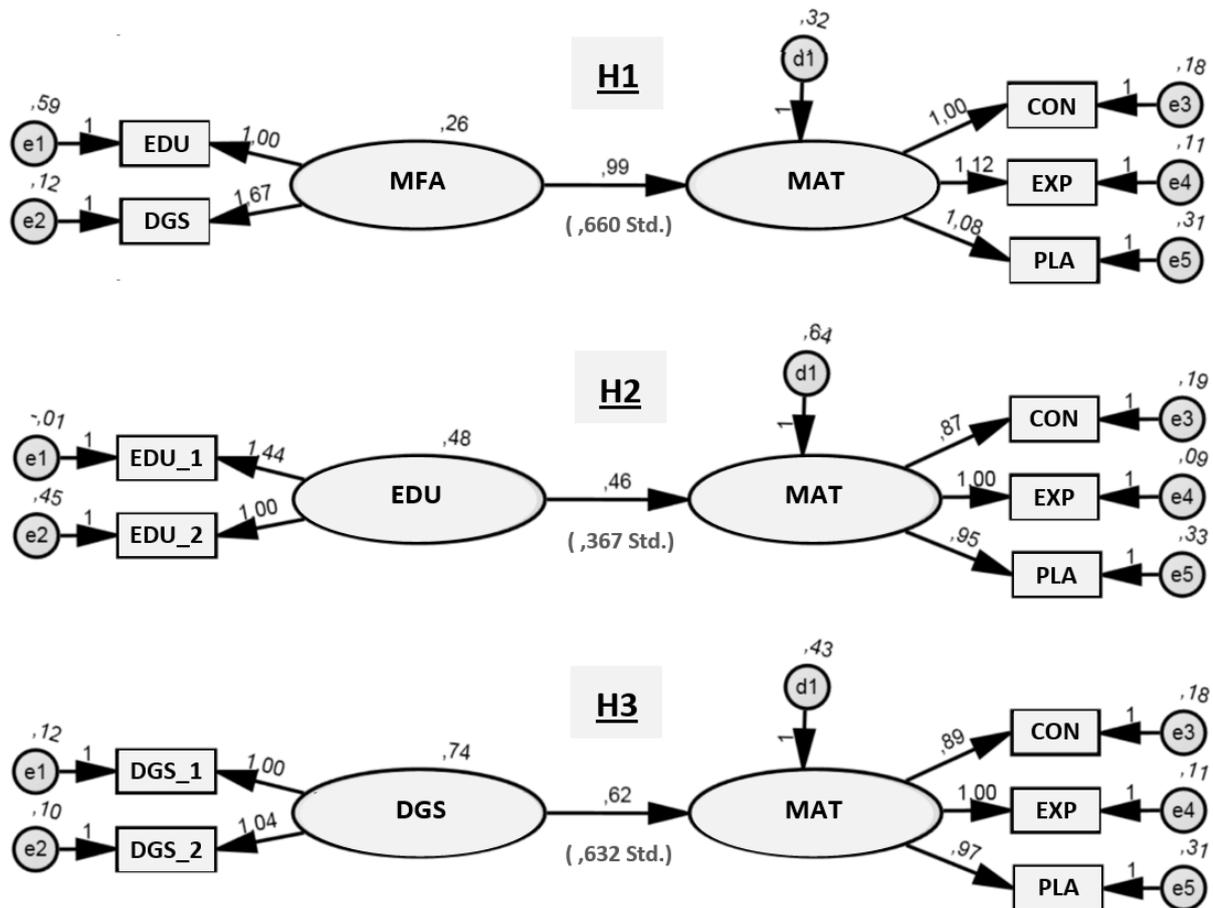


Figure 4. Structural models with estimated parameters.

DISCUSSION AND CONCLUSIONS

This article explored digital business model maturity and the managerial factors affecting it, focusing on the particular context of SMEs. The key concepts have been analyzed theoretically and empirically, whereby the three hypotheses have been tested to reveal the nature of the relationship between relevant constructs. In particular, all variables in the research model were measured on a multi-national sample of 162 SMEs operating in a single business sector, which contributed to the adequate comparability of the results. The measurement model was checked for reliability and coherence. At the same time, the resulting structural models have also been assessed through adequate statistical procedures, including the calculation of relevant model fit indices. All observed constructs were positively mutually correlated, with a statistical confidence level of 1%, and all corresponding hypotheses have been empirically confirmed in this research.

Therefore, the obtained findings of this study imply that the managerial factors have a statistically significant positive impact on digital business model maturity, which proves H₁ and answers the research question. Specifically, both management education (H₂) and management digital skills (H₃) have exerted a positive influence on the maturity of the company's digital business model, which implies that one of the possible ways to improve company's digital business model maturity is by fostering targeted improvements in the relevant managerial education and their digital skills. While previous studies have focused on the adoption of technology, ability to innovate, organizational readiness, capacity to stimulate the development of business ecosystems, this study stressed the importance of managerial

factors in achieving digital business model maturity. This empirical research aligns with previous papers, namely with the work of [29], who pointed out that digital transformation efforts must be led from the top. In addition to those general findings, the research results indicate several potential improvement areas on a deeper level, including managers' education about digital business and technologies and managers' knowledge to lead a digital strategy and their actual participation in developing and implementing it. In that capacity, the results of this study show that managerial factors can be seen as the prerequisites for successful digital transformation and implementation of a digital business model.

The obtained results further develop the scientific understanding of digital business model maturity and its relevant managerial factors. While previous research endeavors have frequently focused on a general notion of digital business models maturity, mainly pursuing a theoretical approach (e.g. [10, 31]), this article goes a step further. It contributes with international empirical research, encompassing the companies from 42 different countries across 5 continents.

Regarding the limitations of this research, there are several of them to be noted. On the one hand, the research has been performed within a single business sector, enabling internal comparability. Still, it could also be viewed as a limitation because some of the findings may not be applicable in the same way to other business sectors. On the other hand, there are some limitations to the survey methodology itself. In particular, the most notable issue has been related to the highly structured format of the research instrument, which did not allow for individual free-style comments by the respondents. To compensate for this limitation, some of the respondents sent additional thoughts and comments to the authors via e-mail or social networks, which is why it is recommended that further studies of this topic do include more space for such additional comments within the very research instrument.

With all this in mind, this article extends the body of knowledge in the field, contributing empirical evidence on achieving the appropriate level of digital business model maturity, which is important from both scientific and managerial viewpoints. The results of this study can be useful to other researchers to design their empirical studies in this field and seek to understand these constructs in other kinds of business settings, such as for large companies or specific business sectors of interest. Further research may involve comparative studies, seeking to observe and explain any systematic differences between industries or geographies or validate the research model shown here with in-depth case studies (such as those in [45]) in specific industries. Researchers may also opt to explore the impact of other factors on digital business models maturity and the impact of the digital business model maturity on certain aspects of the company performance.

The managerial implications of this article are threefold. Firstly, it could help practitioners shed more light on the fast-evolving field of digital business models and understand the relevant managerial factors that may be a tool to improve the company's digital business model maturity. The ability of a company to shift to a digital business model proves to be one of the most important topics in adjusting businesses to the Covid-19 pandemic environment, and the results of this article might provide useful guidance for practitioners and managers. Secondly, they may also choose to benchmark their own company by answering the questions provided in the measurement model, which could also be useful for identifying gaps and areas for future improvement in that particular company. Finally, this research may inspire the managerial community to explore different approaches and ideas and assist them in taking certain strategic and tactical decisions regarding the digital aspect of their operations.

In conclusion, due to the highly intense uptake of digital business models, as an integral part of the new digital age, it is increasingly relevant to continue studying these phenomena from a scientific perspective, seeking to understand further their nature, potential impacts, and facets of possible implications.

APPENDIX – FREQUENCY DISTRIBUTION CHARTS FOR MANAGERIAL FACTORS

Table 9. Frequency distribution for EDU and DGS indicators.

	I fully disagree	I mostly disagree	I neither agree nor disagree	I mostly agree	I fully agree
EDU indicators:					
M1: Management has university diplomas	15	9	18	30	90
M2: Management has attended many professional seminars and courses	7	14	43	47	51
M3: Management is continually educating themselves	3	9	26	62	62
M4: Management has formal or informal education relevant for digital business & technologies	12	19	38	56	37
DGS indicators:					
S1: Management understands new digital trends and technologies	2	9	28	68	55
S2: Management has sufficient knowledge to lead digital strategy	4	17	43	63	35
S3: Management actively participates in development & implementation of digital strategy	6	18	34	60	44
S4: Management has the right combination of technical and business skills	4	12	38	66	42
S5: Management has more developed digital know-how than competitors' management	11	23	67	32	29

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WORDS MATTER: SCHOOL LEADERS' LANGUAGE IN THE COVID-19 PANDEMIC

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ABSTRACT

As the coronavirus pandemic has affected all walks of life, education has not been an exemption; in fact, it is one of the most severely hit sectors. The unknown crisis created unprecedented circumstances for all participants in the education process, and school leaders have had a double job: to navigate their institutions and look after their employees. The latter is a pretty delicate task – they have had to keep doing business and running their companies while minding the language, since physical distancing necessitated the use of electronic communication, thus making room for vagueness and many misinterpretations. For this research, ten education leaders of private language schools and public primary and secondary schools in North Macedonia were video-interviewed on everyday COVID-19-related situations from their workplace context. Discourse completion tasks were employed as a data elicitation method. Being given the open-ended, only topically specified scenarios, the respondents were asked to recreate their language reaction to situations that really happened in their newest pandemic work life, recollecting the period since 16 March 2020. The interviews were transcribed, and the leaders' language choices were analysed.

The findings show that the leaders have been mindful about their words and have mostly chosen to use positive, calm, and encouraging language.

KEY WORDS

COVID-19, business, education, leaders, language

CLASSIFICATION

JEL: D23, D81, D83, I29, P36

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INTRODUCTION

The deadly global pandemic has overwhelmed the whole world – physically, psychologically, spiritually, and intellectually. More than 100 million COVID cases have been recorded worldwide and, of those cases, more than 2,6 million people died. Those are not just ‘abstract’ people, but, as Erni and Striphas [1] state, family members, friends, lovers, mentors, colleagues, acquaintances, public figures, personal connections, and total strangers. Let alone the untold numbers of COVID ‘long-haulers’ whose bodies have been unable to overcome infection, so they endure protracted suffering; or the billions of people whose daily lives have been turned upside down and inside out socially, professionally, and financially. Social activities have dropped, frequent hand washing is exercised, and masks are worn. Erni and Striphas [1] argue that social inconveniences, frustrations (and anger) over lockdown orders and travel restrictions, confusion, separation and boredom characterise what we have been living through. And, according to them, mourning will be remembered as the primary way in which we have lived through the crisis. Remembering the horrific figure, what the world mourns is its existential vulnerability, and sensing and feeling this vulnerability is done through quiet, lingering sadness.

In such a melancholy and sadness caused by this unprecedented event in modern history, it is not only personal lives that have suffered, but, mapped into the business context, as Pejić-Bach [2] says the epidemic has strongly affected the economies of the countries all over the world, thus generating numerous challenges for many business entities; therefore, the experience of managing through it is not necessarily unique. In her Harvard Business Review article, Knight [3] cites Paul Argenti, a Professor of Corporate Communication in the Tuck School of Business at Dartmouth College, saying that in a situation of this kind the manager is to project confidence and strength.

As Perkins [4] says, throughout the pandemic, leaders have found themselves in positions they simply were not prepared for, managing teams through an evolving obstacle course of both professional and personal challenges. Simply, the pandemic has meant that all companies are affected by an event that threatens their stability and that of the business sector in which it operates, both nationally and globally, so business leaders have had to implement modifications to their corporate strategies and new organisational management models to face a new reality [5]. Besides taking the necessary health measures, the next most urgent reaction of the companies has been to technologically adapt to the new situation, since “quarantine has made video services, such as Skype, Zoom, and Google Meet become the primary way for communication with people outside of our households – family members, friends, teachers, students, business partners, co-workers, and clients. In brief, without video conferencing solutions, face-to-face communication would not be possible with people outside of our households.” [2], meaning that business could be done only virtually.

What Bonchek and France [6] state is worth emphasising and that is we can not pick our crisis. The first thing to know is that we need to expect the unexpected. They say that, according to Jamie Moldafsky, Chief Marketing Officer (CMO) of Wells Fargo, the first rule is that we do not get to pick our crisis, but we have to be ready. They also interpret Brian Irving’s thought, former CMO of Hampton Creek, whose opinion is that our crisis is not the one we think it is going to be. Therefore, it is very important to be prepared, stay positive and optimistic. The challenge is that by the time the crisis comes, it is often too late for many brands. Companies need to create a bank of goodwill when times are good, so that when a crisis comes, they are ready to speak up, reassuring critics and reinforcing their message.

Thus, communicating in the face of uncertainty is a constant leadership challenge [7]. It is an essential leadership skill, regardless of whether or not one has a formal leadership role. In fact, the ability to communicate through uncertainty is part of what demonstrates to others one’s leadership readiness.

Perkins [4] says that as we become more reliant on technology, personal communication has become increasingly important. The way leaders communicate with teams, and the words they choose are vital. And that is the case especially now, in a digital world.

Bonchek and France [6] claim that one might not be able to control what people say about the leader, but there is one thing a leader can control: himself/herself, meaning that a leader should choose a strategy and set an example for their employees. They cite Jamie Moldafsky, who says “A crisis is a crisis. It’s all about how you handle it. And that’s within every leader’s control.” Amy Friedlander-Hoffman advises to “get comfortable with being uncomfortable.” You have a choice. “You can come in every day trying to get your job done, frustrated that you have to keep putting out fires. Or you can realize that putting out fires actually *is* your job.” The lessons learned by executives who have weathered a crisis are relevant to anyone who finds themselves in challenging circumstances. All levels (including leaders) have to get better at overcoming obstacles, dealing with uncertainty, and staying focused in a changing environment. It is good advice for everyone to be prepared, stay true to their purpose, involve others in solutions, control what they can, and work on the underlying issues.

Hafner and Sun [8] say that leadership in a crisis involves a range of activities, such as making responsive decisions, communicating those decisions to the public, envisioning goals, generating trust and cooperation, and appealing for collective actions. As a result, effective communication plays an essential role in this process. As Baxter [9; p.13] claims, leadership is never a solo performance but jointly constructed.

In such a crisis, which has created unprecedented circumstances for all participants in the education process, school leaders have had a double job: to navigate their institutions, and to look after their employees. The latter is a pretty delicate task – they have had to keep doing business and running their companies while minding their language, since physical distancing necessitated the use of electronic communication, and instead of increasing and improving communication, it actually made room for void in communication, vagueness and even misinterpretations. Being scientifically challenged to investigate the situation in our country, that is, to see how leaders in R. North Macedonia talk to their employees and how or whether they navigate them in this challenging pandemic, we have conducted research that centres around two hypotheses. Namely, we make the following research propositions:

RP₁: during the COVID-19 pandemic, leaders have been mindful about their use of language, and

RP₂: in the pandemic circumstances, when interacting with their employees, leaders use more positive, encouraging than negative, reprimanding language.

As far as methodology is concerned, ten education leaders of public primary and secondary schools, as well as from private language schools in North Macedonia have been video-interviewed on everyday COVID-19-related situations from their workplace context. Discourse completion tasks (DCTs), a tool mainly used in linguistics and pragmatics to elicit particular speech acts, have been employed as a data elicitation method. They are a one-sided role play with a situational prompt, whereby one participant elicits the responses of another participant. This instrument was originally developed by Shoshana Blum-Kulka, who, based on the work of E. Levenston, used it to study and compare speech act realisation between native and non-native Hebrew speakers [10]. As the DCT consists of a scripted dialogue that represents various scenarios and is usually preceded by a short prompt describing the setting and situation, we have chosen to use it for the purpose of our research. Namely, being given the open-ended, only topically specified scenarios, the respondents are asked to recreate their language reaction to situations that have really happened in their newest pandemic work life, recollecting the period since 16 March 2020. The interviews have been transcribed and the leaders' language choices have been analysed.

Drawing upon the literature sources on the topic of using language in the leader-employee interaction, further in the text we analyse the language that our interviewed school leaders have used in the most common everyday situations, such as thanking and reacting to one's good performance that usually requires praising, but also in rather sensitive while equally realistic occasions such as apologising and reacting to one's failure.

LITERATURE REVIEW

LEADERS' LANGUAGE IN COMMUNICATION

When teaching leadership, Panayiotou [11] gives a non-textbook definition of leadership by relying on a famous quote by the 6th century Before the Common Era Chinese philosopher, Lao Tzu: "A leader is best when people barely know he exists, when his work is done, his aim fulfilled, they will say: we did it ourselves."

Speaking of the importance of communication and language in a leadership context, King [12; p.1205] says "managing is about talk," where the power of language through "its ontological capacity [structures] our actions in the context of perceived realities". Conger [13; p.31] maintains that "effective leaders [are] skilful craftsmen of their organisation's mission [and] communicate their missions in ways that maximise their significance." In his study of powerful international leaders and statesmen such as Margaret Mead, Martin Luther King, Margaret Thatcher, and Pope John XXIII, Gardner [14; p.22] writes about the cognitive and cultural elements of leadership that reside in the minds of leaders and in their work cultures. This approach deals with the stories and struggles that constitute a leader's mission in life.

Ling and Guo [15] say: "Leadership is a language game." According to the theory of motivating language, leaders can motivate and inspire their subordinates through their oratory skills. The motivating language used by leaders powerfully influences the leader-follower interactive process as a result of its role in establishing followers' relational and psychological states, including their work motivation. The choice of words used by leaders is one of the most effective strategies for instilling a perception of their credibility and trustworthiness within employees. For an effective leader-follower interaction, leaders should create an inclusive work environment, which requires them to be educated on how best to hold conversations in productive and thoughtful ways. They cannot provide the proper support if they do not understand their employees' needs. What is more, if performance messaging is not delivered in ways that can be received effectively, then business results, along with employee performance and moral, will inevitably suffer. Therefore, leaders need to listen and be curious [16].

In that interaction, the power of language should not be underestimated, since words can paint a picture. And everybody should think before talking, think what they are going to say, especially if it is an emotive or potentially confrontational subject. A real and authentic language will help form a stronger bond of trust, and if the others (followers) trust the leader, they will feel safe in the company and will follow the leader. To achieve this, leaders should marry language with action – not only to say the right words, but to mean them, that is, to follow them by behaviour and action [5].

Schwartzberg [17] emphasises that the leader's use of weaker words diminishes a leader's impact, thus, our interpretation is that in order to be seen as a figure of integrity, they should plan how to construct their messages.

As Gallo [18] points out, throughout much of human history, leaders have relied on their words to spark action. And many economists and Chief Executive Officers (CEOs) today swear that words are the most important tool in a world where "command and control" leadership has given way to power by persuasion.

In his Harvard Business Review article, Gallo [18] cites the Nobel economist Daniel Kahneman, who says: “If you care about being thought credible and intelligent, do not use complex language where simpler language will do.” Effective leaders speak in simple language and simple means short. Thus, short, effective and situation-targeted language should be used, since the clearer and more concise the leader is, the better the chances of the leader getting their message across and persuading people to act on it. Thinking about how to share the next message, it should be remembered that language influenced by the Anglo-Saxon period has been used by many great leaders. Gallo [18] cites Winston Churchill who once said: “The shorter words of a language are usually the more ancient. Their meaning is more ingrained in the national character and they appeal to greater force.” In a memo titled “Brevity,” he urged government administrators to replace long “woolly phrases” with single conversational words, pointing out that brevity equals clarity and that directness makes things easier to understand. In line with this urge, but in the current situation, a very popular person is Dr. Anthony Fauci, the director of the National Institute of Allergy and Infectious Disease at the National Institutes of Health, who is widely admired for his straight talk and steady demeanour. Cable News Network (CNN) has called him “a public force”, who translates complex medical information into everyday language. His strategy is: “You don’t want to impress people and razzle-dazzle them with your knowledge,” Fauci says, “You just want them to understand what you’re talking about.” Since, like a virus, words are infectious. They can instil fear and panic or facilitate understanding and calm. In the given, pandemic context, calm and understanding are needed, so words should be chosen wisely.

Leaders use empathetic language to express compassion and humanistic emotions as well as to demonstrate their trustworthiness and provide their employees with psychological support, thereby improving their social bonds and identification with the organisation. What a leader says can convey empathy and emotional support to their subordinates, which in turn can enhance subordinates’ job satisfaction and performance.

Mayfield and Mayfield [19] emphasise that a “leader must walk the talk”, meaning that he or she must convey integrity, where actions correspond to intentions and words. They especially emphasise the fact that the use of motivating language is closely connected with the followers’ decision-making and their job performance. Leaders who engage in motivating language (e.g., empathetic language) establish close emotional connections with their subordinates, inducing a high level of affective trust that fosters a feeling among employees of being respected and cared for by the leader. As a result, subordinates will then reciprocally engage in more proactive behaviours that are likely to have beneficial outcomes for the organisation. Through close interactions with subordinates, leaders are able to build an active environment wherein followers feel safe and comfortable and are willing to work proactively above and beyond the scope of their duties. As a matter of fact, according to previous studies, harmonious interpersonal relations and a supportive atmosphere can foster employees’ proactive behaviour.

As García-Sánchez et al. [5] maintain, positive words such as ‘help’, ‘support’, ‘confidence’, ‘commitment’, ‘improve’, ‘advantages’ instil the followers’ positivity and security in their leaders. It can be concluded that such language choices make the employees trust their superiors and feel secure at their workplace. Likewise, when referring to negative discourse, leaders usually use softer negative words, such as ‘stop the spread’, ‘vulnerability’, ‘protect’ and ‘promote a safe and healthy workplace’.

Knight [3] says that the leader’s goal is to be the person the workers turn to for guidance and direction. The leader should look at the situation from the workers’ perspective and think about what they themselves would like to hear. Therefore, a use of rousing language is very important, which will show a belief, instil enthusiasm and hope, and convey strength. As

Argenti is cited by Knight [3]: “leaders need to understand their team members’ individual worries and stresses”, that is: “You cannot manage other people’s emotions; all you can do is minimise the fear they have”. In the current situation, because most employees are working remotely, leaders cannot rely on hallway conversations and there aren’t enough Zoom meetings to make up for what’s lost when your team is not physically together. Therefore, check in with the team on a regular basis is needed to get a handle on “where people stand.” Leaders need to listen carefully to what people are asking and saying, and since most people need to hear they are going to be OK, they should be given “every reassurance”.

The importance of empathetic language is stressed by Binyamin and Brender-Ilan [20], when, in line with what has been written before here, they say it is used to establish human connectedness and bonding with workers through genuine consideration. Leaders can instil work with meaningfulness by prompting employees to transcend their personal needs or goals in favour of those tied to a broader mission or purpose or by encouraging them to explore and recognise new elements of their work. By using empathetic language, they enhance interpersonal relationships with their employees through verbal expressions of emotional support, praise for good performance, and human bonding. When employees interpret leaders’ speech acts and conversations as increasing their autonomy, competence, or relatedness, they feel that their basic human needs are met, and this may stimulate their feelings of energy. Actually, when they feel more meaningfulness in work tasks, they will be intrinsically motivated and thus more energised and vitalised to engage in their work.

Hafner and Sun [8] go on to describe the kind of balancing act required of leaders in a crisis, noting: “a leader is meant to perform a demeanour of courage and confidence in contexts of extreme uncertainty but, at the same time, may be expected to display authentic vulnerability without appearing weak” [8; p.365].

In this context, talking about leaders, Knight [3] says: “It’s okay not to have all the answers”, meaning that what matters is to be empathetic and sensitive to the employees’ concerns. The former Australian PM Julia Gillard suggests that Ardern’s leadership presents a novel approach. In particular, she comments that Ardern is “leading in a different style” and “leading with kindness and empathy at the foreground”.

FEMALE LEADERS’ LANGUAGE (IN A CRISIS)

Namely, speaking of leaders’ language and emphasising the importance of their emphatic language, Panayiotou [11] refers to a *Forbes* article that asked what countries with the best coronavirus responses have in common and the answer is that their leaders are female. From Germany’s seasoned chancellor Angela Merkel to Finland’s young and newly elected Prime Minister Sanna Marin, female leaders who are only 7 % of world leaders seem to have done a better job, on average, in dealing with the pandemic, regardless of a difference in specific tactics: Chancellor Merkel relied heavily on science; New Zealand Prime Minister, Jacinda Ardern, led with what she called a “kindness first approach.” There is statistics from *The Telegraph* on April 28, 2020, which documented that female-led nations had significantly fewer deaths, and these facts of better leadership exercised by women can be connected with our research as 80 % of our interviewees are women, which can be (in)directly linked with the use of positive, soothing language.

In a *Different Voice*, Gilligan [21] argues that women’s sense of morality is based on relationships and feelings of care and responsibility toward others.

Sherman [22] noted a pattern of common traits in all female leaders listed above: humility and a willingness to consult experts; ability to understand one’s community and empathy; willingness to ask questions and to have their decisions questioned and, if necessary, altered

with a new turn of events; high emotional intelligence and ability to set targets that inspire; ability to negotiate, not for the self, but for the common good; and skilled in being able to operate horizontally and to build community.

The biggest rationale behind this might be that women who have gotten to these top positions have most likely worked extremely hard to get there – given the prevalent sexism in politics – and therefore carry with them a unique repertoire of skills. Following a seeming psychoanalytic perspective, it is said that “maybe there is something that goes all the way back to our childhood, (relating to) who we go to with a scraped knee”, who we go to when we are in pain or have ill health. These figures are typically female, oftentimes a mother or a school nurse.

This opposition in the leadership style between male and female political leaders, which we connect with our business leaders is also seen in Boris Johnson’s apparent absence from the handling of the pandemic. His absence has been risky, sending a message that he “does not care,” triggering “especially powerful anxieties about betrayal and abandonment” and a perception that he is not carefree but rather careless [23]. Tomkins [24; p.3] actually makes a distinction between Johnson’s dubious style and Ardern’s combination of “empathy, emotional resilience and efficiency (which seem) to crystallise what it means for leaders to embody and enact care”. Agreeing with Ciulla [25; p.3] that “the job of a leader includes caring for others or taking responsibility for them”, Tomkins also notes that being present is crucial to both accomplish and show this care. Since care is not just about the self; it is about active involvement with others.

Unfortunately, leadership is a highly gendered phenomenon, as French and Webster [26; p.46] write: “Women constantly walk a tightrope of inclusion and exclusion.” in which they are constantly judged by masculine standards. In this context, female leaders have typically shouldered the burden of hiding their femininity and/or what could be perceived as traditional or stereotypical female behaviour.

Yet, what we have seen during the pandemic – and what the media and the business publications mentioned have picked up on – is that it is precisely these traditionally feminine characteristics, such as empathy, compassion and care, that have led to the most effective coronavirus responses. In fact, to go a step further, some female leaders have not only negated the aforementioned “binds” but also worked successfully within the maternal archetype, therefore potentially up-turning traditional media perceptions of leadership.

Johnson and Williams [27] say that male politicians commonly depict themselves as strong leaders who will protect their citizens from both internal and external threats while promising economic security. This can be seen as a form of protective masculinity, in which male leaders draw on traditional conceptions of the male head of household and breadwinner who protects and cares for their family to suggest that they have the necessary masculine characteristics to protect their nation. For example, Donald Trump depicts himself as the strong alpha male who will defend Americans from threats such as undesirable immigrants and the loss of jobs overseas to “make America great again.” By contrast, protective femininity draws on forms of protectiveness, often incorporating caring and empathy and, associated with women’s role in the family, to suggest that women politicians have feminine characteristics that will facilitate their looking after citizens.

It is traditionally mothers, not fathers, who look after sick members of the family. It is traditionally mothers who take charge of household hygiene and ensure that children and recalcitrant males wash their hands. Finally, it is also women who are traditionally caring and empathetic in times of trauma. Thus, like so many other women political leaders, Ardern is depicted as providing the maternal comfort that we seek when we are ill—the one to comfort us and lessen our anxieties.

Ardern urged New Zealanders to be kind and caring; the Norwegian prime minister, Erna Solberg, held a press conference specifically for children, empathising that “many children are finding this

scary” but gently explaining the measures taken to protect their families. Merkel, nicknamed “Mutti” (Mommy), in a video from 2020, also expressed compassion for how painful social distancing and isolating the elderly would be, because in hard times: “We show affection by staying close, and by reaching out to each other. But at this time, we must do the exact opposite.”

Meinecke and Kauffeld [28] maintain that previous theorising and research have repeatedly highlighted the important role of leader empathy as a main driver of successful leader-follower interactions.

There has been considerable debate in the literature on whether empathy is mainly an affective or cognitive phenomenon. The affective view on empathy emphasises the notion of empathy as an emotional response, such that empathy encompasses the ability to share or experience another person’s feelings or emotions, while scholars following the cognitive view on empathy, on the other hand, explained that empathy is a person’s intellectual understanding of another person’s internal state.

More specifically, we define leader empathy as a leader’s ability to accurately recognise and understand the emotional reactions and feelings of their followers. This understanding, in turn, helps leaders to respond appropriately to the needs of their followers and to craft an appropriate (emotional) response. Generally, leader empathy is perceived as being central for managing social relations because empathic leaders are said to be more effective at managing the emotions of their followers. Consequently, it is a common theme in the leadership literature that leaders who are skilled at identifying and responding to follower emotions are also more effective leaders.

For example, it has been argued that leaders who are more attuned to their followers’ emotions are better able to spark enthusiasm in their followers, to develop collective goals and objectives, and to promote flexibility in decision-making and change. In addition, leader empathy has been related to higher ratings of transformational leadership, employees’ well-being, and ratings of leadership performance. Results from a recent large-scale survey [29] further showed that employees themselves value leader empathy and see it as an integral component of the workplace. More than half of the participants stated that they would even accept a pay cut to work for an empathic employer. In sum, these findings provide support for overall positive effects of leader empathy in the workplace. In order to achieve successful conversations, we argue that leaders must be able to not just feel or experience empathy but to craft empathic responses. Leaders’ expressions of empathy are associated with a higher ability to manage follower emotions. It is an inevitable fact that empathy is an important social construct that can create bonds between individuals or build barriers when empathic behaviour is not presented at the appropriate times, and women tend to have better empathy than men. Drawing on the political leaders’ behaviour, we can transfer this similarity in a business context, recognising that a “caring leader” is one who offers personalised attention to their followers and is willing to go beyond the call of duty in dispatching his or her responsibilities. And, the best, most easily seen and immediately felt way of showing attention and responding to somebody’s (in our case, employees’) needs is through the use of (emphatic) language.

Following this train of thought, Stillman [30] discusses the difference between ‘*nice*’ and ‘*kind*’ by saying that it is not a bad thing to be polite and avoid unnecessarily ruffling feathers, but being nice does not go very deep. It is a smile and hello without any action (or maybe true feeling) to back it up, while kindness helps. Choosing kindness over niceness is even more important in our current moment when so many are suffering due to Covid-19. Mainly, because aiming for niceness pressures others to project positivity they may not feel. Far better, to choose your words carefully so people can be open about how they are really doing if they so desire. We are all grouchy at the moment and straining for nice all the time is too much to ask.

Furthermore, research shows that kindness helps the giver as much as the receiver. Helping others boosts happiness and resilience when we need joy and strength the most. Kindness runs deeper and is way more valuable; therefore, if we need to choose between niceness and kindness, we should always aim for kindness.

Finally, every crisis is a change, and to facilitate change, Fullan [31] says that “leadership is the lever to promote deep change”. He stressed: “Change is an intricate, complex, and emotional process that arouses emotions and when motions intensify, leadership is key” [31; p.1]. Heifetz and Linsky [32] are also cited in promoting leadership behaviour as a strong factor in response to change. They stated: “To lead is to live dangerously because when leadership counts, when you lead people through difficult change, you challenge what people hold dear – their daily habits, tools, loyalties, and ways of thinking – with nothing more to offer perhaps than a possibility” [32; p.2].

SCHOOL LEADERS' LANGUAGE

Talking about school leaders, an empirical study commissioned by the Wallace Foundation called *How Leadership Influences Student Learning* is commented by Leithwood, et al. [33] who found that “Without a powerful leader, troubled schools are unlikely to be turned around”. This study says: “Many other factors may contribute to such turnarounds, but leadership is the catalyst” [33; p.7]. In fact, in a crisis moment that calls for a change, transformational leaders are those who are needed as they are “recognised as change agents who are good role models, who can create and articulate a clear vision for an organisation, who empower followers to achieve at higher standards, who act in ways that make others want to trust them, and who give meaning to organisational life. It was teachers' commitment to change that was indirectly and directly impacted by transformational leaders.

Dvir, Eden, Avolio, and Shamir [34] state that transformational leadership positively impacted staff motivation, commitment, and empowerment. Also, Marks and Printy [35] found that transformational leadership blended with instructional leadership positively influenced overall school performance.

As Leithwood et al. [33] claimed: “Today, principals and superintendents have the job not only of managing our schools, but also of leading them through an era of profound social change that has required fundamental rethinking of what schools do and how they do it. This is an assignment few sitting school administrators have been prepared to undertake” [33; p.5]. These authors also declared that: “At the core of most definitions of leadership are two functions generally considered indispensable to its meaning: setting directions and exercising influence” [33; p.1].

Teachers and students held greater organisational commitment when they worked for a transformational principal, thus, Marks and Printy [35] found that transformational leadership positively influenced school performance, when measured by student achievement and quality of teacher instruction.

In fact, transactional leadership represented everyday interactions/exchanges between manager and follower, whereas, transformational leadership “referred to the process whereby an individual engages with others and creates a connection that raises the level of motivation and morality in both the leader and the follower” [36; p.170].

LANGUAGE SITUATIONS

Talking about apologies, the form ‘sorry’ is analysed as prototypically associated with them – a speech act that has been described as “perhaps one of the most ubiquitous and frequent ‘speech acts’ in public discourse and social interaction” [37; p.1]. It is thus a speech act that we use and encounter regularly in our daily lives, which is mainly due to its importance on a social and cultural level as well as its association with polite language use. An apology implies that some wrongdoing has occurred which results in a breach of social and cultural norms and requires remedial action. By apologising, the speaker acknowledges the offence, takes responsibility for it and expresses regret.

Van Hooijdonk and Liebrecht [38] regard an apology as an acknowledgment of (the responsibility for) the dissatisfying event and can include an expression of regret.

Along these lines, Tucker et al. [39] cites Aldous Huxley: “If you have behaved badly, repent, make what amends you can and address yourself to the task of behaving better next time.” Ethical leaders do not deny their mistakes, but they apologise, make amends, and take steps to avoid repeating transgressions in the future. Indeed, some popular writers have recently argued that apologising is a prerequisite for high quality leadership. For individuals in leadership positions, research evidence is beginning to suggest that apologies are critical in rebuilding and sustaining long-term relationships. The general impression is that apologising following wrong-doing will positively influence leadership perceptions. In particular, leaders who apologise will be perceived as looking beyond self-interest for the good of the relationship, thus embodying many elements of transformational leadership (i.e., inspirational motivation, idealised influence, intellectual stimulation, and individualised consideration). Finally, in an apology, the transgressor both admits the act was wrong, accepts responsibility for the offence, expresses empathy, offers penance, and promises not to repeat that behaviour in the future.

When a leader apologises, the followers view the leader’s behaviour as a socially responsible reaction to wrongdoing. A sincere apology signals vulnerability and transmits moral meaning, allowing the repair of interpersonal relationships to begin. As complex speech acts, apologies have a range of positive effects, including generating forgiveness, restoring trust, reducing aggression, enhancing future relationship closeness, and promoting well-being.

Up to now, there have been no studies which directly examine how followers perceive leaders who account for their mistakes with apologies, but it is believed that they can play an important role in developing and repairing leadership perceptions in organisations, and ground this prosocial orientation in transformational leadership theory.

When individuals perceive their leader is fair based on the way he or she behaves (e.g., apologising), they are likely to believe their leader engages in those behaviours willingly. Then, leaders who apologise will be seen as doing so because they care for the individual and the relationship, which reflects individualised consideration, another integral component of transformational leadership. Mistakes, wrongdoing, and other unusual situations are critical moments that attune followers to the behavioural intentions of their leaders.

First, apologies demonstrate idealised influence, by emphasising the importance of behaving in an ethical manner and taking responsibility for one’s actions. As Mills [40] suggests, leaders are “humanised by apologising in a way that a wrongdoer who remains silent and appears indifferent to public opinion is not”. Second, apologies also show caring for the employee and the leader-employee relationship, exhibiting individualised consideration.

But, it is equally essential to thank people, to show appreciation, and to never expect them to simply just do things [4].

Nawaz [41] concedes that many employees are afflicted by stress and anxiety that make brushing teeth and cooking a meal feel like the day’s crowning achievements. In such circumstances, employees feel overworked, underappreciated, and cut off from their colleagues and, as there is no panacea for these current ills, regularly practising gratitude can help.

Research clearly indicates that expressing gratitude is beneficial to our health and well-being. We are happier when we are grateful. During a crisis, taking the time to thank others is vital to dampen loneliness, amp up social connections, and generate generosity. Yet, while the benefits of gratitude are widely acknowledged, we feel thankful a lot more often than we express it – and it seems to be least often expressed at work. But as leaders, it is absolutely essential to express gratitude to the employees, especially now. For one thing, being thankful to the team is the right

thing to do. People are battling fears about the pandemic and juggling home and work in close proximity. Almost every employee needs to hear that their dedication is noticed and it matters. What's more, gratitude is proven to show improvements in self-esteem, achieving career goals, decision making, productivity, and resilience. When people around the leader feel seen and acknowledged, they return the favour, invest more in their efforts, and form stronger connections – all essential ingredients to offset the stress of a crisis. What is more, giving thanks can be infectious. Even when we are uncertain about the present and future, one thing that we control are our actions. We can choose to help sincere expressions of appreciation catch on. When leaders share their affect with their employees and compliment them for a job well done, the employees feel valued and appreciated. They feel that their work is valued and worth the efforts to act proactively. These feelings are likely to increase their motivation to reproduce them and may lead to self-directed actions and the initiation of changes at work [20]. Recent interview studies show that the language of leadership and management is the language of meaning and context. When leaders use a motivating language, they develop a sense of communal trust between workers and management.

As far as reacting to an employee's good performance is concerned, Bonchek and France [6] suggest the key concept – that motivation is less about employees *doing great work* and more about employees *feeling great about their work*. The better employees feel about their work, the more motivated they remain over time. But far more powerful is the leader's commitment to recognising and acknowledging contributions so that employees feel appreciated and valued, and they are motivated when they feel appreciated and recognised for their contributions.

When it comes to reacting to an employee's failure, Shapira [7] says, before starting to communicate to others, the leaders should take a minute to pause and breathe. Since when you are the most senior person in a room, your team takes its cues from you in terms of how to act and how to feel. Taking a minute to centre yourself will ensure that you present a calm, rational force to your colleagues and clients. Similarly, when you feel anxiety, you transmit that to others. Studies of empathetic stress have found that observing others experiencing stress could cause observers to feel more anxious themselves.

Although the interviews subject to our research were held in English and no translation was needed before analysing the polite responses, future research may be conducted to investigate how the politeness phrases are translated in the automatic translation systems. That quality translation is important is proven by Seljan [42] who stresses that, since 2007 Total Quality Management has become a standard in the Directorate General of Translation. Furthermore, in order to obtain useful information about benchmarking of translations, Schiaffino et al. [43] have developed a Translation Quality Index, whose aim is to assess the ratio between quality and cost, taking into account linguistic and technical background, detail-oriented editors and knowledgeable proof-readers, as well as terminology work, time aspect and customer feedback [21].

METHODOLOGY

RESEARCH INSTRUMENT

As far as our research methodology is concerned, first, convenience sampling was used to recruit ten (10) leaders of primary, secondary and private language schools in North Macedonia, that is, the authors had contacted (via phone or email) school leaders to whom they explained the goal of their research and its method, and asked them if they would like to participate. Once the leaders had agreed to be included in the research, the authors sent them a consent form, which was signed by all the leaders thus confirming to have been fully informed about the research: what it was to be about, how it was to be conducted, what their part was to be in it, that their contribution was

voluntary and completely anonymous, meaning that no disclosure of their identity would be ever made, and that they could withdraw from it at any time.

Second, DCTs were used as a data elicitation method, that is, the leaders were given open-ended, only topically specified scenarios of everyday COVID-19-related situations from their workplace context.

Being assigned a situation, the respondents reminiscent of a case that had really happened in their newest pandemic life (since 16 March 2020) and recreate their language reaction to it. Interviews were held individually – one at a time, with an interviewer and an interviewee, they were videoed, held via the Cisco Webex platform, recorded, and transcribed. Eventually, the leaders' language choices were analysed.

This article is an extension of a study that was conducted with a seven-item questionnaire: five (5) questions for gathering general information, and two (2) scenarios, where Vaneva and Bojadjiev [44] investigated the ways leaders had recently apologized to an employee and had recently thanked them.

For the purpose of this study, the extended interview consists of eleven (11) items: the first five gather information about the gender, age, education level, sector, and length of the interviewees' leadership position before proceeding to the next, six situations that formed the core of the interview: how they have presented a problem to their employees, how they have reacted to a problem presented by their employee, how they have recently apologized to an employee, recently thanked, how they have reacted to their employee's good performance and to their employee's failure (the interview structure is given in the Appendix.)

The authors have chosen to ask the leaders situations that are common to their everyday business context, so that they would easily identify themselves with the given scenarios. The interviewees were only asked to concentrate on the period after 16 March 2020 and to try to recreate their response or reaction to a particular situation as truthfully as possible, by giving the language they had actually used.

In order to test the interview, that is, to evaluate the appropriateness of the situations as well as to ensure their understandability by the respondents, before starting the actual research, the interviewing had been piloted with a language school in Singapore. The school's leader gave his answers to the situations – DCTs – part of our research interview. As the piloting was done successfully and proved that no revision to the situations was needed, we proceeded to conduct the actual interviews.

DATA AND STATISTICAL METHODS

The study was conducted in ten (10) different schools: primary and secondary schools from the public sector, and language schools from the private sector. The public schools' directors and the private schools' owners were interviewed online and their participation was recorded. The interview situations had not been shared with the respondents before the interview, thus ensuring their most authentic answers in both content and form.

The information gathered for this study has been linguistically analysed, that is, the interviews have been listened to, transcribed, words and phrases counted, and the language analysed.

RESULTS

Of the ten leaders interviewed for the purpose of this study, five (5) were heads of private language schools, three (3) were leaders of public primary schools, one (1) was a leader of a public high school, and one (1) was at the head of a private high school.

As far as the gender is concerned, eight (8) were female (80 %) and only two (2) – (20 %) were male.

Concerning the age, three (3) leaders were in the age range 30 to 40, another three (3) were in the group between 40 to 50 years old, and four (4) school leaders were 50 to 60 years old.

Regarding education, six (6) leaders had a bachelor degree, and the other four (4) held master degrees.

Certainly, the sector they came from was education, as only that sector was investigated, while the length of their leadership position varied. Only one (1) interviewee was leading less than a year, one (1) was leading for three years, one (1) – six years, one (1) – eight years, two (2) – ten years, one (1) – fourteen years, one (1) – fifteen years, and one (1) – twenty-five years.

Table 1. Interviewees' demographic data.

Gender	N	%
Male	2	20
Female	8	80
Age		
30-40	3	30
40-50	3	30
50-60	4	40
Education		
Bachelors	6	60
Masters	4	40
Sector		
Education	10	100
Length of leadership position		
Less than 1 year	1	10
3 years	1	10
6 years	1	10
8 years	1	10
10 years	2	20
14 years	1	10
15 years	1	10
25 years	1	10

In continuation, we analyse four of the situations that we have selected to be subject to our study.

APOLOGISING TO AN EMPLOYEE

When apologising, 'sorry' is definitely the most common form, as our corpus shows that later, but other words that can be used to apologise are: 'afraid', 'apologise', 'apology', 'excuse', 'forgive', 'pardon' and 'regret'.

Table 2 shows the patterns used by our respondents when the situation required an apology on their part.

One leader has claimed that, due to the wonderful collaboration she has with her employees, she has never needed to apologise, so no answer has been recreated in this scenario.

While the rest, when given the situation, two leaders recreated their reaction without hinting to any form of apology, with one of them talking about the problem – rescheduling classes but without actually apologising to the students for cancelling their class that week.

Table 2. Apologising patterns used by the interviewees.

Phrases/Words	No
<i>I apologise</i>	3
<i>I am sorry</i>	4
No formal pattern	2
No answer	1

The actual words being used are:

I have an urgent thing to do today at 9:30 so the classes are cancelled; we are going to have the classes on Friday this week because this group does not have classes on Friday.

As a matter of fact, this is not apologising at all, since the speaker focuses her expression on the task – rescheduling the class (what would have required an apology) – instead of feeling responsible for doing something wrong and feeling sorry.

The second of these two ‘non-apologising’ leaders has used ‘please’, which has been her way of excusing her behaviour and ‘softening’ the assumed wrongdoing. This interviewee’s right words are:

Please don’t take me for granted this period because I am really out of my mind and I have a lot of problems so please just try to understand me.

Again, no explicit, straightforward, formal apology is given, but semantically regret for not doing something right is felt and the speaker is admitting to not having behaved well.

The typically apologising pattern used by three leaders will be portrayed with this answer:

I apologise for not informing you that today’s classes were cancelled.

And the ‘sorry’ answer has been given by four leaders. One of these four, after being told the news of the employee about not feeling well and possibly having contracted the virus, has said:

I am sorry to hear that, we will find a substitution; just keep me informed about your test result and your general health.

So, out of the ten (10) interviewed leaders, seven (7) have given an apology in situations that require such a reaction, which makes us conclude that our school leaders use an emphatic language.

THANKING AN EMPLOYEE

Besides apologising, thanking is another language strategy that shows care for the interlocutor. The following table shows how thanking has been used by our respondents.

Table 3. Thanking patterns used by the interviewees.

Phrases/Words	No
<i>Thank you (so, very much)</i>	8
No pattern	2

Eight (8) leaders have formally (and semantically) thanked their employees, while two (2) have done it covertly – their expression does not contain a thanking word, but they are equally encouraging and appreciative of their employees, if not even more than those who have been openly thankful.

The following example illustrates an extended gratification given by one leader:

Thank you, thank you so much, because despite your current situation/illness you did your best, were able to hold your online lessons from home, and I am deeply grateful for it.

In this expression, ‘thank you’ is strengthened by ‘so much’, and, as if not enough, it is all emphasised with ‘grateful’. The impression is that the speaker wants to repeat her gratefulness.

Another leader who did not use a formal means to thank but semantically expressed his satisfaction with his employee's proposal said:

Wow, that is a great idea, I think we should try this, we should see how it goes. I believe it could work. If you need my support, I will be online, you can call or message me and I can help. I believe it is a great idea you have.

There is no mention of 'thank you' or words and phrases similar to it, but the leader chooses to show satisfaction with his teachers' behaviour by praising his work using the words 'great', 'we should ...', 'I believe', and basically making himself available to the employees – to contact him whenever they need.

Another leader and school owner has recreated her very characteristic way of thanking her teachers, saying that whenever she is satisfied with their behaviour and results, she thanks them by using the following sentence:

The students come to my school because of you, because of the teachers.

This is a very powerful sentence, which praises the teachers' work better than any other thanking pattern and openly motivates the employees to continue working in the way they do.

All in all, the thanking strategy entirely shows the leaders' inclination to the use of motivating language.

REACTING TO AN EMPLOYEE'S GOOD PERFORMANCE

Employees are attuned to whether leaders have a genuine connection to the work. If learners are not engaged and enthusiastic about the company, the team, or the work, it is unlikely that that leader will be a great motivator of others. Simply put, if the leaders are motivated, their learners are, too, and the first step to installing motivation is by thanking.

The following table shows what language the school leaders have used when reacting to their employee's good performance.

Table 4. Reaction patterns used by the interviewees.

Types of words	No
Positive words	9
Positive structure	1

Since this situation asked the leaders to recreate what they normally say when their employee has performed well, they have all chosen to use positive words.

Considering that all the ten leaders gave differently structured answers (rather difficult to be grouped) yet all of them positively painted, we cite them all here:

That was marvellous, and I would like you to post the parent's reaction publicly so that everybody can see it.

Thank you very much, I appreciate this very much.

That was a great job you did last week with your group of students and it was great that you prepared the students for the math competition so I hope you and your students will have great results.

Excellent job, dear colleague! I wish you continue you work and do it even better in the future.

Wonderful, bravo, well done for all your successes, keep up the great work, I am so proud of you and the school is so proud of you.

I really appreciate what you have done. This project plan is great, I am going to give my best so that we could implement it.

It is a great success for the team, for all of us that now one of our teachers is training the German teachers in the US and in Mexico. I would like to thank those who really tried new stuff and brought new ideas. With these institutes requesting to see our online classes I believe we must have done something right here.

Bravo, I am so happy for you, bravo, you did it well, please keep giving this great encouragement to your students.

That was very good of you, you should keep doing it that way.

Nine (9) leaders have used positive words, mostly adjectives, to praise their teachers for their good performance, to show appreciation for their work and to encourage them to continue to work with the same level of dedication. The previously listed words show that all of them are positive, both formally and semantically. Those are the underlined words in our examples: *marvellous, great, excellent, wonderful, proud, appreciate, well, very good, bravo*, etc. They show the leaders' satisfaction and spread positivity onto their hearers.

One (1) leader did not use a word that can be labelled as typically positive, but rather used a structure that altogether conveys a positive spirit. The sentence is:

Thank you, without your participation in the work we would not have been able to apply for this project, and now I hope we will get it.

This tells the teacher that their participation in the project has been invaluable, and it motivates them to work even harder.

All these answers show that our leaders tell employees that their contribution is noticed and that their progress is constantly monitored.

REACTING TO AN EMPLOYEE'S FAILURE

Failures happen and they are a natural, expected part of everyday business life. But as much as employees should learn how to deal with them, even better – to minimize their occurrences – undoubtedly, leaders should handle their followers' failures in the most dignified way. The following table shows our results classified in six patterns, starting from the strictest to the most lenient reaction to the situation.

Table 5. Reaction patterns used by the interviewees.

Functions of phrases/words	No
Reprimanding	2
Direct asking	2
Comforting	2
Reassuring	2
Offering to help	1
Asking politely	1

When the leaders were faced with situations that asked them to recreate their answer to their employee's failure, our interviewees gave an array of choices. That is, we classified the reactions that they gave in five patterns – we grouped two answers per pattern.

When finding out about their teachers' failure, the leaders who chose to reprimand them, said the following:

You should inform me on time for your problem, so you should do it next time.

You should have informed me that you are not coming to classes today so I can reschedule the classes and, now because you did not inform me, the students came to school and you were not here so it was a problem situation because I had not thought of another teacher who would come and take the class. Next time please inform me.

Although written (since the intonation from the spoken form would have been more indicative of the true nature of this reaction), the modal verb 'should' brings us into the reprimanding space created with this pattern. 'Should do something' is used for actions that are suggested for the future, while 'should have done something' is a structure used for past actions when the speaker reprimands the hearer for an action that was right to be done in the past but had not been performed, so with it the leader reprimands the employee and asks him to do it next time. These two situations illustrate a rather clear reprimand, when despite the function of advising, 'should' reprimands too, thus, the hearer knows how to behave in the future.

Similar in tone to reprimand is the form of directly asking the hearer to do something. The following examples illustrate this:

Dear colleague, I will ask you not to be late for classes, because they are already short enough. OK, you failed this time but next time try to finish by the deadline.

These two leaders recognise that their employees have failed in these particular situations but ask them to be more careful next time and do their job more conscientiously.

More welcoming language on the leaders' part is used in the following situations; we will first look at comforting:

Do not worry about it, it can happen, the most important thing is that you have participated in the competition so next time you participate, I am sure all effort you have made will be valued and you will succeed.

Do not discourage yourself, please be strong and understand the parents and their needs and please next time think twice before you do something.

These two leaders have chosen to be more lenient to their employees and to soothe them, not mentioning the failure but encouraging them to go on, to compose themselves and continue their work not bothering themselves with the actual results.

Not only is the whole message positive, but there are positive words too, like: 'please', 'strong', as well as the phrases 'don't worry', 'do not discourage yourself', etc.

Regarding reassuring, as it might be expected, this pattern has an unbelievably positive effect on the hearers since, amid the whole uncertainty, fear and frustration, the employees want to hear that the situation will end soon (the first example in continuation), or that it will be better next time (the second example). This assures them that, although their failure is noticed, it is not counted as their disadvantage, and that everybody tries and, as a result, either succeeds or fails. Thus, not being successful is part of the working process but, when this difficult situation improves, it will be easier for everyone, as the following examples show:

We have to confirm – the end of this situation is very close, hopefully, in September we will be back to school, so keep up the way you did it previously.

Don't worry, don't be angry, calm down, next class will be OK.

'Hopefully' and 'OK' are the positive words that blanket the whole expression and reassure the teachers that their effort is not wasted – it will yield better results next time.

When somebody fails to do something, the most professional and humane approach is to offer to help, and one of our leaders has chosen this technique:

As far as I am concerned, I have to inform you that we have a lot of written complaints from some students and their parents about the way you organise your classes so I think that in order to perform better we could offer you some technical assistance with some of our teachers that are more experienced with technology so that you could perform better.

This is the most indirect and polite way of saying that something is not done well, that the person needs to improve, thus showing care for the employee's feelings, but by offering help, the leader also shows concern for this teacher's professional growth and development. There is no insult here as, judging by the wording, the message is conveyed in the most subtle and tactful way. The whole expression is outright indirect, while the modal 'could' just adds to its politeness level.

This last example, in continuation, politely asks the teacher to do what is anyway expected from him, but the way it is structured makes no room for misinterpretation or offence on the part of the hearer:

Do you remember that we said we would need you to participate in the online survey until this day? I would appreciate it if you could be on time because otherwise, I would have to get back to you and that creates additional work for me so I would appreciate it if we could do our tasks on time and if we don't do, then to contact each other with concrete date and date the task can be done.

Again, a modal is used, plus the word 'appreciate' intensifies the polite, kind and well-mannered address by the leader, when the speaker is polite enough to maintain the good relationship with the employee but strict enough to ask the hearer to do his job, on time.

DISCUSSION

Our research had no intention to focus on the difference between the language used by male and female leaders, but since the majority of our interviewees (80 %) were female and we have read some findings in terms of the language used in the particular situations, it might be worth considering the gender difference in these pandemic circumstances, as studied in literature.

In our study, the male leaders' language (of those 20 %) was in no way different from the female leaders' expression (those 80 %), but we cannot guarantee that this result would have been the same if the male and female leaders had been equally represented in our research. Since the kind, polite, thoughtful and considerate approach have been labelled as characteristics of women, regardless of the position they have, and literature has particularly analysed them in these pandemic times, we would like to refer to examples of some powerful female leaders and their acts in these circumstances.

The broader explanation behind this lies in the several common characteristics in how the heads of Germany, Taiwan, New Zealand, Iceland, Finland, Norway, Denmark and Serbia dealt with the pandemic: they listened to scientific expertise; implemented widespread testing; gave easy access to quality medical treatment; relied on aggressive contact tracing; and imposed tough restrictions on social gatherings. When discussing effective pandemic leadership, it is proposed that those leaders who gave everyone a voice, through the power of their own voice, who listened carefully and who directed attention to relational understandings of the situation were the ones with the most successful outcomes. And, we also know that the leaders embodying these characteristics are overwhelmingly women – for whichever sociological, political or psychological, complicated reasons. The reasoning of an ethic of care is, inductive, contextual and psychological, rather than deductive or mathematical – and this is what is needed during unprecedented crises.

Our analysis shows that out of the two research propositions that grounded the research, the interview findings resulted in accepting both of the propositions that we have set as the basis for our research.

The answer to the first research proposition (RP₁), which states that during the COVID-19 pandemic, leaders have been mindful about their use of language, was accepted. The results have shown that leaders have been cautious in choosing the language when communicating with their employees in these pandemic circumstances. As this first research proposition is very much connected with the second one, the proof that the first research proposition is accepted is contained and seen in the next proposition.

That is, the second research proposition (RP₂), suggesting that in the pandemic circumstances, when interacting with their employees, leaders use more positive, encouraging than negative, reprimanding language was accepted. In other words, when interacting with their employees, leaders use more positive, more encouraging than negative, reprimanding language, seen in the following conclusions: out of ten (10) leaders – when apologising, seven (7) have chosen to give an open apology; when thanking, eight (8) interviewees have used positive words to express their gratification; when reacting to their employees' good performance, even nine (9) respondents used different positive, encouraging words; while when reacting to their followers' failure, six (6) leaders used indirect and empathic language of reassuring, comforting, offering to help and asking politely as opposed to four (4) who were reprimanding and asking directly. This shows that the leaders' use of positive language definitely prevails the neutral or less encouraging (but not explicitly negative) language. The results that support the acceptance of the second research proposition also go in favour of accepting the first research proposition since the leaders' use of more positive and encouraging language in the pandemic proves that they have been truly mindful about the language they have chosen to use.

CONCLUSION

This study's results support the two hypotheses set as a ground for our research. Namely, the results show that during the COVID-19 pandemic school leaders have indeed been mindful about their use of language, since they have properly reacted to the situations that needed recreation of their responses. In other words, they apologised when apologising was in question, thanked when thanking was needed, adequately reacted to their employees' good performance, and cautiously used their expressions when reacting to the teachers' failure.

The study answered the research questions that we envisaged to be investigated, but putting it in a broader context and looking at its implications more prospectively, several limitations can be highlighted.

Considering that this study is part of a larger project in which more leaders but from different sectors were interviewed and we here chose to present the situation only in the education sector, the first limitation is the fact that only ten leaders' interviews were analysed. That is, future research can include more leaders of education institutions. Another limitation can be the gender imbalance among the interviewees, with 8 females and 2 males. When expanded, this study may include an equal number of male and female leaders so that conclusions can be drawn regarding the leaders' gender language. A further limitation can be the non-inclusion of higher education institutions, so in the future, university leaders in North Macedonia can be interviewed for the purposes of this research. Finally, it can have comparative aspects if compared with the situation in another country, in order to illustrate how in this pandemic leaders' language is used elsewhere.

Compared to previous studies [12, 13, 15, 19], this research confirms that communication and language are very important in leadership context, since by using motivating and empathetic

language, leaders motivate and inspire their followers, give them psychological support, connect with them socially, instil trustworthiness, and help them identify with the organisation they work in. Leaders' positive words make the employees more positive and secure at work, and feel they belong to the workplace [5], as well as when employees see more relatedness in their leaders' language choices, they will be more motivated and energised in their work [20]. The definition of transformational leadership, when an individual (that is, the leader) engages with others and creates a connection that raises the level of motivation and morality at both levels [16] shows that in school context, what our study researches, transformational leadership positively influenced school performance, when measured by student achievement and quality of teacher instruction [35]. All this leads us to the conclusion that if authentic, motivating and empathetic language is used by the leader, not only to say the right words, but to mean them, the employees will be more connected to the top level, will feel safe, trust them and ultimately follow the leaders [4].

The practical implication of this study is to give the school leaders an insight into the role that language plays in the communication with their employees in a pandemic situation, thus help all leaders, not only of schools, to see the effects of positive language so that shape the way they communicate with their employees in the future. The results will also offer the leaders a chance to self-critically look at the language choices they make and reflect on their way of using it in their business context.

They can certainly learn from the answers given to all scenarios, which are all summed up in the fact that when apologising, thanking, reacting to an employee's good performance, and reacting to an employee's failure, the more positive words and phrases are used, the better. That is because employees need to feel closer to the leader, as one of them; in the case of apologising; to appreciate their hard work, in the case of thanking; to be praised, after performing well; and comforted, after failing in something.

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APPENDIX

COVID-19 Post-Lockdown Leader – Employee Interaction

Leaders' interview structure:

1. Male/female
2. Age
3. Education level
4. Sector
5. Length of their leadership position

You will be asked to talk about situations that have happened after the emergence of the current coronavirus pandemic. Please use direct speech, first person singular form, and imagine the interviewer is your employee – address her.

6. Think of a recent problem situation that you had to present to your employees and recreate it (give the actual words you used when presenting the problem).
7. Think of a problem situation your employee presented to you and recreate your response to it (give the actual words you used when reacting to your employee's problem).

8. Think of a situation in which you have recently apologised to an employee and recreate it by using your actual words.
9. Think of a situation in which you have recently thanked a colleague and recreate it by using your actual words.
10. Think of a situation when your employee performed well and recreate your reaction.
11. Think of a situation when your employee failed to do something and recreate your reaction.

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THE EVOLUTION OF KAUFLAND COMMUNICATION STRATEGY IN ROMANIA DURING THE PANDEMIC

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ABSTRACT

Retailers strove to find a way to better communicate with consumers between 2020 and 2021. The pandemic raised some walls against their struggles because of people's fear, distrust, and new demands. In the first stage of this unusual lifestyle, buyers looked for new manners of living and even surviving. Then, they tried to adapt to unexpected opportunities to alleviate their daily existence. This study aims to analyse the evolution of Kaufland communication in terms of strategy between March 16, 2020, and December 2021. We wanted to find out how a specific retailer organized its communication in Romania during the pandemic, because taking into consideration that Kaufland is quite successful in the local market, meets most clients' demands, whose opinion about their products is usually positive. Concerning research methods, we conducted a multimodal discourse analysis focused on online ads delivered on Instagram, investigating them at the extralinguistic and linguistic levels. The study aimed to compare the lockdown and the post-lockdown Instagram campaigns to reveal such issues: global and local aspects, the balance between the rational and emotional approach of the retailer, tone of voice, and even main topics. Our purpose consisted in comparing the first pandemic year with the second one when consumers started learning how to deal with this new challenge in their life. The research outcomes confirmed that Kaufland re-considered its position in the Romanian virtual community, helping people to better cope with unexpected hardships in their lives by using corporate social responsibility communication strategies and an emotional approach in most advertising campaigns.

KEYWORDS

retailers, pandemic, consumer behaviour, advertising, communication

CLASSIFICATION

JEL: M37

INTRODUCTION

This research aims to provide information regarding the communication strategies of one of the most popular retailers in Romania during the pandemic when consumers' behaviour changed for many reasons. At that moment, public institutions, the Government, and the Ministry of Health in Romania first reacted rather hectically while common people were most vulnerable and needed any help. Analysing Kaufland's communication strategies and tactics, this article underlined the way the economic role of this retailer turned into a strong social one due to their initiatives to meet customers' needs. When discussing the context of this research, many factors entirely motivate such topics as the global situation regarding crisis management, the sanitary restrictions, the market development, and the psychological obstacles.

The worldwide reaction to the pandemic was quite homogeneous because it was an answer to a high level of fear and insecurity. Mass media and social media kept informing people worldwide, tracking the number of patients and the deceased. The government's decisions were similar: closing city gates, then the borders, isolating citizens, and elaborating sanitary protocols. Hence, the consequences of this crisis occurred almost the same everywhere, as Naeem stated: 'The outbreak of Covid-19 has brought changes to social, professional and psychological routines, such as financial hardship, self-isolation and stress, loss of jobs and physical and psychological health issues.' [1; p.282] By all means, the collapse of the sanitary system triggered the abovementioned consequences upon society; even if the crisis was global, the fear was individual. Ordinary citizens gradually became so afraid of the virus that they had no hope for their future since they were surrounded by confusion and fears. Schleper et al. [2] stated that many waves of this virus triggered similar reactions in the world: 'The global COVID-19 pandemic has caused severe economic shocks in many countries. Containment and mitigation measures taken by many governments around the world aiming to avoid the breakdown of health systems have led to regional and national lockdowns in different waves' [2; p.193].

The 'social-distancing' demanded from population discipline, calm and rational behaviour. The most difficult control was buyers' behaviour in supermarkets, buses, stores, markets, or public spaces. The harder they obeyed the restrictions, the more they put their lives in danger. This was the moment when the concept of a 'viable supply chain' was embraced. The term was launched by Ivanov [3] and described to which extent positive changes with resilience and sustainability can ease the effects of shocks in society.

In this context, retailers reacted differently within this already prolonged interval regarding communication strategy, online shopping, buyers' health protection, social responsibilities involvement, and even the efficient reorganization of the in-store supermarket space. There were markets where this process was quite smooth, for example, in Greece, whereas, in other countries, such as Romania, the process encountered some obstacles. Accordingly, Anastasiadou et al. asserted: 'At the same time Greek supermarkets seemed not to have any problems with wholesales and handled the situation better' [4, p.901]. In other countries, such as Sweden, consumers perceived this new organizational attempt of retailers, yet not always for good, which justified their tendency to stockpile without any apparent reason. Therefore, buyers became sensitive to prices, quantity, product display, and ingredients necessary for in-home cooking. According to Mead et al. [5], consumers' decision to acquire goods has been influenced by numerous factors simply because they fear for their own life and safety.

Consequently, the sanitary crisis led to deep changes in consumers' behaviour since they connected shopping with many references to their lifestyle, including those on social, private, and even professional levels. This situation was observed worldwide, and consumers experienced real challenges in adapting to the new circumstances offered by supermarkets: 'Changes in social behaviour are not limited to personal behaviour, but it seems that various

areas of life are affected, including consumer behaviour, and this time, across the world' [2; p.894]. Tormala [6] stated that psychological certainty, this feeling of being safe, has strongly influenced behaviours and attitudes.

This article's goal consists of presenting how these two ideas of resilience and sustainability were born in the supermarkets' politics, using the case of the Kaufland retail chain. Until then, Romania was not so well-known for their people's involvement in supporting causes, activism, and even corporate social responsibility (CSR) campaigns. Before the pandemic, brands chose to represent their interests in various areas, and their communication generated integrated communication campaigns. Sustainable and responsible behaviour of consumers does not represent a regular attitude compared to other countries. Besides, long-term strategies were mostly dedicated to digitalizing buying, ordering products, and paying online. Another strong reason for researching crisis communication of a retailer relies on the fact that many scholars analysed particular contexts and markets. Still, they usually concentrated on well-developed countries such as the United Kingdom, Sweden, Netherland, Italy, and France. Unlike these, Romania has always been perceived as a traditional country with an older population, usually living in the countryside or small cities, presenting a huge gap between Millennials, Gen X, and Baby Boomers. Most articles and books published during the 2020 and 2022 focused on educational adaptation to the online system of teaching, teleworking, information technology progress [7], psychological impact on consumers [8], and major shifts in sustainable customer behaviour [9]. Analysing how a supermarket has changed its communication strategies, initially supported by traditional advertising and not by sophisticated social media, stands now a step forward to outline its social role in society. Furthermore, this study brings to light the moment of launching a new era of retailing in Romania because Kaufland took the opportunity to implement revolutionary technological tools immediately adopted by competitors.

The research questions of this article are meant to clarify its purposes and highlight its relevance in the field of communication studies and business. Therefore, in the present article's main body, we aim to answer the following questions: (i) To what extent did Kaufland Romania adapt the communication to the pandemic context using Instagram as the main platform? (ii) What are the main linguistic features of Kaufland communication on the Instagram page firstly between March 16 and December 2020, and last, but not least, throughout 2021? (iii) Which are the relevant topics embraced by Kaufland messages on an Instagram platform during the same interval? (iv) Which are the most obvious features of the extralinguistic level regarding Kaufland communication, by unveiling cultural landmarks and visual representations of the brand?

As for the main objectives of this article, we should consider the context of conducting this qualitative research, the abovementioned questions, and the relevance of approaching this topic for the Romanian market. In this regard, this article's first objective is to investigate to which extent Kaufland's image considerably shifted its business role into social help by understanding consumers' needs during the pandemic. The next purpose of this research focuses on analysing how Kaufland communication adapted to the pandemic context, especially on Instagram, a social media platform intensively embraced by brands and influencers in Romania. Last, but not least, this research aims to unfold the way Kaufland communicates on a linguistic level compared with the extralinguistic one, given that Instagram is a platform explicitly conveying both verbal and visual information.

Moreover, this study responds to the necessity of examining the retailers' reaction to the Romanian market with some specific characteristics: a very high level of consumption, a low level of digital education among seniors, and a rejection of E-commerce. The present study's main goal is to understand the Kaufland adaptation to the pandemic condition and its switch

from a simple economic factor to a social one by volunteering for people, looking for innovative solutions, and empowering other brands to do the same thing. The specific contribution to this field of research, based on the pandemic strategies of doing business, arises from comparing those two levels of communication by applying multimodal discourse analysis. Instagram is a virtual platform, most likely by Romanians, after Facebook. According to Mediafactbook 2021 [11], Instagram users represent 61 % of the online population in Romania, which justifies both the brands and the consumers orientation towards this one. Hence, researching intense interactivity on Instagram during the pandemic provides us with a better comprehension of the new Kaufland communication strategies.

Despite the unpredictable situation, retailers have strongly developed on three crucial levels: the technological and organizational one, the strategical one in terms of communication, and the adaptation to consumers' needs to whom they pay special attention. Firstly, to be more specific, the way Kaufland organized its services in the last 2 years proved high standards of employees, and the supermarket fought against chaos or panic on the shelves or between their products. The supermarket prioritized its business according to each stage of the health crisis, thus displaying the goods not monthly, as usual, but weekly. They ensured a better flow of customers along the aisles, always signalling the legal distances. While discussing the fact that employees worked all this time efficiently, Valtorta et al. also investigated the psychological consequences of such efforts, which generated, in their opinion, burnout, and dehumanization of employees at the supermarket [12].

Nevertheless, this approach has calmly inspired buyers and employees to take the attitude, reconfiguring the entire context of in-store shopping. Technology convinced traditional Romanians to transition from direct in-store shopping to online purchases, building trust step by step to protect their lives. Romanians still appreciated mostly peasants' local products regarding vegetables, fruits, dairy, or meat and suddenly had to accept only supermarkets offer as a measure of safety. Thus, Kaufland created its new brand significantly, named *I want from Romania*, described on the supermarket site page as 'a manifesto of our tradition and culture. This is Romania that we have known ever since we were born, from our grandparents' stories, from the fields full of love, from our heroes' courage, from your eyes.' Kaufland has used technology not only to provide buyers with another way to fill their shopping baskets but also to keep them connected to their roots and local gastronomy to make them feel comfortable at home. The highest risk experienced by the worldwide population during the pandemic was the industrialization of life due to remote work, isolation, de-socialization, and delivery services (usually scheduled). This was another form of globalization, but Kaufland invited Romanians to return to their origins, perceived as memories and life beyond the Covid-19 virus.

Secondly, the Kaufland communication strategy has been continuously updated from one phase to another in one of the pandemic contexts. While focusing on the frame of this study, there is no doubt that this supermarket has communicated differently in the following timespans. They look as follows: in the lockdown, in the first 2 months between March and May 2020; during relative restrictions until January 2021 when the vaccination campaign started, and, finally, in 2021, when people got used to a pandemic routine of virus waves. During the lockdown, Kaufland experienced the highest level of its crisis reflected in communication, as it happened to other retailers worldwide. Communication tactics were meant to fight against panic buying behaviour that had two consequences: on the one hand, this destabilized the balance of daily supermarket routine and, on the other, triggered huge sales because of people stockpiling supplies [13]. When moving to the next strategy stage, Kaufland invested in social responsibility campaigns, being perceived as a reliable partner, not only as a supplier. This time, their advertising and press releases highlighted the retailer's concerns regarding buyers' apprehensions and lifestyles. In a recent article, Feyaerts and Heyvaert entitled this business

approach of the supermarket *humanized business communication*, outlining the main values associated with the brand: empathy, solidarity, sympathy, support, trustworthiness, and, last, but not least, fully engaged [14]. In this stage, the communication strategy relied on a detailed knowledge of consumer behaviours, whose fears, needs, and emotions were released to high pressure and had to be effectively controlled. After January 2021, once people's hopes suddenly increased due to the distribution of the anti-COVID-19 vaccines, social media stands for the third pillar that ensures retailers a coherence of their voice regardless of the virus waves. This level of interaction is quite visible in Romania on Instagram because Kaufland shifts to consumer-oriented interaction from product- and brand-oriented messages.

Regarding consumers' adaptation to these new behaviours of safe buying and online satisfaction, retailers constantly investigated their reactions and interactions on social media. Their behaviour was chaotic at the pandemic's beginning, considering that the unpredictable future leads them to fear, defence, and individualistic feelings. Supermarkets had to deal with this general confusion and tendency to spend more and empty the shelves as buyers would have prepared for a biological 3rd World War. Before the pandemic, compulsive buying was associated with a hedonist attitude, with consumerism since people satisfy their psychological or social pleasures. According to Naeem [1, 15], impulsive buying has become one of the best ways to characterize the COVID-19 pandemic in consumer behaviour. Hence, from commodities, such as groceries, and hygiene products, buyers' attention quickly focused on fashion (new categories of in-house clothing), furniture, construction or renovation materials, and quick food delivery. The extent to which Kaufland runs its communication mostly on Instagram and Facebook in Romania certainly displays adapting to customers' tendencies and trends and discovering their interests and needs for interaction. According to Jefferson and Tanton, digital content marketing is meant to activate strong emotional connections, substitute face-to-face socialization, and support consumers with every click. In this case, it is not about simple sales, marketing offers, or tactics, but about building trust and empowering brand values lately so much humanized [16].

This study dedicated to the communication strategies of a supermarket, which caters to the Romanian consumers' needs, is organized as follows. The next section, after the introduction, explains the context of e-commerce evolution in Romania before and after the pandemic, which is quite relevant to understanding consumers' behaviour online. The literature review is paid considerable attention in the next 3 sections. The third section discusses consumer behaviour before and during the pandemic globally. The next one moves to the issue we are interested in regarding the retailers' involvement in supporting consumers during the pandemic. This part emphasizes the role of the *signalling theory* elaborated by Spence [10]. The last stage of the scientific literature refers to the social media role in communication campaigns, seen not only as means of promoting brands but also as a real chance to integrate people into virtual communities and, this way, to get over self-isolation and pandemic fears. In the rest of the article, we present the methodology and the results displayed on both the linguistic and the extralinguistic levels. In the end, the study reveals the discussions and the research conclusions, all consisting of the main stages of Kaufland communication strategies, their limitations, and the possible development of the article in the future.

THE IMPACT OF COVID-19 ON E-COMMERCE IN ROMANIA

Before March 2020, electronic commerce was frequently associated in Romania with special events such as Black Friday, food delivery (at work, usually not from the restaurant), and digitalized generation, mostly Millennials and Z Generation. Besides, E-commerce was strongly meant to facilitate some activities, such as travel, bills payment in some cases (not always user-friendly), business investments, and entrepreneurship. For some loyal customers,

e-shopping had started earlier, once they looked for global brands to purchase their goods from international E-commerce giants such as e-Bay, Amazon, and Vivre. This generation was already used to Internet banking before mobile applications were considered user-friendly since they operated with complicated devices at that time, available online on computers. Once selling and buying platforms appeared (OLX.ro, Publi24.ro), customers started paying more attention to electronics from eMag, the oldest successful E-commerce platform in Romania, and other brands developing such opportunities. As Rohm and Swaminathan state, online shopping comes up with a huge advantage in terms of flexibility, time management, discounts, and product diversity [17]. In comparison, in-store buying creates that synergy between buyers and products and reveals the sensory dimension of every brand.

During the pandemic, E-commerce became more than a necessity because many people used it as a single solution to buy groceries, especially while they had to spend time either in quarantine or isolation. As a result, their confidence in online shopping has significantly grown, even if the context was far from being a happy one. So, the main concern in E-commerce, which was the security system during the purchase, has been overcome. Since then, this category of sceptic buyers has strongly come to consider E-commerce a viable opportunity to solve daily needs. On their part, banks and online financial platforms like Revolut went into a process of better organization, further tightening security checks by updating SmartToken.

Following Kaufland in the previous year, 2021, there is no doubt that the supermarket team, either we refer to the marketing one or the management, has considerably evolved since they localized the communication so much, they created a local brand and were the first to react in front of the deep changes caused by the health crisis.

CONSUMER BEHAVIOUR BEFORE AND DURING THE PANDEMIC

What deserves further consideration for this research consists of a brief comparison between consumers' behaviour before and during the pandemic. A few factors marked the main differences: the consumption level, the attitude toward E-commerce, and the loyalty toward brands. Before 2020, humanity strove to fulfil wishes and dreams by any means, and consumerism was a form of freedom or even an aspiration. Nothing could hinder them from consumption, and brands fought for people's loyalty by looking for strategies adapted to their dreams and self-projection. Brands focused so much on consumers' personalities and beliefs, on campaign insight, and less on CSR. The shopping experiences fulfilled consumption dreams and brought about satisfaction. According to Ritzer, consumption at such a large scale implies a spectacular view of reality that removes consumers from day-to-day common life: 'Through simulation, cathedrals of consumption can mimic, and render even more spectacular, natural environments, fictional settings and historical monuments' [18; p.441]. Mall and shopping centres were metaphorically depicted as 'cathedrals of consumption, considering their philosophy, architecture, and, last but not least, the time perception. Consumption was not a necessity but a pleasure.

During the pandemic, consumers became vulnerable because they risked contamination or even death while being provided with the main supplies, sanitary purchases, or other mandatory acquisitions for common needs. According to Brimmer et al. [19], the decision factors for vulnerability are the following: medical conditions, social stability, and economic or financial status, the latter helping people cope with their needs through long-term survival strategies. Locked in their houses, they returned to old habits, focused on cooking, using more online delivery, or learned how to get products by utilizing diverse applications. Before the pandemic, customers concentrated on brands' credibility and image built by efficient campaigns, while since January 2021, people have given up subjective perceptions of the mandatory products.

The gap between delivering promised goods and concerns about Covid infestation during shopping is quite obvious, as Bove stated: 'However, whereas in pre-COVID-19, consumers' were concerns about the seller's credibility to deliver upon the promise, now the informational gap is around the physical risk of asymptomatic transmission from both front-line staff and other customers who will share the service' [20; p.1186]. Last but not least, Anastasiadou et al. [2] underlined a strong reality that changed consumers' behaviour during the first stages of the pandemic: people completely disregarded Chinese products, as decreasing the level of credibility and quick association with SARS-COV-2.

RETAILERS' INVOLVEMENT IN SUPPORTING CONSUMERS DURING THE PANDEMIC

Considering that vulnerable people need more help than other social categories for many reasons, such as health problems, psychological barriers, and even social support, the pandemic created several opportunities to involve brands and supermarkets in social responsibility activities.

This time, their efficiency was a necessity and a solution to the entire context. As Breitbarth et al. state: "Since the food supply is essential, solutions must be developed to circumvent supermarkets as a potential source of infection for vulnerable populations. In the future, other pandemics or epidemics may reveal different vulnerable population groups" [21; p.228]. The brands whose role was crucial during the lockdown and relaxation measures belong to such categories of products and services: supermarkets, banks, delivery food, communication, Internet providers, media, and online platforms. Almost all these categories, apart from giants' providers of Internet and online resources, were faced with two problems: firstly, employees' safety during their work and, secondly, the emergence of new consumers' needs under these circumstances. Consequently, the concept of resilience found its place in this context, strongly associated with the ability to adapt, respond, and come up with innovative solutions to the ongoing crisis, according to well-known scholars [22].

As for supermarkets, they did not stop their activity because they moved to online applications, thus connecting people more attractively and safely. Strategies launched by supermarkets to overcome consumers' fears during the pandemic were called *signalling theory* by Spence in 1974 [10]. The word, signal' refers to stimuli meant to indicate the values and hidden qualities of the respective brand that diminish the consumers' uncertainty and specify the extent to which providers communicate most positively. According to Donath, this concept' is to alter the receiver's beliefs or behaviours in ways that benefit the signaller' [23]. After the Covid virus was considered one of the most dangerous enemies in this world, retailers focused so much on positive messages, safety headlines of campaigns, encouraging slogans, and urged patience and compliance with government restriction rules. At this moment, retailers were perceived as social actors whose main mission was to represent customers' protection. Carrefour Romania created a buying application entitled Bringo, whose role was to satisfy clients' needs under safe circumstances. Bringo's message recreates the off-store atmosphere online by telling such words: 'You buy like you're in the store' Auchan launched a platform of delivery whose message is very persuasive and turns the store from a simple supermarket into a real help, efficient buyer considering this idea of handing over the baton: 'We do your shopping. Auchan called himself the professional buyer, and Lola Market became a virtual space for successfully online shopping.

At the end of this brief analysis regarding the supermarket's role, while supporting consumers during the pandemic, we reach Fairlie and Fossen's statement: 'Overall, the patterns of sales losses and growth indicate a shift from in-store purchases to online purchases, and from restaurants to grocery stores' [24; p.5].

SOCIAL MEDIA ROLE IN COMMUNICATION CAMPAIGNS

The Internet enables people to gain power through technology, which has completely changed the world, knowledge being not a privilege anymore, but hunting among information or disinformation. In the beginning, when clicking a website, users were mere witnesses to a virtual catalogue that was displayed and updated as quickly as possible. Yet, their attitude was passive, not intrusive or risky for brands and companies. Although, Internet policies were not entirely applied and ethically controlled as they were supposed to be. In other words, the Internet was perceived as a collective voice not that much focused on specific desires and needs but relied on consumers' segmentation. Users found their voice once social media turn them from passive witnesses into active players, always able to generate intriguing, challenging, or, why not, creative content. Social media's emergence in people's life in the 21st century has entirely changed communication styles in many fields, such as business, advertising, marketing, entrepreneurship, psychology, and even private relationships [25].

For some scholars such as Shang et al. [26], online communication, including blogging, vlogging, and different platforms of interactive messages (Facebook, Instagram, Twitter, TikTok, Reddit, Whatsapp, Snapchat, etc.) stands for innovative word-of-mouth, or, in our view, as a door-to-door communication, the same way as marketing. For a few decades already, Internet has become one of the most important factors of globalization since the cyberworld has no limits and it can be incredibly well organized in communities for simple, informal interactions or informal/professional relationships. This communication overcomes the real geographical space and brings people closer, given their interests. Thus, according to Rheingold, who anticipated this online (r)evolution, the Internet might be defined as a social aggregation of people carrying out public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace [27].

The main characteristics of social media consist of dialogical communication, volatility, interaction, building new connections, bonding communities, as we discovered, and processing the information quite quickly. According to Grewal and Levy [28], social media has been steadily adapting businesses to people's needs and knowledge, absorbing their curiosities and learning how to be successful and efficient. Technology, in this case, social platforms, has started a strong competition providing consumers with diverse and performant tools available both on apps, android, and desktops. However, as mentioned earlier, in terms of technology, the progress was the solution to this incredible change of communication direction: from simply providing one-sided information to letting consumers engage and interact with the content [29].

Furthermore, social media could be considered at least a means of integrating marketing communication once consumers participate in virtual events, competitions, generating-content activities, and brand capital evaluations. Leismeyer et al. [30] highlighted that virtual or cyberspace could be organized in non-commercial and commercial communities, the latter being often associated with brand community since this is rooted in strong values mirroring consumers' personalities. Every brand relies on its consumers' loyalty, and social media platforms have become the appropriate space to be influenced by an opinion leader who deserves the other members' trust. In social media, emotional reactions cannot always be prevented also never entirely controlled. However, a brand should benefit from its community dynamics to gain customers' attention. As a result, virtual communities dedicated to a brand might be a reason of concern for this because of the possible negative comments against the brand itself, which can destabilize the very relationship among consumers as well [31]. Yet, consumers' involvement in brand communities might be regarded as brand loyalty since users constantly express their views towards products, services, and any message delivered on social media, thus triggering an emotional or cognitive attitude.

In addition, social media advertising has emerged as a new form of advertising meant to get more traffic and better mark out products' qualities [32]. As did pop-ups, banners, and other online ads, without annoying users anymore, this kind of advertising takes consumers' attention by storm, yields their involvement, and produces qualitative content. Considering the qualities, this new form of brand promotion accounts for a new name: *native advertising* [33]. Lately, native advertisements have conquered the market, mostly responsible for effective campaigns because they stir users' involvement, attention, and emotional commitment towards the brands.

In the context of empowering social media in advertising, it is equally important in this study to understand the background of Romanian Internet users in general, particularly during the pandemic. Bărgăoanu and Cheregi rigorously demonstrated that the technology emerges as a soft power instrument, mandatory for developing the economy even in the post-pandemic world, just as in any country worldwide. Society's evolution in an era of disruptive changes will be decided by technology, which will most likely become a real advantage for the Romanian future [34]. However, Romania is framed as a tech-nation, as the abovementioned scholars pointed out, being a destination for I.T. investors, having one of the best Broadband Internet speeds, numerous young people choosing this career (Millennials, Gen Z), and, finally, launching projects supported by the Government and private sectors as well. At the international level, the criterium of digital abilities situated Romania in the 50th place in the IMD World Digital Competitiveness Ranking, 2021. Romania decreased from 2019 to 2021, from 46 to 50, which lends more significance to the context of this global study in terms of health crisis and consumers' behaviour.

In other words, users were more oriented to daily and basic needs and not to improve their abilities or aspire to the next levels of the following features characterizing digital competitiveness: knowledge, technology, and future readiness.

In Romania, scholars investigated the impact of social media on life improvement during the pandemic, underlining the functional and emotional level of day-to-day existence. Conducting research focused on the Instagram role in people's routines in 2020, Balaban and Spoaller revealed paradoxical outcomes. On the one hand, this social platform did not positively affect self-esteem and life satisfaction but considerably decreased loneliness [35]. According to our researchers, sharing their life on Instagram often entrusts this platform with a high level of expressing emotions: 'Posting pictures and stories on Instagram made our respondents feel like a part of a community and thus made them feel less lonely' [35, p.14].

Consequently, retailers, and in our study, Kaufland, have started communicating steadily to entertain consumers' community and diversify the respective strategy, as the current research will demonstrate further.

METHODOLOGY

The main purpose of the present study was to investigate the Kaufland communication strategies applied in Romania in the online environment, respectively, on the Instagram account between March 16 and December 2021. Hence, I conducted a multimodal discourse analysis to investigate Kaufland's communication in such circumstances. According to Teun A. Van Dijk, one of the most prominent discourse analysis scholars, 'the notion of discourse is essentially fuzzy' [36, p.1]. Language is only the first level of communication, whereas a careful perspective on any message reveals many layers of conveying some information. Therefore, analysing how Kaufland communicated on Instagram involves a double approach: firstly, a visual one and, secondly, a linguistic one. In this context, Berger's statement regarding the evolution of this concept enriches the range of theories that debates discourse analysis: 'When discourse analysts started analysing complex texts such as Facebook, they had to deal

with words, images, photographs, and videos. The term they use for this kind of analysis is multimodal discourse analysis – dealing with different modes of communication’ [37; p.598].

The main research question of this article refers to the extent to which the supermarket adapted its communication to the pandemic using the Instagram social media platform. Their multimodal discourse was the best qualitative approach to pay enough attention to the brand capital, made up of advertisements, comments, and posts related to Kaufland products. Therefore, this research followed and adapted Halliday’s theory [38] that divided the discourse analysis into Extralinguistic and Linguistic levels. Regarding the Extralinguistic level, the main items taken into consideration are the culture and situation-related context. In this case, the situation is almost the same: the pandemic crisis. The linguistic level is represented by content levels (semantics and lexicogrammar, which can be translated into the main topics of the slogans or headlines) and the expression levels (phonology, graphology, and gestures). This theory can be easily adapted to Kaufland communication on Instagram by framing the multimodal discourse according to the following items presented in Table 1.

Table 1. Multimodal levels of discourse analysis.

Extralinguistic level	Linguistic level
1. The Romanian cultural landmarks	1. The content levels (the topic of Kaufland communication)
2. The landmarks of diverse situations during Kaufland’s campaigns on Instagram	2. The tone of voice
3. The Design and chromatics of Instagram-posts	3. The lexical field of brand messages

Consequently, we analysed the Romanian Instagram account belonging to Kaufland Romania based on visual aspects often representing the extralinguistic level of communication, on the one hand, and the linguistic characteristics such as vocabulary, syntax, repetitive words, and tone of voice, on the other hand.

RESULTS

THE LINGUISTIC LEVEL

The first dimension of the multimodal discourse analysis under discussion refers to the linguistic level provided by the communication on Instagram firstly, between March 16 and December 2020, and last, but not least, throughout 2021. The comparison is relevant for a better understanding of Kaufland’s strategic communication in terms of dynamics and adaptation to the pandemic context. The topic of all Instagram posts, especially in the first 3 months (published every other day if not days after the lockdown), focused on several directions: gratitude, implication, help, safety, celebration, prevention, nutrition, and gastronomy. When the lockdown started in Romania, the message was very strong and clear, highlighting responsibility and solidarity using such sentences and campaign slogans: *Responsibility makes the difference*. During the Easter holiday, the topic was changed from gratitude and implication to celebration and happiness despite all the restrictions caused by the lockdown. As for the tone of voice, the Insta-analysis displayed three categories: the serious and responsible one in most cases, the friendly and joyful one during Easter celebration or spring beginnings, and the relaxed one while advising consumers to adapt their new style of life to the pandemic. Ultimately the lexical level fulfilled this linguistic approach of multimodal discourse analysis. The specific outcomes emerge from the hashtags used by Kaufland during the campaigns, on the one hand, and the rich Instagram messages posted at that time, on the other hand. Among the most relevant hashtags revealed by the research, the following seem to be outstanding:

#responsibility, #help, #together, #socheap, #Kaufland, #whateverwearedoingwelltoday, #it'sdoingourselvesgoodtomorrow, #pizza, #dinner, #KClassic, #pancakes, #dessert, #cranberries. Figure 1 synthesizes the lexical field analyzed by relying on frequency criterium. This word cloud frames the CSR activity developed by the retailer during the first pandemic week as the entire nation was overwhelmed by fear and uncertainty.



Figure 1. The lexical map of Kaufland's Instagram posts during the lockdown.

As expected, the main interest of messages was oriented towards responsibility, employees' efforts, staying safe, and observing protection measures to prevent infections. Easter posts offer not only a breath of fresh air but also a consolation. The message was full of hopes but adapted to the entire context: *Spend the Easter day with traditional food. Call your nearest and dearest and enjoy the time spent together from far away. We stay home, but tomorrow all the Romania will be ours.*

While looking forward to investigating the post-lockdown communication delivered by Kaufland on Instagram, we observed that the retailer daily posted ads and messages, thus enhancing the brand's visibility. After May 16, 2020, the extralinguistic and linguistic discourses completely changed the approach. After giving up most restrictions, posts and comments became more personal and focused mainly on another dimension of health, i.e., nutrition and rational combination of aliments and ingredients. The brand's messages used second person singular verbs when addressing consumers (*By the way do you prefer it with milk or yogurt?; Have you ever tried a vegetarian burger? or How do you paint your summer days?*). The linguistic level seems quite representative, given that after the lockdown, the entire society strove to recover the time and the *guilty pleasures* of life. Most Insta-posts (74,61 %) developed topics on the beauty of life and optimism. The other themes are family, health, gaming, childhood, and the future. The tone of voice covers a range of diverse references, most of them preoccupied with increasing the level of optimism and happiness. What is predominant with 38,70 % is the positive tone of voice followed by a relaxed and friendly attitude with 22,58 %. The other 38,71 % is represented by a range of tones of voice such as nostalgic, challenging, smart, persuasive, and playful.

To sum up, after the lockdown in 2020 and throughout 2021, the tone of voice of each social media campaign was quite appealing, the messages getting close to the consumers' hearts. The lexical field emphasized the aspiration to return to the familiar joy of life before the pandemic context, to return to the life consumers used to have. Thus, the first message posted on May 16 reveals the well-being and the need to convey happiness by saying: *Change the world. Enjoy things day by day.* Following the same analysis pattern, the lexical field relies on two directions: the diversity of hashtags, on the one hand, and the messages, on the other. In terms of hashtags,

Instagram posts came to be well-known through their diversity, either from an emotional viewpoint or from a functional perspective, describing mostly the campaigns' topic. Certainly, each Insta-picture was simultaneously accompanied by many hashtags. Here are some associations of messages delivered between June 2020 and 2021 (Table 2).

Even if the Kaufland Instagram hashtags appeal to the Romanian market, they use English to synthesize messages. During a week, each post has at least 3 or even 4 hashtags describing the variety of communication. Over 20 hashtags observed food quality (#delicious, #mozzarella, #cheese, #spinach, #waffels, #strawberry, #goudacheese, #perfectsandwich, etc.), and 10 of them underlined moment of consumption (#breakfast, #dinner, #Sunday, #breakfastideas, #morning). In contrast, the rest paid attention to Kaufland services (#KClassic, #Socheap, # So simple).

Considering that after May 2020, Kaufland daily posted at least one social media message on Instagram, it is obvious that their communication strategy was emotional, using their products to improve consumers' attitudes towards life. Messages ignore any pandemic context, focusing on consumers feeling extremely sensitive, vulnerable, and lonely. Somehow, the linguistic level marked out a new context of daily existence characterized by creativity, self-esteem, joy, and high intrinsic motivation; at least, this is what they meant. Hashtags are relevant landmarks of the lexical field, as they also happened in the lockdown stage.

In 2021, Instagram topics were quite diverse, presenting offers, recipes, rational native advertising, but also design of meals, lunches, organization of specific events, such as celebrations, anniversaries (Christmas, Easter, June 1), and even festivals (Untold). The retailer invests so much in creativity and emotional involvement. Recently, Kaufland has supported sustainability in some campaigns, focusing on recycling. In this context, the tone of voice remains the same, familiar and very friendly. As for the lexical field, in 2021, such semantic fields as aesthetic, entertainment, creativity, and beauty were the main aspects highlighted by hashtags and posts.

Table 2. Hashtags vs. Instagram topics.

Date	Topics	Hashtags
4. 08.2020	A plateful of bruschetta	#relax, #summermood, #kauflandvibes
6.08.2020	Royal Nuts presented in their package	#healthyfood, #kauflandvibes, # goodprice, #Kclassic
2.09.2020	Canned herring	#kauflandromania, #oferta, #fish, #salatacuhering, #foodphotography, #tasty, #foodlover, #fishlovers, #saladlover, #rețete, #goodmood, #salatenextlevel, #raisethesalatbar.
24.10.2020	Kaufland anniversary campaign	#15aniDeKaufland, #FacemdinPovesteRealitate
18.11.2020	A reel presenting Christmas celebration by dancing	#poftădeviață, #poftădeviațădelicioasă, #sărăbătoridepoveste, #poftădedelicatese, #poftădepromoții, #spiritulsărbătorilor.
12.01.2021	A pot with potatoes cooked after traditional recipe	#kaufland, #romanianfood, #gustulcopilăriei, #delicios, #comfortfood, #foodie
4.03.2021	Breakfast with tarts	#Kaufland, #desertlovers, #thesweetlife, #sweettreat, #freshfood, #bestdayever, #breakfastideas, #relaxtime, #feelingmyself, #bestfoodfeed, #moodoftheday.

THE EXTRALINGUISTIC LEVEL

The second dimension of our research method refers to the extralinguistic level, which is less generous regarding information and details. Regarding Romanian cultural landmarks or local identity, the German retailer—initially approached the sanitary crisis globally, at least in lockdown. Kaufland wove the local visual symbols with the global ones. For instance, in the first two weeks of lockdown, the red colour as a background of posts reminded us of Red Cross advertisements. Ads were simple, explaining the new sanitary prevention advice meant to re-organize people's life. Around the Easter celebration, the local identity drew consumers' attention by posting visual representations of Romanian traditions: the painted eggs, Easter sweet bread, and the new perspective of Easter family lunch. Besides the partnership with the Royal Foundation, Margaret of Romania stands for another sign of national history. At the end of lockdown, the retailer prepared the target for normality, inviting them to enjoy other activities such as watching a movie at home while ordering or cooking a pizza from Kaufland. As for the landmarks that framed or outlined diverse situations of the crisis, Kaufland's Instagram posts unveiled the entire evolution of the pandemic crisis.

Consequently, ads set forth the stockpiling and urged to recover people's trust and stop this excessive buying attitude. Then, Kaufland emphasized its pioneering stage when it decided to deliver for free and activated volunteers to help seniors. Posts insisted so much on new pandemic rules, communicating a guide of staying healthy and safe. Then, the most frequent posts tackled the pandemic lifestyle, looking for solutions to ease the transition from a dynamic life to a static one.

Right after the lockdown, we discovered that Romanian cultural landmarks were completely overlooked in some contexts. In 4 campaigns, the Romanian issues were absent. In the other 4, the landmarks remind us of the international gastronomy, such as the German, the Italian, the Portuguese, and the French. Regarding the national references, Kaufland bears the sign of localized campaigns by using Romanian artist's names (Smiley), athletes (Cristina Neagu), traditional food (recipes), popular graphic design on plates, traditional Romanian dishes (chopping boards, the wooden pestle and mortar, wooden spoons, rolling pins, and clay pie dishes) and ingredients (berries, coriander, garlic, parsley, and dill). The situations when Kaufland become part of people's lives are related to consumption moments or significant period such as morning, breakfast, Sunday, lunch, dinner, celebration, or, why not, movie time. Visual landscapes were similar between November 2020 and December 2021, referring to representations of national gastronomy, traditions, and even family. Over 2021, the international approach was also paid enough attention (French, Swiss, Italian lifestyle). When it comes to chromatics, there is a real difference between lockdown advertising and post-lockdown brand advertising. In the first case, the composition of each Insta-ad was quite balanced, and chromatics followed the classic expectations of the menu.

In contrast, after May 16, 2020, the brand delighted consumers by using an explosion of vivid colours. Colours were meant to endow loyal consumers with a motivational vibe by focusing so much on food combination and creativity in terms of cooking. In both pre-and post-lockdown timespan, Kaufland ads delivered on Instagram prompted a dynamic perspective of dishes, goods, and table design, which helped consumers re-build their life, inspired more by social media. Still, in lockdown, chromatics was also associated with health crisis (red with the campaign #ajut -#Ihelp), or category of food (vegetables with green and yellow), meat (red and brown), fruits (multicolour). From June to December 2020, the extralinguistic level was progressively diversified in layout, chromatics, and product display.

DISCUSSION AND CONCLUSION

Our research synthesis is a chronological one, on the one hand, and a comparative one, on the other. The latter perspective refers to the results triggered by the linguistic versus the extralinguistic level. Kaufland reacted quickly, learning how to cope with this challenge from one day to another. So, the retailer understood its social role from the very first moment of lockdown, supporting consumers and providing them not only with supplies but also with trust and encouragement. Coming up with solutions to adapt on the go, the retailer became a real partner, giving the supportive message, the initiative of partnership with Glovo, and the volunteering program. Certainly, Kaufland's attitude triggered a chain reaction in the market and hindered consumers from experiencing panic. However, the Kaufland discourse was not homogeneous because it did not establish a balance between the extralinguistic and linguistic levels. The latter one more strove to encourage people, provide information, come up with strong solutions and appeal to people's sense of humanity. Nevertheless, the topic, the tone of voice, and even the pandemic situations developed by the retailer Instagram campaigns accounted for the most-active behaviour and turned the advertising message into a CSR one.

Quite after the lockdown, Kaufland gave up on its social role, focusing on its psychological support, given the optimistic messages at the linguistic level and the diversity of topics at the visual one. Hence, consumers were invited to be part of this new communication strategy by providing them with recipes and unleashing their creativity and emotions. As a result, the retailer became a daily partner of consumers' usual activities, acting as a witness to their entire routine. In 2021, ads did not concentrate on marketing issues, such as discounts and offers or catalogues, but on special moments of pleasure, such as the joy of an exquisite dessert. Paying so much attention to colours, creative meals, atmosphere, festivals, and social media ads ultimately urged people to live their lives. Therefore, this step corresponds to the well-promised direction based on the hashtag #it'sdoingourselvesgoodtomorrow transmitted on March 15 and May 15, 2020. The positive tone of voice, the idea of changing the world's perception, and even the lexical field reflect the desire to accelerate the process of returning to the pre-pandemic life when cooking, recipes, fresh vegetables, and delicious food stand for serious subjects to be discussed.

Compared to the first stage of the multimodal discourse analysis, in the second phase, the message is quite homogeneous at the linguistic level, in terms of lexical field, topic, and tone of voice, since the entire strategy is based on escapism, on release from the fear of the virus. As for the balance between the extralinguistic and linguistic aspects, one can notice an obvious correspondence because the positive tone and the topics are specific to the Romanian contexts and traditions in most cases.

Investigating all these communication stages of Kaufland campaigns running on Instagram between March 16, 2020, and December 31, 2021, several strategies stand out as a result of properly facing the pandemic crisis, thus underlining the novelty of this article. Firstly, the retailer re-considered its position in the community, helping people better cope with unexpected changes and hardships. Therefore, Kaufland got involved in social responsibilities campaigns and conveyed messages regarding people's safety, sustainability, and even education in terms of nutrition.

To summarize, there is no doubt that Kaufland proved the ability not only to re-connect itself as a brand with its buyers, but also the supermarket can be considered a pioneer in Romania due to its social initiatives under such difficult circumstances. The verbal or visual Instagram posts concern establishing people's psychological balance, teaching them how to stay calm, and recommending patience. The adaptation to the entire context of experiencing life under such pressure of the virus was completely fulfilled by organizing the messages according to the following criteria: the moment of sanitary crisis, which was not dramatically approached,

and private life, always relevant to the brand. We can recognize Feyaerts and Heyvaert's theory [14] regarding *humanized business communication* in terms of personalizing every message in this adaptation process to the local market overwhelmed by the crisis. The supermarket brand was supportive and empathetic, convincing us that it strove to help people overcome their fears, as Singh et al. stated [13]. However, consumerism has been replaced by rational behaviour, adopting two tactics: in-store and virtual communication. This time, Ritzer's view [18] on consumption as a pleasure turned into a well-managed necessity, which strongly influenced other retailers regarding organization and time efficiency.

Regarding management implications, Kaufland has become a brand easily empowered with trust. Therefore, it is considered an example for other retailers who found it more difficult to understand that their communication strategy did not properly appeal to their buyers in such a crisis. Given Kaufland-inspired innovations with no hesitations in-store, on virtual applications, and on social platforms, other brands have started thinking of positive changes, understanding their role not as a simple food supplier but as psychological support and educational factor.

At that moment, retailers considered creating mobile shopping applications to become user-friendly and capable of displaying their catalogues of goods, supporting the change in consumer behaviour. An illustrative example is Bringo from Carrefour, whose accessible interface instantly drew customers' attention. Beyond all these, every supermarket updated its front site page, adding the possibility to create a personal account, make an online list of articles and schedule the delivery date. That was the time when delivery jobs and preparing shopping baskets required more employees than before. Maybe this is a step to a hybridized shopping and a differentiation between off- and online duties in a supermarket.

In the beginning, Kaufland volunteered with special delivery services addressing the elderly living alone or being sick. Later, however, they extended this practice by signing contracts with delivery companies such as Glovo, Tazz, and Food Panda, to give customers larger access even with a small shopping list. In this context of discovering new resources in purchase facilities, supermarkets have triggered tight competition based on E-commerce strategies. We can call it a second era of entering the local market because retailers are faced with new challenges created by the pandemic yet raising consumer expectations in the years to come. Nevertheless, Kaufland took these chances of establishing partnerships with delivery companies, reaching their customers by all means, and transforming a global crisis into opportunities for more resilient and sustainable food systems. Supermarkets supported the local economy, more brand images were appreciated, and the level of loyalty increased.

When the lockdown partially ended, consumers were willing to accept new challenges related to communication, weaving offline with online behaviour. This is the stage at which the retailer develops more the linguistic level by connecting its offers with consumers' psychological needs. Even if E-commerce was associated with life protection and comfort, Kaufland aimed to build a further level of trust based on emotions, special occasions, and even phantasy described as gastronomic journeys worldwide. It is worth mentioning that rituals, traditions, and even local celebrations (National Day, June 1) deserved special attention, and extended campaigns entirely focused on cultural insights regardless of the stage of the pandemic.

Finally, in the last phase of this research, in 2021 respectively, Kaufland's strategy relied on creative tactics meant to keep alive consumers' initiatives by inviting them to come up with their recipes and adding some special ingredients from Kaufland. At this level, Kaufland became a community of people experiencing fascinating activities and enjoying little moments for themselves. There is nothing about marketing, but all about human feelings, achievements, and, why not, self-development.

This research also presents certain limits regarding the lack of organization of all Kaufland Instagram advertisements (delivered between March 15, 2020, and December 2021) on specific criteria that might generate a further detailed quantitative approach. Some aspects cannot be generalized to other cultures because of the local aspects and different attitudes and behaviour of genuine customers. Furthermore, Instagram is just one of Kaufland's social media platforms, and this aspect minimizes the validity of the present study. Therefore, we invite other researchers to explore other directions of this topic by coming up with some suggestions. For instance, this study would have been more valuable if it had benefited from some interviews with Kaufland employees, managers, and customers to get a first-hand insight into the efficiency of this campaign. Thus, a better perspective on the entire role of Kaufland virtual communication would have been achieved by gathering data from offline interaction as well because it would have eliminated the research subjectivity.

Consequently, the present research might be extended through a comparative approach between the pandemic and the after-pandemic communication of this retailer on the Romanian market and even comparing it with other countries. Another possibility would be to analyze this topic in the same context and gather data from the same social media platform (Instagram) but from another market to unveil other localization or glocalization strategies provided by the supermarket during the pandemic. Afterward, all data could be compared with the Romanian communication tactics, and some strategies might be recognized as global ones, while others as local.

At the end of this study, one of the assumptions would be that retailers' communication has been mostly transformed into a hybridized one, given that social media has already developed rational and emotional strategies to successfully appeal to customers.

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SYSTEMATIZATION OF ANTECEDENTS AND EFFECTS OF WORKPLACE INCIVILITY

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ABSTRACT

Based on the literature review, the article presents the systematization of antecedents and effects of workplace incivility. Variables contributing to deviant workplace behaviour (antecedents) are placed within three categories: dispositional, behavioural, and contextual. Dispositional antecedents, which include characteristics of targets (certain demographic characteristics and personality traits) and characteristics of instigators (position and power, attributes, attitudes, and certain personality traits), are presented. After that, behavioural antecedents of targets (such as counterproductive work behaviour, annoying or provocative behaviour, etc.) and instigators (inappropriate conflict management style, “workaholism”, response to negative emotions, etc.) are stated. Furtherly, contextual antecedents that are divided into organizationally-based (organizational change and downsizing, hierarchy and autocracy, lack of organizational justice, inadequate organizational culture and climate, certain negative aspects of e-communication, etc.), and work-based antecedents (job design issues, inappropriate working conditions, performance pressure, etc.) are explained at the end. Finally, negative consequences of workplace incivility on employees and the organization are presented. The article ends with the concluding remarks, the implication of the research, and suggestions for future studies.

KEY WORDS

workplace incivility, antecedents, effects

CLASSIFICATION

JEL: M12, Z13

INTRODUCTION

Workplace incivility has attracted much attention in organizational behaviour studies in the last two decades. Andersson and Pearson introduced the construct of workplace incivility [1], which was defined as a low-intensity deviant behaviour with ambiguous intent to harm the target, in violation of workplace norms for mutual respect, which is assumed to be discourteous and careless. Andersson and Pearson [1] started a new research direction in workplace deviance, with growing interest of scholars, especially after 2015.

Examples of uncivil behaviour are: exclusion, ignoring, hostile look, demeaning [2, 3] interrupting, spreading rumours, eye-rolling, [4], disrespect, neglect, insult, verbal attacks, yelling [5, 6], inappropriate language, unprofessionally addressing, inappropriate jokes, unacceptable gestures [7], etc.

Several characteristics distinguish workplace incivility from other types of deviance at work. Firstly, workplace incivility has a low intensity and requires less energy than other more aggressive types of workplace deviance, such as workplace aggression and violence. Secondly, the intention to harm the target is not obvious – it is not clear if it is intentionally negative [8-10]. Therefore, workplace incivility depends on the interpretation of the individual who experiences or perceives it [11]. Workplace incivility might have many undesired outcomes and lead to more aggressive behaviour, so it should not be treated as the less relevant problem [9, 12].

There are numerous studies of workplace incivility that mainly investigated outcomes, antecedents, or processes of workplace incivility. Research subjects were focused on experienced incivility (investigation of the targets of uncivil behaviour), witnessed incivility (investigation of the witnesses of incivility), or instigated incivility (investigation of the instigators of uncivil behaviour). Workplace incivility was usually categorized regarding the source into superior incivility, co-worker incivility, subordinate incivility, and customer incivility.

The article aims to offer a general overview of various antecedents of workplace incivility – variables that contribute to incivility at work. The article integrates the results of previous studies into the comprehensive framework and shows the spectrum of various incivility antecedents. Such an approach enables a better understanding of the roots of workplace incivility. The article critically discusses the factors that should be considered regarding the level of incivility and preconditions that should be provided on an individual, organizational and work level aiming to reduce incivility at work. Also, various negative consequences of workplace incivility on employees and organizations are discussed to reveal the magnitude of this issue.

The systematization made in this article is based on the un-systematic literature review of previous theoretical and empirical research in workplace incivility. The study is based on peer-reviewed scientific papers written in English retrieved from Emerald, Google Scholar, Taylor and Francis, Elsevier, Scopus, Web of Science.

The article begins with the systematization of antecedents of workplace incivility, where antecedents are grouped into individual, behavioural and contextual. In the next section, workplace incivility consequences for employees and the organization are highlighted. The article ends with the discussion and conclusion regarding theory, implications for practice, and recommendations for future studies.

THE ANTECEDENTS OF WORKPLACE INCIVILITY

Antecedents of workplace incivility could be grouped into individual (dispositional) antecedents, behavioural antecedents, and situational (contextual) antecedents [13]. Cortina et al. [14] explain individual characteristics related to the perceived or experienced incivility (personality/behaviour), stigmatized identities that are related to experienced incivility (gender, ethnicity, weight, motherhood status, etc.), and job related or contextual antecedents of incivility.

INDIVIDUAL AND BEHAVIOURAL ANTECEDENTS

Table 1 presents the systematization of antecedents of workplace incivility, based on previous conceptual and empirical studies considering targets and instigators.

Table 1. Individual and behavioural antecedents of workplace incivility taking into account targets and instigators.

	Individual antecedents	Behavioural antecedents
Targets	Female gender Minority Lower organizational position Younger age Fatness Multiple children motherhood Generational specificities Lower competence and knowledge Personality traits (low agreeableness, high neuroticism, negative affect)	Counterproductive work behaviour Provocative behaviour Annoying behaviour Bothersome behaviour
Instigators	Position and power Attitudes and beliefs (regarding job insecurity, organizational injustice, job dissatisfaction, expected benefits from uncivil behaviour or low cost of such behaviour) Negative attributes Personality traits (low agreeableness, high neuroticism, low emotional intelligence, aggression, hostility, ego, internal competition, narcissism, psychopathy, lack of moral maturity, etc.)	Inadequate conflict management style “Workaholism” (which increases stress and decreases psychological capacity) Exhaustion Behavioural response to rage, fear, and anger Experienced incivility that motivates revenge Lack of communication

Individual antecedents are certain characteristics of a person that might predispose experience, perception, or appraisal of workplace incivility. Individual characteristics of targets could be female gender, minority, [3, 11, 15, 16], lower organizational position [11], younger age [17], fatness, multiple children motherhood [18], generational specificities [19], lower competence and knowledge [20], certain personality traits [18, 21] etc.

By investigating personality traits of targets, Milam et al. [21] find individuals low on agreeableness and high on neuroticism attract attention on them as targets. Similarly, Naimon et al. [22] concluded that low agreeableness, negative affectivity (N.A.), and low spirituality were positively related to experienced workplace incivility. When analysing each personality trait independently, Sliter et al. [23] find that negative affect, positive affect, and trait anger are positively related to the perception of incivility, while agreeableness, emotional stability, and openness were negatively related the perception of incivility. But, when all personality traits are analysed in a combined model, the strongest predictors of incivility are positive

affect and trait anger [23]. Similar replication study [24] finds that negative affect and trait anger are positively related to incivility perception, while emotional stability and positive affect are negatively related to incivility perception, but analysis of personality traits in the combined model showed that significant predictors of incivility perception are trait anger, positive affect, and extraversion.

In their empirical studies, scholars find certain individual characteristics of instigator related to workplace incivilities such as position and power [2, 11], attitudes (about job insecurity, organizational injustice, job dissatisfaction, etc.) [25], beliefs on expected benefits from uncivil behaviour or low cost of such behaviour [26, 27], negative attributes [28], certain personality traits [29]. Instigator personality traits that were found to be connected to workplace incivility were: type A personality, hostility, aggression, ego, internal competition [11, 26, 30], low agreeableness, psychopathy, and narcissism [31], low emotional intelligence [32], lack of moral maturity [33]. Batista and Reio [34] find that conscientiousness and agreeableness lower the relationship between stress and instigator incivility, while neuroticism and extraversion strengthen their connection.

Behavioural antecedents are behavioural characteristics that may predispose uncivil behaviour. Such behaviour of a target might be counterproductive work behaviour [29], provocativeness or annoyance related to personality [21], insensitivity or bothersome behaviour [2] etc. Instigator behavioural antecedents might be inadequate conflict management style (high dominating or low integrating style) [35], “workaholism” that increases stress and decreases psychical capacity [27] or exhaustion [25], response to rage, fear or anger [36], experienced incivility that motivates revenge [37] lack of adequate communication, etc.

CONTEXTUAL ANTECEDENTS

Contextual antecedents are associated with a situation that enables and facilitates workplace incivility. These antecedents are usually divided into two groups: organizationally based and work-based antecedents (Table 2).

Table 2. Contextual antecedents.

Organizationally based antecedents	Organizational change, integration, and downsizing Pressure for productivity Autocracy and strict hierarchy Lack of organizational justice, lack of reciprocity norm, braking of psychological contract Inadequate climate/climate of informality Inadequate organizational culture Lack of civility policies and norms Low social support Communication issues (multi-communicating, e-communications, etc.)
Work-related antecedents	Role issues Lack of autonomy High job demand, Work overload High-performance pressure Inappropriate working conditions Work interdependence

Organizationally based antecedents of workplace incivility might be organizational change, integrations, and downsizing that impede job insecurity, part-time employment, and productivity pressure [1, 12, 26, 36, 38-40], autocracy and strict hierarchy [39], lack of organizational justice [25], lack of reciprocity norm [28], breaking of psychological contract [41], inadequate climate including climate of informality [1], inadequate corporate culture that tolerates incivility [40, 42-43], lack of civility policies and norms [44, 45], low social support [40, 46], e-communication issues, lack of face-to-face communication due to information technology and constant availability [12, 47-49], multi-communicating [15], globalization [39] etc.

Vickers [12] states that organizational change might cause higher workload, perception of job insecurity, and fewer resources aiming to cut costs, making employees more inclined to uncivil acts. Restructuring and downsizing usually cause the reduction of hierarchical levels, which cause loss of position, fewer promotion options, increased employee competition, workload, and pressure for productivity [1, 26, 38] – which all creates fertile ground for interpersonal deviance, including incivility.

Perceptions of injustice are associated with various negative behaviours at work [50], including engaging in revenge and expressing hostility [51]. Aquino *et al.* [52] find that distributive injustice is associated with negative behaviour, such as spreading rumours about individuals in the organization. Blau and Anderson [25] confirm that employees who experience distributive injustice are more inclined to workplace incivility. Additionally, the connection is found between workplace incivility and lack of procedural justice [53] and the lack of interpersonal justice [54]. The connection between low organizational justice and workplace incivility is often based on reciprocity norm according to which workers turn back the treatment they received (bad or good). Sears and Humiston [41] find that breaking the psychological contract leads to higher workplace incivility. A psychological contract within an organization is a belief in mutual obligations between the individual and the organization (relational or transactional), which is an important determinant of employee behaviour.

Organizational climate is the atmosphere at work that is created from experience, behaviour, and relationships among employees. The perception of an inappropriate or egoistic climate creates fertile ground for employees to engage in selfish behaviour and reckless to their coworkers [55]. Adding organic elements in organizational structure is driven by the need for flexibility. These organic elements, such as flattening organizational structure, favour the climate of informality, which allows more relaxed employees to cross the line of decency [1].

National culture, industry culture, and organizational culture are important factors that influence workplace incivility. The behaviour of employees is usually consistent with their values, assumptions, attitudes and beliefs, and organizational culture aims to shape these elements through their invisible and visible level. When culture is not adequate, it might encourage deviant behaviors and work mistreatment, including workplace incivility. If uncivil behaviour becomes part of a culture and stays unnoticed or unpunished, it may furtherly leverage the appearance of incivility at work [12, 40].

According to previous empirical research [12, 47], information technology enables constant availability due to e-communication with no strict difference between working and private time, which might disturb employees, causing their rude behaviour. Furthermore, the lack of in vivo communication might cause not being completely professional and polite [12].

Work-based antecedents include certain attributes of job and work environment. In this category, causes of workplace incivility could be inadequate job design, including role issues [56], lack of autonomy [58], high job demand, work overload, performance pressure [27, 59-61], inappropriate working conditions [37, 62], work interdependence [62] etc.

EFFECTS OF WORKPLACE INCIVILITY

The number of studies investigating workplace incivility has increased due to understanding its relatively frequent incidence in practice and its negative effects on the organization, employees, and other stakeholders. The systematization of negative consequences of workplace incivility is shown in Table 3.

Table 3. Effects of workplace incivility.

Effects on employees	Effects on organization
Lower satisfaction with the job, with coworkers or supervisors Lower motivation, energy, commitment, engagement, and moral Lower job performance (efficiency, creativity, effectiveness) Absenteeism, turnover intention Lower dignity and self-esteem Negative emotions Worse mental and physical health Lower wellbeing and life satisfaction Worse family (private) relationships	Deterioration of financial results Higher costs Lower productivity Deterioration of reputation and image Undesirable organizational climate Poor work environment Employee turnover

Literature on workplace incivility reveals various negative consequences for employees such as lower satisfaction with the job [11, 44, 61-65], lower satisfaction with coworkers and supervisors [4], lower motivation and energy [66], reduced commitment, engagement, and moral [67, 68], reduced efficiency and creativity [69-72], lower job performance [73, 74], absenteeism [77], turnover intention [3, 44, 75], lower dignity and self-esteem [76], negative emotions [38], worse mental and physical health [2, 77-80], lower wellbeing and life satisfaction and [43, 46, 81], worse family relationships [9, 82-85], etc.

The effects of workplace incivility mainly refer to employees who have experienced incivility. But incivility may also affect employees who have witnessed incivility, especially if grounded on empathy for targets [76]. Furthermore, being involved in a negative event such as rudeness can also affect the instigator. Schilpzand et al. [13] discuss that instigators might face exclusion and distrust from others within the organization. An investigation of the effects of experienced incivility on employees Schilpzand et al. [13] assume that incivility from the superior is more harmful than incivility from a coworker and that incivility from a coworker is more harmful than incivility from the customer. On the other side, Caza and Cortina [61] discuss that incivility from coworkers is not less harmful than incivility from people with authority. Guo et al. [68] find that the connection between workplace incivility and employee work engagement is very complex, with many indirect elements that mediate that relationship. Miner et al. [46] stated that negative outcomes for employees could be mitigated by a higher social (organizational and emotional) support.

Furthermore, the organization might be burdened with the various consequence that comes from workplace incivility such as deterioration (reduction) of financial results [70], higher costs [86], lower productivity [38, 87], deterioration of reputation and image [68], undesirable organizational climate [29], poor work environment [1], employee turnover [11], etc.

DISCUSSION

Incivility at work presents a serious problem with numerous negative consequences for employees, the organization, and beyond. Literature review reveals many negative outcomes for employees that could be cognitive, emotional, behavioural, attitudinal, social, mental, and

physical. Previous studies confirmed that incivility affects not only the targets but witnesses and even instigators of incivility. Furthermore, organizations might have various problems in the area of financial results, reputation and image, productivity, climate and culture, work environment, and employee turnover due to increased incivility.

For that reason, it is important to understand better variables that contribute to the incidence of incivility at work. The literature explains numerous causes of workplace incivility that have been investigated empirically and could be placed within three categories: individual/dispositional, behavioural, or contextual. The recognition and understanding of these antecedents are important to shape preconditions to diminish and eliminate incivility.

Due to the possession of characteristics, such as obesity, low competence, physical disabilities, belonging to an ethnic or racial minority, female gender, young age, social status, rural origin, financial status, etc., some employees can easily become victims of inappropriate behaviour by their coworkers, superiors or clients. The role of certain demographic characteristics such as age, gender, race, tenure, skill and knowledge level, minority, and obesity in electing experienced incivility is well examined in the scientific research. Yet, certain variables such as geographical origin, rural/urban origin, social background, physical disabilities, sex orientation, or other diversity specificities have not attracted sufficient research interest within the literature of workplace incivility. Hence, it would be useful to investigate these variables more deeply to understand better their role in electing workplace incivility as such incivility can serve as a camouflage for hidden discrimination.

Individual antecedents that fall into personality traits attracted much research interest. Results of empirical research have shown that low agreeableness, high neuroticism, and negative affect are traits not only of incivility instigators but of targets as well. Internal competition, ego, narcissism, psychopathy, low moral maturity, and additional traits characterize instigators. Therefore, these personality traits are undesirable in light of the need for civility. Furthermore, employees' counterproductive, provocative or annoying behaviour could attract attention to become targets of uncivil acts.

Additionally, employees who cannot cope with conflicts, stress, fear, anger, or other negative emotions or who experience incivility could fall into the trap of becoming uncivil perpetrators toward others. All these individual antecedents should be considered while shaping human resource policy, practice, and interventions, especially in employee selection and development. To avoid discrimination and harassment, proper values and principles, respect, diversity, and inclusion should be incorporated within organizational policies, rules, code of conduct, and culture.

Additional contextual antecedents of workplace incivility are organizationally based variables. Previous empirical studies reveal numerous organizational issues that should be considered: organizational change and downsizing, high autocracy and hierarchy, inadequate corporate culture and climate, lack of organizational justice, e-communication issues, insufficient organizational support, etc.

Organizations that go through organizational change and restructuring should manage changes wisely, considering the influence on employees. It becomes particularly important in the case of downsizing, which often causes layoffs, reduction of wages, loss of positions, and performance pressure. Adequate employee support is important to prevent negative emotions and retaliation that could lead to undesired behaviour, including incivility. Furthermore, organizations characterized by a bureaucratic structure and autocracy should assure, through organizational norms and policy, that power and position are not misused for uncivil behaviour downwards. Regarding global trends of spreading rapid e-communication, it is important to set proper policies regarding e-communication to avoid undesirable situations

that may frustrate employees, causing incivility, which is emphasized especially keeping in mind the increasing use of e-communication, which was especially apparent during the COVID-19 pandemic.

Organizational injustice is the next important element that could elicit workplace incivility and other undesirable outcomes that result from unjust distribution, procedures, or interaction within an organization. Therefore, it is important to establish distributive, procedural, and interactional justice within the organization.

Corporate climate and culture take a special place in creating a foundation to decrease incivility at work. Leiter [88] states that workplace incivility depends more on the climate or culture than on individuals. Hence, a positive organizational climate should be developed, such as a caring climate nurtured with professional and positive attitudes, assumptions, and behaviour, whereby an appropriate leadership style is particularly needed. Cultural setting creates an arena in which personal characteristics are displayed and may elicit or diminish incivility at work. Pattani et al. [89] highlights the existence of the culture of silence that refers to the inability of leaders to detect and deal with workplace incivility so that incivility remains unsolved. Positive organizational culture support ideas that are beneficial for the organization and thus could help in building competitive advantage. A strong positive organizational culture aims to motivate employees toward incorporating important organizational values and implementing them in their working practice, which should be strengthened through an incentive system.

Furthermore, organizational culture creates the basis for shaping an adequate work environment. When organizational culture is appropriate and based on the proper value frame, it influences employees to perceive the need for desirable and courteous conduct. To create a desirable work environment and the feeling of mutual moral obligations, corporate culture should incorporate values such as openness, justice, fairness, trustfulness [90], dignity and respect, integrity, personal development [91], organizational support, warm interpersonal relationship, commitment [92], consideration, cooperation [14], spirituality, patience, resiliency, psychological capital [93], protection of privacy [94], ethics [27, 95-97], etc. Emphasizing the significance of the core values and ethical codes will circularize the domain of acceptable workplace behaviour.

Considering work-related variables as a part of the incivility context, it is important to assure adequate work setting, including adequate job design, adequate working conditions, appropriate workload, job security, etc., to decrease work-related roots of incivility. An inspiring, healthy, safe, and respectful work environment is expected to enhance positive thinking and perceptions, enabling employees to focus on achieving their work objectives better.

External antecedents of workplace incivility beyond organizational boundaries have not attracted enough research interest. Some scholars investigate private aspects such as family incivility, confirming its influence on incivility at work [98] or negative influence of media that encourage rude behaviour by role modelling [47], etc. Therefore, this literature gap leaves space for further studies.

It could be concluded that managers and employees should understand workplace incivility's nature, antecedents, and effects. Civility norms should be prioritized and explicitly expressed, which should be leveraged through a proper incentive system. By their behaviour, managers should give an example for employees to follow. Furthermore, various management approaches toward civility should be conducted, such as civility interventions and programs, employee development, and training techniques (coaching, workshops, role play, case studies, multimedia, etc.) to develop diversity awareness, civility acceptance, interpersonal and conflict management skills, stress coping styles, etc.

This article presents numerous arguments to justify the need for civility. However, it is worth pointing out that civility should not be forced for bad purposes. Cortina et al. [14] cited Calabrese that civility is sometimes misused as a means to “limit, silence or control the free expression of the weak” side. Therefore, it is important to set the value of workplace incivility with positive, not negative, intentions.

CONCLUSION

This article offers a comprehensive overview of the antecedents of workplace incivility and the systematization of multiple outcomes of incivility. Previous literature on workplace incivility reveals that various antecedents of workplace incivility mutually interact, so further studies could be oriented to explore the mutual dependence of these variables and their influence on workplace incivility. Furthermore, workplace incivility’s mediation and moderation role should be investigated more deeply. In previous studies, dynamics and interventions of workplace incivility are not sufficiently investigated, which leaves the space for conducting additional studies in that area. As quantitative studies dominate, it would be useful to conduct more qualitative and meta-analytic studies to illuminate the complex workplace incivility problem better.

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EARNINGS MANAGEMENT AND DIVIDEND PAYMENTS DURING THE COVID-19 PANDEMIC

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ABSTRACT

The recent outbreak of coronavirus has caused the worst global economic crisis in the last few decades. A substantial number of companies have experienced severe economic difficulties and were tempted to adjust their financial figures in order to reach certain business thresholds. Maintaining an existing level of dividend payments is a powerful incentive to engage in such activities.

The aim of this article was to estimate the effect of the economic crisis caused by the COVID-19 pandemic on the relationship between the estimated level of earnings management and dividend payments made by companies.

Research models were estimated using panel analysis. The Modified Jones model was utilized to assess the level of earnings management. A total of 56 companies listed on the Zagreb Stock Exchange in the Republic of Croatia with their financial data from 2015 to 2020 were included in the research sample.

Unlike in the case of absolute and income-decreasing discretionary accruals, results indicated that the economic crisis caused by the COVID-19 pandemic positively affected the relationship between earnings management and dividend payments in the case of income-increasing accruals regarding companies that made regular dividend payments.

In conclusion, the economic crisis caused by the COVID-19 pandemic was an additional incentive for certain companies to perform income-increasing earnings management to reach the desired level of dividend payments.

KEY WORDS

Coronavirus, COVID-19, crisis, dividend, earnings management

CLASSIFICATION

JEL: G01, G35, M41

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INTRODUCTION

Not long after national economies had recovered from the global financial crisis which had started in 2008, they were severely affected by a recent “black swan” event [1], that is the outbreak of coronavirus (SARS-COV2) which led to the recent global financial crisis that “resulted in levels of economic distress unprecedented since the 1930s” [2; p.2]. The “largest pandemic in the modern globalized era” [3; p.3] has caused economic repercussions in numerous areas, e.g. “sales, purchases of inputs, employment, the firm’s financial situation, online sales, and remote work” [3; p.4].

The focus of this research was directed towards the financial performance of companies, which had also been negatively affected by the COVID-19 pandemic [4, 5]. Generated net profits are considered as the primary source of dividend payments – at the end of financial year management of a company decides on a number of profits that will be allocated for such payments. Considering the positive impact of corporate financial performance on dividends and dividend-signalling theory [6], it is presumable that dividend payments could be considered as an indicator of the company’s financial health, and are related to the future profitability [7].

In this regard, companies are simultaneously faced with the repercussions of the COVID-19 crisis and high pressure to maintain the desired level of dividend payments because managers are not willing to decrease dividends easily [8]. Consequentially, management is tempted to resort to earnings management practices. Earnings management, which can be considered as one of the most important topics in economic research in the last decades, can be defined as “the insider’s attempt to manipulate earnings against the interest of outsiders” [9; p.302]. Furthermore, da Silva et al. [10; p.269] state earnings management “is characterized as an opportunistic manager’s practice that aims to deceive the external user ... using the permissibility in selecting accounting principles for recognition and measurement of elements (assets, liabilities, and revenues and expenses) within the limits of rules to deliberately inform misleading results”.

The purpose of this article was to determine the effect of the economic crisis caused by the COVID-19 pandemic on the relationship between earnings management and dividend payments using empirical data of Croatian companies. Although unfortunate, the COVID-19 pandemic has provided numerous opportunities for scientific research and the intention of this article was to contribute by examining the relationship of two extremely important variables, earnings management, and dividend payments, which were frequently researched (e.g. [11-15]). Because an ongoing pandemic generates economic uncertainty, every additional insight into behaviour of companies is valuable for investors and other stakeholders. The research on the relationship between earnings management and the COVID-19 crisis [16] is extremely scarce and this article contributes to the existing literature since it examines the relationship between earnings management and dividend payment in an emerging market during the economic crisis caused by the COVID-19 pandemic as an extremely rare and highly specific event in business history and, to the authors’ best knowledge, no such study was still performed.

The article was organized as follows – the second section provides a review of research relevant for the subject of this article and development of research hypotheses, the third section comprises explanations on statistical techniques applied in research for model development, methods used for estimation of the dependent variable and research models with additional explanations of variables included, the fourth section presents results of conducted statistical analysis, in the fifth and final section contributions of the research are explained, relations to previous findings made, as well as recommendations for future research.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

In this part of the article authors focus on researches that investigated earnings management practices and dividend payments in periods of crisis. It is expected that financial and economic crises will influence earnings management practices. This effect can be either positive or negative depending on management's goals and earnings management purpose.

Research related to earnings management practices in crises period was popular after the global financial crisis in 2008, but findings are inconclusive. For example, Da Silva et al. [10], Flores et al. [17], and Koowattananai [18] document an increase in earnings management during financial and economic crises. On the other side Chintrakarn et al. [19], Kumar and Vij [20], and Cimini [9] document a decrease in earnings management during financial crises.

Ahmad-Zaluki et al. [21] state how during the crisis market is more tolerant of lower performance reported by companies since low results are reported by most of the companies. Consequently, Kumar and Vij notice how "firms have less incentive to engage earnings management during the crisis" [20; p.89]. Türegün [22] also points out how "the presence of lower manipulation of earnings during the crisis period may be credited to certain motivation, for example, lower incentive for management for manipulating the earnings, higher market acceptance toward lower performance by the firms and increased surveillance of government authorities, auditors and exchange boards during such periods of economic distress" [22; p.70]. Authors also note how crises may serve as an excuse for a company's poor performance and therefore managers are less motivated for earnings management behaviour [19].

One of the rare researches that examined the impact of COVID-19 on earnings management was performed by Xiao and Xi [16] on a sample of 2 029 Chinese listed firms. Research results indicated "an increase in accrual-based earnings management (AEM) and a significant decline in real activity-based earnings management (REM), in firms in the most severely affected regions" [16; p.59]. Authors pointed out that earnings management was less expressed in firms with higher performance than in those with lower performance. Also, earnings management was less pronounced in firms audited by Big 10 audit firms.

Türegün [22] examined the impact of the financial crisis in 2008 on the earnings management practices of Turkish firms in period 2007-2012. The author analysed earnings management behavior in three periods: pre-crisis period (2007 and 2008), crisis period (2009 and 2010), and the post-crisis period (2011 and 2012). The sample included 138 companies or 828 firm-year observations. Results showed that earnings management practices were lower in the crisis period and then increased in the post-crisis period.

Chintrakarn et al. [19] examined the impact of the 2008 financial crisis on earnings management practices on a sample of 14 000 observations in the 15-year period. Research results revealed how earnings management practices decreased during the crises. Authors point out how "during the crisis firm performance was so far below the target that no amount of earnings management would have been sufficient to reverse the poor earnings picture" [19; p.477].

Kumar and Vij [20] analysed earnings management practices for Indian firms in the period 2007-2012. They examined changes in earnings management in periods of crisis, periods before crisis, and periods after crises. Results indicate the presence of earnings management in the pre-crisis period, a decrease in earnings management practices in the crisis period and again increase after the crisis period. Also, the authors examined earnings management practices by dividing companies into two sub-samples: those with positive and those with negative discretionary accruals. Results show that earnings management behaviour in both sub-samples declined in the crisis period and increased after the crisis for firms with negative discretionary accruals.

Flores et al. [17] examined earnings management practices for companies listed in the capital markets of Brazil and the USA. The research sample consisted of 7 932 firm-quarter observations for Brazilian firms and 99 931 from listed US firms. The observation period was 1998-2010. According to research results in periods of crisis earnings management practices are more pronounced both in Brazil and in the USA.

Cimini [9] evidenced a decrease in earnings management practices after the financial crisis in 2008. Authors performed cross-country analysis on a sample of 11 844 firm-year observations listed in the EU for the period 2006-2012. Earnings management practices were analysed by event study approach, i.e. “comparing abnormal accruals before and after an event, which is, in this case, the burst of the financial crisis since the fiscal year 2008” [9; p.303].

Filip and Raffournier [23] performed a cross-country analysis and examined earnings management behaviour in 16 European countries in the 2008 financial crisis. Results indicated a decline in earnings management in the crisis period and this tendency was observed for all analysed countries. Furthermore, the authors reported a connection between earnings management behaviour and economic growth rate.

Da Silva et al. [10] examined earnings management practices on the Brazilian market in the period 1997-2009 on a sample of 445 companies (3 941 firm-year observations). They found a significant relation between earnings management and economic crises.

Ahmad-Zaluki et al. [21] analysed earnings management practices of Malaysian IPOs. According to their results income-earnings management practices increased in Malaysian IPOs and this effect is especially pronounced for IPOs during a period of crisis.

Another stream of research related to our hypothesis is related to the impact of earnings management on a dividend policy. Different authors (for example [11-15]) examined the connection between earnings management and dividend payout since “the level of reported earnings is an important determinant of dividends” [12; p.3]. It should be pointed out how research results are different meaning that some authors [11-13] evidenced positive relation between variable earnings management and dividend policy while others found no significant impact of earnings management on dividend policy [24-26].

Association between earnings management behaviour and dividend payout on a sample of 37 Finnish companies was performed by Kasanen et al. [11]. According to research results, companies use earnings management techniques to increase earnings as a response to pressure coming from the side of large institutional investors for dividends payout.

Daniel et al. [12] examined whether companies perform earnings management practices in situations when “pre-managed” earnings are expected to be lower than expected dividend payments. Their research was conducted on a sample of 1500 American companies in the period 1992-2005. According to research results “firms are significantly more likely to manage earnings upward when pre-managed earnings are below expected dividend level than when they are not” [12; p.3].

Atieh and Hussain [13] questioned the association between earnings management and dividend payout on a sample of large companies listed on the London Stock Exchange in the period 1994-2004. Results show how those companies that pay dividends are more prone to manage earnings upwards in comparison to dividend non-payers.

International research on the link between dividend payout and earnings management was performed by He et al. [14]. A study was conducted on a sample of 23 429 companies from 29 countries and research results show that “dividend payers manage earnings less than dividend non-payers, and that this evidence is stronger in countries with weak investor protection and high opacity” [14; p.267].

Evidence from France also shows a positive link between earnings management and dividend policy. More precisely, Amar et al. [15] surveyed 280 companies, i.e. 2 108 firm-year observations in period 2008-2015 according to research results dividend policy of French companies is positively related to earnings management.

It is interesting to point out a study conducted by Abbadi et al. [26], who examined the relation between earnings management and dividend policy in Kuwait. However, the study performed on a sample of 46 companies in the period 2011-2016 found no significant relation between earnings management and dividend payout.

Similar results were obtained by Shah et al. [24]. They performed comparative analysis on a sample of 120 Pakistani firms in the period 2003-2007 and 55 Chinese firms in the period 2001-2007. According to research results, earnings management practices were not significantly associated with dividend policy.

Furthermore, Abbasi et al. [25] performed research on a sample of 214 companies listed on the Teheran Stock Exchange in the period from 2008-2012. Their results also found no statistically significant relation between earnings management and dividend policy.

Finally, the relationship between dividend policy and financial crisis should also be considered. Abdulkadir et al. [27; p.103], who pointed out this relationship as “relatively underexplored”, stated that “markets attach a high valuation to firms that are able to pay during the crisis period”. Thus, “some managers strive to maintain stable dividends during the crisis period” [27; p.103] and this can be considered as an incentive for earnings management practices.

Laing et al. [28; p.145] had conducted their research in Malaysia and stated that “dividend policies that will increase firms’ valuation are adopted” what was “reflected in the signalling theory with evidence that higher profitability exerts a positive influence on firms’ propensity to increase and/or maintain dividends over different study periods, implying that markets attach a high valuation to firms that can pay, especially during the crisis period”.

Ankudinov and Lebedev [29; p.384] have found that “amid the global financial crisis, the dividend payments of state-owned companies decrease more significantly than those of privately owned companies”, but also that “the generous dividend policies of public companies suffer greater ‘adjustments’ during the crisis period”. They pointed out that “even companies with liquidity constraints do their best to keep dividend payments at least at the pre-crisis level” [29].

Reddeman et al. [30; p.53] have noticed that during the crisis “dividend cuts have been suggested to preserve capital” but that “some observers seem to fear that investors could interpret a reduction of dividends as a sign of future problem”. Despite those interpretations, they asserted that results of their research did not “indicate that dividend smoothing or dividend signalling are relevant economic phenomena examining the dividend policy of the European insurance industry” [30; p.53].

This article aimed to examine the effect of the economic crisis caused by COVID-19 on the relationship between earnings management and dividend payments. Given the specificities of the ongoing global economic crisis caused by COVID-19 as an extremely rare event, as well as the Republic of Croatia as a small European bank-centric country with an insufficiently developed capital market, similar research was not previously conducted. Considering the results of previous research presented in this section and since this article examines a very complex relationship, the direction of effect that the economic crisis caused by COVID-19 had on the relationship between earnings management and dividend payments was not defined. Thus, the following research hypotheses were established:

- H₁:** There is a statistically significant effect of the economic crisis caused by COVID-19 on the relationship between earnings management and dividend payments to shareholders.
- H₂:** There is a statistically significant effect of the economic crisis caused by COVID-19 on the relationship between income-increasing earnings management and dividend payments to shareholders.
- H₃:** There is a statistically significant effect of the economic crisis caused by COVID-19 on the relationship between income-decreasing earnings management and dividend payments to shareholders.

METHODOLOGY

SAMPLE DESCRIPTION

The entire population of public limited companies listed on the Zagreb Stock Exchange on 30th September 2020 was taken into consideration for the creation of the research sample, i.e. 103 companies. Due to their particularities, financial companies such as financial banks, insurance companies, and funds were excluded (13 companies), as well as companies belonging to industries that did not have sufficient data for calculation of discretionary accruals with the Modified Jones model, i.e. minimum of six observations [31]. Also, companies with missing data were eliminated from the research sample, as well as companies that published financial statements before 11th March 2020, when the minister of health announced the epidemic of the COVID-19 [32] and the global pandemic was announced [33, 34].

After implementation of above-mentioned adjustments, the final sample comprised 56 companies whose data was analysed in the period from 2015 to 2019. This period was analysed because in 2015 the growth of the gross domestic product in the Republic of Croatia was recorded [35], indicating a more favourable trend after a prolonged period of the global economic crisis, and financial statements for the financial year 2019 were the first ones published during the COVID-19 pandemic. The financial year 2020 was not taken into consideration because financial information and information on dividend payout were not completely available at the time this research was finalized.

Financial data as well as data on a number of shares listed on the Zagreb Stock Exchange was collected from annual reports available at Zagreb Stock Exchange official website. The RGFI Public Posting website was used as a complementary source for companies that had not published necessary data on a number of shares listed. The portal MojeDionice.com was used to determine the amount of dividend payments companies made to their shareholders.

EARNINGS MANAGEMENT MEASUREMENT

To estimate the level of earnings management, the Modified Jones model which divides total accruals into non-discretionary and discretionary accruals was applied: “normal accruals are estimated from a simple statistical model based on firm assets, property, plant, and equipment, and change in sales” [36; p.174] and “abnormal or discretionary accruals are the residuals between actual accruals and the predicted accruals from the modified Jones model” [36; p.174]. Regression residual was used as a measure of discretionary accruals [37]:

$$\frac{TAC_{i,t}}{TASS_{i,t-1}} = a \cdot \frac{1}{TASS_{i,t-1}} + b \cdot \left(\Delta REV_{i,t} - \frac{\Delta REC}{TASS_{i,t-1}} \right) + c \cdot \frac{PPE}{TASS_{i,t-1}} + e_{i,t}, \quad (1)$$

where $TAC_{i,t}$ is total accruals for year t for firm i , $TASS_{i,t-1}$ a lagged total assets, $\Delta REV_{i,t}$ revenues of year t minus revenues of firm i in year $t - 1$. ΔREC denotes receivables for firm i

in year t minus receivables in year $t-1$, $PPE_{i,t}$ is property, plant, and equipment of firm i in gross in year t and $e_{i,t}$ is error term in year t for firm i [37; p.21].

Companies “with consistently large discretionary accruals are deemed more likely to be manipulating earnings, or at the very least, have less transparent financial statements” [36; p.174]. The following formula was used for total accruals [37]:

$$TAC_{i,t} = \text{earnings} - \text{CFO}, \quad (2)$$

where CFO denotes cash flows from operations [37; p.21].

Three measures of discretionary accruals were used. Firstly, absolute discretionary accruals which “measure the extent of ... discretionary behavior instead of its direction” [8; p.2743]. Given that the behavior of a company regarding earnings management can differ due to its motivations [12], a more detailed analysis was conducted using income-increasing and income-decreasing accruals to determine if there was a difference between different types of earnings management.

STATISTICAL METHODS

Random effects panel model and fixed effects panel model were used to estimate regression models required for hypothesis testing. To determine “whether fixed or random effects regression model will be accepted” the Hausman test was conducted [38; p.316]. R language and environment for statistical computing [39] were used for statistical analysis and estimation of models. Also, some additional R packages were applied, such as The *plm* package [40] necessary for estimation of panel data models, the *stargazer* [41] for regression tables formatting, and the *car* package [42] for multicollinearity testing. Research conducted by Pavić Kramarić, Aleksić, and Pejić-Bach [43] can be mentioned as the example of the panel research in the Republic of Croatia in the field of finance.

RESEARCH MODELS

Considering previous research on the relationship between earnings management and dividend policy, certain control variables with potential impact on the level of earnings management were included to increase the reliability of statistical models: company size [8, 12-14, 43, 44], leverage [12-14, 43, 44], profitability [8, 14, 44], retained earnings [12, 13, 43], an affiliation of audit company to Big Four [14].

Additionally, retained earnings were taken into account in this context given that they are “legitimate source of cash dividends” and due to the fact, that “higher retained earnings lead to the fewer needs of earnings management” [43; p.208]. Results of the research conducted by Daniel et al. [12; p.10] indicate that “accruals are negatively associated with retained earnings” and corroborate statement that retained earnings are “a proxy for the inventory of earnings from which dividends can legally be paid”.

After considering the variables used in previous research, the following regression models were formed:

$$\begin{aligned} aDACC_{i,t} = & \beta_0 + \beta_1 \cdot \frac{D}{P_{i,t}} + \beta_2 \cdot \frac{D}{P} \cdot COVID_{i,t} + \beta_3 \cdot RET_{i,t} + \beta_4 \cdot BF_{i,t} + \\ & + \beta_5 \cdot CS_{i,t} + \beta_6 \cdot PROF_{i,t} + \beta_7 \cdot LVG_{i,t} + e_{i,t}, \end{aligned} \quad (3)$$

$$\begin{aligned} uwDACC_{i,t} = & \beta_0 + \beta_1 \cdot \frac{D}{P_{i,t}} + \beta_2 \cdot \frac{D}{P} \cdot COVID_{i,t} + \beta_3 \cdot RET_{i,t} + \beta_4 \cdot BF_{i,t} + \\ & + \beta_5 \cdot CS_{i,t} + \beta_6 \cdot PROF_{i,t} + \beta_7 \cdot LVG_{i,t} + e_{i,t}, \end{aligned} \quad (4)$$

$$\begin{aligned} dwDACC_{i,t} = & \beta_0 + \beta_1 \cdot \frac{D}{P_{i,t}} + \beta_2 \cdot \frac{D}{P} \cdot COVID_{i,t} + \beta_3 \cdot RET_{i,t} + \beta_4 \cdot BF_{i,t} + \\ & + \beta_5 \cdot CS_{i,t} + \beta_6 \cdot PROF_{i,t} + \beta_7 \cdot LVG_{i,t} + e_{i,t}, \end{aligned} \quad (5)$$

where dependent variables measuring the level of earnings management are aDACC – absolute value of discretionary accruals; uwDACC – income-increasing discretionary accruals which indicates upward earnings management and dwDACC – income-decreasing discretionary accruals which indicates downward earnings management. Test variables are D/P – a number of dividends that company paid to its shareholders divided by net profit in previous financial year (identical variables had been used by Saona and Muro [7] and He et al. [13]); COVID = financial year for which annual financial statements were not disclosed before the declaration of the global COVID-19 pandemic and the COVID-19 epidemic in the Republic of Croatia. That variable is a binary variable with values 0 – financial years before declaration of the COVID-19 pandemic, or 1 – year in which the global COVID-19 pandemic was declared.

Multiplication of the ratio of dividends that company paid to its shareholders and net profit in previous financial year with the binary variable COVID ($\frac{D}{P} \cdot COVID_{i,t}$) is used for measuring the effect of the global COVID-19 pandemic on relationship between the level of earnings management and a number of dividends that company paid to its shareholders divided by net profit in previous financial year.

Control variables are: RET – retained earnings divided by total income; BF – affiliation of audit company to Big Four, that was specified as a binary variable (with value 0 – audit company not classified as a part of Big Four, or 1 – audit company classified as a part of Big Four); CS – natural logarithm of total assets which was used as proxy variable for size of a company; PROF – return on assets (calculated as a ratio between net income and total assets) which was used for measuring level of profitability; LVG – ratio between total liabilities and total assets which was used for measuring leverage. Finally, β_0 is regression intercept, β_n ($n > 0$) are regression coefficients and e is regression error term.

RESULTS

The descriptive statistics related to the variables included in the research models are presented in Table 1, which comprises the six measures (minimum, 1st quartile, median, mean, 3rd quartile, maximum) of the numeric variables included in the research models. The affiliation of statutory auditors to the group of Big Four audit companies was not incorporated in Table 1, given that it is a dichotomous variable – 131 audit companies (47 %) were classified as a part of the Big Four, while 118 companies (42 %) were not classified as a part of the Big Four. The data was not available for 31 companies (11 %).

Table 1. Descriptive statistics – numeric variables included in the model (aDACC is absolute value of discretionary accruals; uwDACC the income-increasing discretionary accruals; dwDACC the income-decreasing discretionary accruals; D/P the dividends divided by net profit in previous financial year; RET is retained earnings/total income; CS denotes natural logarithm of total assets (proxy variable for size of a company); PROF is return on assets (net income/total assets); LVG denotes total liabilities/total assets).

Variable	Min	1st Q.	Median	Mean	3rd Q.	Max
aDACC	0,0001	0,0136	0,0306	0,0481	0,061	0,465
uwDACC	0,0006	0,0131	0,0311	0,0446	0,0597	0,2191
dwDACC	-0,466	-0,0613	-0,0303	-0,0522	-0,0143	-0,0001
D/P	0	0	0	0,13	0	2,09
RET	-43,91	-0,19	0,008	-0,94	0,13	0,73
CS	17,55	19,18	20,14	20,14	20,94	23,79
PROF	-2,44	-0,008	0,02	-0,007	0,05	0,22
LVG	0,04	0,28	0,28	0,44	0,56	2,01

The variance inflation factor (VIF) test was conducted to “ensure that multicollinearity does not bias our results in the models’ estimation” [8; p.2761]. The variance inflation factor values included in Table 2 are related to all six research models. The results of this test indicated that all values are lower than 3,02, thus there is no multicollinearity problem if a value of 10 is taken as a benchmark [45].

Table 2. Multicollinearity – Variance Inflation Factor (D/P is dividends/net profit in a previous financial year; COVID = financial year for which annual financial statements were not disclosed before the declaration of the global COVID-19 pandemic and the COVID-19 epidemic in the Republic of Croatia – it was specified as a binary variable (0 = financial years before the declaration of the COVID-19 pandemic; 1 = year in which the global COVID-19 pandemic was declared); RET = retained earnings/total income; BF = affiliation of an audit company to the Big Four (0 = an audit company not classified as a part of the Big Four; 1 = an audit company classified as a part of the Big Four); CS = natural logarithm of total assets (proxy variable for size of a company); PROF = return on assets (net income/total assets); LVG = total liabilities/total assets).

Variable/Model	(1)	(2)	(3)	(4)	(5)	(6)
D/P	1,3	1,3	1,42	1,47	1,28	1,36
COVID	1,02	1,11	1,04	1,21	1,03	1,48
RET	1,05	1,65	1,13	1,93	1,03	1,73
BF	1,38	1,62	1,33	1,59	1,49	1,72
CS	1,65	1,96	1,64	1,77	1,83	3,02
PROF	1,35	1,48	1,40	1,45	1,52	2,4
LVG	1,37	1,46	1,23	1,93	1,61	1,14

To determine if the fixed effects or random effects panel model is more suitable for the estimation of research models, the Hausman test was conducted. It indicated that in the case of Models 1-5 random effects panel model was more appropriate for analysis, while the fixed effects panel model was more appropriate for Model 6. The results of models estimation are presented in Table 3 where regression coefficients for independent variables, standard errors (in brackets below coefficients), number of observations, and R^2 are included for six models.

Models were estimated using absolute discretionary accruals (Model 1), income-increasing discretionary accruals (Model 3), and income-decreasing discretionary accruals (Model 5) as a dependent variable and a measure of earnings management. Also, models in which companies that have not made dividend payments over a five-year period were filtered out from the research sample are estimated using absolute discretionary accruals (Model 2), income-increasing discretionary accruals (Model 4), and income-decreasing discretionary accruals (Model 6).

The results in Table 3 indicated that the regression coefficient of moderating variable that represented the effect of the economic crisis caused by the COVID-19 pandemic on the relationship between the level of earnings management and the amount of dividends that the company paid to its shareholders was positive (0,017) but not statistically significant in case of absolute discretionary accruals. The same was inferred from models where income-increasing discretionary accruals and income-decreasing discretionary accruals were used as a dependent variable (0,047 and 0,009).

The situation changed after companies that have not made dividend payments over a five-year period were filtered out from the research sample given that the regression coefficient of moderating variable for income-increasing discretionary accruals was positive (0,076) and statistically significant, indicating that economic crisis caused by the COVID-19 pandemic contributed to higher income-increasing discretionary accruals (earnings management) in

case of companies which made dividend payments in the observed period. It follows that a D/P ratio growth of 0,1 leads to an average increase of the discretionary accruals by 0,0076.

Table 3. Regression Models 1-6 (aDACC is absolute value of discretionary accruals, uwDACC is income-increasing discretionary accruals, dwDACC is income-decreasing discretionary accruals, D/P is an amount of dividends that company paid to its shareholders divided by net profit in previous financial year, COVID is financial year for which annual financial statements were not disclosed before the declaration of the global COVID-19 pandemic and the COVID-19 epidemic in the Republic of Croatia – it was specified as a binary variable (0 = financial years before declaration of the COVID-19 pandemic; 1 = year in which the global COVID-19 pandemic was declared), D/P*COVID is variable used for measuring the effect of the global COVID-19 pandemic on relationship between the level of earnings management and an amount of dividends that company paid to its shareholders divided by net profit in previous financial year, RET is retained earnings/total income, BF is affiliation of an audit company to the Big Four (0 = an audit company not classified as part of the Big Four; 1 = an audit company classified as part of the Big Four), CS is natural logarithm of total assets (proxy variable for size of a company), PROF is return on assets (net income/total assets) and LVG is total liabilities/total assets.

Model	Dependent variable:					
	aDACC		uwDACC		dwDACC	
	(1)	(2)	(3)	(4)	(5)	(6)
D/P	0,004 (0,013)	0,01 (0,011)	-0,0002 (0,017)	0,030 (0,019)	-0,0004 (0,019)	0,017 (0,015)
D/P*COVID	0,017 (0,034)	0,019 (0,024)	0,047 (0,051)	0,076* (0,044)	0,009 (0,048)	0,0002 (0,033)
RET	0,001 (0,001)	-0,016 (0,035)	0,0003 (0,001)	0,022 (0,042)	-0,001 (0,001)	0,312 (0,180)
BF	0,008 (0,008)	0,006 (0,012)	0,024*** (0,008)	0,010 (0,013)	0,012 (0,014)	
CS	0,005 (0,003)	0,003 (0,006)	-0,002 (0,004)	-0,001 (0,007)	-0,011* (0,006)	-0,049 (0,106)
PROF	-0,147*** (0,019)	-0,039 (0,132)	0,048 (0,057)	-0,221 (0,151)	0,160*** (0,026)	0,321 (0,481)
LVG	0,031** (0,014)	-0,041 (0,045)	0,036** (0,016)	-0,007 (0,054)	-0,031 (0,024)	0,985* (0,470)
Constant	-0,066 (0,064)	-0,004 (0,126)	0,050 (0,073)	0,047 (0,142)	0,186* (0,110)	
Observations	247	73	134	48	113	25
R ²	0,317	0,070	0,121	0,170	0,431	0,518

*significant at the level $p < 0,1$.

**significant at the level $p < 0,05$.

***significant at the level $p < 0,01$.

DISCUSSION AND CONCLUSION

THEORETICAL CONTRIBUTIONS AND PRACTICAL IMPLICATIONS

Earnings management and dividend payments are popular topics that have been intensively researched over the few past decades. One of the things they have in common is that research results in these fields are often inconclusive, causing debates and making consensus among researchers practically unreachable. Despite intensive research activities all over the world,

the research on earnings management in the Republic of Croatia is still in its infancy, leaving a lot of space for new scientific cognitions which will deepen knowledge on that matter.

On the other hand, there is a brand new stream of scientific research initiated by the dismal surroundings of the global economic crisis caused by the COVID-19 pandemic which involves practically all scientific fields, as well as economics. There is a considerable demand for new research to strengthen mechanisms for alleviating the consequences of the crisis caused by the COVID-19 pandemic.

That implies a unique opportunity for examining the relationship between the level of earnings management and dividend payments because similar research was not previously conducted. Research results showed that the impact of the economic crisis caused by the COVID-19 on the relationship between earnings management and dividend payments had not been statistically significant. But, when companies that had not made dividend payments over a five-year period had been filtered out of the sample, results showed that there was a statistically significant positive impact of the economic crisis caused by the COVID-19 on the relationship between dividend payments and earnings management.

Taking into account the assertions by Abdulkadir et al. [27] quoted in the Literature review section, discontinuation of dividend payments is not a desirable move for a company that has made dividend payments regularly over previous financial periods because it could signify financial difficulties and reduce interest for new investments. In that context, “companies may alter their payout policies in response to a financial crisis” [27; p.104].

Despite smaller sample of data available for this additional analysis, it provided higher precision of estimation because the distinction was made between companies that had not made dividend payments over a five-year period included in the research sample and companies which did not make dividend payments in the financial year when COVID-19 crisis started but previously had the practice of dividend payment. This implies that companies which suspended their long-lasting practice of dividend payments or decreased dividend payments in the financial year when the COVID-19 crisis started are probably not prone to earnings management practices, while companies that continued their practice of dividend payments during the crisis are.

Companies that decreased their dividend payments or were not able to make dividends payments most likely did so probably because they had presumed investors’ tolerance for companies that did not make dividend payments due to the difficult circumstances they found themselves in, similar to what Ahmad-Zaluki et al. [21] and Türegün [22] stated for the financial performance of companies during a crisis. Thus, the economic crisis caused by the COVID-19 pandemic provided a solid excuse for companies that were seeking an opportunity to suspend their long-standing practice of securing part of their cash-flows for dividend payments.

Furthermore, lack of resources and economic difficulties characteristic for periods of economic downturn can cause a shift in stakeholders’ behaviour in a way that they become more alert and scrutinize activities of a company they are interested in investing in more carefully than in a time of economic prosperity. Therefore, some companies are probably more inclined to lower dividends paid to their shareholders or completely abstain from dividend payments rather than engage in manipulative activities.

The results of this research could be useful for various groups of corporate stakeholders, but primarily for actual and potential investors. They could interpret actions that companies take within their dividend policies or, more precisely, they have to be cautious when companies continue the practice of dividend payments during the COVID-19 crisis because there is a possibility of increased earnings management in that scenario. On the other side, if a company suspends their dividend payments during the COVID-19 crisis, it could be evidence of its rational behaviour in terms of earnings management.

RELATIONS TO PREVIOUS FINDINGS

Research results indicate that the economic crisis caused by the COVID-19 pandemic had a positive effect on the relationship between earnings management and dividend payments in the case of income-increasing accruals regarding companies that made regular dividend payments. This is in line with researches conducted by Kasanen et al. [11], Daniel et al. [12] and Atieh and Hussain [13] regarding the relationship between earnings management and dividend payment, Ahmad-Zaluki et al. [21], Da Silva et al. [10], Flores et al. [17], Koowattananianchai [18] and Xiao and Xi [16] regarding the effect of the economic crisis on earnings management, as well as statements made by Abdulkadir et al. [27] and Laing et al. [28] regarding dividend payments during a crisis.

On the other side, the research results for the effect of the economic crisis caused by the COVID-19 pandemic on the relationship between earnings management and dividend payments were not statistically significant considering absolute discretionary accruals and income-decreasing discretionary accruals, which is in line with researches of Shah et al. [24], Abbasi et al. [25] and Abbadi et al. [26].

FUTURE RESEARCH AND RESEARCH LIMITATIONS

Future research should consider a separate analysis of the companies which increased their dividend payments during the economic crisis caused by the COVID-19 from those which decreased their dividend payments or abstained from dividend payments during the economic crisis caused by the COVID-19. It would be interesting to determine if the latter companies made new modifications in their recently implemented dividend policies immediately after the first year of the COVID-19 economic crisis and to examine the level of earnings management in their financial statements.

Also, it would be interesting to examine investors' reactions to dividend policies companies had applied during the COVID-19 economic crisis. Did investors appreciate companies that have not resorted to manipulative practices to create an impression of a stable financial situation or did they completely focus on dividend payments that they received based on shares they own?

The size of the research sample was affected by the fact that the Croatian stock market comprises a relatively small number of companies. Therefore, future research should be conducted on capital markets with larger number of companies or should include companies listed in capital markets from several countries with similar characteristics.

Despite the unquestionable prevalence of the Modified Jones model as a measure of earnings management, its weaknesses should be considered and future research could apply different measures of the mentioned construct to provide additional assurance.

Given that the economic crisis caused by the COVID-19 pandemic is still ongoing, it offers vast opportunities for scientific activities. Hence, various economic variables should be considered in future research to enhance the understanding of its effect on the corporate environment [47], and to identify the means necessary for timely and effective response to its consequences [48].

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THE CROATIAN HOSPITAL SYSTEM: INSIGHT INTO A CASE OF FINANCIAL UNSUSTAINABILITY

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ABSTRACT

This article shares some unusual insights into the natural and financial operations of the Croatian hospital system. It reveals a puzzling observation: the financial indicators of costs and hospital spending are on the rise, while at the same time, natural indicators, e.g., the number of hospital days and discharged patients, are declining. Physician numbers are increasing while hospital days of treatment are decreasing, and certain drugs consumption has been increasing without a corresponding increase in their patients. These are only some of the examples which are discussed in this publication. Stakeholders in healthcare insist that the hospital system is underfunded, while public finance, which sees financial sustainability through the prism of fiscal restraint, highlights uncontrolled growth of healthcare expenditures as key. Each has an element of truth, but neither is verifiably right or wrong.

Due to the absence of a shared understanding of the dimensions of the problem, healthcare, and public finance have created a *status quo* of hidden deficits and government bailouts. A comprehensive response to this longstanding issue requires open and sincere communication of all public sector functions stakeholders on societal priorities. No matter how much it has been generally accepted so far, healthcare should no longer be a public function whose expenditures are regularly insufficiently planned in the budget, because under the pretext that the lives and health of citizens are at stake, it is irresistibly easy to subsequently cover the lack of financial resources.

KEY WORDS

healthcare, hospital system, financial sustainability, Croatia

CLASSIFICATION

JEL: H51, H60, I18

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INTRODUCTION

Finding the optimal balance point determined by the availability, quality, and financial sustainability in healthcare seems to be an untamed problem in the long run. For the last three decades, the reform of the Croatian health care system has failed to ensure long-term financial stability [1-6]. Over the long run, significant intervention is provided by periodically allocating additional financial resources to the healthcare sector from the state budget.

In the past two decades (2000-2020), financial interventions of the central government were not recorded for only six years, with financial instability being evident and manifested at the secondary-tertiary level of health care, i.e., in the hospital debts remediation. They directly or indirectly account for the most significant part of the HRK 20,3 billion in rescue funds for the Croatian health care system [7]. Approximately this is the amount corresponding to the two-year current hospital expenditure (CHE) of the Croatian hospital system, according to consumption data from 2015 [8].

The achievement of financial sustainability must be carefully considered and weighed; namely, as much as it is undesirable to cover inefficiencies and ineffectiveness with limited public resources, it is even more unacceptable to jeopardize the essential functions of health improvement, quality of care, and accessibility [9]. The general idea of this article is to study and highlight the trends in the movement of hospital sectors' selected indicators. In that regard, this article aims to: (a) analyze the hospital system's natural and financial operations until 2019 and for the COVID 2020, and (b) compare the findings and record numbers of concern. These discoveries are discussed against the backdrop of the financial strategies of the healthcare sector. On this basis, the article opens up a conversation about the potential responses to the issues of concern. The concluding remarks offer three avenues for research towards changing the *status quo*; firstly, in the direction of behavioral change, secondly in determining the level of inefficiency and ineffectiveness in providing the health service, and thirdly to what extent the hospital system is underfunded.

THE HOSPITAL SYSTEM FRAMEWORK

The Croatian hospital system is part of the secondary and tertiary levels of health care [10]. Hospitals are almost entirely publicly owned and managed. Under the central government are tertiary care hospitals and secondary care specialized hospitals, while secondary level hospitals are mainly owned by local governments (counties and cities). The secondary level includes 22 general and 33 special hospitals, health resorts, and a prison hospital. With appropriate bedding, diagnostic and other possibilities adapted to their purpose, general hospitals perform surgery, internal medicine, pediatrics, gynecology and obstetrics, and emergency medicine. Special hospitals perform specialist-consultative activities and hospital treatment of certain diseases or specific age groups. The most complex forms of health care from specialist-consultative and hospital activities, scientific research, and teaching are performed at the tertiary level.

The tertiary level of health care in Croatia is provided by five clinical hospital centers (CHCs), three clinical hospitals, and five clinics. A clinic is a health institution or part of a health institution that, in addition to performing specialist-consultative and hospital activities, performs the most complex forms of specialist health care, and is a resource for higher education institutions and conducts scientific work for the activity for which it was established. Clinical hospitals are general hospitals in which at least two activities from internal medicine, surgery, pediatrics, gynecology and obstetrics are offered as clinics and at least two other activities of other specialties, i.e., diagnostics. CHCs are general hospitals with clinics for internal medicine, surgery, pediatrics, gynecology and obstetrics, whose more than half of other specialties are clinics, and where more than half of the curriculum of medicine, dentistry, pharmacy, and medical biochemistry, or nursing is delivered.

METHODS AND DATA

The insight into the financial (un)sustainability of the hospital system is based on data compiled from the Croatian Institute of Public Health (CIPH), the Agency for Medicinal Products and Medical Devices (AMPMD), and from five key Croatian hospitals, i.e., Clinical Hospital Centers for which there is an obligation to publish financial statements. According to the definitions of the System of Health Accounts [11], data on hospitals' current health expenditures in Croatia are collected by CIPH. They also collect statistics on the work of health care institutions and publish a report on the work of hospitals by activities, separately for inpatient activities, day hospitals, one-day surgery, and hospital hemodialysis. For the analytical purpose, descriptive statistical analysis has been used to analyze obtained secondary data.

The AMPMD collects data on total drug consumption in Croatia, and their data provide insight into the movement of hospital consumption in monetary amounts and (partially) by the Anatomical Therapeutic Chemical (ATC) Classification [12]. In this article, the ATK group L (drugs for the treatment of malignant diseases and immunomodulators) was singled out as a representative example of hospital consumption of medicines [13; p.116].

This research's observation period of natural and financial indicators was planned to cover five years from 2015 until 2019 and the COVID year 2020. However, this was partially successful, i.e., for selected indicators of the hospital system shown in Table 1 [8, 14-23] and for medicines consumption displayed in Figure 1 [24-29]. For providing a more detailed insight into the financial development of events in the hospital system, the example of five clinical hospital centers was used. For CHC's, indicators are shown for a shorter period until 2020. Their natural indicators have been shown since the year 2018 in Table 2 [21-23] because they were previously aggregated in data sources in such a way that makes separated reporting impossible. As regarding the financial indicators in Table 3 [30-51], the observation period starts arbitrarily with 2017; this year was chosen because, in the last decade, it was the last in which CHC's realized cumulative income surplus. Also conditioned, the insight into the CHC's maturity structure presented in Table 4 [34-52] starts dependently on the fact that hospitals are required to report their structure of liabilities by maturity only since 2018.

Monetary amounts are shown in the national currency, the Croatian Kuna (HRK). However, if, e.g., EUR or USD are preferred, the reader is suggested a simplified approximation using the Croatian National Banks' 2015-2020 average of annual middle exchange rates [53], i.e., dividing the HRK amounts with 7,5 (EUR), and 6,6 (USD).

THE NATURAL AND FINANCIAL STATE OF AFFAIRS

PATIENT NUMBERS AND DAYS OF HOSPITAL TREATMENT

In 2019, hospital spending in Croatia amounted to HRK 13.4 billion (Table 1). Compared to 2015, this increases HRK 2,9 billion or 27,8 % (average YoY growth of 4,4 %). The share of Croatian hospital system consumption in total health spending in 2019 was 47,6 %, making it the largest of all 27 EU countries for the third year in a row. With an average growth rate of 2,7 %, hospital physicians increased from 6 401 in 2015 to 7 181 in 2020. At the same time, the number of days of hospital treatment and the number of people in inpatient wards in the hospital system has been declining continuously since 2015. In other words, the number of patients in inpatient wards, days of hospital treatment and the number of inhabitants in Croatia has been in decline but the number of hospital physicians is steadily increasing. An added curiosity is that even though the population is shrinking, the number of hospitalizations per 100 inhabitants is relatively constant in the observed period.

The reduced admissions and days of treatment in acute hospital wards were offset by directing patients towards day hospital treatments. During the five years before the pandemic outbreak (2015-2019), in day hospitals, one-day surgeries and hospital hemodialysis, the numbers of discharged patients and hospital days recorded an average YoY growth of 7 % and 7,7 %, respectively. However, compared to 2015, in 2019, the total number of hospital days (including inpatient and daily hospital stays) decreased from 7 530 845 to 7 241 279. That means there are almost 300 000 hospital days less, or more precisely a decrease of 3.85 %. Simultaneously, the number of discharged patients increased almost 10 % in total, owing to the increases in patient discharges in daily hospitals, day surgeries and inpatient hemodialysis (see Table 1, line III.). It is a generally accepted fact that improved access to day hospital / one-day surgery goes hand in hand with reduced admissions to acute hospital wards and contributes to the rationalization of hospitals' operating costs. In that regard, Croatian hospitals' current expenditures rise of almost 3 billion HRK (2019/2015) deserves to be mentioned once again.

MEDICINE CONSUMPTION

The total consumption of medicines in Croatia in 2019 amounted to HRK 7,65 billion, of which HRK 3,34 billion (43,7 %) is related to hospital consumption of medicines (Figure 1). Total drug consumption increased by 45,2 % from 2015 to 2019, with drug consumption in hospitals growing from HRK 1,81 billion to HRK 3,34 billion, growing almost twice as much (85 %). The most significant increase in the share in total consumption was recorded by medicines to treat malignant diseases and immunomodulators (ATC group L). As mentioned earlier, and since drugs of this group are prescribed exclusively by specialist doctors after a diagnostic procedure that is possible only in hospitals/clinical hospital centers, it can be inferred that the total consumption of drugs from ATC group L can indicate hospital consumption of medicine [13; p.116] of CHCs'. Their increase has been extraordinary; from 2015 to 2019, the share of medicines treating malignant diseases and immunomodulators (ATC group L) in total hospital drug consumption increased from 56 % to 66 %. In fact, the consumption of these costly medicines doubled from HRK 1,02 billion in 2015 to HRK 2,2 billion in 2019. The increase in the consumption of ATC group L can be attributed to the increased use of new biological and biosimilar drugs to treat neoplasms, various autoimmune diseases, and other diseases that are now more effectively treated with new biological drugs. However, in the division into so-called "old" and "new" drugs in this group, the consumption of "old" drugs did not decrease, while the consumption of "new" drugs increased significantly [13; p.116].

THE 2020 COVID PARADOX

As can be seen from a comparison of 2020 with the pre-COVID period, the pandemic significantly highlighted the pre-existing oddity. In inpatient health facilities, the number of hospital days and discharged patients decreased YoY roughly by one-fifth; daily hospitals and day surgery show a decrease of 13,5 % in hospital days and 14,5 % in the number of discharged patients. At the same time, hospital drug utilization recorded an increase of HRK 418 million or 12,5 %, and the cost of ATK group L drugs increased by 28 %, or HRK 613,7 million. Altogether, it will make 1,35 million (18,7 %) fewer hospital days, and almost 225 000 fewer discharged patients (16,8 %) in 2020 compared to the previous year. Similar results were obtained by Kalanj et al. [54] in their research based on Diagnosis Related Group (DRG) data from all non-specialized acute hospitals in Croatia, which account for 96 % of national inpatient activity. Their analysis of the hospital admission rate before (average 2017-2019) and during the pandemic reveals a 21 % decline in general hospital admissions in 2020, despite the additional 20 609 COVID-19 related inpatient admissions reported by the CIPH. Case numbers in DRG classes related to the treatment of cancers decreased by 14 %,

whereby tertiary hospitals experienced a decrease of 16 % in cancer and neoplasm-related admissions, and secondary level hospitals a 6 % decrease in such admissions. At the same time, as shown in this article, hospital drug utilization recorded an increase of HRK 418 million or 12,5 %, and the cost of ATK group L drugs increased by 28 %, or HRK 613,7 million.

When looking at 2020, the COVID-19 disease pandemic surfaced the complete picture of the hospital systems paradox. Namely, compared to 2019, the number of hospital days in inpatient health facilities decreased by one-fifth, and the number of discharged patients decreased by 18,5 %. The same indicators in daily hospitals and day surgery show a decrease of 13,5 % in hospital days and 14,5 % in the number of discharged patients, which in total indicates 1,35 million fewer hospital days (18,7 %) and almost 225 000 fewer discharged patients (16,8 %) in 2020 compared to the previous year. On the other hand, hospital drug utilization simultaneously recorded an increase of HRK 418 million or 12,5 %, while the cost of ATC group L drugs increased by 28 %, or HRK 613,7 million.

Table 1. Selected indicators of the hospital system.

Year(s)	2015	2019	2020	2016/ 2015, %	2017/ 2016, %	2018/ 2017, %	2019/ 2018, %	2019/ 2015, %	2020/ 2019, %
I. Inpatient health facilities									
<i>No. of doctors</i>	6 401	7 117	7 181	1,70	2,03	2,95	4,08	11,19	0,90
<i>No. of hospital days</i>	6 401 804	5 843 470	4 676 614	-2,60	-2,87	-2,07	-1,48	-8,72	-19,97
<i>Avg. length of stay, days</i>	8,56	8,17	8,05	-0,70	-1,76	-1,20	-0,97	-4,56	-1,47
<i>No. of patients discharged</i>	748 159	715 639	581 093	-1,93	-1,15	-0,89	-0,45	-4,35	-18,80
<i>Hospitalizations per 100 inhabitants</i>	17,80	17,60	14,36	-1,24	0,05	0,00	0,10	-1,09	-18,45
II. Daily hospitals, day surgery, and inpatient hemodialysis									
<i>No. of patients discharged</i>	469 158	622 851	532 796	10,58	5,76	11,87	1,48	32,76	-14,46
<i>No. of hospital days</i>	1129 041	1397 809	1209 447	18,03	7,86	4,81	-7,21	23,80	-13,48
<i>Avg. length of stay, days</i>	2,41	2,24	2,27	6,64	1,95	-6,49	-8,57	-7,05	1,34
III. Total (I.+II.)									
<i>Hospital days</i>	7 530 845	7 241 279	5 886 061	0,49	-0,98	-0,75	-2,64	-3,85	-18,72
<i>Discharged patients</i>	1217 317	1338 490	1113 889	2,89	1,71	4,61	0,43	9,95	-16,78
<i>Hospitals CHE, mil. HRK</i>	10,456	13,364	n,a,	3,11	6,40	7,96	7,91	27,81	n,a,
<i>Hospitals CHE share in total CHE, %</i>	45,36	47,6	n,a,	-0,90	2,87	1,64	1,28	4,94	n,a,

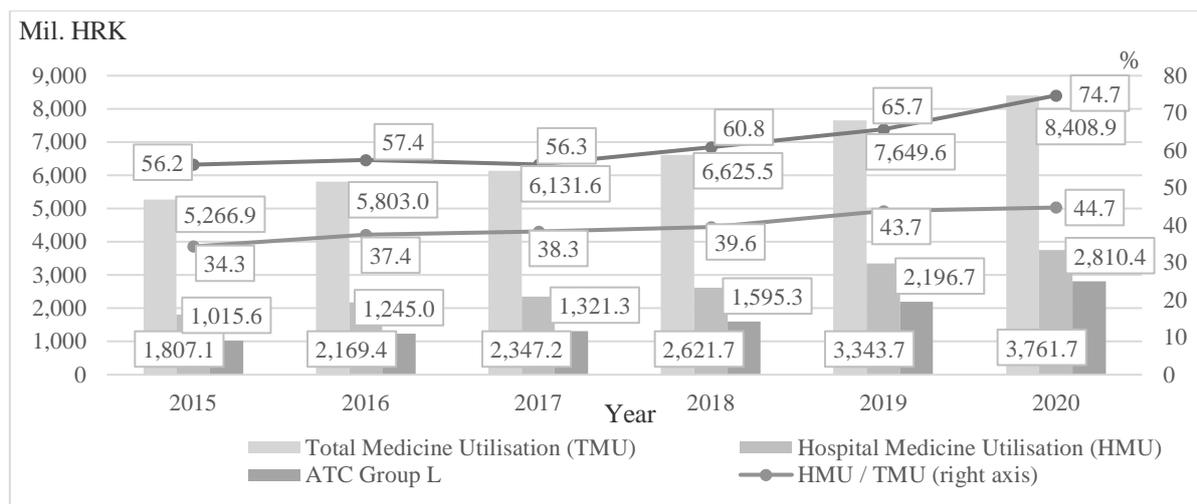


Figure 1. Medicine consumption in the period 2015-2020.

COVERING CASH GAPS OF CHC'S

A somewhat more detailed insight into the financial development of events in the hospital system can be seen in the example of five clinical hospital centers; their selected natural indicators are shown in Table 2. Together, clinical hospital centers account for approximately half of the entire hospital sector expenses in Croatia and almost the total ATC Group L drugs consumption. They employ over 40 % of all physicians in the hospital system and treat 39 % of acute and chronic inpatient hospital patients.

Table 2. Selected natural indicators of clinical hospital centers.

Year(s)	2018	2019	2020	2019/ 2018, %	2020/ 2019, %	2020/ 2018, %
Avg. no. of employees	19 385	19 755	19 674	1,91	-0,41	1,49
No. of doctors	2 915	3 022	3 059	3,67	1,22	4,94
No. of hospital beds	6 400	6 413	6 128	0,20	-4,44	-4,25
No. of hospital days	1760 028	1708 981	1352 381	-2,90	-20,87	-23,16
Avg. length of stay, days	6,23	6,12	5,91	-1,77	-3,43	-5,14
No. of patients discharged	282 367	279 113	228 993	-1,15	-17,96	-18,90
Ann. bed occupation, days	275	266	221	-3,27	-16,92	-19,64
No. of patients per hosp. bed	44,12	43,52	37,37	-1,36	-14,13	-15,30

According to data compiled from CHC's financial reports (Table 3), in 2017, their aggregated total income (around HRK 6,1 billion) covered total expenses (around HRK 6 billion). The explanation of the income surplus is simple – HRK 856 million of budget aid was received. The following year, in which budget aid was halved, a total income deficit of HRK 406 million was achieved, while in 2019, with a budget aid of HRK 191 million, a total deficit of HRK 616 million was achieved. Overall, in 2019, total income is 13 % higher than in 2017, and total expenses by 26 %. Material costs increased from 3 to 4.1 billion HRK (35 %), while with a slight increase in employment, employee costs increased by 11 %, to about 3 billion HRK. In 2020, with the advent of COVID-19 disease, total expenditures exploded relative to total income, and clinical hospital centers achieved a total income deficit of almost 1,5 billion HRK.

Table 3. Selected financial indicators of clinical hospital centers.

Year(s)	2017, mil. HRK	2018, mil. HRK	2019, mil. HRK	2020, mil. HRK	2018/ 2017, %	2019/ 2018, %	2020/ 2019, %
Total income	6092,6	6249,0	6908,6	7186,9	2,57	10,56	4,03
Total expenses	5984,1	6655,5	7524,7	8685,8	11,22	13,06	15,43
Total income surplus or deficit (TISoD)	108,4	-406,5	-616,1	-1498,9	-474,92	51,56	143,27
TISoD brought forward	-1929,3	-1821,0	-2221,7	-2794,7	-5,61	22,01	25,79
Employee costs	2761,1	2861,2	3057,3	3465,4	3,62	6,86	13,35
Material costs	3035,6	3495,5	4,111,1	4557,2	15,15	17,61	10,85
Aid from general budget	856,2	430,9	190,9	94,4	-49,68	-55,70	-50,56
Total liabilities	2378,6	2786,5	3371,1	4897,9	17,15	20,98	45,29

In three years, the total liabilities of CHCs increased from 2,8 in 2018 to 4,9 billion HRK in 2020 (76 %), with overdue and unpaid liabilities growing 56 %, from 1,5 billion to 2,3 billion HRK (Table 4). Almost all due liabilities relate to material expenses (over 95 %) or plainly said for unpaid medicines and medical supplies, meaning that the medicines wholesalers "credit" hospitals in the stated amounts and deadlines. In other words, the money goes first to pay salaries and overhead costs, and the cash gap is 'covered' by non-payment of medicine wholesalers.

Table 4. The maturity structure of clinical hospital centers liabilities.

Year(s)	2018, mil. HRK	2019 mil. HRK	2020, mil. HRK	2019/2018, %	2020/2019, %	2020/2018, %
I. Nondue	1285,75	1539,00	2554,85	19,70	66,01	98,71
II. Overdue (A+B)	1500,71	1832,12	2343,04	22,08	27,89	56,13
A. Material costs	1441,43	1732,37	2262,94	20,18	30,63	56,99
a) 1-60 days overdue	472,19	519,07	663,42	9,93	27,81	40,50
b) 61-180 days overdue	635,03	859,86	1065,75	35,40	23,94	67,83
c) 181-360 days overdue	334,13	353,44	532,80	5,78	50,75	59,46
d) over 360 days overdue	0,08	0,00	0,97	-	-	-
B. Other costs	59,29	99,75	80,10	68,25	-19,70	35,10

KEY STAKEHOLDERS' FOCAL POINT

From the insight into hospital institutions' natural and business indicators, the outlines of a fuzzy picture can be seen. More detailed data on expenditures and operations are currently not publicly available, and what is available in control and management is useless. Overall, they quite clearly indicate the need for deeper analysis, the search for some rational justification, reasoned explanation, whether medical or economic, of the growing costs of the health or hospital system that have been disproportionate to available resources for decades.

The Ministry of Health of the Republic of Croatia has set a specific goal for years - more efficient management of financial resources in health [55]. However, if some effort has been made to achieve this goal, it has not yet (year-end 2021) resulted in more visible changes. Nowadays, BI tools and existing IT infrastructure can enable relatively rapid development and setup of an analytical-reporting system that allows top decisionmakers to propose measures and make decisions based on credible, up-to-date information and value indicators. Such a central reporting system can be designed to democratize the data of health care institutions, i.e., to provide the management structure of health care institutions with insight into selected interactive reports of their operations, comparative indicators with other institutions, etc., which encourages self-regulation and self-control. Management at the hospital system level could, for example, be improved by using dynamic quantitative/qualitative control and management tools that provide in-depth insight into the status, changes, and causes of all relevant items and indicators of natural and financial performance at all times.

Typically, something that would align with the above suggestion should have come to life years ago; it is not ingenious. From a multitude of potential explanations why it did not, one of the most elegant and straightforward is that the current situation describes the focal point in Thomas Schelling's sense [56-60]. As pointed out by Schelling in his seminal research on the resolution of coordination problems [56, 57], in situations of strategic interactions, there are both elements of conflict and common interests. Such situations can be resolved so that common interests are maximized despite conflicts of interests - when converging on the particular equilibrium seems 'obvious' for the strategic game players. Idiosyncratic cues determine the path towards convergence. The coordination problem solution stands out as the natural answer, i.e., it appears intuitively apparent to the involved individuals. History plays a vital role in Schelling's concept of a focal point [57; pp.67-68, 61]. An outcome can become salient simply because it has occurred frequently in the past [62].

Interdepartmental discussions on the problem of financial instability in Croatian health care, i.e., the hospital system, are generally dominated by two persistently opposing views. From the perspective of those responsible for protecting, improving, and preserving the population's health, the system's financial framework has traditionally been considered insufficient. On the other hand, according to the view that sees financial sustainability through the prism of fiscal restraint, healthcare problems are uncontrolled growth of expenditures. These key players and the social community, in general, believe that (public) hospitals are too important to fail; they are 'socially important non-financial institutions' [63]. Because they operate in a structural-situational monopoly with the function of saving the lives and health of citizens, when their regular business is threatened by illiquidity or insolvency, the government intervenes and saves them with taxpayers' money.

This indirect government guarantee is why medicine wholesalers supply hospitals and simultaneously accept seriously delayed payments. For them, it is a lucrative, risk-free sales and financing business combination – in their sales prices, financing with mark-up is embedded. When the medicine wholesaler's credit lines from their banks and suppliers are completely exhausted, the drama play is set in motion. Typically, the scenario is as follows:

Medical wholesalers initially try to negotiate with hospitals. It is always unsuccessful since the hospitals have no money. Swiftly, the danger of medicines and medical products not being delivered to hospitals becomes breaking news in the public media. The topic rises to a higher level, and wholesalers talk to the ministry of health whose hands are tied - funds for hospital debts repayment are not planned in the current budget. As days go by and the pressure rises, the finance ministry is tasked with finding a solution at the governmental level. In the concluding part of the play, the fiscal balance keeper prepares the budget revision, and the government announces the debt remediation schedule. The fire is extinguished, and the tensions calm down; everything returns to normal until next time.

The healthcare sector decisionmakers, including the management structure in the hospital system, have no intrinsic motivation to think within the financial equilibrium. According to them, the system is underfunded, which means that it cannot even fulfill its essential task of protecting, improving, and preserving the population's health within the given financial framework. Therefore, when the health care system faces a budget constraint, they spend more in good conscience. However, the Ministry of Finance is responsible for preparing and implementing government fiscal policy. One of its most important tasks is the management of budget revenues and expenditures; the state budget serves, among other things, as a system of control over the collection and spending of budget funds. The public finances, whose task is to guard the fiscal balance, should be very discontented when 'forced' to settle unplanned debts in any public sector function, including health care. They should be very much interested in preventing such adverse events in the future, e.g., by proposing controls or discouraging mechanisms where unplanned debts arise. However, as far as health care is concerned, public finances are entirely passive in this regard.

The passivity of the fiscal balance keeper may indicate that they tacitly admit that healthcare is underfinanced, i.e., that the allocation of resources to various public sector functions in the state budget is not optimal. When passed in parliament, the budget reflects socio-political consensus, a compromise reached on allocating limited resources to various public sector functions. The community pays regularly more than budget-planned expenditures for the health care function. The anomaly of unrealistic budget planning for healthcare is a form of shared understanding among a population of agents; it is a focal point where they maximize their joint welfare in bargaining situations. For decades, it has been 'order without law' [64, 65] that unplanned healthcare debts are paid without much difficulty and (public) discussion. If, for example, during the budget preparation process, healthcare funds were planned in a more significant amount, then due to scarcity or limited resources, the expenditures of some other public functions would have to be reciprocally limited. So, the 'Schelling point' where all participants maximize their interest is to underbudget the public healthcare function and accept later more spending than officially planned. In essence, it is a hidden budget deficit, revealed at some later point in time, and that could never be more easily leveled out in any other public function than in healthcare, i.e., the hospital sector. A generally accepted outcome is a salient *status quo ex-ante* year after year.

CONCLUDING REMARKS

It is generally prudential to observe financial sustainability in the public sector through the prism of fiscal constraint. However, the achievement of sustainability in the health system can be exerted to the level where it will continue to meet its primary goals and tasks in the future. By focusing on fiscal balance, without in-depth analyses, methods, and consequences of potential decisions, achieving financial sustainability may result in undesirable or unacceptable consequences in achieving the fundamental function of improving health, quality of care, and availability. In other words, without an appropriate quantitative-qualitative basis and in-depth

analysis of efficiency, from the aspect of social welfare, the newly achieved financial balance can be just as inefficient as the imbalance that preceded it.

The divergences mentioned earlier intuitively call for more profound attention and analysis to detect inefficiencies or ineffectiveness in health service delivery. Citizens use the term extravagance in their daily lives for economically irrational behavior, and it is indeed highly undesirable not to eliminate it when it comes to public funds. Adjustments in the management of public funds, especially in healthcare spending, should be accompanied by ‘law and order,’ i.e., efficient and effective management, control, and responsibility for results. However, this does not have to be the only cause of Croatian hospitals’ financial troubles. In parallel and simultaneously, it is imperative to find a compromise financial sustainability point where the health system faces a given budget constraint, a realistic financial framework in which it optimally achieves its core task of protecting, improving, and preserving public health. In that way, the direct, intrinsic contribution of the health system to the financial balance is optimized, i.e., the pursuit of harmonization of expenditures and revenues does not jeopardize the achievement of the health system’s goals. Therefore, it is needed to determine the extent to which the hospital system is underfunded.

The essence and scope of the problem depend on who has been asked. Health and finance stakeholders have different interpretations of what the problem is. Every version of the problem has an element of truth, but neither is verifiably right or wrong. Due to the absence of shared understanding of the dimensions of the problem and noncommunication, healthcare and (public) finance have, intentionally or unintentionally, for decades played their soft-budgeting game that always ended by acclamation accepted rescues. They created a *status quo* of hidden deficits and government bailouts that is fundamentally wrong and undesirable. Therefore, the first and foremost necessary prerequisite that should be fulfilled is a fundamental behavioral change of key stakeholders. In essence, it seems that this challenge is not so complex as it is longstanding. It is longstanding because different stakeholders are convinced that their version of the problem is correct. For moving away from the *status quo*, effective collaboration is critical. Communication, open and sincere, is a vital precondition for creating a shared understanding of the problem and comprehensive response to the issue.

Just as there is no doubt that Croatia is facing reform measures in health care, there is no doubt that there are no quick fixes and simple solutions. Because of the troublesome budgetary effects of hospital bailouts, not just health and finance, but all public sector functions stakeholders need to get out of their trenches and work together on a budget, i.e., public priorities. It should be their duty to search for and find the socio-political consensus on the allocation of limited resources to the various functions of the public sector. At the core of macroeconomic and fiscal constraints should be a total public sector spending review, identifying inefficient programs and their defundation. Healthcare should no longer be a public function whose expenditures are regularly insufficiently planned in the budget because, under the pretext that the lives and health of citizens are at stake, it is irresistibly easy to cover the lack of financial resources subsequently.

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ON EMPLOYING EXTENDED CHARACTERISTIC SURFACE MODEL FOR TOURISM DEMAND FORECASTING

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ABSTRACT

Extended Characteristic Surface Model is a theoretical tool of general application designed for computing coefficients in Monte Carlo stochastic simulations in particular in multi equation stochastic econometric models. Econometric models are most often used for economic analysis of large enterprises as well as national economies but rarely for analysis of small entities. The reason is that the costs of building and testing such large-scale models are very high. However, the hereby presented Extended Characteristic Surface Model delivers a not-so-expensive, rather intuitive, and flexible method eligible for consumer sentiment analysis and forecasting as well as for "what-if" inferring suitable for entities of all sizes. In particular, it allows for analysis of demand variation resulting from messages concerning competing merchandise. The article is focused on the application of the Extended Characteristic Surface Model for the evaluation of sentiment and forecast of demand in tourism. In the work extended characteristic surface method is explained in thorough detail, furthermore, the influence of factors such as demographic structure, prices, or market size on financial outcomes is analysed on the example of a small touristic entity.

KEY WORDS

forecasting, sentiment, tourism, visualization, machine learning

CLASSIFICATION

JEL: C01, C53, D81, D91, Z32

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INTRODUCTION

For evaluation of business enterprises, complex multi-parameter econometric models are build up. As it is well known that tiny variations of input data may induce large changes on output, econometric models are employed for the analysis of the sensitivity of an entity to viable internal and external conditions often changing very abruptly. As probing input data combinations is impossible partly due to obvious danger of irreparable damages to the entity, experimenting on the mathematical model is safe and allows for reliable what-if analysis and forecasting.

Econometric models are sets of mutually conjugate equations based on time series of economic categories often delayed. Such models consist generally of two elements: time series of econometric categories and set of coefficients relating them. Thus accuracy of coefficients is crucial for reliability of the model. Common methods of evaluation of coefficients are e.g. ARMA (Autoregressive Moving Average), ARIMA (Autoregressive Integrated Moving Average), ARMAX (Auto Regressive Integrated Moving Average with eXogeneous Input) or regression-based methods. Unfortunately, this gives point estimates only while due to imminent inaccuracy of learning datasets they are rather interval estimates. There are generally two attempts to overcome this limitation – Monte Carlo simulations and fuzzy number or interval arithmetic – both have pros and cons.

Fuzzy number methods despite intense research and development still suffer problems concerning computation complexity as well as convergence [1]. However, the solution may be obtained in a single computation pass [2]. Oppositely Monte Carlo based methods are presently very well explored. However, in order to produce reliable results, they require multiple repetitions of every simulation pass and subsequent statistical analysis. Another problem is the need to use long and uncorrelated series of random numbers, however present day pseudorandom number generators, like Mersenne Twister [3], Matsumoto [4], allows to overcome this limitation. The direct bonus of this procedure is obtaining empirical probability distribution estimate of output data. Furthermore, due to enormous computation power of contemporary computers, considerable computation complexity of Monte Carlo based methods is no more the problem [5]. One of the problems of MC based methods is often complex and hard to assess structure and hierarchy of conditional decisions.

In the article, hypothesis is verified that Monte Carlo based Characteristic Surface Model is useful for modelling of economic output of a single small touristic entity in the era of pandemic. Alongside numerical efficiency of the Model, ability to recreate typical scenarios will be investigated as well as ability of assessment of risk level and of estimation of fluctuations level. For the case study, Croatian touristic industry was selected due to its specificity including strong influence on the State economy.

The Methodology section consists of 6 subsections. In the first specificity of tourism in Croatia is analysed. In the second one, Characteristic Surface Method, extended characteristic surface model (eCSM) is introduced as an efficient tool for determination of stochastic coefficients in econometric models. Accordingly, relevant terminology is explained. In the next section, Design of the Numerical Experiments, experimental setup is presented and explained. In the fourth section, econometric model of hypothetic private, small touristic entity is presented as a base for calculations presented in the next section. Characteristics of layers adopted in this exemplary case is presented in Layers Data subsection. In the last subsection computer program written as test tool for the case study has been described, as well as other software utilized.

In the next section, Results, attempt is made to perform numerical modelling of evolution of consumer sentiment using characteristic surface method on the example of tourism industry in the era of SARS-Cov-2 pandemic. In particular, applicability of estimation of influence of input data, (e.g. population structure) on model output values is analysed. Computational results for eight different scenarios are presented; two examples display influence of discounts on final profit of the entity. Next two sections are devoted to discussion of results and presentation of final conclusions.

METHODOLOGY

Specificity of Tourism in Croatia

For the case study, tourism in Croatia has been chosen due to its remarkable specificity. Economics of Croatia, as well as more than 40 other countries, depends heavily on tourism. According to some authors, share of tourism in overall economy for 2017 was about 19,6 %, which is almost one third of the whole services sector – 70,1 % [6, 7] compared to industrial output at 26,2 % and agriculture 3,6 %. Other sources give even higher figures up to 25 % in year 2019 and 383 400 jobs (9,3 % of population) involved in the tourism industry [8]. Different figures may result from taking into account real contribution to Gross Domestic Product (GDP) accounted for 15.2 billion of US\$ [9], while the other may include revenues (13 billion US\$ in year 2019) of touristic industry only [8]. Due to analysis of Orsini and Ostojić [10], Croatia has the highest share of tourist revenues in GDP among countries like Cyprus, Greece, Malta, Italy, and Spain. This makes Croatian economy very sensitive to even minor fluctuations.

At real GDP PPP accounting \$116,34 in 2019 [7] Croatia was 85th country in the world, however taking into account GDP per capita (\$28 602) was even higher – 72nd which means substantial progress if compared to year 2017 [7, 11]. After a collapse initiated in 2008 by world financial crisis Croatia started recovery in late 2014 which culminated in 2019 at GDP growth rate at 2,9 %, declining public debt (to 73,2 % of GDP) (The World Bank [12]) and notable reduction of unemployment rate to below 7 % from 15 % in 2015 ([7]). It was speculated that due to SARS-Cov-2 outbreak, GDP may shrink by more than 8,1 %. Unemployment rate was estimated at 7,5 % in 2020 Q3 [11] while previous estimates were even higher at 9 %. While governmental emergency package (Croatia Week [13]) may help reducing the economy downturn, it was forecasted, that it would increase budget deficit and substantial rise of public debt even up to 84 % GDP by the end of 2020. Moreover, a fiscal deficit may set a record rising close to 7 % of GDP. It was expected that economy would rebound in the second half of 2020 (The World Bank, [12]) but no conclusive figures are available yet. It is expected that pre-epidemic levels may be reached no sooner than in 2022 [14]. Decline in number of overnights in 2020 was not distributed evenly. For example, Rab island, claimed as “Covid free zone” noticed only minor decrease of number of tourists [15]. This stresses up role of FUD (fear, uncertainty and doubt) in planning or abandoning holiday travel plans.

Characteristics of tourism in Croatia changed abruptly in 1995. Up to 1995 the shares of domestic and foreign tourists were comparable, however thereafter share of domestic tourists remained on war time level, while number of foreign tourists rapidly rebounded to a record number of 21 million in 2019 (5 % increase vs. 2018 [16-18]). This has changed in 2020, as in March only drop of 75 % in number of tourists was recorded year to year [19]. Figures for the April were even more severe reaching 99,8 % drop [19]. However preliminary data showed that in a whole year reduction of overnights was lesser than expected, at 54,0 million versus 91,24 million in year 2019 (59,2 %) [18, 20].

Accommodation structure is one of the most interesting factors of Croatian tourists industry [17, 18]. While number of beds in hotels and camping sites barely grows or even

decreases, number of beds in private accommodation entities more than tripled compared to year 1995 (Figure 1). Not only does it make Croatian tourism unique, but also has important social and economic consequences e.g., by helping reducing jobless rate (very high among youth, 17,8 % in 2019 [21]) as many facilities are operated by families. Another fast-growing tourism sector is nautical tourism [18; p.33], which stayed unexpectedly strong amid epidemic in year 2020 [22]. This may be attributed to adventurous nature of sailors.

Structure of private accommodation in Croatia is moderately diversified. Based on data from rental agencies, offered entities range from small, one or two apartments (rooms or studios) facilities up to luxury micro hotels for say ten families. What makes them distinct from regular hotels is management – private accommodation is by rule governed by a single family or even one person only.

Average number of overnights per arrival depends on the month. In the summer, it approximates to six days/one week (July, August), 5 days in June and September and less than three days in the rest of the year. This is probably caused by policy of owners of private accommodations and camps who restrict reservations to the whole week in high season and lift that limitation in other months [17, 18]. Furthermore, number of overnights vary during the year and peaks in July/August far more than in other countries [10]. Strong seasonality is another weakness of tourist industry.

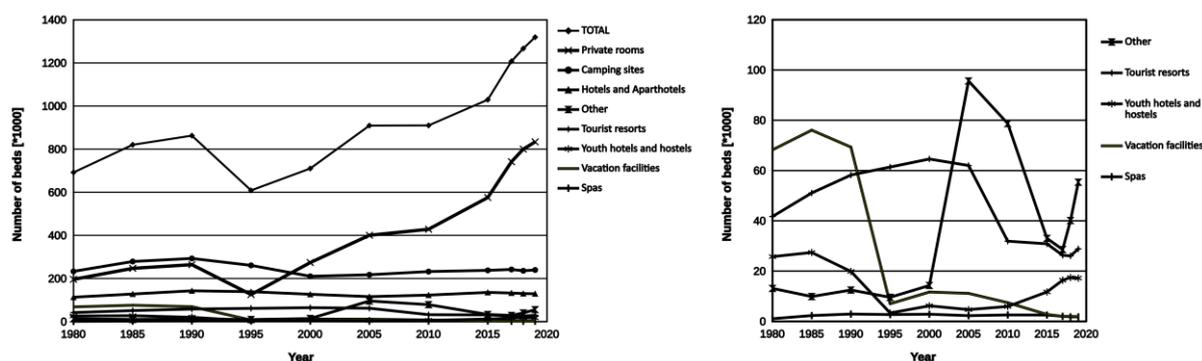


Figure 1. Number of beds depending on accommodation type [18].

Average number of overnights per arrival depends on country of origin too. While tourists from Germany, Czech Republic and Poland arrive to Croatia for one week on average (7,2, 6,8 and 6,5 respectively), the ones from Austria, Slovenia, Hungary, UK and Italy stay for approximately 5 days [18]. Visits from other countries are shorter than four days. According to governmental data in 2020 only number of overnights generated by tourists from Poland was substantially higher than in 2019 [23], peaking at 12,4 % of all bed nights a bit less than Slovenes tourists (13,5 %) but ahead of Czechs (9,2 %) and Austrians (6 %) while Germans retained first place with 33,3 % of all overnight stays [24].

What is intriguing is that the choice of accommodation type strongly depends on the country of origin. It may be best presented as dependency of proportion of number of overnights in private accommodation and the number of overnights in hotels, on the country of origin – P/H. Based on data from y.2019 [18], four different groups may be spotted (Figure 2). The first one contains only one country – Poland ($P/H = 7,67$). The second group consists of Czech Republic, Hungary, Germany, Italy and Slovenia ($2,1 < P/H < 5,42$). To the third one belongs France and “other countries” ($1,5 < P/H < 1,7$). The last one consists of USA, Austria and UK ($P/H < 1,0$). While sentiment of Polish tourists toward private accommodation may be attributed to more affordable prices or just preferred form of vacationing, the difference between Austria and Germany is more difficult to understand. Both countries are comparably

wealthy and are in similar distance from Croatia with Austria being obviously nearer. This puzzle should be explained in separate research. There is one more thing to note, namely rapid grow of P/H factor for some countries like Poland or Czech Republic with stagnation for others like Slovenia, UK or USA (Figure 2, right).

P/H factor lesser than one, spotted for travellers from USA, Canada or UK may be attributed to luggage limitations imposed by airlines. This makes hotels the first choice for accommodation. However, this does not explain low value of P/H factor for Austria i.e. 0,9 (0,7 in 2018), as Croatia is easily accessible by car and there are no serious luggage limitations. Larger figures for private accommodation may result also from that increase of number of hotel beds requires more investments, thus owners of private accommodations tune to market requirements faster.

Analysis of available offers suggests that typical price per week/per arrival ranges from 400 up to 600 €, however prices over 1000 € per week are not uncommon. It should be stressed that as the euro is widely accepted (and often expected) in all payments (services, restaurants, tolls and goods) it became the second currency of Croatia, even prior to official access to Eurozone, expected as soon as in year 2022 as Croatia currently participates in the ERM II since July 10th 2020 [25].

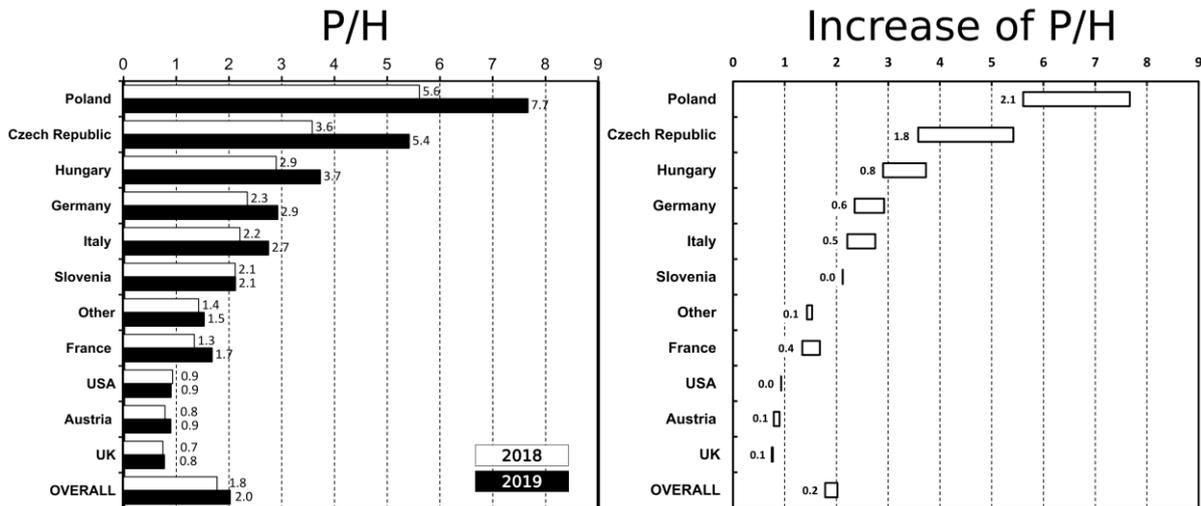


Figure 2. Proportion of overnights in private accommodations to hotel overnights (P/H) vs. country of origin. Comparison of P/H factor for year 2019 vs. year 2018 (left) and illustration of increment (right). White fill means increment, black decrease or no change [18].

Summarizing, majority of tourists in Croatia is from abroad, spent one week per arrival most likely in private accommodation; all payments may be done in the euro. Numerical experiments presented in the next chapter are based mainly on these conclusions.

Details of Characteristic Surface Method

The method is being developed for some years. In the course of time some important and promising results have been obtained and presented in national journals, selected papers [26-28]. However, method with latest improvements has not been presented yet in details at the international forum not including more or less descriptive presentation [29-31]. Thus the article is devoted to detailed description of both theoretical background of the method and crucial details of implementation. The model is built upon specific to the model notions and assumptions defined as follows.

Abstract population **P** consists from **I** “individuals” – exemplary it may be group of tourists, but individuals of other kind may be regarded too, namely migrating birds or animal species choosing between two habitats. Many other kinds of “individuals”, including elementary particles or molecules may be the subject of the model.

Individuals are making personal “decisions” choosing one of at least two options – **M** options in general. Although model allows for values of $M > 2$, employing $M = 2$ should be sufficient for majority of typical scenarios. In particular $M = 2$ allows to model the financial outcome of economical entity under consideration (one option) versus its competitors (second option). However, increasing number of options beyond 2 may sometimes be necessary. So, for the sake of simplicity, $M = 2$ will be assumed in this article.

For each individual every option has an individually attributable “attractivity” A_i , $i = 1, \dots, M$. Each individual selects one option according to all values of A_i , exact reason for selecting given option A_i is intentionally assumed unknown, irrelevant and it does not matter if it was selected consciously and by reason or spontaneously, however it is assumed that sentiment towards different options remains fairly constant over time.

Act of decision may be modelled using “criterion function” $K(A_1, A_2, \dots, A_M)$ which evaluates to whole numbers $1, 2, \dots, M$ depicting which option has been selected. In order to make model computable it is further assumed that a transfer function $f(A)$ exists converting elusive attractivity A into real number a : $a = f(A)$. Finally criterion function is defined as $m = K(f(A_1), f(A_2), \dots, f(A_M)) = K(a_1, a_2, \dots, a_M)$, where $m = 1, 2, \dots, M$ is the number of the option selected.

Probability of drawing of individual with a set of attractiveness $A = \{A_1, A_2, \dots, A_M\}$ is governed by function $CS(\cdot)$ of M variables: $z = CS(a_1, a_2, \dots, a_M)$, which may be interpreted as multidimensional probability density function, PDF in short. This is the most important part of the model actually. It is assumed that the shape of the function is rather constant for the given population over longer times or evolution of the function $CS(a_1, a_2, \dots, a_M)$ is predictable by direct computation, forecast or modelling. Thus, because the function $CS(a_1, a_2, \dots, a_M)$ is characteristic to the given population over some time interval, it has been named Characteristic Surface and the whole model, Characteristic Surface Model (CSM). While early implementations employed static characteristic surface, the latter probe dynamic surfaces, i.e. changing over time.

In order to model the evolution of the characteristic surface over time and due to variety of signals (signal – a prominent event influencing behaviour of the population, e.g. epidemic) or conditions (i.e. set of parameters e.g. interests rates or mortgage loans rates), a variety of methods may be used. For example, the following may be mentioned: forecasting or control models, e.g. ARIMA (autoregressive integrated moving average), least squares based models GLM (General Linear Models), machine learning (ML) models, artificial intelligence (AI) trained models or last but not the least – formula based layer models. The last one is very useful for performing numerical experiments while probing theoretical background of the model.

“Layer” is defined as a subset of all individuals of the population, similarly reacting to signals. Thus splitting the whole population into layers allows for individual modelling of the evolution of every single layer independently from others and as a result, modelling evolution of the complete characteristic surface. As every layer has its own shape function $CS(a_1, a_2, \dots, a_M)$, each one may be modelled independently from others. One may be defined by equation, the other by empirical PDF, and another by AI/ML model. Furthermore, while one layer evolves, the other may remain static. In that way the model allows for testing many diverse scenarios.

In the article equation-based layers were used. Author found the use of time dependent correlated bivariate Gauss probability density distribution function $G(\mu_1, \sigma_1, \mu_2, \sigma_2, \rho, t)$ as particularly useful, where μ_1, μ_2 are means, σ_1, σ_2 standard deviations, ρ correlation coefficient and 't' indicates time dependency.

In original implementation the domain of numeric attractiveness $a_i = f(A_i)$ was restricted to the unit square what was causing some troubleshoots. Current, enhanced implementation lifts this limitation so time evolution of CS may be modelled in a more consistent and logical way. Another possible enhancement is introduction of criterion function K dependent on previous decisions of selected individual, thus allowing introduction of personal experience into the model.

The presented model does not provide procedure of evaluation of CS. Thus, variety of methods may be applied: query, theory of the subject, historical data, Big Data analysis, Machine Learning/Artificial Intelligence and A/B testing method [32 (known also as bucket or split-run testing) or just formula – whatever suits the best.

Summarizing, the Characteristic Surface Model may be denoted as a set CSM consisting of Characteristic Surface CS, attractivity A and criterion function K: $CSM = \{CS, A, K\}$. Obviously, CSM is the function of the number of options M, number of layers L and time t. It is assumed that in the following analysis $M = 2$, there are three layers and one of them evolves with time. In order to emphasize the difference between static and dynamic formulations time dependent variant of the model was named “enhanced” thus finally acronym eCSM is used.

Design of the Numerical Experiments

In order to test and illustrate pros, cons and caveats of the model, hypothetical tiny tourists entity located in small destination has been selected. This is motivated by following assumptions and goals:

- small entities are more sensitive to fluctuations of incomes and expenditures than bigger,
- it is far more difficult to simulate small-scale entity than large-scale as fluctuations rapidly rise for small number of individuals/tourists,
- as the number of small tourist entities is currently very big and still grows, it is important to test the tool for analysis of what-if scenarios for them.

Econometric model and assumed data

In the article, multi-equation stochastic econometric model of the agritourism farm, developed and tested in the past [27, 28] was adequately adopted and enhanced. Due to the exploratory nature of this research, some simplifications were accepted. The subject of the model is now a small touristic entity located in a small touristic destination (e.g., Soline, Šilo, Lumbarda, Postira). Host offers 6 apartments on weekly basis and earns flat price over whole season 20 weeks long, beginning June 1st. There is no problem with implementing a more complex scenario but this is far beyond the scope of the article. Weekly cost of the facility consists of constant part (instalments, local taxes, etc.) and variable costs depending on the number of flats rented (e.g., tourist tax, water, energy). Fixed costs per week are of course case-dependent. However, they may be deduced from yearly costs recalculated per one week in the season. Although according to official statements only about 8 % of loans indexed to CHF were taken for seaside rental houses [33], such a case is taken into account in this experiment. According to the analysis performed by Tepuš [34], the average monthly house instalments before 2005 were estimated at € 654. Another, though underrated, element of the private entity's fixed costs are living costs of the owner and his family, spread over whole year. Therefore, the value of the fixed costs during the period considered was roughly assumed at

EUR 1000 per week for the whole entity, keeping in mind that this cost component is strongly case dependent.

Although not very high, model takes into account cost connected with not-rented apartments. No taxes explicitly are taken into account as local and other taxes are included implicitly in fixed and variable costs. It was assumed that whole population might be split into three distinct layers, represented by bivariate correlated Gaussian distribution every. For the testing purposes, basically two were assumed static while the third one was migrating (change of μ_1 and μ_2) and changing its dispersion parameters (σ_1 and σ_2), while keeping correlation coefficient ρ constant. Evolution patterns varied with the experiment. Summary of parameters of Model are presented in the Table 1. Other extended cases are explicitly described in the Results section and in the Table 2.

Table 1. Definition of the Stochastic Econometric Model.

Variable	Formula, value or range assumed	Comment
't'	0...20	Index - week number
IR	3000	Initial financial resources in €
N_R	100	Number of repetitions
N	6	Number of apartments for rent, constant
N_D	100	Number of apartments for rent in destination, constant
p_t	420 € (315€, 360€)	Basic price per week 't' and variations, assumed constant
F_t	1000 €	Fixed costs at period 't', estimated,
D_{Tot}	90, 135 or 200	Total demand for the destination. Assumed constant.
$C_{F,t}$	10 €	Cost of "free" apartment at time 't'
$C_{U,t}$	25 €	Unit cost per apartment rented at time 't'
D_t	$D_t = D(t, \dots)$	Demand in period 't', depends on many factors
$N_{S,t}$	$N_{S,t} = \min(D_t, N)$	Number of rented apartments in period 't', $N_{S,t} \leq N$
C_t	$C_t = F_t + N_{S,t} \cdot C_{U,t} + (N - N_{S,t}) \cdot C_{F,t}$	Total cost of unit at week 't'; variable
I_t	$I_t = p_t \cdot N_{S,t}$	Incomes for week 't'
P_t	$P_t = I_t - C_t$	Profit per week 't'
$P_{C,t}$	$P_{C,t} = P_t + P_{C,t-1}$	Cumulated profit, $P_{C,0} = IR$.

*all values are estimated or assumed and varied depending on test

Layers data

Identification of layers is the key point of the model. While sentiments are usually inert, in response to intense signals (e.g. disasters like epidemic or earthquake) they may change

rapidly. For example recovery of frozen economy, thereafter lockdown will take some time due to aversion to the risk especially present in the tourist industry. Obviously, there is no rest in the presence of risk (excluding people adherent to risk).

Identification of layers and their sensitivity to variety of signals is complex task, requiring not only access to raw data but trained experts and specialized software too. Luckily, this does not need to be done frequently as once computed layers do not change rapidly or change in the predictable manner.

Table 2. Attributes of layers used in econometric model.

Layer index	μ_1	μ_2	σ_1	σ_2	ρ	S, %
L ₁ (static)	0,80	1,60	0,25	0,35	-0,3	20
L ₂ (static)	0,00	1,40	0,25	0,35	-0,2	60
L _{3A} (normal)	0,20	0,60	0,25	0,30	0,5	20
L _{3B} (epidemic)	0,10	1,00	0,25	0,30	0,5	20
L _{3C} (stimulated, 1)	0,50	0,30	0,25	0,30	0,5	20
L _{3D} (stimulated, 2)	0,50	0,40	0,25	0,30	0,5	20

In order to study a numerical experiment three layers have been assumed in the try to model recovery from the lockdown. As layers are shaped according to bivariate correlated Gaussian distribution (1), they are fully defined by 6 parameters: standard deviations (σ_1 and σ_2), means (μ_1 and μ_2), correlation coefficient (ρ) i.e. components of covariance matrix, and share in the population (S). All values are presented in the Table 2. Probability density function $f(x)$ of bivariate correlated Gaussian distribution is defined by the formula:

$$f(x) = \frac{1}{2\pi\sigma_1\sigma_2\sqrt{1-\rho^2}} \cdot e^{-(x-\mu)^T C^{-1}(x-\mu)} \quad (1)$$

where \mathbf{x} represents 2D point coordinates, $\boldsymbol{\mu}$ denotes the mean (2D point as well) and \mathbf{C}^{-1} is inverse of related covariance matrix. For higher dimensions formula stays the same excluding normalizing factor which depends on the dimensionality.

In all scenarios Layer L₃ migrates steadily from the selected initial state to the final state (ref. Table. 2). Uniform displacement per time step was hereby implemented nevertheless it may be step dependent. Layer L_{3A} describes sentiments during normal season while layer L_{3B} describes sentiments in the middle of first epidemic wave. The other layers have been assumed static in order to reduce number of variables in numerical experiments. However, in fully developed model they should “migrate” too and relative share of layers would probably change as well. Although variable, time dependent or stochastic displacement of the surface may be easily applied, it is out of scope and goal of this article as it introduces many new factors irrelevant to current discussion. It may be assumed that L₁ and L₂ layers represent domestic tourists not very favoring modelled destination, and less prone to foreign travel ban. Resulting Characteristic Surface may be symbolically denoted as $CS \equiv S_1 \cdot L_1 \oplus S_2 \cdot L_2 \oplus S_3 \cdot L_3(t)$.

Computer Program and Other Software Used

Model has been implemented as C language console program (GCC compiler, tdm-1, v.5.1.0), source code is available for research groups on demand. According to the algorithm used, computing time scales linearly with the size of the population sample ‘N’ and number of repetitions ‘K’, thus BigO is of rank N×K. Use of regular laptop was sufficient for all

calculations. Typical time of the single simulation was approximately 0,1 seconds over 20-week period (computed using clock() function), it was tested that 100 repetitions were optimal for convergence while not affecting significantly computing time. Charts have been prepared using gnuplot 5.4.1 [35] and tuned using Inkscape 1.02 [36], if required.

Obtained results are presented mainly on multi image (hybrid) charts. Images are arranged in two rows. Top row presents shape of Characteristic Surface before and thereafter migration of the monitored surface while a lower row shows estimated share of demand of monitored entity, number of apartments rented and cumulated profit respectively. In all charts lines presents minimum/maximum (solid bold line), lower and upper quartile (dotted line) and median (solid line) of depicted category. Vertical scales are expressed as percentage “Demand (share)” chart, as count of items in “Rented” chart and in thousands of euro (“Profit (cumulated)” chart). On the “Profit” chart black dashed horizontal line at $y = 3$, labelled ‘IR’ on secondary ‘Y’ axis depicts initial financial resources.

RESULTS

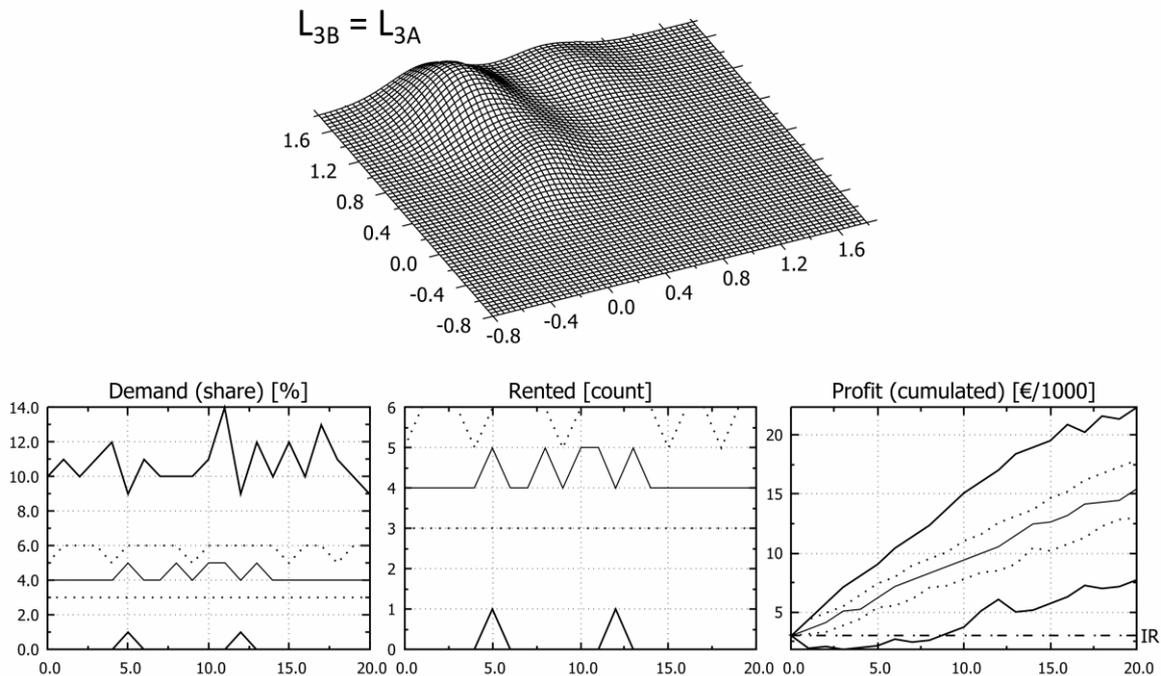


Figure 3. Simulation for the regular season, no migration of layers present.

From a plenty of possible and tested scenarios seven were selected for the presentation of the model (Figures 3 to 9). Migration of the third layer from epidemic L_{3B} state toward one of states L_{3A} , L_{3C} or L_{3D} was assumed in all investigated cases but first two. Four more experiments were done in order to reveal influence of scale effect on estimated profit (Fig.10). Basic values of attributes of the model are presented in the Table 1. Maximum theoretical cumulated profit after whole season was 27 400€ (all apartments rented all the time) while the highest possible loss 21 200€ (no guests at all).

In Figure 3 results of simulation assuming undisturbed season are presented, i.e. parameters of all disputed layers are constant over time. Specifically, this means that L_{3B} layer was identical to L_{3A} layer i.e. characteristic surface was the same in the course of simulation so it is drawn once in that Figure.

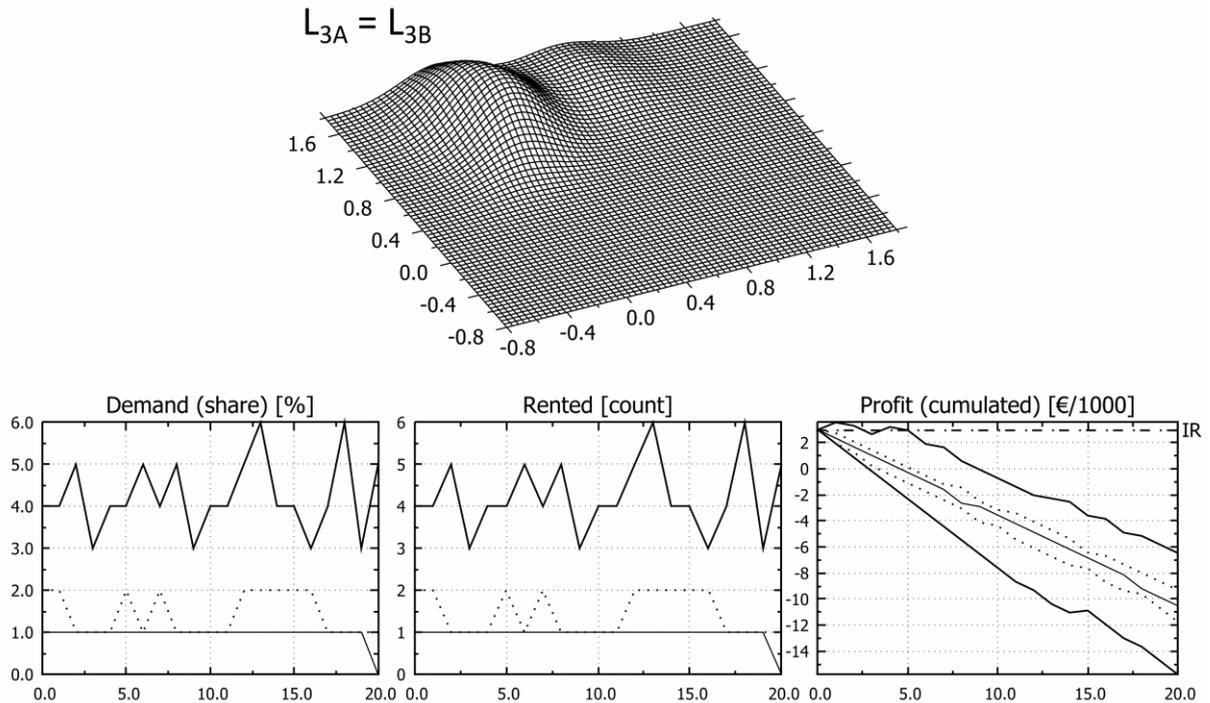


Figure 4. First wave of the epidemic, results of severe lockdown - all layers remains on “epidemic” L3B positions.

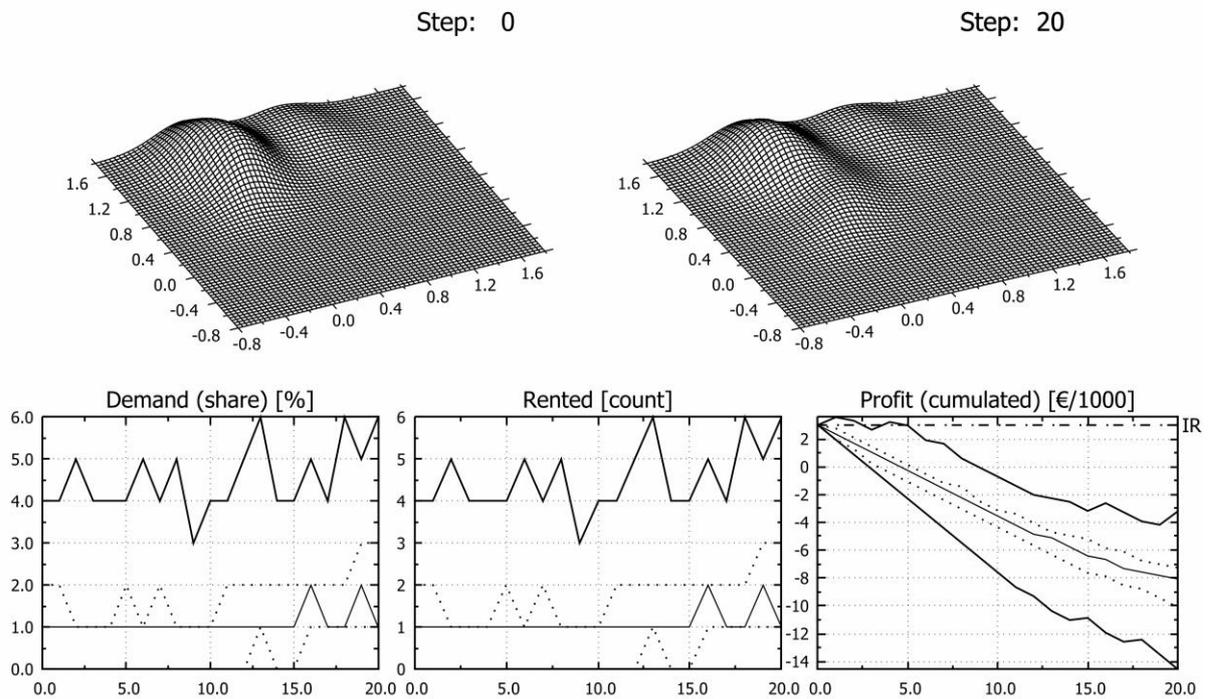


Figure 5. Passive, nonstimulated recovery by spontaneous migration of the L3B layer to the pre-epidemic L3A state.

As shown in Fig.3 median of demand’s share for analysed entity oscillates in the narrow band from 3 % to 6 % with 50 % probability (1st to 3rd quartile band), however maximum values incidentally reach 14 % and minimum values are down to 0 %. Hence, there is a noticeable uncertainty about profit. While median of cumulated profit is about 15 400 € on the end of the

season, every value in the range from 13 000 € to 17 800 € approximately is possible with 50 % probability. In the worst possible scenario short term loss of initial resources in the beginning of the simulation is possible however barely probable.

In the Figure 4. opposite case is discussed. Now the system, due to epidemic threat and restrictions, goes to epidemic layer L3B position and remains there, thus now L3A layer is identical with L3B layer. For this reason, as before, only one surface is shown in the picture. Additionally total demand in destination was reduced from pre-epidemic 200 units (e.g., individual tourists, families) to 90 only.

Due to marginal demand from unaffected layers L1 and L2 demand for analysed entity is nonzero, however median equals 1 % most of the time and with probability 50 % demand's share is less than or equal 2 %. Accordingly, no more than two apartments are rented, usually less. In effect owner suffers massive losses in the worst scenario at 15 800€ nearing maximum possible value. However median of loss is 10 500€ and 50 % of losses falls in the range 11 700-9 300 €.

Results of the third experiment are presented in the Figure 5. Simulation starts just after the end of the first wave of epidemic and thus starting characteristic surface reflects negative sentiment (ref. Fig. 4), then third layer, L3B, (maybe the most adventurous tourists) starts moving toward its pre-epidemic location, L3A. Demand for the destination remains at epidemic level of 90 guests or families.

Demand's share remains at low level during whole simulation. Not only the minimum value remains at zero level but even maximum value is lower than capacity most of time. Accordingly, it is not possible to rent all apartments. Due to that cumulated profit drops until the end of simulation thus resources in the end would be smaller than in the beginning. Using layers metaphor, one may ask question what to do to speed-up or intensify migration of third layer to its post-epidemic position in order to ensure faster recovery. There is no single and simple answer however. Popular solution is a discount supported by additional benefits (e.g., half board, fuel cost refundation). This was studied in the next experiment. Effect of simulation is shown in the Figure 6. Intense shift of third layer (assumed attributes of L3C layer: $\mu_1 = 0,50$ and $\mu_2 = 0,30$) is attributed to aggressive price lowering by 25 % to 315 € (total demand for destination remained at 90) and benefits.

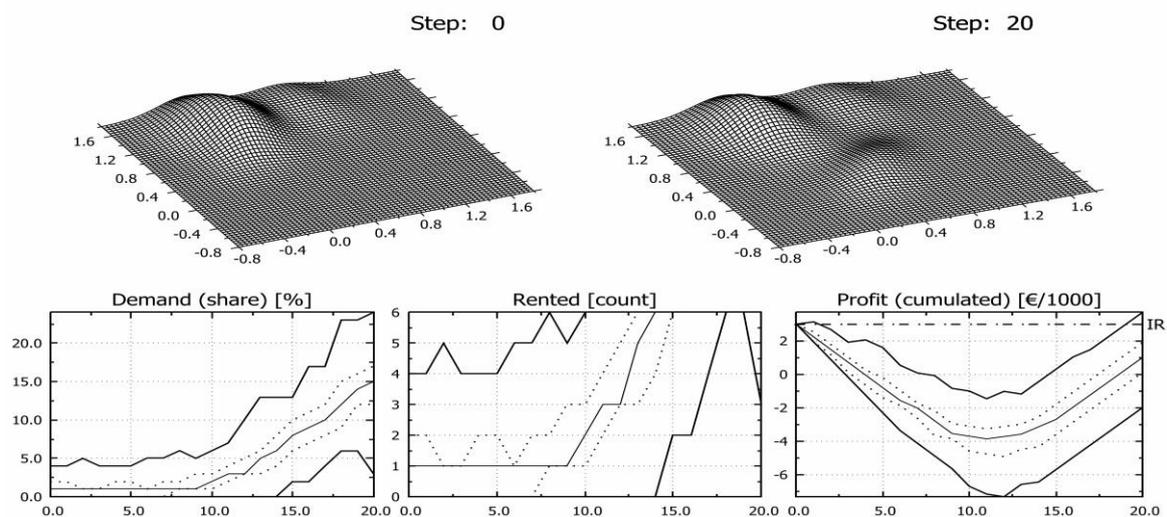


Figure 6. Overstimulated migration of the layer L3B to the state L3C after 25 % discount and benefits are offered.

In simulation shown in Figure 6 demand's share remains steady at low level but beginning from week 10th median starts rising and about week 14th exceeds capacity of the site. However minimum value remains at low level and minimum of demand is lower than capacity most of time. Despite that there is a small probability only that the host would not rent all apartments after week 15th. Accordingly, median of cumulated profit drops until 11th week then starts rising. Probability that final cumulated profit will be greater than initial resources (IR, Figure 6) is very small. This may mean that price lowering was too aggressive. Less aggressive option is popular discount "7 = 6" what means, that whole week is sold for price of six days. This time influence of price on final layer will be weaker, but incomes might be higher. Results of simulations are shown in the Figure 7, layer L3D (assumed attributes of L3D layer: $\mu_1 = 0,50$ and $\mu_2 = 0,40$, Table 2) was used as final layer. Less aggressive discount and lack of benefits make the offer less attractive, thus final μ_2 is higher than in the previous example. Median of demand exceeds capacity around 15th week a week later than previously. Despite slower recovery of demand final profits are in 25 % of simulation greater than initial resources (IR line in Figure 7). However still there is a substantial risk of loss but currently with probability lesser than 25 %. This two results once again emphasize conclusion that all discounts should be based on precise risk assessment.

Following two experiments test how restoring of initial demand would influence profits. Figure 8 shows effect of increasing of total demand by 50 %. Now probability of output greater than initial resources is remarkably greater than 75 % with no risk of final loss. Next, total demand reaches value of two hundred apartments from before the black swan. As shown in the Figure 9, now there is 100 % probability of not ending the season in red and 100 % probability of earning more money than initial resources. Moreover, positive results of recovery may be spotted started as early as from 8-9th week.

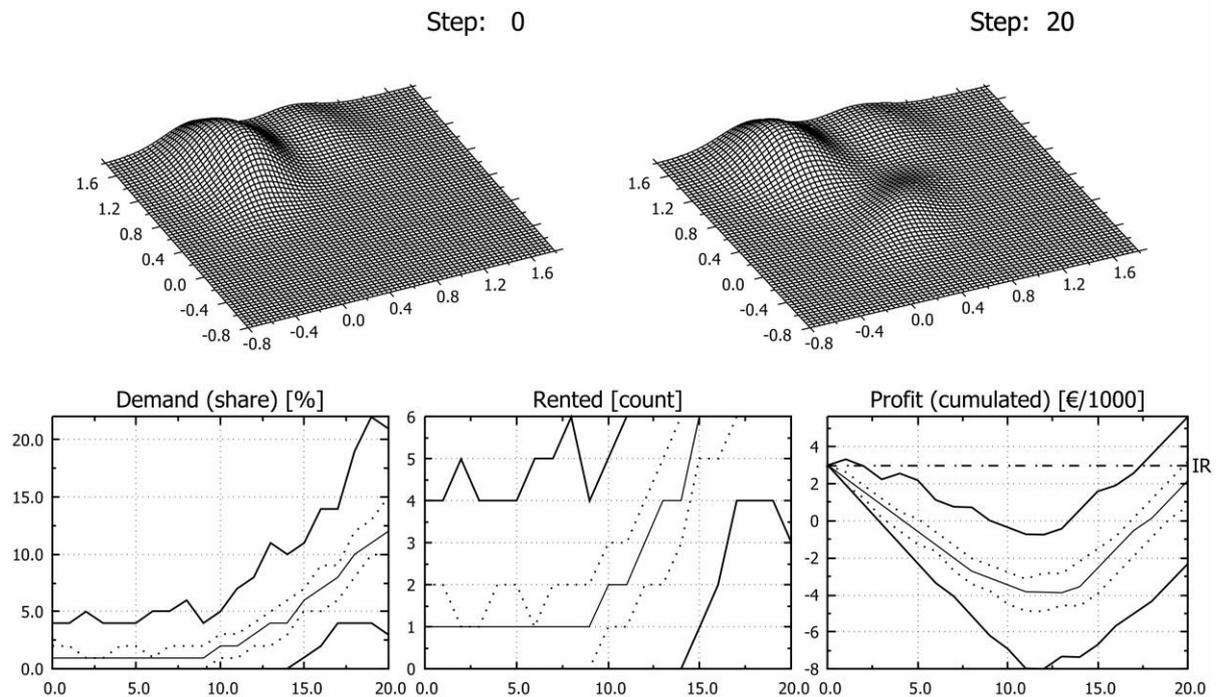


Figure 7. Moderate migration of the third layer from state L_{3B} to the state L_{3D}, "7 = 6" action engaged.

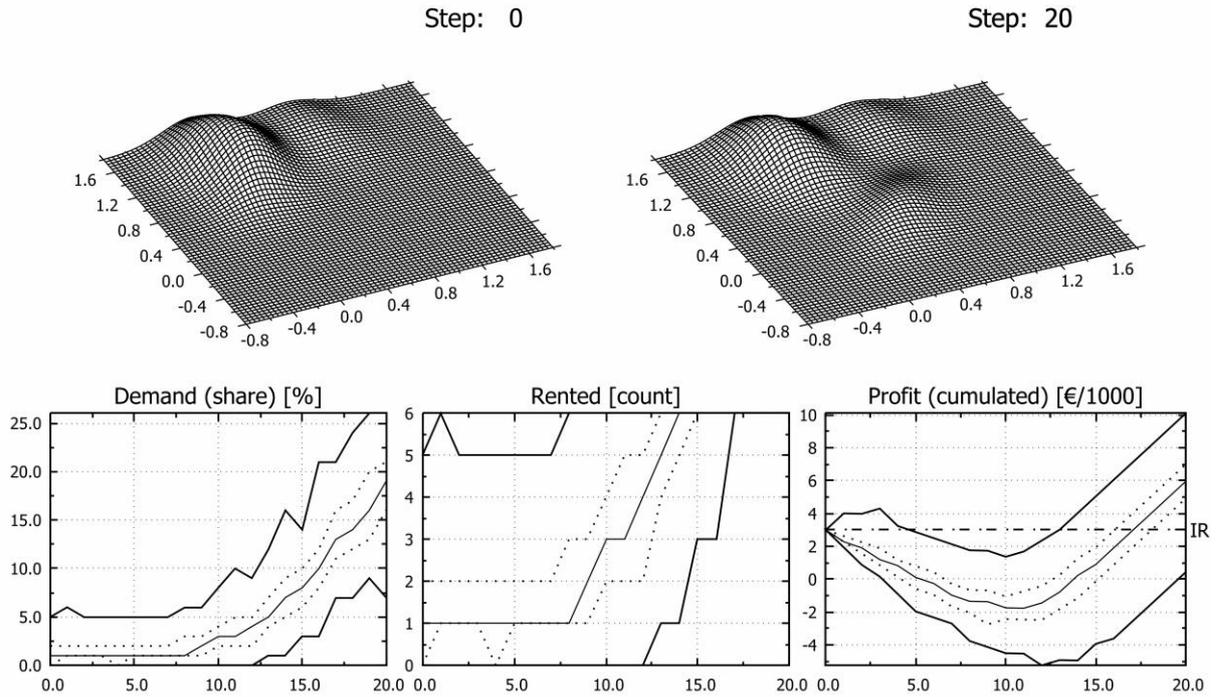


Figure 8. Migration of the third layer from state L_{3A} to the state L_{3D} . “7 = 6” offer active and total demand increased by 50 %, up to 135 apartments.

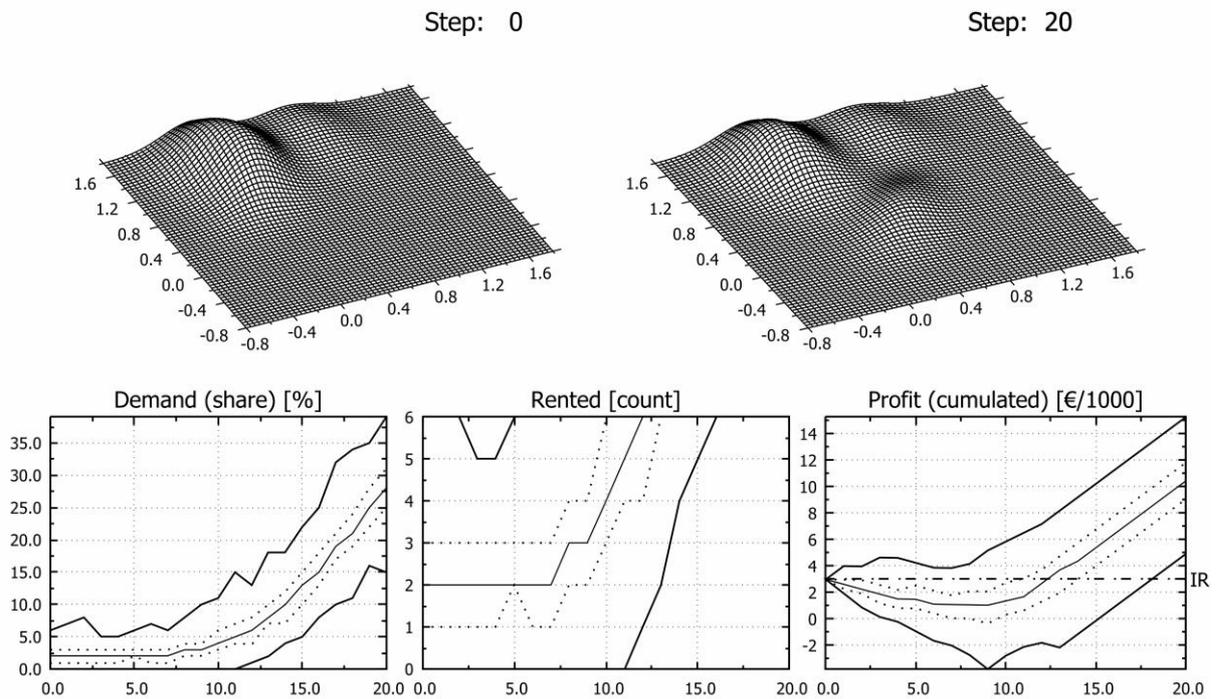


Figure 9. Migration of layer from state L_{3B} to the state L_{3D} . Total demand increased up to 200 apartments.

The host may lower the price but as long as total demand for destination is lesser than total capacity this would not suffice. As shown allowing and encouraging tourists for coming in is crucial for recovery from the crisis. In the case of epidemic, one of possible methods is lowering price, but this reduces incomes too thus discount rates should be carefully estimated.

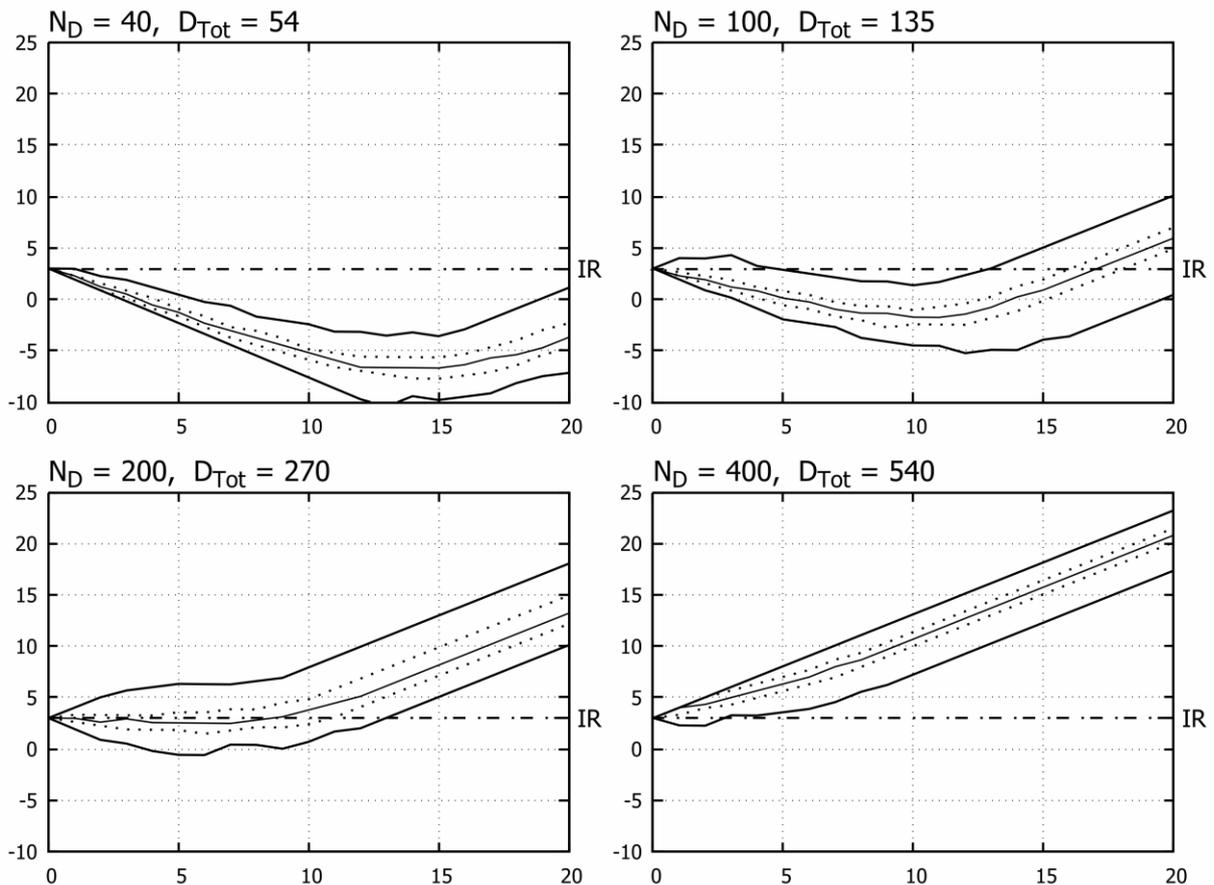


Figure 10. Scale effect influences results of simulation. Entities having the same attributes but in different locations may gain different profit depending on local offer and demand.

Final, eighth experiment shows influence of scale effect on cumulated profit. Analyzed entity was virtually placed in three other destinations, having total offer (N_D) and total demand (D_{Tot}) scaled. All values are estimated or assumed and varied depending on test, while total demand was assumed 50 % up from epidemic lowest level ($D_{Tot} = 54, 135, 270, 540$, respectively).

As may be easily spotted not only stochastic fluctuations are smaller for larger system but profit is significantly higher as well. Facilities having the same attributes but located in different destinations may gain different profit depending just on local demand. In more populated destinations probability of profits is greater than in less. In similar circumstances an entity located in small destination may even suffer losses while profiting in larger. This is in accordance with common belief that it is easier to catch a fish in big river than in small stream.

DISCUSSION

Results presented in the previous section suggest that Characteristic Surface model is useful for modelling of economic output of a single small touristic entity in the era of pandemic. As the Model is founded on very weak assumptions, it is very general as well, and may be easily adopted to a variety of scenarios.

Numerical efficiency of the Model is satisfactory and the Model itself scales linearly with number of repetitions and size of population involved. However, referential implementation of the Model may still be optimized by parallelization of computations for larger samples.

According to results presented above, the Model exhibits ability to recreate typical business scenarios. The Model is sensitive to even small variations of the input data in all tested

scenarios. Every parameter of the Model may be treated as a specific “degree of freedom” of its own variability range. Even after restricting number of options to $M = 2$, number of layers to $L = 3$ and omitting parameters of econometric model, number of possible combinations (Cartesian product) of remaining parameters: data of Layers ($6 \times L$, float numbers), population size N (positive integer), criterion function definitions (numerable, infinite), transfer function definitions (numerable, greater or equal 1) is infinite.

For the selected case study on forecasting of recovery of Croatian tourism industry from epidemic, a few conclusions can be made. As increasing rate of rented apartments is crucial for cumulated profit, it may be assessed in a different manner. One possibility is that high social skills of the host, commonly addressed as emotional intelligence, may help increase attractiveness of a given entity over competitors. In terms of Characteristic Surface Model, this may be expressed as an additional push from social skills on layer $L3$ toward higher competitiveness (bigger μ_1 values). Enhancement of the offer is possible as well. Markus et al. [37] suggest that introduction of additional items like sports activities to the offer, may help increase sales. Applying discounts may increase the number of rented apartments but may deteriorate profit, thus it must be precisely computed. Surely, small revenues are always better than no revenues, however discounts must be calculated in order to maximize incomes.

On the country level, there are more options available. In the first place, I would mention reducing stress and fear of potential guests, as there is no holidays in the presence of critical risk. This may be obtained by several means including (but not limited to) additional, low cost health assurance, increase of number of events for tourists – festivals, concerts or charming fisherman’s evenings, improving operation of highways toll system which currently is highly inefficient, safer organization of travelers resting places & fuel stations and strong support for domestic tourism. Of course, these remedies must be introduced by governmental agencies.

Hypothesis may be formulated that post epidemic tourists are more adventurous than others and expect active offers, like nautical tourism, biking, climbing. This might be verified in dedicated research. As shown in the Results section, the Model allows for risk assessment for selected scenario. Furthermore, according to properties of MonteCarlo method, range of variability for computed outputs may be estimated.

CONCLUSIONS

Presented hereby method seems to be useful for the what-if analysis, giving quantitative answers thus allowing for decision making at known risk. While using of the model is rather simple, fine-tuning of crucial parts of the model might not be easy and may require a lot of additional research including variety of methods from simple A/B testing up to the most complex AI/ML. In particular, layers for the specific population may be subject of scientific research on its own. Results may be published by governmental agencies ready for use by individual entrepreneurs.

Furthermore, besides new computational method, model introduces own descriptive language suitable for discussion concerning behaviour of analysed population. As assumptions the Model is built upon are very weak, it has almost no limitations. The main problems are proper identification and attribution of layers, determination of the response patterns (i.e. evolution of CS due to signals and time) and adoption of proper criterion function. Model easily scales with population size and may be applied to small, medium and large-scale systems.

Although shown on the example of tourist industry, presented Model is universal and may be implemented for a variety of scenarios, including forecasting of general elections, demand on selected goods or number of visitors in National Park at a variety of weather conditions. Due

to universal basics of the model another possible fields of implementation are sciences like physics or engineering.

Possible areas of further development include methods of determination of Characteristic Surface, introduction of innovative transfer functions and development of time dependent criterion functions, including past experience simulation.

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ACCOUNTING AND TAX REGULATION OF CRYPTOCURRENCIES

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ABSTRACT

The digital age creates new concepts, methods, and rules that are affecting the accounting process which presents new challenges in accounting practice. One of the most significant changes and innovations within accounting processing and the financial industry is the emergence of cryptocurrencies that create a completely new financial business concept. Cryptocurrency is the equivalent of electronic money and is completely digital. Cryptocurrencies and transactions with cryptocurrencies are frequent appearances in today's modern business but are not fully regulated. Accounting and tax treatment in the Republic of Croatia and other European Union countries but also beyond is not fully established and adjusted for doing business with cryptocurrencies. Due to the mentioned lack, cryptocurrencies and their transactions require strict regulation and adjustment operations. This article aims to investigate the development of cryptocurrencies and their involvement in the financial industry and business environment, with a focus on the accounting and tax treatment of cryptocurrencies within the accounting profession. Cryptocurrencies are rapidly developing on a daily basis and pose a significant challenge to the financial industry and especially their regulation within the accounting profession. A systematic literature review was undertaken to provide an overview of the related area of cryptocurrencies and their accounting and tax treatment. The terms ("cryptocurrency") and ("accounting" OR "tax") were used to collect data. The papers were reviewed to investigate whether a cryptocurrency control system has been established from an accounting and tax point of view and whether it functions as such but also its impact on the financial industry. Results indicate that the main problem that arises around the concept of cryptocurrencies and their accounting and tax treatment is insufficient regulation and inconsistencies in the implementation, monitoring, and evaluation of cryptocurrencies in the field of accounting at the local but also global levels.

KEYWORDS

money, cryptocurrencies, blockchain technology, accounting, taxes

CLASSIFICATION

JEL: H25, H26, M21, M41, O33

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INTRODUCTION

The new digital age brings with it several innovations and new products that have become an indispensable part of today's business. Digital transformation of business, implementation, and use of new digital technologies are nowadays an indispensable part of the business if companies want to follow market trends and if they want to be competitive. Due to that, financial markets are creating financial innovations known as FinTech. Blockchain technology and cryptocurrencies are just some of FinTech's products that are changing business models and ways of doing business known so far.

Cryptocurrencies in financial operations function without the mediation of banks, which ensures the user's complete anonymity and speed of data and money transfer. Cryptocurrencies are completely digital and carry a certain degree of risk because they are based on supply and demand for them, which represents a certain degree of uncertainty for the user. The task of the regulatory market is to ensure a transparent global network for transactions and data credibility, ie a regulatory body that will take care of and support the mentioned transaction mechanism. The area that requires the most attention when it comes to cryptocurrencies is their accounting and tax treatment and their regulation in the financial market. As cryptocurrencies become more popular, so do taxes on cryptocurrencies that vary from country to country. Cryptocurrencies are associated with risks such as money laundering, terrorist financing, and tax evasion, which require the establishment of a regulatory body and the implementation and application of regulations in the function of the transparent business with cryptocurrencies.

This article aims to explore the concept and main features of cryptocurrency, its advantages and disadvantages, and its effect on the financial industry and specially accounting profession. The main goal is to investigate the regulation of cryptocurrencies in the financial market, i.e. in the field of accounting and tax regulation. Innovations in the financial market are rapidly evolving daily and pose a great challenge in front of the financial industry, and cryptocurrencies as one of the FinTech products are emerging into various industries especially the financial sector thus creating new rules and ways of doing business. A systematic literature review was conducted to provide an overview of the relevant areas of cryptocurrencies and their accounting and tax regulation. To collect data following phrases were used and that is (cryptocurrency) and (accounting) and (tax). The collected papers were analyzed to review the existence of accounting and tax regulations for cryptocurrencies.

This article is sectioned into three parts. The first part of the article is dedicated to understanding basic terms related to cryptocurrencies and blockchain technology. In this first part, knowledge about cryptocurrency accounting and tax regulation is presented. The second part of the article represents the research approach, used methodology, and a literature review. Lastly, the third part is a discussion about the conducted research, conclusion, and recommendations. The goal of the article is to present a systematic literature review of papers and the connection i.e. regulation of cryptocurrencies established so far from the accounting and tax aspect. In our research, we focus on papers in the fields of banking, finance and accounting, business and management, and ICT technology.

THEORETICAL BACKGROUND

THE CONCEPT OF CRYPTOCURRENCIES

Cryptocurrencies are digital records stored in digital databases and are a means of digital exchange. Cryptocurrencies are virtual money (the equivalent of electronic money) that can be traded digitally and that serves as (1) a medium of exchange, (2) units of measure, (3) used

to store value, but not an official means of payment in any states [1; pp.656]. Cryptocurrencies exist only on the Internet, they are not issued by any bank or state, so they are not formally money. However, some authors see its ease of transmission over the Internet as an advantage [2; pp.25]. Also, cryptocurrencies create cheaper transactions, they are more accessible, more practical, but the security of data is questionable, which is one of the key areas of their further regulation.

Cryptocurrencies are kept in the so-called “digital wallet” on one of the websites that provide this kind of service. Unlike credit/debit cards cryptocurrencies do not contain or require names, but only have a digital wallet code, the so-called key that ensures anonymity, which is enabled through a peer-to-peer system, as a decentralized system without a central authority. All mentioned transactions take place through the general or public ledger which monitors and records all performed transactions of cryptocurrencies and is called the blockchain. The basic and key features of blockchain technology are that the system is based on peer-to-peer partners where the system is decentralized and there is no central authority (financial institutions, etc.) and each record and each transaction are recorded in real-time between many nodes within peer-to-peer systems [2].

In 2008, under the pseudonym Satoshi Nakamoto, an article entitled “Bitcoin - A Peer to Peer Electronic Cash” was published, constructing today’s most famous virtual currency, “bitcoin”. “Bitcoin is the first real digital solution to the problem of sovereignty, stability, and marketability it is resistant to unexpected inflation, while at the same time being marketable in every area, in all sizes and at all times” [3; pp.167]. “Bitcoin has no intrinsic value and its value mostly depends on its speculative value. The speculative value is based on spins on the technological mystery associated with cryptocurrency mining” [2; pp.29].

The main problem that arises around bitcoin is its regulation, i.e. the non-existence of a regulatory body and reaching an agreement on the nature of bitcoin (understanding bitcoin as money or as good), which is a possibility for various frauds. The importance of regulation and verification of transactions with cryptocurrencies is recognized by auditing and study who investigate audit procedures, i.e. risk assessment, i.e. significant misstatements in the financial statements related to cryptocurrency transactions and balances [4]. It is through “audit and audit monitoring of the adoption of blockchain technology that it can result in increased efficiency during the audit process because there will be a higher level of information revision” [5; pp.36].

Five important research gaps about bitcoin emerge was defined through study: “(1) research on the use of bitcoin and cryptocurrency in developing countries and across countries as well, (2) approach through a mixed-method (case study and user surveys) regarding the perception and understanding treatment of bitcoin and cryptocurrencies, (3) more research needed on legal regulations and the accounting framework of Bitcoin, (4) research on comparative analysis and mixed-method approach with respect to other cryptocurrencies and bitcoin, (5) need for studies focusing on a longer period of cryptocurrency analysis” [6; pp.74].

BLOCKCHAIN TECHNOLOGY

Cryptocurrencies use a Peer-to-Peer system (a system consisting of interconnected nodes) that works through a cryptographic mechanism through which all transactions are created and recorded through the so-called private and public address keys (digital record, a file containing the number of cryptocurrency units transferred). The entire blockchain system consists of computers connected to a network that confirm/verify certain transactions. Blockchain is associated with the term mining, which implies the process of confirming and adding new transactions in the blockchain. Although they do not physically exist, around

1700 virtual currencies are an increasingly common means of payment in the world, but bitcoin convincingly retains its leading position.

The main feature and the biggest advantage of cryptocurrencies, i.e. bitcoin, and blockchain technology, is a simple way of transferring money that takes place without intermediaries (over the Internet) where a third party cannot influence the transaction, while the total cryptocurrency market today is worth more than 1,4 billion USD. With regard to the growing popularity of cryptocurrencies, especially among Generation Z, ensuring customer satisfaction has a positive effect on creating the intention to use cryptocurrencies [7].

Blockchain technology has great potential because it speeds up and automates business processes, which can lead to reduced costs and safer and faster returns on investment. Blockchain technology is associated with the emergence of the concept of “smart contract” concluded between two parties (automatic implementation by the platform and within it) without the need for human intervention [8]. The concept of a smart contract is supported today by the four most popular blockchain platforms bitcoin, Ethereum, HyperLedger Fabric, and Corda [8]. “Blockchain technology can support a new generation of transactional applications and streamlined business processes by establishing trust among parties, accountability, and transparency that are essential to modern commerce” [9]. The growing interest in cryptocurrencies is also shown by the research which “proves that price increases encourage people to keep their money in long-term deposits, including in cryptocurrencies” [10]. We can claim that blockchain is “the main game-changer” in the fourth industrial revolution [11].

Recognizing the importance of blockchain technology as well as its further progress, some authors explore and define alternative mechanisms that can replace the existing Blockchain algorithm and thus make it more efficient [12]. The importance of blockchain technology is also visible in the creation of new innovative networks and new infrastructure with the aim of replacing old and non-integrated systems [13]. It has been proven that blockchain technology in combination with IoT elements contributes to the optimization of business processes, traceability, and transparency of the supply chain with significant financial savings within logistics processes, which speaks of a wider and significant application of blockchain technology [14].

ACCOUNTING TREATMENT OF CRYPTOCURRENCIES

Digitalization and digital transformation of business has an impact on all companies, but also on its business functions, including accounting itself. A wide range of tools is available to accountants in data processing and analysis, but the digital age provides and markets new and modern technologies daily. Data processing, recording, analysis, and interpretation of data as part of the work within accounting is affected by new technology, where it is important to understand the importance and significance of new digital technologies to improve business and further development of accounting in the context of new technologies. “Blockchain technology is the most discussed technology option and tool in the accounting, finance, and legal professions in recent decades” [15; pp.78].

Cryptocurrencies, as already mentioned, are becoming a means of payment, so the way of regulating, recording, and monitoring these types of transactions for accountants is an increasingly demanding and complex task. In addition to cryptocurrencies, it is necessary to distinguish them between crypto-assets. Cryptoassets are totality assets and information necessary and available for storage and processing through a blockchain platform which, unlike cryptocurrencies, does not necessarily have to be anonymous [15]. “Blockchain and crypto-assets are transforming how business is conducted” [16]. “The new blockchain technology provides a triple-entry bookkeeping system where all transactions are immutable

and time-certified, recorded in real-time, and encrypted” [17]. The transition to blockchain technology for accounting practice involves changing and adapting the accounting information system to electronic sophisticated programs and applications that are technologically advanced [18]. “Tracking accounting transactions and their continuous recording through blockchain can generate a complete route and history of items for such transactions” [5; pp.36]. The discussion about the contribution and importance of blockchain technology to accounting is visibly clear in terms of new technologies that bring a number of benefits, in this case, blockchain for the accounting profession.

With the advent of new technologies and especially blockchain technologies, the American Institute of Certified Public Accountants (AICPA) monitors current legislative programs and their impact on the accounting profession [19]. That is why the work of accountants and the accounting profession results in new concepts of accounting for the profession to adapt and learn following the requirements of new modern technologies.

Based on the above, the accounting profession is not yet fully adapted to the cryptocurrency business. Currently, there are no accounting standards in the accounting profession that follow cryptocurrencies and their accounting treatment, i.e. monitoring and recording, accountants currently refer to existing accounting standards. Due to that, we can talk about the lack of guidance for the measurement and presentation of holding and trading cryptocurrencies. Accounting treatment of cryptocurrencies under the Financial Accounting Standards Board (FASB) and International Financial Reporting Standards (IFRS) is unclear. “Although the International Financial Standards Board (IFSB) produced a draft document for guidance in the reporting of cryptocurrency, they have only provided a broad overview of these issues and the actual guidance for accounting for cryptocurrency is lacking” [20; pp.171]. Non-harmonized accounting can jeopardize the ability of users to properly assess the financial position and performance of entities involved in cryptocurrency transactions [21; pp.184]. “The regulation of cryptocurrencies, i.e. their treatment within the financial statements should maintain the economic circumstances arising from the psychology of cryptocurrency users” [22].

Regulation of accounting operations through IFRS hardly fits cryptocurrencies within the structure of IFRS [23]. The issue of valuing cryptocurrencies within accounting relates to its recognition and recording of transactions. In this context, the valuation and recording of cryptocurrency transactions through International Accounting Standard 38 (IAS) as intangible assets or in certain circumstances as Inventories through IAS 2 is considered acceptable [23]. However, there are different interpretations of cryptocurrencies, so there is a valuation outside the mentioned standards (Table 1).

As already mentioned, cryptocurrencies are a form of digital money, but unlike real money that is controlled by the state or the central bank, cryptocurrency is not. In this accounting context, cryptocurrencies do not meet the definition of money according to IAS 7, according to which money includes cash on hand and demand deposits [23; p.58]. Furthermore, the valuation of cryptocurrencies as a financial instrument is also unacceptable because cryptocurrencies also do not meet the requirements of IFRS-9 (IFRS-9 defines the recognition of assets as a financial instrument if there is a relationship that will create a financial asset and a financial liability). Valuation through IAS 40, investment in assets, is unacceptable, cryptocurrencies are not a physical form of assets as they are by definition, e.g. land or buildings. Accordingly, from an accounting point of view, cryptocurrency cannot be valued as money, a financial instrument, and an investment in real estate.

Intangible assets do not have physical characteristics and future economic benefits can be expected from them. According to IAS 38, intangible assets are separate assets (may be sold

Table 1. Valuation of cryptocurrencies according to IAS/IFRS [23; pp.58].

Standard	Evaluation	Acceptable under IFRS
IAS 7 – Cash flow statement	Cash and cash equivalents	No
IFRS 9 – Financial instruments	Financial assets at fair value through profit or loss	No
IAS 40 – Real estate investments	Real estate investments	No
IAS 16 – Property, plant, and equipment	Property, plant, and equipment	No
IAS 38 – Intangible assets	Intangible assets	Yes
IAS 2 – Supply	Supply	In certain circumstances

separately, transferred, exchanged, etc.) and are the result of contractual or legal rights. Based on the aforementioned, cryptocurrencies meet the definitions of intangible assets because they are exchangeable, it is possible to identify them in total assets as separate assets and they are expected to have future economic benefits [23]. According to table 1, cryptocurrencies are defined as intangible assets within the provision of IAS 38 (alternatively through IAS 2), while the initial idea of the creator of cryptocurrencies was valuation, i.e. a substitute for money and cash equivalents or an investment that is logically similar to an investment into financial assets [23].

The regulation of cryptocurrencies within existing accounting standards due to the lack of standards for monitoring cryptocurrencies poses a major challenge for the accounting profession and is the result of several studies addressing these issues. Research conducted by some authors considers that based on the main characteristics of bitcoin, it belongs to the classification of foreign currency, whereby they believe that virtual currencies do not have all the characteristics of a classic currency but have important common features: medium of exchange, a common measure of value and standardized exchange value [24]. Given that IFRS does not contain specific guidelines for accounting monitoring of cryptocurrencies, Procházka proposes several models for monitoring cryptocurrencies based on existing accounting procedures [21]. These models serve to present user-relevant information that represents the economic reality of cryptocurrencies [21]. Based on all the above, it is necessary to find a consensus and define an international accounting standard that will monitor and record cryptocurrencies.

TAX TREATMENT OF CRYPTOCURRENCIES

Due to the increased need for cryptocurrencies, the need to change the laws in the countries to regulate the performance of cryptocurrency transactions is also encouraged. Tax authorities and regulators around the world are trying to understand the concept of cryptocurrency and blockchain and place them within the legal framework. Moreover, their virtual transactions are considered legal in many regulations. Therefore, the possession of cryptocurrencies is even prohibited by law in some countries (Bangladesh, Bolivia, Ecuador, Kyrgyzstan, Vietnam, Russia, and China are on the verge of being banned). “Due to the lack of legal regulation of cryptocurrencies, most countries do not regulate transactions and exchanges with cryptocurrencies, which leads to the growth of illegal transactions” [25]. Given that cryptocurrencies (bitcoin) are often associated with different types of legal and illegal activities, some studies explore ethical considerations related to the “use of cryptocurrencies and their impact on cryptocurrency price estimates” [26]. The results on ethical considerations indicate that the “frequency of unethical discussion about Bitcoin negatively correlates with its price, while the frequency of ethical discussion positively correlates with

the price of the cryptocurrency” [26]. Their misunderstanding and lack of regulation underscores the need for cryptocurrencies (bitcoin) to be regulated by the state to avoid tax evasion, possible links to the illegal market, and protect consumer rights [24].

Different countries value cryptocurrencies differently, so the taxation and tax treatment of cryptocurrencies are different within different countries. Trading with cryptocurrencies generates earnings or receipts that are considered capital receipts, so income tax is paid on the income earned based on trading them based on capital gains. But there are also so-called. “Crypto-friendly” countries that have introduced more lenient laws to promote better adoption and innovation in the crypto-industry and allow investors to buy, sell or hold digital assets without tax. As of January 1, 2020, companies engaged in virtual currency trading and/or providing a wallet custodial service to store private cryptographic keys (e.g., cryptocurrency exchange offices and businesses that rely on crypto transactions) have become subject to the Prevention Act money laundering and terrorist financing (part of the implementation of the 5th European Union (EU) Directive on the prevention of the use of the financial system for money laundering and terrorist financing).

RESEARCH APPROACH

In our research, we have used the literature review, as a means to summarize past findings in a research field, in our case findings of accounting and tax regulation of cryptocurrencies.

Our selection process of the papers for the literature review is presented in Figure 1. First, we identified relevant databases for our research, and we have decided to focus on the peer-reviewed journals that are cited in Scopus and WoS (SSCI and SCI papers). Tables 2 and 3 present our search strategies in WoS (SSCI and SCI) and Scopus, with the period 2015-2021. We conducted a search using the scientific databases Web of Science (WoS) and Scopus in January 2022. Through the first part of the search, we checked WoS and Scopus using keywords: “cryptocurrency” AND “accounting” AND “tax”. The search was focused on peer-reviewed papers in journals in the English language. This approach resulted in 77 hits (72 in Scopus and 5 in WoS).

In the next step, the search strategy was refined. Since cryptocurrency is applied in different avenues of scientific research, we decided to limit our research to papers in the fields of banking and finance, business and management, accounting, and ICT technology. This criterion was related to Scopus subject areas and WoS categories (Table 2 and 3). This approach resulted in 36 hits (32 hits in Scopus and 4 hits in WoS).

Table 2. WoS (SSCI, SCI) search strategy (2015-2021).

Search strategy	Hits	Time span	Indexes
(cryptocurrency)) AND ((accounting)) AND (tax)	5	2015-January, 2022	SCIEXPAND., SSCI, A&HCI, ESCI
Refined by: WoS CATEGORY (Law, Business, Business Finance, Computer Science Interdisciplinary Application)	4	2015-January, 2022	SCIEXPAND., SSCI, A&HCI, ESCI

Table 3. Scopus search strategy (2015-2021).

Search strategy	Hits	Time span	Indexes
(TITLE-ABS-KEY (cryptocurrency)) AND ((accounting)) AND (tax)	72	2015-January, 2022	Scopus
AND (LIMIT-TO SUBJAREA, “BUSI”)) AND (LIMIT-TO (DOCTYPE , “ar”)) AND (LIMIT-TO (LANGUAGE , “English”))	32	2015-January, 2022	Scopus

In our analysis, we have included 36 papers (4 from WOS and 32 from Scopus). However, after merging all papers, we excluded 2 papers that were found in both databases. Therefore, 34 papers remained for the analysis. After reviewing the abstracts and keywords of all 34 papers, we eliminated 11 papers that did not report the description of cryptocurrency and its accounting and tax treatment. We used the following criterion that the paper was considered relevant if it specifically covers cryptocurrency and its accounting and tax treatment.

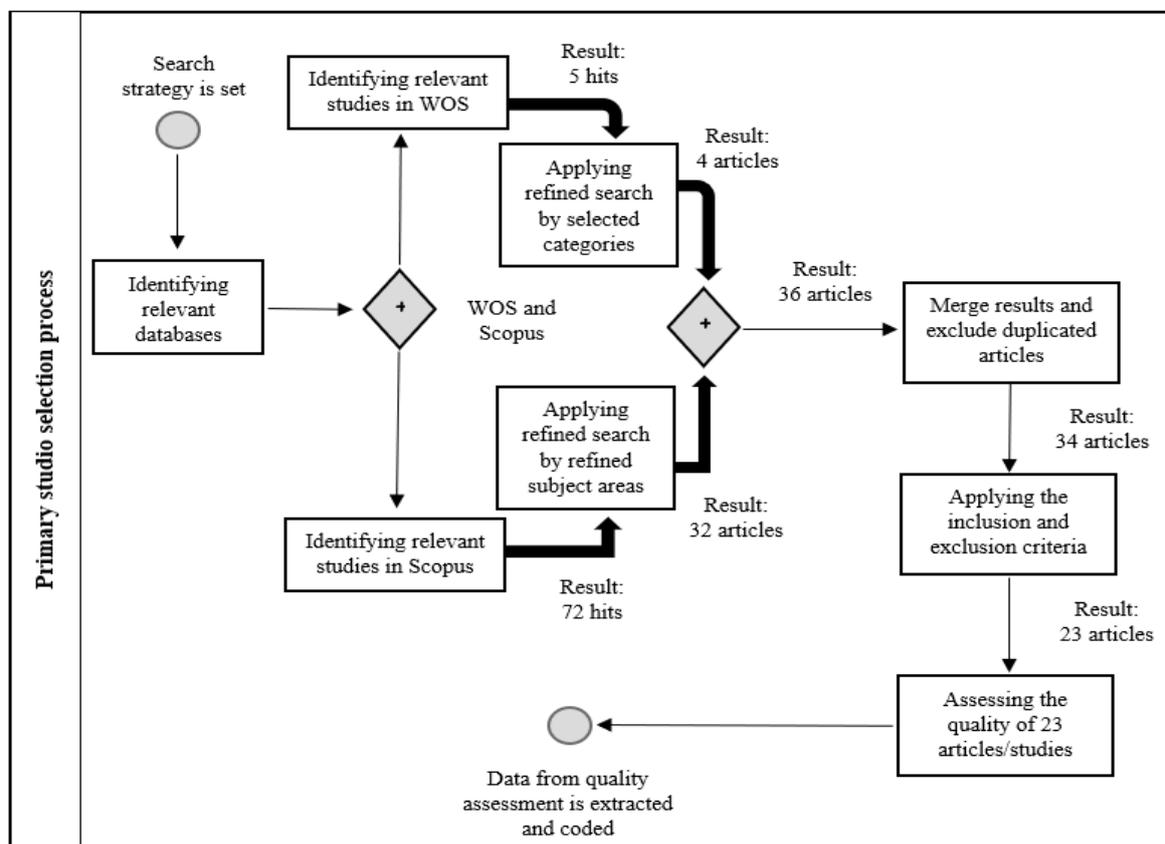


Figure 1. The selection process of the papers for the literature review.

Finally, after applying this exclusion criterion 23 publications remained, and they represent the basis for our further analysis.

RESULTS OF RESEARCH

The objective of this work was (1) to study and explore the importance of cryptocurrencies in the financial industry and their involvement in the business process of today organizations (2) to analyze and explore the accounting and tax treatment of cryptocurrencies (3) to ensure a systematic literature review of the research literature in these fields. To achieve the set goals, numerous world literature was analyzed, which explores the field of cryptocurrencies and their accounting and tax treatment.

By researching the world literature, it is obvious that too few scientists are dealing with the research field. Today cryptocurrencies are the subject of numerous researches and topics of numerous authors through various fields but only a few studies and even insufficient is in the field of cryptocurrencies regulation and its accounting and tax treatment. Numerous studies dealing with the topic of cryptocurrencies have shown their impact and benefits in today's global business operations. However, as mentioned there is still a lack of research that investigates and deals with cryptocurrencies regulation and its accounting and tax treatment which is evident from the review of the researched literature.

Figure 2 depicts the annual number of publications from 2015-2021. A growing trend of published papers is revealed. A growing trend in this area is from 2020 until 2021 (in 2016 and 2017 no paper has been published) where 20 articles were published regarding cryptocurrencies regulation and its accounting and tax treatment. As shown a very small number of articles deal with cryptocurrencies regulation and its accounting and tax treatment.

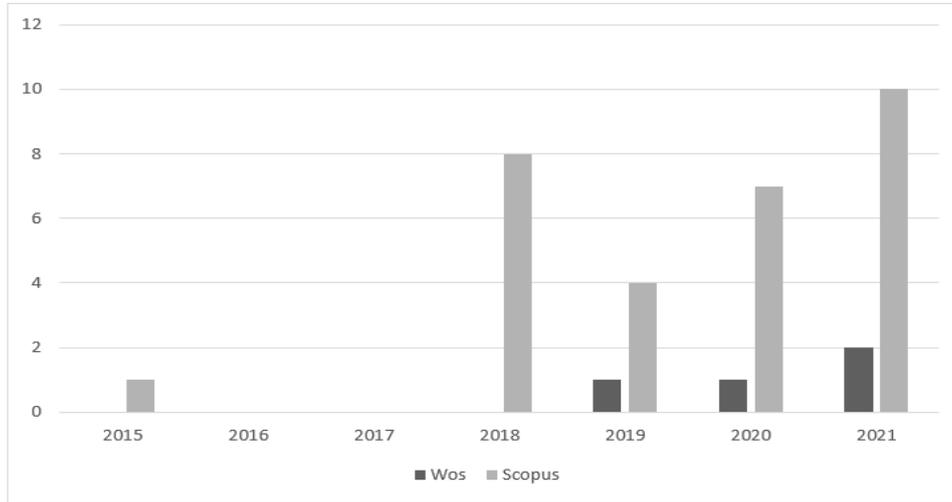


Figure 2. A number of papers published per year with described cryptocurrencies and their accounting and tax treatment.

Further, Table 4. shows all of the 34 papers that were the result of research work within the WoS and Scopus database.

Table 4. Literature review (continued on pp.649-652).

ID	Author name, year	The name of the work	Research description	The connection between crypto-currencies regulation and its accounting and tax treatment
SCOPUS base				
1	Sakas, D.P., Giannakopoulos N.T., Reklitis, D.P., Dasaklis, T.K. (2021).	The effects of cryptocurrency trading websites on airlines' advertisement campaigns	The paper deals with linking digital marketing strategies and cryptocurrencies in the field of airlines in order to increase the number of website visitors and to optimize visibility parameters with the help of cryptocurrency trading sites.	NO
2	Fletcher, E., Larkin, C., Corbet, S. (2021).	Countering money laundering and terrorist financing: A case for bitcoin regulation	The paper deals with the inconsistency of effective classification of bitcoin (on the one hand currency, on the other hand, assets) which leads to bureaucratic war between different regulatory bodies, where it is proven that criminals and terrorists use the unique properties of Bitcoin terrorist financing and money laundering schemes.	YES

Table 4. Literature review (continuation from p.648, continued on pp.650-652).

3	Yen, J.-C., Wang, T. (2021).	Stock price relevance of voluntary disclosures about blockchain technology and cryptocurrencies	the study examines the value relevance of blockchain and cryptocurrency disclosures in firms' 10-K filings, which act as proxies for the firms' involvement in this trending technology and its applications.	NO
4	Patrício, L.D., Ferreira, J.J. (2021).	Blockchain security research: theorizing through bibliographic-coupling analysis	The study aims to develop a systematic literature review analyzing the previous literature and to propose a framework to better understand the process of blockchain security.	NO
5	Adams, M.T., Bailey, W.A. (2021).	Emerging Cryptocurrencies and IRS Summons Power: Striking the Proper Balance between IRS Audit Authority and Taxpayer Privacy	This article examines the history of the IRS summons power, which is an attempt by the tax administration to try to use a huge amount of customer data from Coinbase, a cryptocurrency exchange platform.	YES
6	Ramassa, P., Leoni, G. (2021).	Standard setting in times of technological change: accounting for cryptocurrency holdings	This article considers the regulatory issues arising from disruptive technological innovations (i.e. cryptocurrency) and explores how the International Accounting Standards Board (IASB) has dealt with the emerging issue of accounting for cryptocurrencies	YES
7	Jalal, R.N.-U.-D., Alon, I., Paltrinieri, A. (2021).	A bibliometric review of cryptocurrencies as a financial asset	This paper researches: (1) the determinants of cryptocurrency returns, (2) the efficiency of cryptocurrencies, (3) tests of portfolio diversification and sheep flock behavior, and (4) the regulation, governance, and socio-economic impact of cryptocurrencies.	YES
8	Bagus, P., de la Horra, L.P. (2021).	An ethical defense of cryptocurrencies	This paper examines the advantages and disadvantages of cryptocurrencies vis-à-vis central bank fiat money, analyzes cryptocurrencies as facilitators of tax evasion and the ethical implications arising therefrom, and explores the use of cryptocurrencies for nefarious consumption	YES
9	Zhang, W., Li, Y. (2021).	Liquidity risk and expected cryptocurrency returns	This paper examines how liquidity risk is priced in the cross-section of cryptocurrency returns	NO
10	Marthinsen, J., Gordon, S. (2021).	A theory of optimum cryptocurrency scope	The paper investigates the adoption of fixed or fluctuating exchange rates by countries and in this case in the application of cryptocurrencies	NO
11	Yee, T.S., Heong, A.Y.K., Chin, W.S. (2020).	Accounting treatment of cryptocurrency: A Malaysian context	This research examines factors that affect the accounting treatment of cryptocurrencies in Malaysia.	YES

Table 4. Literature review (continuation from pp. 648-649, continued on pp.651-652).

12	Kimani, D., Adams, K., Attah-Boakye, R., Frecknall-Hughes, J., Kim, J. (2020).	Blockchain, business, and the fourth industrial revolution: Whence, whither, wherefore, and how?	Authors analyze the prospects of blockchain for various business functions, including banking and the capital markets, corporate governance, international trade, and taxation.	YES
13	Albayati, H., Kim, S.K., Rho, J.J. (2020).	Accepting financial transactions using blockchain technology and cryptocurrency: A customer perspective approach	This paper explores the usability of blockchain technology by investigating behavioral elements that affect customers' intention towards blockchain-based cryptocurrency transactions.	NO
14	Caton, J.L. (2020).	Cryptoliquidity: the blockchain and monetary stability	This paper aims to investigate whether cryptocurrencies present an opportunity to profitably implement rules that promote macroeconomic stability but also investigates the possibility of reduction in taxes placed on the use of cryptocurrency and cryptocurrency protocol	YES
15	Ajouz, M., Abdullah, A., Kassim, S. (2020).	Acceptance of Shari'ah-compliant precious metal-backed cryptocurrency as an alternative currency: An empirical validation of adoption of innovation theory	This research investigates potential users' tendency to adopt a Shari'ah-compliant precious metal-backed cryptocurrency.	NO
16	Hairudin, A., Sifat, I.M., Mohamad, A., Yusof, Y. (2020).	Cryptocurrencies: A survey on acceptance, governance and market dynamics	This research deals with a public embrace of cryptocurrencies, views cryptocurrencies as a financial tool, its classification as an asset, explores tax evasion and other frauds related to cryptocurrencies	YES
17	Barth, J.R., Herath, H.S.B., Herath, T.C., Xu, P. (2020).	Cryptocurrency valuation and ethics: a text analytic approach	This paper examines the extent to which ethical considerations associated with the use of cryptocurrencies affect the valuations attached to such currencies but also explores ethical and unethical behavior associated with the use of cryptocurrencies due to the lack of its regulation	YES
18	Drobayzko, S., Blahuta, R., Gurkovskiy, V., Marchenko, Y., Shevchenko, L. (2019)	Peculiarities of the legal control of cryptocurrency circulation in Ukraine	This paper discusses the issues of the legal control of cryptoairreny in the system of civil rights under Ukrainian law' and bills submitted to the Parliament of Ukraine.	YES

Table 4. Literature review (continuation from pp.648-650, continued on p.652).

19	Silva de Souza, M.J., Almudhaf, F.W., Henrique, B.M., Sobreiro, V.A., Kimura, H. (2019).	Can artificial intelligence enhance the Bitcoin bonanza	This paper investigates how Machine Learning (ML) techniques perform in the prediction of cryptocurrency prices but also connects it with the accounting process.	YES
20	Ram, A.J. (2019).	Bitcoin as a new asset class	The author explores the understanding and classification of bitcoin-related to its regulation	YES
21	Chornous, Y., Denysenko, S., Hrudnytskyi, V., Turkot, O., Sikorskyi, O. (2019).	Legal regulation of cryptocurrency turnover in Ukraine and the EU	The paper explores and investigates the legal status of cryptocurrencies	YES
22	Salawu, M.K., Moloji, T. (2018).	Benefits of legislating cryptocurrencies: Perception of Nigerian Professional Accountants	This research wants to ascertain the view of Nigerian Professional Accountants towards legislating cryptocurrency in Nigeria, where the researchers concluded that the legislation of Cryptocurrency or its modified form by the Federal Government of Nigeria is desirable for the protection of her economy as well as the interest of her citizens.	YES
23	Corelli, A. (2018).	Cryptocurrencies and exchange rates: A relationship and causality analysis	The paper analyzes the relationship between the most popular cryptocurrencies and a range of selected fiat currencies, in order to identify any pattern and/or causality between the series.	NO
24	Ram, A.J. (2018).	Taxation of the Bitcoin: initial insights through a correspondence analysis	This paper presents a conceptual approach for developing a taxation policy for Bitcoin, using a multi-jurisdictional analysis.	YES
25	Holub, M., Johnson, J. (2018).	Bitcoin research across disciplines	Paper deals with Bitcoin under a few areas such as technical fields, economics, law, public policy, finance, accounting, and others.	YES
26	Yoo, J.-H., Kang, J.-Y., Park, S.-U. (2018).	Measuring return and volatility spillovers across major virtual currency market	Authors analyze the return and volatility transfer effect of virtual money markets through GJR-GARCH model.	NO
27	Smith, S.S. (2018).	Implications of next step blockchain applications for accounting and legal practitioners: A case study	The paper explores the implications that blockchain technology and cryptocurrencies have on authentication and compliance reporting.	YES
28	Volosovych, S., Baraniuk, Y. (2018).	Tax control of cryptocurrency transactions in Ukraine	The paper explores the value orientations when forming the system of cryptocurrency transactions tax control in Ukraine taking the positive experience of developed countries into account.	YES

Table 4. Literature review (continuation from pp.648-651).

29	Legotin, F.Y., Kocherbaeva, A.A., Savin, V.E. (2018)	Prospects for crypto-currency and blockchain technologies in financial markets	The paper observes the prospects for further growth and development of cryptocurrencies	NO
30	Polasik, M., Piotrowska, A.I., Wisniewski, T.P., Kotkowski, R., Lightfoot, G. (2015).	Price fluctuations and the use of bitcoin: An empirical inquiry	This paper provides a study of the payment and investment features of Bitcoin and their implications for the conduct of e-commerce	NO
WOS base				
31	Shovkhalov, S., Idrisov, H. (2021).	Economic and Legal Analysis of Cryptocurrency: Scientific Views from Russia and the Muslim World	The article examines cryptocurrency trading and its direct correlation with the national legislation of individual countries that are subject to domestic regulation with currency, tax, and securities market legislation.	YES
32	Shestak, V., Kiseleva, A., Kolesnikov, Y. (2021).	Taxation Issues for Digital Financial Assets	Authors explore the status of a digital financial asset and the features of its taxation in the Russian Federation and progressive countries.	YES
33	Cassidy, J.; Cheng, MHA., Huang, E. (2020).	A toss of a (bit)coin: the uncertain nature of the legal status of cryptocurrencies	This paper discusses the different approaches to regulating cryptocurrency and the taxation implications in four Asian countries which account for a large proportion of cryptocurrency transactions.	YES
34	Gomaa, A.A., Gomaa, M.I., Stampone, A. (2019).	A Transaction on the Blockchain: An AIS Perspective, Intro Case to Explain Transactions on the ERP and the Role of the Internal and External Auditor	The paper investigates cryptocurrency trading and their tax implications	YES

Common to all researched papers is that they emphasize the importance of cryptocurrency and blockchain technology in today's business process. As shown, there is insufficient research that connects cryptocurrencies with their regulation and their accounting and tax treatment which represents the basis for further research in this area. Still, papers that deal with cryptocurrencies and link them to accounting and tax treatment claim prove a lack of regulation and insufficient research in this area.

CONNECTION BETWEEN CRYPTOCURRENCY, ACCOUNTING, AND TAX

Our research of relevant data basis on the correlation between cryptocurrency, accounting, and tax found 18 papers connecting cryptocurrency and accounting, and 14 papers connecting cryptocurrency and tax (Table 5). As can be seen, almost an equal number of papers are engaged in research in the field of cryptocurrency accounting and in the field of cryptocurrency taxation.

Table 5. Correlation between cryptocurrency, accounting and tax.

Cryptocurrency regulation	Paper ID	#of papers
Accounting	1, 3 ,4, 6, 7, 9, 10, 11, 12, 13, 14, 15, 17, 18, 20, 21, 22, 23	18
Tax	2, 4, 5, 7, 8, 9, 11, 16, 17, 19, 20, 21, 22, 23	14

Today, the application of blockchain technology is visible in almost all areas and various business functions, and this includes the field of banking and capital markets, corporate governance, international trade, accounting regulators, and taxation [27]. We can claim that blockchain and cryptocurrencies are changing the power of the global economy. Blockchain technology, which is related to the use of cryptocurrencies, as a promised technology to ensure higher levels of data encryption and security. The European Banking Authority (EBA) report for 2019 shows that the supply, trading, and use of cryptocurrencies for payment is on the rise. But the problem that arises when trading cryptocurrencies is the lack of an effective system of legal regulation of cryptocurrencies. Exploring and linking the economic recession with cryptocurrencies, some authors believe that “blockchain technology can promote the money supply that responds to changes in the demand for holding money” [28]. “It is the policy of one government that supports the development of innovations in blockchain technology and cryptocurrencies that can be seen as an opportunity for profitable implementation of rules that promote macroeconomic stability of the state” [28]. However, some authors believe that the government opposes the adoption of cryptocurrencies as a currency because these instruments could indirectly affect the fluctuation of domestic currency prices, which would affect the money supply [29]. This is obvious today in the market where users of cryptocurrencies are constantly flooding the foreign exchange market with domestic currencies [29].

Despite the large application of new technologies such as blockchain and cryptocurrencies today, there is still some uncertainty for its users about their use. Some authors investigate the “acceptance and use of blockchain technology, taking into account several factors: certification, regulatory support, social influence, design, and experience” [18]. Research shows that users at a certain level of experience feel secure in using blockchain-based applications while a high level of security results if Blockchain-based applications are regulated and provided by the local government. Some author finds that the “cryptocurrency Bitcoin represents a distinct alternative investment and asset class” [30]. Although blockchain technology and cryptocurrencies are widely applicable, they create disruptions and changes within the financial industry and especially in accounting practice. The authors explore and try to approximate and explain the challenges and changes that blockchain technology and cryptocurrencies reflect on the accounting profession [15].

Today, growing problems arise in the accounting profession and corporate responsibility due to the growing trade in cryptocurrencies and due to the currently vague accounting regulations [31]. Since there is no clear and specific definition of what cryptocurrencies are from an accounting point of view, their regulation makes it difficult for regulators to determine which aspects require regulation and how to control and monitor cryptocurrency activities [32]. Cryptocurrencies are becoming and are a complex and challenging area for standard setters, financial report creators, and users themselves. Due to different models and their impact on business, they are treated differently within accounting, which requires specific regulation within the standard [33]. Although blockchain technology is increasingly accepted by companies, for the accounting profession it is certainly a strategic and technological tool that will encourage innovation within the accounting profession [7].

The lack of specific accounting standards that cover the area of cryptocurrencies, but also due to their variable value, creates a great impact on the audit and accounting profession because of the lack of a basis for assessing the audit risks of cryptocurrency holders [34]. The importance of regulating cryptocurrencies within accounting and tax regulations is evident in a study which explores how the IASB deals with the emerging issue of accounting regulation for cryptocurrencies [31]. Just mentioned research shows how disruptive technology, among which are cryptocurrencies, impacts the area of accounting regulation and gives concrete insight into the existing limitations within the regulatory process of the IASB, emphasizing the relationship between the rapid pace of technological innovation and the length of IFRS.

The issue of cryptocurrency taxation is also an area that is not sufficiently researched but also regulated. One study provides and gives an overview of the initial mechanism for the development of tax treatments for transactions that are not covered by existing legislation but also gives normative recommendations on the taxation of Bitcoin [35]. This research highlights the view of applicable tax laws, the manner of acquisition but not the reason (intention) to acquire, which is crucial in determining how Bitcoin will be taxed [35].

Research on cryptocurrency regulation, research field covers various areas (but only a few research) such as money laundering, terrorism, crime, classification of cryptocurrencies within accounting standards, and tax evasion. Also, only a small number of researchers at the national level study the accounting and tax treatment of cryptocurrencies (Table 6).

Table 6. Cryptocurrency in various areas of accounting and tax.

Research approach	Paper ID	#of papers
Cryptocurrency – money laundering	1, 9,10, 19	4
Cryptocurrency – terrorism / crime	1,10, 19	3
Cryptocurrency – accounting standards (cryptocurrency classification)	3, 4, 5, 9, 11, 13, 14, 15, 18, 21	10
Cryptocurrency – tax evasion	5, 9	2
Cryptocurrency – a national-level study of the accounting and tax treatment of cryptocurrencies	5, 11, 15, 19, 20, 21, 22	7

Although research shows a number of benefits and involvement of cryptocurrencies in the financial sector and business in general today, few researchers express concern about the use of cryptocurrencies to facilitate large-scale terrorist financing and money laundering schemes [26, 29, 36]. “In order for cryptocurrency trading to be legally legal, it is necessary to determine the legal nature of cryptocurrency within which there will be a regulatory framework within which cryptocurrency trading may or may not occur, in order to ultimately avoid illegal transactions” [26, 29].

Considering the ethical implications of cryptocurrencies, some research explore “cryptocurrencies as money; cryptocurrencies as a means of tax evasion, and cryptocurrencies as a relief for consumption” [35, 37]. Comparing fiat central bank money and cryptocurrencies there is an obvious difference where cryptocurrencies are not subject to money supply manipulation. Likewise, “cryptocurrencies allow users to undertake equitable financial transactions without the need for intermediaries such as banks” [3]. “Tax evasion is generally considered an unethical practice, ie cryptocurrencies due to their intrinsic nature qualify to become tax havens, facilitating tax evasion” [35, 37]. It is precise “because of a number of negative implications related to cryptocurrencies due to illegal and insufficient regulation that governments need to improve and strengthen mechanisms, enact and

implement new regulations to reduce tax evasion and criminal acts related to cryptocurrencies” [37].

Governments do not recognize cryptocurrencies (alternative currencies) as currency (money) i.e. fiat currency, because in this way the right to implement monetary and fiscal policy is waived. Because cryptocurrencies are online it bypasses traditional remittances through commercial banks thus technically allowing illegal trade as they are transmitted through an unknown source [29]. “Manipulation with cryptocurrencies is also in the area of taxation where users store their net cryptocurrency value in an online database allowing them to report fake earnings that don’t actually represent their value” [29]. Manipulations at the corporate level of companies related to cryptocurrency trading are reflected in the creation of assets or earnings in offshore locations through cryptocurrencies thus trying to avoid taxes [38]. Study on ethical and non-ethical behaviour results and shows the use and transactions with cryptocurrencies [26]. “Due to its anonymous and the lack of minimal surveillance transaction with cryptocurrencies can lead to money laundering, the establishment of illegal exchange offices and platforms, the use of underground black markets dealing in the illegal sale of drugs and illegal firearms” [28].

Very few authors research the legal status of cryptocurrencies at the country level. At a country level, the issue and debate about the legal status of cryptocurrencies, ways of trading and acquiring cryptocurrencies (possible corruption risks), forecasting the mining taxation system was researched at the level of Ukraine [39]. At the level of the state of Ukraine, investigation about tax control was conducted [40]. Authors believe that the lack and insufficient regulation leads to money laundering, terrorist financing, and tax evasion. For this reason, they present factors that they believe are important for understanding tax control (structural, functional, systematic, and institutional approach) and consider to be the basis for identifying the characteristics of cryptocurrency transactions as objects of tax control [40]. Some authors investigate the legal position of cryptocurrencies in Russian legislation and state that they have not yet found their consistent consolidation and legislation [41]. The attitude of professional accountants towards cryptocurrency legislation is researched in Nigeria [42]. On a sample of 250 respondents (tax practitioners, financial analysts, state auditors, bankers, accountants, lawyers, lecturers, and other accounting professionals) they found that professional accountants in Nigeria are willing to work in a cryptocurrency environment provided the Government legally assigns their use [42]. Interesting research was conducted and represents conceptual scenarios of digital taxation of income and taxation objects in the process of creating a cryptocurrency in the Russian Federation with critical reviews of the application of international standards for tax accounting of digital assets [43].

Traceability, legal, accounting, and tax regulation are key to detecting cryptocurrency misconduct so that cryptocurrency-related crimes mainly revolve around fraud, such as tax evasion through false reporting of income, drug and/or arms smuggling, and money laundering could be minimized [29].

DISCUSSION AND RECOMMENDATIONS

Most of the papers analyzed gave a theoretical point of view on the analyzed problem. The results of the presented literature review indicate that new modern and digital technologies such as cryptocurrencies are an indispensable part of today’s business world while changing traditional ways of doing business.

The research shows that most authors are engaged in researching the very concept and importance of cryptocurrencies in the financial market, while there is a small number of those who research the problem and importance of accounting and tax regulation of cryptocurrencies. However, there are few cases and studies that are engaged in research of accounting and tax regulation of cryptocurrencies, but they are rather the exception than the rule. The practice and conducted studies show that due to the lack of a clear definition and nature of cryptocurrencies from an accounting point of view, problems arise in the area of its regulation which makes it difficult for regulators to determine which aspects require regulation and how to control and monitor cryptocurrency activities.

As benefits of this research, we can point out also some recommendations for further research. This research deals with and explores cryptocurrencies and the related concept of blockchain technology, while the focus of the research is on the accounting and tax regulation of cryptocurrencies. Research gives an overview of accounting and tax regulation of cryptocurrencies, showing that researched area is insufficiently explored through the scientific literature, but also insufficiently regulated in practice, which is a recommendation for further research in this area.

The findings of our research indicate that the impact of correct and adequate accounting and tax regulations of cryptocurrencies is on the verge to disrupt the current accounting profession. Also, this is the research area that needs more empirical evidence, theoretical and quantitative evidence, and presents scope for many studies to be carried out in the future.

CONCLUSION

The main goal of the article was to provide a brief and clear overview of the accounting and tax regulation of cryptocurrencies using a systematic literature review. The article deals with the process of recording, monitoring, and valuing cryptocurrencies and their effect on the financial market and accounting profession. Although the concept of cryptocurrency is not a new phenomenon, its growth, and development change how companies operate, especially from the aspect of its regulation. Due to main goal of this article we can highlight the objectives of this article that were provided and proven: (1) importance of cryptocurrencies in the financial industry and their involvement in the business process of today organizations (2) review of accounting and tax treatment of cryptocurrencies (3) a systematic literature review of the research literature in these fields. To achieve the set goals, numerous world literature was analyzed, which explores the field of cryptocurrencies and their accounting and tax treatment.

However, after providing data and given systematic literature review it is obvious that the area is insufficiently researched. Lack of research is evident in the context of insufficient regulation and inconsistencies in the implementation, monitoring, and evaluation of cryptocurrencies at the global level in the field of accounting and tax. It is extremely important to find a unique and acceptable way to regulate, monitor, and record cryptocurrencies shortly to minimize the level of uncertainty between holders and users of accounting information and thus minimize accounting and tax risks. Precisely due to insufficient regulation of cryptocurrencies, business operations involving cryptocurrencies are becoming areas of illegal activities, money laundering, and even terrorism. For further research in this area more efforts should be focused on the legal, accounting, and tax regulations of cryptocurrencies in order to minimize illegal activities and to ensure that operating with cryptocurrency is secure in the future.

APPENDIX

Table 7. List of selected papers.

Paper ID	Paper reference
1	Fletcher, E.; Larkin, C. and Corbet, S.: <i>Countering money laundering and terrorist financing: A case for bitcoin regulation</i> . Research in International Business and Finance 56 , art. no. 101387, 2021, http://dx.doi.org/10.1016/j.ribaf.2021.101387 ,
2	Adams, M.T. and Bailey, W.A.: <i>Emerging Cryptocurrencies and IRS Summons Power: Striking the Proper Balance between IRS Audit Authority and Taxpayer Privacy</i> . ATA Journal of Legal Tax Research 19 (1), 61-81, 2021,
3	Ramassa, P. and Leoni, G.: <i>Standard setting in times of technological change: accounting for cryptocurrency holdings</i> . Accounting, Auditing and Accountability Journal, 2021, http://dx.doi.org/10.1108/AAAJ-10-2020-4968 ,
4	Jalal, R.N.-U.-D.; Alon, I. and Paltrinieri, A.: <i>A bibliometric review of cryptocurrencies as a financial asset</i> . Technology Analysis and Strategic Management, 2021, http://dx.doi.org/10.1080/09537325.2021.1939001 ,
5	Bagus, P. and de la Horra, L.P.: <i>An ethical defense of cryptocurrencies</i> . Business Ethics, 2021, http://dx.doi.org/10.1111/beer.12344 ,
6	Yee, T.S.; Heong, A.Y.K. and Chin, W.S.: <i>Accounting treatment of cryptocurrency: A Malaysian context</i> . Management and Accounting Review 19 (3), 119-149, 2020,
7	Kimani, D., et al.: <i>Blockchain, business and the fourth industrial revolution: Whence, whither, wherefore and how?</i> Technological Forecasting and Social Change 161 , art. no. 120254, 2020, http://dx.doi.org/10.1016/j.techfore.2020.120254 ,
8	Caton, J.L.: <i>Cryptoliquidity: the blockchain and monetary stability</i> . Journal of Entrepreneurship and Public Policy 9 (2), 227-252, 2020,
9	Hairudin, A.; Sifat, I.M.; Mohamad, A. and Yusof, Y.: <i>Cryptocurrencies: A survey on acceptance, governance and market dynamics</i> . International Journal of Finance and Economics, 2020, http://dx.doi.org/10.1002/ijfe.2392 ,
10	Barth, J.R.; Herath, H.S.B.; Herath, T.C. and Xu, P.: <i>Cryptocurrency valuation and ethics: a text analytic approach</i> . Journal of Management Analytics, 367-388, 2020,
11	Drobyazko, S., et al <i>Peculiarities of the legal control of cryptocurrency circulation in Ukraine</i> . Journal of Legal, Ethical and Regulatory Issues 22 (6), 1-6, 2019,
12	Silva de Souza, M.J., et al.: <i>Can artificial intelligence enhance the Bitcoin bonanza</i> . Journal of Finance and Data Science 5 (2), 83-98, 2019,
13	Ram, A.J.: <i>Bitcoin as a new asset class</i> . Meditari Accountancy Research 27 (1); pp.147-168, 2019,
14	Chornous, Y., et al.: <i>Legal regulation of cryptocurrency turnover in Ukraine and the EU</i> . Journal of Legal, Ethical and Regulatory Issues 22 (Special Issue 2), 20 p, 2019,
15	Salawu, M.K. and Moloi, T.: <i>Benefits of legislating cryptocurrencies: Perception of Nigerian Professional Accountants</i> . Academy of Accounting and Financial Studies Journal 22 (6), No. a22, 2018,

16	Ram, A.J.: <i>Taxation of the Bitcoin: initial insights through a correspondence analysis</i> . <i>Meditari Accountancy Research</i> 26 (2), 214-240, 2018,
17	Holub, M., Johnson, J.: <i>Bitcoin research across disciplines</i> . <i>Information Society</i> 34 (2), 114-126, 2018,
18	Smith, S.S.: <i>Implications of next step blockchain applications for accounting and legal practitioners: A case study</i> . <i>Australasian Accounting, Business and Finance Journal</i> 12 (4), art. no. 6, 77-90, 2018,
19	Volosovych, S. and Baraniuk, Y.: <i>Tax control of cryptocurrency transactions in Ukraine</i> . <i>Banks and Bank Systems</i> 13 (2), 89-106, 2018,
20	Shovkhalov, S. and Idrisov, H.: <i>Economic and Legal Analysis of Cryptocurrency: Scientific Views from Russia and the Muslim World</i> . <i>Laws</i> 10 (2):32, 2021, http://dx.doi.org/10.3390/laws10020032 ,
21	Shestak, V.; Kiseleva, A. and Kolesnikov, Y.: <i>Taxation Issues for Digital Financial Assets</i> . <i>Social Science Computer Review</i> , 2021, http://dx.doi.org/10.1177/08944393211003919 ,
22	Cassidy, J.; Cheng, MHA. And Huang, E.: <i>A toss of a (bit)coin: the uncertain nature of the legal status of cryptocurrencies</i> . <i>eJournal of Tax Research</i> 17 (2), 168-192, 2020,
23	Gomaa, A.A., Gomaa, M.I., Stampone, A.: <i>A Transaction on the Blockchain: An AIS Perspective, Intro Case to Explain Transactions on the ERP and the Role of the Internal and External Auditor</i> . <i>Journal of Emerging Technologies in Accounting</i> 16 (1), 47-64, 2019,

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<http://dx.doi.org/10.3390/economies9010040>,
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