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CONTENTS

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Skopje, April, 2023

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TRAINING AS A TOOL FOR ACQUIRING SKILLS FOR DIGITALIZATION OF THE HUMAN RESOURCE MANAGEMENT IN THE REPUBLIC OF NORTH MACEDONIA

Abstract: The digital transformation process includes people, tools, and processes, and it enables the use of digital evaluation, monitoring, and testing systems to automatically document and track the progress of every employee in the business. The need for educated and trained staff with modern knowledge and skills for digitization is dictated by new trends. Those skills are typically acquired through an informal education process, primarily through training. As a systematic and continuous process, in the shorter term, the digitization training improves the skills of the employees for the application of new sophisticated ways and opportunities for better and more efficient performance of the work at a specific workplace.

The objective of this paper is to convey the significance and requirement of digitization in human resource management, with a focus on the need to conduct training for businesses in Republic North Macedonia. The paper analyses empirical data from surveys conducted on Macedonian businesses. The findings are sublimated in the concluding observations about the need to implement training for digitization of human resource management processes and their relevance for greater competitiveness of Macedonian businesses on the global market.

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Introduction

Digital transformation is needed in all spheres of social life. It introduces specific changes in business, enables the development of new business models and increases the competitiveness of companies on the market.[1] Each country that aims to achieve a significant position in the global economy or strives to reach the leading countries must focus on digitization. Because of that, the benefits of a functionally digitized society are significant for developing countries and enables them to catch up developed economies faster if they use digital skills in operations.

Basically, digital transformation represents a process of integration of digital technologies in all areas of operation through the development and application of an appropriate digital business model based on new, more sophisticated technological solutions.

Technology is rapidly evolving, and the pressures for its incorporation into business operations are increasing. Digitization is a significant challenge for business development, as is the advancement of digital skills among employees in this context. Companies, regardless of size or nature, require professional, expert personnel with appropriate knowledge and skills in addition to digitalization technology and strategy. Employees must have knowledge and skills that will permanently and progressively improve them in order to meet the organisation's expectations and goals. As one of the most important management functions, human resource management is often responsible for this complex process.

Embedding digital learning throughout the education system is a long-term process, and businesses often need to improve digital capabilities rapidly.[2] Employee training is the most important and frequently used tool in management of human resources in the short term. Thanks to the trainings, employees gain concrete, specific knowledge, abilities, and skills in order to improve performance through more efficient and successful implementation of planned activities.

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[1]   https://ekonomijaibiznis.mk/News.aspx?IdNews=26175/01.02.2023.
[2]   Gemma Baker and Steve Lomax, BMG; and Paul Braidford, Gordon Allinson and Maxine Houston, PRG. Digital Capabilities in SMEs: Evidence Review and Re-survey of 2014 Small Business Survey respondents, A report by BMG research and Durham University, September 2015, p.1.

1. DIGITIZATION OF HUMAN RESOURCE MANAGEMENT

The term "digitalization of human resource management" refers to the transformation of HR services access via modern digital and web-based technology. In this sense, those responsible for HR management must not only master traditional human resource management skills and knowledge, but also be able to apply those skills and knowledge by using modern technologies. Therefore, it is correct to say that digitalized HR is a portal, not a person, because it entails the establishment of universal access to HR services through the use of IT and web-based applications, that further drastically changes the HR practice of the company. These modifications are frequently the result of a need to reduce costs while expanding or improving services.

According to some studies, businesses that have adopted and used advanced technological tools in the management of human resources surpass those that have not yet digitized their HR processes. At the same time, it should be noted that digitalization does not simply mean process automation, but rather application of modern technology to radically revolutionize conventional HR practices. Human resource management that is more technology-based emerges from the needs of businesses to:[3]

- Streamlining human resource management processes and reducing administrative burdens.
- Reduction of human resource management costs and compliance of practices with legal requirements.
- More effective attraction of professional and talented employees.
- Improving service and access to data for employees and managers.
- Providing real-time metrics to enable decision makers to spot trends and manage the workforce more effectively.
- Facilitating the transformation of human resource management so that it can play a more strategic role in the company.

Businesses place a high value on training in the digital age and the need for ongoing development of operations. Strategically, it increases overall productivity and the organizational growth. Employee training, in this view, is

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[3]   Richard D. Johnson and Hal G. Gueutal: Transforming HR Through Technology: The Use of E-HR and HRIS in Organizations, Society for Human Resource Management (SHRM), 2004   https://www.shrm.org/hr-today/trends-and-forecasting/special-reports-and-expert-views/documents/hr-technology.pdf /24.01.2023

carried out in accordance with overall business strategies for the attainment of established organizational goals. As a result, trainings are one of the most effective tools for acquiring skills and knowledge for HR digitalization in order to gain and keep a competitive advantage and respond to business environment challenges.

HR digitization trainings can enable the automation of many human resource management processes, decreasing the workload of the human resource department and increasing productivity, resulting in several benefits for the business. In this respect, HR digitalization trainings may be implemented to improve the processes of recruiting and selecting new employees, the system for generating employee benefits and salary, and monitoring employee performance and contribution to organizational success.

2. TRAININGS AS A TOOL FOR ACQUIRING SKILLS FOR DIGITIZATION OF HUMAN RESOURCE MANAGEMENT

During the performance of job activities, businesses frequently discover that employees' formally acquired education is insufficient to enable its application in the achievement of certain goals. Namely, rapid technological changes cause the need for constant improvement of knowledge and skills, so that employees can keep up with the changes. Therefore, businesses are constantly in need of skilled people with education and concrete or specific abilities, which are typically gained through training.[4]

Learning, education and training are interrelated processes. Education is a structured learning system that gives fundamental knowledge that should be regularly upgraded and improved with particular expertise and skills, typically gained through training or counselling, consultation, research, and the like. The knowledge and skills gained through a complementary process of continuing formal and informal education over a set period of time affect the company's production and profitability.[5]

Trainings, according to its meaning, are one of the three fundamental activities in human resource development. (Figure 1.)

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[4] Ефтимовски Д.: Економски раст-Основни теоретски концепти и модели,Скопје 2009, p. 88.

[5] Богичевиќ Миликиќ Б.: Менаџмент људских ресурса, Центар за издавачку делатност Економског факултета у Београду, 2008, p. 167.

Figure 1. Interconnection between learning, training and education
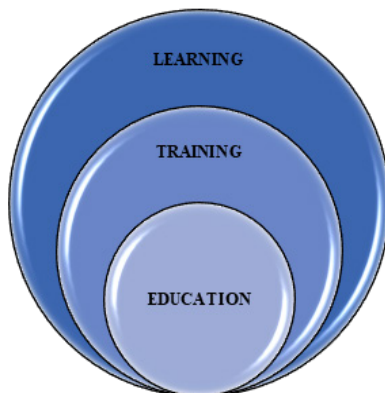
Source: Adapted from: Armstrong M., Human resource management practice, Tenth edition 2006, London, p. 554

Training is a vital part of a company's long-term investment and growth strategy, which requires a planned effort to improve workplace performance, advance specific knowledge, abilities, skills, attitudes or behaviour of employees.[6] Continuous improvement of knowledge and skills through training is essential to the effective implementation of operational strategies, and new information technologies, as an important component of the operational process, allow human resources to effectively implement the intended strategies.[7]

The digitization process itself, requires the development of creative solutions as a foundation for business growth and development. This is critically valuable for small and medium-sized businesses since it opens up new opportunities and routes for them to boost their competitiveness in the global market.

Training is critical to the successful implementation of the organizational strategy goals of the business. Through training, employees get skills to accomplish work responsibilities and knowledge on how to provide better customer service.[8] Employee development is integrally tied to changes in behaviour, motivation, inventiveness, and dedication in the accomplishment of

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[6] www.gofluent.com/blog/ld-leaders-training-mistakes/ 05.02.2021.

[7] Ahmed Hassin: The Link between Operations Strategy and Human Resource Management for NGOs Working in Unstable Environments, Journal of Business Systems, Governance and Ethics Vol 4, No 3, p. 48.

[8] Wajdi Milhem, Khalil Abushamsieh, Maria Nieves Pérez Aróstegui: Training strategies, theories and types, Journal of Accounting – Business & Management vol. 21 no. 1 (2014) 12-26, pp.12-13.

organizational goals through a constant process of acquiring knowledge and skills. Furthermore, trainings enable individuals to increase their life quality, working style, productivity, professional and career growth.[9] All of the afore-mentioned factors influence the improvement of working environment, in-creased satisfaction, increased professional competence, readiness to embrace change, and so on.[10]

The development of employees through training allows to improve per-formance through a permanent process of transferring knowledge and improv-ing the skills of each individual. Most often, trainings are conducted through lectures, in order for employees to acquire and apply the knowledge, skills and develop abilities needed for the business's operations.[11]

Identifying needs and planning training programs is usually task of human resource management. Human resource managers are responsible for the career development of employees and based on that, in understanding the needs for their upgrading, planning, organization and successful implementa-tion of knowledge and skills.[12] Depending on the size and nature of the busi-ness, as well as the program goals, trainings can be organized at the level of an individual, department or organization. According to the planned goals and training programs, companies direct their resources in those areas in which it is necessary for employees to improve their skills and knowledge and to prepare themselves for new business challenges, improving market performance and image.

In achieving the goals in the operation, the companies need to orga-nize different types of trainings for the digitalization of the human resource management. After determining the need and objectives, the content, form and methods of the training are conceptualized (for example: seminars, symposia, demonstrations and/or workshops), a job analysis is carried out and potential participants are determined. It is important to analyze the required qualifica-tions for the jobs, the level of skills, experience and knowledge, in order to compare them with the set strategic goals of the organization.

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[9]   Vemić, J.: Employee Training and Development and the Learning Organization. FACTA UNIVERSITATIS Series: Economics and Organization, 2007, 4 (2), 209-216

[10]   Byars, L.L., & Rue, L. W: Human Resource Management, Irwin McGraw Hill, 1997, Bos-ton, p. 6.

[11]   https://www.businessmanagementideas.com/human-resource-management-2/what-is-training-in-hrm/20387/ 25.09.2021.

[12]   Мирчевска Л.: Значењето на обуката за стратегискиот менаџмент на човечките ресурси: студија на случај-Црвен крст на Република Северна Македонија (магистерски труд), ИСППИ, декември 2022, стр.28.

Depending on different criteria and goals, different types of training can be organized.[13]

According to the venue, they can be classified as follows:[14]
- Trainings at work and outside of work and
- Trainings according to service delivery.

The group of trainings according to service delivery includes: training in teams, mentoring, simulation, seminars, field trainings or trips, e-learning and others.

What kind of training will be carried out to acquire the necessary skills of the employees depends on the general and/or specifically set goal of the business and the strategy for human resource management. According to the specific goal, technical trainings, compliance with legal requirements, interpersonal relations and problem solving, professional - career development and other types, are usually organized.

According to the generally set goal, the trainings can be:[15]
- renewal of knowledge;
- cross-functional training;
- team training;
- creative training;
- diversity trainings;
- literacy and
- skills.

Skills training is the most commonly applied type of training. Since these are basic skills trainings, the process of organizing these trainings can be quite simple. The specific goals of this type of training are determined in advance with planned content and are developed and realized according to the specific need. This group includes the trainings for the acquisition of digitalization skills of the employees.

According to the duration of their implementation and type of programs, trainings can be basic, ad hoc and innovative. Innovative training programs

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[13]   Ibid, pp.30-35.
[14]   Wajdi Milhem, Khalil Abushamsieh, Maria Nieves Pérez Aróstegui: Training strategies, theories and types, Journal of Accounting – Business & Management vol. 21 no. 1, 2014, p.20-23.
[15]   Kennedy, P.E, Chyung, S.Y, Winiecke, D.J., & Brinkerholff, R.O.: Training professionals' usage and understanding of Kirkpatrick's Level 3 and Level 4 evaluations. International Journal of Training and Development, 2013, 18:1.

offer expanded knowledge and novelties from a specific field of operation or management, such as digitization training.

3. EMPIRICAL RESEARCH OF THE NEED FOR TRAININGS TO ACQUIRE DIGITIZATION SKILLS IN COMPANIES IN REPUBLIC OF NORTH MACEDONIA

According to the results of certain survey, the digital operation in our country and the countries of the Western Balkans amounts to an average of 10% of the total operation of the companies. Almost 63.3% of the companies consider that digitization represents an opportunity to improve their way of working. Macedonian businesses feel pressure to be innovative and competitive, but their full understanding of the potential of digital transformation is still at a low level. Thus, about one third (34%) of the companies in Macedonia in 2022 are classified as digitally mature companies, which means that they have the technological and human capacity to improve business processes (digitalization of operations) and meet market demands. At the same time, this data indicates an increase in the overall digital maturity of Macedonian companies compared to 2021 by 28%. In terms of the size of businesses, the data indicate that ICT use is strongly related to company size, so micro and small companies largely lag behind large and medium-sized companies. Also, the differences in company maturity become even more apparent when the data is observed by company size. Thus, all large companies are digitally mature (100%), but this is the case for only 23% of micro companies (small office/ home office). The low level of awareness of Macedonian companies about the importance of digitization also results in low investments in the development of digital skills of employees. In 2020, 12% of Macedonian companies provided ICT training for their employees, which is much lower than the EU average of 20%. From this aspect, there are big differences between the companies in Macedonia, depending on their size. While 46% of large companies in 2020 provided ICT training for their employees, this was the case with only 22% of micro and 10% of small companies.[16]

Based on the survey findings, specific measures and activities are proposed for the advancement of digitalization and digital skills of Macedonian businesses. Some of the recommendations are: free digital services for a period

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[16] https://akademik.mk/digitalizatsijata-veke-ne-e-optsija-tuku-potreba-za-kompani-ite/02.02.2023.

of 6-12 months for micro companies, the establishment of a government fund for co-financing trainings for digital skills, tax reliefs and incentives that would encourage employees to train or requalify in the direction of digital skills, etc.

Some other studies give recommendations for measures for citizens such as: acquiring a mandatory minimum level of digital skills for students, establishing a national framework for digital skills, training unemployed people in digital skills to support their (re)employment.[17]

According to another survey, when asked if the person/employees responsible for human resource management have ever attended training for acquiring skills for the digitalization of the human resourse management, the findings show that 31% of the respondents answered positively, and even 69% negatively (Graph 1).[18]

Graph 1. Answers to the question: Has the person/employees responsible for human resource management ever attended training to acquire skills for the digitalization of the human resource management?
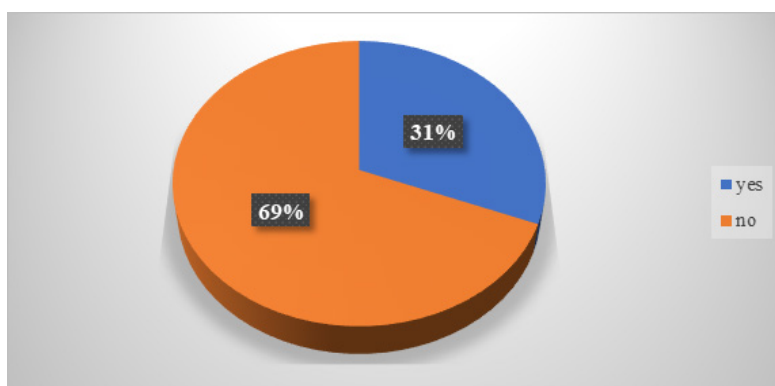
Source: own research

Respondents who answered the question negatively were given the option to state whether they think that the person/employees responsible for human resource management should attend trainings to acquire skills for the digitalization of the human resourse management and explain their attitude.

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[17]   https://ekonomijaibiznis.mk/News.aspx?IdNews=26175/30.01.2023.

[18]   The research results presented in this paper are part of the project Main human resource management challenges for small businesses (Главни предизвици на малите бизниси во управувањето со човечките ресурси), NIP.UKIM.21-22.21, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia

The majority of them are of the opinion that the person/employees responsible for human resource management should attend trainings to acquire skills for the digitalization of the human resourse management, and as the most common reasons they cite: increasing the efficiency of the organization's operations, to follow modern market trends, maintaining competitiveness, etc.

Conclusion

Employees are one of the most important resources of a business. The human resource management is in the constant perception of the needs for upgrading, planning, organization and successful implementation of the knowledge and skills of all employees, so the trainings are one of the most frequently applied tools in this sense.

New trends dictate the need for educated and trained staff with modern knowledge and skills for digitization and create conditions for their acquisition through an informal education process, most often through training. As a systematic and continuous process, in the shorter term, the digitization training improves the skills of the employees for the application of new more sophisticated ways and opportunities for better and more efficient performance of the work at a specific workplace.

In modern conditions, digital skills are needed for successful digitalization of human resourse management. It presupposes the need to acquire new knowledge and skills by using the available tools and software solutions in all functions of the human resourse management. Acquiring the necessary digitization skills allows simpler and more functional creation of a centralized database for automatic data updating, consolidating and reporting, greater flexibility, reliability, security and improves financial control.

By implementing the trainings for the digitalization of the human resourse management, skills are created for the exchange of knowledge, information and/or instructions. Through a continuous learning process, they enable the raising of the level of necessary knowledge, skills and qualifications for more efficient work of the businesses.

Empirical research data shows that in terms of digitization, micro and small businesses largely lag behind large and medium-sized businesses. In addition, the low level of awareness of the importance of digitization also results in low investments in the development of digital skills of employees. Namely, in most companies the person/employees responsible for human resource management have not yet attended training for acquiring skills for the digita-

lization of human resourse management, although some of them consider that these trainings are necessary for the advancement of their work. This imposes the need to increase awareness of the benefits of digitalization, and thus the realization of greater investments by businesses in Republic of North Macedonia for training employees to acquire skills for digitalization of processes.

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18 https://ekonomijaibiznis.mk/News.aspx?IdNews=26175

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HUMAN RESOURCE PRACTICES IN SMALL BUSINESSES IN REPUBLIC OF NORTH MACEDONIA

Abstract: *The primary objective of this paper is to identify human resource practices implemented by small firms, so as to better understand the specifics of human resource management in small businesses. An online survey was conducted among small businesses in the Republic of North Macedonia. The research findings[4] reveal that small firms in North Macedonia use employee referrals as a recruiting strategy and a traditional selection process based on CV/interview analysis. Most of small businesses have some form of consistent and continuous compensation system, with employee performance as a main criterion for determining the compensation level. Employee training has been identified as one of the biggest challenges that small businesses face. Most small firms conduct employee training to improve job-specific skills for current job tasks. In addition, employee trainings are implemented on an ad hoc basis and largely depend on firms' available financial resources, since high training costs remain to be an obstacle to small firms.*

Keywords: small business, human resource practices, Republic of North Macedonia
JEL Classification: M51

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Introduction

The last two decades an increasing focus on human capital as a key criterion for economic competitiveness and growth is noted. The focus on human capital was, in fact, a result of the global trends, as the wide use of increasingly sophisticated technology, digitalization, advancement of business processes, competition and increased innovation, which led to the development of the knowledge-based economy. Additionally, the contemporary approach to management has resulted in new, upgraded organizational processes, greater project orientation of businesses, changes in organizational structures for greater flexibility and adaptation, as well as changes in the nature of employee tasks and activities. Businesses have introduced proactive policies for developing and managing human resources in a way that would enable them increased productivity at organizational level and increased market competitiveness. In this regard, the overall business management philosophy, and in particular human resource management policies and practices, should be directed towards creating, developing and deploying a human capital pool for achieving business goals. Thus, the development of appropriate human resource management practices becomes essential to gain considerable advantage from human resources.

Small businesses are the backbone of any economy. According to the State Statistical Office, in the Republic of North Macedonia, small businesses with 1-9 employees account for the largest share of active business entities (82%), whereas 97.7% of all active business entities are small firms[1]. Undoubtedly, the share of small businesses in the total number of registered active business entities indicates their importance for the development of the economy. Appropriate management of human resources in small businesses is important for their sustainability and market development, since they often have limited resources, especially financial. Thus, the sustainability and development of small businesses often depend on employees' knowledge and skills as well as their commitment, adaptability and motivation to achieve the organizational and market goals of the firm. The characteristics of small businesses however dictate the manner and the degree of use of human resource management practices, and in this regard, research reveals that small businesses often face numerous challenges in human resource management due to various factors, as

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[1]   State Statistical Office of the Republic of North Macedonia, "*Number of active business entities, 2021– Preliminary data*", [https://www.stat.gov.mk/pdf/2022/6.1.22.14_mk.pdf]

lack of knowledge in HR management and lack of HR departments or HR professionals, limited financial resources for employee development, lack of formal procedures and alike. These factors directly diminish the potential benefits of firm's human capital. Taking into account the abovesaid, it is essential to identify the use of human resource management practices in small businesses and determine the potential prospects and challenges. The primary objective of this paper is to identify human resource practices implemented by small firms[2], so as to better understand the specifics of HRM in small businesses as well as to understand the challenges that they face. Therefore, the paper first includes a brief literature review on main HR practices in small business and then the findings of the primary research conducted among small businesses in North Macedonia are elaborated.

1. HUMAN RESOURCE MANAGEMENT IN SMALL BUSINESSES

Human resource management in small business is mainly characterized by informal and less sophisticated HR practices.[3] The development and implementation of HR practices in small business depends heavily on the owner, as a result of lack of HR departments or professionals, as well as of centralized decision-making process. In such context, owner's recognition of HRM significance for business success is of great importance. Yet, insufficient business knowledge and even more HRM knowledge adds up to often dysfunctional human resource practices in small business.

Recruitment and compensation practices are the most important HR practices for small businesses.[4] Recruitment is undoubtedly one of the most challenging HR practices nowadays as it has significant impact on both organizational and market performance of firms. The continuous search for the desired skills has created fierce competition in the labor market. Firms with proactive and sophisticated recruitment policies, successful firms and financially sound firms have created an advantage over small firms, since they can offer competitive, above-market compensation, employee development oppor-

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[2]   Based only on staff headcount (EU definition of SMEs includes two criteria: staff headcount and annual turnover)

[3]   Kotey, B. & Slade, P., "Formal human resource management practices in small growing firms", *Journal of Small Business Management*, Vol.43 No.1, 2005, pp.16-40

[4]   Hornsby, J. & Kuratko, D., "Human resource management in US small business: a replication and extension", *Journal of Developmental Entrepreneurship*, Vol.8 No.1, 2003, pp.73-92

tunities and alike. Despite their unfavorable position in the labor market, small businesses do not seek to upgrade their recruitment strategies. In fact, they rely mostly on informal recruitment practices. As Carroll et al.[5] note, small firms do not use recommended systematic recruitment procedure but instead mostly use informal methods including word-of-mouth recruitment as more cost effective in the short term. The choice of the selection method is closely related not only to the type of job and its requirements, but also to the firm's capacity to implement this selection method. Research confirms that small businesses use unstructured interviews as predominant selection tool[6], as well as reference checks and application forms[7].

Employee training and development is another HR practice that raises due attention among scholars. The profound changes in organizational context have reshaped businesses and jobs. The latter has increased the need for a proactive approach to employee training. Investments in employee training, however, depend on several factors as firm's goals and strategy, its specifics, industry and the organizational culture. There is considerable evidence that small businesses do not invest in employee training as much as their large counterparts.[8] This is partly a result of the very specifics of small firms (as, for example, lack of human resource budgets, lack of adequate training needs assessment, etc.) as well as of various obstacles faced by small business. Financial costs of training and lost working time are the most frequently reported barriers for workforce training.[9] In addition, small business mainly prefer job-specific employee training and/or tailor-made training which would match their specific needs. Hence, employee training is mainly conducted in-house as most training offers in the market are more general. Management capability is also identified as a possible barrier to employee training investments.[10] Lack

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[5]   Carroll, M., Marchington, M., Earnshaw, J. & Taylor, S., "Recruitment in small firms: Processes, methods and problems", *Employee Relations*, Vol. 21 No. 3, 1999, pp. 236-250

[6]   Bartram, D., Lindley, P.A., Marshall L. & Foster, J., "The recruitment and selection of young people by small businesses", *Journal of Occupational and Organisational Psychology* 68, 1995, pp. 339–358

[7]   Gilbert, J. & Jones, G., "Managing human resources in New Zealand small business", *Asia Pacific Journal of Human Resources*, Vol.38 No.2, 2000, pp.55-68

[8]   See for example Eurostat data on training enterprises

[9]   Kitching, J. & Blackburn, R., "*The nature of training and motivation to train in small firms*", Research Report RR330, Small Business Research Centre, Kingston University [https://core.ac.uk/download/pdf/4154524.pdf]

[10]   Stone, I., "Upgrading workforce skills in small businesses: Reviewing international policy and experience", *Report for Workshop on Skill Development for SMEs and Entrepreneur-*

of HR departments and insufficient business knowledge of small firm owners usually results in managers' belief that the workforce is proficient enough and the additional training is not necessary. Inability to conduct training needs assessment in small business could also result in reluctance to training.

Compensation system is central to human resource policy in small business, but it also poses a great challenge. Establishing a sound compensation system requires thorough investigation into the main elements of the system. In this context, for the compensation system to be properly developed it should be simple, transparent, attainable and measurable. It should also include objective performance benchmarks against which the employee's performance is measured. Research on the use of formal compensation practices by small business is rather limited. Previous studies have found that small businesses generally lack a defined compensation system, as pay and/or reward levels are mainly determined by owners. This is especially present in micro firms, with less than 10 employees.[11] While a compensation system can encompass different elements, small businesses, particularly family-owned, indicate clear preference for fixed rewards.[12] However, there is a growing interest among small businesses owners for properly designed compensation system as a response to their search for greater employee productivity and overall performance.

2. RESEARCH FINDINGS

The empirical research was conducted with an online questionnaire using Microsoft 365 Forms, distributed to small firms in Republic of North Macedonia during the period of two months. The questionnaire included questions to define the demographics of the sample and questions related to several HRM practices. In particular, questions included aspects of the recruitment and selection process, implementation and challenges of employee training and existence of a formal compensation system, A total of 58 completed questionnaires were gathered and further analyzed.

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ship, OECD/LEED, 2012 [https://www.oecd.org/cfe/leed/Skills%20Workshop%20Background%20report_Stone.pdf]

[11]   Carrasco-Hernandez, A. & Sanchez-Marin, G., "The determinants of employee compensation in family firms: empirical evidence", *Family Business Review*, 20(3), 2007, pp. 215-228

[12]   Almadana-Abon, S., Molina-Gomez, J., Mercade-Mele, P. & Delgado-Centeno, J., "Total compensation model in family business as a key tool for success", *European Journal of Family Business*, 10(2), 2020, pp.82-91

The analyzed sample included small firms with main business activity in trade (24%), services (67%) and production (9%). Most of these firms are active in the market either more than 10 years (59%) or between 5 to 10 years (24%), while only 17% are active less than 5 years. Furthermore, 59% of the businesses employ up to 10 employees, 15% employ 11-25 employees, while one quarter employ 25-50 employees (see Figure 1).

Figure 1. Demographic characteristics of the sample
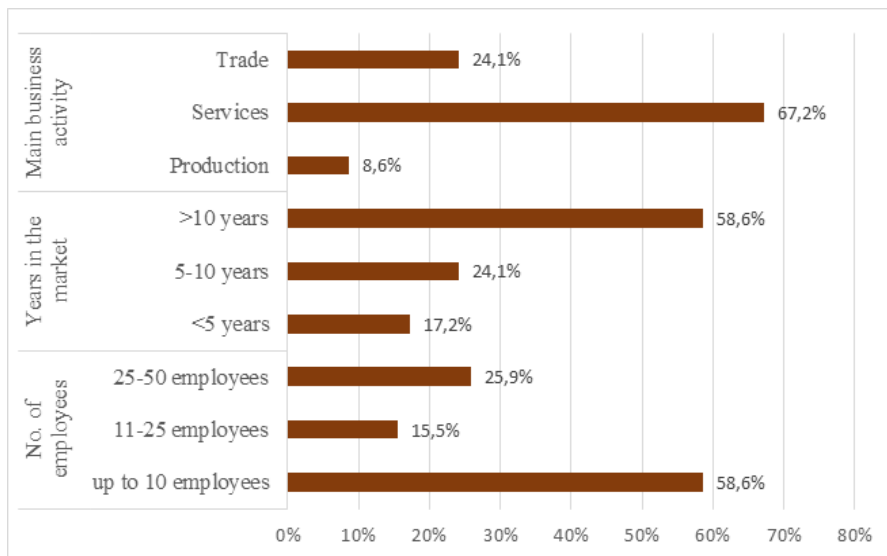
Source: Based on authors' research

The findings show that small firms rely heavily on referrals by either existing employees, partners or friends in the recruitment process. Almost 64% of small businesses (Figure 2) report that employee referral is the most frequently used recruitment method. Online recruitment agency is another preferred recruitment method, but used only by 15% of firms. Research provides compelling evidence of the wide use of employee referral as a recruitment method by small businesses[13] as well as its benefits for the firms[14]. Indeed,

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[13]   Mani, V., "The effectiveness of employee referral as a recruitment source", *International Journal of Management Sciences and Business Research*, Vol.1, Iss.11, 2012, pp.12-25

[14]   Pieper, J. R., Greenwald, J. M. & Schlachter, S. D., "*Motivating employee referrals: The interactive effects of the referral bonus, perceived risk in referring, and affective commitment*", Management Department Faculty Publications, 2017 [http://digitalcommons.unl.edu/managementfacpub/159]

employee referral is probably the least time-consuming and least expensive method of recruitment. To be successful, however, employee referral programs should be cautiously designed and implemented, as some of the disadvantages of this recruitment strategy relate to narrowed candidate pool, decreased workforce diversity and possible biases in the recruitment process.

Figure 2. Most frequently used method of recruitment
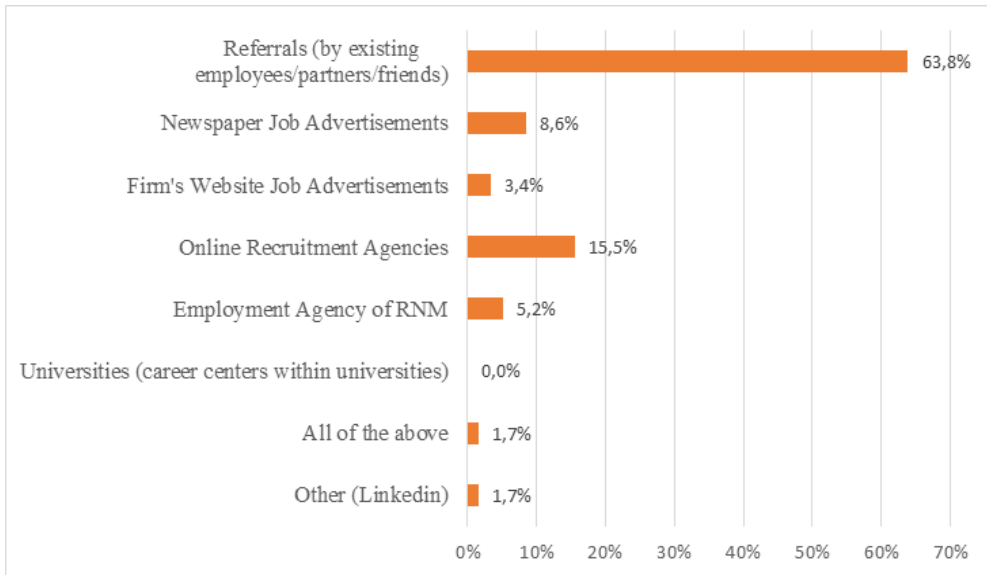
Source: Based on authors' research

Small businesses screen the potential candidates using CV assessment and interview as part of their selection process (Figure 3). The data provided in the CV, in terms of acquired skills, prior work experience and achievements of the applicant, allow businesses to shortlist their potential candidates, whereas, the interview is crucial in determining if the applicant's skills and experience meet the job requirements. Indeed, semi-structured interview is the most widely used selection technique by companies in general. Zibarras and Woods[15] found that CVs and interviews are widely used by UK firms regardless of their organizational size. Nevertheless, it is interesting to note that only 5% of small businesses check previous employer references.

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[15] Zibarras, L., & Woods, S., "A survey of UK selection practices across different organization sizes and industry sectors", *Journal of Occupational and Organizational Psychology*, 83(2), 2010, pp. 499-511

Figure 3. Most commonly used selection techniques
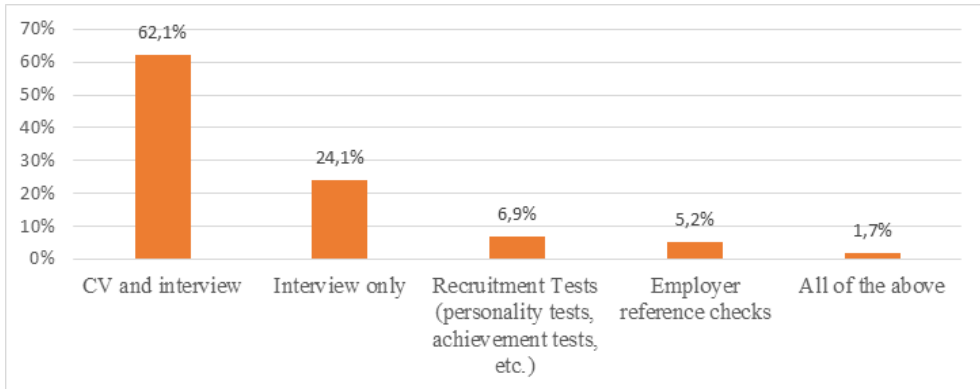
Source: Based on authors' research

Previous work experience in same or similar job and/or industry as well as job-specific skills are the key selection criteria for applicants (see Figure 4). In fact, more than half of small businesses (55.2%) view previous work experience of the applicant in same or similar job and/or industry highly important while about one third of small businesses rely on adequate job-specific skills in the hiring process. Finally, 65.5% of small businesses are satisfied with their newly hired employees, 22.4% are not satisfied, while 12.1% are not sure.

Figure 4. Key selection criteria for hiring employees
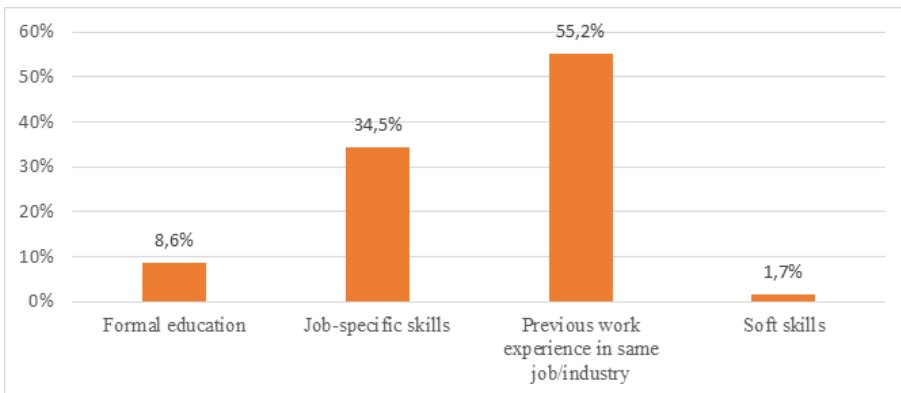
Source: Based on authors' research

Small businesses continuously report lower incidence of employee training, compared to medium and large ones.[16] Difference between small and medium firms, with regard to the incidence of employee trainings, was also revealed among SMEs in the Republic of North Macedonia.[17] In line with this, the findings show that one third of small businesses did not conduct any employee training in the last three years (Figure 5), whereas a similar percent of businesses (36%) provided training to a quarter of their workforce at most.

Figure 5. Participation of employees in training in the last three years, in %
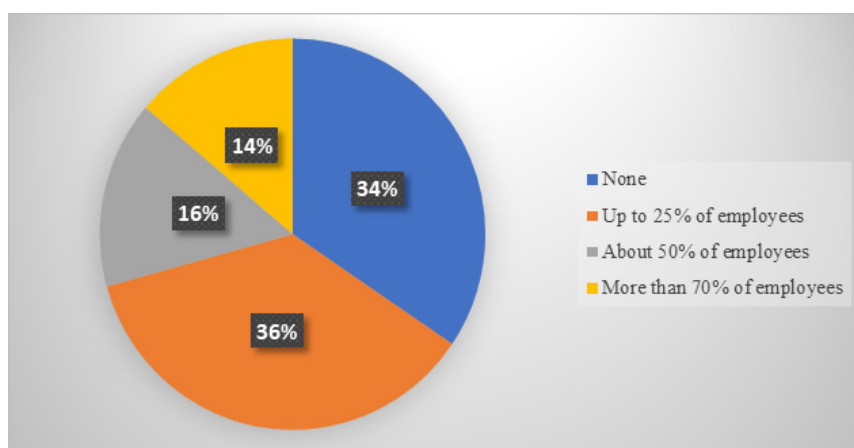
Source: Based on authors' research

Investments in employee training in the last three years were generally made for upgrading employee job-specific skills related to current job tasks (Figure 6). Job-specific skills are essential for the operational needs of business and are thus of primary interest to businesses. On the other hand, an insignificant share of firms (5.2%) reported conducting employee training on soft skills and only 10% of businesses reported conducting employee training for future job requirements. Lack of anticipating future skill needs and even more neglecting employee soft skills could leave businesses more vulnerable to change

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[16]   See, for example, OECD, "*Skills development and training in SMEs*", OECD Publishing, 2013; Eurostat, [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Vocational_education_and_training_statistics&oldid=464069]

[17]   Piperkova, I. & Lozanoska, A., "Barriers to employee skills development: Comparative analysis of firms in North Macedonia", *Economic Development*, Year. 23, No. 2-3/2021, 2021, pp. 131-146

and would increase the mismatch between existing and required skills in business in the long run.

Figure 6. Key reason for conducting employee training
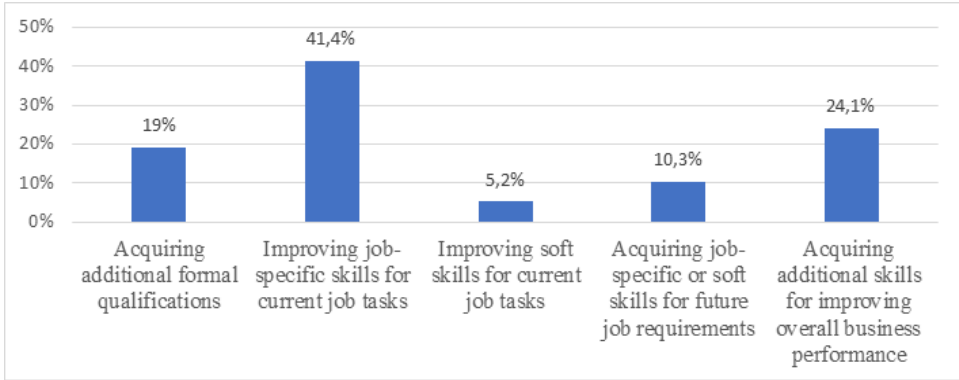
Source: Based on authors' research

The focus on skills development for current job tasks is also reflected in businesses' approach to employee training in general. About 38% of small businesses reveal that they conduct training on an ad hoc basis and additional 31% of businesses depending on the available financial resources (see Figure 7). Less than one third of firms have a proactive approach to employee training, in an attempt to anticipate future needs of the business.

Figure 7. Businesses' approach to employee training implementation
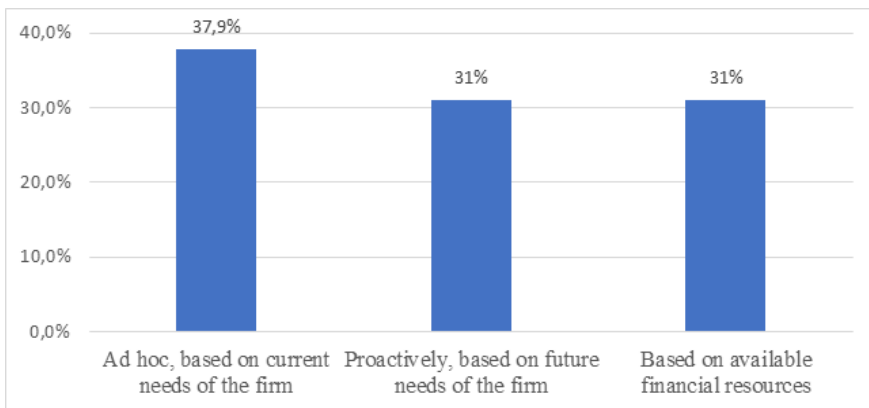
Source: Based on authors' research

Research has provided compelling evidence that small businesses face multiple barriers to skills development process, as a result of higher training costs per employee[18], absence of HR expertise and/or departments, poor training needs assessment and lack of training budgets[19], among other. In this regard, more than half of businesses consider high training costs to be their primary concern. In addition, almost 28% of businesses also point to lack of training budget in their organization as well as lack of custom-made training offers in the market (Figure 8). Indeed, one of the most common barriers to employee training is the mismatch between the specific needs of small businesses and the training programs offered on the market. Therefore, small businesses prefer informal and in-house training, as it can be tailored to their needs.[20]

Figure 8. Challenges of employee training faced by small businesses
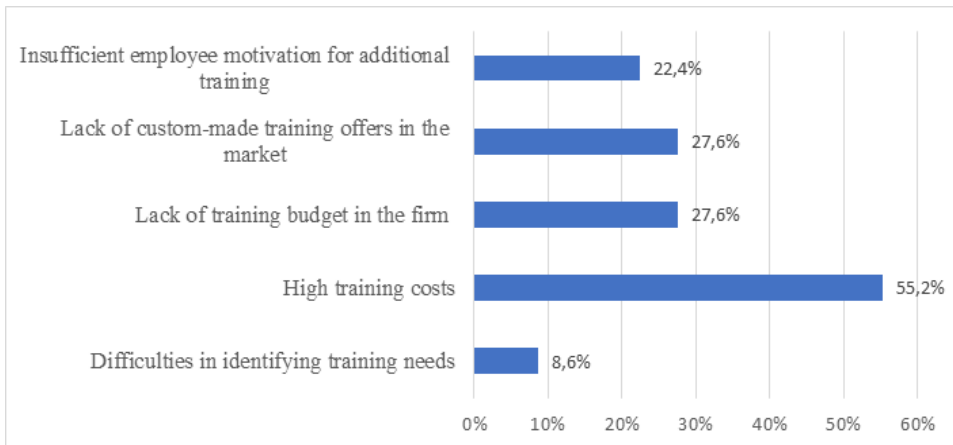
Source: Based on authors' research

In terms of employee compensation, the findings reveal that more than half of businesses have developed and consistently implement a compensation system and another 15% plan to develop a formal compensation system. It is

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[18]   Stone, I. "*Encouraging small firms to invest in training: learning from overseas*", Praxis, UK Commission for Employment and Skills, Iss.5, 2010, p.10

[19]   Beraud, D. "SMEs are increasingly interested in the effects of training", *Training and Employment* No.114, 2014, p. 2

[20]   Stone, I., "Upgrading workforce skills in small businesses: Reviewing international policy and experience", *Report for Workshop on Skill Development for SMEs and Entrepreneurship*, OECD/LEED, 2012 [https://www.oecd.org/cfe/leed/Skills%20Workshop%20Background%20report_Stone.pdf]

also worth noting that about 22% of businesses do not implement consistently the compensation system they have developed. This implies that either small business owners have not fully grasped the importance of a sound (fair, objective, attainable and consistent) compensation system or that the compensation system has not been properly designed and is thus dysfunctional. In this context, developing a compensation system that reflects the needs of the business is probably one of the biggest HR challenges for small firms.

Figure 9. Developed compensation system by small businesses
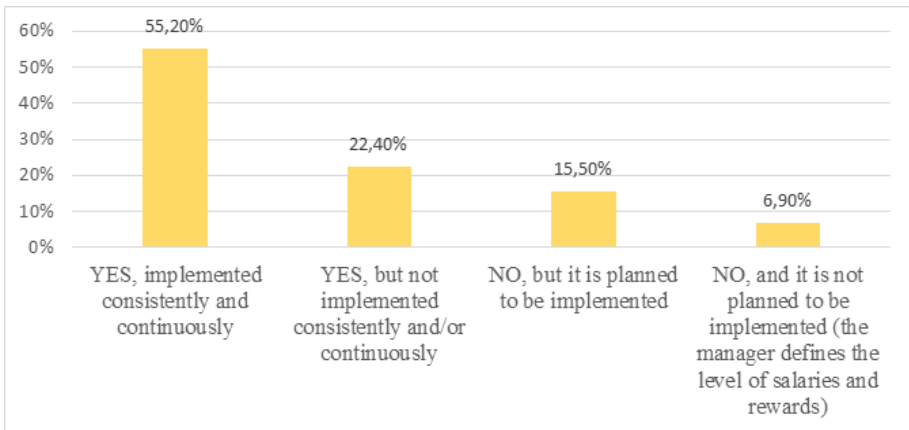
Source: Based on authors' research

More than half of small business owners report that employee performance and achieved targets are main criteria for determining salary and reward levels of employees (Figure 10). These findings support the notion that small businesses, in terms of human resource management, are predominantly focused on improving employee productivity and performance. An insignificant share of firms points to job value or formal qualifications and acquired skills as main criterion for determining salary/reward levels.

Figure 10. Main criteria for determining salary and reward levels
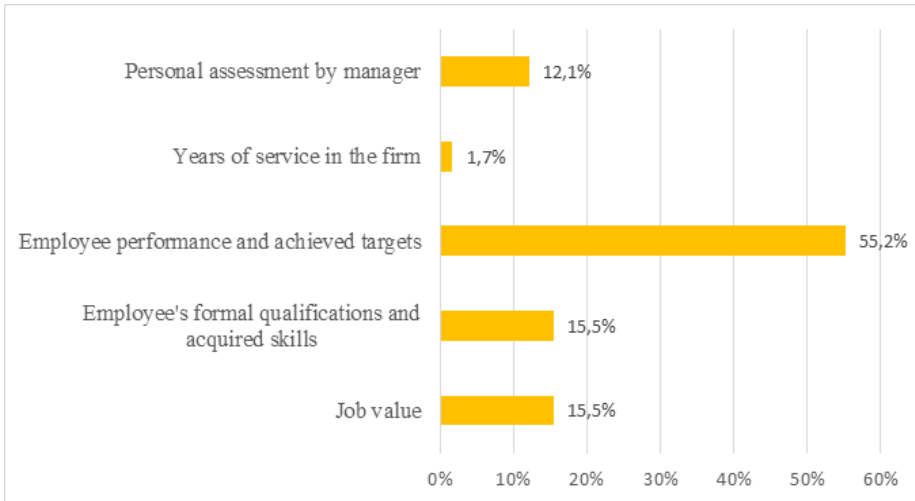
Source: Based on authors' research

Various aspects in managing their human resources pose great challenge to small business owners. However, owner's capacity to understand these challenges is directly related not only to his/her HRM knowledge but also to owner's recognition of HRM importance to the business. Lack of HRM knowledge and/or lack of HR specialists could mislead managers in believing that either the maximum is achieved in their HR policies or that only repressive HR measures, as for example strict rules, pay cuts or even layoffs, could deliver the desired results.

Figure 11. HR aspects that pose challenge to small businesses
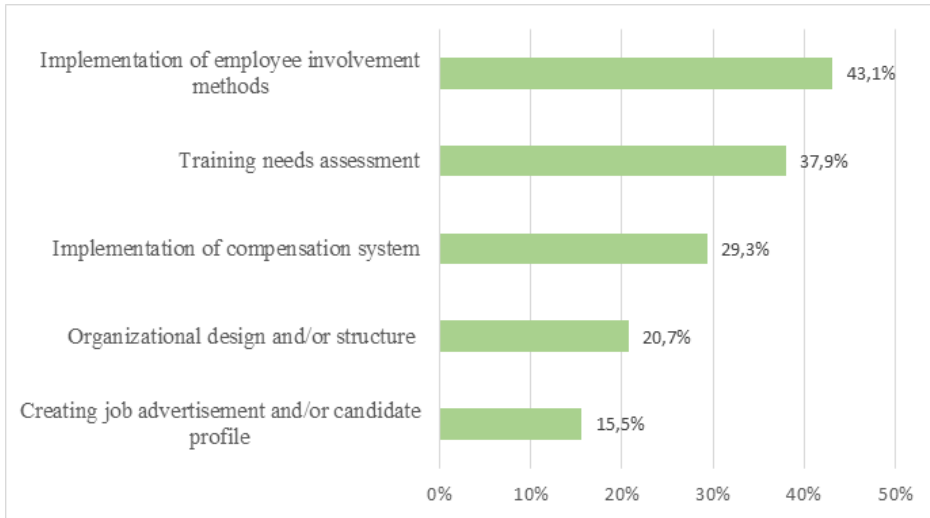
Source: Based on authors' research

Our findings reveal that a significant percent of small businesses could use professional HR assistance for implementing employee involvement methods, training needs assessment as well as implementation of employee compensation system (see Figure 11). These findings show that small business managers have become more aware of the potential benefits of human resource management for their business.

Conclusion

This study contributes to a better understanding of main human resource practices in small business in North Macedonia. Appropriate management of human resources in small businesses is important for their sustainability and market development. However, they often face numerous challenges in human resource management mainly as a result of lack of HR professionals and insufficient HR knowledge of business owners, limited financial resources for employee development and lack of formal procedures, among other. Research provides evidence that human resource management in small business is mainly characterized by informal and less sophisticated HR practices.

Overall, this study is in line with previous studies in the field of human resource management in small businesses. Indeed, our findings reveal that small businesses do not fully employ HR practices to their benefit. Most small

33

businesses use traditional recruitment and selection strategy and do not have a proactive approach to employee training. The recruitment and selection process are mainly conducted using traditional methods as employee referrals and CV/interview analysis. Employee training investments are made for workforce upskilling based on current job requirements and in most cases cover relatively small percent of employees. A proactive approach to training lacks in most of small businesses, since most businesses do not anticipate future skill needs. In terms of compensation system, some form of compensation system is implemented by small businesses, with employee performance as a main criterion. Hence, developing a sound and consistent compensation system continues to be a challenge for small businesses.

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4   Carrasco-Hernandez, A. & Sanchez-Marin, G., "The determinants of employee compensation in family firms: empirical evidence", *Family Business Review*, 20(3), 2007, pp. 215-228

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13 Piperkova, I. & Lozanoska, A., "Barriers to employee skills development: Comparative analysis of firms in North Macedonia", *Economic Development*, Year. 23, No. 2-3/2021, 2021, pp. 131-146

14 State Statistical Office of the Republic of North Macedonia, "*Number of active business entities, 2021– Preliminary data*", [https://www.stat.gov.mk/pdf/2022/6.1.22.14_mk.pdf]

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17 Zibarras, L., & Woods, S., "A survey of UK selection practices across different organization sizes and industry sectors", *Journal of Occupational and Organizational Psychology*, 83(2), 2010, pp. 499-511

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IMPACT OF COVID-19 ON THE PERFORMANCE OF BANKING SECTOR AND THE SET OF MEASURES UNDERTAKEN IN THE REPUBLIC OF NORTH MACEDONIA

Abstract: The current crisis caused by Covid-19 pandemic has damaged the global economy, causing significant changes to every aspect of the global banking system, and Republic of North Macedonia is no exception. Since the banks are the main source of liquidity insurance for economies and they perform a very important intermediation role it is very important to study the impact of Covid-19 pandemic on the performance of the banking sector in the RNM. Because of that, the first aim of this paper is to analyze the defense function though a set of measures constructed in a direction of the support of the banking sector in the Republic of North Macedonia. The second aim of this paper is to analyze the impact on the banking sector in the Republic of North Macedonia caused by the Covid-19 pandemic. From the results obtained, we concluded that although the banks in the RNM faced a lot of challenges caused by the Covid-19 pandemic, they managed to maintain their profitability and stability and even to contribute in the process of mitigation of the consequences of the pandemic in the RNM.

Keywords: Covid-19, CAMEL, bank performance, banking sector
JEL Classification: G210

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Introduction

The financial system is one of the pillars of statehood of Republic of North Macedonia. The stability of the financial system directly affects the stability of the state and all spheres of normal social functioning. During every crisis of an economic of financial nature in the country or abroad, the financial system, represented mainly by the commercial banks and the Central Banks, is under attack through various shocks. Since the country's monetary independence in 1991 and the package of laws passed in 1992 that provided an institutional framework for the monetary system, the banking system has been put through a number of challenges. With the maintenance of stable exchange rate of the denar, low level of inflation, continuous growth of foreign exchange reserves, the foundations of our statehood and independence were strengthened more and more. Throughout the years of North Macedonia's independence, the banking system has responded to a series of challenges, blockages, conflicts, financial crisis, thus standing out as one of the institutions with greatest trust among citizens. For the first time in recent history, the shocks caused by a health crisis have directly and indirectly caused disruptions in the economic and financial sectors in countries around the world. The health crisis that began with the emergence of the new type of corona virus "Covid19" spread across the globe with great speed at the level of pandemic and as expected, affected all social flows from the economy and finance to health, culture, art, that is the entire open system of connections and relationships in which individuals and groups function. The resulting pandemic presented a rare opportunity to activate the defense systems in direction of survival, reorganization and resetting of established habits, processes, trends and expectations. The "domino effect" which appeared caused consequences in our country as well, with an impact on citizens with controlled social behavior, with an impact of companies through disruption of international and domestic trade channels and investments, on domestic consumption with a further impact on the banking sector, budget implications etc. The first aim of this paper is to analyze the defense function though a set of measures constructed in a direction of the support of the banking sector in the Republic of North Macedonia. The second aim of this paper is to analyze the impact on the banking sector in the Republic of North Macedonia caused by the Covid-19 pandemic.

1. GENERAL OVERVIEW OF THE HEALTHCARE CRISIS AND ITS EFFECT ON THE ECONOMIC GROWTH

At the end of 2019 and the beginning of 2020, a small number of people adequately perceived the emerging epidemical situation in which the PRC is and what consequences it may have on individuals and companies around the world, the pandemic that slowly spread to all continents. The effects that resulted from the Covid-19 crisis left a deep mark in the normal functioning that we were used to until then. Today in the world there are over 400 million people who have been infected with the virus and over 5 million dead people by the end of 2021. In order to protect their citizens, the health authorities and the governments of the states have taken measures to reduce the spread of the infection by limited movement as well as through social and physical distance, which inevitably led to a decline in the world economy as a result of reduced consumer spending of the citizens, stopped investment cycle of the companies, delayed infrastructure and development projects of the governments etc.

Figure 1. Annual percentage change in GDP
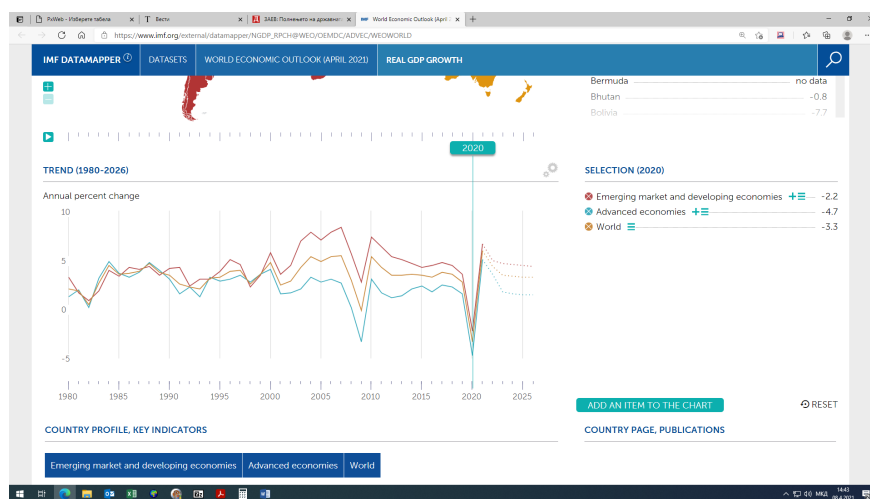
Source: World Bank

As a results of the health crisis and the measures taken by the governments of the countries all over the world, in direction of protecting the health of their citizens and reducing the spread of infection through mass quarantines, the world economy during 2020 recorded the largest drop in GDP after the

Second World War by almost 3.3 percent. The decline of the world economy was in all sectors and almost all economies. The decline in the world economy was even higher than the decline in the world GDP during the international financial crisis in 2009. There was a decline in economic activity both in highly developed countries and in developing countries as well as in the fast-growing economies. The economies of highly developed countries in 2020 recorded a decline of 4.7 percent.

The activities undertaken by companies, individuals and state governments were aimed at mitigating the negative consequences of the corona virus. The labor market was seriously disturbed by the growth of the number of unemployed people. The number of directly lost jobs as a result of the negative impact of Covid19 crisis is estimated at 114 million jobs. Particularly affected were employees in the hospitality, transport and consumer goods stores. In conditions of general panic and fear, citizens opted for moderate consumption because as a result of mass quarantines they were limited in their options for personal consumption, while due to great uncertainty, they opted for delayed consumption of free cash resources for future and more stable periods that would follow.

The health crises have a profound negative impact on the economies of the countries around the world and the Republic of North Macedonia was no exception. In the Republic of North Macedonia, the health crises had a profound negative impact on the growth of the growth of the gross domestic product, international trade, labor market, foreign direct and domestic investments, reduced public spending, delayed private development and infrastructure projects, etc.

Table 1. Gross domestic product by production method for Republic of North Macedonia, at current prices for 2018, 2019, 2020 and 2021 (by sectors)

current prices (million denars)	2018	2019	2020	2021
A Agriculture, forestry and fishing	55979	56331	57351	52225
B, C, D and E Mining and quarrying; Manufacturing; Electricity, gas, steam and air conditioning supply; Water supply; sewerage, waste management and remediation activities	123187	125196	116703	121890
F Construction	35757	38994	35514	39157
G, H and I Wholesale and retail trade; repair of motor vehicles and motorcycles; Transportation and storage; Accommodation and food service activities; Wholesale and retail trade; repair of motor vehicles and motorcycles; Transportation and storage; Accommodation and food service activities	131737	140322	130471	138894
J Information and communication	22612	24365	26732	31249
K Financial and insurance activities	19276	19293	20636	21978
L Real estate activities	66152	68258	69940	75298
M and N Professional, scientific and technical activities; Administrative and support service activities	23822	26298	24251	28459
O, P and Q Public administration and defense; compulsory social security; Education; Human health and social work activities	76943	82218	88928	93220
R, S and T Arts, entertainment and recreation; Other service activities; Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	18458	20187	17555	20487
Value added	573922	601462	588081	622858
Net taxis on products	86956	91220	81199	97556
Gross domestic product	**660878**	**692683**	**669280**	**720414**
Real growth rates (in %)	2,90%	3,90%	-4,70%	3,90%

Source: State Statistical Office

According to Table number 1, the sectors G, H and I (Wholesale and retail trade; repair of motor vehicles and motorcycles; Transportation and storage; Accommodation and food service activities; Wholesale and retail trade; repair of motor vehicles and motorcycles; Transportation and storage; Accommodation and food service activities) and the sectors B, C, D and E (Mining and quarrying; Manufacturing; Electricity, gas, steam and air conditioning supply; Water), has the greatest impact on the on the amount of GDP of the North Macedonian industry. Those two sectors account for around 40% of the country's GDP value formulation. The drop in GDP in the North Macedonian industry amounts to almost 5 percent compared to 2019. It is interesting to be noted that the financial sector managed to increase its GDP despite of the Covid-19 crisis. But we can see that the economy in the Republic of North Macedonia in 2021, taking the GDP as measure is starting to recover from the Covid-19 pandemic.

2. IMPACT ON THE BANKING SECTOR IN THE REPUBLIC OF NORTH MACEDONIA CAUSED BY THE COVID-19 PANDEMIC THROUGH THE SET OF MEASURES IN THE COUNTRY

2.1 Measures adopted by the RNM government
Although there is no ideal set of measures that would completely nullify the negative impact of the COVID-19 crisis, the measures that were adopted in the RNM were aimed at preserving jobs, maintaining economic activity and stabilizing personal consumption. The first package of economic measures from the months of March and April 2020, until the most recent addition with the sixth package of economic measures in the amount of EUR 17.8 million to support the activities that were completely closed in order to prevent the spread of the coronavirus during the quarantine, as well as to improve the liquidity of the companies investing during the years 2020 and 2021. Total direct and indirect aid is estimated at around EUR 1.2 billion, though a set of 106 measured during the analyzed period.

2.2 Measures that affected the Banks and the Banks' customers
With all the measures adopted by NBRSM, their responsiveness, timeliness, far-reaching, in-depth analysis and their positive consequences, once again strengthened this institution and its management team as an entity with

greatest trust and reliability in the country. At the very beginning of the crisis, even though our country was faced with risks of that scale for the first time, a series of measures were developed by the National Bank, which were fully understood and used by the banks in the direction of protecting citizens and companies as well as the entire financial sector.

The most significant measures since the beginning of the crisis adopted by NBRSM will be elaborated briefly in the following part of this paper.

Based on the analyzes at the beginning of the crisis, it was decided to keep the level of the interest rate for treasury bills at 2% at the same offered amount of EUR 405 million. The analysis of the crisis was through the prism of comparison with the financial crisis of 2008, where the rate of capital adequacy, the gains from past years in the direction of recapitalization and the liquidity of the banking sector increased, the level of non-performing loans decreased, with the conclusion that the banking system has absorption capacity of the impending crisis.

In a situation where it became clear that the effects of the corona crisis will not be localized and is gaining an international character in countries all over the world, the National Bank reduced the reference interest rate on treasury bills, thereby giving a signal for monetary easing in conditions of low inflation, high foreign exchange reserves and potential risks that were in sight. The NBRNM made a decision to reduce the basic interest rate by 0.25 percentage points to 1.75 percent.

The National Bank re-introduced the non-standard measure regarding the mandatory reserve, which enables the reduction of the basis for the obligation of the mandatory reserve in denars of the commercial banks for the amount of the newly approved and restructured loans approved to the enterprises in activities that according to the information from the Government of the Republic of North Macedonia will be the most affected by the spread of covid-19. This measure will encourage uninterrupted credit support on favorable terms by the banks for the most affected sectors.

The Council of the National Bank held an extraordinary electronic session at which it adopted regulatory changes aimed at temporarily easing the financial burden of citizens and companies that are beneficiaries of loans. Mainly the changes were as following:

- Banks should reprogram the debts of their clients without a parallel increase in the provisions for those placements
- Banks should be able to postpone customer maturities for 6 months without a parallel increase in reservations for those placements

- Instead of the current approach, according to which banks and savings banks are obliged to record loans that are overdue for more than 90 days as non-performing, now the criterion for transitioning into a non-performing claim has been moved to 150 days
- Flexibility of banks and savings houses when changing the contractual conditions for repayment of loans in favor of customers, depending on the need and financial ability of each creditor-beneficiary. More favorable conditions may be a temporary postponement of the obligation for payment (grace period), extension of the due date, lower interest rate, approval of a new more favorable loan to close the existing one, etc., which enables the reduction of the current burden on citizens and companies in dealing with the negative pressures of the pandemic.

With the IMF decision, our country received financial support of around EUR 176 million. The financial support from the IMF was extremely important for us, both for the implementation of fiscal measures and for ensuring further growth of the foreign exchange potential of our economy, that is, for increasing the foreign exchange reserves. In this way, more space is created for implementing a loose monetary policy and for providing easier financial conditions for crediting the affected companies and citizens.

At the session of the Committee for Operational Monetary Policy of the National Bank it was decided to reduce the amount of treasury bills that banks can register with the Central Bank. At this session, it was decided that the offer of treasury bills will be reduced by MKD 8,000 million. The funds released by the reduced supply of treasury bills would provide further support to the Macedonian economy through the maintenance of credit flows and the credit cycle by the banking system. Shortly after this session another session was held where they agreed on Reduction of the basic interest rate by an additional 0.25 percentage points and an additional decrease of 7 billion MKD in the offer of treasury bills at the auction held by NBRSM.

The NBRNM recommended payment of pensions in coordination with the Banks in the direction of protecting the most elderly and also the most vulnerable categories in conditions of a pandemic.

With the regulatory changes adopted by the Council of the National Bank, it is foreseen that banks can offer their clients a second favorable change in the contractual conditions for credit products. The goal was to help those customers who are negatively affected by the covid-19 pandemic and despite all the measures feel a prolonged negative impact from the recession.

3. IMPACT ON THE BANKING SECTOR IN THE REPUBLIC OF NORTH MACEDONIA CAUSED BY THE COVID-19 PANDEMIC

In the first part of the analysis in this paper, in order to get conclusions about the credit activity, the growth of deposits and the effect on the banking sector in the Republic of North Macedonia, we will take the available data from NBRM. The analysis will take the credit exposure of the banking sector from the end of 2016 to the end of 2020 in order to see how and does the Covid-19 pandemic influenced the financial position and the performance of the banking sector in the Republic of North Macedonia. Additionally, in the analysis we will include the year 2021 (the last available data) in order to see their performance after Covid-19.

Table 2. Loans and deposits for all banks in the RNM for the period 2018-2021 (in million denars)

No.	Description	2018	2019	2020	2021
2	**Gross loans to non-financial entities**	320.085	339.699	353.502	383.627
	non-financial entities	162.775	166.723	168.420	183.639
	Households	153.229	169.510	181.166	196.167
3	**Deposits of non-financial entities**	371.333	405.587	430.870	468.844
	non-financial entities	100.948	114.853	127.385	142.478
	Households	257.036	276.671	288.992	309.051

Source: The National Bank of the RNM

From the information presented in Table 2, we come to a conclusion about the distribution of the loans and the deposits in the banks in the Republic of North Macedonia for the period 2018-2020. The growth of lending in 2019 and 2020 came to the greatest extent from lending to the households, while in

the section of loans to legal entities the growth was much smaller till the year 2021. The net deposit base in the analyzed period is divided in deposits of individuals and legal entities. The growth of domestic deposits in 2020 had almost identical growth of residential deposits and deposits of legal entities. Deposits of the state, non-profit institutions that serve households and non-residents entered with a small share that is not presented in the previous table.

From the perspective of the Income statement, i.e. financial result, the year 2020 was a successful year with a total profit MKD 7.252 million (Table number 3) and almost maintains the profit of 2019, which is mainly a result of the protection of the banking sector and the customers who use loans with the measure of deferment of obligations, increases in the value correction item on financial assets and a special reserve for potential client losses.

Table 3. Income statement for the banking sector in the RNM for the period 2018-2021 (million denars)

INCOME STATEMENT	2018	2019	2020	2021
INTEREST INCOME	19.605	19.247	18.525	18.726
INTEREST EXPENSE	-4.225	-4.232	-3.451	-3.067
NET INTEREST INCOME	15.380	15.015	15.074	15.660
NET INCOME FROM COMMISSIONS AND FEES	4.639	5.075	4.844	5.594
NET INCOME FROM INSTRUMENTS MEASURED AT FAIR VALUE THROUGH INCOME STATEMENT (INCLUDING TRADING)	8	43	-45	28
NET INCOME FROM OTHER FINANCIAL INSTRUMENTS MEASURED AT FAIR VALUE THROUGH INCOME STATEMENT, DETERMINED AS SUCH AT INITIAL RECOGNITION	13	11	10	12
NET INCOME FROM EXCHANGE DIFFERENCES	858	922	1.020	1.144
OTHER INCOME	3.561	2.170	3.175	3.959
IMPAIRMENT LOSSES - CORRECTION OF VALUE OF FINANCIAL ASSETS AND SPECIAL PROVISION FOR POTENTIAL CREDIT LOSSES	-3.362	-4.206	-4.486	-3.853
LOSSES DUE TO DAMAGE TO NON-FINANCIAL ASSETS	-440	124	-46	5
EXPENSES FOR THE EMPLOYEES	-5.018	-5.188	-5.162	-5.401
AMORTIZATION	-1.078	-1.050	-1.084	-1.185
OTHER EXPENSES	-5.219	-5.401	-5.375	-5.928
PROFIT/LOSS BEFORE TAX	9.341	7.514	7.925	10.035
PROFIT TAX	-988	-829	-673	-885
PROFIT/LOSS AFTER TAX	8.353	6.685	7.252	9.150

Source: The National Bank of the RNM

In the second part of the analysis in this paper, as to whether the performance of the banking sector in the Republic of North Macedonia is influenced by the Covid-19 pandemic, the CAMEL model for evaluation of the performance of the banks was used. The sample used was consisted of all commercial banks in the Republic of North Macedonia. The period of study was divided into two segments, pre-pandemic period (years 2015-2019) and pandemic period (years 2020 and 2021) of Covid-19. Using the CAMEL model, we calculated the most important ratios for capital adequacy, assets quality, management efficiency, earnings quality and liquidity position for each bank and for each year and then we compute the composite CAMEL rating for each period (pre-pandemic and pandemic period) for each category and for each bank in order to get to a conclusion whether the performance of each commercial bank in the Republic of North Macedonia was influenced by the Covid-19 pandemic.

In the table number 4, you can see the ratios and the criteria for evaluating each CAMEL component.

Table 4. CAMEL components

CAMEL components	Indicator	Formula	Criteria
Capital	Capital adequacy ratio		≥8%
Assets	NLP ratio Loan loss rate		≤ 1% < 2%
Management	Profit per employee		Depends on the level of income
Earnings	ROA ROE		≥ 1% - 1.5% ≥ 11
Liquidity	Current ratio		> 1

Source: Author's calculations

Table 5. Composite CAMEL rating

Name of the Bank	RANKING										COMPOSITE RANKING	
	2015 – 2019					2020-2021					2015-2019	2020-2021
BANK	C	A	M	E	L	C	A	M	E	L		
CKB	1	1	5	5	3	1	1	5	5	3	3	3
HALK	1	1	2	4	3	1	1	3	2	4	2	2
CAPITAL	1	5	3	5	2	1	3	5	5	3	3	3
KOMERCIJALNA	1	4	1	2	2	1	3	1	1	3	2	2
NLB	1	1	1	1	2	1	1	1	1	3	1	1
PROCREDIT	1	1	1	3	2	1	1	2	2	2	2	2
DEVELOPMENT BANK	1	1	3	5	1	1	1	2	4	1	2	2
SHPARKASSE	1	1	4	4	3	1	1	3	3	2	3	2
SILK ROAD	1	2	3	3	3	1	1	3	2	3	2	2
STOPANSKA BANKA BITOLA	1	1	4	3	2	1	1	1	3	2	2	2
STOPANSKA BANKA SKOPJE	1	1	1	1	3	1	1	1	1	3	1	1
TTK	1	2	4	3	3	1	1	3	2	3	3	2
UNI	1	1	3	3	3	1	1	3	1	3	2	2

Source: Author's calculations

From the results obtained and presented in Table 5, we concluded that although the banks in the RNM faced a lot of challenges caused by the Covid-19 pandemic, they managed to maintain their profitability and stability and even to contribute in the process of mitigation of the consequences of the pandemic in the RNM. Some of the banks made a higher profit during the pandemic period compared to the years before the Covid-19, whereas almost all the banks had solid and stable liquidity position after the year 2019.

Conclusion

The emergence of a new health crisis, caused by Covid-19, with an unprecedented scale of spread in the world across all countries and continents brought new challenges during the years 2019, 2020 and 2021. As a result

of the health crisis, the economic activity at the conscious level experienced a great reduction. In a situation of reduced economic activity and a trend of decreasing employment, the financial sector collided with a potential risk that needed to be reacted to immediately. Withdrawal of deposits from banks as well as fear of job losses and thus problems in servicing credit obligations in banks and the loss of international and domestic markets, reduced sales and investments, i.e. closure of entities in the business sphere was something that was expected and in sight. The financial sector, which consists mostly of Banks and the Central Bank at the head of the system, was faced with the challenge of maintaining its stability. From the analysis in this paper, it can be seen that the answer was timely, direct and comprehensive. The Central Bank in coordination with the government and the banks adopted and implemented a set of measures that managed to maintain stability. The conclusion of the analysis is that the banking sector, with its capacity and the knowledge of the members of the supervisory and management boards, as well as with its mechanisms in the structure of the banks, responded quickly and efficiently to the new challenges. The central bank, as a pillar of the stability of the banking sector, once again demonstrated its professionalism and independence. As a result of the measures, the banking sector maintained and increased liquidity, the credit activity of banks was maintained, the existence of customers was not threatened under the pressure of their credit obligations. During the analyzed period, interest rates decreased, both on the side of the liabilities and the assets of the banks, the rate of non-performing loans of the banks was reduced, the profits, which are a source of stability, were largely maintained, and thus the adequacy of the capital in the segment of large and medium-sized banks, an increase was observed. Everyone was up to an unknown challenge and responded well.

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THE INFLUENCE OF THE DIGITAL CHANNELS DESIGN ON CUSTOMER EXPERIENCE

Abstract: The online shopping is a process that enables customers to buy products and services offered by digital channels. Nowadays, the technologic revolution has changed the customers' behavior and habits on media consumption, which has a direct effect on the ways they receive the information about brands and shopping locations. These changes require higher level of sophistication of design of the customer journeys, sometimes including behavioristic and neuromarketing researches when planning and optimizing the online sales in digital environment.

For successful competitiveness in the digital environment, it is mandatory to define the key characteristics of online shops that influence the attractiveness towards customers and stimulate sales. One of the most important aspects and key factors is the design, the visual and functional journey that the customer needs to fill in order to create positive experience for digital business. The customer experience understand the psychological condition of the digital channel visitor stimulated by the online channel characteristic and exposed products i.e. the online shop design.

This paper presents research findings for online shops of two companies from same industry in the Republic North Macedonia, with use of neuromarketing tools of customer behaviour. The findings show that design has a significant influence to the positive customer experience, and consequently to the sales increase and the profitability to online business.

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Introduction

The Pandemic with Covid 19 was a period that has changed the life of each individual and business with a speed that has not been noted in the human history before. Practically, there is no company that during this period did not create or intended to create an online interface and digital interaction with its own customers, suppliers and partners. Such development leads to highly intensified competition in the digital world.

Nowadays, majority of the companies are forced to use digital solutions as sales channels, which means significant change in their way of working and the applied business models. The increased number of platforms for online sales increases the competitiveness and creates a need for strategic planning and new competitive advantage for each business using digital channels.

In order to create successful differentiation in the intensive competitive environment (practically the full eco system is becoming a single market), it is necessary to define the key characteristics of the digital channels that attract the customers and prospects.

The optimization of the online sales shall be well thought, planned and implemented process in order to achieve maximal efficiency and effectiveness. Every attribute related to the online shop like the awareness of the existence, the simple customer journeys[1], variety of products with affordable prices, the relation with the customers, anticipation of the customer needs, the design of the online shop etc. have influence towards the final goal, i.e. realization of higher and more profitable sales and revenues.

This paper elaborates and analyses the impact of the design of the digital channel, online shop, to the increase of its efficiency, i.e. sales. The basic assumption is that the design of the online shop has a significant impact in creation of positive customer experience, and correspondingly for increased sales and effectiveness. Since customer experience is a process that mostly happens unconsciously, the appropriate methodology for its research are neuromarketing techniques, as tools for detecting eye movements, navigating through clicks and recognizing emotions through micro-expressions. The obtained results from the research shows that the design of the online shop directly influences the successful online transactions, as well as buying other additional

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[1]   A **customer journey** is an entire experience a customer has while communicating with a brand.

products. In order the results to be limited only to the influence of the design, the products and prices are equal during the research.

1. THE TRENDS AND CHALLENGES FOR ONLINE SALES

The development of online sales was intensified during the Covid 19 period. According to OECD, the online sales increase of 25.7% in 2020 is directly correlated with the delivery of the goods to the physical locations, and the development trend is similar in all developed countries. The assumptions for online sales worldwide shows that it is expected to grow with stable annual rate (Figure 1), but not with the rate that was reached in 2020 (Holiday, 2021).

Figure 1: The forecasted trend of online sales

Source: Adjusted according to: Retail e-commerce worldwide 2014-2026, https://www.statista.com/statistics/379046/worldwide-retail-e-commerce-sales/

In 2021 year, the growth of online sales in Republic of North Macedonia is also notable, especially for the basic goods like clothes and food. The Figure 2 shows the data provided by the Omnibus research for online sales growth in July, October and December 2021, where the increase of the mobile payments and online sales in the second half of the year are visible.

Figure 2: The growth of online sales in Macedonia in the second half of 2021

ONLINE SHOPPING USAGE AND HABBITS
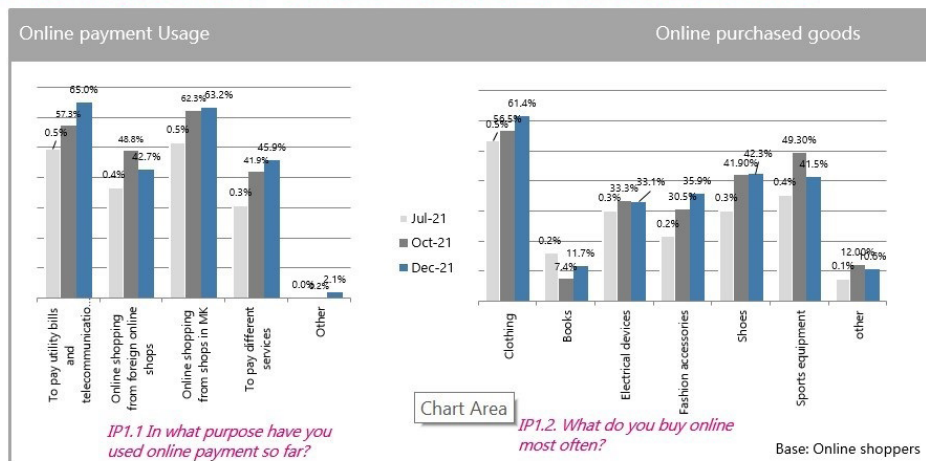
Source: Omnibus research, STRATUM R&D, 2020-2021

In order to increase the online sales, the businesses are facing different market and customer challenges. Market challenges are related to the increased number of offerings for online sales and marketing activities via digital channels, which makes the competition harder, and the customer choices more difficult. Besides the enormously increased offers in online sales channels and intensive digital communication, a lot of noise is being created, i.e. the quantity of the data disseminated towards the customers is enormously huge, which is resulting into an overload and insensitivity towards the information.

From customer perspective, the challenges are multidimensional and very complex. According to Schultz (2018), the online solutions shall be simplified, with minimal quantity of visual and textual information, in order to decrease the customer overload and the destruction and to enable the conscious control and attention. For more successful online sales transactions, the trust is critically important and it is based on the direct experience or on the reputation of the company (Basso at al. 2001). In the situations when besides the habits also the values are being changed, according to some researches, a tendency for conservatism is being increased, and changes of the values in the direction of intensifying the need for traditional behavior, conformism and security, on account on values related to self-development and openness to changes (or

more concretely decrease the needs for achievements, power, leisure, stimulation and self-governance).

According to Mitson (2016) for online sales not only an active web site is needed, but also provision of positive customer experience, which increase the trust, loyalty and intention to purchase. This is creating a demand for smart online solutions that will make the customer experience easier and richer, and via pleasant, simple and unique customer experience, competitive advantage will be created for the retention of the existing customer base and acquisition of new prospects.

2. THE DESIGN OF THE ONLINE CHANNEL

There are more aspects that influence the selection of the online shop, like the specific needs of the customers, familiarity and closeness to the brand, attractive price offerings, attractive design, perceived quality, overall likability and more specific individual factors. For better effectiveness of online sales, one of the most important aspects is the design of the online channel. When the word design is mentioned, it is often associated with graphic design, that is, the visual solution of the online channel. The design of the online shop shall produce the optimal information for the users in order to strengthen their trust, create positive customer experience via esthetics and enjoyment and efficiency that will provide, in short time with small number of clicks customer to be able to finalize the realization of the desired transaction.

According to many authors in the area of consumer psychology, ICT and sales like Mosteller at al. (2014), Bilgihan (2016) and Basso at al. (2001), the design of the digital channels shall take into account three psychological consumer conditions: the attitude of the customer towards online sales (based on trust), attractiveness and attention (hedonistic needs of the consumer) and functionality (or the highly efficient customer experience).

The attitude towards the online sales has to be based on trust and security, meaning the buyer believes in the sales process and the concrete online shop will provide protection of the personal data and will offer proper value for money for the presented product portfolio. This trust can be created successfully via positive customer experience that happened in the past, and the brand reputation. Consequently, the clear branding of the online shop does have a severe impact on the finalization of the transaction.

The visual aspects of the design shall be based on attractive solution (Mosteller at al. 2014) on esthetical principles like good form, symmetry and

contrast of the base and objects. These esthetical principles shall not create unnecessary cognitive effort to the consumer, but will satisfy the hedonistic needs via perceived fluency in order to realize the selection of the product and finishing the sales transaction.

The functionality of the design means high efficiency for realization of the aim of the consumer, i.e. optimal time and energy to make a decision for choice and to realize the transaction. Bilgihan (2014) links the customer satisfaction related to the successful flow of the transaction as high level predictor for next shopping (high loyalty). In order to offer highly functional online sales solution, it is very important to take into account the complexity, the optimal number of clicks, optimized navigation that results into short time used for realization and remaining time for additional pleasure that will create a possibility for selection of products that will generate additional unplanned sales.

3. EMPIRIC RESEARCH ON THE DESIGN OF THE ONLINE CHANNEL AND CUSTOMER EXPERIENCE

The customer experience is mostly based on unconscious motives. According то Bridger (2017), when the business generates more graphic media and content, including web pages, presentations, videos and social media posts, majority of big companies like Procter&Gamble, Coca-Cola, Tesco and Google, use neuromarketing tools and theories in order to optimize their digital content, and consequently increase the sales and profitability.

The selection of neuromarketing tools for this type of researches is based on the analyses presented by Gunter (2020), according to which the neuromarketing tools can generate new forms of consumer profile that combines measures for human personality, verbalized cognitive and emotional reaction and neuro-physiological measures for the activity of the brain that can locate which parts of the brain are being engaged by specific marketing stimulus. The neuromarketing analyses are based on psychophysical metrics taken from the neurology, but with application of advanced software solutions that replace the expensive hardware-based solutions in medicine.

According to the above, for the purposes of this paper, below are presented the findings on the rational and unconscious drivers of online shopping, i.e. customer experience, based on which it can be determined how online store design affects positive customer experience and increases sales. For this research, the platform Impala is used via the detection of the movements of the

eye pupils, recognition of emotions and detection of behavior while surfing via behavior of 200 respondents of the research (www.impala-research.com).

The data obtained from the reactions of the respondents on websites of two large companies in Macedonia were used in the analysis (Company 1 and Company 2). The research was conducted on two groups of respondents according several demographic characteristics. The first group is experimental and the second is a control group (Figure 3). Each group has 100 respondents, 50 of whom are male and 50 females. Their age is between 18 and 60 years, with an average of 35 years. According the user profile, the defined sub-samples are composed of more than 30 respondents in the following way:

Subsample 1 – customers of Company 1
Subsample 2 – customers of Company 2
Subsample 3 – customers of other companies

The experimental group is getting a virtual voucher with a value of 25.000 denars, with a task to buy a product (a device) from web site of the company that the customer is attached to. The control group gets instruction to buy same product, but on a web site selected by own choice. With this plan, the emotional bond that the customers have with the company they are loyal/attached to is being neutralized.

Figure 3: The structure of the sample
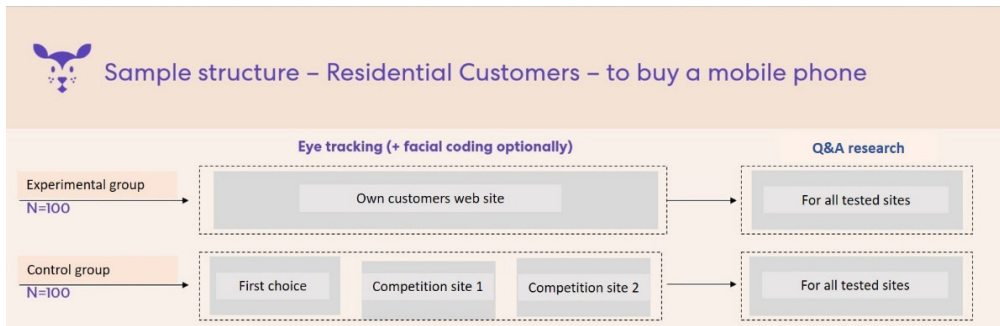
Source: research data

The collection of data is done by sending an online link to the respondents with included supervision on their quality. The collected data are presented by the software. In addition, an interview questions are being formulated at the end of the research. The answers are transferred to the SPSS database, with a mechanism that controls the logic.

The data are analysed by using the following techniques: heat maps, descriptive statistics for detection of the movement of the eye pupils, descriptive statistics for emotions detection via micro-expressions, descriptive statistics of clicks, significance of the difference between the experimental and control group and the subsamples.

From the analyses of the obtained data the statistical significant difference between the experimental and control group in regards to all key indicators is being determined on a level $p < 0.01$. These differences show that the percentage of successfully finished transaction is visibly higher at the control group versus the experimental, i.e. when the respondents make their own choice where to buy the device (besides the fact that the prices of the devices and sales conditions are the same). Due to the elimination of the impact of emotional bond with the company (in this case the brand), it can be concluded that the design of the online shop is having an influence over the customer experience, i.e. the online sales.

Figure 4: The result for navigation

		Company 1 site	Company 2 site	Other
KPIs	Completion rate: can they find the task page?	98%	95%	90%
	Time to find the task page	62s	72s	65s
	Numbers of clicks they needs to find	2.8	4.8	5.4
Path	Used menu/success rate via menu	90%	89%	91%
	Used search/success rate via search	97%	97%	97%
General	Percentages that added products via search	89%	85%	75%
	Percentages that added product via menu	90%	85%	80%
	Percentage that added products via promotion	70%	50%	50%

Source: research data

The online shop of the Company 1 in major part of the indicators is optimal, and therefore has the highest percentage of successfully finished transaction in the both groups and subgroups. Figure 4 shows that the highest number of consumers bought additional products from Company 1 that implies on higher number of sales transactions.

Figure 5: Result for view of separate zones of interest (% of respondents and average time)
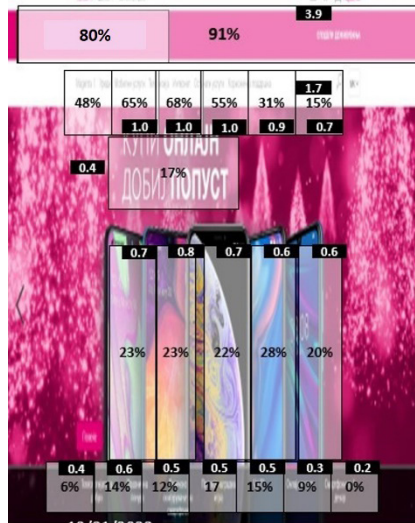
Source: research data

The Figure 5 shows that the promotional banner is the most visible part of the web site, which is being watched by 91% of the respondents and is being listed for almost 4 seconds, meaning that the visitors were reading the text.

The elements that are above the listing line are still having dissent visibility (the Shipping Pass banner and line for promotional articles).

The visibility drops down with a progression of the page, and only 22% respondents are reaching the bottom of the page).

The average visibility of the category in the menu of the web page (the middle of the page) is 16%, which is very low compared to the expectations. These categories are visible only if the customers scroll down.

The web page of the product is not deeply seen and majority of the attention is dedicated to the picture of the product. This element is being seen by 97% of the respondents in an average of 3 seconds. Over 50% visibility show the connected pictures, but the last element is not sufficiently examined (no sufficient time for reading).

Figure 6: Results illustrated via heat maps for concentration of the view of the respondents at the web sites of Company 1 and Company 2
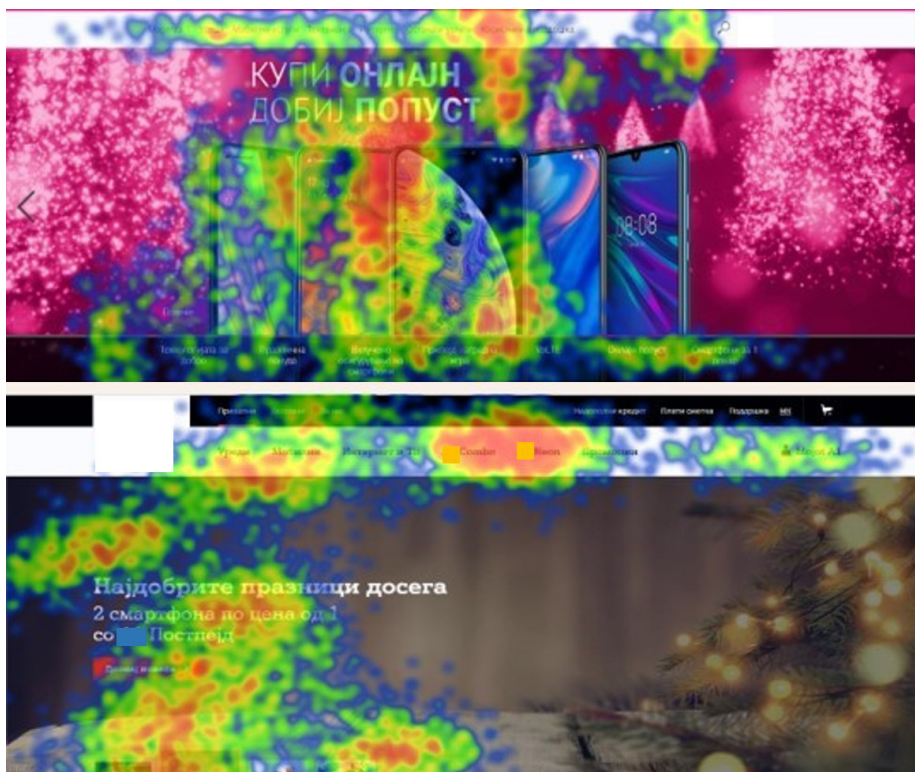
Source: research data

Figure 6 shows graphical illustration by using heat map of the focus of the customer, and similar behavior of the users of the websites of Company 1 and Company 2 can be noticed (concentration of the view on the devices and the tabs of the main menu).

61

Figure 7: Result of monitoring the movement of the eye on the product page
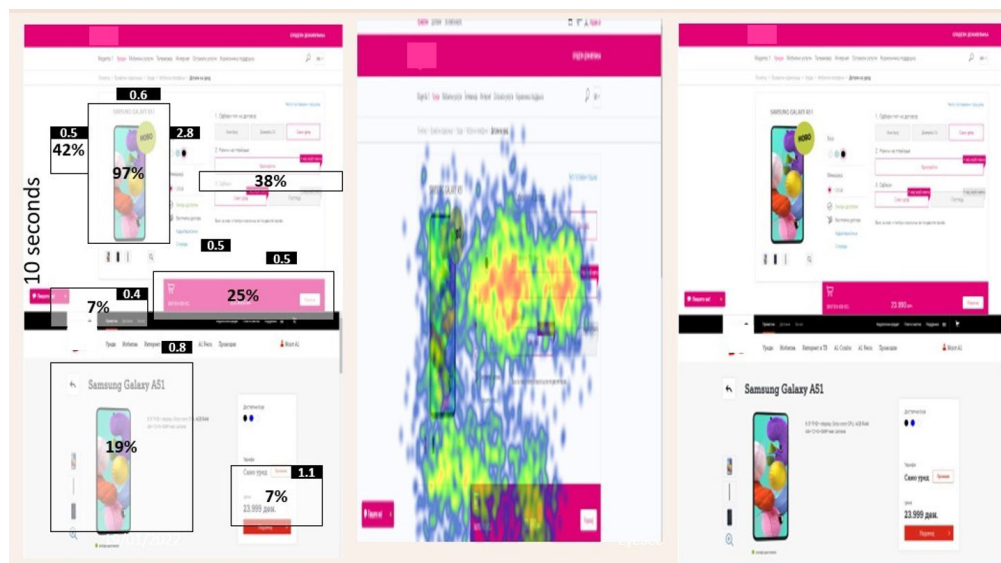
Source: research data

The most important elements on the product page, after the respondents reach this part of the journey are: click on the map that uncovers the picture of the product, the shopping basket button, followed by the quantity of the product (part of the name), information about the category and availability of the product. This information shall be clearly presented on the web page.

Figure 8: Result on detection of emotions via micro-expressions
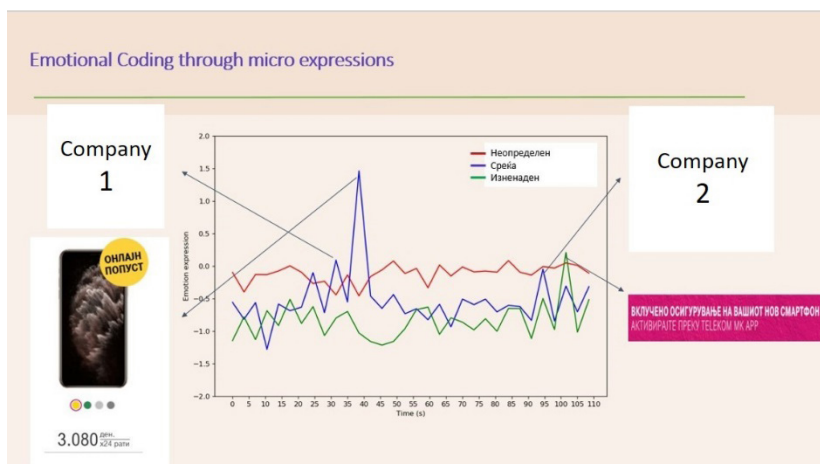
Source: research data

With the tool for recognition the emotions via micro-expressions, the company logo strongly provokes positive emotions (Figure 8). Besides, the elements that provoke positive emotions – happiness and positive surprise is the picture of the products presented as promotion. At the same time, the promotional price also produces happiness, which clearly implies the key elements in the design of the visuals of the online shop: logo, product (if possible with 360-degree view) and clearly expressed price with bigger font.

The impact of the design of the online shop on the sales can be measured via detection of the navigation, i.e. determining how many respondents bought the device, how long time they needed to find the target page with the product they seek for, how many clicks they made, what kind of menu they used, whether they went through the menu tree or they used the Search option, and how many customers bought additional product via other navigation (Figure 9)

Figure 9: The result on navigation scheme for selecting the product
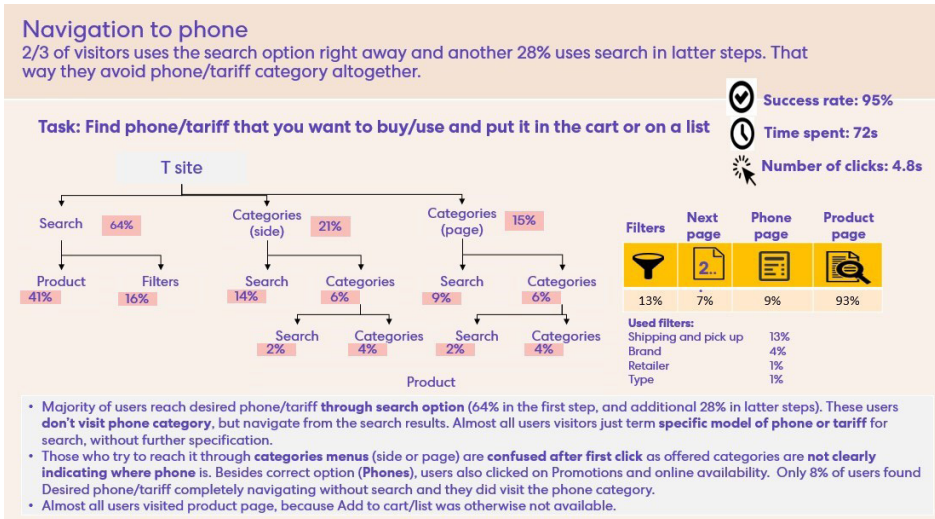
Source: research data

The data shows that the consumers prefer online shops at which they can select the final product in shorter period of time and with a smaller number of clicks. They are also ready to spend more than the planned budget in case they can in shorter period of time and less energy decide for the purchase of the product. This clearly shows the basic directions that shall be taken into account when designing the digital channel customer journey.

The results presented on Figure 9 shows the way the navigation on dynamic web sites happens. In order to make a decision for the product, more customers are going via Search option where they write the name of the product without using filter functionalities. Those customers that search via product categories use filters and more specific categories, which influences the prolongation of the time and number of needed clicks, which is the reason why at these categories of users, the realized sales volume is lower.

From the sociodemographic characteristics obtained with the traditional quantitative research at the end of the research, the profile of the customers that majorly buy online is determined, i.e. the primary target group.

Figure 10: Segment description – target group for online shopping
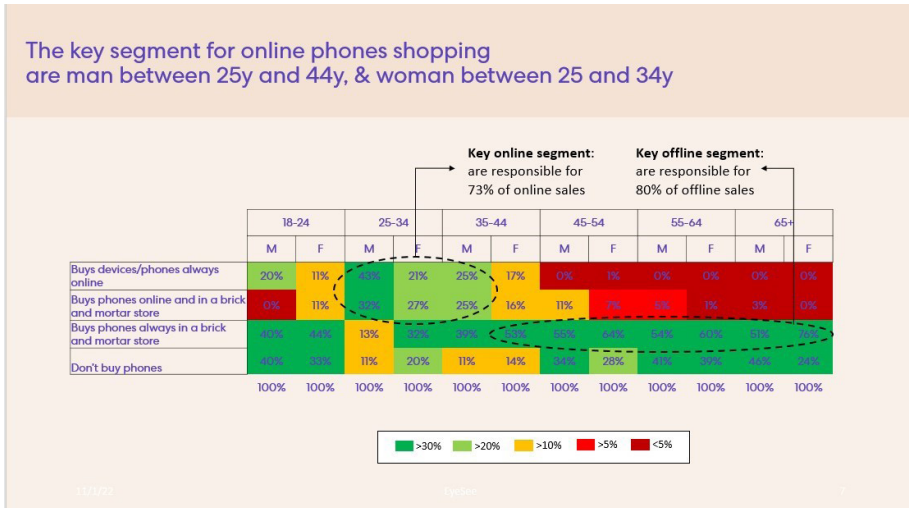
Source: research data

According to sociodemographic characteristics, the group consist of male users with age 25-44 and female with age 25-34 years (Figure 10).

Figure 11: The results from the Q&A quantitative research
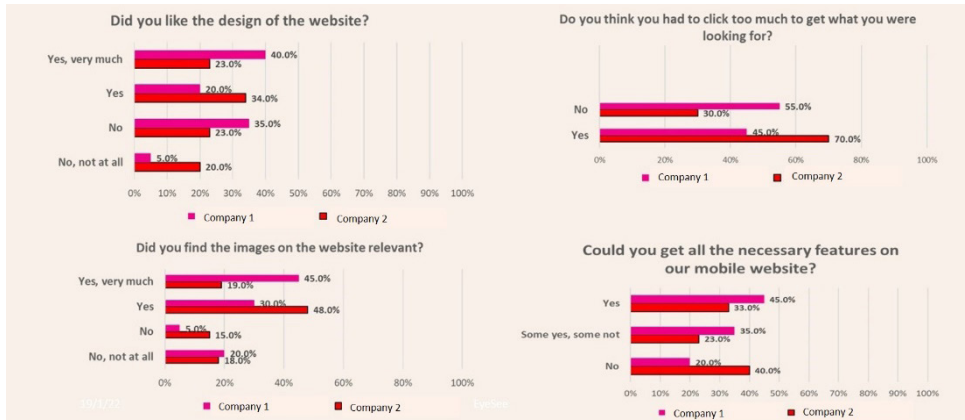
Source: research data

From the interview responses received, it is noticed that the respondents state the reasons for the positive user experience on a rational level, i.e. the design of the customer journey when shopping online has positively impact sales. (Figure 11).

Conclusion

The increased number of platforms for online sales and the extremely high growth of web sites that offers products and options for online orders and payments are strengthening the competition and intensifying the need from strategic planning and creating competitive advantage in the digital environment. With the optimization of the online sales and the digital customer journeys, the maximal effectiveness is being achieved. Practically, each attribute related to the online shop has an impact to the final goal of better commercial performance.

The creation of efficient digital channel is not a simple process, because many factors are influencing the realization of transactions at the digital channels. This paper analyses one of the most important aspects when doing business in competitive digital environment – the importance of the design of the customer journeys in online business.

The design of the digital channels and the corresponding customer experience has a critical importance on the efficiency and sales increase in online business. It is even higher for companies with advanced technology which use digital marketing. According to the findings, companies shall invest significant resources in the design of digital channels. With better customer experience, they are able to charge higher price premium, and secure higher number of acquired and retained customers, especially with the loyalty based on the attitude.

Theoretical and empirical elaboration in this paper indicates that design of the digital channels strongly influences the customer experience. The business that invest in better design will increase the simplicity and conversion rates. The logo of the company, 360-degree of the product and price expressed with large font, as well placing the promotions centrally, positively influence the transaction outcome.

Despite the fact that the online shops are dynamic websites, it must be taken care for the navigation that with less number of clicks and shorter time to reach the desired category and product. The Search option shall be clearly visible, and positioned on the top of the page with larger font.

The positive customer experience that is being stimulated with the above design characteristics of the online channel is helping into easier purchase decision making.

In addition, the quantitative research for customer experience via digital channels commonly conducted with traditional explicit answers are much more difficult to be executed and can dilute the conclusions. The neuromar-

keting tools and big data analyses shows much better and reliable results. In order to define and prioritize the aspects that increase the efficiency of the online business in the digital environment, the researches shall embrace both the unconscious and rational drivers for online shopping and the corresponding customer experience.

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IS THE PROFITABILITY OF THE MACEDONIAN BANKS DRIVEN BY HIGHER EFFICIENCY?

Abstract: The question of how Macedonian banks managed to maintain their performances and double their profits even during periods of slow credit growth and low financial intermediation is always contentious. This paper aims to identify the drivers supporting positive and stable returns in the Macedonian banking sector, aspiring to try to answer the question: Does higher efficiency drive the Macedonian banks' profitability?

The paper is focused on the determinants of bank profitability in the Macedonian banking sector. It aims to identify the drivers supporting positive and stable returns in 12 Macedonian banks for the period from 2007 to 2021. Using regression with time-fixed effects and a yearly data set compiled from revised individual financial reports of each bank, authors alternatively evaluate the impact of five independent variables (loan to deposits ratio, net-interest margin, overhead costs, equity multiplier, and fee income) on return on assets, set in the model as a dependent variable.

Based on the results, it can be concluded that several factors, including net interest income, operating costs, and fee income, influence banks' profitability. These variables significantly impact banks' profitability, as indicated by the estimated coefficients of the panel data model. On the other hand, the loan-to-deposit ratio and assets-to-capital ratio were insignificant in the model, suggesting that they have little to no impact on bank profitability.

Keywords: cost efficiency, bank profitability, net-interest margin, time series models
JEL classification: C22, E44, F65, G21

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Introduction

The efficiency of the banking sector in the previous decades has been under the strong influence of the high level of globalization and integration within the financial system. Furthermore, the rapid development and information technology application has caused a drastic decline in the expenses for processing financial transactions. The fierce competitive battle, conditioned by the flows of deregulation, has decreased the profit margins of the banks that seek to compensate through increasing the economy of scale and diversification of business activities. Strengthening market competitiveness is followed by a highly expressed tendency of consolidation of the banking institutions. Banking mergers and acquisitions appear as a mechanism that utilizes the economy of scale and activities diversification, which leads to greater efficiency and to the creation of competitive advantage for banking institutions in an uncertain and dynamic environment.

This paper aims to identify the drivers supporting positive and stable returns in the Macedonian banking sector. The paper structure continues with the literature review with a special focus on several models and techniques developed to measure bank efficiency and profitability, providing valuable insights into bank performance, and helping banks to make decisions that improve their performances. The second section of the paper represents a trend analysis of the chosen indicators connected to the profitability and efficiency of the Macedonian banking sector. Moreover, it includes the values of the efficiency indicators – net interest margin and operating costs and the indicators of profitability – ROA and ROE as well as other indicators as additional vital aspects influencing the bank's profitability representing financial intermediation, net-fee income, and capital adequacy based on data from the National Bank of the Republic of North Macedonia for the period between 2004 and 2021.

The next section of the paper is focused on the determinants of bank profitability in the Macedonian banking sector aiming through a panel data model to identify the drivers supporting positive and stable returns in 12 Macedonian banks from 2007 to 2021. This part describes the methodology with the interpretation and discussion of the results from the empirical data analysis. Finally, the last part represents the conclusion of the research.

1. LITERATURE REVIEW

The banking industry plays a crucial role in the financial system of any country. To ensure financial stability, banks need to operate efficiently. Therefore, analyzing bank efficiency has been a popular research area for economists and finance researchers. This literature review aims to provide an overview of the models, techniques, and approaches used to measure bank efficiency and profitability.

One of the most used models for measuring bank efficiency is the Data Envelopment Analysis (DEA) model (Charnes, Cooper, and Rhodes, 1978). DEA is a non-parametric approach that measures efficiency based on multiple inputs and outputs. Several studies, such as Berg, Forsund, and Jansen (1992) and Coelli, Rao, and Battese (1998), have used DEA to measure bank efficiencies. Another technique used to measure bank efficiency is the Two-Stage Network Data Envelopment Analysis (TSN-DEA) model. The TSN-DEA model allows for the measurement of efficiency in a two-stage process. This model has been used to measure efficiency in banks with two-stage processes, such as loan origination and servicing.

Another popular approach for measuring bank efficiency is the Stochastic Frontier Analysis (SFA) model (Aigner, Lovell, and Schmidt, 1977). SFA is a parametric approach that assumes a random error component exists in the production process. Several studies have used SFA to measure bank efficiencies, such as Hjalmarsson and Vejsiu (2004) and Zaim and Karasoy (2011). The Malmquist Productivity Index (MPI) is another commonly used model for measuring bank efficiency (Färe, Grosskopf, Lindgren, Roos, and Sersenová, 1992). MPI is a non-parametric approach that measures productivity change over time. Several studies have used MPI to measure bank efficiencies, such as Barros, Santos, Assaf (2008) and Worthington and Hurst (2010). Other models and techniques have also been used to measure bank efficiency, such as the Free Disposal Hull (FDH) model (Worthington and Higgs, 2004) and the Two-Stage Network Data Envelopment Analysis (TSN-DEA) model (Lin, Chiu, and Yu, 2014). Abd Karim, Sok, & Hassan's (2010) study estimates a cost efficiency using the stochastic cost frontier approach assuming a regular gamma efficiency distribution model. The simultaneous equation regression results indicate that higher non-performing loan reduces cost efficiency. Likewise, lower cost efficiency increases non-performing loans. The result also supports the hypothesis that poor management in banking institutions results in bad-quality loans and escalates the level of non-performing loans. Additionally, lower cost

efficiency increases non-performing loans. The results are consistent with the studies by Altunbas et al. (2000), Fan and Shaffer (2004), and Girardone et al. (2004) that found that non-performing loans lead to inefficiency in the banking sector.

Several studies have used the ROA and ROE models to measure bank profitability, such as those by Oviatt and Rose (1987) and Batten, Hogan, and Szilagyi (2010). The DuPont Model is another commonly used model for measuring bank profitability, as it breaks down ROE into three components: net profit margin, asset turnover, and equity multiplier (Shin and Soenen, 1998). Additional studies have used this model to analyze the components of bank profitability, such as the study by Molyneux, Thornton, and Lloyd-Williams (1996).

When measuring bank performances, several authors propose a new methodological framework by considering the bank's business model as a crucial factor for the bank's performance. For example, Badunenko, O., Kumbhakar, S. C., and Lozano-Vivas, A. (2021) investigate the long and short-term effects of bank's business model choices on performance to assess if banks are successful in achieving cost-efficient business model. Farnè and Vouldis (2017) divide a similar set of banks into four clusters. The first two are commercial banks with large loan portfolios that differ in their funding base: one is mainly deposit-funded, whereas the other is wholesale-funded, through bonds and interbank markets; the third includes banks with a significant share of trading activities and holding securities portfolios funded in the interbank and wholesale markets. The fourth, the universal banking model, combines the other three. Tran, D. V., Hoang, K., and Nguyen, C. (2021), investigating the impact of economic policy uncertainty (EPU) on banks' business activities, represent the first study shedding light on how uncertainty in economic policies influences the choice of bank business model. Venturelli, V., Landi, A., Ferretti, R., Cosma, S., and Gualandri, E (2021) investigate how the financial market defines and evaluates different business models. Finally, Bonaccorsi di Patti, E., and Palazzo, F. (2020) investigate the impact of macroeconomic conditions on the profitability of EU banks by testing for differential effects according to the business model.

Regression analysis is also commonly used to identify the factors that affect bank profitability. Several studies have used regression analysis to identify the determinants of bank profitability, such as Demirgüç-Kunt and Huizinga (1999) and Athanasoglou, Brissimis, and Delis (2008). Borroni, M., and Rossi, S. (2019) focus on the determinants of bank profitability in Europe and

aims to identify the drivers supporting positive and stable returns. Simeonovski, Naumovska, and Petkovski, 2020 have used bank density to measure financial deepening to investigate its linkage with financial development and economic performance in 41 European countries from 2004 to 2018. Furthermore, Elekdag, S., Malik, S., and Mitra, S. (2020) explore the determinants of profitability across large euro area banks using an approach based on conditional profitability distributions, how selected determinants differentially influence the distribution of euro area bank profitability.

In conclusion, several models and techniques have been developed to measure bank efficiency and profitability. DEA, SFA, and MPI are among the most used approaches to measure bank efficiency, while the ROA, ROE, and DuPont models are popular models for measuring bank profitability. Regression analysis is also commonly used to identify the determinants of bank profitability. These models and techniques can provide valuable insights into bank performance and help banks to make decisions that improve efficiency and profitability.

2. ANALYSIS OF THE MACEDONIAN BANKING SECTOR PERFORMANCES

The Macedonian banking system comprises 14 banks (The National Bank of the Republic of North Macedonia, 12 commercial banks, and one development bank). Regarding the ownership structure of the Macedonian banking sector from 1998 to 2021, the highest portion of foreign owners, 75,7% in 2021, has replaced the predominant portion of domestic owners, 61,7 % in 1998. The Macedonian banking sector is characterized by a satisfactory level of profitability, which can be ascertained through the movement of return on assets (ROA) and return on equity (ROE) indicators. Figure 1 shows that after the downward trend during the financial crisis, the values of these indicators returned to the previous level, and the financial result of the banks was more than doubled compared to the maximum amount reached just before the financial crisis. Even in a Health and Economic crisis, the banking system maintained its stability and contributed to mitigating the consequences of the crises, registering solid profitability indicators of the banking system. The five largest banks generate approximately 90% of the profit.

Figure 1. Profitability of the Macedonian banking sector – ROA and ROE in % (left) and financial result in millions of EUROs (right)
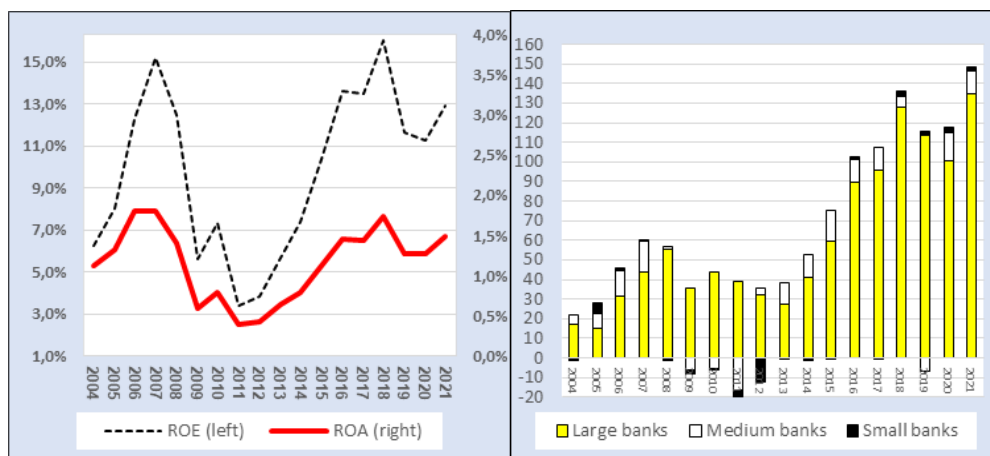
Source: Authors' calculations, based on data from the National Bank of the Republic of North Macedonia

Nevertheless, the period after the 2008 financial crisis marked a new phase in the lending activity of banks in North Macedonia, a period of slower credit growth which is a "new normal" of credit growth rates continuously in single digits. Hence, the question of how banks managed to maintain their performances and double their profits during such slow credit growth is still debatable.

In this regard, banks show the accelerated growth of loans to individuals, especially after the financial crisis. In 2021, loans to households had a larger share than loans to companies, unlike the beginning of the analyzed period when these loans participated in the total loans by only about 10%. Furthermore, with more favorable (cheaper) short-term sources, banks finance loans with a longer maturity, characterized by higher interest rates, especially in the household sector (characterized by low-interest elasticity). Hence, long-term loans to households provide the opportunity to generate higher net interest income within this structure of assets and liabilities. However, these trends are more likely to be registered in a group of large-sized banks.

On the other hand, referring to the bank's deposit base transformation, after several years of upward trends of the loan-to-deposit ratio, the banks have started slowing the process of financial intermediation between surplus and deficit economic units, as some kind of "new normal," as well. Figure 2 (left) shows the loan-to-deposit ratio trends for the banking sector, large-sized

banks, and small and medium-sized banks separately. Considering other more favorable investment alternatives, large-sized banks tend to keep this ratio below 85%. Even though these banks have extra liquidity, they tend to replace the financing of private companies, considering the investments in government securities and deposits and assets in the Central Bank as more secure and profitable alternatives. Showing the changes in the absolute amounts of the individual positions that represent assets of the Macedonian banking sector as well as their share in total assets in the period from 2004 to 2021, Figure 2 (right) confirms that the amount of bank assets invested in securities, deposits, and assets in the NBRM increased in 2021 compared to 2004 increased by more than ten times (from 295,4 to 3.121,5 millions of EUR, which also increased their share in total assets from 15,3% to 30,1%.

Figure 2. Loan to deposits ratio in % (left) and structure of Macedonian banks' assets (right) in millions of EUR for the period from 2004 to 2021
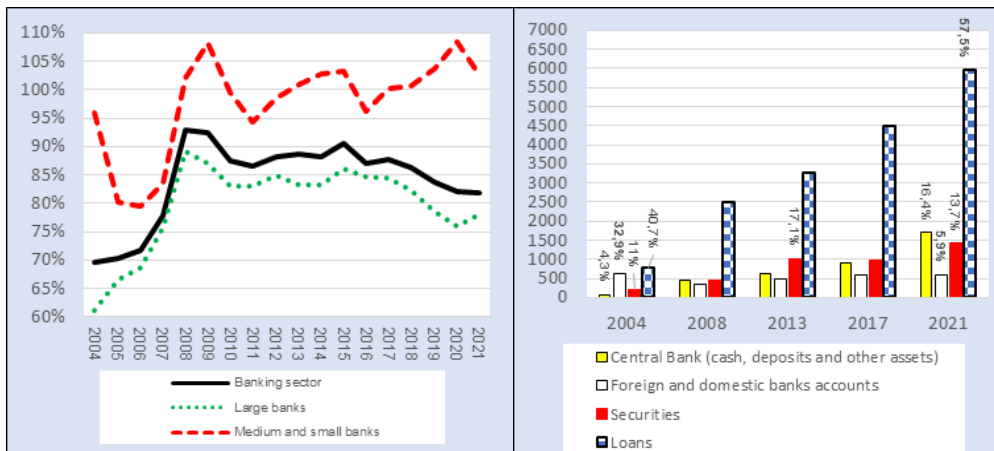
Source: Authors' calculations, based on data from the National Bank of the Republic of North Macedonia

However, room for more credible discussion for maintaining the bank's profitability considering dynamic changes in the circumstances of the bank's operating environment can be found through analysis of the bank's efficiency ratios such as net interest margin as well as overhead cost calculated as a share of net interest income or operating cost in total banks assets. Furthermore, we would also consider the net fee income and bank capitalization as additional vital aspects influencing the bank's profitability (Figure 3).

Figure 3. Efficiency indicators in % (left) and Capital adequacy of the Macedonian banking sector in % and millions of EUR (right) for the period from 2004 to 2021
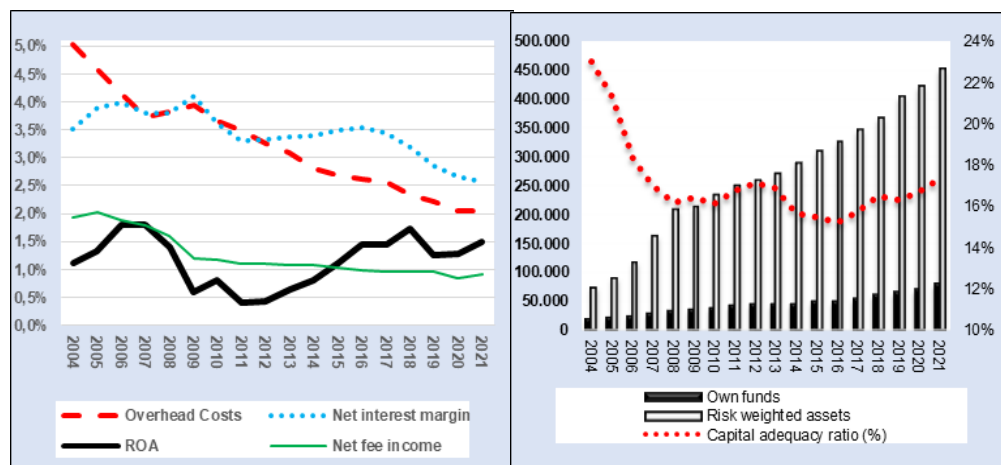
Source: Authors' calculations, based on data from the National Bank of the Republic of North Macedonia

Except for the 2008-2009 financial crises, Figure 3 (left), illustrating the ***overhead costs*** ratio's trend, indicates constantly improved cost efficiency, reflected by the reduced share of the banks' operating costs in the bank's assets. Namely, due to the advantages of the economy of scale, increased competitiveness, investments in new contemporary software solutions, and increased labor productivity, large-sized banks notice a sustainable reduction of operating costs with the potential to further strengthen the bank's efficiency.

The tendency to reduce the ***net interest income*** and increase the operating costs during the financial crisis was followed by a fall in the profitability indicators. Thus, several banks (from the group of small and medium-sized banks) registered a loss. In conditions of a slight increase of the net interest income during the reduction of the operating costs, in the period after the crises, the profitability indicators were stabilized. In the next period, in the environment of declining interest rates, banks managed to reduce the interest rate of their liabilities with higher intensity than the reduction of the interest rates of their placements. Consequently, the sharp decline in interest expenses followed by a slighter decrease in the bank's interest income was one of the main reasons for a significant increase in the profit of the banking system. Since maintaining a favorable net interest income became a fundamental challenge

77

for banks in the following period, the stagnation of the net interest margin ratio was replaced with their reduction. However, banks continued to work profitably due to the reduced operating cost and increased fee income.

Namely, in conditions of low interest rates and with significantly exhausted room for further reduction of the cost for their deposit financing, Macedonian banks were increasingly oriented towards finding alternatives to compensate for the reduced contribution of the net interest income to the formation of the returns ratios. For example, they managed to increase their *fee income* (Figure 3, left) by increasing the scope of the activities that generate commission income or by introducing new services or more sophisticated business activities. At the same time, in the absence of significant amounts of recapitalization, banks are mainly oriented to internal capital creation (reinvesting profits made in the capital funds), which emphasizes the importance of profitability for the solvent positions of banks, as well as for supporting banks activities (Figure 3, right).

3. DATA AND METHODOLOGY

This part of the paper is focused on the determinants of bank profitability in the Macedonian banking sector and aims to identify the drivers supporting positive and stable returns in 12 Macedonian banks for the period from 2007 to 2021. Using regression with time-fixed effects and a yearly data set compiled from revised individual financial reports of each bank, authors alternatively evaluate the impact of five independent variables (loan to deposits ratio, net-interest margin, overhead costs, equity multiplier, and fee income) on return on assets, set in the model as a dependent variable.

This session starts by presenting the collected data; then, the paper refers to a descriptive analysis of the variables used. Finally, an explanation of the assumptions on which the model is based follows. Table 1 shows the variables used in the econometric model accomplished by explaining the premises for their expected relationship with the dependent variable.

Table 1. Specification of the variables used in the empirical analysis

Type of variable	Specification	Description of variables	Expected Result
Dependent variable	Return on assets (**ROA**)	The ratio between the net income and the average annual assets of the banks	
Independent variable	Financial intermediation ratio (**LOANDEP**)	The ratio between total loans and total deposits	**(+)**
Independent variable	Net-interest margin (**INTMARGIN**)	The ratio between the net interest income and the average annual assets of the banks	**(+)**
Independent variable	Overhead costs (**COSTS**)	The ratio between the operating costs and the average annual assets of the banks	**(-)**
Independent variable	Equity multiplier (**EM**)	Proportion of bank's assets financed by equity	**(-)**
Independent variable	Fee income (**FEEINC**)	The ratio between the fee income and the average annual assets of the banks	**(+)**

Source: Authors' calculations

Panel data analysis allows for examining variable changes over time and the differences between individuals or groups. In this case, the dependent variable is bank ROA. The independent variables include loan/deposit ratio, net interest income to assets ratio, operating costs to assets ratio, equity multiplier ratio, and fee-income to assets ratio. The loan-to-deposit ratio calculates the bank's percentage of loans compared to deposits received. A greater ratio could mean the bank is taking on more risk, but it could also mean it is doing better financially. A lower ratio can mean that the bank is more risk-averse and prudent. The net interest income represents the net interest income the bank receives from its assets-to-assets ratio. A higher ratio shows that the bank is more effective at turning its assets into income. The operating costs to assets ratio measure the amount of operating expenses incurred by the bank relative to its assets. A lower ratio indicates that the bank is more efficient at managing its expenses. The assets-to-capital ratio measures the amount of assets the bank holds relative to its capital. A higher ratio may indicate that the bank is taking

on more risk, but it may also suggest that it has more resources to deploy. The fee-income-to-assets ratio measures the portion of fee-income generated by the banks in their average annual assets. A greater fee income is a favorable alternative for compensating the reduced contribution of the net interest income to the formation of the return ratios. Table 2 shows the dataset's descriptive statistics and includes measures of central tendency: mean and median, the minimum and maximum value of the data, and the standard deviation.

Table 2: Descriptive statistics of the dataset

Variables	Mean	Median	Std. Dev.	Min	Max
ROA	0,001286	0,006468	0,023185	-0,107075	0,039495
LOANDEP	0,809739	0,782576	0,289744	0,202603	4,006603
INTMARGIN	0,034723	0,033928	0,011519	0,000000	0,097384
COSTS	0,040462	0,034492	0,025295	0,013660	0,186474
FEEINC	0,010061	0,009240	0,003696	0,003979	0,025274
Observations	206	206	206	206	206

Source: Authors' calculations

The empirical approach in this paper aims to estimate the parameters of each independent variable and determine the relationship between the independent variables and the return of the bank's assets. Therefore, let's define the following:

$$y_{it} = \text{ROA}, \text{where } i = 1, 2, \ldots, N \text{ and } t = 1, 2, \ldots, T$$
$$X' = [x_1 \quad x_2 \quad , \ldots, \quad x_k], \text{where each } x_k \text{ represnts a single independent variable}$$
$$i = 1, 2, \ldots, N, \text{where } i = 1 \text{ is the first and N is the } 12^{th} \text{ individual bank in the database}$$
$$t = 1, 2, \ldots, 15, T, \text{where } t = 1 \text{ is the end of 2007 and } t = T \text{ is the end of of 2021}$$

The decomposition of the form of the primary regression function allows us to determine and quantify the connection between the selected determinants and the return on assets (ROA). We tried to estimate the parameters using regression with time-fixed effects for five indicators in the selected sample of 12 banks for 15 years. To avoid the multicollinearity with the initial value of the functions in the system, in this model, we assume that the individual fixed effects are equal to zero for each arbitrary "i" entry. Consequently, the regression function is defined as:

$$Y = XB + TD + e$$

Y = total assets of OFIs   XB = undependent varaibles

TD = parameter vector e = residuals

Or in a decomposed form of a matrix:

$$\begin{pmatrix} y_{1,1} \\ y_{1,2} \\ y_{1,3} \\ \vdots \\ y_{N,T} \end{pmatrix} = \begin{pmatrix} 1 & x_{1,1,1} & \cdots & x_{1,k,T} \\ \vdots & \ddots & \vdots \\ 1 & x_{N,1,1} & \cdots & x_{N,k,T} \end{pmatrix} \begin{pmatrix} \beta_0 \\ \beta_1 \\ \beta_2 \\ \vdots \\ \beta_k \end{pmatrix} + \begin{pmatrix} t_{1,1} & \cdots & t_{1,T} \\ \vdots & \ddots & \vdots \\ t_{N,1} & \cdots & t_{N,T} \end{pmatrix} \begin{pmatrix} d_1 & 0 & & 0 & 0 \\ 0 & d_2 & \cdots & 0 & 0 \\ 0 & 0 & & 0 & 0 \\ \vdots & & \ddots & & \vdots \\ 0 & 0 & \cdots & d_{T-1} & 0 \\ 0 & 0 & & 0 & d_T \end{pmatrix} + \begin{pmatrix} e_{1,1} \\ e_{1,2} \\ e_{1,3} \\ \vdots \\ e_{N,T} \end{pmatrix}$$

To complete the multiplication of the matrix, the only equation for the entire system would be as follows:

$$y_{i,t} = \beta_0 + x_{1,i,t}\beta_1 + x_{2,i,t}\beta_2 + \cdots + x_{k,i,t}\beta_k + t_{i,t}d_t + e_{i,t}$$

4. RESULTS AND DISCUSSION

In analyzing the panel data output results, looking at each independent variable's coefficients and their statistical significance is important. A positive coefficient suggests that the independent variable positively relates to bank ROA, while a negative coefficient suggests the opposite. The statistical significance of the coefficient tells us whether the relationship is likely to be real or just due to chance. It is also important to look at the model's overall fit, as measured by R-squared. A high R-squared indicates that the model can explain a large proportion of the variation in bank ROA, while a low R-squared suggests the model is ineffective. Overall, the panel data analysis can provide valuable insights into the factors driving bank ROA and help banks make more informed decisions about their lending practices, expense management, and risk management strategies.

Panel data diagnostic tests are essential to ensure the model is reliable and produces accurate results. If diagnostic tests show that the model assumptions are not being met, adjustments may be necessary to ensure the model is valid.

1. Breusch-Pagan test: The results show no evidence of heteroscedasticity, indicating that the variances of the residuals are the same across all values of the independent variables.
2. Hausman test: The results suggest that the fixed effects model is more appropriate than the random effects model. This indicates that

the coefficients of the independent variables are constant across all individuals in the panel.

3. Serial correlation test: The results show no evidence of autocorrelation, indicating that the model's residuals are not correlated with one another over time.

4. Collinearity tests: The results show no evidence of multicollinearity among the independent variables in the model, indicating that the independent variables are not highly correlated.

The results of these diagnostic tests suggest that the panel data model used in the academic paper is valid and produces accurate results. This provides confidence in the study's findings and ensures that the conclusions drawn are reliable.

Table 3 presents the results of the applied econometric model. Based on the analysis, the paper shows that the loan-to-deposit ratio and assets-to-capital ratio are statistically insignificant. This means that these variables are not associated with significant changes in bank ROA. In other words, these two independent variables do not directly impact bank profitability in this model. However, the net interest income to assets ratio, operating costs-to-assets ratio, and fee-income-to-assets ratio are all statistically significant with a probability below 1%. This means that these variables are associated with significant changes in bank ROA.

Table 3. Results of the basic model

Independent variable	Coefficient	Std. Error	t-Statistic	p-value
Constant	0,006886	0,005641	1,220747	0,2236
LOANDEP	-0,000156	0,004471	-0,034840	0,9722
INTMARGIN	0,426904	0,130972	3,259497	0,0013
COSTS	-0,757954	0,057180	-13,25553	0,0000
EM	-0,000240	0,000325	-0,739219	0,4606
FEEINC	1,228806	0,352726	3,483742	0,0006

Source: Authors' calculations

Specifically, an increase in the net interest income to assets ratio, or a decrease in the operating costs to assets ratio and provision to assets ratio, is associated with an increase in bank ROA. This suggests that these three vari-

ables are important drivers of the bank's profitability. Based on the estimated coefficients, an increase in the net interest income to assets ratio by one unit is associated with a 0.42 unit increase in bank ROA, holding all other independent variables constant. On the other hand, a decrease in the operating costs to assets ratio by one unit is associated with a 0.75 unit increase in bank ROA, holding all other independent variables constant. Finally, an increase in the provision-to-assets ratio by one unit is associated with a 1.22 unit increase in bank ROA, holding all other independent variables constant.

As for the R-squared value of 0.50, the independent variables in the model explain around 50% of the variation in the dependent variable, bank ROA. While this is a moderate level of explanatory power, the model can capture a significant portion of the factors contributing to bank profitability. Overall, these results suggest that in this specific model, factors related to net interest income, operating costs, and provision are significant drivers of bank profitability, while loan-to-deposit ratio and assets-to-capital ratio do not appear to have a significant impact. However, as the paper mentioned earlier, it's important to consider the model's specific context and underlying assumptions to fully interpret the results.

Conclusion

Based on the previous findings, it can be concluded that several factors, including net interest income, operating costs, and fee income, influence banks' profitability. These variables significantly impact banks' profitability, as indicated by the estimated coefficients of the panel data model. On the other hand, the loan-to-deposit ratio and assets-to-capital ratio were insignificant in the model, suggesting that they have little to no impact on bank profitability.

 Results of the analysis in the study have found that the net interest income to assets ratio, operating costs to assets ratio, and provision to assets ratio are crucial determinants of a bank's profitability. The results show that an increase in the net interest income to assets ratio, or a decrease in the operating costs to assets ratio and provision to assets ratio, leads to an increase in bank ROA. The estimated coefficients reveal that the impact of each variable on bank ROA is different, with an increase in net interest income to assets ratio having the smallest effect and an increase in provision to assets ratio having the largest effect. These findings suggest that banks can enhance their profitability by focusing on improving these key drivers of profitability.

However, considering the negative and insignificant relation obtained for loan to deposit ratio as a signal for low level of financial intermediation, it is still questionable if the profitability of the Macedonian banks is fully driven by higher efficiency. Aspiring to other more favorable investment alternatives, large-sized banks tend to keep this ratio below 85%. Even though these banks have extra liquidity, they tend to replace the financing of private companies, considering the investments in government securities and deposits and assets in the Central Bank as more secure and profitable alternatives. Moreover, the high interest margins also point towards unsuitable allocation of the financial resources and insufficient competitiveness in the banking sector of a country. Nevertheless, constant improvement in cost efficiency, can be considered as a vital driver of bank profitability. Namely, due to the advantages of the economy of scale, increased competitiveness, investments in new contemporary software solutions, and increased labor productivity, Macedonian banks have noticed a sustainable reduction of operating costs with the potential to further strengthen the bank's efficiency.

The panel data diagnostic tests run on the model indicate that it is reliable and produces accurate results, which provides confidence in the conclusions drawn from the study. Overall, the study's results provide valuable insights into the factors that influence bank profitability, which bank managers and policymakers can use to make informed decisions and improve the overall performance of the banking industry. However, it is important to note that the findings of this study are specific to the sample of banks and the period analyzed and may not necessarily generalize to other contexts. Therefore, future studies should replicate the analysis with different samples and periods to further validate the results.

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KATERINA HADZI NAUMOVA-MIHAJLOVSKA[*]

GREEN BUSINESS PLAN: TOOL FOR ENTREPRENEURIAL VENTURE IN SUSTAINABLE BUSINESSES

Abstract: Due to climate change, workers, enterprises and economies have been led to focus on sustainable consumption and production. Businesses that are committed to the principles of environmental protection within their activities, while striving to use renewable energy sources and trying to minimize the negative impact on the environment are defined as green. Main document that explains the business opportunity of green business, identifies the markets to be served and provides information on how it will be carried out is the green business plan. The purpose of the paper is to analyse the environmental aspects that green business plan should have in order to realize a business idea whose basis is environmental protection and on the other hand to emphasize the importance of the same as a necessity for running a successful and sustainable business.

Key words: green business, environmental challenges, entrepreneurial venture, sustainable business
JEL classification: L21, Q56

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Introduction

Green business is vital in contributing to sustainable solutions to climate change and other environmental challenges. Creating green products, offering green services, or making sure their processes are green, helps businesses protect the environment and make money at the same time. In this regard, customers can make positive choices with green entrepreneurs because they give them products and services that meet their lifestyles. Since consumers' demands for natural, healthy and ecological services and products are increasing, the markets of these offerings are growing. This creates business opportunities for green businesses and enterprises.

Business plan is priority to start-up on new venture performance and prevalent feature of new venture. A business plan is key to securing financing, maintaining focus, communicating and preparing for the unexpected. Business plans prove the entrepreneur's initiative and let him/her communicate a step-by-step goal-setting schedule. The owner can take an objective, critical, and unemotional look at the whole business. Contingency strategies are included in business plan in case of uncertain outcomes.

Green business plans need to include key elements that are critical in starting a green business. As is well known, a green business is business operates according to green principles and may be a business that sells green products or services. In this regard, green businesses contribute to solving environmental problems and have a minimal negative impact on the environment. Therefore, the green business plan must emphasize its contribution to the environment and the society. Additionally, the green business plan must explain in each segment of the business plan how the company will preserve or improve the environment and promote social justice and equality. Also, it should take into account the impact of its activities on human aspects and that such business must be able to cover its costs and generate profit.

The main purpose of the paper is to research environmental aspects of green business plan in order to identify crucial elements of the green business plan. Based on importance of determined environmental aspects that green business plan should have, the diversity of green business plan will be emphasize in order to show the green business plan as toll that stimulate entrepreneurial venture in sustainable businesses.

For that purpose, the subject of research are the basic characteristics of green businesses, the importance of a green business plan, its development

and preparation in the context of environmental aspects, as well as the key elements that stimulate entrepreneurial venture in sustainable businesses.

Therefore, based on an extensive literature review and the analysis of the state in the respective research fields, it will be clarify relevant distinguish of the green business plan. In this regard, the method of theoretical analyses is used in order to summarizing the most important insights about green businesses and business plan. Through the analytical - synthetic method with the application of descriptive, qualitative and comparative analysis are presented the environmental aspects of green business plan as important elements in realizing a business idea. The inductive-deductive method is applied in order to present the characteristics and elements of the business plan in order to distinguish and perceive the different aspects of the green business plan.

1. MAIN PURPOSES OF THE BUSINESS PLAN FOR STARTING ENTREPRENEURIAL VENTURE

In the conditions of a market economy, no enterprise can operate profitably without a previously prepared business plan. The business plan represents a set of management decisions focused on what the enterprise will do to be successful. It must necessarily contain the answers to two questions: what action will be taken and how it will be implemented. A business plan is a detailed, written document that explains the purpose of creating a new venture to provide new or improved products or services to consumers. It should offer a logical and rational sense of the direction of action, as well as a basis for managing and developing business performance. The business plan is the vision of the enterprises, the path from desire to realization.

Preparing the business plan is one of the important steps in the enterprise management process. The business plan shows how the company will achieve the set goals and work towards achieving the mission. In the course of operation, the business plan is used to check what has been achieved, and by incorporating changes and additions, it can help determine the future directions of business development. A business plan clearly describes how a business plan can market its products or services to generate profit and be attractive to potential investors.

During the preparation of the business plan, special attention is at least of three perspectives, independent of its user, such as:[1]

➢ Perspective of the entrepreneur (The entrepreneur is the most capable to explain the essence of the business venture because he best understands its concept and idea, as well as the processes and technology of operation);
➢ Market perspective (During the formation of the business plan, operations should be seen through the eyes of buyers, that is, consumers);
➢ Investors' perspective (Investors expect the business plan to provide realistic and reliable projections of financial indicators, such as: income, expenses, cash flow, financial result, etc.).

Research of Burke, Fraser and Greene showed that ventures with written business plans grew faster than those without written plans, having controlled for selection effects.[2] In addition, written business plan offers a key referential resource to assess and support the performance of the venture.

A business plan has two key purposes:
1) To help the enterprise in securing the necessary capital and
2) To facilitate the process of managing the growth and development of the enterprise.

Essentially, the purpose of the business plan is to convince investors that the company has identified market opportunities, has the managerial and entrepreneurial skills to exploit those opportunities, and has a plan to make sure revenues and expenditures get done on time in the foreseeable future. The second role refers to the process of managing the growth and development of the enterprise. In that case, the business plan should enable managers to clearly perceive the consequences of different strategies and tactics, as well as to perceive the need for human and material resources for starting a new or developing an existing business venture.

The business plan is the "backbone" of the entrepreneurial venture. It is the only document that guides the entrepreneur through three critical situations: (1) Sets the decision-making process in times of crisis; (2) It represents

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[1] Different Perspectives on Business Planning: Creating the Right Plan for Your Audience, https://www.brighthub.com/office/entrepreneurs/articles/80737/, 10.2.2023
[2] Different Perspectives on Business Planning: Creating the Right Plan for Your Audience, https://www.brighthub.com/office/entrepreneurs/articles/80737/, 10.2.2023

a map that shows the way in cases of indecision; (3) It represents a means of motivation in periods of demoralization and failure. A business plan forces the entrepreneur to examine the potential venture in detail in the initial planning phase before significant capital is invested. The business plan is a very complex instrument that enables the management of business activities and the management of business ventures. The business plan sets the goals and directions for future development. It is based on thorough planning and detailed analysis of specific parameters, in the direction of discovering new business opportunities, as well as profitable businesses.

2. IDENTIFYING ENVIRONMENTAL CHALLENGES IN THE CONTEXT OF GREEN BUSINESS

The term "green business" refers to businesses committed to the principles of environmental protection, using renewable energy and minimizing their environmental impact. In this regard, these businesses are part of a long-term strategy for sustainability, i.e. they are an opportunity to achieve business goals without creating economic or social threats to the environment, both for current and future generations. Green business is to adopt principles, policies and practices that improve the quality of life for customers and protect resources. Using renewable energy resources, enhancing material recyclability, reducing toxic dispersion are all eco-efficient practices while doing green business.

In order to start any green business it is necessary to think about the problems in the environment related to the protection of the environment. A green idea can be defined when people are aware of the environmental problem, which will get them thinking about starting something. As such, to define a green business idea, it is necessary to know what causes environmental problems and what can be done about them, i.e., at the level of businesses, what actions should be taken.

The problem of the environment arises from the overexploitation of natural resources at such a rapid rate that they cannot be replenished at the same pace. All this entails environmental degradation as a result of human abuse. Environmental challenges or ecological problem refers to:

1) Climate change. The Earth is facing climate change as the increasing of the temperature and this is accelerated due to human activities. The use of fossil fuels (coal, oil and natural gas) releases large amounts of greenhouse gases that cause temperature rise and global warming. This

results in a series of challenges such as the loss of biodiversity due to the extinction of species that are unable to tolerate the new environment; devastation; rising sea levels that will result in shrinking land areas in coastal areas; and extreme weather incidents such as droughts, floods and storms.

2) Air pollution. Air pollution is the result of gases or hazardous substances entering the air, most often as a result of human activities such as emissions from factories, vehicle exhaust and smoke from burning farmland or dust from construction.

3) Water pollution. Water pollution occurs when harmful substances enter natural waters from domestic sewage, industrial sewage, or farmland sewage that has been treated with chemical pesticides, herbicides, and fertilizers.

4) Soil pollution. Soil pollution is caused by contaminated water or polluted air and solid waste, and this includes solid waste from domestic, agricultural or industrial sources, such as organic waste, plastic or metal.

5) Waste pollution. With overcrowding and consumers' way of life, waste production is increasing and thus increase natural resource exploitation.

Health problems are directly related to air, water, and soil pollution. The International Agency for Research on Cancer (IARC), as a specialized agency of the World Health Organization (WHO), announced in October 2013 that outdoor air pollution is classified as carcinogenic to human health (group 1).[3] Nearly half of the world's population, and almost entirely from developing countries, suffers from various diseases as a result of insufficient amounts of water or because of its pollution. According to the World Health Organization, 2 billion people are at risk of intestinal diseases, caused by contaminated water and food.[4] Pollution and changes in weather conditions disrupt food production and food security. Droughts and unseasonal rains result in heavy losses and limit access

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[3] Outdoor Air Pollution, IARC Monographs on the Evaluation of Carcinogenic Risks to Humans Volume 109, IARC, 2015

[4] SDG Goal 6 Ensure availability and sustainable management of water and sanitation for all, SDG Targets 6.1/6.2/6.a Drinking water, sanitation and related official development assistance (who.int), 12.2.2023

to food. In addition, changes such as an increase in temperature make it easier for diseases to spread. The effects of pollution are numerous and include creation of new diseases, disruption of ecosystems, reduced soil fertility, which results in the reduction of natural resources.

If the resources that people depend on are destroyed, business and incomes are affected. There are certain genera that will not grow where they used to because of temperature changes. This means business closures and losses for communities that depend on these resources. In business the effects of pollution, whether air, water, soil or solid waste means higher medical costs and increased lost work days, which subsequently reduces productivity. For example, PM particles alone can cause a 5% to 6% reduction in productivity.[5] Also, areas with higher than average levels of air pollution are often seen as undesirable cities in which to live and work, meaning that a company's ability to attract skilled, top-quality employees can be severely hampered. Research published by Bain and Company, as well as the American Chamber of Commerce in China, found that 53% of American-owned businesses operating in China have difficulty recruiting highly skilled employees, citing the area's high levels of air pollution as one of the biggest contributors to this shortage.[6]

Given the negative consequences of these environmental problems, businesses can take action to tackle them, such as gradually shifting from the use of fossil fuels to alternative sources of energy and implementing the "3R" strategy of reducing, reusing and recycling. By reducing unnecessary consumption, reusing things and recycling waste material to create new material, the efficiency increase, waste minimize and the overexploitation of natural raw materials is avoid.

3. IMPORTANCE AND DISTINCTIVENESS OF A GREEN BUSINESS PLAN IN SUSTAINABLE BUSINESSES

Green business can be defined from two perspectives: one relates to the output in the form of green products or services, while the other relates to the process of an economic activity. (Figure1) This means entrepreneurs can enter into the "green" business sector by either providing environmentally friendly

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5   Dechezleprêtre A., Rivers N., and Stadler B., The Economic Cost Of Air Pollution: Evidence From Europe, Economics department working papers No. 1584, OECD, 2020
6   Member Survey US-China Business Council, 2022

products or services, through an environmentally friendly process, or with the help of clean technologies that reduce any negative effects of the business.[7]

Figure 1 Green business output perspectives
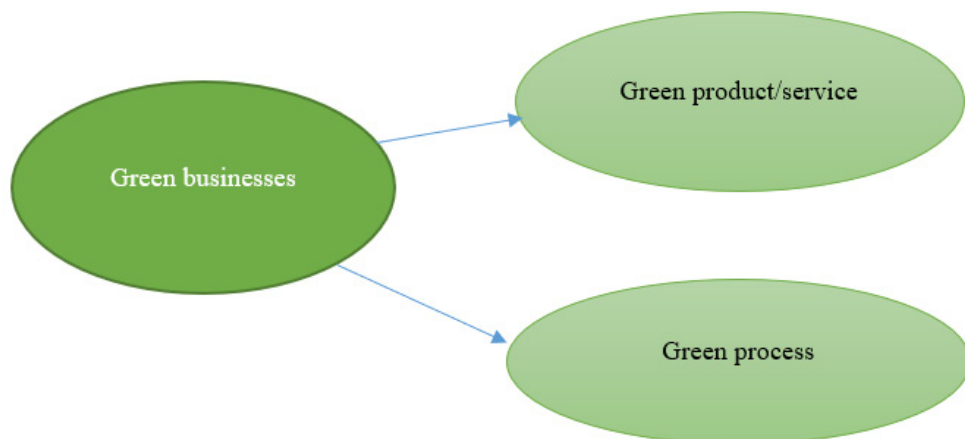
Source: Majurin E., Green Business Booklet / ILO; International Labor Office – Geneva, 2017, p. 7

Thereby, green business plan should cover all the aspects that refers to environmental problems, the consequence that are raised from and the action should be taken. In this term, it's very important to determine how each of the business plan components is affected by the green characteristic of the product or service. Therefore, it's useful to give special attention to:

- The executive summary of the business plan should highlight the green dimensions of the business idea, specifically how the environment is affected by the business. In describing the green idea, it is necessary to highlight what makes it unique as a green business (in terms of the product, service or process). The study of environmental problems and the consequences of pollution is crucial in explaining why the proposal is unique, why it will be profitable, how market initiatives will be used to drive environmental or social change, and what positive environ-mental and community impact. The goal is to get the reader's attention to read the entire document. Figure 2 shows example of sentence struc-ture that clearly distinguishes the green business plan and shows the uniqueness of the green business idea.

[7] Majurin E., Green Business Booklet / ILO; International Labor Office – Geneva, 2017, p. 7

- Developing the marketing plan should be based on including the environmental challenges in 7P – price, product, place, promotion, people, process and physical evidence. Also, marketing research is needed in order to identify the need of green customers and on the other hand to find out how green business will satisfy their needs. In this regard, it's important to identify the customers that are environmental friendly and green determined.
- Depending on what type of business is intend to start, the operational plan should include an overview that manufacture the goods, selling of the products or delivering of the services will be in environmental mission and initiatives.

Figure 2 Example of sentence for defining green business idea in green business plan

[Name of the business] exist because **[environmental problem that green business idea is solving]** to **[goal market]** providing **[green product or services]** with a **[green product or service advantage over the tradition or the competition]** for the **[benefit witch customers will receive].**

Overall, developing a green business plan is a mandatory first step for the entrepreneur with aspiration to create positive social, environmental and economic value, regardless of organizational context or motive and despite uncertain outcomes. Also, consumers are increasingly interested in eco-friendly products due to ethical, cost or health reasons so the demand for green products is growing. Therefore, at the core of the green business plan should be incorporated goals related to sustainable business. This way we can define a different approach related to goal approach to green business plan: select and prioritize sustainable development goals (SDGs) that are closely linked with the green business and where it has the biggest impact on. They can be classified in three pillars of sustainability: social equity, environmental protection, and economic viability in accordance to SDGs showed at Figure 3.

Figure 3 SDGs in green business plan

Environmental goals	Society goals	Economy goals
- Enhancing biodiversity - Making resources more productive - Staying within the planet's boundaries	- Providing sustainable public services - Reducing poverty and inequality - Realizing human potential	- Reducing the dependency of economic growth on resource consumption - Creating new markets

Creating green business plan relies on exploring different alternatives, experiments, learning and iterations where besides economic criteria it focusses on **ecological and social consequences of the activity. Green** entrepreneurial ventures are crucial in creating new market spaces that attempt to bring innovative, responsible, and sustainable solutions together.

Conclusion

A business plan is essential whenever embarking on a new venture because it provides an overview of the whole investment, is a reminder of something not to be forgotten or missed, identifies critical points and makes it easier for business partners or financiers to see how valuable the venture really is. Green business plan enable entrepreneurs to make a positive contribution to the environment by setting up and running profitable and sustainable businesses. It helps potential entrepreneurs to come up with a viable green business idea and to develop a business plan from a green perspective, and guides existing entrepreneurs on ways to green their business.

Green business idea comes from the current ecological - environmental problem, and green businesses is a consequence of these environmental problems. Therefore, businesses can take action to tackle them in terms of reducing fossil fuel use and implementing the "3R" strategy of reducing, reusing and recycling. A business plan clearly describes how a business can market its products to generate profit and be attractive to potential investors. In terms of green business, the actions taken should be clearly, comprehensibly and precisely described in the plan and the solutions for the environmental challenges should fully express the intention. Therefore, the key goals of the green business plan is:

- To emphasize its contribution to society and the environment,
- To explain in each segment how the enterprise will preserve or improve the environment and how it will promote social justice and equality,
- The idea should be an example for other companies on how to work in an environmentally and socially responsible manner.

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BILJANA HADZI-VELKOVA[*]

MONETARY TRANSMISSION MECHANISM THROUGH THE INTEREST RATE CHANNEL IN THE REPUBLIC OF NORTH MACEDONIA

Abstract: The monetary policy of the central bank plays an important role, which is even further increased in times of crises.

This paper examines the efficiency of the monetary transmission mechanism through the interest rate channel in the Republic of North Macedonia. The research of the efficiency of the monetary transmission mechanism is carried out with the statistical methods of simple linear correlation and regression. Moreover, this paper examines the impact of the changes in the interest rate of the central bank treasury bills, on the interest rates of the interbank deposit market, and, then the transmission to the interest rates of the loans issued by the commercial banks.

The results indicate a slight difficulty in the functioning of the transmission mechanism through the interest rate channel in the country, since the commercial banks do not take immediate actions upon the monetary signals sent by the National Bank through the main instrument of the open market operations. The causes for this situation can be found in certain specific characteristics inherent to the Macedonian banking sector.

Key words: monetary policy, interest rates
JEL classification: E52, E43

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Introduction

In the vast majority of countries, primary goal of the monetary policy is maintaining price stability. Nevertheless, the monetary authority is also important for achieving "full" employment, financial system stability and normal functioning of the foreign trade payment turnover. In most countries worldwide, there is a political consensus that the price stability takes priority over the other monetary policy objectives.

The central bank has several instruments at its disposal; however, usually one of them has a dominant role, which depends on the financial market development level and the structural liquidity position of the banking system (Velichkovski, 2006). The authors who researched this issue reached a consensus that the situation with the structural liquidity of the banking sector in one country influences the decision of the monetary authority which instrument it would choose as primary in the open market operations, but it also affects the extent how efficient the chosen monetary intervention would be. It is empirically established that in countries with developed financial markets, where there is a lack of liquidity, the interventions of the central banks are transferred to the commercial banks faster and more efficiently.

The purpose of this paper is to show whether the monetary transmission mechanism through the interest rate channel is functional in the Republic of North Macedonia and to what extent the signals of the monetary authority in the country are implemented by the commercial banks in the country.

The statistical methods of correlation and regression examine the impact of changes in the interest rate of the National Bank treasury bills, on the interest rates of the interbank deposit market and then the transmission to the interest rates of the banks' loans in the country.

The data used for the analysis refer to the period from January 2005 to December 2022, with the exception of the data on the interest rates of the newly approved Denar loans, which are available from January 2006. All data are taken from the official website of the National Bank of RNM.

Theoretically, in market economies, the signals of the monetary authority are being imlemented by the commercial banks, which are expected to adjust their interest rate and credit policies to the changes in the interest rate of the treasury bills. However, due to certain specificities of the banking sector in the country, the hypothesis of this research is that the signals of the National Bank sent to the commercial banks through the changes in the interest rate on

the treasury bills are not fully and immediately absorbed by the commercial banks.

In addition to the introduction, the paper briefly presents results and findings from previous research and contributions, the applied methodology and the data used for the research. At the end of the paper, the results of the research are discussed and the conclusions are presented, along with the possibility of applying the findings obtained, as well as the possibility of continuing the research.

1. SPECIFICITIES OF THE MONETARY POLICY IN THE CASE OF REPUBLIC OF NORTH MACEDONIA

Monetary policy is in the focus of the interest of the experts and the general public, because of the challenge it is currently facing. Namely, the inflation rates reached the multi-decade maximum this past year:

Chart 1. Movement of the inflation rate in RNM in 2022

Source: https://tradingeconomics.com
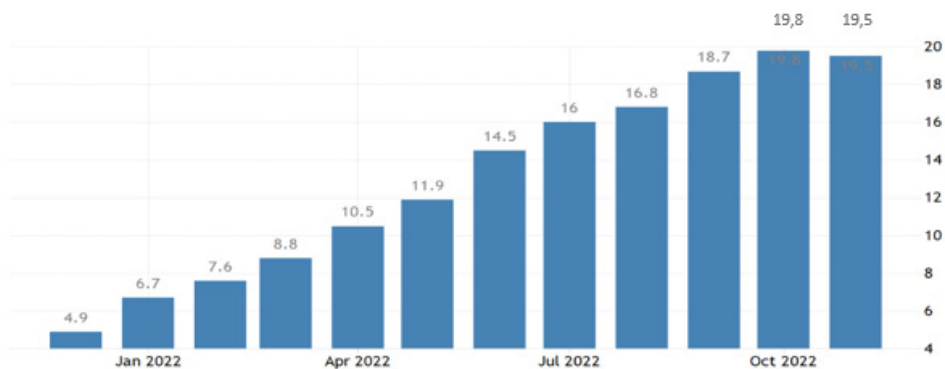
In such conditions, in the period from January to December 2022, the National Bank increased the interest rate of the treasury bills eight times, from 1.25% to 4.75% per year. The main goal of this policy is for the commercial banks to reduce the issuance of loans by increasing the active interest rates on loans, which they offer to legal entities and individuals.

2. LITERATURE REVIEW

What is common for the papers addressing this topic conducted in the country is that they aim to contribute to a better awareness of the regulator about the effects of previous policies, as well as to help in the conception of future policies. Monetary policy measures, with a shorter or longer delay, have an impact on all sectors of the economy, and, hence, without proper understanding of the transmission mechanisms, these measures will fail to achieve the desired results.

According to Brinkmeyer et al (2015), there is a consensus among the economists that the monetary policy instruments generate, at least in the short term, real effects. However, the exact mechanism is still subject of a controversial debate. As early as the 1960s, Milton Friedman concluded that "long and varied delays" appear in the transmission of monetary impulses. The traditional interest rate channel transmits the effects of monetary policy on the aggregate consumption and other macroeconomic indicators through the changes in the interest rates.

According to Besimi et al (2006), in North Macedonia, but also in similar small and open economies in transition, there are three basic channels of monetary transmission: the exchange rate, the interest rates and the money supply. The findings in the paper show that the changes in the exchange rate and money supply have a stronger impact on the prices in the economy than those caused by the changes in the interest rates; devaluation increases domestic currency substitution, but also domestic currency substitution reduces inflationary pressure.

Jovanović et al (2015) state that excess liquidity in the banking system changes the transmission mechanism, reducing the efficiency of the traditional instrument – the interest rates. This suggests that the monetary policy can affect the economic activity through the reserve requirement ratio and the quantity (amount) of treasury bills offered.

The transmission mechanism through the interest rate channel in the Republic of North Macedonia is subject of research of two separate papers, drafted in 2005 and 2006 (Jovanovski et al (2005) and Velichkovski (2006)). In that period, the financial system of the country was characterized by low level of savings in the banks, a high participation rate of non-performing loans in the total loan portfolio of the banks, long litigation proceedings and difficulties related to the execution of mortgages by the banks, structural excess of liquidity, uncertainty created by non-economic shocks, etc. In such conditions,

the authors conclude that the exchange rate is the most significant and fastest channel of monetary policy transmission in the country, taking into account the high level of openness of the economy, its dependence on foreign markets and the high level of euroization. For the same reasons, it is assessed that the interest rate channel does not provide for efficient transmission, i.e. it is insignificant. However, the authors refrain from systematic conclusions due to the relatively short periods of analysis. The Vector Error Correction Model indicated a weak and negative correlation between the bank interest rates and the treasury bill interest rates for the analyzed periods, which is opposite of what was expected. In addition to the stated conditions in the financial system, as reasons for such relations, the authors state the following: wide margins of the banks that allowed adjustment of the active interest rates despite the increases in the interest rates on the treasury bills; possibility of cost rationalization; expectations of the banks that the monetary policy measures are of a temporary nature; increase in the quality of competition in the banking sector; and long-term strategy for maintaining creditworthy customers even if there are short-term opportunity costs.

The need to analyze again this subject stems from the fact that some of the conditions in the financial system have changed, compared to the period when the previous research was conducted as well as the availability of sufficient amount of data for conducting the regression analysis.

Namely:

1. The level of savings[1] has significantly increased: In the period from 01.01.2003, when the total deposits amounted to 52,464 million Denars, to 30.11.2022, when they amounted to 479,108 million Denars, their total increase is 913%.

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[1]   The data refer to the total deposits included in the M4 money supply. Restricted deposits over one year, blocked accounts and other restricted deposits are not included in the deposits included in the monetary aggregates according to the recommendations of the IMF for the Monetary and Financial Statistics. Only limited deposits up to one year are included.

Chart 2. Movement of the total deposits in RNM
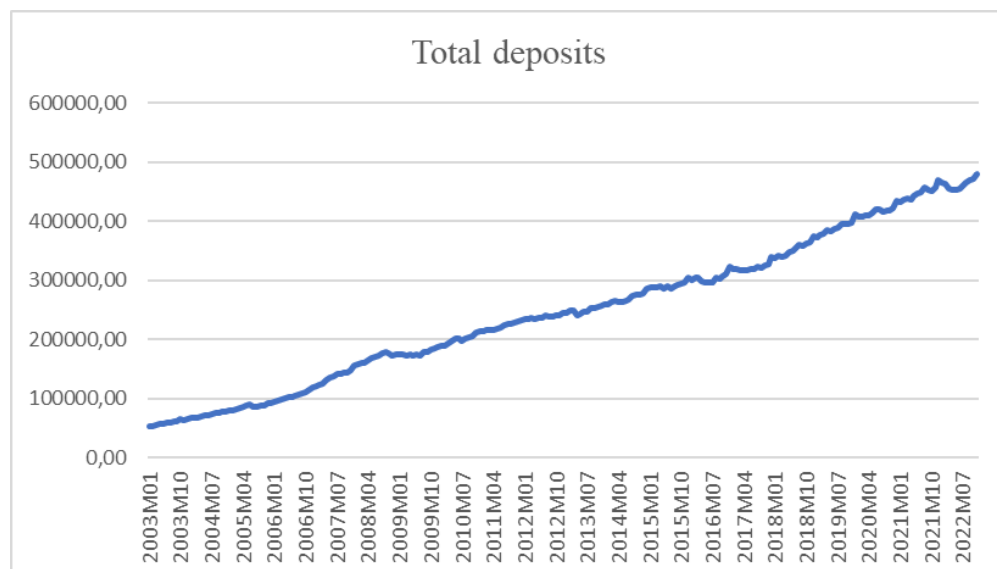
Source: Own calculations based on the data presented on the webside of NBRM: https://www.nbrm.mk/

    2. The level of liquidity has also changed. As a parameter for the liquidity in the banking sector in this paper, the ratio between the liquid assets[2] and the total assets of the banks was used (available data for the period from 31.12.2006 to 30.09.2022). This liquidity indicator at the beginning of the analyzed period was 37.7%, and at the end, i.e. on 30.09.2022, it was 19.7%, which is a decrease of more than a half compared to the initial one.

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[2]   The liquid assets consist of highly liquid assets and short-term time deposits with foreign banks. Total assets do not include assets in domestic banks.

Chart 3. Movement of the liquidity in the banking sector in RNM
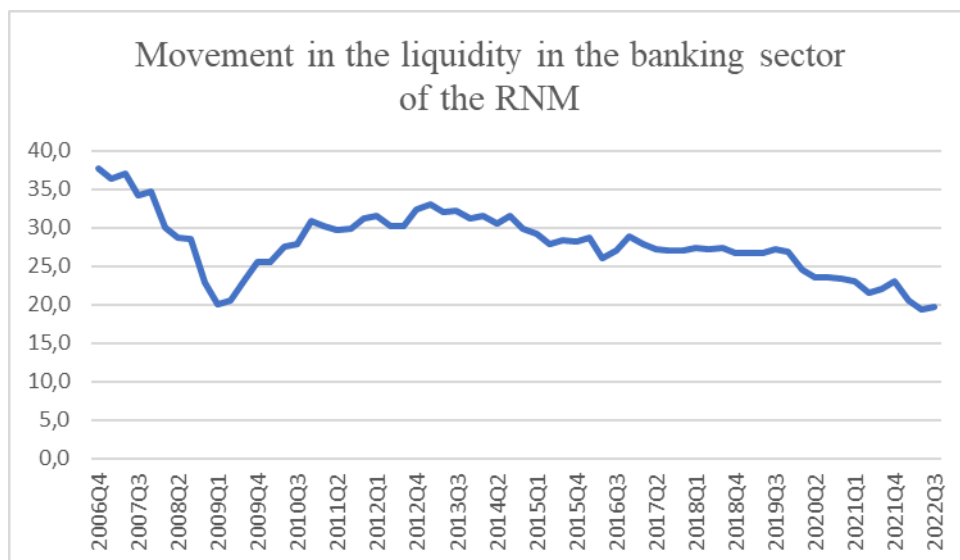
Source: Own calculations based on the data presented on the webside of NBRM: https://www.nbrm.mk/

3. The share of non-performing loans in the total gross loans in the banking sector has significantly decreased. The ratio between the non-performing loans and the gross loans of the non-financial sector is calculated for the period from 31.12.2006 to 30.09.2022. This indicator at the beginning of the analyzed period was 11.2%, and at the end, i.e. on 30.09.2022, it was 3.3%, which is a decrease of approximately 3.5 times.

Chart 4. Movement of the non-performing loans in the banking sector in RNM
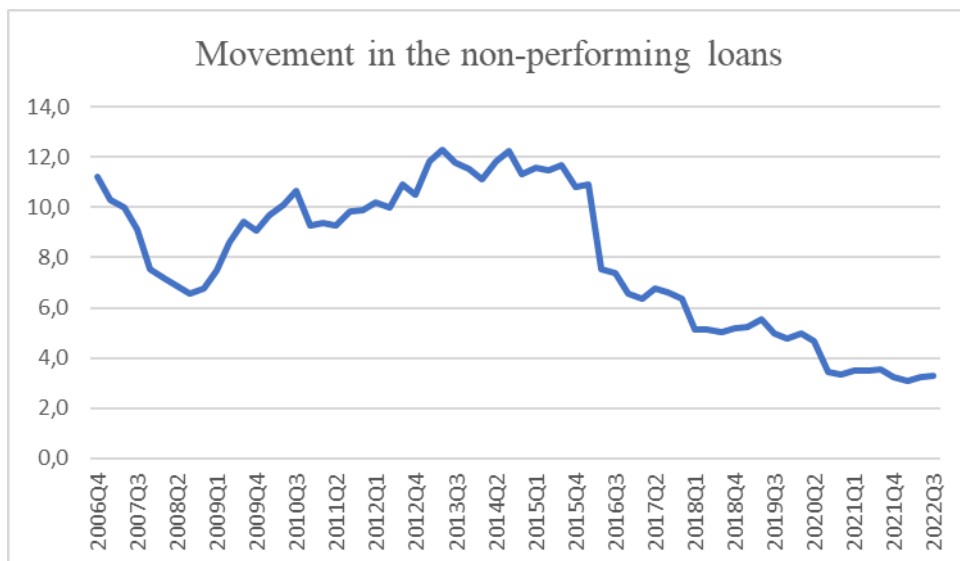
Source: Own calculations based on the data presented on the webside of NBRM: https://www.nbrm.mk/

There is also a significant change in the way the interest rates of the loans are defined. Namely, until 01.10.2017, the contractual provisions of the loan agreements provided the banks the discretionary right to change the interest rates on the loans approved to customers, at any time and at their own discretion (period of adjustable interest rates). After this date, the interest rates in the loan agreements are defined as fixed or variable. In the loan agreements with variable rates, a reference rate is introduced which is upgraded by a certain margin corresponding to the assumed credit risk, with the possibility of choosing different reference rates by the banks: SKIBOR, the interest rate on the treasury bills, etc. In the largest number of Denar loan agreements without a currency clause, the national reference rate (NRS) is used by the commercial banks in the country, which is actually the interest rate on the Denar deposits without a currency clause.

3. METHODOLOGY AND DATA

In order to examine the efficiency of the monetary transmission mechanism through the interest rate channel in the country in the analyzed period, the following statistical methods were used: correlation and regression.

The correlation method is used to examine the direction and strength of the quantitative agreement of the variations of the variables, and as a relative measure to quantify the strength of the correlation relationship in the sample the Pearson's coefficient of simple linear correlation (r) is used.

The regression analysis is used to determine the variation of the dependent variable, from the variation of the independent variable.

The EViews 12 software tool was used to analyze and process the variables.

When modeling the interactions and effects for the purposes of this analysis, monthly data were used for the period from January 2005 to June 2022, with the exception of the data on the interest rates of the newly approved Denar loans[3], which are available from January 2006. Thus, the model includes 215 observations, except for the analyses of the interest rates of the newly approved Denar loans, with 203 observations.

These data are publicly available on the website of the National Bank of RNM, while the variables used are:

1. the weighted interest rate on the treasury bills -KS BZNBM,

2. the interest rate on the interbank deposit market -KS MBD,

3. the weighted active interest rate on the Denar short-term loans of the commercial banks -KS KRATKMKD,

4. the weighted active interest rate on the total Denar (short-term and long-term) loans of the commercial banks -KS VKMKD, and

5. the weighted interest rate on the newly approved total Denar loans of the commercial banks -KS NVKMKD.

Considering that the interest rate on the treasury bills of the National Bank of RNM is used as a reference rate in a small part of the loan portfolios of the commercial banks, the changes in the weighted interest rate on the newly approved total Denar loans of the commercial banks were also examined, since this interest rate is expected to most significantly absorb the changes in the interest rate on the treasury bills of the National Bank.

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[3]   The newly approved loans include all new loan agreements concluded between the customers and the commercial banks in the month for which it is reported, in which the terms of the agreement are agreed upon and specified for the first time.

The stationarity of the series is obtained by the logarithmic value of the variables.

4. RESULTS AND DISCUSSION

4.1 Correlation analysis

The correlation analysis starts with a display of the movement trend of the analyzed variables. The chart below shows an evident downward movement of all analyzed interest rates in the period from 2005 to 30.06.2022, given that in the period from the second quarter of 2008, throughout 2009[4] and the second half of 2022, there is an increase in all rates, which is significantly higher for the interest rate on the treasury bills and the interest rate on the interbank deposit market, compared to the one for the active interest rates on the Denar loans of the commercial banks.

Chart 5. Movement of the interest rates in RNM
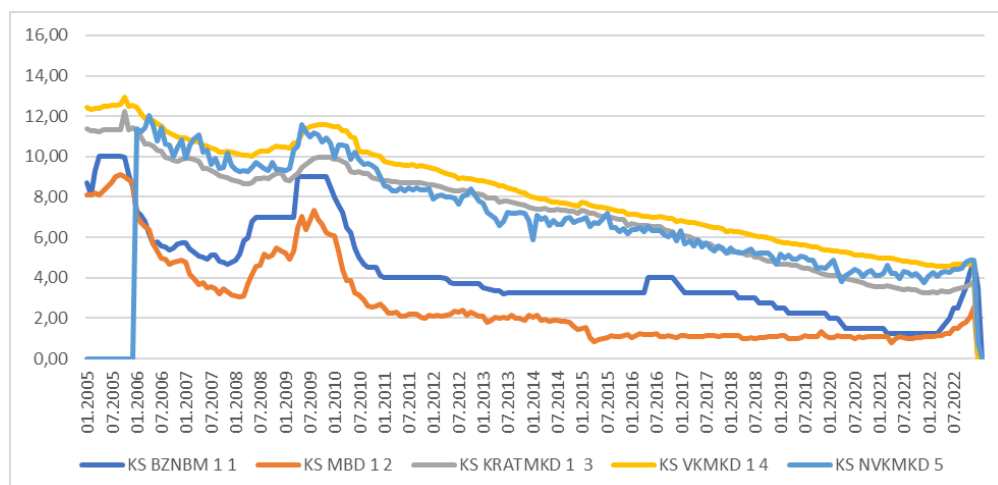
Source: Own calculations based on the data presented on the webside of NBRM:
https://www.nbrm.mk/

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4   This is the result of the global financial crisis in 2008.

Table 1. Correlation matrix:

	KS BZNBM	KS KRATKMKD	KS MBD	KS NVKMKD	KS VKMKD
KS BZNBM	1.000.000	0,313613	0,357431	0,077259	0,227883
KS KRATKMKD	0,313613	1.000.000	0,210965	0,338994	0,662191
KS MBD	0,357431	0,210965	1.000.000	0,124118	0,194491
KS NVKMKD	0,077259	0,338994	0,124118	1.000.000	0,326567
KS VKMKD	0,227883	0,662191	0,194491	0,326567	1.000.000

Source: Own calculations

According to the results obtained from the calculations performed by using EViews, it can be concluded that there is a weak positive correlation between the analyzed variables:

- the correlation coefficient between the weighted interest rate on the treasury bills and the interest rate on the interbank deposit market has the strongest intensity of 0.36,

- the correlation coefficient between the weighted interest rate on the treasury bills and the weighted interest rate on the newly approved Denar loans of the commercial banks has the weakest intensity of 0.08.

4.2 Regression analysis

For each individual analyzed interdependence of the variables, a simple linear regression model can be determined:

$$Y_i Y_i = \beta_0 \beta_0 + \beta_1 X_i \beta_1 X_i + u_i u_i \quad (1)$$

Y_i- analyzed dependent variable;
β_0- intercept coefficient;
β_1 - slope coefficient;
X_i- independent variable;
u_i- stochastic term,

Table 2. Regression analysis results

Dependent Variable-Y	Independent variable-X	Intercept coefficient β_0	Slope coefficient β_1	R-value of β_0	R-value of β_1	R^2 Determination Coefficient
KS MBD	KS BZNBM	-0.395207	0.513700	0.4302	0.0000	0.137170
KS KRATKMKD	KS BZNBM	-0.489335	0.077756	0.0000	0.0000	0.089527
KS KRATKMKD	KS MBD	-0.492083	0.035515	0.0000	0.0053	0.035931
KS VKMKD	KS BZNBM	-0.438643	0.039984	0.0000	0.0003	0.059123
KS NVKMKD	KS BZNBM	-0.406004	0.063234	0.2044	0.2732	0.005969
KS NVKMKD	KS MBD	-0.383722	0.070911	0.2286	0.0777	0.015405

Source: Own calculations

α=10%   α=5%   α=1%

From the obtained results, it can be concluded that in the first four models, the independent variable affects the dependent variable, i.e. the obtained R-value of the slope coefficient - β_1 is statistically significant at all levels of significance. Therefore, the influence of the independent variables on the dependent variables in these four models is positive. The strongest influence exists in the first regression, where the subject of examination is the influence of the weighted interest rate of the treasury bills of NBRM on the interest rate of the interbank deposit market.

In the last two regression models, which examine the relationship of the weighted interest rates on the newly approved Denar loans with: the weighted interest rates on the treasury bills of the National Bank, and the interest rate on the interbank deposit market, it can be concluded that:

- the R value of the slope coefficient is not statistically significant at the level of 1% and 5% in the last regression model, i.e. the interest rate on the interbank deposit market affects the weighted interest rates on the newly approved Denar loans at a significance level of 10%,

- the weighted interest rate on the treasury bills of the National Bank does not affect the weighted interest rates on the newly approved Denar loans.

The obtained results of the regression model indicate a partial, i.e. poor functioning of the transmission mechanism in the banking sector in the country, taking into account the obtained values of the coefficient of determination, as an indicator of the participation of the explained variability in the total variability of the dependent and independent variable.

Hence, it can be concluded that the hypothesis set at the beginning of the research is approved since the signals sent by the National Bank to the commercial banks through the changes in the interest rate on the treasury bills are not fully and immediately absorbed by the commercial banks in the country in their credit and interest rate policies.

Conclusion

The purpose of this paper is to show whether the monetary transmission mechanism through the interest rate channel is functional in the Republic of North Macedonia and to what extent the signals of the monetary authority in the country are implemented by the commercial banks in the country.

The results of the correlation and regression analyses show that the transmission mechanism through the interest rate channel in RNM functions with a slight difficulty, i.e. the commercial banks are not immediately responsive to the monetary signals sent by the National Bank through the basic instrument of open market operations. This situation is also observed in other research papers that were conducted several years ago, despite the fact that the conditions in the financial system have changed significantly, as elaborated in more detail in this paper:

- the level of savings has increased significantly and recorded an increase of 913% in the period from 01.01.2003 to 30.11.2022,

- the level of liquidity has decreased in the banking sector in the period from 31.12.2006 to 30.09.2022 from 37.7% to 19.7%, and

- the share of non-performing loans in the total gross loans in the banking sector has significantly decreased in the period from 31.12.2006 to 30.09.2022, from 11.2% to 3.3%.

The reasons for this situation, in which part of the commercial banks in the banking sector of RNM do not immediately adjust their interest rate policies to the changes in the interest rates on the treasury bills, could be explained based on the following:

- the business policy of the commercial banks with dominant foreign capital, which is primarily aimed at increasing the market share in issuing loans to individuals and legal entities,

- the limited number of large customers who are creditworthy and the banks cannot afford to "lose" them as strategic customers, for the sake of increased short-term revenues due to the limited market,

- the expectations that the signals sent through the increase in the interest rates on the treasury bills are temporary, which, at least, causes a delay in the changes, again temporarily, in the interest rate policies of the commercial banks,

- the expectations of the management of the commercial banks regarding the speed of overcoming the crisis periods,

- the interest rate on the treasury bills is in very few cases used as a reference rate in defining the interest rates on the Denar loans. For this purpose, the national reference rate is most often used - the weighted interest rate on the Denar deposits without a currency clause.

As distinct specificities, the relatively small volume and the irregular transactions on the interbank deposit market could be mentioned.

This scientific research contributes to a better management of the transmission mechanism through the interest rate channel in the country. If the National Bank expects a faster transmission of the monetary signals sent through the increase in the interest rates of the treasury bills on the volume of credit activity of the commercial banks, it should be considered to define the interest rate on the treasury bills as a reference rate when determining the interest rates of the commercial banks.

The research can further be upgraded and further elaborated in order to check whether there is a time delay in the adjustment of the interest rate and credit policies of the commercial banks in the country, how significant that delay is, if there is a delay at all, and to what extent the adjustment is carried out.

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Appendix 1

Dependent Variable: LOGKS MBD
Method: Least Squares
Date: 03/03/23   Time: 12:37
Sample (adjusted): 2 216
Included observations: 215 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.395207	0.500058	-0.790322	0.4302
LOGKB_BZNBM	0.513700	0.088278	5.819101	0.0000

R-squared	0.137170	Mean dependent var		-0.540077
Adjusted R-squared	0.133119	S.D. dependent var		7.865401
S.E. of regression	7.323196	Akaike info criterion		6.829230
Sum squared resid	11423.02	Schwarz criterion		6.860584
Log likelihood	-732.1422	Hannan-Quinn criter.		6.841898
F-statistic	33.86193	Durbin-Watson stat		2.151066
Prob(F-statistic)	0.000000			

Dependent Variable: LOGKS_KRATMKD
Method: Least Squares
Date: 03/03/23   Time: 12:40
Sample (adjusted): 2 216
Included observations: 215 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.489335	0.096243	-5.084388	0.0000
LOGKB_BZNBM	0.077756	0.016990	4.576496	0.0000
R-squared	0.089527	Mean dependent var		-0.511264
Adjusted R-squared	0.085252	S.D. dependent var		1.473661
S.E. of regression	1.409446	Akaike info criterion		3.533529
Sum squared resid	423.1323	Schwarz criterion		3.564883
Log likelihood	-377.8543	Hannan-Quinn criter.		3.546197
F-statistic	20.94431	Durbin-Watson stat		2.154419
Prob(F-statistic)	0.000008			

Dependent Variable: LOGKS_KRATMKD
Method: Least Squares
Date: 03/03/23   Time: 12:40
Sample (adjusted): 2 216
Included observations: 215 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.492083	0.099146	-4.963208	0.0000
LOGKS_MBD	0.035515	0.012605	2.817562	0.0053
R-squared	0.035931	Mean dependent var		-0.511264
Adjusted R-squared	0.031405	S.D. dependent var		1.473661
S.E. of regression	1.450336	Akaike info criterion		3.590727
Sum squared resid	448.0402	Schwarz criterion		3.622081
Log likelihood	-384.0031	Hannan-Quinn criter.		3.603395
F-statistic	7.938653	Durbin-Watson stat		2.012553
Prob(F-statistic)	0.005294			

Dependent Variable: LOGKS_VKMKD
Method: Least Squares
Date: 03/03/23   Time: 12:42
Sample (adjusted): 2 216
Included observations: 215 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.438643	0.061909	-7.085314	0.0000
LOGKB_BZNBM	0.039984	0.010929	3.658483	0.0003

R-squared	0.059123	Mean dependent var		-0.449919
Adjusted R-squared	0.054706	S.D. dependent var		0.932500
S.E. of regression	0.906635	Akaike info criterion		2.651105
Sum squared resid	175.0832	Schwarz criterion		2.682460
Log likelihood	-282.9938	Hannan-Quinn criter.		2.663774
F-statistic	13.38450	Durbin-Watson stat		1.996202
Prob(F-statistic)	0.000320			

Dependent Variable: LOGKS_NVKMKD
Method: Least Squares
Date: 03/03/23   Time: 12:47
Sample (adjusted): 14 216
Included observations: 203 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.406004	0.318865	-1.273280	0.2044
LOGKB_BZNBM	0.063234	0.057558	1.098621	0.2732

R-squared	0.005969	Mean dependent var		-0.419433
Adjusted R-squared	0.001024	S.D. dependent var		4.542112
S.E. of regression	4.539787	Akaike info criterion		5.873441
Sum squared resid	4142.543	Schwarz criterion		5.906083
Log likelihood	-594.1542	Hannan-Quinn criter.		5.886646
F-statistic	1.206967	Durbin-Watson stat		2.658131
Prob(F-statistic)	0.273248			

Dependent Variable: LOGKS_NVKMKD
Method: Least Squares
Date: 03/03/23   Time: 12:48
Sample (adjusted): 14 216
Included observations: 203 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.383722	0.317753	-1.207609	0.2286
LOGKS_MBD	0.070911	0.039986	1.773387	0.0777

R-squared	0.015405	Mean dependent var		-0.419433
Adjusted R-squared	0.010507	S.D. dependent var		4.542112
S.E. of regression	4.518188	Akaike info criterion		5.863902
Sum squared resid	4103.218	Schwarz criterion		5.896545
Log likelihood	-593.1861	Hannan-Quinn criter.		5.877108
F-statistic	3.144903	Durbin-Watson stat		2.594429
Prob(F-statistic)	0.077679			

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ICT APPLICATION IN HUMAN RESOURCE MANAGEMENT PRACTICES IN SMALL BUSINESSES: OPPORTUNITY AND CHALLENGES

Abstract: In recent years, information technology has effects on almost every aspect of our society, as well as on organizational processes, including human resource management (HRM) processes and practices. Continued innovations in technology fundamentally increased the effectiveness of HRM and improve their work efficiency. Main purpose of the paper is on base of a literature review to analyze main challenges and opportunity behind the adoption of ICT in HRM by small business. The research results presented in this paper are part of the project Main human resource management challenges for small businesses (Главни предизвици на малите бизниси во управувањето со човечките ресурси), NIP.UKIM.21-22.21, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia.

Key words: Information and Communication Technologies (ICT), Human Resource Management (HRM), small business

JEL classification: L21

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Introduction

Small businesses are a vital source of income and make up 90% of the total number of businesses in developing countries such as the Republic of North Macedonia. Their key feature is working in a dynamic environment characterized by changing customer needs, increased competition, greater need for flexibility and rapid innovation of products and services. Under this competitive reality, HRM has more critical role than ever, as new forms of business demand new ways of engaging people. In traditional HRM, there is too much paper work and long administrative processes. HR professionals must analyze opportunities in the social, economic, political-legal, and technological environment to redesign HRM processes and practices that are critical to the success of the organization's mission and goals. To meet these challenges, HRM is forced to adopt new methods and HR managers have to adopt new methods. On the other hand, they should help organizations define their strategies and build programs for the development of their human capital.

In this context, ICT has increased the effectiveness of HRM through more effective methods of recruitment, organizational communication, employee involvement and increased skills of HR managers. Organizations facing challenging business environments, such as operating in dynamic markets, often are transformed into successful ones by the use of ICT.

Main purpose of the paper is to analyze main challenges behind the adoption of ICT in HRM among small businesses.

Given the interest of this topic, the present work is a literature review about the impact of the adoption of ICT in HRM by SMEs. Therefore, the subject of the research are current situation of the use of ICT among SMEs in order to show their increasing penetration into the business environment. In addition, the paper is analyzing the importance and benefits of ICT usage in HRM and finally, we conclude by reviewing the main opportunities and challenges of implementing ICT in HRM in small businesses.

1. THE IMPORTANCE OF USAGE OF ICT IN HRM

Today the world is shaped by the evolution in the ICT field. Every business organization realizes that ICT is very useful for their business to sustain in this modern economy. Small businesses implement ICT in their HRM practices to improve speed, accuracy, save time, be effective in decision making and increase transparency in their work. Thus, ICT provides reliable and ap-

propriate information that helps to get the right information at the right time for making any kind of strategic decisions. Various HRM practices such as HR planning, recruitment, selection, training and development, performance appraisal, payroll and employee compensation, have brought small businesses to a higher level of production and communication. ICT has increased the efficiency and effectiveness of HR practices, and reduced costs and operating time, on the other hand[1]. In addition, increasing the use of information technology for HRM can improve the performance of HR professionals and make them involve in the company's internal consulting activities.[2]

Modern HRM sees the use of ICT as a catalyst for operational efficiency. These attitudes are supported by the ever-increasing investment in developing countries in ICT-related governance[3] However, recent empirical evidence from developing countries suggests that increased investment in ICT does not necessarily lead to higher HR performance.[4] This can reduce incentives for businesses to use ICT, especially when they face tight budget constraints such as small businesses. In them, especially if there is a traditional way of working, switching to the use of ICT is possible only if the benefits obtained are higher than the investment and maintenance costs.

Technology development is an important activity for the innovation process in any organization. As information technology improves, businesses, especially small businesses, could manage an increasing number of HRM processes in an effective manner, thereby contributing to the availability of information and knowledge[5]. This interaction and intersection between IT and HRM leads to the emergence of e-HRM, a term used to describe IT systems

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[1]	Manini N., Mahalik D.K., Impact of ICT on Human Resource management Practices: a study on selected manufacturing industries of western Odisha, Nat. Volatiles & Essent.; 8(5): 1884 – 1912, Oils, 2021

[2]	Mohrman S.A., Lawler, E.E., Transforming the human resource function. Hum. Resour. Manage., 36: 157-162. 1997, https://doi.org/10.1002/(SICI)1099-050X(199721)36:1<157::AID-HRM25>3.0.CO;2-7

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[4]	Chaudhry A. A., Khan K. S., Hassan, A., Can HRM be affirmed as a system? Applying general systems theory (GST) on human resource management. Journal of Management and Research (JMR), University of Management and Technology (UMT), Lahore, Pakistan, Vol. 2, No. 2, 2015

[5]	Bondarouka T.V., Ruëlb J.M., HRM systems for successful information technology implementation: evidence from three case studies, European Management Journal Volume 26, Issue 3, June 2008, p.153-165

and processes used in HRM. According to Ruel the term e-HRM was first used in the late 1990s when e-commerce took over the business world. E-HRM is an internal application of e-business techniques to add value to management through a more effective and efficient flow of information and is a way of achieving the goals and activities of the HRM. E-HRM, apart from contributing to cost reduction in the organization, has helped to modify many HR processes, including HR planning, recruitment, selection, performance management, workflow and compensation. These new systems have enabled HR professionals to provide better service to all their stakeholders (e.g., applicants, employees, managers) and reduced the administrative burden on the field.[6]

2. BENEFITS OF ICT IN HRM

Information systems represent a major investment by businesses. Therefore, implementing e-HRM requires weighing the benefits and costs. The common benefits of e-HRM cited by various authors are:[7]

- Improved accuracy;
- Providing time and quick access to information;
- Cost savings;
- Working, controlling and planning activities for HR;
- Increased competitiveness by improving HR practices;
- Increased efficiency;
- Production of a large number and variety of operations for HR;

However, there are costs associated with the implementation of e-HRM, namely:

- Employees should have access to computers and global Internet connections;
- Expensive technology costs, time costs;
- Work issues (change of tasks, need for training, change of jobs, dismissal ...).

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6   Mohammed A.K., Halim M., Masa H., Khatijah O., E-HRM, workforce agility and organizational performance: a review paper toward theoretical framework, I J A B E R, Vol. 14, No. 15 (2016): 10671-10685

7   Boateng A. The Role of Human Resource Information Systems (HRIS) in Strategic Human Resource Management (SHRM) [thesis]. Sweden: Swedish School of Economics and Business Administration; 2007, p.112 Available from: http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.473.5116&rep=rep1&type=pdf и Beckers A, Bsat M. A DSS classification model for research in human resource information systems. Information Systems Management. 2002;19(3):41-50

It remains obvious that if technology is to encourage effective HRM in organizations, it should be able to support not only access to documented knowledge, but also, more importantly, knowledge possessed by individuals about the main resources (assets) of the business. HRM must aim to achieve competitiveness in the field of HR by providing permanent educational and training programs for personal and professional development of employees. In addition to improving the visibility and traceability of such knowledge, technology should aim to catalyze the collaboration and transfer of knowledge between its holders both within and between businesses.

According to complementarity theory, utilizing ICT with appropriate organizational resources and capabilities, like worker qualifications, proactive direction, and innovative culture, will result in greater benefits.[8]

There are studies that have tried to identify the differences in the role of IT between service and production oriented industries. Researchers mostly studied Western Europe and the United States, so their results may not apply to other parts of the world due to social and economic differences. Comparatively, developing countries have done very little research in this field.

Chakraborty cites several examples of information collected from HR departments or the environment that are part of e-HRM, such as[9]:

- Information about employees;
- Type of employee recruited during the year;
- Offered training and development;
- Performance evaluation results;
- Promotion, demotion, transfer, separation of employees;
- Offered compensation packages, financial and non-financial;
- Absence of employees;
- Maintenance, safety and health services;
- Availability of HR from different sources;
- Training and development facilities available outside the organization;
- • Expectations of HR from the organization;
- • Government policies affecting employment conditions and labor laws;

8 Gargalo A., Gorriz C., The relationship between human resources an information and communication technologies: Spanish firm-level evidence,   Journal of Theoretical and Applied Electronic Commerce Research, April 2010, DOI: 10.4067/S0718-18762010000100003

9 Chakraborty A, Mansor N. Adoption of human resource information system: A theoretical analysis. Journal of Social and Behavioral Sciences, 2013;75: p. 473-478

- The trade union movement and its attitudes towards employers' organizations;
- Benchmarking of HRM practices.

Upon incorporating IT, HR in small businesses must remain focused on the strategic goals of the enterprise. On the one hand, this will make HR more efficient and effective, and the use of IT applications for database management and an advanced recruitment system will improve business efficiency. Developing the entity's technological systems, like designing products (research and development) and IT systems, will help improve business efficiency.

ICT implies major changes in the management of HR in small businesses. According to Kwabiah, for the successful implementation of ICT in HRM, it is necessary to pay attention to[10]:

a) Support of the top management in ICT application. Top management is responsible for formulating and implementing set organizational goals based on resources and the corporate environment. It affects organizational performance and decision-making. Top management is responsible for generating resources solely for IT improvement, evaluating departments that benefit from IT investments, reporting to top management on the impact of IT policies and strategies, and reviewing IT strategic policies.

b) Investing in an appropriate ICT structure. Today's changing customer demands require leaders to stay abreast of the most appropriate IT infrastructures to improve business performance. IT infrastructure networks contribute to better organizational performance by providing good Internet connectivity and coverage, along with computers and other communication devices. Computers, laptops, mobile phones and multimedia devices enhance assimilation flocks and the implementation of IT in businesses.

c) Trainings and skills for appropriate ICT knowledge. Small business management emphasizes training employees to acquire knowledge and appropriate skills in IT to improve business innovation and performance. Acquiring IT skills and developing employee competencies improve operational and dynamic capabilities, which enable businesses to be robust and flexible to overcome modern challenges. IT knowledge and skills contribute immensely to IT implementation.

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[10] Kwabiah W., Small Business Strategies for Information Technology Implementation in Developing Countries, Walden Dissertations and Doctoral Studies Collection, Walden University, 2019, p.83

d) Creating an organizational culture for accepting ICT. Small business-es highlight the role of a good organizational culture for assimilating knowledge among employees. According to Kwabiah, small business managers emphasize respect for local customs, norms and good orga-nizational culture and found that the organization's capabilities depend on routines, processes and organizational culture, which create good customer relations, reputation, employee skills, efficiency and effec-tiveness in any context. Also, corporate culture affects the way em-ployees accept and interact with organizational information systems, hence understanding the culture of the Internet and related technolo-gies is a critical success factor in implementing IT for e-commerce and business processes in organizations.

e) Acceptance of legal and regulatory frameworks. IT has become a vital resource for innovation and efficiency improvement in many sectors and has provided a platform for global digital transformation in every segment of society. Despite the benefits of technology, the growing trend of cybercrime has threatened business activities across the in-formation environment due to the lack of a universal legal framework. Therefore, businesses express strong support to ensure the coordi-nated use and standardization of policies. A long-term IT regulatory framework in the industry provides certainty and facilitates strategic planning by business owners. Small business executives point out that governments and industry partners must strive to close the gaps in cyber operations to improve the security of customer transactions in a digitalized environment.

3. OPPORTUNITIES AND CHALLENGES OF IMPLEMENTING ICT IN HRM IN SMALL BUSINESSES

The application of ICT in HRM among small businesses can be seen in:

1) Improvement of management

IT tools can complement the HRM and improve the efficiency and ef-fectiveness of small businesses, leading to greater success of the business itself as a whole. Especially in small businesses, where IT tools for HR can be used to improve performance, which is more effective and efficient with the im-

proved operational efficiency of IT. By providing a universal set of products, companies can diversify their business by getting better products and services.

2) Effective recruitment

Small businesses use online job portals to search for the best candidates for the position. The process is efficient with the use of the internet because many people find out about the offer and this increases the probability of hiring efficient employees. Employers can present all the necessary information related to the work, career and personal development of each employee on the portals online. This is a great promotional tool for the organization. IT tools not only help to hire the best potential, but also to retain them.

3) Data management and critical analysis

IT tools make it easier to analyze employee performance data, and it's more accessible. This increases the efficiency of work and its effectiveness. Organizational performance can lead to the timely success of a business whether it is in a stable or unstable environment.

4) Career development and human capital management

Performance appraisal and career advancement can be a key motivational factor for employees to work effectively and efficiently. Performance measurement and reward systems in an organization establish attitudes of priority. Changing reward systems to make them based on performance goals stored in HR IT tools make sense. Employees are rewarded based on desired behavior and results based on IT tools regarded to:

- Career development: analysis of careers, their evolution, development of career plans and achievement of stated goals;
- Education, skills and training programs: analysis and identification of competencies, identification of training needs, access to remote training content;
- Appraisal of employee performance: definition of performance objectives, design of evaluation metrics, performance evaluation and feedback on results.

HR development process is tool that provides all information on employee succession planning, overall performance evaluation and individual potential review, including a detailed employee profile. It also includes an agree-

ment between the individual and the supervisor for business purposes over a period. It leads to continuous development of the employee's career.

5) *Automation of HR processes*

HRM is an incredibly complex domain involving many processes. HR specialists spend too much time on mundane, monotonous activities. Implementing technology into the HR workflow frees professionals from a large amount of routine work. Process automation eliminates documentation, speeds up the execution of many tasks and contributes to more efficient performance. Advances in technology mean companies can use the latest innovations, such as machine learning to review resumes and augmented reality to onboard new employees.

6) *Availability of HR tools*

There are hundreds of HR tools available specifically designed to facilitate and optimize the work of HR specialists. Features of HR software include:
- Streamlining work flows;
- Organization and management of employee data;
- Creation of detailed records for employees
- Social cooperation;
- Payroll, vacation and bonus management.

The transition to a digital work environment allows modern HR specialists to perform certain tasks in a faster way and thus pay more attention to issues such as employee satisfaction, optimization of recruitment and onboarding processes, employee motivation, etc.

7) *Advanced candidate search*

One of the main responsibilities of a HR specialist is finding and recruiting specialists that the company needs at the moment. IT has significantly changed the way these approached processes.

First, the Internet has given HR professionals the ability to search for candidates worldwide. Freelancers have become commonplace now, and collaborating with freelancers can be even more beneficial than hiring an in-house team. This way, HR specialists can fill the gap that their internal team is missing and find the perfect candidate anywhere in the world.

Second, HR specialists can use advanced tools (i.e. artificial intelligence) to screen resumes and pay attention to only those profiles that strictly match the requirements. This greatly speeds up the search process and helps find the most suitable candidates.

8) *A new way of branding a company*

Company branding is an important factor in attracting and retaining employees. Thanks to IT, companies now have the ability to build a strong online presence and reach numerous potential candidates with minimal effort. Thorough branding and website design, presence in major markets and online communication - all these factors promote direct interaction between the candidate or employee and the company.

Social media also plays a huge role in company branding. Social platforms have become a key source of information, and candidates are more likely to search for a company on LinkedIn than through traditional sources. Hence, companies should consider what image they would like to build and what values and messages they want to convey to users. IT has greatly expanded not only the talent pool, but also the way HR professionals can reach top talent and promote the company online.

9) *Analytics gives access to more data*

Finally, information technology has given HR professionals access to sophisticated analytics, taking their work to a new level. Previously, HR professionals had to rely on guesswork and intuition when evaluating employees, their level of motivation and satisfaction, and the effectiveness of HR processes. Now, all processes and work results are reflected in numbers, so they can rely on it.

With the help of analytics, HR professionals can track the candidate journey and see at what point the most people decline (or accept) an offer, how many people are involved in the processes, what percentage of employees open their emails and more other important events.

In this way, HR specialists can make data-driven decisions and use past experience as a basis for redesigning and optimizing current processes. E-HRM can help in various aspects of this area:
- Records of employee discipline: access and management of disciplinary procedures, reports on disciplinary procedures;

- Trade union and labor distribution: management of information about trade unions and workers' committees, distribution of work and analysis of indicators of work and labor relations;
- Attitude, Climate, Culture and Commitment: The ability to automatically query the entire organization and perform attitude, climate, culture and commitment analysis.

10) Strategic management of human resources

The strategic HRM is characterized by adopting a dynamic vision for the resources it manages. It covers not only the planning and implementation of the actions, but also the control of the results, that are related to the organization's strategy.

11) Manpower planning and employment

HR planning for what the organization will need is of great importance to HR professionals, revealing different skill profiles, work schedules, enabling the organization to have the right people, in the right quantity, at the right time. It reflects the interests and perspectives of the organization, as well as the aspirations of candidates and associates. E-HRM give information in this area like:
- Promotions, Transfers, Hiring and Termination Rates: Tracks data for analysis and decision making for workforce planning and hiring needs.
- Work analysis and definition: enabling employees in geographically dispersed locations to work together.
- Recruitment and selection: the ability to support processes by creating tools that are more agile and enable online work.
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12) Awards

Reward systems consist of all material and non-material benefits, which employees can receive, depending on the quality of their performance, contribution to the development of the business and its identification with the values of the organization. E-HRM allows identify the following information regarding the awards:
- Salary information: salary processing, vacation management, leaves and absences, automatic calculations of salary components.

- Retirement planning: identifying succession plans, pensions, streamlining severance programs.
- Administration of benefits: imputation of benefits, analysis of imputed benefits, analysis of costs and benefits.
- Salary analysis: analysis of salary development, salary comparisons.

Conclusion

As technology evolves, it force HRM to adopt new processes in its practices. As a result of these changes, E-HRM emerged to take into account improved accuracy, quick access to information, increased competitiveness and efficiency, and re-engineering HR. Many questions remain about the real goals of e-HRM and how they answer HR's real needs. However, its role in the HRM allows us to respond more quickly to changes and HRM needs, for example, enabling budget control, monitoring and verification, skills matching, assessments, feedback, workforce planning, succession planning, skills monitoring, training needs analysis and global analysis. By focusing on using technology to continuously improve the quality of work, technology can improve the information available to HR, streamlining HR processes and making them faster and more effective. One of the biggest allies in HRM, e-HRM has been adopted to make organizations more accurate and effective. HR professionals need to prepare for the future by preparing for new roles or finding outsourcing.

Within this, top management must be involved and support the IT implementation, setting the direction and ensuring specific investment in IT infrastructure aligned with overall organizational goals. Owner-managers of small businesses must begin training and development, focusing on the acquisition and retention of relevant skills through workshops, seminars and symposia organized by competent and qualified educational centers. Also, they must create a favorable organizational culture by gradually exposing and motivating employees to embrace the IT culture. Strong support from owner-managers would reduce organizational resistance by creating cultural values that support technology adoption and implementation. Small business managers implementing IT need to understand the role of government policies and work within the regulatory framework to ensure a smooth transition.

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ROLE AND STRUCTURE OF THE FUNCTIONAL ANALYSIS FOR THE PUBLIC ADMINISTRATION EDUCATION IN THE REPUBLIC OF NORTH MACEDONIA

Abstract: The problem in the public administration is particularly a pressing issue, especially how to create a system of public administration with proper education. If effectively implemented, functional analysis is often considered as a method which can be useful for identifying the weeknesses of the public administration. This paper firstly analyzes the theoretical framework of the functional analysis, alongside with a review on the methodological and organizational questions which are given in The Methodology for Implementation of Functional Analysis in Public Sector Institutions. Then, it focuses on a several functional analyses which are publicly available with a special focus of the employee's education level in public institutions in RNM. The aim of this research is to see the situation of employees in public sector regarding their education, in order to take future measures for enhancing the capacity of employees. The research subject is focused on the data reports from the Ministry of Information Society and Administration of North Macedonia. Data analysis was accomplished by using SPSS statistical software.

Keywords: functional analysis, public administration, human resources, Republic of North Macedonia

JEL Classifications: O1, D73, M1, M2

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Introduction

The main role of the Functional Analysis (FA) is to provide a real and at the same time a comprehensive picture regarding the willingness of the institutions, on a short and middle term, to conduct all improvements for doing better their core functions and processes. FA is very often considered as a tool for the management team. The process is consisted of generating information for the functions that are performed by the employees within a particular institution as well as the working methods in order to achieve their goals. In fact, this methodology should be considered as an asset of essential importance for the institutions from the public sector, by which they will be capable of doing self-assessment for the success and quality of their work. This also will lead to improvement of the services that are offered to the citizens, while having in mind that the existence of the public sector institutions is for the citizens. The purpose of the FA is:[1]

- To perceive the main issues and characteristics of the existing organizational setup and functioning of the institution, and then
- To propose specific measures for changes in the organization that could contribute to improving the performance of the institution's work by increasing efficiency and effectiveness

The ultimate goal of the functional analysis is to determine the need for possible changes in the internal layout and execution of work processes. FA do not provide any substantial changes, instead it sets a framework for all further necessary development of the capacities and management processes.

The FA in North Macedonia was part of the on-going public administration reform process. It was stipulated with the Law on Public Sector Employees of 2015, by new legislation for the public service. According to this law, all public entities, both at central and local levels, were required to prepare a comprehensive functional analysis prior to the development and adoption of their new organizational plan and job descriptions. They were also required to introduce competency-based management systems, which would be aligned with job positions in the institution and to adjust the criteria and conditions for recruitment and employment.

In 2015 the MISA, with support from the OSCE Mission to Skopje organised a training-of-trainers' certification training programme for a number

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[1] Ministry of Information Society and Administration, Methodology for conducting functional analysis in public sector institutions, 2018, pp.7

of national functional review practitioners, and at the same time, a manual for conducting functional reviews was developed, aiming at facilitating the introduction of functional reviews to different public institutions in the RNM.

All regulations were adopted in 2015, but in the meantime, the situation in the institutions has already changed. Hence, there was a need to conduct a new functional analysis to revise the existing acts for internal organization and systematization of jobs. After starting the process for conducting a functional analysis on 08.10.2019, the Government of the RNM adopted the "Information on conducting a functional analysis in the public sector", according to which the institutions are required to conduct a functional analysis within one month from the day of information acquisition. Having the aforementioned in mind, the preparation of a functional analysis is already mandatory for all institutions in the public sector.

Accordingly, with the conducted assessment of North Macedonia's progress in fulfilling the political criteria necessary for EU membership, it was concluded that there is no FA, or in other words FA was done properly only in a few institutions. A clear recommendation was given that a functional analysis of human resources in the public administration is necessary in order to perform optimization in terms of numbers, skills, education and professional attainment of the employees. Part of the ministries have not conducted analyzes at all, so the assessment is that the whole process as a final result of the FA would be ready for two or three years.

In this vein, the main research topic in this paper is the functional analysis of the public institutions. More specifically, the subject of research is the section of the functional analysis which is dedicated to the quality of the employees in the field of their education. Hence, the aim of the research is to investigate the quality of employees they possess in order to take measures for enhancing their capacity.

1. LITERATURE REVIEW

Functional analysis offers an integral insight into the efficiency and effectiveness of an entity, as well as in the means of their operations, processes, and administration (Jahija, 2017).

The FA model is consisted of assessment of three basic criteria (Figure 1):[2]

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[2] Ministry of Information Society and Administration, Methodology for conducting functional analysis in public sector institutions, 2018, pp.9

- Strategic compliance with planned goals - refers to the effective and efficient delivery of policies and services,
- Building organizational capacities in the institution - refers to human capacities, their utilization, distribution, professional upgrading, motivation, and
- Effective and efficient execution of work tasks to achieve the planned results - they present a clear picture of the institution in terms of competences, goals, priorities and expected results.

Figure 1: The model of Functional analysis

Source: Ministry of Information Society and Administration

In addition to these criteria by which the efficiency and effectiveness of the institution is evaluated, an essential aspect of this FA model are the functions. The optimal organizational structure of the institution and, ultimately, the efficiency and effectiveness of the work processes depend on the correct identification and placement of the functions.

For the preparation of the FA, the Methodology for conducting functional analysis in public sector institutions from 2018 is being used.

Stages for implementing the functional analysis process contain:[3]

- *Team formation to implement a functional analysis* - the first initial step to implement this process is the formation of a team that will undertake the necessary activities in order to translate all activities into a report with specific findings and recommendations.
- *Plan for action* – the action plan is the first document prepared by the designated team to start the functional analysis process that contains several elements, such as: phases, activities, period and parties involved. It is also important to inform the employees of the institution about the start of the process beacuse of the need for cooperation for this process, in order to avoid misunderstandings and unpleasant feelings among them, and at the same time to provide support and cooperation, which is of crucial importance for improving performance in the operation of the institution.
- *Document analysis* - analysis of the most important documents, according to which the organizational units in the institution carry out their assignments. Such documents are the acts for organization and systematization of the workplaces, the strategic plan, laws, internal procedures for work, etc.
- *Elaboration of a questionnaire for the employees* - According to the methodology, a questionnaire is prepared. Then, it should be delivered to all the employees of the institution. Also, a form for a detailed investigation is submitted to the managing administrative officers in the institution.
- *Analysis of the questionnaires* – Questionnaires for self-assessment of employees should give a complete and comprehensive analysis of the work in the institution and they should be written in a form of textual analysis.
- *Interviews* - The interviews should be conducted in a certain time period, with employees from each sector individually. The chosen sample of respondents should include administrative officers, and employees who are assigned to different job positions (levels) in different organizational units, at the same time paying attention to their age structure, as well as gender and nationality. With a predetermined list of

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[3] Ministry of Information Society and Administration, Methodology for conducting functional analysis in public sector institutions, 2018

questions for interviewing people, taking into account that human relations are a dynamic matter.

- *Analysis of the data from the conducted interviews* – in this phase should be analyzed the data obtained from all previous stages.
- *Findings and Recommendations* - The final stage of the functional analysis report is writing a report which contains all findings, as well as recommendations, which later are submitted to the top management.

FA should be conducted every 4 years. However, if there are any significant changes in terms of the institution's strategic goals, competencies or positioning, is recommended the FA to be carried out earlier than 4 years. In the years between two such processes, the implementation of the recommendations in the improvement plan should be regularly monitored. Other than that, the management must be informed about the achieved progress every 6 months.

Having in mind the fact that it was concluded that there is no FA in real sense, or in other words it was accurately prepared only by few institutions, and in spite of the fact that there are also trained representatives from the institutions for the application of the methodology, who will be able to support the other institutions in the implementation of the functional analysis, as well as the clear tasks given by the Government of RNM in January 2020, all institutions did not release the required report. Namely, 37 out of 134 institutions have submitted to MISA reports for the functional analysis carried out according to the new methodology prepared in 2018.[4]

2. METHODOLOGY

Any institution that wants to achieve the goals and thus to maximize quality of the employees work, it's required to introduce quality analysis that will make better the quality of institution and its work. A crucial resource in any institution in order to achieve the listed goals is to have successful human resources. Given the importance of this sector there is a need for governments and policy makers to understand human resources in institutions in order to formulate appropriate work places and policies. Human resources are regarded as a significant factor in determining an institution's success. In addition, it is important the relevance of institutional resources in terms of gender equality,

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[4]   https://metamorphosis.org.mk/izdanija_arhiva/reformi-vo-javnata-administracija-merit-sistemot-i-natamu-problem-digitalizacijata-napreduva/ (23.02.2023)

education and professional development. In order to understand the quality of the human resources in institutions from the standpoint of their education, first of all we conduct qualitative analysis based on the all available functional analyses conducted by public institutions. Functional analyses are conducted only by several institution and in this paper are included those of: Ministry for Information Society and Administration, The Ministry of Justice and Agency for the Protection of the Right to Free Access to public information. The qualitative analysis of the functional analyses in this paper emphasizes the level of educational attainment of employees in these institutions.

Additionally, to support the conclusions of the qualitative analysis we try to determine the dependence between the total employees in public sector and employees with higher education. To determine the dependence between the two variables we use Pearson $\chi2$ (Chi-Square) test since we consider it as the most suitable one. In addition, we use the SPSS statistical software for data processing. For this purpose, data from the annual reports from the public sector employees register in the Republic of North Macedonia are used. This report provides data regarding the employees of these institutions, in terms of their number, classification of jobs, gender, age, level of education and belonging to a community. The annual report on the data from the Public Sector Employees Register is the responsibility of the Ministry of Information Society and Administration (MISA), to establish and maintain a single register of all employees in public sector institutions. The register of employees in the public sector is part of the Human Resource Management Information System (HRMIS).

The register of employees in the public sector includes persons employed in:[5]

- The state and local government bodies and other state bodies established in accordance with the Constitution and the law,
- Institutions that perform activities in the fields of education, science, health, culture, labor, social protection and child protection, sports, as well as in other activities of public interest established by law, and organized as agencies, funds, public institutions and public enterprises established by the Republic of North Macedonia, the municipalities, the city of Skopje, as well as the municipalities within the city of Skopje.

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[5] Annual report on the data from the Public Sector Employees Register, Ministry of Information Society and Administration, 2018-2021

The annual report on the data from the Public Sector Employees Register is prepared in accordance with article 2 paragraph (1) of the Law on Public Sector Employees. Based on that, MISA publishes this report every year, where data is obtained about employees in these institutions, in terms of their number, job classification, gender, age, level of education and community affiliation.

3. RESULTS AND DISCUSSION

Institutions that have published functional analyses that were also considered in this paper are: Ministry for Information Society and Administration, Ministry of Justice and Agency for the Protection of the Right to Free Access to public information.

Ministry for Information Society and Administration for 2020 clearly states the need for professional and educated staff, especially for management positions. Furthermore, in their report they state that due to the lack of employees they have an inadequately developed organizational structure and many work tasks are needed to be performed by people who are not experts in that domain. As a result of these reasons and other shortcomings, a large number of educated staff, especially IT, leave the institution, so the need for properly educated employees additionally increased.[6]

The Ministry of Justice, according to the functional analysis of 2021, makes several conclusions regarding the education of the administration. First, they have professional staff in management positions who are not used enough in trainings. Generally, technical positions are overburdened with a larger number of employees than necessary, while positions that are more professional have a lack of educated employees. At the end, also the regional departments are overburdened with a large number of employees in relation to the amount of work they have, but despite that certain work tasks are not carried out and the stated reason for this is the lack of professional and properly educated staff.[7]

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[6] https://mioa.gov.mk/sites/default/files/pbl_files/documents/Funkcionalna%20analiza_MIOA.pdf (24.02.2023)

[7] https://cpia.mk/mk/%D1%84%D1%83%D0%BD%D0%BA%D1%86%D0%B8%D0%BE%D0%BD%D0%B0%D0%BB%D0%BD%D0%B0-%D0%B0%D0%B-D%D0%B0%D0%BB%D0%B8%D0%B7%D0%B0-%D0%BD%D0%B0-%D0%BC%D0%B8%D0%BD%D0%B8%D1%81%D1%82%D0%B5%D1%80%D1%81%D-1%82%D0%B2/ (24.02.2023)

According to the Agency for the Protection of the Right to Free Access to public information and their analysis, similar conclusions were reached as those of the previous two ministries. By now, the agency did not apply any identification of the profile of the employees in order to redistribute them to appropriate work positions. Additionally, there is a lack of professional IT staff and jurists with higher education in the institution.[8]

In order to further investigate the level of education and the number of employees in public institutions, below are following the results of the short empirical analysis.

First, there are presented two tables which are taken from annual report on the data from the Public Sector Employees Register regarding the variables which are later used in the empirical research.

Table 1: Number of employees in the public sector

Type of institution	Number of employees			
	2018	2019	2020	2021
Public institutions	66893	67684	67534	68554
Public enterprises	18026	18026	17721	18146
Municipalities	5696	5655	5798	6103
Independent bodies of state administration	3468	3827	3680	3479
Courts	2312	2312	2250	2221
Bodies within the ministry	4386	4448	4378	4523
Public Prosecution	449	449	343	366
Ministries	4808	6266	6010	5037
Legal entities with public authorization	1553	1512	1492	1455
Independent state bodies	778	778	779	812
Regulatory bodies	377	377	385	421
Secretariats in the government of RNM	122	122	110	118
Government of RNM	333	333	320	312
Ombudsman	82	82	77	79

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[8]   https://aspi.mk/wp-content/uploads/2023/02/%D0%A4%D1%83%D0%BD%D0%BA%D1%86%D0%B8%D0%BE%D0%BD%D0%B0%D0%BB%D0%B-D%D0%B0-%D0%B0%D0%BD%D0%B0%D0%BB%D0%B8%D0%B7%D0%B0.pdf (24.02.2023)

National Bank	442	442	431	420
A special body of state administration	245	248	261	238
President of RNM	60	59	57	63
Service in the government of RNM	394	394	398	378
Assembly of RNM	287	282	257	257
Council of Public Prosecutors	7	7	7	7

Source: Author own work, data from the Annual report on the data from the Public Sector Employees Register, Ministry of Information Society and Administration, 2018-2021

Table 1 presented the number of employees for each institution in the public sector for 2018-2021. It is obvious that there are not any significant changes in absolute numbers, except for the last observed year for the employees in the ministries. Moreover, it is important to mention that the total number of employees in the public sector does not correspond to the total number of filled job positions, due to the fact that there are employees who are working in two or more institutions of the public sector simultaneously. For instance, a doctor who is employed in a state clinic can simultaneously have an established employment relationship as a professor at the medical faculty.

The next table is in regards with the employees in the public sector (Table 2) and shows their structure in terms of their education attainment. On one hand, most of them hold a bachelor's degree, but on the other hand, the second group in number, right after those who hold bachelor's degree, are those employees who are only with secondary education.

Table 2: Structure of the employees according to the education level

	2018	2019	2020	2021
No education	347	141	0	42
Semi-qualified	118	67	0	0
Qualified	225	106	0	0
Primary education	10015	9650	9218	5846
Secondary education	38373	38755	38493	38543
High qualified	4682	4543	533	523
Pre-bachelor (4 semesters)	1069	930	3511	1140

Bachelor's degree	50301	51233	52891	59355
MSc	5053	5282	4283	4753
PhD	1981	2004	2660	2575
Total	112164	112711	111589	112777

Source: Author own work, data from the Annual report on the data from the Public Sector Employees Register, Ministry of Information Society and Administration, 2018-2021

For the aim of our research we will use Pearson χ2 (Chi-Square) test. Pearson χ2 (Chi-Square) test is a method for statistical processing of categorical data. Since in this paper we are dealing with categorical data we consider that this is the most suitable one. To analyze our hypothesis, Pearson χ2 (Chi-Square) test for independence has been carried out. The margin of error is given of 5 %, i.e. α = 0.05.

We investigate the dependence between the total employees in public sector and employees with higher education, the following hypotheses were developed.

H_0: *There is no dependence between the total employees in the public sector and employees with higher education*

H_1: *There is dependence between the total employees in the public sector and employees with higher education*

Based on the results obtained p=0,213, in other words it means that Asymp. Sig. (2-sided) or p> 0.05, which means that zero is accepted and the alternative hypothesis is rejected. This means that there is no statistically significant relationship between the variables. But that doesn't mean that total number of employees in the public sector is isolated from the employees with high education, but one should bear in mind that there are many other factors that have a major impact on total employees in public sector. Hence, there is a dependence between the total employees in public sector and employees with higher education. From the obtained results we reject the null hypothesis and provide support for individual hypothesis H_1 (Table 3).

Table 3: Chi-Square Test

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,000ᵃ	9	,213
Likelihood Ratio	11,090	9	,270
Linear-by-Linear Association	,463	1	,496
N of Valid Cases	4		

Source: Author's own research

From the research analysis of the testing of the hypotheses, we can see that, alternative hypothesis is accepted. This means that there is a dependence between the total number of employees and employees with high education. From the obtained results it follows that individual hypothesis H_1 - is accepted.

Conclusion

Public institutions should be the backbone of a state because the trust is gained though their good and successful functioning. Public institutions and their employees with a focus on their education attainment were the main research subject in this paper. More precisely, in the first part of the paper they were observed in terms of the functional analysis which should be prepared by the public institutions in order to identify their constraint, so in the future can enhance functioning and be more successful in their working. This approach can be very useful because it can help to identify the need for setting new goals in the area or to assign new competences to some individuals or sectors that can lead to an increased volume of work and strengthening of resources. The execution of the tasks by the public institutions in RNM in order to achieve the goals is slow and difficult not because of insufficient number of employees but of the poor quality of employees. Furthermore, the second part of the paper was dedicated to the empirical research where we investigated the dependence between the total employees in the public sector and employees with higher education where we determined the existence of dependence.

After the literature review and observing all available report we came up to a several conclusions. First of all, the functional analysis is a powerful tool for assessing and improving the efficiency and effectiveness of public sector institutions. By breaking down complex processes and identifying areas

for improvement, functional analysis can help organizations streamline their operations, reduce costs, and deliver better outcomes for all citizens. However, successful functional analysis requires a collaborative and data-driven approach that engages all stakeholders and incorporates feedback from frontline staff. Ultimately, by adopting functional analysis as a continuous improvement methodology, public sector institutions can enhance their capacity to deliver high-quality services and achieve their organizational goals. Government of RNM has given a clear direction for implementing the functional analysis and also provided a skilled people who could help the institutions in the process of preparation of the functional analysis but besides everything the results are disappointing.

Suggestion for further researches on the same topic could be not to focus only on the education level, but to expand it also for other features regarding the employees in the public institutions, in order to have more detailed and comprehensive inside for the employees in these institutions.

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QUANTITATIVE ANALYSIS OF THE IMPACT OF THE FINANCIAL MARKET ON THE ECONOMIC GROWTH

Abstract: The subject of this paper is an analysis of the correlation between the financial market's development level and the level of economic growth. The paper also quantitatively tests a model that describes the impact of the financial market on economic growth. More specifically, it aims to provide the creators of the economic policies and financial markets regulators with a better understanding of the financial market's role in explaining the variance in the gross domestic product.

The paper analyzes the correlation between financial market development level and market capitalization per listed company in 56 countries from 2016 to 2020, using two linear regression models and two panel regressions. The results of the analysis suggest that there is a strong positive correlation between the analyzed variables. These findings indicate that the stock market capitalization can reliably estimate the gross domestic product. Thus, the key implication of the paper is for the policymakers who should strive to stimulate the stock market development.

Keywords: Financial market development, stock market capitalization, panel data analysis.
JEL classification: *B26, E43, G15, O40, G10.*

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Introduction

A growing body of evidence shows the critical importance of financial markets and institutions for economic growth. Some economists argue that finance does not cause growth; it simply responds to changing demands from the "real sector." Joan Robinson (1952, p.86) famously declared that "where enterprise leads finance follows". Nobel Laureate Robert Lucas (1988, p.6) dismisses finance as an "over-stressed" determinant of economic growth. In contrast, others believe that financial systems have a critical function in economies' growth. Namely, Walter Bagehot (1873) and John Hicks (1969) argued that the financial sector was vital in promoting industrialization in England. Nobel Laureate Merton Miller (1988, p.14) argues that "the idea that financial markets contribute to economic growth is a proposition too obvious for serious discussion."

However, Schumpeter (1911) was the first to highlight that financial sector development is related to economic growth. Since then, economic theory has tested if a well-functioning financial system promotes technological innovations when sufficient funds are distributed to the entrepreneurs, which are key to economic growth. Further research also reviewed the link between financial sector development and economic growth (Goldsmith (1969); Durusu-Ciftci et al., (2017); Mesagan et al., (2018)). As a result, the argument of Schumpeter was upgraded many times in terms of a policy analysis tool for developing countries, with a recommendation and high priority for policymakers on the efficiency of the financial system in facilitating capital accumulation and financial intermediation. Yadirichukwu and Chigbu (2014), Levine and Zervos (1996), Cooray (2010), Beck and Levine (2004), Narayan and Narayan (2013), as well as Isola and Mesagan (2018), pointed that the financial sector provided a direct stimulus that is necessary for growth. In summary, many authors believe that when financial systems function properly, they can exert a powerful influence on economic development, poverty alleviation, and economic stability. However, as The Global Financial Crisis of 2007-2009 has demonstrated, finance can also be a source of fragility.

The importance of knowing the elements of economic growth has been high since the theory of economic policy. Torado and Smith (2011) concluded that economic growth measured as an increase in GDP is a widely accepted indicator to measure the country's development. Decades of research studies try to define country-specific economic growth indicators, and in every one of them, the role of financial markets is acknowledged. Nwaolisa, Kasle, and

Egbunike (2013) pointed out one key segment of the country's economy, the capital market, as a specific part of the financial market that plays an essential role in economic growth because of its unique way in the mobilization of the saving and investments. Thus, its impact on economic growth should motivate policymakers to work on reforms toward capital market development.

Greenwood and Jovanovic (1990), and Pagano (1993) explicitly tested the model of the link between the financial intermediation role of capital markets and growth indicators. These models find a strong relationship between the capital market and the economic growth of emerging economies. Furthermore, capital markets are also considered a variable in explaining the economic growth in the most-developed countries, Yadirichukwu (2014).

Given the previously mentioned, the paper's goal is to test empirically:

1. First is the existence of a link between the level of financial market development and economic growth.

2. Second, the paper questions whether economic growth can be estimated based on financial market development.

The paper structure continues with the literature review, with a perspective of the recent research in the field. The third part describes the methodology, and the fourth part of the paper interprets the results of empirical data analysis. Finally, the last part represents the decision and conclusion from the research.

1. LITERATURE REVIEW

Using ordinary least squares (OLS) and vector autoregression (VAR) methods, Kehinde *et al.* (2013) tested the impact of the Nigerian capital market on the country's economic growth in the long run, using annual data from 1981 to 2010. The Johansen cointegration identifies three co-integrating equations, and the VA suggests a long-run relationship between the stock market and GDP. Wild and Lebdaoui (2014) tested if there is a relationship between the Moroccan stock market development and economic growth from 2000 to 2013. Testing quarterly, the results show a long-run relationship between stock market development and economic growth. Other studies find that the case for developing countries where financial markets were poorly organized and their output growth was not substantially enhanced is very different from developed ones (Singh (1997); Nili and Rastad (2007); Adusei (2014); Owusu and Odhiambo (2014); Mesagan and Nwachukwu (2018)). However, the past few decades were filled by researchers from developing nations such as (Bol-

bol et al. (2005); Odhiambo (2010); Acquah-Sam and Salami (2014); Mesagan and Shobande (2016); Mesagan et al. (2019); Yusuf et al. (2020)), which among others, have been more interested in examining the relationship between growth and the financial sector such as the studies by Levine and Zervos (1996), established for developed nations.

Analytical studies of Atje and Jovanovic (1993); Demirguc-Kunt and Levine (1996); Korajczyk (1996); Levine and Zervos (1996), Levine and Zervos (1998) suggest that there exists a strong positive link between the stock market development and economic growth. World Bank (1994) found that stock market development impacts the growth rates in capital, productivity, and GDP per capita. The work of Francis Xavier and Raja (2007) showed that a developed stock market protects shareholders bringing confidence to the stock market, which should boost economic growth. However, other studies done by Bencivenga and Smith (1991), Naceur and Ghazouani (2007), suggest that in developing countries, there is no strong relationship between stock market development and economic growth. Furthermore, the study of Barro (1989) underlines that stock market development cannot be considered a key indicator of economic movements.

Prats and Sandoval (2019), using the VAR model, analyzed the link between stock market capitalization and real GDP in ten Central and Eastern Europe countries, questioning the role of financial markets in economic growth. Results suggest that there is a positive correlation. Dökmen, Aysu, and Bayramoğlu (2015) focus their analysis on eight developing countries using time series data from 1991 to 2012, again proving the positive correlation between economic growth and financial market movements. Like the previous research, Levine and Zervos (1996) proved that in a sample of 46 countries, there is a positive link between stock market development and economic growth. Finally, Boubakari and Jin (2010) analyzed the data set from 5 countries (Belgium, France, the UK, Portugal, and the Netherlands) for 13 years and the causality between the stock market and economic growth. The results indicate a positive relationship between these two variables in some countries.

2. DATA AND METHODOLOGY

The data set is obtained from the IMF database (https://data.worldbank.org) and the official data generator of The Global Economy (https://theglobaleconomy.com). Essential data refers to the yearly market capitalization and GDP of 56 countries from 2016 to 2020. Data were analyzed using the

statistical software SPSS (IBM). The analysis tests two models: (1) the correlation between average market capitalization and average nominal GDP for 2016-2020, and (2) the average market capitalization for every listed company and the average GDP per capita for the same period. Before conducting our analysis, we organized the data for each country into 20 columns, and each of the columns represents an input variable. The input variables are described in Table 1.

Table 1. Input variables

Variable name	Variable description
market_cap_plc_2016 -2020	Market capitalization per listed company
average_market_cap	Average market capitalization
average_no_lc	Average number of listed companies
average_market_cap_plc	Average market capitalization per listed company
average_gdp	Average nominal GDP
average_gdp_pc	Average GDP per capita

Correlation and linear regression were used to understand and model the relationship between the level of financial market development and economic growth. To diagnose the impact of the financial market development on economic growth, after the test for linear regression, the paper continues with panel regression on average total market capitalization and average market capitalization of different listed companies as an independent variable. In contrast, as dependent variables, the paper defines the average total GDP and GDP per capita, respectively.

According to the data set, the average market capitalization in the analyzed period is 1.201 billion us dollars, but this parameter has a relatively high standard deviation of 4.522 billion us dollars. A high standard deviation is expected since the countries in the sample have many different economic and other characteristics; thus, they have different market capitalization levels. However, since the sample represents around 29% of the population (46 countries in the sample and 195 countries in the world), a standard deviation of the average is 7,5 times smaller, reaching around 604 billion us dollars.

Market capitalization value depends on the number of listed companies in a particular capital market. Since this number differs among countries, anal-

ysis and interpretation of the above statistics may be more relevant to market development parameters, such as market capitalization per listed company.

Table 2. Descriptive statistics of market capitalization (2016-2020), in billion us dollars

		2016	2017	2018	2019	2020	Average 2016-2020
N	Valid	56	56	56	56	56	56
	Missing	0	0	0	0	0	0
Mean		984.8752	1194.712	1055.221	1258.634	1512.326	1201.1537
Std. Error of Mean		502.1468	591.5979	552.6255	621.8612	755.8586	604.26282
Median		91.05	113.905	110.325	132.57	132.14	122.112
Std. Deviation		3757.723	4427.113	4135.47	4653.583	5656.328	4521.88888
Minimum		2.34	2.82	2.4	2.22	1.87	2.44
Maximum		27352.2	32120.7	30436.31	33890.83	40719.66	32903.94

Source: Author's calculations.

The lowest average market capitalization per listed company is 0,0402 billion us dollars (around 40 million), and the highest market capitalization is 7,64 billion dollars. The lowest average value is in Cyprus, and the highest is in the USA. The mean value is 1,245 billion, and the standard deviation is 1,724 billion us dollars.

The lowest GDP is seen in Barbados, with a total of 4,37 billion dollars in 2020, and the highest GDP value is observed in the USA, with 21.433 billion us dollars in 2019. The lowest average value of this parameter is 4,9 billion in Barbados, and the highest average value is 20.254 billion in the USA. The mean is 1.097,57 billion us dollars, and the standard deviation is 3.195,45 billion dollars.

Table 3. Descriptive statistics of countries' nominal GDP (2016-2020), in billion us dollars

		2016	2017	2018	2019	2020	Average 2016-2020
N	Valid	56	56	56	56	56	56
N	Missing	0	0	0	0	0	0
Mean		994.3452	1067.628	1137.099	1162.738	1126.032	1097.5685
Std. Error of Mean		385.4741	407.8016	438.4046	453.8036	450.5353	427.01006
Median		266.63	263.37	284.2	290.975	271.255	285.6
Std. Deviation		2884.624	3051.708	3280.719	3395.955	3371.498	3195.45067
Minimum		4.83	4.98	5.09	5.21	4.37	4.9
Maximum		18745.08	19542.98	20611.86	21433.22	20936.6	20253.95

Source: Author's calculations.

Table 4. Descriptive statistics of countries' GDP per capita (2016-2020), in US dollars

		2016	2017	2018	2019	2020	Average 2016-2020
N	Valid	56	56	56	56	56	56
	Missing	0	0	0	0	0	0
Mean		19393.93	20503.4	21781.04	21522.76	20282.25	20696.677
Std. Error of Mean		2908.509	3016.078	3233.611	3177.595	3118.905	3088.1994
Median		9749.705	10655	11332.51	11455.93	10451.1	10560.769
Std. Deviation		21765.29	22570.26	24198.13	23778.95	23339.74	23109.968
Minimum		1401.56	1563.77	1698.13	1855.69	1900.71	1697.59
Maximum		104278.4	107361.3	116597.3	114685.2	115873.6	111759.15

Source: Author's calculations.

When analyzing the GDP per capita, Bangladesh has the lowest level, with 1.401 us dollars in 2016, and the highest level is in Luxemburg, with 116.597 us dollars per capita in 2018. On average, GDP per capita in the period of 2016-2020 in the sample is 20.696 us dollars, and its standard deviation is 23.109 us dollars.

3. RESULTS

Descriptive statistics suggest that the countries with higher stock market capitalization tend to have higher GDP. Furthermore, this may indicate a positive link between these two parameters. The paper tests the following two hypotheses:

H_o: There is no link between market development and economic growth, i. e. $r \leq 0$.

H_1: There is a positive link between market development and economic growth, i. e. $r > 0$.

The confidence level α is set to 0,05.

The results are displayed in the following order: First, the authors present the correlation between the two empirical research models. Second, the linear regression between the variables in the two models is presented, and third, the paper presents the results of Panel regression for the two models.

Model 1: Dependent variable is defined by the average GDP, and the independent variable is the average market capitalization.

Model 2: Dependent variable is the average GDP per capita, and the independent is the average market capitalization per listed company.

3.1 Correlation test. The results of the analysis done by using statistical software confirm the assumption of a positive correlation between market capitalization and the nominal GDP, with a coefficient of 0,93 in model 1. Using the correlation coefficients, the authors calculate the coefficient of determination R^2. In our case, the value of the determination coefficient is 0,8656, meaning that the stock market capitalization can explain more than 86% of the variations in GDP. The observed p-value is 0, and with a confidence level set at 0,05, the analysis can conclude that the coefficient of correlation is significant. Therefore, continuing with a rejection of H0 and H_1 is accepted, which states that stock market capitalization positively correlates with economic growth.

Table 5. Correlation results

	Model 1		Model 2	
	Average market capitalization	Average GDP	Average market capitalization per listed company	Average GDP per capita
Pearson Correlation	1	0,93039**	1	0,48916**
Sig. (1-tailed)		0,000		0,000
N	56	56	56	56
Pearson Correlation	0,93039**	1	0,48916**	1
Sig. (1-tailed)	0,000		0,000	
N	56	56	56	56
	**Correlation is significant at the 0.01 level (1-tailed).			

Source: Author's calculations.

The results of the analysis of model 2, where the paper tests the correlation between GDP per capita and stock market capitalization per listed company, are similar to the ones in model 1. Here, the coefficient is 0,489, the observed p-value is 0, and the H_0 is rejected, thus accepting that the GDP per capita and market capitalization per listed company is positive and significant. However, the link may need to be revised since the coefficient of determination is 0,2393, meaning that the capitalization per listed company explains only 24% of the movements of GDP per capita. It is still respectable, but 3,62 times lower than that in model 1.

3.2 Linear regression - Regression models and Model diagnostics. *Regression models:* A strong positive linear correlation between market development level and GDP means that analysts can model the impact market development has on economic growth. To that extent, further, the authors conduct regression analysis between the two already explained variables in this paper.

Using the results of the analysis, we can generate the following function:
The results show that with a confidence level of 95%, the regression coefficient is between 0,587 and 0,728 in model 1, and 3.367,163 and 9.746,704 in model 2.

Table 6. Linear regression

B	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
	Std. Error	Beta				Lower Bound	Upper Bound
M 1 (Constant)	307,846	163,552		1,882	0,065	(20,056)	635,749
Market capitalization (billion USD)	0,657	0,035	0,930	18,651	0,00	0,587	0,728
M 2 (Constant)	12530,481	3363,875		3,725	0,00	5786,317	19274,645
Market capitalization per listed company (billion USD)	6556,933	1591,004	,489	4,121	0,00	3367,163	9746,704

Source: Author's calculations.

Model diagnostics: To test the significance and the strength of the linear regression models, for each of the 2 models, we test the following assumptions:

1. The relationship between the outcomes and predictors is (approximately) linear.
2. The mean of the residuals is zero.
3. The residuals have constant variance.
4. The residuals are uncorrelated.
5. The residuals are normally distributed, or the sample size is adequate to rely on a large sample theory.

Graph 1. Model fit line
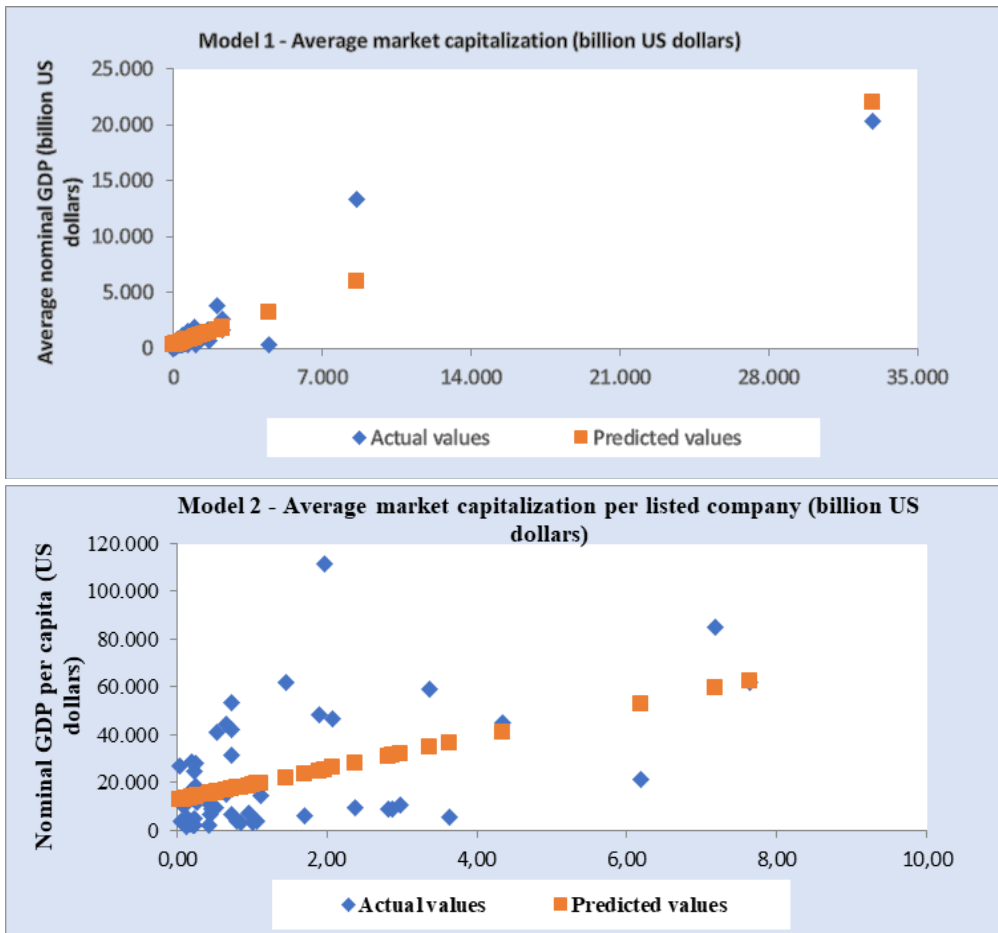
Source: Author's calculations.

As can be seen from Graph 1, the linearity between the outcomes and predictors in Model 1 is stronger than the linearity in Model 2. Again, it is expected given that the linear correlation coefficient for the first model is 0,930, while the second model is 0,489. In the first model, two observations visually have relatively large residuals and three leverage points (including the two outliers). However, these observations cannot be considered influential since they have very little influence on the slope of the line. The linear relationship between the variables in Model 2 is much weaker than the relationship; thus, this model is less reliable than Model 1.

In both models, the mean of the residuals is 0, and their variance is relatively constant. 54 out of the 56 standard residuals in Model 1 and 55 out of the 56 residuals in Model 2 have a standardized value between -2 and 2. However, we still must be cautious with both models since two residuals in Model 1 and one residual in Model 2 have a standardized value less than -2 or greater than 2.

Table 7. Residual Statistics

Model 1	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	309,4505	21941,1895	1097,5685	2973,00492	56
Residual	(2905,66406)	7314,72852	0,00000	1171,38668	56
Std. Predicted Value	(0,265)	7,011	0,000	1,000	56
Std. Residual	(2,458)	6,187	0,000	0,991	56
Model 2					
Predicted Value	12794,1104	62602,1172	20696,6770	11304,37089	56
Residual	(31684,94141)	86354,39844	0,00000	20156,43406	56
Std. Predicted Value	(0,699)	3,707	0,000	1,000	56
Std. Residual	(1,558)	4,245	0,000	0,991	56

Source: Author's calculations.

To test if the residuals are correlated (assumption 4), we used the Durbin-Watson test, and the test results are in Table 10. The observed Durbin-Watson test statistic for Model 1 is 2,843, and the observed statistic for Model 2 is 2,025. This means that in Model 1, residuals have a negative

autocorrelation. The value of 2,843 is between 1 and 3, and Field (2009) suggests that values under one or more than 3 are a cause for concern. The value of 2,025 for Model 2 means that there is non-significant negative autocorrelation in residuals.

3. 3. Panel data – results and discussion. Since the development level of the financial market and the nominal GDP are time-varying variables, we also study (and model) their relationship using the fixed effects model. Furthermore, since the individual cases are measured over time, they serve as their controls with this model.

Table 8: Panel data analysis: ANOVA, Tests of Between-Subjects Effects

Model 1 Dependent variable: Nominal GDP (billion US dollars)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2811366512,754[a]	56	50202973.44	1021.066	0	0.996
Intercept	56697789.75	1	56697789.75	1153.162	0	0.838
market_cap	3367637.767	1	3367637.767	68.494	0	0.235
Country	409391991.6	55	7443490.757	151.391	0	0.974
Error	10964290.8	223	49167.223			
Total	3159634633	280				
Corrected Total	2822330804	279				

a. R Squared = ,996 (Adjusted R Squared = ,995)

Model 2 - Dependent variable: GDP per capita (US dollars)

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	146870189527,650[a]	56	2622681956	861.63	0	0.995
Intercept	27406695410.985	1	27406695411	9003.923	0	0.976
market_cap_plc	764889.787	1	764889.787	0.251	0.617	0.001
country	116443509654.716	55	2117154721	695.549	0	0.994
Error	678781114.110	223	3043861.498			
Total	267487653103.679	280				
Corrected Total	147548970641.761	279				

a. R Squared = ,995 (Adjusted R Squared = ,994)

Source: Author's calculations.

To do the fixed effects panel regression, we transformed the data into a long format (for the simple regression analysis, the data was in a comprehensive form). In addition, because we were dealing with a relatively large number of cases (56 countries), instead of using the dummy variable approach, we used the univariate general linear model approach offered by SPSS.

Considering that the variable "country" is the case identifier variable, we used this same variable as the fixed factor. In contrast, given that the market capitalization and the market capitalization per listed company are the time-varying predictors, we used them as covariates in model 1 and model 2, respectively.

The value of the coefficient of determination is 0,996, and since the level of significance is 0, this means that the panel data analysis is better than the linear regression. Results for model 1 suggest that the value of the coefficient is between 0,122 and 0,198, with a current value of 0,16, and a p-value of 0, giving a statistically significant result.

In model 2, the coefficient of determination is 0,995, which explains 99,5% of the variations of GDP per capita in country i and time t. Further analysis will show us that, with the elimination of the time factor, the coefficient of determination in panel data is different from the same coefficient in linear regression. This means that in the linear regression model the authors were analyzing the average values. Including the time series in the analysis upgrades the general regression model by including the different period specifics and the fixed factors for other countries. In model 2, even though the panel data analysis explains 99,5% of the variations in the dependent variable, the market capitalization per listed company independently explains only 0,1% of the variations in the GDP per capita. This is also statistically nonsignificant, with a p-value more significant than 0,05, reaching 0,617.

Conclusion

Research results suggest that the level of capital market development gives a reliable estimation of the country's economic growth. There is a strong positive and statistically significant relationship between the level of capital market development and nominal GDP, which means that the movement of one variable in a particular direction corresponds with the movement of the other variable in the same order. However, the regression model in which the nominal GDP is expressed as a linear function of the market capitalization has better predictability than the model in which the GDP per capita is described

as a linear function of the market capitalization per listed company. One possible reason for such a conclusion is the difference in listed companies among different countries.

A high positive correlation between the level of capital market development and nominal GDP should be granted as something other than causality between these two variables. Instead, the positive correlation does not necessarily mean that the reason for a high level of economic growth is the level of capital market development and vice versa – that the reason for the low level of economic growth is related to the low level of capital market development.

Each national economy has interconnected variables, and finding the reason for the particular behavior of a specific variable requires many different approaches. In this paper, the authors try to find the relationship between two country-specific and rather aggregate variables with two different estimation techniques, meaning that further research should test the relation between its components or between them and other different variables with varying estimation processes.

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COMPONENTS AND BENEFITS OF BUSINESS MODEL INNOVATION SUPPORTED BY EMPIRICAL EVIDENCE FROM THE IT INDUSTRY IN NORTH MACEDONIA

Abstract: We live in a rapidly changing environment where every company faces challenges to keep up with the changes. In recent years, there has been a significant shift in the way businesses operate, driven by advances in technology, changes in consumer behavior, and global economic trends. As a result, traditional business models have become increasingly outdated and companies that do not adjust to changing market conditions run the risk of losing their market position. Business model innovation (BMI) is the primary focus of managers on the path to achieving a company's competitive advantage, growth, and increased revenue. This scientific paper emphasizes the importance of BMI as a critical driver of progress and competitiveness for companies in the 21st century.

The primary objective of the paper is to identify the components of BMI and explore its potential benefits for companies. The study contributes to the body of knowledge on the topic by exploring the potential benefits of BMI in general with an accent on Macedonian IT companies and offering insights into how companies in emerging markets can leverage BMI to compete successfully in the global marketplace. By examining the experiences of these companies, the paper highlights the advantages and opportunities associated with the implementation of BMI.

Keywords: Business Model Innovation, Business Model, Innovation Management

JEL Classification: O10, O21, M15

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Introduction:

Companies have been in existence for centuries, yet every decade introduces new changes in the corporate and business world. The 20th century, in particular, witnessed significant changes in business models and their evolution, especially in the last 50 years. The need for the development of business model innovation (BMI) arose progressively due to the ever-increasing competition, the need for marketing, the evolving demands of consumers, and the emergence of new forces that put pressure on companies.[1]

The traditional business models, as well as innovative approaches, are facing changes in order to keep up with current business trends and developments. These dramatic changes are forcing company managers to reassess their core goals and focus on creating new ones, redefine their markets, restructure their internal forms of management, and change their business models. The most successful companies of the XXI century have already accepted the fact that innovation is the main driver of the company's progress and that the ability to continuously innovate has become a major source of competitive advantage.[2]

BMI has a comprehensive use and therefore it is valuable to be considered from the perspective of each industry and category. Business models don't apply only to companies but also to non-governmental organizations. schools, social enterprises, and government departments. [3]

This research highlights the critical role of business model innovation in the company's success. The working hypothesis of this paper is that companies that embrace innovation and continuously develop their business models are better positioned to achieve long-term success and competitive advantage and thrive in the dynamic business environment today.

The subject of this research is to examine the importance of BMI use for companies and the advantages it provides. The primary objective of this paper is to identify the components of business model innovation and explore its potential benefits for companies, with a particular focus on Macedonian IT

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[1]   Hague, Paul, The Business Models Handbook, Templates, Theory and Case Studies, Kogan Page Limited, UK, 2019, стр. 1-2
[2]   Kuratko, F. Donald, Goldsby, G. Michael, Hornsby, S. Jeffrey, Corporate Innovation, Disruptive thinking in Organizations, Routledge Taylor & Francis Group, New York and London, 2019, стр.3
[3]   Brem, Alexander, Viardot, Eric, Revolution of Innovation Management, V2, Internationalization and Business Models, Palgrave Macmillan, 2017, p.108

companies which is particularly relevant as it offers insights into how firms in emerging markets can leverage BMI to gain a competitive edge in the global marketplace. By examining the experiences of these companies, this study provides valuable insights into the advantages and opportunities associated with the implementation of BMI.

1. COMPONENTS OF BUSINESS MODEL INNOVATION

Business model innovation is a powerful tool that can increase market value by attracting new customers or empowering existing ones to buy more. By definition BMI "does not require the discovery of new products or services, or new technology, but rather the redefinition of existing products and services and how these are used to create value."[4] From that point, BMI often refers to internal changes that are invisible to the competitors and is very difficult to be copied. That is the advantage that comes with BMI that the company can use to build its competitive advantage.[5]

Each BMI has four main components and value proposition is one of the key components. A change to any one of the four affects all the others and the system as a whole. BMI requires modifying at least two of them. The Business Model Navigator graphically demonstrates four elements in a magic triangle, using four simple questions that help managers easily design the company's innovative business model. Those questions begin with the following question words: WHO, WHAT, HOW, and WHY. Using these four question words, the company should define WHO are the target customers, WHAT is offered to them, HOW the product/service is produced and HOW the value proposition is created, and WHY all these components generate profit for the company. Specifically, WHO and WHAT refer to the external aspects, while HOW and WHY refer to the internal aspects related to the company's business model. [6]

The customer component. The studies related to the customer component show that significant innovations are not only developed using internal

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[4]   Markides, C., Disruptive innovation: in need of a better theory. Journal of Product Innovation Management, 2006, 23, 19–25; (2004) Fast Second: How Smart Companies Bypass Radical Innovation to Enter and Dominate, New Markets, Jossey Bass, San Francisco во Tidd, Joe, Bessant, John, Managing Innovation, Integrating Technological, Market and Organizational Change, 4th Edition, John Wiley and Sons Ltd, England, 2009, p. 207

[5]   Girota Karan, Netessine Serguei, Four Paths to Business Model Innovation, Harvard Business Review, Jul-aug 2014

[6]   Grassmann, Oliver, Frankenberger, Karolin, Csik, Michaela, The Business Model Navigator, 55 Models That Will Revolutionize Your Business, Pearson, India, 2015, p. 6-10

company factors, although there is a trend of close cooperation with external factors affecting business models like customers, partners, and competitors. it should be kept in mind that the focus should remain not only on current customers but also on potential and future customers. [7]

The value proposition component. A value proposition outlines what a company does and how it solves customer problems in a unique way. The value proposition focuses on the customers and how the product or service meets their needs, requirements, or desires. There are external factors that help to create the value proposition component. This group of external factors represents the BMI ecosystem and includes suppliers, distributors, and other service providers, as well as factors with indirect influence, such as researchers and consultants. [8]

The value chain component - resources and processes. Resources like people, technology, products, equipment, space, channels owned by the company, as well as the brand itself, are considered key resources. Another part of this component are processes. Production, development, recruitment and training of employees, planning, budgeting, and sales, as well as the approach and implementation of rules, regulations, and norms, are considered key processes. The company's success relies on the coordination and integration of all resources and processes with the same goal of creating an innovative value proposition.[9]

The profit component. The profit mechanism makes clear what makes a business model financially viable by addressing elements like cost structures and revenue-generating methods. BMI requires identifying new ways to generate revenue. This may involve identifying new customer segments, developing new products or services, or finding alternative ways to monetize existing offerings. The company should provide a quality product or service at a reasonable price that will satisfy the customer's needs and bring profit to the company.[10]

Designing a business model innovation involves four key components that are interdependent and work together to create a desired value proposition for customers. To achieve success, managers must have the ability to adapt,

[7]   Ibid 33-37

[8]   Ibid 39-40

[9]   Johnson, Mark W., Christensen, Clayton M., Kagermann, Henning, Reinventing the Business Model, Harvard Business Review Press, Boston, Massachusetts, 2019

[10]   Grassmann, Oliver, Frankenberger, Karolin, Csik, Michaela, The Business Model Navigator, 55 Models That Will Revolutionize Your Business, Pearson, India, 2015, p. 6

combine, and think creatively in order to effectively develop a unique and effective value proposition. By doing so, they can create a competitive advantage that distinguishes their business from others in the market.

2. BENEFITS OF BUSINESS MODEL INNOVATION

Several research studies have analyzed the transformation of the traditional innovative approach, which typically focuses on product and process innovation, into the development of BMI as a new approach. These studies have confirmed the benefits that BMI offers, indicating that it has the potential to significantly enhance a company's overall competitiveness and long-term success. According to the study, during the period of five years, the companies gained 6% more profit than those that did not implement BMI. Other research shows that BMI is the main success driver that can facilitate sustainable innovations. More than 60% of the company's profit growth resulted from BMI use. Therefore, the trend that the competitive market enforces is based on the BMI and the ability of companies to implement it. Only those companies that use the model will differentiate themselves from the competition. [11]

A successful business model innovation can result in increased revenue and profitability for a company. By finding new ways to generate revenue, reduce costs, and increase efficiency, companies can increase their profitability and make new investments. The power of BMI is evident and confirmed, especially in retail as demonstrated by the following:

"BMI has reshaped entire industries, redistributing billions of dollars of value. In retail, discounters that, like Target, Walmart, and Amazon, entered the market with innovative business models accounted for 93 percent of the total industry market capitalization by 2016, having seized more than $300 billion of value from their old-line competitors".

Another research from the same author shows that more than half of the 39 companies that used BMI and that were funded after 1984 are part of the Fortune 500 list of companies in the period between 2006 and 2016. [12] Both studies indicate that the design of BMI ensures a company's profit increase.

By embracing BMI, companies can develop a culture of agility and adaptability. This strategic flexibility can help them respond more quickly to

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[11]   Grassmann, Oliver, Frankenberger, Karolin, Csik, Michaela, The Business Model Navigator, 55 Models That Will Revolutionize Your Business, Pearson, India, 2015, p.4-6

[12]   Johnson, W.Mark, Reinvent Your Business Model, How to Seize the White Space for Transformative Growth, Harvard Business Review Press, Boston, Massachusetts, 2018, p. 20

changes in the market and stay ahead of competitors. Business model innovators indicate strategic flexibility as one of the major benefits of BMI.[13] Other studies show that as a result of BMI and strategic flexibility, companies with a better absorptive capacity or ability to use external knowledge are superior in the sense of sustainable competitive advantage. In this context, companies are focusing on the acquisition and assimilation of external knowledge as a number one priority, apart from knowledge transformation and exploitation, in order to gain a competitive advantage. Logically, redesign, recombination, adaptation, and integration of knowledge in the company's business model are crucial elements for the creation of BMI and strategic flexibility.[14]

According to studies, a well-executed BMI can create a significant competitive advantage for a company. By introducing new products or services, changing the pricing structure, or redefining target customers, a company can differentiate itself from competitors and attract new customers. Managers' awareness of the importance of IBM began to grow after 2000. In fact, the research conducted by the Economist Intelligence Unit in 2005 shows that out of 4000 surveyed managers, 54% favor the implementation of a new business model rather than the development of a new product or service as a method of achieving competitive advantage.[15]

Business model innovation can help companies enter new markets, expand their end users, and grow their businesses. By exploring new sources of revenue and business models, companies can create opportunities for growth and expansion. Another survey shows that from 1500 companies, 1400 had implemented BMI in some part of their growth strategy process.[16]

It is important to mention the survey result that 37% of European SMEs are innovating their BM and use BMI as a tool for improvement. The survey shows that BMI affects almost all components of the company's business mod-

[13] Pohle, G., Chapman, M., IBM's global CEO report 2006: business model innovation matters. Strategy & Leadership, 2006, p. 34–40.

[14] Miroshnychenko, Ivan, Strobl, Andreas, Matzler, Kurt, De Massis, Alfredo, Absorptive capacity, strategic flexibility, and business model innovation: Empirical evidence from Italian SMEs, Elsevier, Journal of Business Research, Volume 130, June 2021, P. 10-11, 670-682

[15] Amit, Raphael, Zott, Christoph, Creating Value Through Business Model Innovation, MIT Sloan Magazine https://sloanreview.mit.edu/, Март, 2012

[16] Lindgardt, Zhenya, Ayers Margaret, Driving Growth with Business Model Innovation, BCG [Boston Consulting Group] Perspectives, October 8, 2014, bcgperspectives.com/content/articles/growth_innovation_ driving_growth_business_model_innovation in Johnson, W.Mark, Reinvent Your Business Model, How to Seize the White Space for Transformative Growth, Harvard Business Review Press, Boston, Massachusetts, 2018, p. 20

el and depends on the strategic aim of the companies if they are profit-seekers, growth-oriented, or start-ups.[17]

Only a few studies have been conducted on the advantages of BMI for organizational performance; this may be because it is challenging to establish a relationship between BMI and performance.[18] In conclusion, business model innovation offers numerous benefits to companies including profit growth, increased revenue, competitive advantage, strategy flexibility, sustainable benefits, company growth, and expansion.

3. USE OF BMI BY IT COMPANIES IN NORTH MACEDONIA

The following data presents the results of a survey conducted on the implementation of BMI in the IT industry in North Macedonia. [19] In addition, this paper presents selected survey results relevant to the topic, such as the usage of BMI in North Macedonia, its advantages for companies, new benefits, HR changes, types of BMI used and the benefits from BMI.

The primary objective of the survey is to analyze and assess the extent to which innovative business models are being implemented in N. Macedonia and the level of awareness among companies regarding the significance of business model innovation and the potential benefits they can derive from it. The survey was conducted online by distributing a questionnaire to respondents. The questionnaire was divided into two groups of questions. The first group consisted of general questions that aimed to gather the main characteristics of the companies. The second group, focused on determining the relationship between the implementation of BMI and its implications. In total, 42 IT companies answered the questionnaire.

In terms of the diversity of survey participants, the majority of companies (78.5%) have been operating in their respective markets for over six years, from which a significant proportion of 45.2% has been operating in the market for over a decade. Additionally, 88% of respondents indicated that they operate

[17] Heikkila, Marikka, Bouwman, Harry, Business Model Innovation in European SMEs – Descriptive analysis of quantitative survey and case survey data, Bled eConference Digital Transformation-Meeting the Challenges, Conference paper, June, 2018, p. 14,15

[18] Foss, Nikolai J., Saebi, Tina, Fifteen Years of Research on Business Model Innovation: How Far Have We Come and Where Should We Go?, Journal of Management, vol. 43, 2017, p. 200-227, p.13

[19] Krstevska, Bojana, Business model innovation as a key tool of the contemporary innovation management, Institute of Economics, University Ss. Cyril and Methodius, Skopje, The Republic of North Macedonia, 2022
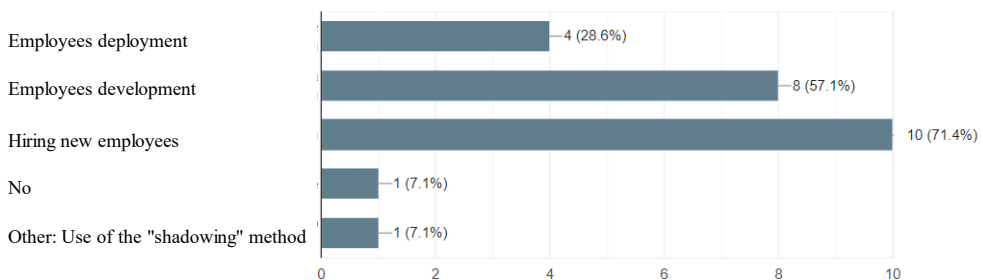
either exclusively in the international market or both in domestic and international markets. Furthermore, the majority of the companies (64.3%) belong to the Software and IT services sector. Based on the survey results, 26.2% of the companies are micro and medium-sized companies, 33.3% are small companies, and only 14.3% are large companies.

The survey findings indicate that BMI has been applied by 33.3% of the sample (14 companies), while the remaining 66.7% (28 companies) have not implemented BMI. It should be emphasized that these outcomes solely relate to the participating companies and can not be generalized to the wider business segment.

According to the survey results, the use of IBM is not limited to the development of new products alone. The answers to the question "What are the additional benefits that consumers receive from the implementation of BMI?" shows that 92.9% of respondents created new services that offer additional benefits to their consumers. Out of this group, 46% of companies reported that they created the benefits of both new products and services.

Moreover, changes in HR may be significantly impacted by BMI implementation. Only one company reported that they did not require any changes in their HR practices. Changes are mostly recognized in hiring new employees and investing in employee training and development (71.4% and 57.1%, respectively).

Did the implementation of BMI require changes in HR?

Employees deployment	4 (28.6%)
Employees development	8 (57.1%)
Hiring new employees	10 (71.4%)
No	1 (7.1%)
Other: Use of the "shadowing" method	1 (7.1%)

The next question refers to the classification of BMI based on Schaltegger's[20] categorization. The categorization includes four types of BMI: adjustment, adoption, improvement, and redesigning of the model. Adjustment refers to minor changes made to the business model, often to only one element.

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[20]   Marolt, Marjeta, Lenart, Gregor, Maletic, Damjan, Borshtinar, Mirjana K., Pucihar, Andreja, Business Model Innovation: Insights from a Multiple Case Study of Slovenian SMEs, August 2016, https://www.researchgate.net/publication/307546403

Adoption refers to changes made according to the competition. Improvement of the business model includes changes in almost all elements of the model, while redesigning the model implies a complete change of the offered value, offering a new product, service, or system.

What is your company's BMI (Business Model Innovation) type?
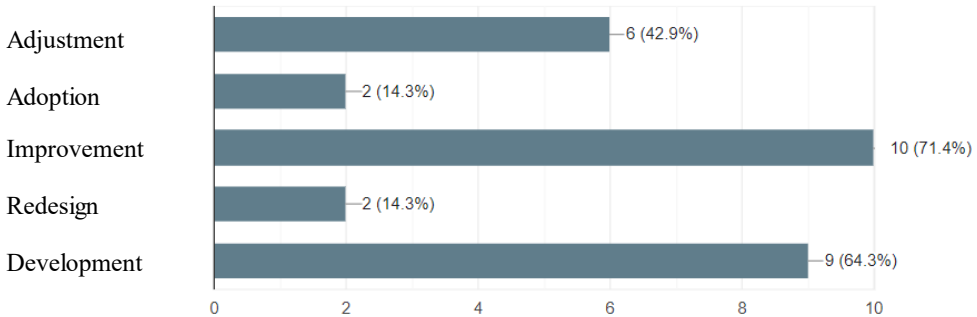
According to the chart, it is evident that only a small amount of companies have applied the adoption of a new business model or redesigned their business model, with a percentage of 14.3%. Meanwhile, the majority of the companies have selected improvement or development of their business models, with a percentage of 71.4% and 64.3%, respectively.

A survey was conducted to examine the impact of implementing BMI as a tool for improvement in companies in N. Macedonia. The findings revealed that 71.4% of the companies reported improved operational performance, including efficiency and effectiveness, as the primary benefit of BMI implementation, compared to other benefits. Moreover, 64.3% of the companies considered new customer attraction as a key benefit. Additionally, an equal number of companies (57.1%) identified increased strategic flexibility, employee productivity, and profit as important BMI benefits. Furthermore, 50% of the companies recognized the competitive advantage as a benefit of BMI use.

What are the benefits of BMI?
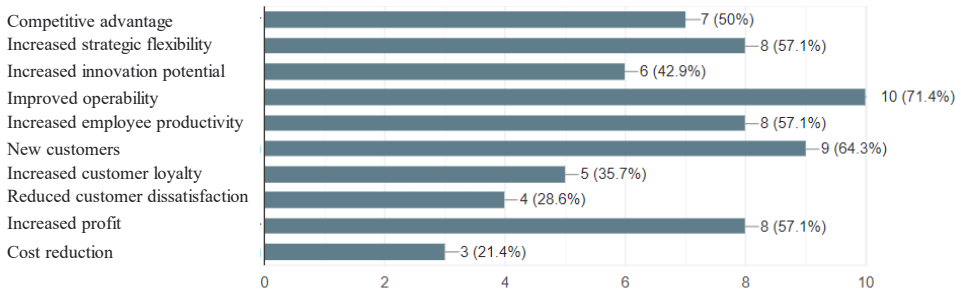
Each company provided multiple responses to the question, highlighting three to four benefits resulting from the implementation of BMI. It is crucial to note that none of these companies have reported any negative effects of BMI implementation to date.

In conclusion, based on the findings mentioned above, it can be inferred that the research conducted on the benefits of BMI implementation in North Macedonian companies aligns with the results from previous quantitative research on the topic.

Conclusion:

In summary, business model innovation is a powerful tool that can help companies gain a sustainable competitive advantage, strategy flexibility, increase profitability, and respond quickly to changes in the market. Through BMI, companies can find new ways to generate revenue, reduce costs, and increase efficiency, which can lead to increased profitability and new investments.

The success of a BMI depends on the company's ability to create and deliver value that meets the needs of its customers. The survey results show that companies have effectively identified distinctive value propositions that align with their customers' needs and desires. This highlights a strong connection between the value proposition component and the implementation of BMI, as companies that have used BMI have reported an enhanced ability to attract new customers (64.3%). The resources and processes incorporated in the value chain component play a critical role in designing an impactful value proposition for customers. According to the survey findings, the implementation of BMI requires modifications in HR practices, such as recruiting new staff (71.4%) and investing in employee training and development (57.1), emphasizing the need for adequate resources and processes to generate a unique

175

value proposition. The survey results demonstrate another positive correlation between BMI implementation and the profit component. This suggests that the successful implementation of BMI requires the identification of new revenue streams, and companies that have effectively implemented BMI have successfully identified these opportunities, resulting in improved profitability (57.1%).

In conclusion, the survey results conducted in IT companies from N. Macedonia show that BMI has been implemented by 33,3% of participating companies, while the remaining 66,7% have not yet adopted it. The survey findings provide empirical evidence to support this paper hypothesis. Specifically, was found that the implementation of BMI has several benefits for the companies surveyed. The majority of the companies (71.4%) reported improved operational performance, including efficiency and effectiveness, 57.1% identified increased strategic flexibility and employee productivity, as important BMI benefits. Moreover, half of the companies recognized the competitive advantage as a benefit of BMI use.

Furthermore, the finding that 33.3% of companies used BMI demonstrates that North Macedonia is not falling behind global trends and modern advancements in the area of innovation management.

The findings of this paper demonstrate that companies that do not implement BMI may struggle to differentiate themselves from their competition and may miss out on potential growth opportunities.

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ANNEX

Questionnaire

A: Basic data
1. How long has the company been on the market?
   o To 5 y
   o From 6 to 10 y
   o More than 10 y

2. According to the number of employees, which category does the firm belong to?

- o Micro (from 1 to 9)
- o Small (from 10 to 49)
- o Medium (from 50 to 249)
- o Large (more than 250)

3. What is the ICT subsegment of the company?

- o Telecommunication
- o Software and IT services
- o Other IT services _____
- o ICT Trade
- o ICT Manufacturing

4. What is the primary market where the company sells its products/services?

- o National
- o International
- o Both

5. How do you evaluate the company's performance? (in terms of income)

- o 1 (lowest)
- o 2
- o 3
- o 4
- o 5 (highest)

B) Implementation of Business model innovation (BMI)

1. Which BMI are you familiar with?

_____

2. Has the company implemented any innovative business models so far?

- o Yes
- o No

3. What are the reasons for using BMI?
- o Internal opportunity
- o External opportunity
- o Internal threat
- o External threat

4. a) Did the company change the market area by BMI implementation?
- o No, didn't change the market
- o Yes, expanded to a new market
- o Yes, expanded to the international market for the first time

4. b) What market segment did the company operate by BMI implementation?
- o Business market
- o Customer market
- o Governmental market

5. What is the new benefit for customers?
- o Product
- o Service
- o Other _____

6. a) Did the company make changes in the use of resources by BMI implementation?
- o No
- o Yes, in-house resources
- o Yes, outsourcing

6. b) Did the implementation of BMI require changes in HR?
- o Employe deployment
- o Employee development
- o Hiring new employees
- o No
- o Other _____

6. c) What IT functions have been improved by BMI implementation?
- o IT as a product/service enabler
- o IT as a promotion/sales channel
- o Other _____

7. What is your company's BMI type?
- o Adjustment
- o Adoption
- o Improvement
- o Redesign
- o Development
- o Other _____

8. What other tools did you use for the development of BMI?
- o Canvas model
- o Lean Canvas model
- o SWOT analysis
- o PEST analysis
- o Other _____

9. What tools did the company use for market research?
- o Phone and online surveys
- o Interviews
- o Focus groups
- o Panel discussions
- o Other _____

10. What are the benefits of BMI?
- o Competitive advantage
- o Increased strategic flexibility
- o Increased innovation potential
- o Improved operability (efficiency and effectiveness)
- o Increased employee productivity
- o New customers
- o Increased consumer loyalty

- o Reduction of consumer dissatisfaction
- o Increased profit
- o Cost reduction
- o Other _____

11. Does the use of BMI have any negative effects on the company?
- o No
- o Yes

Please describe the negative effects.

_____

12. Is the development of BMI included in the company's innovation budget?
- o No
- o Yes, up to 10%
- o Yes, from 11% to 30%
- o Yes, more than 30%
- o There is a separate budget for BMI development

PETAR BOGOJESKI[*1]

CONVERGENCE OF THE MACEDONIAN PUBLIC ADMINISTRATION WITH EUROPEAN STANDARDS

Abstract: Having an effective and efficient public administration is seen as critical for successful economic growth and good governance. Therefore, interest in public administration reform has grown substantially. Moreover, for the Republic of Macedonia, it is essential for the effective accession dialogue with the European Union, which depends on achieving the European standards for the public administration.

Thus, for almost three decades, the Republic of Macedonia made continuous reforms in public administration, but the state of public administration is far from a satisfactory level and truly harmonized with European standards. The paper researches the argument for that, starting with an analysis of the European Commission's Progress Reports of the Republic of Macedonia for part of the public administration, then continue with a review of current measures and policies for public administration in the Republic of Macedonia and finished with an assessment of conditions and need for promotion of key areas in the public administration in the Republic of Macedonia.

Keywords: public administration reform, European standards, public goods and services, good governance, accountability
JEL Classification: H11, H83

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1. **Public administration reform in the European Commission's Progress Reports of Republic of Macedonia**

Almost three decades in the Republic of Macedonia, a debate is constant about the state of the public administration and for its reform, development, and advancement. At the same time, regular (annual) qualitative evaluation and evaluation of the work of the public administration of the Republic of Macedonia is made by the European Commission in its annual reports on the progress of the Republic of Macedonia in the Euro-integration process. Below is a retrospective review of the European Commission's reports, focusing on the assessments and remarks regarding the reforms of the public administration in the Republic of Macedonia in the last eight years (2010 - 2016), the period before the change of the Government:

- In 2010: **in regards to the most of the legal framework, partial progress has been achieved**. Accountability, both political and functional, remains fragmented for public administration management. The Law on public servants was brought to introduce provisions similar to the provisions of the Law on civil servants. Due to budgetary constraints, the training plan on civil servants for 2010 could not be implemented.[1]

- In 2011: **Even though progress is seen on the legal framework for public administration, there is a limited** progress in the implementation phase. In the context of the legal changes, they did not provide strategic solutions for all existing challenges that occur. A new public administration reform strategy was adopted by the Government for the period 2010-2015.[2]

- In 2012: **In the field of public administration, some progress has been made.** Additional efforts and resources are needed to improve the administrative capacity of the Ministry of Information Society and Administration (MISA), while the administrative inspection needs to effectively carry out the tasks and responsibilities in the country. State and public service areas continue to be fragmented. To consolidate the regulation of this area and address the deficiencies, especially in terms of promotion, recruitment, and termination

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[1]   Progress Report on the Republic of Macedonia for 2010, Brussels 09.11. 2010, page 7-8 https://www.sobranie.mk/WBStorage/Files/EKizvestaj2010.pdf - accessed October 2017

[2]   Progress Report on the Republic of Macedonia for 2011, Brussels, 12.10.2010, стр. https://www.sobranie.mk/WBStorage/Files/PR2011mk.pdf - accessed October 2017

of work, preparations for a new comprehensive Law on Administration are being drafted. Specifically, the principle of merit-based employment should be ensured and complied with, together with the principle of equitable representation in the public administration.[3]

- In 2013: **The unity, transparency, and accountability are affected, as a result of the fragmentation of the legal framework in regards to the public administration.** Access to public information and transparency remain low; statistical data for the total number of public sector employees are not available for the public, temporarily and repeatedly, making it difficult to measure progress in achieving reform goals and transparency for the public. Continuous efforts are needed to enhance the independence and professionalism of the public administration, along with equitable representation.[4]

- In 2014: **The public administration in the Republic of Macedonia has constructed a professional staff that needs to be retained**. Nonetheless, the issue of politicization remains a serious concern, both at central and local level. Public administration continues to be fragmented and subject to political influence, notwithstanding the progress in the normative regulation of the area. Even though procedures for policy development and coordination across sectors are well defined, they are not always effectively implemented. There is a continuous lack of thorough policy analysis and assessment that needs to be dome. Additional efforts need to be made to ensure the principles of accountability, transparency, remuneration and advancement according to merit and equitable representation in the public administration. Furthermore, fiscal transparency needs to be promoted as a vital principle.[5]

- In 2015: **Even though progress has been made over the past year, much remains to be done in regard to the public administration.** Reform in the public administration, together with the rule of Law

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[3] Progress Report on the Republic of Macedonia for 2012, Brussels, 10.10. 2012, page 10-13 https://www.sobranie.mk/dokumenti-rm-eu-cbb3490c-fe7d-4750-82f4-67c619c46a6a.nspx- accessed October 2017

[4] Progress Report on the Republic of Macedonia for 2013, Brussels, 16.10.2013, page 9-11 https://www.sobranie.mk/dokumenti-rm-eu-cbb3490c-fe7d-4750-82f4-67c619c46a6a.nspx -accessed October 2017

[5] Progress Report on the Republic of Macedonia for 2014, Brussels, 08.10.2014, page 9-11 https://www.sobranie.mk/dokumenti-rm-EU-cbb3490c-fe7d-4750-82f4-67c619c46a6a.nspx -accessed October 2017

and economic governance, are cross-sectoral issues of great importance that lead to success in political and economic reform, while also building the foundation for the implementation of EU rules and standards. Improvement of the quality of the administration needs to be executed, which would have a direct influence on the Government's ability to combat and prevent corruption, provide public services, and support growth and competitiveness. Incorporating the principles of merit in the civil service management is important, together with providing appropriate administrative procedures.[6]

- In 2016: **The Republic of Macedonia is moderately prepared in terms of public administration reforms**. However, commitment to implement the Commission's recommendations from 2015 is low. Issues such as the ineffective lines of responsibility, the use of the public sector as a political instrument, together with the alleged politicization of the administration in the election year, are of crucial matter. Furthermore, allegations of pressure on public sector employees continue to be a matter of concern in the public administration. In order to accomplish the independence of the public administration, together with respect for the principles of transparency, equitable representation and merit, the Republic of Macedonia needs a strong political commitment.[7]

To conclude from the annual report extracts, it is clear and evident that in many respects, instead of improvement, there is even a downturn. To summarize, the criticism referred to in the progress reports of the country, refers to recorded shortcomings in terms of transparency, professionalism, and the administration's independence. According to the reports, the principles of employment and merit-based advancement are seriously endangered. EU reports indicate that there are no clear and transparent criteria for recruitment, remuneration and career development, but in general, they indicate the inadequate human resources management systems.

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[6]   Progress Report on the Republic of Macedonia for 2015, Brussels, 10.11.2015, page 9 https://www.sobranie.mk/content/%D0%9D%D0%A1%D0%95%D0%98/PR2015_All_CK_FF_MK_16.11.2015.pdf - accessed October 2017

[7]   Progress Report on the Republic of Macedonia for 2016, Brussels, 09.11.2016, page 15 https://www.sobranie.mk/content/%D0%9D%D0%A1%D0%95%D0%98/izveshtaj_na_evropskata_komisija_za_republika_makedonija_2016_godina-mk2-raboten_prevod.pdf - accessed October 2017

2. Current measures and policies for public administration in the Republic of Macedonia

The Republic of Macedonia, in the past years, faced a political and institutional crisis that began in 2015 with the announcement of illegally wiretapped talks. The crisis showed that the principles of the Rule of Law were violated entirely, and the intense partisanship of state and public institutions seriously violated their integrity. The possibility for the state and institutions to deal with the political crisis quickly led to a situation in which the Republic of Macedonia was qualified as the "captive state" of captured institutions by the European Commission's Report on RM for 2016."[8].

In order to resolve this situation, in the summer of 2015, the Commission set up a group of top legal experts to prepare a report with specific recommendations, called the Emergency Reform Priorities.[9], so-called Priebe's report. The so-called Przino Agreement was achieved after long and difficult negotiations, which forced several key political solutions. The agreement resulted with a change of Government, and in June 2017, a new government was formed, which widely declared the will to reform, democratize and Europeanize the country.

In September 2017, the legal experts from the European Union prepared a second report which assessed the implementation of the previous recommendations as being practically stopped, with new guidelines for a new government to free institutions, restore citizens' confidence and promote the Euro-Atlantic path. For this purpose, we have to deal with the problematic issues of reforming the judiciary and public administration, the fight against corruption, media reforms, and the resolution of the wiretapping scandal.

In response to this assessment, the Government of Republic of Macedonia in the Program for its work (2017-2020) defined and determined as the primary strategic priority: "The Government will work on creating an expert and efficient, accountable and transparent administration that will provide quality services for citizens and businesses and will protect their rights." In doing so, the Government pledged to respect the principles of fairness and professionalism in employment in the public administration, together with objectivity

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[8]   European Commission: Report on the Republic of Macedonia for 2016. https://ec.europa. eu/neighbourhoodenlargement/sites/near/files/pdf/key_documents/2016/20161109_report_ the_former_yugoslav_republic_of_macedonia.pdf

[9]   Source: http://www.sigmaweb.org/publications/public-governance-monitoring-reports. htm.

in the promotion and rewarding of employees. Additionally, the Government pledged for the creation of an administration that would be free from the party constraints and will be primarily committed to solving citizens' and business entities problems, through the respect of the principles of impartiality and legality in the performance of the public administration[10].

Thus, the reform of public administration is again high on the agendas of the new Government. The first step is being accepted (new) Public Administration Reform Strategy in the direction of a complete de-politicization and professionalization of the administration, and building quality and service-oriented administration that will function and work in improved working conditions, using all possibilities of modern access through e-government, e-services, and interoperability. This document for the period 2017-2022, together with the Action Plan, was adopted in February 2018. At the same time, the commitment of the current Government of the Republic of Macedonia is to continue the process of updating the Register of employees in the public sector in order to publish the total number of employees by sectors.

In regards to decentralization, it remained at the same level, with the continued dialogue between authorities for sub-financing and promotion of local services with increased transfers from central funds. The Government also adopted a new Action Plan for decentralization and regional development. However, there is a lack of strategy as to whether decentralization or strategy for the development of services of general significance will continue. In general, there is no overall strategic planning other than the one related to the European integration process, however, this does not ensure the quality of long-term public policies that are implemented.

Furthermore, public policies are still under the influence of changing political constellations; the participation of citizens, experts, civil society members, and the academic community is still not sufficient. The lack of public evidence-based policies and evaluation studies is evident, while the quality of legal regulations needs to be improved, together the need for further deregulation.

The issues connected with deep politicization of public services, lack of administrative professionalism, authoritarian and bureaucratic awareness of the public sector is still present in the country. Also, the cooperation between

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[10] Government work program 2017-2020, page 35. Source: http://vlada.mk/sites/default/files/programa/2017-2020/ProgramaVlada20172020_08062017.pdf.

the public administration and the academic and professional community is relatively weak.

3. Conditions and need for promotion of key areas in the public administration in the Republic of Macedonia

Since its independence, the Republic of Macedonia is committed to joining the EU and undertakes a number of measures to meet the criteria required for EU integration, as well as NATO. However, on the road to implementing the reforms, we faced numerous external and internal obstacles and problems. First of all, was an unresolved bilateral issue concerning the name between the Republic of Macedonia and the Republic of Greece, and then the other problems with the neighbors, which are complex because they sought a solution to the critical identity issues. The internal condition will be elaborated in continues.

3.1 Organization and size of the public sector in the Republic of Macedonia

The organization of the state administration in the Republic of Macedonia is still suffering from numerous organizational irrationalities. The number of ministries and central level bodies, rather than decreasing, is growing. Attempts to reorganize can be heard only in pre-election programs; there is no serious functional analysis for the optimal organization. What is currently being done is the counting of institutions and the number of employees, and it goes quite slowly and uncertainly.

The Government of the Republic of Macedonia, as another part of the executive branch. The Law on Organization and Operation of the State Administration Bodies has established 15 ministries comprising 29 bodies. In addition, holders of the executive are 32 independent bodies of state administration and administrative organizations and eight legal entities with public authorizations.

MISA published an Annual Report from the Register of Public Sector Employees for 2017[11], according to which 1,299 institutions are active and 128,722 persons are employed. The largest number of institutions, as can be seen from the table below, are the public institutions (most of which are in the field of education, in the area of health, in the area of culture, in the field of

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[11] http://mioa.gov.mk/files/pdf/dokumenti/IzvestajReg2017_v1.02.pdf, accessed on 16.06.2018

labor and social affairs and others) and public enterprises, of which 111 are public enterprises for communal services.

Table No.1 Number of institutions according to the type in RM, 2017

TYPE OF INSTITUTION	Number of subjects
PUBLIC INSTITUTION	899
PUBLIC CONVENTION	129
MUNICIPALITY	81
COURT	34
SELF-STATE BODY OF THE STATE ADMINISTRATION	32
PUBLIC PROSECUTION	29
BODY IN THE COMPOSITION OF THE MINISTRY	29
MINISTRY	15
INDEPENDENT STATE AUTHORITY	11
REGULATORY BODY	10
LEGAL PERSON WITH PUBLIC AUTHORIZATIONS	16
THE SECRETARIAT IN THE GOVERNMENT	3
COURT COUNCIL	2
GOVERNMENT OF THE REPUBLIC OF MACEDONIA	1
OMBUDSMAN	1
NATIONAL BANK	1
SPECIAL BODY OF THE STATE ADMINISTRATION	1
PRESIDENT	1
GOVERNMENT SERVICE	1
ASSEMBLY	1
COUNCIL OF PUBLIC PROSECUTORS	1
CONSTITUTIONAL COURT	1
TOTAL	**1.299**

Source: Annual Report from the Register of Public Sector Employees 2017, Skopje, March 2018

The number of employees, according to institutions, is illustrated in Table 2 below. It shows that the largest number of employees - 64,564 are employed in public institutions that provide public services for citizens, then in public enterprises - 17,744, in the Ministry of Internal Affairs - 11,966, in the Army of the Republic of Macedonia -7,202, in the units of local self-government - 5, 678 and the rest in the other institutions. Formally from international organizations does not comment on the size and structure, but the principles on which it works and is set as general standards for all member states and EU candidates.

**Table No.2 Number of employees in the public administration of Republic of Macedonia, 2017**

INSTITUTIONS	NUMBER OF EMPLOYEES
ARMY OF THE REPUBLIC OF MACEDONIA	7,202
MINISTRY OF INTERNAL AFFAIRS	11,966
DEVELOPING AGENCY	250
ASSEMBLY	272
PUBLIC COMPANY	1,029
REGULATORY BODY	368
INDEPENDENT STATE AUTHORITY	747
GOVERNMENT OF THE REPUBLIC OF MACEDONIA - GENERAL SECRETARIAT	345
SECRETARIES IN THE GOVERNMENT	1,866
GOVERNMENT SERVICE	364
MINISTRIES	4,670
BODIES IN THE COMPOSITION OF THE MINISTRIES	4,448
INDEPENDENT BODIES OF THE STATE ADMINISTRATION	3,339
LEGAL PERSONS WITH PUBLIC AUTHORITIES	1,538
NATIONAL BANK	445
CONSTITUTIONAL COURT	23
OMBUDSMAN	64
PUBLIC PROSECUTION	455
COUNCIL OF PUBLIC PROSECUTORS	5
COURT	2,275
COURT COUNCIL	30

PUBLIC INSTITUTIONS	64,564
PUBLIC ENTERPRISES	17,744
SKOPJE AND THE MUNICIPALITIES	5,678
PLAN REGIONS	44
TOTAL	**128,722**

Source: Annual Report from the Register of Public Sector Employees 2017, Skopje, March 2018, our processing.

There is no complete and accurate data on how this figure has moved in the past, but for the time being. According to certain Eurostat approximations, the number of employees in the public sector started to increase from 2006 onward and ranged over 100,000. For the whole of this period, the number of employees in the public sector is constantly increasing by 24.4% compared to 2016, or at least by 36.150 persons. This is about 6 % of the total population. According to this amount, compared with the size of the public sector in the EU.[12], the Republic of Macedonia does not have a large public sector.

Figure 1 Number of employees in the public sector in relation to GDP and Gross external debt of Macedonia
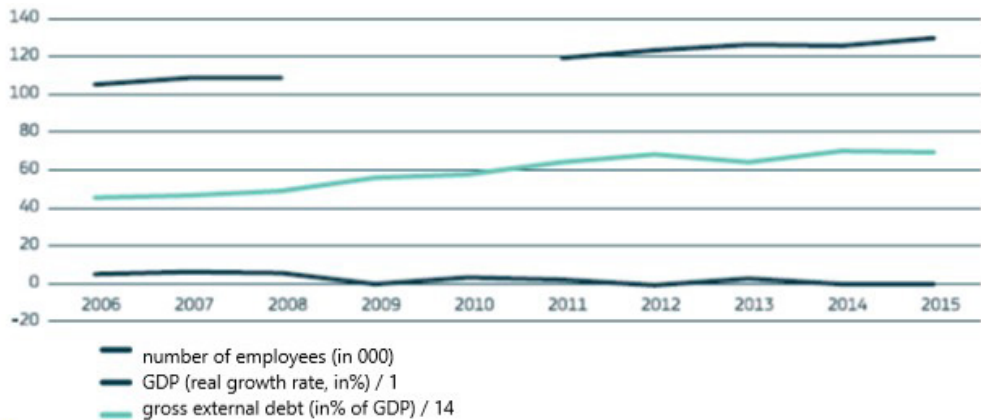
Извор: Eurostat database in witch missing data for 2008, 2009 u 2010 year due to differences in national classification of activities/source for the GDP and Gross external debt NBRM, 2017 [http://nbrm.mk/WBStorage/Files/Statistika_Osnovni_makroek_indikatori_ mak.xlsx];

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[12] The average size of the EU member and candidate countries for 2016 is about 10 % (measured as the number of employees in the public sector in accordance with total population), Eurostat http://ec.europa.eu/eurostat/data/database

However, as it can be seen in figure 1, relative to the actual growth of GDP and the significant external debt in this period, it can be concluded that **the increase in the number of employees in the public sector does not follow the development of the economy.** No economic indicator justifies this trend.

3.2 The compliance with European legal principles and standards

In general, it can be concluded that **the Macedonian legal system is harmonized with the legal heritage of the European Union. However, there are numerous problems in maintaining the compliance of the Macedonian legal system with European legal principles and standards**.

As mentioned in the previous part, we have a strategic framework for reforming the public administration but have no realization or sustainability (the first standard). Problematically is the second principle-development of policy and coordination—the most interested in a third principle- public service and human resource management. Public services are not well-designed and well-managed, nor enables the state to reach an adequate level of professionalism, sustainability, and quality of public service in all parts of its administration and provide better services to citizens and businesses.[13]. This is core for our public administration reforms and also the hardest feasible.

Other standards, as accountability and service delivery, are concerned. They demand that setting the standards and inspiring the behavior of public servants should be embedded in institutions and administrative procedures at all levels of the administration. Citizens and businesses do not view the public sector as a service provider, which they pay for through their taxes, and they want to see the delivery of improved services.

Unnecessary regulations should be eliminated, and attention should be paid to preparing new regulations (deregulation). The functioning of the public administration must be simplified, and, among other things, this should be a guiding goal in the preparation of regulations. The attempt to come to better

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[13] Modern constitutional public service in a democracy is regarded as possible only when the following conditions are in place:
- the separation between the public sphere and the private sphere;
- the separation between politics and administration;
- individual accountability of public servants;
- sufficient job protection, level of pay and stability, and clearly defined rights and obligations of public servants;
- recruitment and promotion based on merit.

regulation, in fact, and as we have already mentioned, is a part of the general reform efforts for the public sector in the entire modern world, the improvement of the business environment and a precondition for higher growth and the standard of the population.

In addition to the reasons mentioned earlier, in the effort to effectively reform and organize the public administration, there should be a cost of public services, as well as their quality. Unfortunately, we do not have measurable indicators for the quality of public services. However, according to the realized and planned budgets of the Republic of Macedonia, we can see the public expenditures for wages and salaries for employees in the state and public administration, which are presented in Table 3.

Table No.3 Budget expenditures for salaries and allowances for the employees in the state and public administration in the Republic of Macedonia for the period 2013-2018 (in millions of denars)

Year	Amount	Euro
2013	22,999	370,95
2014	23,605	380,73
2015	25.082	404,55
2016	26,520	427,74
2017	26,614	429,26
2018*	27,103	437,14

* Ministry of Finance in the Government of the Republic of Macedonia, Draft Budget of the Republic of Macedonia for 2018, available at: http://www.finance.gov.mk/files/u6/ BUDZET%202018%20-%20SOBRANIE%20-%2010.11.2018.pdf

Source: Ministry of Finance in the Government of the Republic of Macedonia, Budget of the Republic of Macedonia for 2013, 2014, 2015, 2016, 2017, available at: http://www.finance. gov.mk/mk/node/575

As seen in the table, the trend of increasing expenditures is growing. Thus, from the comparison between the realized budget for the fiscal year 2013 and the planned for the fiscal year 2018, i.e., in 5 years, it can be noted that the public expenditures on salaries and remuneration from public administration salaries of over 15% are visible.

Conclusion

The process of approximation to the European standards, ever since the establishment of independence, has a task of creating a professional, accountable, politically neutral, transparent, and service-oriented administration is imperative for the development of a democratic and market-oriented society.

The Republic of Macedonia does not have a large public sector, but relative to the GDP growth and external debt, it can be concluded that **the increase in the number of employees in the public sector does not follow the development of the economy and not is reasonable**. Formally, international organizations do not comment on the size and structure but the principles on which it operates and is set as general standards for all member states and EU candidates.

The public administration organization has been modernized and pointed to the compliance of EU models, but there is a need to reassess the number of bodies and agencies. In recent years, institutional changes in public administration responsibilities have not led to the improvement of the situation, nor the visible political leadership of the reform, despite the declarative efforts.

Europeanization of public services is one of the most complex processes, and in the upcoming period, this may be a challenge for the Republic of Macedonia. It is necessary to create a comprehensive policy regarding the supply of public goods and services, consistently implement the already established measures and activities to increase the efficiency in this domain, and undertake additional measures and activities in those segments in which it has a real need.

Therefore, in spite of the principle of achieving good governance, despite the long-lasting reforms, it can be said that the Republic of Macedonia faces numerous challenges, which is the question of whether big breaks are needed, or a new administrative paradigm is needed.

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MISO DENKOVSKI[*]

THE RELATIONSHIP BETWEEN STOCK MARKET & ECONOMIC ACTIVITY DURING THE COVID 19 PANDEMIC IN SOUTHEASTERN EUROPE

Abstract: The emergence of the corona virus and its rapid spread has caused a global health crisis, the virus has had a huge negative impact and has deepened fear in all segments of economic activity and financial flows. Experts from the business world, have for a long time highlighted the facts that point to great losses in the world economy. The Organization for Economic Cooperation and Development (OECD) indicated that the corona virus was biggest threat to the world economy in recent history until today. For the needs of this paper, and in the direction of fulfilling the set goals, available data have been used that through statistical processing show the impact of the pandemic on the activities of the stock markets through the overall economic activity. In addition, the American and several world stock markets were selected for this paper as a comparison with the stock markets of Southeast Europe. The purpose of the paper is to show how the emergence of COVID in the Balkan countries at the beginning of 2020 affected stock exchange activities, how fear and state restrictions led to a decline in economic activity and thus a decline in the indices of all stock exchanges.

Keywords: international stock markets, economic activity, COVID Coronavirus statistics.

JEL classification: F15, G15, G41

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Introduction

In the conditions of globalization of the world economy, the inclusion in international financial flows is one of the key prerequisites for economic growth and development, which is especially important for developing countries whose participation in world trade is still relatively modest. This research confirms the existence of a positive influence of openness to financial markets and the economic growth of developing countries. For the countries of the Southeastern Europe, trade exchange and financial incorporation with the Western world is one of the most important aspects of economic cooperation, here we are primarily thinking of the European Union. However, the later start of the process of transition to the market model of the economy of these countries compared to the countries of Central and Western Europe, political instability caused them to still face the problems of insufficient level of economic development and competitiveness and to be highly sensitive to various negative market "externalities".

The Corona virus in a very short period of time has swept the entire world and caused a huge negative impact on all aspects of human life, including financial flows. The economy fell into a crisis of unknown duration and incomprehensible outcome. The pandemic was and is a great challenge due to its unique way of occurrence and the profound consequences it left and still leaves on the economy and finances. There was considerable uncertainty in all aspects of the global economy and society. It is impossible to predict what long-term effects the Covid-19 pandemic will have on the economy, financial markets and innovation. The spread of the virus has kept people away due to the measures introduced and this has affected the closure of offices, businesses, public events, and thus the financial markets and a drop in stock market activity that has negatively affected the entire world economy. Covid-19 spread very quickly and caused concern among consumers who were spending and investing, but in the face of fear and restrictions this changed and they all invested less and less. Countries around the world have introduced various measures to protect the population, from quarantine of the sick, maintaining distance, closing borders, and thus closing countless facilities that had a strong negative impact on the economy.

The purpose of this paper is to show how certain capital markets are reacting to the emerging crisis and how their ability to cope with the aforementioned pandemic is moving. For this research, we observed data on the

movement of stock market turnover and the stock index of some regional and world stock exchanges.

The methodology for the purposes of this paper, in order to fulfill the set goals, we used available data that, through statistical processing, show what the impact of the pandemic was on the activities of the stock markets. For example, the American, some of the larger European stock exchanges and the stock exchanges of South-Eastern Europe were chosen. Hence, this paper offers a literature review of relevant research on the same or similar topic and their sublimation in order to make a comparative analysis.

1. SIGNIFICANT DECLINE IN WORLD ECONOMIC ACTIVITY

The emergence of the virus and its rapid spread caused a global health crisis, but the virus also had another negative aspect, deepening fear in all segments of economic activity, investment, stock market trading and stagnation of capital investment worldwide. The OECD also released a report on the situation, which states that the current situation could have a very negative effect on the economy. It should be noted that the report is based on data that has not yet been fully processed given the resurgence of the corona virus now with its subtypes. In the context of the decline in global economic growth, the OECD states that restrictions on the movement of people, goods and services, as well as quarantine measures, have drastically reduced production in domestic demand in the EU and the US, which is consequently having an increasingly negative impact on the rest of the world economy.[1]

It is not surprising given the significant role of Europe, USA and China in global supply chains, especially when it comes to industries such as stock markets, transport and public investment. As the coronavirus initially spread outside of China, it is increasingly likely that the impact of the epidemic on the global economy will be greater than previously expected, and analysts have cut growth estimates, while stock prices in global markets have started to fall sharply.

Global GDP was forecast to grow by just 2.4 percent in 2020, down from 2.9 percent the previous year. The OECD and the IMF have warned that negative growth is possible in the coming years. Global growth fell to

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[1]   OECD. *Coronavirus (COVID-19): SME Policy Responses*. Retrieved from https://www.oecd.org/coronavirus/policy-responses/coronavirus-covid-19-sme-policy-responses-04440101/, 2021.

just 1.5%.[2] That was the economic cost of absenteeism, lower productivity, reduced movement of goods and services, and investment. The recommendations were for governments to provide effective and well-supported public health and financial measures to prevent major consequences and policies to protect the incomes of vulnerable social groups and businesses during the spread of the virus. It was important to ensure the liquidity of small and medium-sized companies and to avoid the bankruptcy of solvent companies that were most affected by the measures to stop the spread of the corona virus. The specificity of this crisis is reflected in the fact that, unlike the world financial crisis that caused a drop in aggregate supply, the crisis caused by the pandemic led to a drastic drop in aggregate demand, which is particularly problematic for developing countries whose economies rely on the export of raw materials and services.

The integration of countries in world trade is directly related to economic growth and development. The research results confirm the causality between the openness of the economy, growth and income distribution.[3] Export-led economic growth is beneficial to countries because it facilitates foreign exchange inflows, increases production, creates new employment opportunities and increases overall commercial value.[4] According to certain studies, the export of high-tech products, the growth of stock markets, high capital investments is particularly important for the economic growth and development of countries. Analyzing the relationship between high-tech exports and economic growth in EU member states in the period 1998-2017.[5] found that it has a significant impact not only on economic growth, but also on gross fixed capital formation and employment. The increased inflow of foreign direct investments, increase in turnover on the stock markets in the short term causes economic growth and confidence in the financial system which contributes to financial development and involvement in international trade which ensures sustainable economic growth.[6]

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[2]   OECD, *A fragile recovery*, https://www.oecd.org/economic-outlook/march-2023/, 2023.

[3]   Mazur, M., Dang, M., & Vega, M.: *COVID-19 and the march 2020 stock market crash. Evidence from S&P1500*. Finance research letters, 38,2021, 101690.

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Experiences from past financial crises have shown that trade in financial markets is the mechanism through which the effects of the crisis are reflected, that is, that trade is the most obvious economic link between countries. The crisis caused by the pandemic of the Covid-19 virus took on the character of a global economic recession because it was caused by a negative exogenous shock whose effect spread throughout the entire economic system, causing economic decline and recession.

The crisis caused by the pandemic affected not only the volume of trade on world stock exchanges, but also the value of the shares themselves and the entire commodity structure of international trade. According to OECD data, in 2020 the decline in the value of international trade in services amounted to 16.7%, which is twice as much as the decline in the value of trade in goods (-8.2%), which is a consequence of the introduction of measures to lock in simultaneously increasing the demand for certain goods.[7]

2. STOCK MARKETS ANALYSTS DURING PERIOD OF COVID – 19

The financial market shock due to Covid-19 has stimulated interest in empirical research. It is interesting that this phenomenon entered the sphere of the stock markets, which were considered one of the most diversified assets in the portfolio of the states' finances. The theory of efficient market hypothesis (EMH) assumes when the stock price fully reflects all relevant market information. However, the theory faced pros and cons. For example, Charfeddine et al. find that stocks, financial derivatives, bonds and cryptocurrencies are resistant to this kind of developments, while other studies find that the cost of capital is not only incorporated by market information, but also the result of psychological and behavioral finance.[8] The discussion of the theory is still ongoing and there is no final conclusion by academic researchers and financial practitioners; therefore, this study contributes to a better understanding of stock market returns and volatility. Preliminary research related to the impact of Covid-19 on the stock market is still being developed.

[7]   EMAN: International trade after the pandemic: New challenges and opportunities. In the international scientific conference on economics and management (EMAN)., 2021, Retrieved from https://doi.org/10.31410/EMAN.2021.9

[8]   Charfeddine, L, Karim Ben K, Goodness C. A, and Rangan G: Time-varying efficiency of developed and emerging bond markets: Evidence from long-spans of historical data. Physica A 505, 2018, 632–47

Some studies have found that globally oriented companies with exposure to China have seen their shares decline, while companies in the natural gas, software, food and healthcare sectors in America have performed positively during the Covid-19 pandemic.[9] Another study showed that the South Korean stock market was more resilient than the French stock market during the pandemic.[10]

Charfeddine used GARCH to analyze the volatility of stock indices during the Covid-19 pandemic. Using data for the top 10 countries based on GDP from January 2019 to June 2020, it found that volatility during Covid-19 was higher than the normal period[11]. New evidence from estimates the volume of volatility and open interest in the Nifty Index futures of the National Stock Exchange of India using a GARCH model.[12]

They suggest that trading volume has a stronger impact on volatility than open interest or open contracts in the futures market. A long-term perspective of stock market volatility was conducted by Bai et al., focusing on pandemic infection and stock market volatility in the US, China, UK and Japan from 2005 to 2020 by applying GARCH-MIDA. They find that there is a significant negative impact on the persistent volatility of international stock markets up to a 24-month lag of the pandemic.[13] In fact, in the early days of the pandemic, the US stock market experienced a decline. From Chart 1, we can see that the stock market has been seriously affected by Covid-19. S&P 500 falls by a third in a short period, from 3380 points on February 14, 2020 to 2237 points on March 23, 2020.

Hence, empirical findings further confirm this intuitive conclusion that Covid-19 negatively affects stock market downside risk. We find that the severity of the pandemic, as a proxy for the growth rate of daily new confirmed

9   Mazur, M, Man D, and Miguel V.: COVID-19 and the march 2020 stock market crash. Evidence from S&P1500. *Finance Research Letters* 38, 2021, 101690.
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cases, has a significant negative impact on the conditional skewness of market returns, i.e. the risk of a stock market crash.[14] It is also consistent with Liu et al, on the Chinese stock market, indicating that the pandemic increases the risk of a stock market crash.[15]

Chart 1. US stock market activity before and during the pandemic
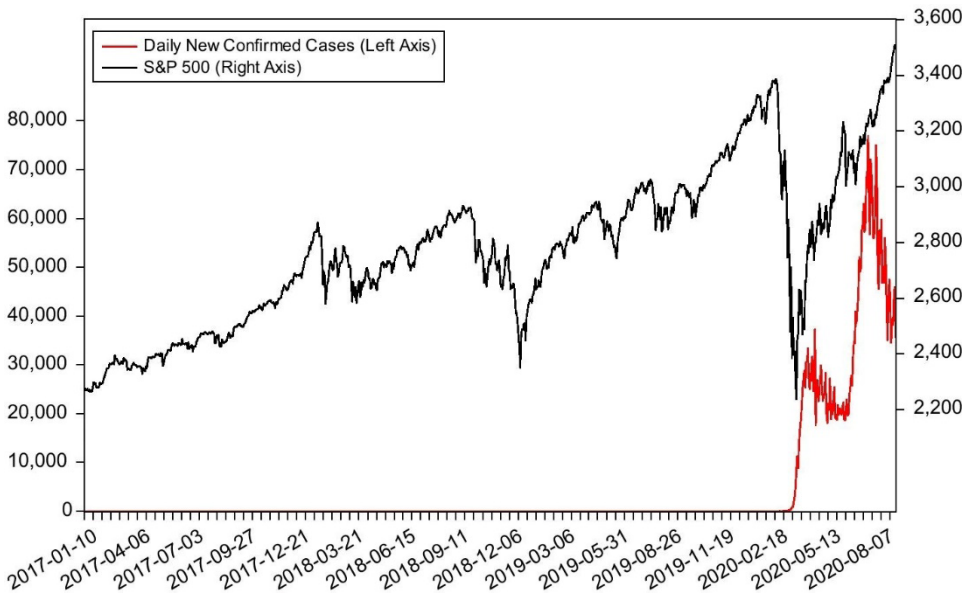
Source: Youssef, M., Mokni, K. & Ajmi, A.N. Dynamic connectedness between stock markets in the presence of the COVID-19 pandemic: does economic policy uncertainty matter?. Financ Innov 7, 13 (2021). https://doi.org/10.1186/s40854-021-00227-3

Luy et al, analyzed the volatility of capital markets during the first wave of Covid-19. The data were analyzed using modified cumulative sum of squares (MICSS), which reveals that structural breaks in volatility in many sectors, except for consumer durables, information technology and property.[16] This section will acknowledge the current literature on the Covid-19 pandemic and its impacts on financial markets. When it comes to the comparison between

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[14]   Baker, Scott, Nicholas Bloom, Steven Davis, Kyle Kost, Marco Sammon, and Tasaneeya Viratyosin. 2020. *The Unprecedented Stock Market Impact of COVID-19*. No. w26945. Cambridge: National Bureau of Economic Research.

[15]   Liu Z, Huynh TDL, Dai P-F (2021) *The impact of COVID-19 on the stock market crash risk in China*. Res Int Bus Financ 57:101419

[16]   Liu Z, Huynh TDL, Dai P-F: *The impact of COVID-19 on the stock market crash risk in China*. Res Int Bus Financ 57, 2021, 101419

the Covid-19 event and other public health crises, Schell et al indicated that the coronavirus outbreak shows significant negative abnormal returns in most stock markets, while this phenomenon does not exist for other events such as Ebola, Zika virus and other viruses.[17] In the same direction, the study of Ambros et al. investigates the role of news on stock market returns and volatility.

Chart 2. Comparison between different
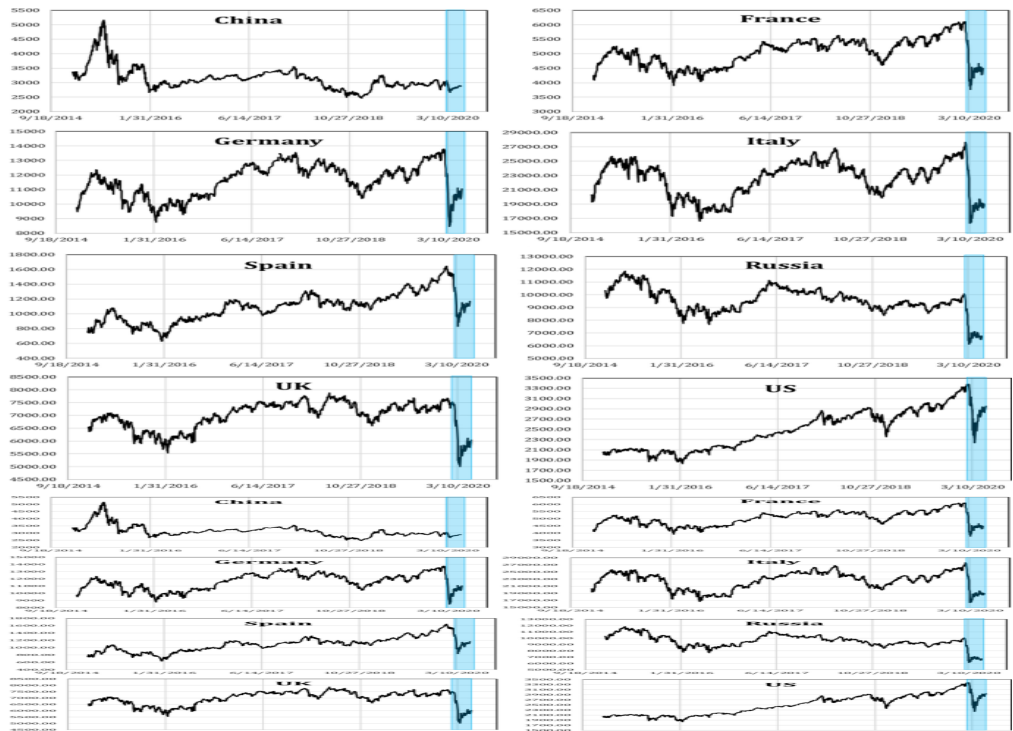
Source: Youssef, M., Mokni, K. & Ajmi, A.N. Dynamic connectedness between stock markets in the presence of the COVID-19 pandemic: does economic policy uncertainty matter?. Financ Innov 7, 13 (2021). https://doi.org/10.1186/s40854-021-00227-3

This existing literature shapes our motivation to use GARCH-S, capturing skewness effects, to measure the possibility of market crashes during these unprecedented events. As shown, all stock market indices examined showed a sudden and abnormal decline near the beginning of the Covid-19 pandemic. The models show that the SE index saw a slight drop from 3000 to around

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[17]   Schell D, Wang M, Huynh TLD: *This time is indeed different: a study on global market reactions to public health crisis*. J Behav Exp Finance , 2020, 100349

2500 points. However, European stock markets and US stock markets were the most affected by the spread of the new contagion shock and saw unprecedented closes in the spot prices of their indices. In Italy, just before the outbreak of the pandemic, the index was above 27,000 points, but fell to below 17,000 points with the start of the pandemic. (Chart 2)

3. STOCK MARKETS ANALYSIS DURING THE PANDEMIC IN SOUTHEASTERN EUROPE - BALKAN COUNTRIES

In this section, an analysis will be made of the stock markets of some of the Balkan countries and those stock market activities and achieved sales during the time when the pandemic was reaching its peak at the global level. In doing so, the stock exchanges of Serbia, Greece, North Macedonia, Bulgaria, Slovenia and Croatia will be included.
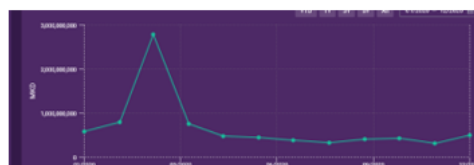
Chart 3. Financial Market - Equity Market -Turnover Value/Volume/ Ratio
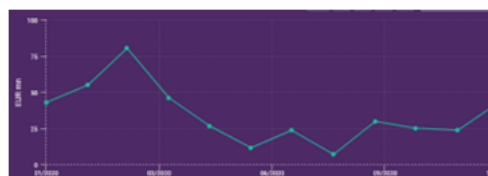
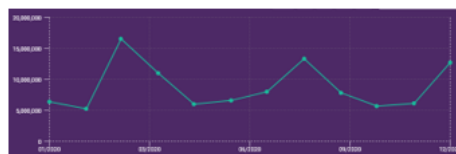Serbia Stock Exchange- Belgrade (BELEX)
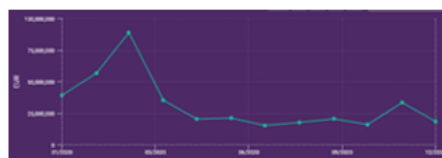
Zagreb Stock Exchange (ZSE)

Macedonian Stock Exchange (MSE)

Athina Market Index (Athex)

Ljubljana Stock Exchange (LJSE)

Bulgarian stock exchange-Sofia (BSE)

Source: insights.ceicdata,2023.Available at: https://insights.ceicdata.com/Untitled-insight/ views

The above Chart 3 shows the activities of several Balkan stock exchanges. From the data, it is clearly seen that there is a significant difference in activities compared to the time period, and the same applies to as many as five of the six analyzed stock exchanges. Namely, the five stock markets have seen a significant drop since the third month of 2020, when the first cases and restrictions that significantly contributed to reduced economic activities in the states began to appear, as well as travel bans from one state to another that applied to almost every state country from the Balkans.

The Southeast Europe relies heavily on a steady flow of remittances, financing domestic demand and investment. Remittances, which account for 10% of GDP in the Southeast Europe, are likely to decline due to travel restrictions and rising unemployment linked to an expected economic contraction in the EU.[18] As for the fear and anxiety caused by the coronavirus infection, we have seen that the financial markets are affected by every news and announcement they receive. The financial markets of the Balkan countries, which are included in our research, are the leading countries and stock exchanges affected by this situation. The increase in deaths and events from COVID-19 and the increase in the number of affected countries have led to an increase in investment considerations and volatility in these financial markets. Although China was the first country where the coronavirus epidemic began, it emphasized that its financial market is more stable than other markets.[19]

Verikios et al discussed the effects of the epidemic on the economy at the regional level, regions with a lower level of world economic integration will be more strongly affected than more integrated regions.[20]

The fall of the stock markets in the observed countries of the Balkans had negative effects on large professional investors, such as pension and insurance companies, which traditionally invested huge sums of money in instruments that are traded on the stock market, and of course the same conclusion applies to all analyzed countries, that is that in the period of analysis starting in March when the pandemia had the biggest momentum in our region, all stock market indices dropped dramatically.

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[18]   Xin H. China Daily-Hong Kong; China Financial Market Remains Stable Amid COVID-19 Impact., 2020.

[19]   Idem.

[20]   Verikios G., Sullivan M., Stojanovski P., Giesecke J.A., Woo G. Centre of Policy Studies (CoPS); 2011. The Global Economic Effects of Pandemic Influenza.https://static.rms.com/email/documents/liferisks/papers/the-global-economic-effects-of-pandemic-influenza.pdf

Considering the high degree of unpredictability of the pandemic, we believe that decision-makers in the observed countries of the Southeast Europe should be very careful when choosing future measures, especially considering the fact that now the space for countercyclical fiscal policy is narrowing in many countries.

Conclusion

Integration in international financial flows contributes to improving competitiveness and encourages economic growth and development. For developing countries, greater involvement in financial markets enables the realization of the effects of economies of scale, a higher degree of capacity utilization and the attraction of foreign direct investments. For the region of the Southeast Europe, the role of stock markets is evident in many fields, so the increase in economic movements also means an increase in the activities of the stock market and potentially indicates the general well-being of the economy of a certain country. We have proven that the activity of all stakeholders in economic and financial movements is the most important from the point of view of continuous investment in financial products and capital investments. If people and economic entities are prevented from any occurrence and abstain from their economic activities, in this case the fear of the unknown from the Covid pandemic, then there will be a chain disruption of all financial and economic markets. The stock markets in the Balkan countries are relatively highly incorporated in the world financial markets in such a way that in a short period of time the fall from the leading countries EU, USA and others was transferred to these stock market indexes as well.

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Editing Instructions

NAME AND LAST NAME will be written with capital letters, left

alignment, 12 points, bold, being followed by asterisks, and in the footnote the didactic and scientific degree, the position and place of work of the authors

e-mail are indicated (Times New Roman, 10 points)[*]
(12 points) <Blank line 12 point high>
(12 points) <Blank line 12 point high>
THE TITLE OF THE PAPER WILL BE WRITTEN WITH CAPITAL LETTERS, CENTERED, Times New Roman, 12 POINTS, BOLD

(12 points) <Blank line 12 point high>
(12 points) <Blank line 12 point high>
<Tab> **Abstract: (Times New Roman, 12 points, Sentence case, bold, left alligment**)

The text in the Abstract will only be in English and will have between 100 and 200 words, a single line spacing, justify alignment, Times New Roman, 12 points. (The abstract should summarize the content of the paper. Do not make references nor display equations in the abstract.)
(12 points) <Blank line 12 point high>
<Tab> **Keywords: (Times New Roman, 12 points, Sentance case, a single line spacing, justify alligment, bold). Maximum 5 words, in English, Times New Roman, 12 points.**

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<Tab> **JEL Classification: (Times New Roman, 12 points, Sentance case, justify alligment, bold). Times New Roman, 12 points**, *(http://www.aeaweb. org/journal/jel_class_system.php)*.

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Introduction (Times New Roman, 12 points, Sentance case, left alligment, bold)
(12 points) <Blank line 12 point high>
(The introduction of the paper should explain the nature of the problem, previous work, purpose, and the contribution of the paper, a single line spacing, justify alignment, Times New Roman, 12 points. The contents of each section may be provided to understand easily about the paper.)

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[*] Assoc.Prof., Ph.D., University of Ss. Cyril and Methodius, Republic of North Macedonia, e-mail:

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1. THE TITLE OF THE CHAPTER: Times New Roman, 12 points, , capital letters, bold, numbered with Arabic numbers, left alligment.

(12 points) <Blank line 12 point high>

<Tab> The text paragraphs of the paper will be Times New Roman, 12 points, justified alligment, single line spacing. The paper will be edited on A4 format (210 x 297), page setup, top/bottom 2,54 cm; left/right 2,54 cm. The size of a <Tab> is 1,27 cm.

(12 points) <Blank line 12 point high>

1.1. Subchapter. Subchapters can be used in the text, numbered with the number of the chapter and a number showing the number of the subtitle within the chapter. The subchapters are Times New Roman, 12 points, Sentence case, bold.

(12 points) <Blank line 12 point high>

<Tab> Conclusion: (Times New Roman, 12 points, Sentence case, bold, left alligment)
The text in the Conclusion will be written in Times New Roman, 12 points, justify alignment, single line spacing.

CITATIONS: *Quotations and notes* should be elaborated as footnotes and marked successively with Arabic numbers[2]. The scope of quotations and notes should be limited to 15 lines. Abbreviations such as „ibid", „op. cit" can be used.

Harvard Format Citation is also asseptable (In-text and Reference list).

PRESENTATION OF THE MATHEMATICAL EQUATIONS

(10 points) <Blank line 10 point high>

The mathematical equations will be Times New Roman, 11 points, centred and numbered on the right with Arabic numbers between round brackets.

(10 points) <Blank line 10 point high>

$$X^2 + Y^2 = Z^2$$
$$(1)$$

(10 points) <Blank line 10 point high>

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[2] **Author's surname, Initial of first name**: **Title of book,** Edition (only include this if not the first edition), Publisher, Place, Year, page (Times New Roman, 10 points, justify alligment, single space)

PRESENTATION OF TABLES, GRAPHS AND PICTURES (12 points)
Title of the table, graph, picture or other illustration (Times New Roman, 12 points, Sentence case, bold, left alligment)
<Blank line 12 point high>

Tables, graphs, pictures and other illustrations should be presented in Arabic consecutive numbers. The references or data sources of the tables and graphs should be cited below, preceded by any additional comments or explanations. Tables, graphs, pictures and other illustrations are prepared in black and white techniques presented appropriately in the text. All graphs and illustrations and diagrams should be additionally submitted in their original electronic form (jpg, gif, xls, and alike).

<Tab> **References: (Times New Roman, 12 points, Sentance case, bold, left alligment)**
References should appear at the end of the paper, listed in alphabetical order by the names of authors.

References will be written with Times New Roman 12 points, justify alligment, numbered with Arabic numbers.

- For *books* the required elements for a reference are:
Author's surname, Initial of first name: Title of book, Edition (only include this if not the first edition), Publisher, Place, Year
- For *journal articles* the required elements for a reference are:
Author's surname, Initial of first name: Title of article, Full Title of Journal, Volume number (Issue/Part number),Year, Page numbers
- For *journal articles from an electronic source* the required elements for a reference are:
Author's surname, Initial of first name: Title of article, Full Title of Journal, Volume number (Issue/Part number), Year, Page numbers if availalble, Available at: include web site address/URL(Uniform Resource Locator), [Accessed date]
- For *newspaper articles* the required elements for a reference are:
Author's surname, Initial of first name: Title of article, Full Title of Newspaper, Day and month, year before page numbers and column line.

- For *websites* found on the world wide web the required elements for a reference are:

Authorship or Source: Title of web document or web page, Year of the document, Available at: include web site address/URL(Uniform Resource Locator), (Accessed date)