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THE INFLUENCE OF THE SCHOOL LEADERSHIP STYLES ON THE SCHOOL CULTURE IN THE ARAB HIGH SCHOOLS IN HAIFA DISTRICT

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Abstract

The study examine the influence of school leadership styles on the organizational culture in the Arab high schools in Haifa district in both principal's and teacher's point of view. Further, the study investigate wither the school principal embraces specific style of transformational, transactional lassiez-faire leadership styles, and if this leadership style has an influence on school culture.

Additionally, the study will find out the influence of the principal leadership style and Arab school culture on the teacher's motivation and work satisfaction. The study will explore if the principal motivate the teacher and encourage him in practice a new way of teaching, and if the teacher is satisfied, will that satisfaction lead him to be more creative and result higher Academic achievement for students.

Keywords: Leadership Styles, Transformational leadership styles, Transactional leadership styles, Lassiez-Faire styles, School culture.

Introduction

Do the teachers regard their principals as transformational or transactional or lassiez-faire leaders? Is establishing school culture that support teacher motivation and job satisfaction will increase school performance? The education system in Haifa District as in the whole world is rapid and frequently change, these changes includes development of curriculum, learning strategies, and the roles of students' and teachers'. Educational leadership is more than being effective at getting teachers to do things. Eagly, et al. (2003) defined Leadership as a social influence process in which the subordinates are participating voluntary and work with the leader to reach organization's goals. While Yukl, (2008) and Sušanj and Jakopec (2012) argued that leadership is an interactional process between leaders and followers in which leader attempts to influence followers in order to achieve a common goal.

The principal's responsibility is to lead the school in effective ways that satisfy and motivate everyone involved in the school activities including the teachers. A good leader is a leader who understands the complexities of the rapidly changing environment and can influence their teacher in a creative manner to achieve the higher work performance.

Organizational culture (school culture) was considered as "glue" that embraces the school together (Sürücü and Yeşilada, 2017). On the other hand, Armestrong (2006) suggests

that organizational culture (school culture) consists of valuable, rare, and imitable values, norms, beliefs, attitudes, and expectations, to achieve Competitive advantage.

The study aims to investigate the principal leadership styles, and if the leadership of the principals has an influence on the school's culture in Arab high schools in Haifa district, and how leadership styles influence the motivation and job satisfaction of the teachers.

Research Questions

What is the influence of school leadership styles on the school culture in the Arab high schools in Haifa district?

Research Hypothesis

- The dimensions of school leadership styles play a role in the Arab high schools in Haifa district.
- The school culture plays a role in the Arab high schools in Haifa district.
- School leadership styles are related to school culture in the Arab high schools in Haifa district.
- There is a significant impact of gender leadership styles on school culture in the Arab high schools in Haifa district.

Method

Participants

The data will be conducted from the principals and teachers of the Arab high schools in Haifa district. The sample will includes 8 Arab High schools in Haifa district, 4 schools has rated as "Good", and 4 schools with "law" rate.

The Research Tools

Two separated questionnaires will be built and distributed to collect the primary data. The questionnaires includes principal questionnaire which will be distributed to the principals, and teacher's questionnaire which will be distributed to the teachers of the Arab high schools in Haifa district.

The researcher will use quantitative research method that will include Multifactor Leadership Questionnaire (MLQ6x) scale for leadership styles, Quinn Model for the organizational culture, and Wanous and Lawler (1972) scale for measuring the teacher's job

satisfaction, also an open questions will be distributed to the teachers. The questionnaire translated and audit to ensure conceptual correspondence (Brislin, 1986).

Both questionnaires include the translated MLQ6x scale of transformational, transactional, and laissez-faire leadership styles which developed by Bass and Avolio (1997), but the term of the employees questionnaires were reformed to measure their leader's attitude toward them. Also translated Quinn Model used.

Both questionnaires consist of three parts, the first part includes Demographic Information questions for the principals and teachers, the second part about leadership styles' questions, and the final part includes organizational cultural questions. The variables are scaled by using a 5 Likert scale from 5= frequently, if not always to 1= not at all. These questionnaires will use in print form were given to both principals and teachers in Arab high schools in Haifa district.

The Research Procedure

The researcher will distribute the two questionnaires on the principal and the teachers of the Arab high schools which located in Haifa district to study the influence of the leadership style that the principal use on the schools culture. The data collected will be analyzed by statistical techniques in order to answer the research questions

Findings

The two questionnaires will be distributed into the principal's and the teachers in Arab high schools located in Haifa district to investigate:

If the demographic information of the principal's influence their leadership skills, which leadership style of (transformational, transactional, laissez-faire leadership style) each principal behave to manage the school, what are the dimensions of school culture used in each school, and if there is an influence of the principal leadership style on the school culture.

In addition, the teacher's questionnaire will investigate if the demographic information of the teachers influenced by the principal's leadership styles and the school culture, which leadership style of (transformational, transactional, laissez-faire leadership style) each principal operate to manage the school in their teacher point of view, what are the dimensions of school culture used in each school in teacher point of view, and if there is an influence of the principal leadership style on the school culture in teacher point of view. There will be changes in the future, if the research will expand and more variables studied and more schools would attend.

Furthermore, the teacher's questionnaire will consider the influence of the leadership style and school culture on the teachers' motivation and work satisfaction.

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ACCESSIBILITY FOR STUDENTS WITH DISABILITIES AT UAEU; AN ATTITUDINAL AND THEMATIC ANALYSIS

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Abstract

This research article provides a report of accessibility resources provided by various departments, units and colleges at the United Arab Emirates University as it pertains to services offered to students with disabilities (AKA students of determination). In this research, the authors conducted quantitative and qualitative research that has culminated into an attitude and thematic research study on how service providers on the one hand, and service recipients on the other hand view these services. Services include academic, administrative and support services. The investigators collected data from UAEU students and employees; namely teaching faculty members, administrative and support staff, students without disabilities and students with disabilities, through surveys and interviews. A t-test was used to analyze the significance level between some of the participants' groups in this study. The authors compiled a list of themes that emerged from the interviews. This is a ***pilot*** study and the authors will update current surveys and interviews and continue the study for a subsequent research article.

Keywords: Accessibility, services for university students with disabilities, perceptions, attitudes

INTEGRATION CHALLENGES AND DEVELOPMENT OF HORIZONTAL AND VERTICAL COORDINATE REFERENCES FOR THE TERRITORY OF THE REPUBLIC OF ALBANIA

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Milot LUBISHTANI

Abstract

This paper shall present the construction of "classical" geodetic coordinate references, the transition into the "modern" coordinate reference of the Republic of Albania, as well as its integration into the Western Balkans, by comparing it with the standards and trends used today in Europe and worldwide.

One of the challenges for integration into the Western Balkans for each country is the definition and construction of geodetic coordinate references, taking into consideration the geographical extent and surface of that country. Given that, as long as the geographical extent and the surface are changeable, the definition of the geodetic reference of each country changes, too.

All the developed countries have, on time, made geodetic measurements, and have defined the geodetic coordinate reference of their country, which is not the case for Albania because the country was occupied by foreign invaders of that time, and did not have the opportunity to perform the measurements and calculations for developing and defining the geodetic coordinate reference. Therefore, the measurements and calculations for the definition of the geodetic coordinate references of Albania have been performed by foreigners.

This has been a priority, but at the same time has also caused disadvantages. As a result of all this, Albania has gone through various phases of development and construction of horizontal and vertical coordinate, geodesic, state references. The first measurements were made by the Austro-Hungarian Empire and the Moscow CNIGA Institute.

However, with the rapid development of technology, the classic references developed over the years were no longer a trend of the time. Western countries had already shifted from classical coordinate references to modern coordinate references, relying on new satellite technologies and the standards in place. Thus, such a shift had to happen with Albania – that is the transition into modern geodetic coordinate references according to the standards in place of global character, and quite accurate from the geodetic point of view, since it has also been a requirement for integration into the Western Balkans. This newly created reference becomes comparable to the European ones in all its aspects, as it fully complies with the current European criteria and standards.

Keywords: Republic of Albania, geodetic coordinate reference, integration, standards, European policies.

SCHOOL-UNIVERSITY PARTNERSHIP: INNOVATIVE PERSPECTIVE OF KNOWLEDGE SHARING AND COLLABORATIVE LEARNING

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Abstract

Innovation is important in education. For innovative education, there should be connection and collaboration between knowledge production, dissemination and application sectors. Knowledge sharing is the main thing for upbringing the innovative education. Compared to other professions, education sector left behind in connecting the production of knowledge (university) and its application (school setting). School-university partnership is one of the most suitable solutions for innovative education since it can connect the research, theory and practice in education where the knowledge are produced, disseminated and applied. This study will discuss the context of school-university partnership in its areas of knowledge sharing and learning between schools and universities. The aim of this study is to investigate how universities and schools collaborate to share knowledge and learn together within partnerships in order to develop their skills and for innovative education. The innovative perspective of school-university partnership from perspective of "*triple helix*", where the focus is on collaboration between actors and how they coordinate, will be outlined. The "*knowledge triangle*" will be clearly explained by highlighting the need of collaborating between research, innovation and education. The explanation of how these two concepts (knowledge triangle and triple helix) are applied in education will also be discussed. Hargreaves' *Joint Practice Development (JPD)* will be presented as the core collaborating theory in the context of school-university partnership. Networks of schools which are important not only for sharing of knowledge but also for learning will also be presented in this study. In conclusion, the overall innovative perspectives of school-university partnership for knowledge sharing and learning will be summarized in this study. This study will give the complete view of school-university partnership by underlying its knowledge sharing and learning perspectives.

Keywords: School-university partnership, Innovative education, Knowledge sharing.

1. Introduction

When we talk about school-university partnership, we see "initial teacher training" without doubts. Scholars and many researchers automatically understand the essence of school-university partnership is the training and preparation of student teachers. However, if we see school-university partnership from different perspective, not merely from the views of initial teacher training, it is more than the preparation of initial teacher training.

The innovative perspectives of school-university perspective have four core functional areas. Most scholars rarely notice these four core functional areas of school-university

partnership. They may see them as a separate function, not as an integrated function. If one area is improved, the other three areas are automatically advanced since they are interconnected each other. The four functional areas of school-university partnership are (i) research and innovation, (ii) school improvement, (iii) teacher education as skill development area, and (iv) university improvement.

In this article, all these four areas will be discussed broadly from the perspectives of innovative theories and concept. The innovative theories and concept which will be mainly presented in this article includes knowledge triangle, triple helix, school learning within partnership and the joint practice development. All of these theories and concept support the collaboration between universities and schools and give an alternative perspective of teacher learning and organization learning within the context of school-university partnership.

2. Literature review

2.1. Knowledge triangle

The "knowledge triangle" is an essential tool for enhancing innovation processes through connecting the key drivers called education, research and innovation (Groumpos 2013). The "knowledge triangle" is considered in which research, education and innovation are connected in its three sides. (See Figure 1)

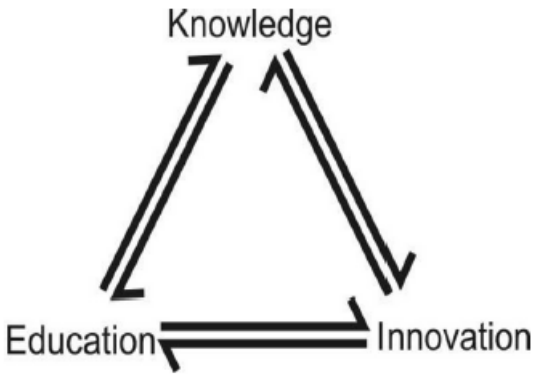

Figure 1: Knowledge triangle concept

Source: Groumpos (2013)

From the perspective of school-university partnership, the knowledge triangle concept can be applied in the following ways. According to Halasz (2016), if we put the knowledge triangle in teacher education, the knowledge component in the knowledge triangle "research centers" in teacher education, and the education component becomes the "University for

Teacher Education" and the innovation component stands for "schools" where the practice is happening in the school setting.

From the perspective of knowledge triangle, it is important to see that schools, teacher training universities and research need to be cooperated together for effective sharing of knowledge and innovation as well as for upgrading and promoting teacher education.

2.2. Triple helix

The triple helix model is developed by Etzkowitz and Leydesdorff and it shows the essence of collaboration between universities, industry and government for the innovation. (Etzkowitz and Leydesdorff 1995)

The triple helix also focuses on the collaboration between three partners as knowledge triangle, however, the only difference between the knowledge triangle and triple helix is that the government participated in triple helix in order to support the collaboration between university and industry. (See Figure 2)

From the point of view of triple helix to put it in the place of school-university partnership, the schools and the universities should collaborate together in order to promote innovation and their collaboration should be supported by the government.

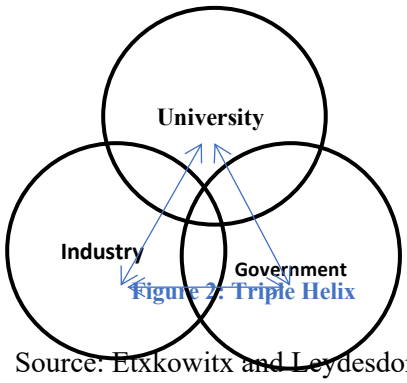

Figure 2. Triple Helix

Source: Etxkowitx and Leydesdorff (1995)

2.3. Joint practice development (JPD)

During last four decades in the United Kingdom, a shift in the professional development of teachers called "knowledge model" of professional development to a "practice model" is formed (Hargreaves 2011). The former "knowledge model" of professional development tends to indicate the acquisition of academic knowledge through cognitive change and the "practice

model" indicates the emphasis on the professional practices rather than theoretical knowledge development.

According to Hargreaves (2011), the traditional model of professional development is not effective because teachers are just listening and do not necessarily need to participate in the professional practice. Therefore, Hargreaves introduced the term called "Joint practice development (JPD)" in order to promote the professional knowledge and development of teachers.

Joint practice development is a process in which individuals in an activity are sharing "good practice" and interact in a learning process. This is an interactive process and is different from other model of professional development where the knowledge is transmitted in a hierarchical order. Hargreaves and College (2012) claimed that the traditional "model" of professional development (where knowledge is transmitted from superior to teachers) is not effective after they asked the participants to measure the success rate of knowledge acquisition in such traditional professional development (Hargreaves and College 2012).

Hargreaves observed why the success rate of knowledge acquisition is so low in traditional model of professional development process and he found the following:

> "*The reason is so obvious: implementing the new practice in one's school or classroom often proves to be a much more difficult task than it appeared to be in the oral or written account of it. The practice was shared, certainly, but not actually transferred*" (Hargreaves and College 2012)

Joint Practice Development (JPD) developed by the Hargreaves gives the significant meaning of successful professional development. It is different from other forms of professional development in three ways.

(i) It is a joint activity, in which two or more people interact and influence one another, in contrast to the non-interactive, unilateral character of much conventional 'sharing good practice'.

(ii) It is an activity that focuses on teachers' professional practice, i.e. what they do, not merely what they know.

(iii) It is a development of the practice, not simply a transfer of it from one person or place to another, and so a form of school improvement. (Hargreaves 2011)

JPD shows the nature of effective school-university partnership. In the effective school-university partnership, the knowledge is transmitted in an interactive process not only from

university teacher to the school but also from the school practitioner to the university expert. Both participants are learning and interacting in learning processes.

3. Conclusion and Discussion

Innovation is an essential element in education. School-university collaboration helps to promote innovation by letting two different units to work together and to learn from one another. The above innovative concepts see school-university partnership from different point of view by fostering each unit to collaborate together. School-university partnership is also a tool for innovative education.

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READING AND WRITING CURRICULUM FOR PREPARATORY CLASS- KEY FACTORS

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Abstract

Reading and writing abilities are the main focus during primary school in all educational systems. In Romanian Educational system, starting with 2012, primary school education was reorganized and learning was split in five classes: preparatory class, first grade, second grade, third grade and fourth grade. This change brought into light many curricular new approaches and teachers faced many difficulties. A major problem turned to be teaching reading and writing abilities. Teachers interpret curriculum in different ways, this leading to learning differences and difficulties in establishing the normative level. In this situation the aim of this research is to prove the necessity of a unitary teaching in order to reduce discrepancies in teaching and later in diagnosing learning disorders (at the end of first grade). Our research was based on elaborating a probe meant to assess reading and writing abilities at the end of the preparatory class. This probe was built starting from our national curriculum for preparatory class and mainly based on the results we obtained during the TALK project (an Erasmus K2 Strategic Project focused on preventing learning disabilities by promoting early intervention, project in which we participated as a partner country). This probe was then applied in schools selected at random, schools from all over Romania country, both from rural and urban areas (N_{pupils}=1058). Results underlined the main aspects that should be considered in preparatory class: phonological awareness (to identify the sounds/letters in a given word; to segment words in syllables; to match written monosyllabic and disyllabic written words with the corresponding image; to read small sentences and to identify the corresponding image; to read fluently all letters in our alphabet, mean score=57 letters/minute with almost 3 errors/minute). Based on these results, conclusions can delimit two major aspects both regarding reading and writing skills at the end of preparatory class: reading and writing letters fluency is extremely important as well as training reading and writing comprehension. Thus, even if decoding seemed to be the main focus for preparatory class, this research underlines the necessity to introduce activities and objectives aiming comprehension in order to build a solid foundation for reading and writing skills and to ensure early prevention for learning disabilities. This research also underlines high correlations between writing abilities, phonological awareness and reading comprehension, correlations meant to strengthen a structural approach in teaching reading and writing, from phonological level to semantic and pragmatic language levels. All the obtained results are meant to be used to reorganize our preparatory class reading/writing curriculum.

Keywords: *reading, writing, fluency, comprehension, curricular approach.*

1. Introduction

In Romanian educational system, preparatory class is included in the primary school system before 1st grade and it became part of our national educational system starting in 2012. This change brought into light the need for a curricular change in the main educational areas. One important curricular change concerns reading and writing educational sectors. The main competences to be fallowed during the preparatory class for reading and writing are: to listen and comprehend oral messages corresponding to different communication situations (listening competence); to formulate different oral messages adequate in different communication situations (speaking competence); to be able to decode various written messages (reading competence); to be able to produce different written massages (writing competence). All these four competencies are, in fact, common for the entire mandatory education cycle. This means that the specificity of the preparatory class is ensured by the objectives the curriculum established and by the concrete offered examples of activities that can be organized with children.

Unfortunately these objectives can be considered, to a certain extent, unclear, giving the primary teachers the possibility to interpret them based on their teaching experiences and based on the class level.

For example, the reading competence is analyzed, the main objectives are very general, like-"children should be able to decode several relevant words for them and basic written words around them". This means that some primary school teachers go through the entire alphabet with their pupils, while some of them select the most common Romanian letters and teach them in a global manner through the written words they intend to familiarize children with. This discrepancy between the analytical and global approaches in reading and writing can lead to discrepancies among children's competences and the way reading and writing difficulties and specific learning disabilities will be diagnosed. In this context "Asociația Specialiștilor în Terapia Tulburărilor de Limbaj din România-ASTTLR implemented in Romania, between 2017-2019 the Erasmus + project `TALK- Language and literacy curriculum for pre-schoolers and school-age children: a programme to improve inclusion, scholastic achievement and social well-being`. The project also took into consideration the fact that the law regarding children with specific learning disabilities was approved just in 2017 (The Law 3124/2017 Regarding the Methodology for ensuring the necessary support for children with learning disabilities). Thus, this project came to help with the curricular need but also with the therapeutic need to find solutions for children who graduated kindergarten, attend preparatory class and may develop reading and writing difficulties based on their oral language disorders (Bodea Hațegan, 2019, Talaș, 2019).

The Curriculum for Early Childhood Education (children aged 0-6), was reviewed and approved by the specific national Commission (2019), and it was submitted to the internal advice procedure. Due to the frequent changes of the Minister of Education the changes are not implemented yet.

Starting with 2012, the integrated teaching approach in primary school has been promoted. Not all the teachers agree with this new approach due to different factors like adaptation to the present school curricula, the lack of space in schools, inadequate logistics and material base (Tudor, 2014).

There are other limits identified for thee integrated approached:

- the impossibility of learning deeply the specialized scientific knowledge by the students;
- the difficulty of training the teachers to teach integrated educational objects;
- lack of integration concept in traditional pedagogy;
- latent or active opposition of educators to integrative approach.

2 . Research Methodology

2.1Objective:

The aim of this research is to prove the necessity of a unitary teaching in order to reduce discrepancies in teaching and then in diagnosing learning disorders (at the end of first grade).

2.2 Hypothesis

It is expected to find several discrepancies among children due to the curricular organization.

It is expected to identify the key curricular factor which can contribute to the curricular improvement.

2.3. Instruments

This research was based on elaborating a probe meant to assess reading and writing abilities at the end of the preparatory class. This probe was built starting from our national curriculum for preparatory class and mainly based on the results obtained during the TALK project.

The Probe Assessing Reading and Writing skills at the end of the Preparatory School Year / Preschool Class (0 class, before First Grade) is composed from 8 items:

1. Write your name and surname.
2. Indicate the letter corresponding to the first sound of the given words: avion (plane), pisică (cat), găină (hen), baloane (balloons), mașină (car).
3. Indicate the letter corresponding to the final sound of the given words: bed (pat), masă (table), pencil (creion), pitic (dwaf), morcov (carrot).
4. Establish the correspondence between the following images and their corresponding words: măr (apple), casă (house), copac (tree), lună (moon), tigru (tiger).
5. See the images and write their corresponding names indicating the number of syllables: barcă (boat), urs (bear), ou (egg), cal (horse) and pește (fish).
6. Establish the correspondence between the fallowing sentences and the corresponding images (children have to choose a image from four possible images): Fetele culeg flori. (Grils are picking flowers.); Bunicul citește ziarul (Grandfather reads the newspaper.);
   Toamna este ploioasă. (The autumn is rainy.); Fata se joacă. (The girl is playing.); Băiatul se îmbracă. (The boy gets dressed.).
7. Circle the three syllables words (children are supposed to choose from the following words): carte (book), banană (banana), limonadă (limonade), cămilă (camel), supă (soup), macara (crane), pasăre (bird), elefant (elephant), sac (bag).
8. Read as many letters as possible in one minute (this item is a fluency reading item). This final item is part of the PEAFC Probe (Probe for Assessing and Training Reading Fluency in Romanian language). PEAFC was created by a team coordinated in 2014 by Carolina Bodea Hațegan and Dorina Talaș.

2.4 Participants in the research

Participants in the research were selected based on the following criteria:

a. pupils attending preparatory class, children with ages between 6-7 years old.

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b. pupils with typical development, children with special needs were not part of this research.
c. pupils both from urban and rural areas.
d. pupils attending different schools from all over Romania.

Based on these criteria the sample of participants is considered to be representative for Romanian population attending preparatory class, N=1058

The gender of the participants for our data records a value of 56,9% for male students and a value of 43.1% for female students. These data are considered normal due to the fact that at national level the percent of the school population is increased for male students compared to female students. The INS* data reflects a percentage of 51,8% for male population for primary and secondary education.

For our study the wide majority of participants were enrolled in the urban school, and a small part in rural ones, as is shown in the next table.

Tabel 1. Demographic data regarding participants in the research

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Urban	933	88.2	88.2	88.2
	Rural	125	11.8	11.8	100.0
	Total	1058	100.0	100.0	

The data are in concordance with the Romanian's school residency distribution, based on the INS* data. At the preschool population INS underline a value of 70,8% for urban residency, while our date the value was 88,2%. This distribution is a consequence of the fact that the numbers of schools are more concentrated in urban areas, while in the rural areas are less schools where students can be enrolled. In Romania usually the rural areas are in close proximity to urban areas and for many reasons students reside in rural areas but go to school in urban areas.

2.5 Procedure

This research was organized based on the following steps:

1. Curricular Analysis- authors of the probe with the help of two primary school teachers (Iancu Crina and Bogdan Teofil) developed a thorough analysis of the National Curriculum for The Preparatory class.
2. Elaboration of the *Probe for Assessing Reading and Writing Skills at the End of Preparatory Class*- the probe was elaborated and tested on a class of children in order to be sure that it is suitable to be applied.
3. The elaborated probe was applied- it was applied to 1058 pupils being on the edge to graduate preparing grade under ASTTLR coordination, this helping us to cover all the country, both rural and urban areas. First a training session for those who applied the probe was conducted.Then, the probe was applied during April-June 2018 by primary school teachers and speech therapists. The probe was applied individually, the task in the probe being read to the children who needed help (it is not mandatory pupils should be autonomous readers at the end of preparatory class, according to Romanian curriculum).
4. The obtained data are analysed and curricular changes are recommended.

3. Results and Discussions

3.1 Results

The first task, the one regarding name and surname writing is based on yes or no answers. Results are compressed in table no. 1.

Tabel 1. Results regarding name and surname writing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	139	13.1	13.2	13.2
	Yes	916	86.6	86.8	100.0
	Total	1055	99.7	100.0	
Missing	System	3	.3		
Total		1058	100.0		

Just a very small percentage from the tested pupils did not succeed in writing their names, 13.1% (N=139). The most common error appeared in differentiating the name and the surname or in writing just the surname and not the family name. Results demonstrated the fact that the reading and writing curriculum focuses on name identification and writing, even from the preschool period and this aspect is a relevant aspect for building the inner self and for helping the children in getting motivated towards reading and writing.

In table no. 2 data were analyzed and mean scores were calculated in order to prove the importance of the other identified variables gathered in this assessment probe (Probe for Assessing Reading and Writing Skills at the End of Preparatory class). The variability in N number is due to the missing data for particular items, due to the difficulty of the task.

Thus in the following table are compressed mean values at the task-2-7 from the probe.

Tabel 2. Results regarding task 2-7 in the probe

Frequencies			
	Mean	**Standard Deviation**	**N**
First letter identification task (task 2)	4.84	.588	1058
Final Letter identification task (task3)	4.49	1.06	1058
Word-Image matching task (task 4)	4.82	.704	1058
Writing task (task 5)	4.40	1.211	1057
Syllable judgement task (task 6)	4.35	1.284	1053
Sentence comprehension task (task 7)	4.10	1.287	1058

Results demonstrate that all the investigated variables are very relevant for building reading and writing skills in preparatory class, especially when pupils at risk for learning disabilities can be identified and correctly supported.

The first letter identification seems to be the easiest task children solved (m=4.84, out of 5 points maximum), very closely followed by word-image matching task (m=4.82), aspects confirmed by the fact that our curriculum stresses a lot on this aspect.

The most difficult task remained the sentence comprehension one (m=4.10). This aspect seems to be more relevant in making differences among children and we consider that it should be taken into consideration when diagnosing learning disabilities.

Results in final letter identification task (m=4.49), syllable judgment task (4.35) and the writing task (m=4.40) had very close mean values, they can be considered as triggered by the same aspect, and it is the phonological awareness.

Data regarding task 8, the reading fluency task are gathered in the following table. Fluency task for preparatory class is a letter decoding task.

Tabel 3: Fluency task

	Minimum	**Maximum**	**Mean value**	**Standard deviation**
Correct decode leters	0	132	57.78	21.58
Errors	0	39	2.21	3.34

In the letter fluency probe the mean value of the correct read letters/minute is 57.78. The wrong identified letters were m= 2.21/minute. The numbers of errors recorded a large variability with a range between 0 and 39.

The quartiles presented in table 4 indicate that the 75% of participants have scores higher than 44 letters/1 minute, and 25 % are able to read more than 70 letters/minute. A percentile statistic indicates that the high risk is set below 30 letters/1 minute and risk is recorded at 49 letters/min.

Table 4: Distribution of fluency task based on quartile and percentile intervals

Fluency task		Value
N	Valid	1053
	Missing	5
Quartile	Q1	44 letters/1 min
	Q2	60 letters/1 min
	Q3	69 letters/1 min
Percentile	10	30 letters/1 min
	30	49 letters/1 min
	50	60 letters/1 min
	70	65 letters/1 min
	90	85 letters/1 min

Linear regression model was applied to evaluate the relation of each model with the total performance. The data were tested in two different ways: one model includes the value of the reading task and one is without the reading task.

For situation 1 – Linear regression – stepwise method was applied. The results are presented in table 5. The model 5 was the most comprehensive and was selected.

Tabel 5. Linear regression results- model 1, without the reading/comprehension task

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
5	Regression	18158.280	5	3631.656	13676.357	.000
	Residual	277.758	1046	.266		

	Total	18436.038	1051			

Predictors: (Constant), Writing task (task 5), Sentence comprehension task (task 7), Final Letter identification task (task3), Syllable judgement task (task 6), Word-Image matching task - task 4, First letter identification task (task 2)

The results of this regression model indicated that students at the end of the preparatory class find it more difficult to complete the tasks that require writing, followed by comprehension task. Finding the last syllable of the word is also demanding while first letter identification turned to be an easier task for them. This results in concordance with the fact that the syllable at the beginning of the word is easier to be perceived. In Romanian education system, this aspect is intensively approached both from an educational point of view, while teaching the alphabet, and from a therapeutic point of view when training phonological awareness. The importance of first sound identification for building phonological awareness and teaching the alphabet is of extreme relevance (Hempenstall, 1997) and fortunately children prove to be quite proficient in this type of tasks

For situation 2 – Linear regression – stepwise method was applied. In this situation the predictors were analyzed based on the total number of items, including reading and errors task. The results are presented in the table 6

Tabel 6 – Mediating role of the task for the total performance

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
7	Regression	692430.570	7	98918.653	397399.868	.000[h]
	Residual	253.395	1018	.249		
	Total	692683.965	1025			

Predictors: (Constant), Reading task, Errors on reading task, Writing task (task 5), Sentence comprehension task (task 7), Final Letter identification task (task3), Syllable judgement task (task 6), Word-Image matching task (task 4), First letter identification task (task 2)

Based on this model the difficulties are constant. This new regression shows that the reading/comprehension task is more demanding and that the overall performance is influenced by this task. Also the errors in this task are a good predictor at the end of preparatory class when the error number is high the students have lower performance. As was calculated and indicated in model one the less difficult task is the first letter identification.

3.2. Discussions

The results presented offers a clear perspective on the mean and standard deviation for each task, and also the risk factors. There is a significant difference between task 7 - sentence comprehension task (mean 4.10 and standard deviation 1.287) and task 2 - first letter identification task (mean 4.84 and standard deviation .588) not only because of the complexity of the task, but also because of different approaches in teaching.

Reading and writing should be approached from a phonetic-analytical-synthetic perspective, this meaning that sound letter segmentation and sound-letter association are of extreme value. But, the stress should also be put on reading comprehension as it was underlined based on the two linear regression models.

This means that reading and writing abilities are definitely influenced by phonological skills, but they are also based on lexical-morphological and syntactic knowledge. These lexical-morphological and syntactic skills are unitary tested when assessing reading comprehension (Klauda & Guthrie, 2008, Carlisle, 2004, 2006, Martin-Jones, & Jones, 2000, Apel, Lawrence, 2011, Nagy, Carlisle, Goodwin, 2014).

Reading fluency is a complex process and must start in the preparatory class with letter-sound recognition. The Romanian language is a phonetic language; all the words are read in the same way they are written. The relation between reading fluency and comprehension is highlighted in different researches (Bigozzi et al. 2017, Pikulski & Chard, 2005) and must be taken in consideration when teaching reading skills. Bigozzi et al. (2017) found a strong correlation between reading fluency and school academic outcomes across all school's levels: primary, middle school and high school.

The results confirm the hypotheses, there are several discrepancies among children due to the curricular organization.

The key curricular factor which can contribute to the curriculum improvement are:

- A better curriculum organization,
- Clear and coherent curriculum standards,
- Coherent theoretical framework in understanding language and reading and writing competences.

Wood & Hedges (2016) highlight the importance of developing "alternative theoretical frameworks" taking in consideration pedagogy, assessment, play and learning. Based on this recommendation and on data regarding the language learning approach in typical and atypical context (Kibby, Lee, Dyer, 2014, Perfetti, 2007, Snowling, 2000) we suggested a structuralist-integrated approach in teaching Romnaian language in preparatory class, where phonological awareness should be related with morphological, lexical and syntactic awareness, in order to sustain the needed relation between reading fluency and reading comprehension. All these key factors, phonological, morphological, lexical, syntactic awareness in relation with reading/writing fluency and comprehension if they are intensively approached during language learning classes are able to ensure function reading and writing skills at the end of preparatory class, in a unitary manner.

This theoretical model should be materialized in a curricular way, and should be implemented as a core aspect to be followed in order to develop functional reading and writing skills.

4. Conclusions

Due to the lack of clear curricular standards in the Romanian curriculum, teaching reading and writing abilities in preparatory class is unclear. Based on current national and international research about curriculum, new curriculum standards for Language and Communication for primary school classes are recommended to be developed. Reading and writing curriculum for preparatory class and all the other classes must change due to the major changes in our society. Curriculum "must be adaptable to changes in the educational community and in society in general. Only then will it be able to be an effective change agent in the educational process" (Alsubaie, M. A., 2016, pg. 107). As holistic curriculum outcomes these comprise 'a combination of knowledge about the world, skills and strategies, attitudes, and expectations' (MoE, 1996, p.44).

Some teachers use an integrated approach in teaching, others use traditional teaching. It is important to find the balance between traditional methods and modern methods, including technologies in order to achieve the curriculum standards. In order to be able to identify the best strategies, the teacher must have a good initial training, lifelong learning courses and access to different resources.

It is very difficult to identify the students at risk to develop reading and writing difficulties at an early age, because very often teachers categorize those children according to the class' level and not according to the curriculum standards. The results presented in this study can be used by teachers and specialists as normative data for these specific tasks to identify children at risk to develop reading and writing difficulties.

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STEREOTYPES ABOUT THE ROMA ETHNIC MINORITY GROUP IN ONLINE HATEFUL CONTEXTS[1],[2]

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Abstract

Social media platforms allow people worldwide to communicate and interact almost instantaneously, to develop a sense of belonging and self-esteem. Nonetheless, the large-scale use and popularity of such platforms come not only with benefits related to communication and interaction practices, but also with some challenges. Due to their open nature and the legal protection regarding freedom of speech, social media platforms such as Facebook, Instagram or Twitter provide fertile ground for public expression and discussions, frequently including divergent points of view, based on ideologically-driven opinions and attitudes. The latter nourish the emergence and dissemination of different degrees of hateful content directed against certain individual or groups, often considered minorities. The Roma ethnic minority group – the largest ethnic minority group in the European Union – faces generalized discrimination (i.e., in the majority of the European Union countries and in Romania as well) in terms of access to employment, access to healthcare services, and education. In online settings, such discrimination seems exacerbated due to the fact that people are less constrained to freely express their views and more prone to self-disclosure than in real-life, offline contexts. Based on a 4x2 between-subjects experiment (N=351) in which participants were exposed to one of the following four possible types of information framing Roma people – neutral, derogatory, hateful or extremely hateful content – accompanied by either positive and negative comments, this study investigates the effects of exposure to online hate speech (i.e., on Facebook) directed against the Roma ethnic minority group in Romania, focusing on the main stereotypes about Roma people. Results show that exposure to "average" online hateful content (neither mild, nor extreme) directed against the Roma minority group might temper rather than reinforce negative representations about Roma people. These findings might be used as starting points for further research studies on the effects of exposure to online hateful content against ethnic minority groups and in the advancement of public policies intended to reduce discrimination and promote integration of Roma people.

Keywords: online hate speech, online discrimination, social media, ethnic minority groups, stereotypes about Roma

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TRANSDISCIPLINARY APPROACH TO TEACHING ART HISTORY – METHODICAL READING OF KURT VONNEGUT'S NOVEL *BLUEBEARD*

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Abstract

This work will present one of the possibilities of transdisciplinary approach in teaching art history and literature. This approach will be based on a new methodical reading of Kurt Vonnegut's novel Bluebeard. Ambiguous and ambivalent relationship of word and image will be set through reading a novel by its representation contradictions. Analysis of those representation contradictions will provide a possibility of discussion about relations between verbal and visual representations. Second part of this work will present a methodical framework for implementing this kind of transdisciplinary reading as part of art history teaching.

Key words: Vonnegut, Bluebeard, teaching methodology of art history, teaching methodology of literature, transdisciplinary, visual literacy, reading literacy, critical literacy

STUDY OF APPLICABILITY OF FINANCIAL LEVERAGE TOOL

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Abstract:
Leverage is a concept in physics. Various tools like scissors, crowbar, bottle opener, hammer and many more are designed on the said concept. Leverage has now become a generic word for being in an advantageous position and gaining disproportionately. It is used in financial decision making of Capital Structure. The financial leverage tool is basically used to increase the earnings of shareholders more than in proportion to the organization's earnings and to reduce tax burden. However, the current VUCA environment of volatility, uncertainty, complexity and ambiguity questions the feasibility of using this financial leverage tool. Prudence calls for equity financing till point of indifference and after that point to have an optimal mix of debt and equity to reap the benefits of financial leverage. Various external and internal factors make financial decision making an exercise based on circumstances rather than accepted prudential norms. Leverage is a double-edged sword, it ushers in benefits but also increases risk profile of an organization. It is often said that in business, cash is king. One needs to have robust cash flows. The words are now so true in this COVID 19 pandemic times. Debt reduces cash flows. Various parameters like risk taking ability and macroeconomic conditions need to be studied before determining mix of debt and equity. Asset light companies have inadequate assets to offer as collateral and find debt financing a challenge. Companies with no market visibility cannot go for public issue of shares. Risk appetite of financial intermediaries and cross-country transactions are impacted by the Covid pandemic. Governments may bring in new laws and amend those prevailing to boost the economy. These factors are bound to influence the extent of leverage of organizations.
Key Words: Leverage, prudence, debt, risk, earnings, cash.

Introduction

Debt in Capital Structure creates financial leverage. For example, if a company has a capital of 10 million; 50% debt carrying 10% interest and 50% equity; 500000 shareholders, face value per share- $ 10 and EBIT of $ 1 million, the financial leverage would be 2.

Shown in **Table 1** below:

Capital	$ in millions	Profits	$ in Millions
Equity	5	EBIT(earnings before interest & tax)	1
(500000 shares of $ 10)		Less: Interest	.5
Debt (with 10% interest)	5	PBT(profit before tax)	.5
Total	10	PAT (assuming tax @40%)	.3
		EPS (.3/no of shareholders.5)	.6

Financial Leverage is 2 (EBIT/PBT= 1/.5)

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If earnings double, EPS will more than double, it will go up by 2 times, by $1.2 (.6*2) , new EPS at EBIT of $ 2 million would be(.6+1.2) $ 1.8 The financial leverage, increasing EPS more than in proportion to increase in earnings. The increase in earnings is 1 or 100% and increase in EPS is 2 or 200%. Interest expenditure being a fixed expenditure does not increase when profits increase.

Shown in **Table 2** below:

	millions
EBIT(earnings before interest & tax)	2
Less: Interest remains the same	.5
PBT	1.5
PAT (tax @40%)	.9
EPS (.9/.5)	1.8

Continuing Table 1 example, and if company, needed $ 2.5 million for a new project, what would be the impact on EPS and tax outflow if the project was financed by debt (interest rate 10%) or by equity of face value of $ 10 per share. Tax rate is 40% and new level of EBIT is $ 7.5 million.

Shown in **Table 3** below:

	$-millions	$-millions
Financed	By Equity	By Debt
EBIT	7.5	7.5
Less: Interest		
Old	.5	.5
New		.25
PBT	7.0	6.75
Tax @ 40%	2.8	2.70
PAT(profit after tax)	4.20	4.05
No of shares	.75	.5
EPS (PAT/no. of shares)	5.6	8.1

If the project is financed by debt, financial leverage benefits are reaped. Due to increased debt content, tax outflow is less as interest is a deductible expenditure and EPS too is more. The profit must be distributed amongst lesser number of shareholders, so each gets a bigger share. Point of Indifference is the level of EBIT at which EPS remains the same whatever be the mix of debt and equity in the Capital Structure. As the return on equity and return on debt is the

same, it is also called break-even EBIT point. It is considered before considering source of finance.

Continuing Table 1 example and the new project needs $ 2.5, the choice considered is to finance wholly by equity or wholly or fully by debt.

The position in option 1 of financing only by equity would be that our number of equity shares would increase, and interest burden will remain the same. The position in option 2 of financing by debt only would be that number of equity shares would remain the same and interest burden would increase.

It is shown in **Table 4** below:

	Financing by Equity	Financing by Debt
Existing position	$ millions	$ millions
Equity	5	5
Debt	5	5
Interest	0.5	0.5
No of Shareholders	0.5	0.5
New Position		
Equity	7.5	5
Debt	5	7.5
Interest	0.5	0.75
No of Shareholders	.75	.5

The formula to find the Point of Indifference is where A is the point of Indifference is:

((A-Int. Option 1)*(1-T))/No of shares in Option 1= ((A- Int. Option 2)*(1-T))/No of shares in Option 2

((A-.5)*.6)/.75=((A-.75)*.6)/.50

A=1.25 million

At 1.25 million EBIT level, the EPS is the same. The same can be verified as below.

Table 5

New Project	By equity(million)	By Debt (million)
EBIT	1.25	1.25
Less: Interest		
Old	0.5	0.5
New		0.25
PBT	0.75	0.5

Tax @ 40%	0.3	0.2
PAT	0.45	0.3
No of Shareholders	0.75	0.5
EPS	0.6	0.6

It makes financial sense not to opt for debt financing till you have crossed the EBIT level of $1.25 million as you are taking risk of debt financing but not reaping the benefits.

The primary benefit in debt financing is disproportionate increase in earnings of shareholders. The risk is increasing the risk profile of the organization. If due to lack of liquidity, interest cannot be paid on time and/or the principal, there is risk of insolvency or bankruptcy.

In the example, only if the company earns more than $ 1.25 million, the company must consider debt financing, till then they are taking the burden of debt financing and not reaping the benefits.

When a company has debt in their capital structure, it must be mindful of its EBIT levels, it cannot go below the interest expenditure. In our example when interest burden was .5; EBIT must minimum be .5. When interest burden increased to .75, EBIT must at least be .75. This level of EBIT that is equal to interest expenditure is called Financial Breakeven Point. The benefit of Financial Leverage can occur only when EBIT has crossed the financial breakeven point.

Every company needs to keep its Cost of Capital as low as possible. To understand, the actual value addition of operations, EVA-Economic value addition is calculated by reducing cost of capital from net operating profits after tax (NOPAT).

Cost of Capital is the total of cost of Debt (interest) and cost of equity (dividend).

Cost of Capital will have an impact on the value of the firm and Capital Structure decisions must aim to enhance value of the organization.

As per the Net Income (NI) Theory, financial leverage, having debt in your capital reduces cost of capital. Debt is a cheaper source than equity and average cost of capital reduces when there is more debt in capital. Value of a firm is the sum of the market value of equity and of debt. Market value of equity is Net Income divided by cost of equity or market capitalization rate. EBIT divided by the total value of the firm will give the cost of capital. As debt content in the Capital structure increases, cost of capital decreases and value of the firm increases. As debt content in the Capital Structure decreases, cost of capital increases and value of firm decreases.

As per Net Operating Income (NOI) Theory, debt in Capital Structure has no impact on the cost of equity and value of firm. In this theory, capitalization rate or cost is considered of the

entire capital and not only of equity as in the NI approach theory. The value of the firm is obtained by dividing the Net Income by the overall cost of capital or capitalization rate. This gives the value of the firm. From this figure, debt content is reduced to arrive at the value of equity. Equity value is the residual value. If debt equity ratio changes, with increase in debt and decrease in equity, value of firm does not change. Similarly, if equity content is increased and debt content is reduced, cost of capital is not impacted, and value of firm does not change.

The Modigliani and Miller (M & M) theory is somewhat like NOI theory. It explains that debt equity ratio in Capital Structure has no impact and explains that this is due to Arbitrage operations. Investors shift from leveraged to unleveraged companies, investors will always buy low and sell high and due to this arbitrage process, financial leverage impact is not there.

The NI theory supports that debt equity ratio has an impact and NOI and M & M theory support that debt equity ratio has no impact. The Traditional theory advocates that debt equity ratio does have an impact but not at all levels of the debt equity ratio.

Whenever, long term funds are needed in an organization, options could be debt, equity or retained earnings. The choice made alters the debt equity ratio. Projections need to be done on the impact on EPS, market value of shares and value of firm while making the choice.

The prudential norms as explained above cannot often be complied with. Choice of the source is made due to other reasons like macroeconomic factors having an impact on banking sector or reputation or branding of the organization attracting investors.

Purpose and Objectives of the Study:

To understand the practical applicability of financial leverage tool to reap more than proportionate benefits to shareholders. Often, the choice of a source of finance can be opted for with due prudence but practically due to certain internal and external factors, it may not be possible.

To identify, the factors that makes one take the source of finance decision and to prepare a generic model for finance managers to make the apt choice

Literature Review:

Bei and Wijewardane (2012) have taken data of Sri Lankan listed companies across thirteen sectors. Using statistical tools, they have tried to show the relationship between Financial Leverage, Financial Strength and Growth. Sales, profits and assets of an organization can never remain at the same level. Profit is the most important measurement considered by investors. For profits or EPS to increase, sales must increase and for this to happen assets too must increase. Their findings were that Financial Leverage measurement of TD/TA is significantly associated with Growth and Financial Strength Variables.

Kuroda, Moralles and Albuquerqu (2019) studied the effect of financial leverage and debt maturity in Brazilian companies of the electric sector. They have discussed the importance of energy producing companies and their role in a country's progress. It is vital that investors find investments in such companies to be attractive. Their sample comprised of 14 companies operating in the electricity production and distribution segment. They have discussed how low equity investment in growth companies make them reject projects with positive NPV due to cash flow problems. Conversely, over investment may make companies accept project that may not be very profitable. Debt content should not reduce cash flows due to interest burden and reduce option of growth. Companies must attract equity and reduce excessive debt to maintain robust cash flows.

Amy Gallo (2015) in her article titled "A Refresher on Debt-to-Equity Ratio" summarizes the views of Joe Knight , author of the book "HBR Tools: Return on Investment". Though the calculation of debt to equity ratio is simple, the items included in debt could be only long-term or both long-term and short-term too comprising of accounts payable and outstanding expenses. Including non-interest-bearing debt may or may not be a good option depending on the reason for the calculation. Smaller companies are hesitant to be too leveraged but having debt in capital is an efficient way to grow. Owners of small enterprises must change their mindset about being burdened with loans. A good balance of debt and equity makes a company healthy.

Anuar and Chin (2015) have studied the capital structure of micro franchising firms in Malaysia. They have discussed how franchising is perceived as to be of famous brands. But in Malaysia, government is encouraging entrepreneurs and providing training and finance to them to take up low risk small franchising business. Debt-equity ratio depends and is driven by the growth, level of tangible assets, profitability, liquidity, size and age of the organization. A good debt equity mix will help these small businesses to reduce their risk, better equipped to face competition, be flexible as per changes in the business environment and make government schemes applicable and accessible to them.

Enekwe, Agu and Eziedo Kenneth (2014) have discussed in their paper the effect of Financial Leverage on Financial Performance. They studied the financial statements of 3 Nigerian pharmaceutical companies for 12 years. Their findings were that Debt Ratio and Debt Equity Ratio are positively related to Return on Assets. Interest Coverage Ratio is negatively related to Return on assets. However, the financial leverage variables of Debt Ratio, Debt Equity Ratio

and Interest Coverage Ratio do not have significant impact on financial performance calculated by Return on assets. A company must be wary of not getting into liquidity problems due to debt obligations that could lead to solvency issues. Decisions of Capital Structure must be taken considering the aim of wealth maximization that includes profit maximization.

Adair and Adastou (2015) in their article on Corporate Leverage of SMEs in France have referred to the Trade Off Theory (TOT) of Modigliani and Miller and findings of Stiglitz. It states how there are tax savings due to debt and risk of bankruptcy. An optimal debt equity mix would be when the marginal benefit of tax rebate is equal to the marginal cost of bankruptcy. They have referred to the agency theory as explained by Jensen & Meckling. It explains how an optimal Capital Structure can exist when there are no agency costs. The conflict of interest between the shareholders and managers give rise to agency costs. They have discussed the Pecking Order Theory (POT) of Myers and Majiluf. Businessmen would prefer the hierarchy of internal financing, followed by non-risky debt, then risky debt and finally equity. They studied the capital structure of 2370 SMEs in France for the period 2002 to 2010. Their findings were that trade credit is the main source of finance for SMEs and their way of functioning is very different from big corporates. Guarantees play an important role. The Pecking Order Theory supports the relationship between leverage and profitability and growth opportunities in SME sector. The relationship between leverage and age and size of SMEs is not supported in both the theories namely TOT and POT.

Methodology:

For secondary data, relevant articles from various journals and newspapers were perused. Variables or issues arising were further studied and, on that basis, questions were formulated for asking in interviews. Interviews were taken of about 25 executives in companies responsible for taking funding decisions. Financial Statements of listed companies were analysed to understand impact of debt equity ratio.

Data Analysis:

Responses to the interviews could be summarised as follows. Debt source is perceived as a quick and easy source. Equity source is expensive and long drawn process. Raising finance is tough and needs a lot of repeated negotiations and investment of long hours of work. Debt service coverage ratio, interest coverage ratio and liquidity ratios are important aids to enable

obtaining loans and understanding level of optimum debt. Realistic projected Cash flow analysis is imperative. Future earnings must be projected, present value of earnings understood, exercises like Sensitivity analysis and scenario analysis carried out. Pecking Order theory is a safe way to structure raising of finance; target your own internal sources, then debt and finally equity. Often, decisions are driven by other factors. A company with no market visibility may not be able to attract adequate investors in an IPO. A company that is asset light may not be able to raise loans as there are no assets to offer as mortgage. Often, promotors compel professionals managing the organization to take decisions contrary to their calculations based on ego, conflict of interest and other reasons. Department raising finance and department spending the money raised may not be coordinating with each other. This could lead to payment of higher interest than ROI. The financial statements studied showed no or very low correlation between EPS and value of firm with debt content in Capital.

Conclusion:

Many companies with high debt content have failed. Failure of a company is disastrous as it affects adversely all the stakeholders. Employees lose their source of income and unemployment sets into motion a chain of tragic events. Vendors, customers and others dependent on the company operations are left high and dry. Investors lose their money and government the tax revenue. Having too much debt is very risky, but it is not just the high leverage that causes failures but host of other reasons like wrong projections, mismanagement or change in macro-economic factors like Covid 19 pandemic. Optimum Debt equity ratio may differ from company to company as every company is unique. Macro-economic factors faced by various companies may be the same but the way they react to it may be different. The internal environment is unique to each organization. Culture, leadership style, skill of employees, level of their commitment and loyalty and other issues to decide the ability to handle debt.

Managerial Implications:

Before raising finance, the CFO or person-in-charge must be thorough with all projections of cash flows, probable return from project for which capital is to be raised and of risk analysis. He or she must be able to present the findings convincingly with clarity to the final decision-makers. He or she must be aware of the ground realities and practical issues, both internal and external influencing the decision. A generic model given below could be a tool to be used as a guidance.

Table 6:

WHEN	Ratios indicate ability to handle debt
	Internal and External factors conducive to raising debt
	Cost of Debt lower than ROI
	Strong cash flows
WHY	If for expansion-projected cash flows adequate
	If for M & A-realistic Synergy projection
	If to repay old loans- relationships with new lender to be good
	Any other reason- due projections indicate ability to service & repay the debt
Where	Source must be as in compliance of laws and internal rules of company
How	Research on all other possible sources of finance
	Calculation of indifference point, financial breakeven point and ratios
	Communication with clarity to those that need to know and understanding their concerns
	Study of economic and other factors, internal and external to the company

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FIGHTING DISINFORMATION IN THE DIGITAL MEDIA ECOSYSTEM: ADVOCATING FOR CO-REGULATORY ACTION

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Abstract

This paper[1] discusses contemporary challenges in fighting disinformation in the digital media ecosystem. The recent COVID-19 pandemic is the latest example proving the impact that disinformation, fake news, and conspiracy theories can have on the lives of citizens, and highlighting the need to speed up efforts to devise effective counter measures. Through means of an exploratory qualitative study, we identify a number of possibilities for regulating and limiting disinformation. We compare and assess interventions stemming from the digital platform companies, EU member states, and the EU institutions. More specifically, three main approaches emerge from this study. One is self-regulation, the preferred direction for action of the digital platform companies, who pledge to tackle the issue by improving the security of their platforms, as well as by designing algorithms to identify and take down fake accounts and pieces of disinformation. The second options is co-regulation. In this respect, the EU is currently working towards building a cooperation framework between all relevant stakeholders in the field, with notable results. Lastly, some EU member states have taken upon themselves to implement hard, legal measures to limit this phenomenon, an approach not without significant drawbacks. The conclusions from this comparative analysis incline in favour of the co-regulation approach to correct some power imbalances between digital platform companies, European institutions, and state authorities, while allowing for context-bound flexibility.

Keywords: online disinformation, fake news, regulation of disinformation.

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APPROACHES OF INTEGRATING OPTIMIZATION TO PROJECT MANAGEMENT TOOLS FOR CONSTRUCTION SCHEDULING

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Abstract

An optimal construction schedule is difficult to determine only by using commercial project management tools (PMT), so planners often have to develop separate optimization models within specialized tools. At this point, optimization tools can provide optimal scheduling results, however, they usually need to be further processed and edited with PMT for the aim of their presentation in the forms expected by project management. This time-consuming and error-prone work has motivated the execution of studies dealing with the integration of optimization and PMT to facilitate the successful realization of project goals with an emphasis on optimal time and resource allocation during the project life cycle. Therefore, this paper introduces approaches to the integration of optimization with PMT. The article is focused on construction projects and presents a detailed overview of optimization within PMT through the usage of Visual Basic for Applications (VBA), spreadsheet solving methods with implementation to PMT, special solving applications developed exclusively for the optimization of construction schedules as well as optimization capabilities incorporated into the building information modeling (BIM) tools. The findings of this work are supported by a discussion of the advantages and drawbacks of addressed approaches. The paper ends with conclusions and recommendations for further research.

Key words: project management, construction, optimization, scheduling, building information modeling, BIM

Introduction

When planning the construction of a designed building, the project managers have a rather difficult assignment of scheduling the activities required throughout the construction period. The construction process depends considerably on the skills and knowledge of the team that is in charge of construction planning. Various software solutions are available to facilitate the construction planning process, generally referred to as project management tools (PMT). There is no single solution for scheduling construction activities and each project manager would prepare their variation from their point of view. To verify that the produced schedule is indeed optimal and ready to be implemented on the construction site, an optimization model is necessary.

Optimization models can be developed in separate programs to minimize the construction cost, create a balanced construction schedule with minimal fluctuations in the number of resources and to make sure that the resources are available in the right amount and on time. The limitation of separate optimization models is that they are difficult to be generally applied to every construction project and requires significant modifications if the changes occur during the project implementation. Therefore, the idea was to connect the data that was initially entered in PMT with an optimization modeling tool. This way, the scheduling process can be quite improved so that if the project encounters changes during the construction, it can be easily modified, and the solving algorithm can be applied to ensure that the project execution is optimal. Studies that have managed to integrate optimization to the PMT are addressed in this paper and divided into four subcategories based on the approach of integration.

A comprehensive discussion on the integration of the optimization to the PMT was presented in the paper by Dasović, Galić and Klanšek (2020). The study was mainly focused on the level of automation in the process of combining optimization and PMT with emphasis on the solving algorithm. This paper pays attention to the approach to pairing optimization models to the data from PMT and offers advice on which of the presented approaches to use on a particular construction project.

The paper is structured as follows. Section 2 gives a brief overview of optimization platforms for construction scheduling that have been programmed in the VBA language within PMT. Section 3 describes the spreadsheet-based optimization models for construction scheduling with output to PMT. Specialized applications developed to optimize construction schedules and exchange data with PMT are presented in Section 4. The increasing use of BIM tools in project management has led to studies dealing with project scheduling problems, which are presented in Section 5. The conclusions and results are presented in Section 6 along with recommendations for further research.

Optimization within PMT through VBA utilization

One of the most frequently PMT used in construction scheduling certainly is MS Project. The useful feature of MS Project is its ability to automate actions through VBA usage. The studies that investigated the use of VBA macro programming were mainly focused on the development of heuristic algorithms to solve optimization problems. Great attention was paid to genetic algorithms (GA), along with the ant colony system (ACS), simulated annealing (SA), tabu search (TS), and other heuristic and hyper-heuristic algorithms.

Early studies on the implementation of the optimization model as a VBA macro program within the MS Project 4.1 version were conducted by Hegazy (1999a; 1999b). The author created macro programs for solving resource allocation problems (RAP), resource leveling problems (RLP) and time-cost tradeoff problems (TCTP), i.e., optimization tasks that frequently occur during construction scheduling. The GA algorithm was chosen to solve the said problems because GAs can solve a large share of scheduling problems in a reasonable time. The implementation of VBA-based programs to PMT facilitated the decision-making process in construction scheduling and extended the functions of the commercial PMT. The random nature of GAs was identified as a limitation of the study.

The studies by Anagnostopoulos and Koulinas (2010) dealt with the RLP. MS Project was used to implement simulated annealing hyper-heuristic through VBA programming. The analysis showed the potential to solve complex problems such as construction RLPs. In a further development, the aforementioned authors (2012) presented the greedy randomized adaptive search procedure (GRASP) for solving resource-constrained project scheduling problem (RCPSP). The solution search procedure was also developed within MS Project in the VBA programming language and has proven to be effective for solving RCPSPs. The improvements were aimed at faster performance through more efficient learning mechanisms and more sophisticated heuristics.

Zhang and Ng (2012) presented an example of an ACS-based model for the TCTP of the construction schedule. The ACS-based model was programmed in VBA and implemented in MS Project. The results of the optimization were presented as Pareto front solutions in spreadsheet form. The approach was described as a user-friendly and efficient platform that supports time-cost optimization decisions.

The study by Eid et al. (2018) presented a GA-based model for linear infrastructure projects. The VBA macro module was implemented in MS Project. The module can assign the crews for certain tasks in a way that minimizes the total project cost, project duration, project disruptions and delays. The limitation of the study is that it can only be applied to linear repetitive projects.

Spreadsheet-based optimization with link to PMT

In project management, the spreadsheets are in a wide application for calculations and data analysis. The commercial programs, such as MS Excel, LibreOffice Calc and Google Sheets can also be used as a modeling environment for optimization problems and all of the abovementioned programs are equipped with various solvers that can be applied to solve the

scheduling problems. Since the project managers already use the spreadsheets on the construction site, it was convenient to develop optimization models within the spreadsheet to facilitate optimal scheduling. The modeling of this kind of problem can be very complex and the results of the optimization still need to be processed in PMT to present the optimal schedule in the forms expected in project management. The main objective of the studies was therefore oriented towards the possibilities of integrating the spreadsheet models with PMT.

The study by Hebert and Deckro (2011) combined functionalities of MS Project and MS Excel to solve TCTP. The study aimed to shorten the project overall duration by a certain number of days and to generate minimal additional costs. To compress the schedule, a linear programming TCTP model was developed in MS Excel and solved with the help of an Excel Solver add-in. The functionalities of this approach were demonstrated on a small-scale project. The main limitation of this approach is manual data manipulation. Also, higher-level projects would probably lead to highly complex spreadsheet models. A somewhat similar approach was presented by Tiwari and Johari (2015). The authors expanded their model to solve TCTP and RCPSP simultaneously, intending to optimize schedule to meet the specified deadline with limited resources. The model was developed in MS Excel using the data from MS Project. The same limitations as in the previous study were acknowledged.

Valenko and Klanšek (2017) presented a spreadsheet-based linear programming (LP) model to solve the TCTP. The optimization model was created in MS Excel and solved using an Excel Solver add-in to minimize the total project cost. A step forward in the automation process was achieved by a VBA macro to export the optimal schedule into the MS Project. In this way, the possibility of errors in the project schedule was reduced. The contribution of the study is that it uses software that is already widely used in construction companies and increases the efficiency of scheduling. The limitation of the study, which should be addressed, concerns the scalability of the model. The additional activities or the change in precedence relations between activities would require additional model editing.

Specialized applications for the optimization of schedules created in PMT

To automate the process of optimizing schedules created in PMT, some of the researchers developed stand-alone applications for that purpose. The main goal of the applications is to import the schedule from a PMT file, optimize the schedule based on the given constraints and the objective function, and then, export the results to PMT.

Kandil and El-Rayes (2006) developed a multi-objective automated construction resource optimization system (MACROS) in the programming language C++. The application was able to read the data stored in MS Project and MS Access and to apply GA to solve the time-cost-quality tradeoff problem (extended TCTP). The MACROS includes a built-in module that allows seamless integration between the internal optimization modules and data from external applications, as well as a user interface module that facilitates the ranking of the optimal solutions obtained.

To solve the RLP, Lu, Lam and Dai (2008) developed specialized software called Simplified Simulation-based Scheduling system (S3). The software combines simulations and the particle swarm optimization (PSO) algorithm to achieve the shortest project duration. This system can also be considered as newly developed PMT. The advantages of the system were presented in comparison to MS Project and Primavera P3. Based on the examples given in the study, the software showed improvements in project duration and resource utilization. A multi-objective analysis should be considered for further development.

Lim et al. (2014) developed concurrent construction scheduling simulation system (C^2S^2) to solve the TCTP. The system builds upon well-established systems that practitioners are already familiar with – Primavera P3 and MS Project. This approach aimed to identify optimal overlaps between project activities and to compress the overall project duration without allocating additional resources and exceeding the project budget. The limitation of the study is that the system can only process the Finish-to-Start (FS) precedence relation, without lag or lead time.

Optimization-based BIM tools

BIM tools are increasingly entering the pores of project management. Some researchers recognized the potential of BIM as a beneficial data source for scheduling purposes. To optimize the schedule within the BIM tool, the researchers found various approaches to engage optimization algorithms and develop a dynamic system called active BIM (Dasović, Galić and Klanšek 2019). Studies dealing with active BIM approaches are presented in this section.

Liu, Al-Hussein and Lu (2015) created an automated scheduling system within the Autodesk Revit application programming interface (API). The system used resource and work breakdown structure (WBS) information previously created in MS Access. The information was then processed and linked to 3D elements from the BIM model to create an initial schedule. The PSO and the Symphony simulation model ensured that the schedule was optimized. The schedule can be exported to show the optimal plan for on-site use. So, in a way, this approach

does not require an initial schedule created by the project manager but creates one itself. The limitations of this approach were that the duration and resource productivity were estimated, and the part of the simulation network still had to be manually formed.

The study by Moon et al. (2015) brought a 4D CAD system that solves RCPSP using GA and fuzzy theory. The system was able to import schedules from the commercial PMT and read the BIM models from an .IFC file. The system stored all input parameters in the MS Access database. The optimization model used GA and fuzzy analysis to minimize the number of overlapping activities. The obtained optimal schedule was supported with a 4D simulation. However, by minimizing their overlapping, the activities are pushed through the schedule without regard to the allocated resources. Also, the increase in the cost and duration of the construction project was not investigated.

An integrated approach that facilitates data flow from BIM to the multi-mode RCPSP model was demonstrated by Wang, Lin and Zhang (2020). The authors named the software 4D-BIM. The 4D-BIM software can import and export files from MS Project, MS Excel and various BIM file formats. The functionalities of the software were demonstrated on a residential building project. Autodesk Revit was used to design the building and the design was imported into the 4D-BIM application. The software was able to recognize the building elements and create a list of activities with logical precedence relationships that can be used for the optimization model. IBM ILOG CPLEX Optimization Studio was used to solve the scheduling problem. It was shown that the optimal schedule can be exported to MS Project to be used on the construction site. Further improvements were proposed to extend the model to the cost estimation system and automatic progress tracking.

Conclusion

In this paper, the achievements review of approaches of integrating optimization to the PMT in construction scheduling were presented. The study was focused mainly on the optimal allocation of time and resources during the construction period, where the level of automation in the process of optimizing and updating the original schedule was crucial. Just as decisions on the construction site should be made quickly and on-time, the scheduling system based on optimization should be fast and reliable.

After a short introduction, this paper presented basic approaches to the integration of the optimization model to the PMT. First, the tools that are generally used in construction project management, PMT and spreadsheets, were examined. Then, the specialized tools for

optimization and the BIM-based optimization approaches were demonstrated. The main results, including the contributions, can be summarized as follows.

Certainly, the use of already known software in construction practice facilitates the process of creating the optimal construction schedule. The VBA-based approach in MS Project represents a simple and effective way of optimizing the construction schedule. The solving algorithms that were mainly adopted via VBA programming were heuristic and hyper-heuristic. The GA stands out among the others since it can solve a large share of scheduling problems in a reasonable time. The limitation of this approach is shown in the problem of changing the optimization objectives or change of the constraints which would require knowledge of the VBA programming language.

The spreadsheet-based optimization models were also used to solve project scheduling problems. The advantage is that most project managers are already familiar with the spreadsheet software environment, which can enable modeling perhaps less strenuous. In addition, spreadsheets allow us to select the solving algorithm to be used for the appropriate problem category. Spreadsheets can be impractical when updating the original schedule. The addition of new activities, changes in the precedence relation would require a significant redesign of the initial model. The studies address this problem as a scalability problem of spreadsheet-based optimization models.

The specialized optimization applications provided significantly automated systems that can read and store PMT file formats and thus create an optimal schedule at any point in the construction process. This makes it easier to update the original schedule and obtain the optimal solution. In this approach, the applications were provided with a single solving algorithm that can be applied to solve the optimization problem. While they showed a high degree of applicability in construction management, further research should be focused on extending the applications to solve different types of scheduling problems and the possibility to choose the solving algorithm.

The optimization-based BIM tools revolutionized the scheduling process in terms of data collection for optimization purposes. Data can be gathered from the 3D model created within the BIM tool and used to automatically generate an optimal schedule. The benefit of this approach is that the optimal schedule can be displayed as a 3D simulation of the construction process, eliminating the possibility of operational errors. The direction for further development would be to create a system that tracks changes with intelligent use of 3D scanning technology. The mentioned system could detect which activities were carried out and if there are delays in

the construction process, the system would automatically update the schedule, which would meet the deadlines.

The selection of the approach to be used for a given project depends mainly on the data compliance between the software used. Small-scale construction projects can usually be optimized by utilization of the spreadsheet and VBA-based optimization tools. However, complex and high-value projects would certainly benefit from the intelligent use of algebraic modeling languages specialized for optimization purposes integrated into the PMT. Nevertheless, integrated optimization models ensure not only optimized schedules but also a more efficient scheduling process over the entire life cycle of construction projects, thus promoting intensified research for their further development.

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ONLINE FOREIGN LANGUAGE TEACHING

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Abstract

Due to the newly occurred state of emergency caused by the COVID-19 virus out break worldwide, the classical Macedonian education process has been currently stopped at all education levels. In an attempt to ensure the continuity of the teaching process, many of the higher education institutions have adapted their educational offer to online activities. This also includes virtual classes for the foreign languages taught at university level through the use of distance learning Internet tools.

The aim of this research was to analyze the students' experience in the foreign language (English and French) online classes offered during the COVID-19 pandemic at several Macedonian higher education institutions. The research is based on a tailor-made questionnaire in which the students were asked to state their opinions on the organization of the online classes, the electronic platforms used in the process of online teaching, the scope of the lectures, the type of class activities, etc. The questionnaire was also intended to explore the students' motivation to follow the virtual language classes, the advantages and disadvantages of the virtual classes, especially, when compared to the classical way of teaching, as well as the difficulties the students face in the online learning process.

The results of the research indicate that although a high percentage of the students are motivated to partake actively in the process of online learning/teaching, still, their preference goes on the side of traditional classroom teaching and learning. The findings also point to the necessity of improving a range of aspects of online foreign language teaching in order to overcome the current obstacles and to eliminate all its present weak spots.

Keywords: foreign language, online classes, higher education, advantages, disadvantages.

Introduction

During the first half of the year 2020, the education in almost all countries worldwide faced a major challenge due to the global pandemic caused by the virus Covid-19. In order not to disrupt the continuity of the education process, most of the universities opted for replacing the traditional classroom teaching with online (distant) teaching. Given the urgency of the situation the transition from traditional to distant mode of teaching was conducted in a rather abrupt and improvised manner, i.e. without any prior planning and even a possibility to previously appraise and gauge the advantages and disadvantages of the currently available

online teaching platforms. This, in turn, meant that the teaching staff, in general, received practically no specialized training for this new mode of teaching.

Slightly baffled at first by the newly arisen circumstances, the Macedonian university foreign language teachers almost immediately accepted the challenge to make use of the new technologies in order to realize their foreign language classes online.

Nevertheless, as the two-month period of online teaching and the 2020 spring semester were drawing to their end, a lot of questions of great importance to all university foreign language emerged: "Have we maintained both the continuity and quality of teaching with the online classes?"; "How do our students feel about online foreign language teaching and learning?"; "Can online teaching be a real substitute for traditional classroom teaching?"; "What aspects of online teaching can be improved if online teaching is to be used again in the upcoming academic semesters?", etc.

In order to provide answers to these highly relevant questions, the study at hand placed the focus on the students' experiences and viewpoints regarding the foreign language classes they attended online from March to the end of May, 2020. The study is based on a tailor-made questionnaire whose purpose was to elicit answers from the students as to how motivated they felt to study a foreign language online; what obstacles, if any, they came across in the course of their online foreign language classes as well as what the advantages and disadvantages of online foreign language teaching and learning were.

Theoretical background

The advent of online teaching and learning happened in the second half of the 20th century. More precisely, in 1982, the Western Behavioral Sciences Institute in La Jolla, California, opened its School of Management and Strategic Studies for implementing online learning (Feenberg, 1993). Also, the system of education at the Open University in Britain has always been primarily focused on e-learning. The first correspondence courses materials were delivered by post. With technology improvement, the Open University began to offer faster correspondence with students via email etc.[1]

[1]The history of e-learning. Available at https://www.talentlms.com/elearning/history-of-elearning. Accessed on 15th May, 2020

[2]Introduction to online teaching and learning. Available at http://www.wlac.edu/online/documents/otl.pdf Accessed on 15th May, 2020

In the course of the last decade of the 20th century and the first decades of the 21st century online learning and teaching has gradually developed and several types of distance learning have emerged:

•Correspondence Courses: using mail with little interaction;

•Telecourses: delivering content via television broadcast or radio;

•CD-ROM Courses: interaction with static computer content;

•Online Learning: synchronously and/or asynchronously communication;

•Mobile Learning: including devices such as PDAs, cellular phones and digital audio players (iPods, MP3 players).[2]

The introduction of online teaching is in great part due to how well teachers engage with the new ideas and implement them with their learners. After all, teachers are often viewed by learners as the embodiment of the course, one of the key components which can make or break their whole learning experience (Freeman, 1997); thus the online teacher becomes 'a critical factor in learner acceptance of online-learning' (McPherson & Nunes, 2004).Teachers are instrumental in shaping learners' perceptions (McPherson & Nunes, 2004), so the way in which teachers present and use the different components and tools of a course will greatly influence learners' perceptions of how important and useful these components and tools are. Teachers need to be trained to become confident users and effective supporters of their students, and both teachers and learners alike need to know not only how to use new technologies but also why they should use them (Kirkwood & Price, 2005).

Online education requires careful planning, and the resulting course design should be innovative and allow learners to interact with each other and the materials (Porter, 2004, p. 28). According to Hall et al. (2001) the framework for web-based learning design, consists of seven components: directionality, usability, consistency, interactivity, multimodality, adaptability, and accountability. They propose that effective design begins with clear delineation of the intended audience, usage context, and learning goals and that all further design occurs within the context of these factors (i.e. directionality). The design factors themselves can be seen as representing the fundamental contrasting goals of simplicity (usability and consistency) and complexity (interactivity, multimodality and adaptability) (Clarke & Hermens,2001) posited that online learning is student-centered because students can control their own learning pace, and the activities can be flexible so as to better suit students' preferred learning style. Online learning also creates opportunities for active learning (Dolence & Norris, 1995). In addition, with good online learning applications or software, students have opportunities to participate in discussions, to express their opinions, and to share their knowledge equally regardless of

classroom size and time (Harasim, Calvert &Groeneboer, 1997).The online teaching and learning environment make learners face some challenges too. Thus, learners need higher cognitive ability to deal with the more multi-dimensional learning tasks and complex content (Tyler-Smith, 2006), learners then need to monitor and self-regulate their learning by setting up a learning schedule to ensure they can complete all the lessons (Tsai, 2009) and Internet skills (Ekizoglu&Ozcinar, 2010; Saadé& Kira, 2009). For some learners, these challenges might necessitate deploying a different learning style. For the learners who are less skilled in the use of technology, online learningcanbe rather problematic (Kearns, 2012; Lee, 2001).

In language learning context, online-learning is available to learners in a way that they can make use of it individually based on their personal needs or as a way to enhance formal education; that is, it is used as a supplementary learning environment embedded into formal instruction (Tallent-Runnels et al. 2006; Gluchmanova, 2015). In fact, online-learning offers more practice opportunities and varied audio-visual aids enabling learners to practice the language they learn as well as more online learning tasks for learners to engage (Anderson, 2003).The introduction of online-learning environments is supposed to make learners spend more time on language and make them be exposed to language more (Liu, 2013). Research has shown that factors such as: access to technology experience tools, learning preferences, study habits, purposes, goals, lifestyles, and personal traits can seriously affect the student's success in the online-learning process (Schrum & Hong, 2002).

Other researchers' findings clearly indicate that the learners' attitude towards online-learning is crucial in taking advantage of online-learning. The same goes for foreign language learning online –the success of the online-learning process depends on the students' efforts and attitudes, or in other words, the effectiveness of online-learning is in fact tied to the effectiveness of its users.

Research methodology

The study was conducted on a convenient sample of 53 university students majoring in English Literature and ESP/FSP elected from three different faculties (Faculty of Education; Faculty of Information and Communication Technologies and Faculty of Law) at "St. Kliment Ohridski" University–Bitola, Macedonia. In this study a tailor-made questionnaire was applied to analyze the students' experience in the foreign language (English and French) online classes. It was compiled by means of the online survey software, SURVIO.COM and was distributed electronically to university students. This questionnaire includes 25 questions in which the students give their opinions on the organization of the online classes, the electronic platforms

they use, the scope of the lectures, their class activities etc. The type of these questions is multiple choices and open-ended. The study is both qualitative and quantitative in nature.

The study is based on the following three hypotheses:

Hypothesis 1.The students face certain technology–related difficulties in the course of the online foreign language classes (e.g. unstable Internet connection, computer glitches, etc.)

Hypothesis 2. The students feel motivated to take part in the online foreign language classes, but their motivation does not stem from the advantages of using the Internet during the classes; it results from the fact that, rather than going to University, now, they attend the classes from the comfort of their own home.

Hypothesis 3. The majority of the students believe that the online foreign language teaching is more efficient than the traditional classroom teaching.

Results

Fifty–three students filled in the questionnaire; half of them (50%) are English majors at the Faculty of Education (50%); 40% study English for Specific Purposes (ESP) at the Faculty of Information and Communication Technologies, and 10% of them study French for Specific Purposes (FSP) at the Faculty of Law. One third, i.e. 30.2 % of the interviewed students are in the first year of their university studies; 13.2 % are secondary year students; 22.6 % are third year students and 34.0 % are fourth year students.

Regarding the platforms for online learning, the majority of the students (88.7%) state that they use Meet.googlefor their foreign language classes. The rest use Zoom (17.0%), Google hangouts(17.0%) and Google classroom (18.9%).

As to how often they have online foreign language classes, 47.2% of the interviewed students state once a week; 24.5% twice a week, and 28.3% more than twice a week. This discrepancy in the frequency of the online foreign language classes can be attributed to the fact that half of students are English majors and have a number of different English courses per week. The rest of the students who are majoring in ICTs and Law, on the other hand, have one online ESP/FSP lecture per week, as the foreign language courses are usually elective and a rather limited space is allocated to them in the respective study programs.

One of the questions in the questionnaire was intended to disclose whether the students feel motivated to attend the online foreign language classes. The students' responses show that the percentage of those who feel motivated (50.9%) is very close to those who do not feel motivated (49.1%).

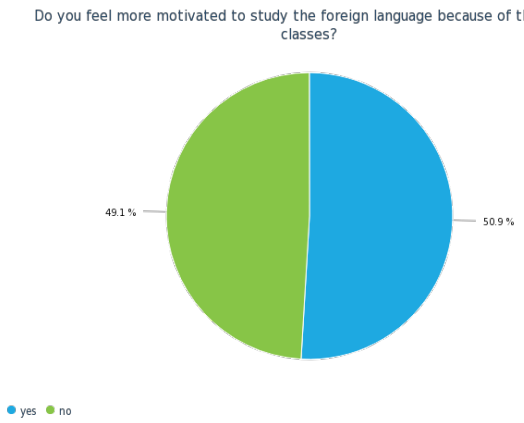

Chart 1

Students' motivation, or rather their lack of motivation for attending online foreign language classes, can be directly linked with the positive and the negative sides of this novel mode of distant teaching/learning. The responses of the "motivated" students, who are in favour of the online foreign language classes, and the advantages of online classes, can be divided into two separate groups. The first group, which encompasses 65% of the respondents, subsumes the answers related to the conditions under which the online classes are realised (e.g. the comfort of one's home); the absence of stress (the students feel much more safe and secure at their home, and, consequently, they feel more self-confident and are more active during the online classes); the saving of finances and time due to the absence of commuting, and the opportunity not to miss classes even when one does not feel quite well. The other group of students, which is significantly smaller than the previous one (35 %), locates the advantages of online classes in the benefits they obtain from using the Internet during the foreign language classes. Namely, the students, in that respect, explain that they have access to a number of Internet resources that are readily available to them when they face certain dilemmas and uncertainties. Thus, they claim they acquire knowledge in a fast and efficient way, and, as a consequence, have more time to come up with well-rounded and insightful answers.

The other group of responses coming from the "unmotivated" students, on the other hand, reveal that the students attribute their lack of motivation to the fact that they cannot follow their online lectures and remain fully focused the entire time, as they would normally be during the traditional classes. More specifically, 26.9% of these students complain about the frequent distractions that appear in their home environment as well as the computer glitches and the poor Internet connection at times, all of which divert their attention from the online lectures. In addition, some are displeased by the absence of a real face-to-face interaction in

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the form of debates and discussions, which, according to them, contributes to creating a rather monotonous atmosphere and makes the online classes so unlike the vibrant and dynamic traditional classes. One portion of the students even claim thatlearning a foreign language online is not as productive as learning it in a regular class as sometimes they cannot fully understand some of the explanations and the exercises they are supposed to do due to the lack of face-to-face contact with their teacher.Moreover, some of the students complain about the increased amount of homework assignments they get now as part of the distant learning and view it as an inconvenience. Still, the majority of them state that they do their homework assignments and submit them to their teachers on a regular basis, which only confirms that they are fully aware of the significant role homework assignments play in acquiring new knowledge and obtaining good grades.

The students were also asked if they take an active part in the online classes. The results show thatthere is no big difference between the percentage of students who claim that they were more active during the traditional classes (22.6%) and the percentage of those who say that they are more active now, i.e. during the online classes (28.3%). Approximately, half of the students (45.3%) claim that they are, more or less, as active now as they used to be previously during their traditional classes. Only few students (3.8%) state that they are not active at all during the online foreign language classes, but, unfortunately, they do not provide the reason why they prefer to attend the lectures in such a passive manner.

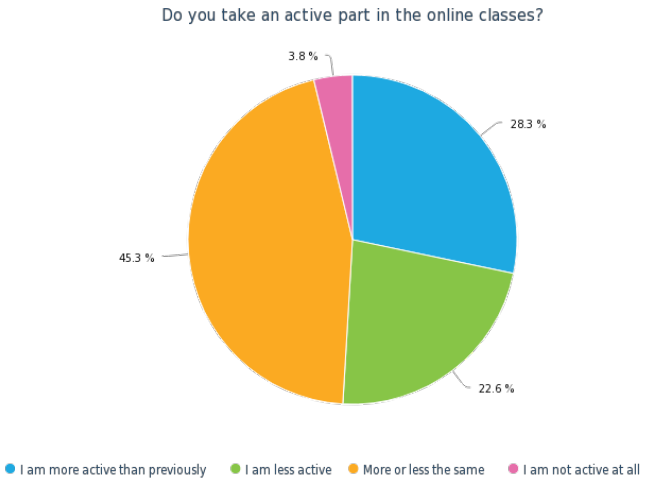

Chart 2

Despite the advantages of online teaching, the results obtained from the questionnaire point to the fact that the majority of the students are more in favour of the traditional way of teaching and learning (60.4%). Nevertheless, the relatively high percentageof students (39.6%)

who maintain that online foreign language teaching is more efficient than the traditional classroom teaching should not be ignored nordownplayed.Furthermore, one should not neglect the relatively high average grade,4 on a scale from 1 to 5, with which the students assess the quality of their online foreign language classes in general.

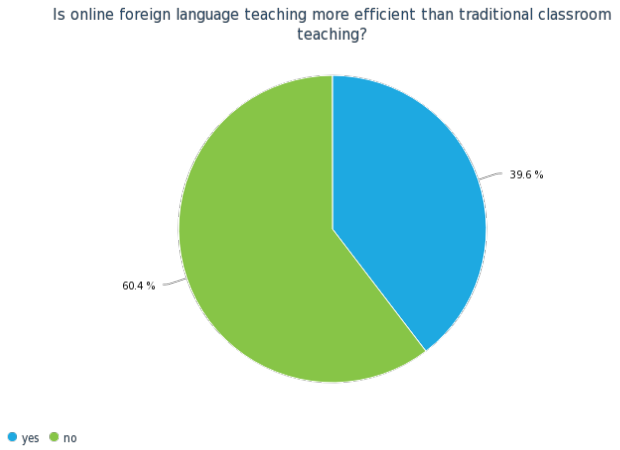

Chart 3

The finding that a significant portion of the students are in favour of the novel distant mode of learning can be further validated by the students' comments concerning the mode in which they would prefer to take their foreign language exam- online or in the traditional way. Namely, 63.5% of the students selected the option for sitting the exam online, and 36.5% chose the traditional paper-and-pan exams.The reasons they state for taking the final exam online range from health concerns and taking precautions due to the Covid-19 pandemic, to online exams being faster and consequently more practical and time-saving. A small portion of the students even state that they have never taken an exam online and that they are curious to experience that.The remaining 36.5% prefer to take their exams in the traditional way because they are not absolutely positive that they will do their best online due to the time-related stress as well as the possible computer glitches, and other technology-related malfunctions. However, they also admit that online exams would leave more room for cheating and other such irregularities which would drastically diminish the objectivity of their final results.

A thorough comparison of the results obtained from this research, points to an obvious 'incongruity' between the relatively high percent of students (63.5%) who are in favour of taking exams online and the relatively high percent of those who feel "unmotivated" to attend

online foreign language classes (49.1%)and who consider online teaching less efficient than the traditional teaching (60.4%).These findings suggest that when it comes to the process of teaching and learning a foreign language, the students attach a far greater importance to the social dimension of the process and the direct contact they have with their teacher and fellow students than to the Internet-related advantages that online classes so profusely offer. Conversely, as far as the exams are concerned, the practical side of the Internet is much more valued and comes to the forefront.

Conclusion

The general conclusion that can be drawn from this research is that the students are quite successful in coping with the new mode of online foreign language learning. The negative aspects of online teaching and learning they draw attention to are mostly of technical nature and include unstable Internet connection, computer glitches as well as lack of direct interaction with the teacher which is an extremely demotivating factor for some of the students.

Nevertheless, all these drawbacks are highlighted in the responses of only a small percentage of students, which, in turn, leads us to refute our first hypothesis that very of ten students experience computer-related issues which obstruct the smooth flow of their online foreign language classes.

On the other hand, the results of the analysis show that our second hypothesis is only partly valid. Namely, despite our expectations that the majority of the students feel motivated to attend the online foreign language classes, the percentage of the "motivated" and the "unmotivated" students turned out to be approximately the same. Still, our hypothesis is confirmed in part since we correctly foresaw that the students' motivation does not stem from the advantages of using the Internet during the classes, but, from the fact that, rather than going to University, now, they could attend classes from the comfort of their own home. In fact, a very high percentage of the "motivated" students (65%) in their answers highlighted a number of advantages which apart for the study-from-home possibility, also include the fact that, now, no time nor money is wasted on commuting to and from university. Only 35% of the motivated students dwell on the advantages that stem from using the Internet resources in a real time during the lectures.

Although the percentage of the motivated students is almost identical with the percentage of the unmotivated students, the research shows that the majority of the students believe that online foreign language classes are less efficient than the traditional ones. This finding, in fact, disputes the validity of our third hypothesis.

The fact that a high percentage of the students are motivated to attend online classes, but, still, if given the option to choose they would still opt for the traditional classes, we believe, points to the necessity of improving a range of aspects of online foreign language teaching in order to overcome the current obstacles and to eliminate all its present weak spots, especially, in view of the fact that this novel way of online distant teaching might be a requirement in the future again.

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DIFFERENTIATED INSTRUCTION PRACTICES AND ALTERNATIVE ASSESSMENT FOR DIVERSE POPULATION CLASSES

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Abstract

The purpose of the present study is to investigate the effectiveness of Differentiated Instruction and Alternative Assessment in the teaching of English to diverse population classes. The research focuses on the effect the aforementioned approaches have on triggering learners' motivation and overall language development.

In particular, this study is an Action Research which examines the outcomes of two groups of students attending the third grade of primary school, in Greece. The experimental group was taught through differentiated instruction, while the control group was taught through the use of the coursebook 'Magic Book' which is used in all Greek third grade primary schools. For collection of data several tools were employed regarding qualitative and quantitative information in order to render the conclusions reliable. A Needs Analysis questionnaire was distributed to the learners, a pre- and post- test was also assigned, portfolio evaluation checklists were administered and student semi-structured interviews were conducted interpreted and analyzed.

The findings of the study revealed the effects which the implementation of differentiated instruction had on the experimental EFL group, through the application of alternative hands-on tasks, students' participation and holistic skills development.

Key words: young learners, diverse population, Roma, differentiated instruction, portfolio assessment.

CLIMATE CHANGE AND ITS IMPACT ON BUSINESS ENVIRONMENT

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Abstract

Actually there is no doubt that in the interest of the whole society we must accept climate change as an inevitable fact and so bring the issue to the forefront of our attention. Entrepreneurship is one of the main components fulfilling principles of social security, healthy and prosperous business environment is highly correlated with a prosperous economy and society. Generally, there are two basic ways of climate change entree into business activities. The first one comes from a nation-wide mitigation strategy concerning on reduction of greenhouse gas emissions as they are considered to be main driver of climate change. The second way is directly related to physical impacts of climate change. Based on the aforementioned, we consider it beneficial to outline the issue of climate change and its consequences on business activities in general, as well as to provide a brief review to the issue of addressing climate-related risks in business environment. We synthesize knowledge gained from a comprehensive literature study and content analysis of selected reports of world-renowned organizations dealing with climate change issue. We focus on understanding the potential extent and way that climate change consequences could affect business activities, subsequently outlining the possibilities of addressing climate-related risks by the companies themselves. Our conclusion, based on the synthesis of knowledge, suggests that the global trend is currently set to take responsibility and address consequences of climate change, and so, it is probably just a matter of very short time, when in the interest of competitiveness and keeping up with development, companies have to consider several questions regarding climate-related aspects of corporate strategy and management, as well as to integrate climate-related risks into their corporate-risk management processes.

Key words: climate risk, physical risk, transitional risk, corporate risk, economic and financial performance of the company, corporate risk management

Introduction

The Intergovernmental Panel on Climate Change stated in one of its latest reports, that the planet is already experiencing the effects of 1°C global warming and will face another serious consequences of climate change with 1,5°C temperature rises that could occur as early as 2030 (IPCC, 2018). Climate change will very likely lead to vast and various impacts and economic costs across different sectors and regions. Climate predictions sound the alarm worldwide in the interest of actions, requiring both mitigation and adaptation strategies to be considered in order to cope with climate change challenges. Business environment as an important social and economic component should be actively involved in addressing the climate change impacts. Businesses are currently facing two major challenges in relation to climate change consequences, both existing and expected ones. From one point, there is a need to develop new

tools and take new and effective measures to cope successfully with the existing and future likely scenarios of climate change, which is likely to manifest itself in a wide range of different physical impacts (like e.g. extreme weather events, precipitations levels change, extreme droughts, floods, rising temperatures). This way of responding to climate change is based on adaptation strategy to be taken in order to reduce vulnerability to climate change impacts. From another point, there is an increase of social, market and institutional initiatives and legislative measures taken to move to a low-carbon economy and to reduce business - made and human-made pollution, and so to mitigate climate-change – related impacts by adopting so called mitigation strategies. This economy transition creates new responsibilities for many companies in different business sectors, but especially for those acting in extremely – polluting ones. However, due to the adoption of stricter regulatory measures in the areas of for example energy efficiency and waste management, and due to higher prices of "green" energy and so on, transition may affect a large part of industry and the business environment. Implementing new measures and responding to demand for a low carbon economy requires new funds to be considered by management of the companies. The economic literature perceives climate risk arising from climate change as one of relatively new financial risks, as this risk, based on the above mentioned, has significant and raising potential to affect cash flow and wealth of companies. As mentioned by Zenghelis (2006), both responses to climate change have to be considered, so adaptation strategy cannot be substituted by mitigation strategy nor vice versa. These responses mean new costs to be considered in order to avoid the problem of "unpreparedness". There is a need to ask the question: what should companies do in response to climate change-related impacts on their businesses and what are actual possibilities to adapt businesses in climate-related changing business environment?

Our paper is based on conceptual research, in the first part, we discuss the issue of climate change-related impacts on business, in the second part, we provide suggestions and main thoughts considered to cope with climate change-related risks in corporate management.

1. From climate change to business and financial risks

1.1. Climate – related risks in business

Climate change can translate into business risk in a number of ways affecting company´s assets, but also operations, supply chains, brands, market and structural risk, or a liability risk (Trexler & Kosloff, 2017; Monin, 2018). Worldwide known definition, accepted e.g. by Regulators Network for Greening the Financial System (NGFS), G20 Sustainable Green Finance Study Group (G20 GFSG,) or by Task Force on Climate-related Financial Disclosures (TCFD)

distinguishes two main groups of climate change-related risks according to the nature of triggering agents: (I) Physical climate risk and (II) Transition climate risk. Physical risk arises from the physical consequences of climate change and from corporate perspective, it reflects potential economic and financial losses due to direct and indirect climate threats to business activities. Physical climate threats can be divided according to their nature into 1. acute and 2. chronic ones. Chronic climate threats stem from changes in climate models used so far, so they have continual character in climate changes, such as continually rising temperatures, rising sea levels and changes in precipitation. Acute climate threats result from increasingly frequent and intense extreme weather conditions, such as extreme droughts, floods, storms. Impacts of physical climate threats on businesses can also be distinguished as follows (Weinhofer & Busch, 2013): (I) first-order impacts include both acute and chronic direct impacts of climate change on property and business of the company and (II) second-order impacts are characterized by all the consequences of climate change on economic, human and environmental systems occurring beyond the borders of an enterprise itself, like e.g. changes in the availability of natural resources, agricultural productivity, changes in world trade routes, migration, transport restrictions, employment, GDP, interest rates, changes in customer preferences and so on, so they are very difficult to manage from the individual company's point of view (Mazzacurati, Firth, & Venturini, 2018). Transition risk, on the other hand, reflects potential economic and financial losses resulting from transition to low-carbon economy. The sources of transition risk are regulatory measures acquired by competent institutions, requirements for technology innovations and changing market preferences (Monin, 2018). TCFD in its report (TCFD, 2018) defined several categories of transition risks, that companies should take into consideration, namely (I) policy risks arising from policy actions taken to mitigate negative effects of climate change or to promote adaptation to climate change; (II) legal risks arising from litigation of companies unable to mitigate their negative impact on the environment, adapt to climate change, or insufficiently disclosing around material financial risks; (III) technology risks, based on technology development and innovation, which will probably affects in example competitiveness of some companies, or their production and distribution costs; (IV) market risks through shifts in supply and demand for certain commodities, products, and services and (V) reputational risks arising from customer or society ´s changing perceptions. All the mentioned factors put pressure on companies to adapt their business models to new economic conditions, and this adaptation requires considerable financial effort on the part of the companies concerned, so climate-related costs can be therefore perceived as a source of business risk and financial risk as well.

Some authors (Busch, Berger, & Paquin, 2012; Nikolau, Evangelinos, & Filho, 2015; Sakhel, 2017; Elijido-Ten, 2017; Linnenluecke, Griffiths, & Murphy, 2015) suggest climate risk classification into three categories: (I) physical climate risk, (II) regulatory risk and (III) market risk. The physical climate risk, similarly to previous classification, refers to consequences of climate change in natural ecosystems. Regulatory risk in this classification arises from potential regulatory changes, when, in response to climate change and increased awareness of the society, new and stricter legislation for mitigating the negative effects of business on the climate is emerging. Considering economic and financial perspective, these regulatory measures can particularly affect the growth of operating and investment costs of enterprises (Sakhel, 2017). Market risk in this classification arises from possible changes in consumer behavior or on financial markets. Market risk includes e.g. changes in demand for goods and services due to changes in customer attitudes, sale of assets of carbon intensive or fossil fuel industry companies by investors, or weakened purchasing power of economies significantly vulnerable to the effects of climate change (Linnenluecke, Griffiths, & Murphy, 2015). Regulatory and market climate risks made by this classification are synthesized into transitional risks defined by previous climate risk classification, i.e. the two types of climate risk classifications only have a different division of terms.

1.2. Possible extent to business

Analyzing the possible extent of climate change impacts to business could serve us with several responses to question of how much can climate change affect businesses in general and what are factors determining the extent, to which particular businesses are exposed to climate change-related negative impacts. We should also ask how business environment perceives climate risks and more, what is the relationship between this perception and factors determining extent of climate change impacts on business activities. Extent of climate change impacts on business depends on objective characteristics, like e.g. geographical location of suppliers and production sites, sector in which company operates, market location and market characteristics. These objective characteristics however should not be all. The extent of climate change impacts could be also affected by company ´s response to climate change threats, and thus, we assume, is also dependent on perception of climate-related issues. As it is highlighted in TCFD final report (TCFD, 2018, p. 3): “the exact timing and severity of physical effects are difficult to estimate and the large-scale and long-term nature of the problem makes it uniquely challenging, especially in the context of economic decision making”. Regarding potential impacts of climate change we have to consider also risks emerging from the effort to reduce of greenhouse gas

(GHG) emissions. Oliver Wyman study (Colas, Khaykin, & Pyanet, 2019) provides an example of several climate scenarios based on adoption of measures to reduce GHG emissions (Table 1). Stronger corrective response to mitigate physical climate change impacts means the need to consider more transition risks affecting business activities (like e.g. carbon taxes, new technologies, change in market and investment preferences) while reducing physical climate change impacts. On the other hand, the smaller corrective response entails greater physical climate risk to business environment, having probably more destructive and irreversible effects. Both types of climate change-related risks provoke companies to be aware of climate change-related impacts on their businesses.

Table 1: Potential climate scenarios, processed according to Oliver Wyman study,2019

Green scenario → Brown scenario				
Scenario	Rapid transition	Two-degree	Business as intended	Business as usual
Corrective transition response	Very strong	Strong	Substantial	Limited
Change in temperature vs pre-industrial era (2100)	1,5°C	2°C	3°C	4°C
← More transition risk			More physical risk →	
Controlled, yet aggressive change Lowest economic damage			Accelerating changes in earths system impacts Economic changes increase	

Adoption of regulative measures trying to mitigate negative impacts has been on ascending path. In 2016 nearly 200 countries of the UN signed the Paris agreement, by which they have committed to reduce GHG emissions and accelerate the transition to a lower-carbon economy. The EU has undertaken to reduce GHG emissions 40% by 2030 compared to 1990 levels and to achieve zero carbon economy till 2050 (The European Green Deal, 2019). Reducing greenhouse gas emissions activities require high costs, however, limiting concentrations in some range is possible and costs are modest in comparison with costs of inaction, as inaction leads to more physical climate change impacts and creates therefore high risk of serious economic impacts (Zenghelis, 2006). Zenghelis (2006) mentions several mitigation policy instruments, like (i) pricing the externality via carbon taxes or carbon trading or implicitly through regulation, (ii) bringing forward lower carbon technology by supporting research,

development and deployment, (iii) overcoming information barriers and transaction costs through regulations and standards setting.

Based on the aforementioned we can conclude, that risk-return profile of organizations exposed to climate-related risks may change significantly (TCFD, 2018) and we assume this change would be affected by the extent of climate change impacts, both physical and transition ones, to companies. Question at this point is, how companies could coordinate the extent of climate change impacts on their businesses.

1.3. Ways of affecting the business

Both physical and transition climate risks can affect the whole corporate value chain. Physical climate change directly impacts company´s operation through damages to property, disruptions of operation or transport or decrease in production due to various physical factors (both acute and chronic ones). Indirect impact concerns disruptions in supply chain or lower aggregated demand from affected markets (Monin, 2018). Transition climate risks can affect company´s operation by higher legislative and regulatory requirements (e.g. carbon taxes, water and waste management regulation, energy regulation, or construction constraints), urgency for greening the production, existing assets ´repricing or losing value due to further technology development or "green" regulatory requirements. They can also give rise to changes in supply chain by affecting availability and pricing of the sources or provoke to change market preferences. The ways of affecting corporate value chain depends on relevant locations and company ´s particular activities. Understanding the way of affecting the business company should implement response and adaptation measures into corporate management so it can manage extent to which climate change can affect its performance (Figure 1).

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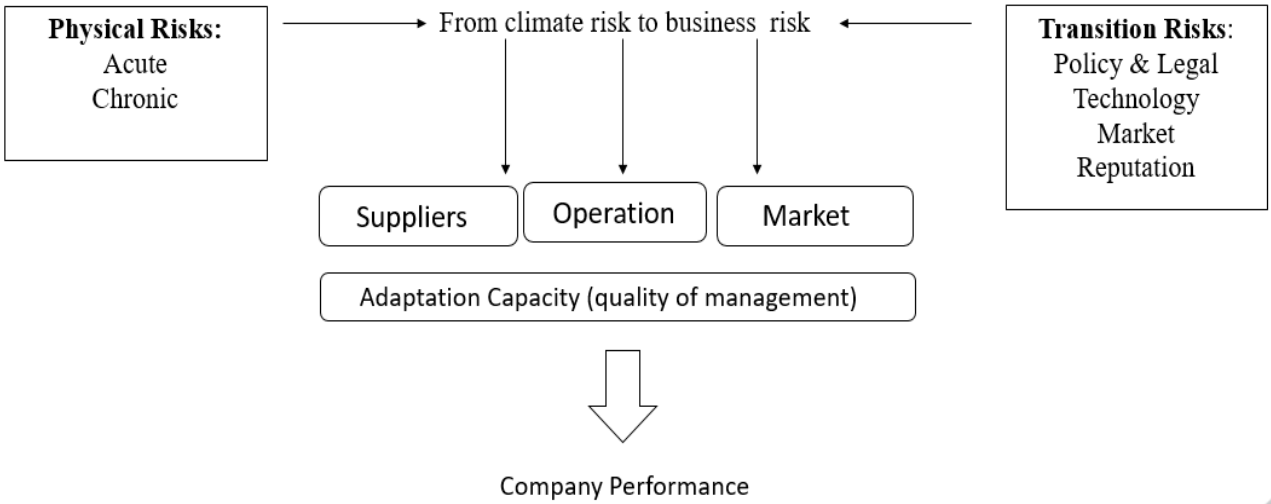
Figure 3: Examples of climate change-related risks on business



By affecting corporate value chain, climate risks translate into financial risks of the companies. Several examples of how climate risks can affect cash flow and asset wealth of companies, are presented in Figure 2. Revenue can be reduced by e.g. reduced production due to supply chain interruption, damages to property, or even due to worker´s decreased productivity in cases such as extreme heats etc. It can be also affected by lower sales due to decreased or cancelled demands, or due to transport difficulties. Increased operating costs due to more expensive inputs of production, capital costs arising from need to repair property damages, or need to invest to new technologies to remain competitive, or due to more stringent regulatory measures adopted, etc. If company doesn´t consider potential risks related to climate change impacts, then the lower than expected cash flow can result in serious financial consequences, like capacity to settle operational expenses and service and repay debts. In such a case poor cash flow management insufficiently considering climate related risks could threaten solvency of the business. Asset wealth of the company can be affected by direct damages to assets and write-offs due to damages or due to no longer unsatisfactory conditions in newly emerged high risk locations. Considering transition risk, stranded fossil fuel assets, and other factors can lead to repricing of company´s assets. Within actual transition of economy efforts, stranded fossil fuel assets constitute serious potential implications to concerned businesses but also to financial markets, and thus the issue of stranded assets is getting more attention. Reduced value of assets and lower than projected cash flow present sources of financial risks to companies.

Figure 4: Explanation of the way how climate change-related risks translate into financial risks,

2. Corporate adaptation to climate change and management of climate-related risks

2.1. Climate change adaptation strategy: approaches and determinants

Climate change-related impacts pose a new challenge to business as both physical and transition climate risks present objective characteristics affecting business, depending among other on geographical, sectoral, market or regulatory determinants. We could say more about that the way and the extent by which the particular business activity is affected, depends not only on these objective determinants, but can be also influenced by specific corporate responses to occurring and anticipated climate change-related impacts. Studies engaged in corporate adaptation behavior have been already interested in identification of factors affecting corporate response to potential climate change-related impacts, and thus determining corporate adaptation behavior. According to some of these studies, awareness and vulnerability perception are the two factors probably most relevant for decisions related to corporate adaptation strategies (Weinhofer & Busch, 2013; Gasbarro & Pinkse, 2015). These factors have been explored yet in regard to physical climate change impacts, but in our opinion, they could be analogously examined in regard to transition climate change impacts.

Four types of corporate adaptation behavior (Figure 4) responding to physical climate risks and resulting from the point of awareness and vulnerability perceptions of corporate management have been derived by empirical study of Gasbarro & Pinkse (2015).

Figure 5: Typology of corporate adaptation behavior resulting from awareness and vulnerability perceptions according to study of Gasbarro and Pinkse (2015)

Vulnerability to climate – related physical change		Awareness of climate – related physical change	
		High	Low
	High	**Pre-emptive adaptation**	**Reactive adaptation**
	Low	**Continuous adaptation**	**Deferred adaptation**

Based on this study, ***pre-emptive adaptation*** behavior is characteristic for companies highly-aware of climate-change physical impacts and highly perceived of their vulnerability to these impacts and so considering related business and financial impacts. These companies would be more probably susceptible to establish climate change- related specific functions or working groups, often integrated in standard risk management procedures or in the overall risk management systems. ***Reactive adaptation*** is applied by companies who went through particular experience with climate-related physical impacts and have already suffered financial losses from these impacts. They have already taken actions to improve and innovate their technical equipment and assets and have already implemented risk management processes and also plans for further business continuity. ***Continuous adaptation*** defines companies routinely dealing with extreme natural conditions routinely and thus considering climate changes affairs as business-as-usual. This group of companies perceives business structures and processes to be resilient and prepared for ecosystem changes, with assumed sufficient ability to anticipate risk and prevent crises, since they are familiar with the local ecosystem dynamics. So, the awareness of physical changes is high, and due to the sense of control, the vulnerability is perceived to be low for this group of companies. Companies with ***deferred adaptation*** have not implemented as well as do not plan to implement in the near future any climate change-related measures as they do not consider climate change-related risks to be relevant risks for their businesses. Low awareness and low vulnerability perception in this group of companies can be explained e.g. by conviction, that business locations are in areas with low present and anticipated weather extremes, or that climate physical impacts would not occur in the period relevant for their businesses. Not considering climate change-related impacts, these companies lack knowledge of potential climate change impacts on their business and their risk assessment is typically based on historical data.

Based on the aforementioned we could induce two basic corporate approaches in relation to climate changes: companies proactively addressing climate change-related issues in their business and companies with relatively passive approach. Choice of corporate strategy would be a function of several external and internal factors. The question emerging at this point is, what is the relation between external and internal factors affecting choice of corporate adaptation strategy and if awareness and vulnerability perception correlates with objective risk factors affecting on organization.

2.1. Means to cope with climate change-related impacts and integration of climate risk into corporate risk management processes

Several means potentially effectively serving to manage potential adverse disaster impacts in a changing climate could be subject of discussion. The aim is to reduce vulnerability and to enhance resilience to the potential negative impacts related to changing natural environment.

Empirical study of Weinhhofer & Busch (2013) suggested that most companies would employ a usual corporate risk management processes for the adaptation to new challenges of climate change. Inspired by perception of enterprise risk management as supporting element in operational and strategic management providing competitive advantage (Brustbauer, 2014; Stroh, 2005; Meulbroek, 2002) by "reducing potential losses and exploiting windows for opportunity (Brustbauer, 2014, p. 3) we sustain the significance for integrating climate risks into corporate risk management processes.

The general risk management processes may cover a range of issues and themes and typically consist of three basic steps: In the 1st step companies identify risks, so the relevance of specific risk type, sources of risk and potential risk event. In the 2nd step they evaluate as far as possible their exposure to identified risks regarding probability and magnitude of risks identified on their business activities, and the 3rd step requires taking response measures to minimize identified risks. Regarding identification and assessment of risks, as climate change deals mostly with future conditions, most negative impacts are subject to uncertainty. In general, the term uncertainty can be defined as "unpredictability of environmental or organizational variables that affect company´s performance" (Miller, 1992, p. 312). Regarding the uncertainty of climate change negative impacts on business in corporate risk management, study of Weinhofer & Busch (2013) recommends to consider (i) already experienced impacts with relatively high level of certainty (ii) expected impacts, with certainty depending on reliability of considered assessment models and (iii) not yet fully anticipated impacts with only limited knowledge of potential risk events. Risk response is selected according to its objective and

usually encourages to reduce the risk, to avoid the risk or to transfer the risk, so to externalize it (Weinhofer & Busch, 2013). Risk sharing and transfer has an important particular role, however their role to climate change adaptation is limited, as "they serve to redistribute loss and damage, but not reduce it" (Mechler, Bouwer, Bayer, & al., 2014). Some authors also point out, that risk sharing and transferring means could also lead to dis-incentivizing the efforts to reduce the real risk (Bayer & Stigler, 2014). Therefore, risk sharing and transferring doesn´t appear to be sufficient in addressing climate change impacts and it should be effectively combined with further corporate risk management tools.

3. Conclusion

The way and the extent by which climate change can affect performance and financial situation of the company, depends on several factors, like sector, in which company operates, geographical localization etc. These characteristics present external or objective factors determining vulnerability of the company to climate change related impacts. It is very important, however consider also internal or subjective factors, based on corporate responses to climate change-related impacts. Actually there is a need to move our interest into the problem of how can company develop its adaptive capacity to respond to climate change in order to better manage associated risks and seize opportunities, and to create better resilience to climate change-related impacts in business environment.

Inspired by the argument, that "the greatest priority is to develop responses that can work within the high future uncertainty of future climate change, to build resilience and maintain flexibility" (Hunt & Watkiss, 2010, p. 13), we have tried to highlight the importance and the possibilities for active climate risk management approach in business field. We suggest the importance of creating a concept of climate risk management in the interest of sustainability of business activities. Based on our literature review, we presuppose that integration of climate risk management within an existing corporate risk management practices is the most convenient way of responding to climate change-related impacts emerging in business environment.

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A BRIEF REVIEW OF THE LITERATURE ON EARNINGS MANAGEMENT

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Abstract

The main objective of the research is a brief review of the specialized literature of the aspects approached at international level regarding the dual role that earnings management has in the life of economic entities. The study was conducted on approximately 60 academic articles indexed in international databases. First of all, a longitudinal analysis of the articles was adopted, the analyzed period being between the years 2015-2020; Second, we used a different type of analysis, focusing on searching for articles by keyword group "earning management". Earnings management is not a new topic, it has appeared since the classical period of accounting and finance. The previous literature has various studies on this topic, but with the emergence of major economic scandals and the economic crisis this topic began to be intensively studied by researchers in various economic contexts. Most studies define earnings management as a way to influence a company's revenue. In practice there are different opportunities to influence financial statements through different methods. Various studies indicate that current research is no longer limited to studying the impact on revenue management from the perspective of internal systems, executive behavior and background, but will be reduced from new perspectives such as macro policies and environmental protection and text tone. The results of this research show that earnings management is influenced by the abnormal cash flow from operating activities leading to fraudulent financial reporting. Profit manipulation is also addressed by the phenomenon of earnings management. This is a very complex and versatile phenomenon that happens in companies, regardless of their territory, area of activity or size. The conclusion we draw from the research of the specialized literature is that factors that influence the management of earnings are the size of the company, the exaggerated increase of the company's income, the decrease of expenses and the analyst's forecast. In future research we will focus on smoothing earnings and the boundary between smoothing and fraud.

Keywords: earning management 1; fraud 2; financialstatements 3; dual role 4;negative effects5;

SELF-EFFICACY AND GROWTH MINDSET: KEY FACTORS TO BECOME COMPETENT LEARNERS IN THE 21 CENTURY

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Abstract

Effective learning encompasses the development of multidimensional aspects of learners including cognitive and psychological domains. Chief among psychological frameworks are self-efficacy and mindset. Self-efficacy is the belief in one's own ability to accomplish a task, which can be divided into four factors: mastery experiences, verbal persuasion, vicarious experiences, and physiological states. Mindset is the form of attitudes which people hold for their skills and abilities which can be classified into two types: fixed mindset (skills and abilities are innate) and growth mindset (skills and abilities can be developed through effort). The quantitative relationship between these two frameworks has been found missing in the existing literature. Therefore, the purpose of this research is to fulfill the research gap. An online questionnaire with 18 closed-ended statements based on a 5-Likert scale was developed, representing factors influencing self-efficacy as well as characteristics of the two mindset types. A total of 103 voluntary responses were received. The analysis supported the theoretical frameworks that there was a moderate positive correlation between compliments on effort and a growth mindset, as well as compliments on intelligence with a fixed mindset. In addition, it reassured the fact that there was a moderate negative correlation between a growth mindset and a fixed mindset, as well as compliments on effort and fixed mindset. However, this research pointed out recent findings that there was a moderate positive correlation between mastery experience and compliments on effort, as well as mastery experience and a growth mindset. On the other hand, a weak negative correlation was found between mastery experience and fixed mindset. Based on these findings, we concluded here that to become competent learners, there needs to be a presence of mastery experience and verbal support in their effort which will further reinforce their cognitive ability into a growth mindset. We also recommend that teachers and parents should focus more on praising their children on effort rather than intelligence, in order to encourage them to see challenges as an opportunity to develop their skills, which then result in better learning performance.

Keywords: Self-efficacy; Growth mindset; Mastery experience; Verbal persuasion

BILINGUALISM OF SLOVAK TEACHERS IN HUNGARY[1]

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Abstract

Purpose: The aim of this paper is to analyse the bilingualism of Slovak teachers in Hungary based on the data of a 2019 questionnaire survey. The research sample consisted of 139 Slovak teachers in Hungary (from the total of 147). Respondents (teachers) were selected from all three types of schools, in towns and villages where Slovak is taught.
Methods: We were interested in the perception of bilingualism depending on the age, ethnicity and mother tongue of teachers. The items examined were: the frequency of use of Slovak and Hungarian, the preference for these languages in reading and communication, the perceived difficulty of these languages and the emotional attitude of teachers towards them.
Results: We found that there was no statistically significant relationship between the teachers' age and their bilingualism. There were differences (Kruskal-Wallis) in terms of reading preferences, average ranks of teachers of Slovak ethnicity (M = 6.29, SD = 1.37), Hungarian ethnicity (M = 6.92, SD = 0.61) and Slovak also Hungarian ethnicity (M = 6.79, SD = 0.74). In terms of mother tongue use, differences were found (Kruskal-Wallis) considering the frequency of use of Slovak and Hungarian, in their preference in reading and in the emotional relationship of respondents to them.
Conclusion: Since our sample covers almost the entire population of Slovak teachers in Hungary, the analysis showed the relationship and opinion of these teachers on the Slovak and Hungarian languages. We can also state that among Slovak teachers in Hungary, bilingualism is an important factor in teaching Slovak.

Keywords: Bilingualism. Slovak teachers in Hungary. Ethnic minority. Mother tongue. Ethnicity.

Aim of the contribution

The aim of this paper is to analyse the bilingualism of Slovak teachers in Hungary based on the data of a 2019 questionnaire survey. We were interested in the perception of bilingualism depending on the age, ethnicity and mother tongue of teachers. The items examined were: the frequency of use of Slovak and Hungarian, the preference for these languages in reading and

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communication, the perceived difficulty of these languages and the emotional attitude of teachers towards them.

Theoretical starting points

Bilingualism as such has always been a subject of research, and its understanding has changed significantly throughout history. It is relatively difficult to find a single, comprehensive definition of bilingualism (Hoffmann, 2014). This is also due to the fact that not even experts in this field completely agree on the issues of bilingualism. The respective authors define bilingualism from various aspects, such as the fluency of language use (Macnamara, 1967), the everyday use of both languages (Grosjean, 2002), the age at which an individual encounters the particular languages (Moradi, 2014; Rosenberg, 1996), the areas where the languages are used (Rosenberg, 1996; Baker and Jones, 1998; Edwards, 2006), the influence of the foreign language on the mother tongue (Skutnabb-Kangas, 1981; Baker and Jones, 1998) and many others. There is practically no research specifically focusing on the bilingualism of Slovak teachers in Hungary. The only exception is a survey conducted by T. Tuska from 2007 to 2009, examining the language use of students of Slovak studies in Hungary. The aim of this research was to contribute to a more detailed description of Slovak as a means used by students - future teachers - to communicate in various spheres and situations of communication. T. Tuska also focused on the bilingualism-related language attitudes and stereotypes, on cultural institutions, as well as the students' stereotypes and prejudices. The age of the students ranged from 19 to 29 years. To participate in the research sample, students had to be Hungarian citizens and had to have a minority origin or background. At the time of the research, 30 respondents met this condition.

Slovak education in Hungary in school year 2018/2019

In the 2018/2019 school year, there were 34 Slovak schools in Hungary: one monolingual, 4 bilingual and 29 schools teaching Slovak as a subject. In the monolingual school (in Budapest), the language of teaching is the ethnic (i.e. Slovak) language. In bilingual schools, (Békéscsaba, Sátoraljaújhely, Szarvas and Tótkomlós), 50% of lessons are held in Slovak. At schools teaching the ethnic language as a separate subject, students are educated in Hungarian; however, the class schedule also contains Slovak language and literature, along with "Slovak studies", amounting to 5 + 1 lessons per week. In the school year 2018/2019, 3494 pupils studied in these schools. The number of teachers teaching Slovak or in Slovak was 147. (Ďurkovská & Tušková, 2019).

The current state of Slovak education in Hungary

There are three types of ethnic schools: monolingual schools, bilingual schools and schools teaching the ethnic language as a separate subject.

Monolingual schools are the ones educating their students in the ethnic language (with the exception of Hungarian language and literature and foreign languages). In bilingual schools, students are educated in two languages, with 50 % of the lessons being taught in the ethnic language (with the exception of Hungarian language and foreign languages). The subjects to be taught in Slovak are not specified, leaving this up to the schools themselves. The respective institutions specify the subjects to be taught in Slovak in their own education programs, at their sole discretion. A precondition of meeting the above legal requirement is having a sufficient number of teachers fluent in Slovak. At schools teaching the ethnic language as a separate subject, students are educated in Hungarian; however, the class schedule contains also the ethnic language and literature and "Slovak studies". At these schools, the compulsory number of Slovak language lessons is 5+1 (i.e. five lessons of Slovak language and one lesson of Slovak studies per week) and, by law, all pupils have to attend Slovak language lessons.

There are 91 students studying Slovak in the monolingual primary school in Budapest. There are 809 students studying Slovak in bilingual primary schools. In Hungary, there are two ethnic Slovak secondary grammar schools, one in Budapest and the other in Békéscsaba. There are 44 students studying Slovak in the ethnic Slovak secondary grammar school of Budapest, while in Békéscsaba, this figure amounts to 56. (Informácia o školstve a vzdelávaní)

Methodology

The data come from the survey conducted in 10 Hungarian counties between January and April 2019, using a sample of 139 teachers of ethnic schools. Respondents, i.e. teachers were selected from schools of all three types (monolingual schools, bilingual schools and schools teaching Slovak as a separate subject) teaching Slovak, both in cities and villages.

The selection criteria of the survey sample were employment (working as an educator of Slovak or in Slovak) and the availability of the respondent, regardless of the identification criteria (age, location, gender).

The survey sample: The survey sample consisted of 11.7% of men and 88.3% of women. The age of the respondents in the sample was 24 – 68 years (M = 48.77, SD = 10.017). The average age of women was 49.49 years (SD = 9.712), while the average age of men was 43.44 years (SD = 10.954). 7.3% taught at monolingual schools, 48.2% at bilingual and 43.1% at schools teaching the ethnic language as a separate subject. 62% of educators came from towns and cities, 38% came from villages. 54% claimed to be of Slovak ethnicity, 18.2% claimed to be

Hungarian, while 27.7% claimed to be both Slovak and Hungarian. 24.1% considered Slovak to be their mother tongue, 54% claimed it was Hungarian, while 21.2% claimed both.

Methods: To analyse age, ethnicity, mother tongue and teachers' bilingualism, we used the following questions: 1. Which language is closer to you? 2. How often do you use the following languages? 3. In which language do you read more? 4. How do you like the languages you communicate in? 5. How would you express their difficulty? 6. What is your emotional relationship to them? Respondents had to choose the appropriate option from a scale; the score was then calculated using a seven-point scale ranging from 1 = "this language is not close to me at all; I don't use it at all; I do not read in that language; it's not nice at all; it's not difficult at all; I don't like it at all" to 7 = "this language is very close to me; I use it very often; I read a lot in this language; it is very nice; it is very difficult; I like it very much".

Statistical analyses: We processed the obtained research results using the methods of descriptive statistics and methods of inferential statistics (Pearson correlation coefficient, Mann-Whitney U test, Kruskal-Wallis H test), using IBM SPSS software, version 21.

Results

First, we examined the relationship between the age of teachers and bilingualism. We used the Pearson correlation coefficient. Results are showed in Table 1.

Table 2: Age and bilingualism of teachers (Pearson correlation)

	Age	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. Which language is closer to you? Slovak	.014											
2. Which language is closer to you? Hungarian	-.121	-.150										
3. How often do you use the following languages? Slovak	.061	.532**	-.091									
4. How often do you use the following languages? Hungarian	-.063	-.128	.754**	-.117								
5. In which language do you read more? Slovak	.084	.620**	-.198*	.637**	-.224**							
6. In which language do you read more? Hungarian	.029	-.194*	.664**	-.083	.709**	-.156						
7.How do you like the languages you communicate in? Slovak	-.050	.605**	-.035	.516**	-.033	.554**	-.034					
8. How do you like the languages you communicate in? Hungarian	-.096	-.012	.480**	.101	.277**	.092	.292**	.142				
9. How would you express their difficulty? Slovak	-.048	-.211*	.142	-.048	.130	-.254**	.206*	-.137	.030			

10. How would you express their difficulty? Hungarian	.035	.056	-.259**	.106	-.234**	.118	-.216*	.022	-.079	.545**		
11. What is your emotional relationship to them? Slovak	.040	.644**	-.104	.506**	-.053	.464**	-.094	.670**	.036	-.101	-.038	
12. What is your emotional relationship to them? Hungarian	.007	-.082	.425**	-.001	.080	-.037	.193*	.071	.739**	.152	.000	-.023

** p < 0.01; * p < 0.05

We found that there was no statistically significant relationship between the age of the teachers and their bilingualism (p < 0.05).

Next, we compared teachers in bilingualism based on their ethnicity (it must be stated that all teachers had a tendency to score the highest ranks on the scales – see Tables 1 and 2). We used the Kruskal – Wallis test for comparison. The results are showed in Table 2.

Table 3: Ethnicity and bilingualism (Kruskal - Wallis)

	Ethnicity	N	Mean	Std. Deviation	Min	Max	Test Statistics	p
Which language is closer to you? Slovak	Slovak	72	6.38	0.76	5	7	8.676	p = 0.013*
	Hungarian	25	5.76	1.05	3	7		
	Both	38	6.32	1.07	3	7		
	Total	135	6.24	0.93	3	7		
Which language is closer to you? Hungarian	Slovak	72	6.39	1.17	1	7	13.2	p = 0.001**
	Hungarian	25	6.96	0.20	6	7		
	Both	38	6.84	0.49	5	7		
	Total	135	6.62	0.93	1	7		
How often do you use the following languages? Slovak	Slovak	74	6.16	0.89	4	7	4.767	p = 0.092
	Hungarian	25	5.68	1.41	2	7		
	Both	38	5.63	1.28	2	7		
	Total	137	5.93	1.14	2	7		
How often do you use the following languages? Hungarian	Slovak	74	6.72	1.03	1	7	1.827	p = 0.401
	Hungarian	25	6.96	0.20	6	7		
	Both	38	6.89	0.31	6	7		
	Total	137	6.81	0.78	1	7		
In which language do you read more? Slovak	Slovak	74	5.26	1.32	2	7	5.434	p = 0.066
	Hungarian	25	4.68	1.68	1	7		
	Both	38	4.58	1.50	2	7		
	Total	137	4.96	1.47	1	7		
In which language do you read more? Hungarian	Slovak	74	6.30	1.37	1	7	7.589	p = 0.022*
	Hungarian	25	6.72	0.61	5	7		

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	Both	38	6.79	0.74	3	7		
	Total	137	6.51	1.13	1	7		
How do you like the languages you communicate in? Slovak	Slovak	74	6.78	0.53	5	7	3.115	p = 0.211
	Hungarian	25	6.52	0.82	4	7		
	Both	38	6.63	0.75	4	7		
	Total	137	6.69	0.66	4	7		
How do you like the languages you communicate in? Hungarian	Slovak	73	6.73	0.63	4	7	5.869	p = 0.053
	Hungarian	25	7.00	0.00	7	7		
	Both	38	6.68	0.81	3	7		
	Total	136	6.76	0.64	3	7		
How would you express their difficulty? Slovak	Slovak	72	3.25	2.11	1	7	4.998	p = 0.082
	Hungarian	25	4.20	2.04	1	7		
	Both	37	3.86	1.92	1	7		
	Total	134	3.60	2.07	1	7		
How would you express their difficulty? Hungarian	Slovak	73	2.96	2.62	1	7	0.255	p = 0.880
	Hungarian	25	3.04	2.65	1	7		
	Both	37	2.73	2.47	1	7		
	Total	135	2.91	2.57	1	7		
What is your emotional relationship to them? Slovak	Slovak	74	6.85	0.36	6	7	9.395	p = 0.009**
	Hungarian	25	6.36	1.04	3	7		
	Both	38	6.50	0.83	4	7		
	Total	137	6.66	0.70	3	7		
What is your emotional relationship to them? Hungarian	Slovak	74	6.68	0.72	3	7	4.541	p = 0.103
	Hungarian	25	6.96	0.20	6	7		
	Both	38	6.66	0.81	3	7		
	Total	137	6.72	0.69	3	7		

df = 2; ** p < 0.01; * p < 0.05

There were significant differences ($p < 0.05$) in terms of reading preferences of Hungarian (1 – I do not read in that language; – 7 – I read a lot in that language), the frequency of reading in Hungarian is different in case of teachers of Slovak ethnicity ($M = 6.30$, $SD = 1.37$), of Hungarian ethnicity ($M = 6.72$, $SD = 0.61$) and of both Slovak also Hungarian ethnicity ($M = 6.79$, $SD = 0.74$). Also, there were significant differences in closeness of Slovak (1 – this language is not close to me at all; – 7 – this language is very close to me) considering the respondents' ethnicity ($p < 0.05$), where teachers of Slovak ethnicity feel the closest to this language ($M = 6.38$; $SD = 0.76$) and teachers of Hungarian ethnicity feel it least close ($M = 5.76$; $SD = 1.05$). Hungarian was the closest language to teachers of Hungarian ethnicity ($M = 6.96$; $SD = 0.20$). There were no significant differences found in the subsequent items of teachers' bilingualism ($p > 0.05$).

Then, we compared teachers' bilingualism based on their mother tongues. We used the Kruskal – Wallis test for comparation. The results are showed in Table 3.

Table 4: Mother tongue and bilingualism (Kruskal - Wallis)

	Mother tongue	N	Mean	Std. Deviation	Min	Max	Test Statistics	p
Which language is closer to you? Slovak	Slovak	32	6.75	0.51	5	7	16.151	p < 0.001**
	Hungarian	74	5.97	1.02	3	7		
	Both	28	6.29	0.94	3	7		
	Total	134	6.22	0.95	3	7		
Which language is closer to you? Hungarian	Slovak	32	6.13	1.39	1	7	17.528	p < 0.001**
	Hungarian	74	6.84	0.66	2	7		
	Both	28	6.57	0.69	5	7		
	Total	134	6.61	0.93	1	7		
How often do you use the following languages? Slovak	Slovak	33	6.52	0.76	4	7	13.663	p = 0.001**
	Hungarian	74	5.65	1.30	2	7		
	Both	29	5.83	1.04	3	7		
	Total	136	5.90	1.18	2	7		
How often do you use the following languages? Hungarian	Slovak	33	6.58	1.12	1	7	8.267	p = 0.016*
	Hungarian	74	6.88	0.72	1	7		
	Both	29	6.90	0.31	6	7		
	Total	136	6.81	0.78	1	7		
In which language do you read more? Slovak	Slovak	33	5.85	1.09	3	7	18.556	p < 0.001**
	Hungarian	74	4.59	1.59	1	7		
	Both	29	4.76	1.21	2	7		
	Total	136	4.93	1.49	1	7		
In which language do you read more? Hungarian	Slovak	33	5.91	1.61	1	7	16.481	p < 0.001**
	Hungarian	74	6.69	0.95	1	7		
	Both	29	6.72	0.59	5	7		
	Total	136	6.51	1.14	1	7		
How do you like the languages you communicate in? Slovak	Slovak	33	6.79	0.48	5	7	4.775	p = 0.092
	Hungarian	74	6.54	0.83	4	7		
	Both	29	6.86	0.44	5	7		
	Total	136	6.67	0.70	4	7		
How do you like the languages you communicate in? Hungarian	Slovak	33	6.61	0.70	4	7	5.911	p = 0.052
	Hungarian	73	6.79	0.69	3	7		
	Both	29	6.86	0.35	6	7		
	Total	135	6.76	0.64	3	7		
How would you express their difficulty? Slovak	Slovak	33	3.15	2.39	1	7	3.436	p = 0.179
	Hungarian	73	3.79	1.84	1	7		
	Both	28	3.50	2.19	1	7		
	Total	134	3.57	2.06	1	7		
	Slovak	33	3.61	2.82	1	7	3.073	p = 0.215
	Hungarian	74	2.62	2.43	1	7		

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How would you express their difficulty? Hungarian	Both	28	2.82	2.57	1	7		
	Total	135	2.90	2.57	1	7		
What is your emotional relationship to them? Slovak	Slovak	33	6.88	0.33	6	7	8.709	p = 0.013*
	Hungarian	74	6.46	0.94	3	7		
	Both	29	6.83	0.47	5	7		
	Total	136	6.64	0.77	3	7		
What is your emotional relationship to them? Hungarian	Slovak	33	6.42	0.87	3	7	14.509	p = 0.001**
	Hungarian	74	6.80	0.66	3	7		
	Both	29	6.86	0.44	5	7		
	Total	136	6.72	0.70	3	7		

df = 2; ** p < 0.01; * p < 0.05

In terms of mother tongue use, we found significant differences also considering closeness to a particular language, the frequency of use of Slovak and Hungarian, the respondents' preference for these languages when reading. There were no significant differences found in the other aspects of teachers' bilingualism ($p > 0.05$). There were significant differences in closeness to Slovak (1 [this language is not close to me at all] – 7 [this language is very close to me]) based on the respondents' mother tongue ($p < 0.05$), where teachers with Slovak as their mother tongue feel the closest to this language ($M = 6.75$; $SD = 0.51$), while teachers with Hungarian as their mother tongue the least close ($M = 5.97$; $SD = 1.02$). Hungarian was the closest to teachers with Hungarian as their mother tongue ($M = 6.84$; $SD = 0.66$). Teachers with Hungarian as their mother tongue used Slovak less ($M = 5.65$; $SD = 1.30$) than teachers with Slovak as their mother tongue ($M = 6.52$; $SD = 0.76$). There were significant differences ($p < 0.01$) in terms of preference in reading in Hungarian (1 [I do not read in that language] – 7 [I read a lot in this language]), the frequency of reading in Hungarian was different in case of teachers with Slovak as their mother tongue ($M = 5.91$, $SD = 1.61$), with Hungarian as their mother tongue ($M = 6.69$, $SD = 0.95$) and both languages as their mother tongues ($M = 6.72$; $SD = 0.59$). In terms of preferring reading in Slovak, average scores were lower in every group of respondents, i.e. those with Slovak as their mother tongue ($M = 5.85$; $SD = 1.12$), with Hungarian as their mother tongue ($M = 4.59$; $SD = 1.59$) and with both languages as their mother tongues ($M = 4.76$; $SD = 1.21$).

Discussion

In Tuska's (2016) research, Hungarian was dominant among the students. The upward trend of using Hungarian in the students' communication within the family confirmed that the influence of the family on using Slovak was gradually weakening. All students, without any exception,

considered themselves to be bilingual, despite the fact that they could not speak both languages at the same level. Considering the question “Which language is closer to you?”, 57% of the respondents answered it was Hungarian, while 33% of the students stated both languages to be equally important to them. This result could prove a double emotional connection of the examined respondents, in spite of a certain communication barrier and a rather passive knowledge of Slovak. To the question “Which language is closer to you?”, included in our research examining Slovak teachers, teachers of Slovak ethnicity and having a Slovak mother tongue claimed Slovak to be closest to them, while teachers of Hungarian ethnicity and having a Hungarian mother tongue claimed Slovak to be less close to the them. It were teachers of Hungarian ethnicity and having a Hungarian mother tongue, who claimed Hungarian was the closest to them.

Based on the use of the mother tongue, our research also showed significant differences in terms of the frequency of use of Slovak and Hungarian and in the language preferred by the respondents to read in. Teachers having Hungarian as their mother tongue used Slovak less than those having Slovak as their mother tongue. As far as preferring Slovak to read in, the average score was lower in each of the groups - Slovak mother tongue, Hungarian mother tongue and both languages. Our findings show that there is no statistically significant relationship between the teachers' age and their bilingualism.

For comparison, we also present the results of Tuska's (2016) research conducted on students of Slovak studies. Comparing the Slovak standard language with the dialects used in the home regions of the surveyed respondents, Slovak students in Hungary considered the standard Slovak language - as used in Slovakia - to be more beautiful, more useful, more difficult and more preferred than the dialect of their own community. A closer look showed that when comparing languages, Hungarian had the greatest, while the Slovak dialects had the lowest prestige, emotional value and dominance. Tuska's (2016) research proves that students of Slovak studies consider Slovak to be a feature distinguishing them from Hungarians, i.e. Slovak is an element of continuity and cohesion with the Slovak minority and in some cases even with their families. Therefore, the Slovak language as an element of national identity has a rather symbolic position among young Slovaks in Hungary, nevertheless, it is used as a means of communication in everyday life less often.

The benefit of the study is that almost all teachers teaching Slovak or in Slovak (139 out of 147) at ethnic schools in Hungary took part in the survey.

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One of the limits of the study is the ceiling effect found in the data - considering some items, the mean values on the 1-7 scale reached even 6.8. However, due to the high representativeness of the sample, this fact corresponds to reality.

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"WHY AREN'T MORE PEOPLE TALKING ABOUT THIS?" SOCIAL MEDIA AND NATION BRANDING IN ROMANIA

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Abstract

The country image is a strategic resource reproducing competitive and power relations between states, in a world of multiplied (inter)dependencies. In the age of "digital disinformation 2.0" (Bârgăoanu, 2018) and "digital deceit" (Ghosh & Scott, 2018), nation branding has become part of a new paradigm of strategic communication between states, trying to seduce various audiences. According to Korjus (2017), the next big industry to face digital disruption will be our nations. For instance, Estonia's brand image is based on the idea of a digital state, both for domestic and foreign audiences. In Denmark, Casper Klynge has become the first nation state ambassador to Silicon Valley, describing his job as "techplomacy" (Baugh, 2017). An interesting case is to be found in post-communist Romania, ranked 46th in the world, in terms of digital competitiveness at global level (World Digital Competitiveness Ranking, 2019).

In the age of "dataism" (Harari, 2018), communication between nation states is affected by the development of technology. The Internet has changed the context in which international relations play out, while new actors have been empowered by the new information communication technologies as well.

In September 2019, the advertising agency McCann Worldgroup Romania and the chocolate brand ROM created an advertising campaign as a response to Elon Musk's tweet about the resemblance between the national flags of Romania and Chad. They created a website entitled "Why aren't more people talking about this?", interpellating the Romanians to contribute with their own memes about similarities between Romania and other countries.

Internet memes consist of collections of images, sounds, and videos that include captions and symbols (Pelletier-Gagnon & Trujillo Diniz, 2018). The topics of "global tech race" and "country power" are constantly approached by Internet memes. In so doing, memes are rapidly spread by members of participatory digital culture for the purpose of continuing the conversation around citizens.

Overall, the aim of the research is to investigate technology as a *soft power* (Nye, 2004) instrument for Romania and to analyze how journalists and public actors construct the topic of new technology as a competitive advantage, in relation to national identity. In doing so, we will focus on the advertising campaign "Why aren't more people talking about this?", made by the advertising agency McCann Worldgroup Romania for the Romanian chocolate brand ROM, along with social media reactions, Internet memes, and news articles published in the press, employing mixed methods such as critical discourse analysis and social semiotic analysis. The results show that journalists have an active role in constructing national identity as a public issue in Romania, related to future policy-making and regulation endeavors, as well as the future of public diplomacy.

Keywords: nation branding, social media, tech country, advertising campaign, digital diplomacy

#STAYHOME IMPACT ON LONG TERM TRAVEL DECISIONS: EXPERIENCED TRAVELLER AND TRAVEL INFLUENCER PERSPECTIVE

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Abstract

The pandemics that hit the world in the beginning of 2020 have drastically impacted the travel industry. With borders, airports and countries on lock down, millions of travellers worldwide have cancelled their travel plans. In the worst cases, many travellers were stuck in the destination countries and were granted repatriation flights to get home, with more on the waiting list at the moment. Instead of pictures from exotic destinations, the world recognized travel influencers now share pictures of their lockdown and quarantine at home, with the majority of the posts being positive about travelling soon again. This study aims to understand from the perspective of experienced travellers and travel influencers whether #stayhome would have an impact on their long term travel decisions. The current study adapted a qualitative study approach. With the help of a travel blog site on Facebook, 17 experienced travellers and travel bloggers from Latvia were recruited for this study. An average of one hour semi-structured interviews was conducted with the study group. The findings reveal that with easing of the lockdown many travellers and travel influencers would be willing to travel again, but all agree that travelling will be less impulsive, and more effort will be put in the way they choose and evaluate destinations. According to the respondents, several factors would influence their travel choices in the future, namely (1) the overall safety of the destination and their timely responsiveness to the crisis, (2) destinations and their home countries' cooperation in case of crisis and unforeseen circumstances and (3) destination characteristics that allow social distancing and personal hygiene. The current study contributes to the existing knowledge both theoretically and practically by showing that even with easing lockdown and quarantine conditions, travel influencers, and consequently, travellers that trust those opinion leaders, would be less impulsive and more careful in choosing their future travel destinations. Joint effort with the public and private sector should be made to ensure safety and responsiveness of destinations that would build travellers' trust and ensure future travel.

Keywords: travel, pandemics, travel influencers, travel decisions, opinion leaders

NEW NORMAL' WORKING PRACTICES – INSIGHTS FROM ORGANISATIONAL SPACE

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Abstract

As the world, businesses and our working practices shift and change with the pandemic of COVID-19, there has been a public and global space and spatiality interest in our relationship with our everyday working environments. Today businesses find themselves at an accelerated pace of implementing flexible working practices. Through the lens of organisational space, spatiality and the socio-spatial school of thought (Fleming and Spicer 2004; Taylor and Spicer 2007; Burrell and Dale 2008; Van Marrewijk and Yanow 2010) this paper aims to conceptualise the pandemic impact on novel flexible working practices such as hot-desking, mobile working and home working (Virginia 2003; Venezia et al. 2008; Bosch-Sijtsema et al. 2010). Changes of organisation and organising are creating a new landscape; a new normal for organisational spaces. The desire for normalcy, which in itself has become questionable pre-pandemic, will encourage and promote a shift in 'Worlds of Work' (Delbridge and Sallaz 2015). Using spatiality, organisations can better understand and prepare their environments both physical spaces and non-physical spaces (symbolic or blurred boundaries), observed and unobserved social dimensions in the face of this 'monstrous threat' (Zinn 2020) as the world, together globally we move towards a 'new normal'.

Keywords: Organisational Space, Flexible working practices, New Normal, Pandemic

A UNIFIED DEFAULT PREDICTION MODEL: EVIDENCE FROM INDIAN LISTED COMPANIES

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Abstract

Credit Rating Agencies (CRAs) play a pivotal role in the assessment of credit risk of issuers of debt instruments. However, there is a growing need for models which can quantify this risk using accounting information and market data. Through 690 public limited companies in India over ten years, this study attempts to combine financial variables and the market-based default drivers in a hybrid form to predict corporate default. The structural model is a forward looking model, and being mathematical, the probability of default can be directly computed. For the reduced-form model, two different types of logistic regression are estimated: (a) model based on net worth, and (b) model based on ratings. The findings and results largely support the hypothesis that adding the accounting ratios as predictors significantly increases the predictive ability of the models. The predictive ability of the three models is compared by conducting an empirical analysis of the classification errors using receiver operating characteristics curve (ROC curve). The results suggest that the accuracy ratio is highest for the logit model with net worth as the key determinant of default risk. It is recommended that the theoretical KMV and reduced model together provides a more refined measure of the credit quality of a company. The logit model can forewarn a corporate distress in the future. The study identifies the significant ratios common across the models which can be used by financial institutions as key ratios for measuring default risk. Moreover, Logit model demonstrates highest predictive ability and can be used to forewarn against corporate distress. These findings strengthen result testing and help in identifying the best model in terms of its predictive ability and conclude that a credit risk model which factors in market variables and financial data can complement the role of external rating agencies.

Keywords: credit risk, default, net worth, ratios,ratings

HOW MUCH DOES COVID-19 COST? A CROSS-COUNTRY PERSPECTIVE

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Abstract

The ongoing COVID-19 pandemic has proved to have a major impact upon all facets of humankind lives. The purpose of this paper is to explicit the extent of the COVID-19 pandemic, quantified using the number of deaths, confirmed cases, testing capacities and case fatality ratios of nations, through several explanatory variables such as population age groups, economic development and cultural dimensions, on a sample of 185 worldwide countries, using recent data. Log- log models on cross-sectional data are econometrically estimated through simple and multiple regressions. Estimations focus on the impact exerted by some factors, further drawing direct measures for limiting the spread of the disease and its associated negative effects.

DEPENDENCY BETWEEN BANK STABILITY AND OTHER VARIABLES IN SELECTED EUROPEAN UNION COUNTRIES

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Abstract

Many studies report the Z-score as a proxy for the stability of the banking sector and describe this indicator as a dependent variable in linear or nonlinear regression models. The paper aims to focus on the direction of Granger causality between Z-score, as a proxy of banking stability, and other bank variables, that are linked with bank stability, and verify whether the use of the indicator is resonalby used as a dependent variable. We bring the procedure of Granger causality through linear models, as well as providing diagnostic tests, and discuss the suitability of the method for exanimated models. We analyse 80 banks, located in 17 European Union countries during the period from 2010 to 2018. Our empirical results show that the existence of causality implies five of ten examined variables cause an impact on bank stability.

Key words: stability, competition, European banking system, Granger causality, linear regression.

Introduction

The banking sector, as a crucial part of the financial system, influences the economic situation of the whole country. Kaufman (2015) claims that economic theory and empirical evidence indicate that instability in the macroeconomy is associated with instability in banking and financial markets, but this fact does not necessarily suggest that financial instability causes macroeconomic instability. In recent times, there has been an increasing stream of studies, for example, Rupeika-Apoga et al. (2018) and Cuestas, Lucotte, and Reigl (2019), which aim is to examine the banking stability linked to various micro and macroeconomics variables, especially with banking competition and concentration. The proposition that banking competition is one of the vital determinants of banking stability, and it leads this study to investigate whether there exists such a relationship. In this paper, we analyse the relationship between banking stability and competition, with other banking variables, which are linked with the banking environment. We formulate a research question for this study: Does stability depend on indicators of competition and other banking variables? To find the answer, we examine the Granger causality method and estimation of vector autoregression models based on the assumption of linear dependence. The aim of the analysis is not to evaluate the relationship among individual countries but to deal with the relationship between banking stability indicator and other banking indicators as a system. The monitored data represent a time series of values that are recorded at equally long time intervals. The rest of the paper is as

follows. Section 2 presents a literature review; Section 3 describes the methodology and data used in the study, Section 4 shows the empirical results and Section 5 concludes.

Literature review

A number of researchers have focused on a possible link between banking stability, and banking competition concentrated on bank-level data (e.g. Liu et al., 2013; Leroy and Lucotte, 2017; Saif-Alyousfi et al., 2018; Ahi and Laidroo, 2019). These studies support a hypothesis that a causal relationship runs from bank variables to stability, and use various stability indicators as dependent variables. Z-score is commonly used as a risk measure in the banking and financial stability, as well as in the mentioned studies. As independent variables are broadly used the banking competition and concentration variables. Competition can be measured either with structural or non-structural competition measures. Bikker and Haaf, (2000) describe that structural approaches concentration ratios take a central position in order to describe the market structure and non-structural approaches measuring competition and do not depend on concentration. Řepková (2012) describes the empirical literature about competition in the banking industry and measures concentration ratio and Herfindahl-Hirschman index as a structural competition proxy and the Lerner index as a non-structural competition measure. Besides the competition and concentration ratios, researchers generally use control variables in the studies. Helmenstine (2020) claims that control variables make it easier to reproduce an experiment and establish the relationship between the independent and dependent variables. Considering the availability of the data from the used database, we follow Leroy and Lucotte (2017); Cuestas, Lucotte, and Reigl (2019) and choose six banking control variables for this study. As the bank-specific, microeconomic variables, we choose the bank SIZE (logarithm of total assets), the non-interest income on total income ratio (NIITR), fixed assets on total assets ratio (FATA) and loans on total assets ratio (LTA). As macroeconomic variables, we use the annual real gross domestic product (RGDP) and fourth-quarter data of the harmonised index of consumer prices (HICP).

To evaluate the analysed dependency between indicators, we follow the method of Granger causality and estimation of vector autoregressive models. Granger causality practical concepts in the time-series literature can be useful to address the existence of dependency between examined variables. Kočišová (2017) provides empirical evidence on the testing the links between the concentration and stability using the Granger causality for panel data and find the one-way relationship running from stability to market concentration.

Methodology, variables and data

As a proxy for banking stability, we use Z-score, which reflects a bank's probability of insolvency and originally was developed in publications by Hannan and Hanweck (1988) and Boyd and Runkle (1993). We use the following formula:

$$Z - score = \frac{ROA_{it} + (E/TA)_{it}}{\sigma ROA_{it}} \quad (1)$$

Where ROA represents a return on assets, E/A is total equity divided by total assets, and σROA is the standard deviation of ROA, for bank i and year t. Because of the unavailability of the equity data in Datastream database, we use total capital as a proxy variable. Li et al. (2017) argue that a higher value of Z-score portrays a greater banking stability and a lower value indicates instability.

The choice of other values is inspired by the mentioned study written by Řepková (2012). Firstly, we focus on indicators of banking competition and concentration. We use the calculation of the Lerner index (LI) as a non-structural indicator of competition, and then we use three structural indicators, market share (MS), concentration ratio (CR5) and the Herfindahl-Hirschman index (HHI).

Lerner (1934) describes the index as a firm's market power, which higher implying less market competition and greater market power, with the following formula:

$$Lerner\ index_{it} = \frac{P_{it} - MC_{it}}{P_{it}} \quad (2)$$

Where P is the average price of bank production, and MC denotes marginal costs of bank i and year t., we follow approach provided in line with studies by Berger et al. (2009), Řepková (2012) and Leroy & Lucotte (2017) for marginal cost calculation and calculate it as follows:

$$MC_{it} = \frac{TC_{it}}{TA_{it}}\left[\beta_1 + \beta_2 \ln TA_{it} + \sum_{i=1}^{3} \emptyset_k \ln W_{k,it}\right] \quad (3)$$

Where TC stands for total costs, TA is for total assets, $W_{1,it}$ is the price of borrowed funds (interest expenses to total assets), $W_{2,it}$ is the price of labour (salaries and benefits expenses to total assets), $W_{3,it}$ is the ratio of operating expenses to total assets data of bank i and year t.

To calculate marginal costs, we estimate the translog cost function for the data specified as follows:

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$$\ln TC_r = \beta_0 + \beta_1 \ln TA_r + \frac{1}{2}\beta_2 (\ln TA_r)^2 + \sum_{i=1}^{3} \gamma_k ln W_{k,r} + \sum_{i=1}^{3} \emptyset_k \ln TA_r \ln W_{k,r} + \sum_{k=1}^{3}\sum_{j=1}^{3} \rho_{k,j} \ln W_{k,r} \ln W_{j,r} + \varepsilon_r \quad (4)$$

We calculate the market share ratio based on total assets, following Cuestas et al. (2019), as the amount of assets held by each bank divided by the total assets of the national banking sector specified as:

$$s_{it} = \frac{TA_{it}}{\sum TA_t} \quad (5)$$

Where TA stands for total assets of individual bank i in the year t, and the $\sum TA$ are consolidated banking data of total assets of specified year t, from Statistical Data Warehouse database. The ratio reaches values between 0-100%, where low value indicates a high degree of competition and vice versa (Cuestas et al., 2019).

We continue to describe the data that were obtained from the Statistical Data Warehouse database of the European Central Bank. The n-bank concentration ratio measures the percentage of the market share of the specific number of leading banks in the banking sector. The concentration ratio is ranged from 0% to 100%, and a higher value indicated a stronger market share of the largest banks with higher concentration and lower competition between banks. In our study, we use data for five largest banks denoted as CR5, calculated as consolidated total assets of these banks to total assets of all the banks in the country. The Herfindahl-Hirschman index gives the sum of the squares of each institution's market share and measures all sizes of banks, including small banks, in the banking system. Bikker and Haaf (2002) argue that the lowest value is reached when the market is comprised of n equally-sized banks. The lower value of the ratio means a higher level of competition.

The sample of control variables for this study includes balanced annual time series data obtained from several sources. For calculation of the index and ratios, LI, MS, SIZE, NIITR, FATA, LTA, we use Datastream, a database computed by Thomson Reuters, provided by Schumpeter School of Business and Economics at University in Wuppertal. Also, we use consolidated banking data from the Statistical Data Warehouse database computed by the European Central Bank for CR5 and HHI variables, and Eurostat database for macroeconomic variables, HICP and RGDP.

Our sample contains 80 banks, during the period from 2010 to 2018, located in 17 European Union countries, except for other European Union countries, whose data are unavailable for the whole observed period in Datastream database. The number of observed

banks in the countries is following: France – 17, Italy – 14, United Kingdom, Austria, Poland – 6, Spain and Greece – 5, Denmark and Slovakia – 4, Belgium – 3, Germany, Finland and Sweden – 2, Ireland, Lithuania, Netherlands, Portugal – 1.

The Granger causality method identifies the direction of causality between the observed variables. As we mentioned, the monitored data represent time series. In the case of simple linear and nonlinear models, the dependence of two variables may not indicate a causal relationship. If the sample of monitored data has a time series, a dynamic regression model is created. Granger (1969) developed the concept of Granger causality by running bivariate regressions. These models can be written as follows:

$$y_t = \alpha_0 + \sum_{i=1}^{m} \beta_i \, y_{t-1} + \sum_{j=1}^{m} \beta_j \, x_{t-1} + e_t$$
$$x_t = \alpha_0 + \sum_{i=1}^{m} \beta_i \, x_{t-1} + \sum_{j=1}^{m} \beta_j \, y_{t-1} + e_t \quad (6)$$

Where $y_t(x_t)$ is the dependent variable, $x_t(y_t)$ is the independent variable, $\alpha_0, \beta_i, \beta_j$ are estimates of regression coefficients where ($i = 1,2,3 \ldots m$ and $j = 1,2,3 \ldots m$), e_t is the standard error and m is the limit for the time lag. Therefore, it is necessary that the condition applies $m + 1 \leq t, m \in N$ and number of the lag time is $2m + 1 \leq t$.

Results and discussion

One of the conditions for using the Granger causality method is that the monitored time-series require being stationary. Stationary is an important part that the observed probability function is not time-dependent. This condition may not be confirmed in Granger's analysis at the original data level, but after adjusting and using first differences, it is already an obligation. In the analysis, the Augmented Dickey-Fuller test was selected to determine stationary. Its purpose is to test whether the data has a unit root. It shows a systematic pattern that is unpredictable. The aim is to assess the test on the basis of the calculated p-value and we establish the following hypotheses.

H0: Data has a unit root; there is not stationary.

H1: Data has not a unit root; there is stationary.

The alpha significance level is set at 0.05, which is the most commonly used value. The results of these tests are described in Table 1.

Table 1: Results of testing the stationary.

Variables	Estimate	Standard Error	P-value	Stationary
Z-score	-0.06018	0.01326	6.65e-06 ***	Yes
LI	-0.18433	0.02242	9.46e-16 ***	Yes
MS	-0.062282	0.013312	3.46e-06 ***	Yes
CR5	-0.003967	0.003724	0.287	No
HHI	-0.02064	0.00767	0.0073 **	Yes
SIZE	-0.001341	0.001807	0.458	No
NIITR	-0.022701	0.008324	0.00655 **	Yes
FATA	-0.12635	0.01975	2.86e-10 ***	Yes
LTA	-0.03292	0.01154	0.00446 **	Yes
RGDP	-0.016892	0.006886	0.0144 *	Yes
HICP	-0.21023	0.02132	< 2e-16 ***	Yes

Note: statistically significant coefficient is highlighted by one of the significance codes: (***) 0.001 (**) 0.01 (*) 0.05 respectively. LI = Lerner index, MS = market share, HHI = Herfindahl-Hirschman index, SIZE = logarithm of total assets, NIITR = non-interest income on total income ratio, FATA = fixed assets on total assets, LTA = loans on total assets ratio, RGDP = annual real gross domestic product, HICP = harmonised index of consumer prices. Source: own research. Source: own research.

At the level of the original data, we accept the null hypothesis, so it is possible to assume that the data have a unit root and are therefore not stationary in almost all cases. Even we test the first differences; the stationary is not confirmed in the variable of CR5 and SIZE.

The next step in the Granger causality method is to determine the optimal number of lags, using "VARselect" command, which takes four information criteria into account. We follow the Akaike information criteria, Schwarz, also known as Bayesian, which is recommended to follow because it is based on Bayesian statistics, Hannan-Quinn and Akaike's final prediction error. Based on the command, it is possible to find out how many lags we should use. The results of this testing are shown in the following Table 2.

Table 2: Testing and finding the optimal number of lags in models.

Criteria	Number of lags recommendation
Akaike information criteria	4
Schwarz (Bayesian) information criteria	1
Hannan-Quinn criteria	1
Akaike's Final Prediction Error	4

Source: own research.

Using the given criteria, it is possible to monitor compliance in determining the optimal number of delays. Akaike's criteria predicts a recommended number of 4. Schwarz and Hannan-Quinn sets a recommended number of 1 lag. As Schwarz sets stricter conditions than Akaike in determining the optimal number of delays, it is more appropriate to select the optimal number of delays based on Schwarz's information criterion, or at the level of the one-year shift.

As the most important part of the analysis, the Granger causality method follows, and thus we examine whether there is causality between stability and the observed variables. In R

software, this method is tested using the "lmtest" package. In the test order, a 1-year delay is set, according to previous tests. Using this test, the causality in the Granger causality between all monitored indicators can be calculated. We investigate the results from the Granger causality test with the obtained p-values, so hypotheses need to be determined.

H0: There is no Granger causality.

H1: There is a Granger causality.

Using these hypotheses, it can be appreciated that if the p-value is less than 0.05, then there is causality in the Granger test. If this value is higher than the level of significance, then causality does not exist in Granger method. To perform an analysis of the relationship, the causality was examined between Z-score and other indicators. The results of the individual tests are shown in Table 3. We analyse only variables with stationary, so we drop the CR5 and SIZE of Table 3.

Table 3: Granger causality test.

Direction	**F statistics**	**P-value**	**Direction**	**F statistics**	**P-value**
Z-score->LI	0.0837	0.7724	LI->Z-score	0.2384	0.6255
Z-score->MS	0.7419	0.3893	MS->Z-score	4.8561	0.02787 *
Z-score->HHI	0.0752	0.784	HHI->Z-score	10.143	0.001512 **
Z-score-> NIITR	3.2454	0.07205	NIITR->Z-score	0.7729	0.3796
Z-score-> FATA	0.0064	0.9361	FATA> Z-score	7.3873	0.006727**
Z-score->LTA	0.0785	0.7794	LTA->Z-score	5.6295	0.01792 *
Z-score->RGDP	1.9873	0.1591	RGDP->Z-score	5.5588	0.01866 *
Z-score->HICP	0.0372	0.8471	HICP->Z-score	0.7967	0.3724

Note: statistically significant coefficient is highlighted by one of the significance codes: (***) 0.001 (**) 0.01 (*) 0.05 respectively. LI = Lerner index, MS = market share, HHI = Herfindahl-Hirschman index, NIITR = non-interest income on total income ratio, FATA = fixed assets on total assets, LTA = loans on total assets ratio, RGDP = annual real gross domestic product, HICP = harmonised index of consumer prices. Source: own research.

Table 3 gives us an overview of causal relationships between stability provided by Z-score and other variables. We can refute the two-way dependence. The existence of a one-way relationship is significant when the Z-score represents a depended variable. The most significant are MS and HHI, as concentration ratios, and there are three other control variables, FATA, LTA and RGDP, which affect the Z-score. We compute five linear models formulated according to Formula (6) in methodology in Table 4.

Table 4: Linear models formulations.

Models	Linear model
Model 1 (M1)	$Z-score_t = \alpha + \beta_1 \times Z-score_{t-1} + \beta_2 \times MS_{t-1} + e_t$
Model 2 (M2)	$Z-score_t = \alpha + \beta_1 \times Z-score_{t-1} + \beta_2 \times HHI_{t-1} + e_t$
Model 3 (M3)	$Z-score_t = \alpha + \beta_1 \times Z-score_{t-1} + \beta_2 \times FATA_{t-1} + e_t$
Model 4 (M4)	$Z-score_t = \alpha + \beta_1 \times Z-score_{t-1} + \beta_2 \times LTA_{t-1} + e_t$
Model 5 (M5)	$Z-score_t = \alpha + \beta_1 \times Z-score_{t-1} + \beta_2 \times RGDP_{t-1} + e_t$

Source: own research.

In this part of the paper, we focus on a more detailed analysis of the relationship between Z-score and five other variables through the linear models´ formulations stated in Table 4. We analyse only those dependencies that proved to be statistically significant within Granger causality. The results of the models that we obtained show Table 5.

Table 5: Results of the linear models.

Models	M1	M2	M3	M4	M5
Intercept	0.038204 (0.004323) ***	0.035680 (0.004689) ***	0.036283 (0.004016) ***	0.037847 (0.006007) ***	0.03329 (0.004388) ***
Beta 1 estimate (lagged ZScore)	0.715672 (0.026132) ***	0.719801 (0.025906) ***	0.719145 (0.025887) ***	0.721092 (0.026455) ***	0.7167 (0.02585) ***
Beta 2 estimate (lagged variable)	-0.016912 (0.019271)	0.007592 (0.030112)	0.017627 (0.252920)	-0.002440 (0.007726)	<0.0001 (<0.0001)
P-value	< 2e-16	< 2e-16	< 2e-16	< 2e-16	< 2e-16
R-squared	0.5202	0.5198	0.5197	0.5198	0.5210
Adj. R-squared	0.5189	0.5184	0.5184	0.5185	0.5197

Note: statistically significant coefficient is highlighted by one of the significance codes: (***) 0.001 (**) 0.01 (*) 0.05 respectively. Source: own research.

By summarizing these models in program R, we can see which variables are statistically significant. Table 5 also informs us of the adjusted coefficient of determination R-squared. It evaluates how much percent of the variability is explained by our models. All of the observed models consider values between 0.5184 and 0.5210. Based on these models, we can observe that the two-way relationship between stability and other variables has not been confirmed. Stability of the bank depends on the stability values from the previous period and does not depend on any other lagged values.

Table 6: Diagnostic tests results

Models	M1 (Diff M1)	M2 (Diff M2)	M3 (Diff M3)	M4 (Diff M4)	M5 (Diff M5)
Normality	No (No)	No (No)	No (No)	No (No)	No (No)
Heteroskedasticity	Yes (No)	Yes (No)	Yes (No)	Yes (No)	Yes (No)
Autocorrelation	No (No)	No (No)	No (No)	No (No)	No (No)
Multicolinearity	No (No)	No (No)	No (No)	No (No)	No (No)
Correct model specification	Yes (Yes)	Yes (No)	Yes (Yes)	Yes (No)	Yes (Yes)

Note: Results of problems in the examined models. Source: own research.

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We also provide diagnostic tests whether they confirm the basic econometric assumptions, and in case of their violation, we transform the models. For every model, we test the normality of residues with the Jarque-Bera test, heteroskedasticity with Breusch-Pagan test, and autocorrelation with the Durbin-Watson test. We use the vif factor to test multicollinearity between variables, and we provide Reset test to test correct model specification. We suffer from the normality of residues and heteroskedasticity. We solve the problem with heteroskedasticity with first differences. Residue values do not have a normal distribution. Several economists and statisticians state that in the case of panel data, the normality of residues is not a necessary condition. Moreover, in the case of a low number of observations, this residue normality test can only have low predictive power.

Conclusion

Structure of the banking system can significantly affect the stability of the whole financial system, and it is therefore important to examine the individual factors that may influence it. Empirical results of this study show that the existence of Granger causality implies five of ten examined variables causing an impact on bank stability with the existence of a one-way relationship with the Z-score as a depended variable. The most significant variables are market share ratio, Herfindahl-Hirschman index, non-interest income on total income ratio, fixed assets on total assets ratio, loans on total assets ratio, annual real gross domestic product, and a harmonised index of consumer prices which significantly affect the Z-score. The contribution of the study is that it has opened up avenues for further research on analysing those variables and bank stability and investigates the relationship using an extended econometric model.

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STRUCTURAL CHANGES AND EMPLOYMENT IN V4 COUNTRIES

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Abstract

Fragmentation of the production process amplifies interdependence between countries, making developments in national economies more sensitive to global trends, technological progress, and international division of labour. Fragmentation of production activities have a significant effect on the production structure of the national economies. The aim of this paper is to analyse the ability of individual sectors to generate new jobs in the V4 countries in the period 2000–2014, using Leontief input–output analysis. The analysis of the national sectoral development can bring important information about the consequences of global change on domestic economic performance and employment. The results show significant shift in the analysed period. However, the highest multiplier effect of production growth on job creation in the analysed sectors is still in the agriculture and retail trade. The automotive sector has significant lower multiplier effects on new job creation.

Key words: employment, input-output analysis, multipliers, V4 countries, sectors.

Introduction

Nowadays, more and more emphasis is placed on macroeconomic analysis to explore the structure of the economy, reviewing inter-sectoral links. An importance of individual sectors of the economy in international production chains lies in evaluating processes, links and impacts of changes in the economy and the impacts on economic growth. Increased attention has been paid to inter-sectoral links in identifying key sectors that have been important for economic development and growth of the country since the 1950s.

Furthermore, the introduction of new technologies into practice, such as e-commerce in the retail sector or process innovation, automation and robotics in the manufacturing and service sectors, has a significant impact on the labour market. Standard economic analysis tools are most often focused on exploring isolated sectors and avoiding their links. The lack of these standard approaches can be supplemented by so-called input–output analysis, which has tools to quantify interdependencies between entities (sectors) in the economy (Domonkos et. al. 2010).

I-O analysis focuses on the mutual linkages between economic sectors and examines the consequences of structural changes on labour market. Based on these linkages, it is possible to evaluate the structure of the economy, or the overall impacts of changing demand in the various sectors of the national economy. Using the demand-side model, different kinds of I-O

multipliers can be generated, i.e. output multipliers, income multipliers, employment multipliers and import multipliers. They can be viewed as summary measures used to estimate the likely effects of economic change. For this reason, the study of multipliers is often called as impact analysis (Pissarenko 2003, Miller and Blair 2009).

The aim of this paper is to examine the ability of individual sectors to generate new jobs in V4 countries (Poland, Czech Republic, Hungary, and Slovakia) and compere the results with Germany. Such analysis enables us to estimate structural changes in employment. We will analyse employment multipliers using data from the World Input–Output Database (WIOD) for the period 2000-2014.

Literature review

Our analysis is concentrated on selected sectors with a significant impact on employment such as retail trade, crop and animal production, automotive sector in V4 countries. In the next part of the paper several empirical studies focusing on analysis of position and changes in these sectors will be presented.

The retail trade sector in Central Europe has changed dramatically in the last two decades and has become a model for successful transformation of emerging markets. According to Americo and Veronico (2018) retail trade sector is one of the main hubs for employment. Their analysis of the effect of e-commerce on the employment in the retail industry in 35 European countries during the last ten years, considering factor such as retail sales and firm's turnover from e-commerce showed a negative effect of the firm's turnover from e-commerce on employment in the retail industry. The disruptive effect of trade digitalisation on traditional retail jobs appear to be clear. However, since the problem with data on employment in the e-commerce industry, it appears to be ambiguous whether the increase in electronic commerce will create new jobs enough to offset the lost in traditional retail employment (Americo and Veronico 2018).

There was a significant decrease in the share of agriculture regarding the gross domestic product and employment in almost all developed economies. However, it is still possible to find considerable differences between individual countries as well as between regions. The income of agricultural workers is traditionally lower, which subsequently leads to an outflow of population from the countryside into cities, and to further deterioration of the demographic and economic situation of the rural population. While agriculture is a key economic activity for rural dwellers, it is not highly remunerative and farm households face high poverty rates (OECD 2018). As adequate production of food and food self-sufficiency have been among the strategic priorities of national governments, macroeconomic policies make efforts to support

agricultural production both at the national and international level (Lacina and Minařík 2002). Moreover, agricultural sector in V4 countries has its own specifics compared to other EU countries. The role of the agro-food industry in rural employment is significant. Contrary to international trends, the labour demand in agriculture has increased slightly. However, aging is a serious problem, young people are reluctant to undertake work in the agricultural area, and their qualifications are poor.

The automotive sector contributes to the economic growth of analysed countries and has a sizeable share in the region's economy. The countries have been able to attract significant FDI amounts which resulted in more than doubled vehicle production in the region in last ten years. However, Slovakia, the Czech Republic were the most successful in this area where car production tripled or even quadrupled. The economic importance of automotive sector greatly differs from country to country. The types of vehicles and the individual models are different, while the value added also varies. According to Túry (2014) the automotive industry is highly important in terms of employment in the Czech Republic and in Slovakia while in Poland the share of employees is only less than half of the Czech Republic in 2013. Considering the total share of the automotive industry, i.e., indirect contribution including production and service activities connecting to supplier industries, its share in employment could be 5-6 times the numbers cited above (Túry 2014).

From the methodological point of view, similar studies have been done in different sectors. The input-output approach was used to analysed Korean economic structural change from labour to capital intensiveness. The study identified the growing effect of education cost reduction on economic development (Kim and Lee 1998). The input-output approach was also used to provide insight into a structural change of the key sectors in CEE economies in the period 2000–2014. The results pointed out that most of the key sectors during the period are service related sectors and that their number is increased after the crisis, while manufacturing of basic metals and electricity, gas, steam, and air conditioning supply have lost the status of the key sector (Fedajev and Radulescu 2019). Pietroforte and Gregori (2003) built upon a series of input–output data examined the construction industry of several highly developed countries (Australia, Canada, Denmark, France, Germany, The Netherlands, Japan, and the USA). The study a set of simple indicators to show a declining role in the national economies during the 1970s and 1980s. The research of Ali et al. (2019) studied the role of construction sector in economies of three South Asian developing countries, namely Bangladesh, Nepal, and Sri Lanka. The results obtained from the examined countries I-O tables show that the construction sector of each country delivers most of the share of its output to the final demand and the rest

to the intermediate consumption. The results also showed that construction sector in all the three economies can be considered as a key sector.

Methodology

Identification of the key sectors in the economy require structural models and input-output analysis, considering the complex links between sectors in the national economy. The Leontief model is based on a symmetrical input-output table and allows analysis of cross-sector and interregional structural links in the world economy therefore represented an advantage compared to other macroeconomic models. The Leontief model was presented for the first time in the 1930s by the Nobel Prize winner, Wassily Leontief. The founder of this approach first published an input-output table for the US national economy. He presented his methodological approach in his classic essay Input-Output Economics from 1951.

While aggregate models consider total production in the economy as one product (which can be used for different purposes and in different ways), the Leontief model assumes that outputs from the production process are different goods and services (commodities). Our interest is focused on input-output analysis for one country (region). We consider that in national economies we have several sectors in which companies operate and each company focuses only on its core business. The national economy is divided into *n* sectors and the output of each sector being used to satisfy final demand (households, public administration, investment or exports) or used as an intermediate product for the manufacture of other products (in the same or other sectors). Gross output of all sectors of national economy can be expressed as column vector:

$$X = \begin{bmatrix} x_1 \\ \vdots \\ x_n \end{bmatrix} \qquad (1)$$

Final use is different from total output because not all commodities serve to satisfy the needs of economic subjects. Under the term final use, we understand the purchase and use of goods and services by households, corporate investments, final government consumption, but also export, which represents foreign demand for products and services. Final demand can be expressed as follows:

$$Y = \begin{bmatrix} y_1 \\ \vdots \\ y_n \end{bmatrix} \qquad (2)$$

As we mentioned not all commodities produced by firms serve to satisfy the needs of economic subjects. The part of the production enters the production process as intermediate use. Matrix *Z* represents the *n* x *n* matrix of coefficients that stands for intermediate use.

$$Z = \begin{bmatrix} z_{11} & \cdots & z_{1n} \\ \vdots & \ddots & \vdots \\ z_{n1} & \cdots & z_{nn} \end{bmatrix} \quad (3)$$

Each element of the matrix Z indicates how much commodity i was consumed as input to production in sector j. The total gross output of individual sectors can be written as follows:

$$\begin{aligned} x_1 &= z_{11} + z_{12} + \cdots + z_{1n} + y_i \\ &\vdots \\ x_n &= z_{n1} + z_{n2} + \cdots + z_{nn} + y_n \end{aligned} \quad (4)$$

The intermediate input matrix Z allows us to calculate the matrix of technical coefficients A. The matrix of technical coefficient determines the structure and volume of direct inputs of different commodities to produce one unit of production in the sector j. The individual elements of the matrix A are noted as a_{ij} and are calculated as follow (Goga 2009, Lábaj 2014):

$$a_{ij} = \frac{z_{ij}}{x_j} \quad (5)$$

Consequently, the technical coefficients matrix can be written as:

$$A = Z(x)^{-1} \quad (6)$$

Using equivalent adjustments, we calculate Leontief's inverse matrix L:

$$X = (I - A)^{-1}Y = LY, \quad (7)$$

where I stands for unit matrix *(n* x *n)* and $(I\text{-}A)^{-1}=L$ represents Leontief inverse matrix. Leontief's inverse matrix links final demand and production. It represents the overall direct and indirect effects for each sector's production when the final demand increase. The horizontal sum of the L matrix elements represents the production multiplier, which characterizes the need for both direct and indirect inputs if the final demand for one commodity increased by one. The vertical sum of the Leontief matrix captures the direct and indirect demand of the domestic sector inputs, thus how much domestic output will grow if demand for the sector is increased by an additional unit.

One of the main uses of the input-output model is to evaluate the effects of changes in the economy caused by changes in elements that are exogenous to the model. In our case, the impact of new final demand can be measured by number of jobs (employment multiplier). The employment multiplier points out total employment crated by one new unit of production for final demand in one particular sector. The mentioned multiplier can be constructed by following procedure. Initially, we divide the number of employees of sector by the total production of the sector (x_n) and we obtain the unit vector of the direct employment coefficients E. To find the matrix of employment cumulative coefficients it is necessary to multiply the unit

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vector of direct employment coefficients E with Leontief inverse matrix L that can be written as:

$$EL = \begin{bmatrix} e_1 & \cdots & 0 \\ \vdots & \ddots & \vdots \\ 0 & \cdots & e_n \end{bmatrix} \times \begin{bmatrix} l_{11} & \cdots & l_{n1} \\ \vdots & \ddots & \vdots \\ l_{1n} & \cdots & l_{nn} \end{bmatrix} \qquad (8)$$

The individual elements of the EL matrix represent directly and indirectly generated employment in a sector caused by one final-use unit of the commodity. The multiplier of the employment is then calculated as the corresponding column sum of the matrix elements. The employment multiplier reflects the employment that generates one final consumption unit of the n-th commodity. To determine employment generated by export or domestic demand (direct and indirect employment generated by export and domestic demand), we multiply the matrix EL by export (x) and domestic demand (d) as parts of final demand.

Results and discussion

The employment indicators and the results of employment multipliers for individual sectors of V4 countries (Slovakia – SVK, Hungary – HU, Czech Republic – CZ, Poland – PL) and Germany – DEU[1] will be presented in the period 2000-2014. The attention is focused on sectors with the highest share on employment creation (crop and animal production, retail trade, manufacture of motor vehicles[2]). The data comes from the WIOD database. Our analysis uses national input-output tables that are based on national accounting and captures cross-sector flows. These tables are published every 5 years. The latest update of socio-economic database was published in 2018 and contains data for the period 2000-2014. From a structural point of view on economic changes, the results are still actual, as structural changes are not so dynamic.

The next part of the paper illustrates the employment trends of the V4 countries and Germany. Despite not favourable situation in the EU due to the consequences of the debt crisis and the slowdown, overall employment in V4 countries has increased, except Hungary. The Hungarian economy was based on agriculture with the share on total employment by more than 12% till 2000. However, over fourteen years employment has been reduced by more than twice. An interesting observation reveals comparison of V4 countries with German sectoral

[1] As Germany is the leading economic and exporting country in the EU. Moreover, there are close links between V4 countries and Germany, especially in the exporting sectors such as the automotive industry.

[2] The industry classification by ISIC Rev.4:
A01 - Crop and animal production, hunting and related service activities
G47 - Retail trade, except of motor vehicles and motorcycles
C29 - Manufacture of motor vehicles, trailers and semi-trailers

employment, namely the share of employment in manufacturing sectors. While in Germany 19% of people work in manufacturing, in SVK and HU it is 25%, 30% in CZ and 32% in PL. Services sectors for job creation are therefore more pronounced in Germany than in V4 countries.

As mentioned above, our analysis is focused on sectors although they are not the first five employers in all countries. After all, they are important for national economies. The traditional sector, such as crop and animal production (A01) is number one in Poland and five in Hungary. In Slovakia, the share of this sector in total employment in 2014 was 2.1%, in Czech Republic 2.78% and in Germany 1.41%. However, all countries experienced significant job losses in this sector (-48% in SVK; -49% in Hungary; -23% in CZ; -44% PL and -12% DEU). Job losses in this traditional sector have been offset by new jobs in the manufacturing sector, such as the manufacture of motor vehicles (C29), where in 14 years employment growth is over 201% in SVK; 104% in HU; 51% in CZ; 73% HU while in Germany it falls by more than 4.5%.

Table 5 Total and sectoral employment in V4 countries and Germany in 2014

Country	Sector	Employment (thousands)	Share on total employment (%)	Growth rate (%) 2000-2014
SVK	Total	2 223	-	10.43
1.	G47	209	9.38	42.36
2.	P85	171	7.67	-5.88
3.	F	164	7.38	35,42
4.	O84	158	7.09	19.66
5.	G46	136	6.13	23.55
HU	Total	4 234	-	-0.075
1.	O84	402	9.50	43.57
2.	G47	379	9.94	2.21
3.	Q	281	6.64	12.28
4.	F	268	6.33	6.97
5.	A01	257	6.07	-49.43
CZ	Total	5 109	-	5.14
1.	F	422	8.25	1.27
2.	G47	362	7.07	-1.21
3.	Q	314	6.14	22.86
4.	P85	296	5.78	9.29
5.	O84	290	5.68	-14.76
PL	Total	15 572	-	5.38
1.	A01	1 640	10.53	-43.98
2.	G47	1 430	9.18	12.46
3.	P85	1 223	7.85	7.58
4.	F	1 122	7.20	4.67
5.	O84	1 060	6.80	15.83

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DEU	Total	42 706	-	6.98
1.	Q	5 264	12.32	27.21
2.	G47	3 209	7.51	-1.47
3.	N	3 010	7.04	54.35
4.	O84	2 535	5.93	-13.86
5.	F	2 443	5.72	-15.58

Source: own calculations, data from WIOD

Although, employment is increasing during the period, the involvement of labour in value added creation is decreasing. It results from the growing automation, robotics and digitalisation both in manufacturing and services sectors. The share of labour in value added creation (Table 2) still dominates (except Poland) however the ratio changes at the expense of labour.

Table 6 The share of labour in value added creation

Country	LAB/VA	Growth rate (%) 2000-2014
Slovakia	51.60	-12.66
Hungary	56.43	-15.02
Czech Republic	55.11	4.61
Poland	48.90	-15.38
Germany	65.15	-2.03

Source: own calculations, data from WIOD

As for the development of wages, expressed as compensation per hour worked, calculated as compensation of employees in millions of euro divided by total hours worked by employees (millions). The values in the Table 3 show the ranking of the three sectors with the highest evaluation per hour and the wages of the three sectors with the highest employment. This comparison reveals that the compensation of employees per hour worked is highest in the service sectors, particular in sectors such as J61 telecommunications and K64 financial service activities (only one exception in Hungary – C19 manufacture of coke and refined petroleum products). The differences between the V4 countries and Germany are still huge, although the wage growth in the V4 has been significantly faster.

Table 7 Compensation of employees per hour of work in V4 countries and Germany in 2014

Country	Sector	Compensation per hour in EUR	Growth rate (%) 2000-2014
SVK	Total	10.08	119.97
1.	J61	17.37	168.11
2.	K66	16.59	107.31
3.	D35	16.41	184.96
	G47	6.82	73.73

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	P85	9.05	206.60
	F	8.84	94.68
HU	Total	7.47	117.96
1.	C19	16.82	21.37
2.	M72	16.06	338.46
3.	K64	15.18	171.20
	O84	6.87	105.06
	G47	4.09	162.25
	Q	6.40	156.14
CZ	Total	9.44	89.33
1.	K64	18.29	100.77
2.	J61	16.63	111.87
3.	K65	16.00	95.73
	F	6.50	54.13
	G47	5.55	73.36
	Q	8.57	123.34
PL	Total	6.65	64.46
1.	M73	17.97	240.71
2.	M72	15.17	205.12
3.	J58	14.46	171.76
	A01	5.96	122.51
	G47	3.51	162.29
	P85	7.23	59.07
DEU	Total	33.49	29.94
1.	J59-J60	56.34	30.65
2.	K65	49.09	37.61
3.	C30	48.73	59.91
	Q	23.53	25.58
	G47	18.54	31.99
	N	19.82	40.32

Source: own calculations, data from WIOD

The next part of the paper, using input-output analysis allows to study deeper structural links between changes in final demand and employment creation in sectors. We examine the effects on jobs creation. The employment multiplier in the selected sector suggests how one unit increase of production (in our case 1 000 000 USD[3]) due to changes in the sector´s final demand will affect the creation of new jobs across the whole economy.

The multiplier effect of output growth on job creation in selected sectors in V4 countries and Germany is noticed in Table 4. Remarkably, the values of multipliers in all sectors have decreased over the studied period 2000-2014. This can be explained by the productivity, automation, and innovation growth in V4 countries and Germany. As expected, manufactured

[3] To compare the effects in countries with different currencies, it is necessary to convert to a common denominator, so we used USD, moreover the data in NIOT is expressed in USD.

sector such as C29 have significant lower multiplier effects on employment creation. The values of multiplier in the crop and animal production sector (A01) are remarkably higher for Poland, although the agriculture sector has lost its position in generating the economic growth in this predominantly agricultural region. The agricultural sector of the other countries also experienced significant reductions in employment. The ability to create new jobs in C29 sector is weak due to high automation and imports of intermediate inputs. Retail and wholesale trades are generally more robust when it comes to economic challenges in the wider economy and are not as vulnerable to economic downturn as the other distributive trade (Fitzpayne et al. 2017). The number of jobs in the trade sector fell during the financial crisis and has remained at about the same level since 2007. Another reason for the decline in employment in the retail sector is technology growth. Technologies are increasingly able to perform the tasks previously done by workers, and retail jobs are particularly vulnerable. Nevertheless, the results of employment multipliers are against this assumption and the multiplier effect is already notably weakening before the crisis period.

Table 8 Employment multipliers (number of jobs)

A01	**2000**	**2007**	**2008**	**2010**	**2012**	**2014**
Poland	288	92	79	91	73	67
Hungary	139	39	32	42	35	32
Czech	84	30	24	31	24	24
Germany	27	16	14	17	16	15
Slovakia	85	19	15	19	14	12
C29	**2000**	**2007**	**2008**	**2010**	**2012**	**2014**
Poland	47	19	15	15	6	13
Czech	39	12	10	10	9	9
Hungary	21	7	6	7	7	6
Slovakia	30	7	7	7	6	6
Germany	13	6	6	6	6	6
G47	**2000**	**2007**	**2008**	**2010**	**2012**	**2014**
Hungary	138	50	42	50	50	48
Czech	112	36	29	33	32	33
Poland	83	39	34	37	20	33
Slovakia	116	33	27	32	27	25
Germany	31	19	18	20	21	19

Source: own calculations, data from WIOD

The following part of the paper points out to what part of total employment is generated by components of final demand – domestic demand and export (Table 5). It is clear from the data that the main driver of job creation in domestic demand is the retail trade (G47) in all studied countries, although countries have generally experienced a reduction in job creation.

Manufacturing remains the key to productivity gains, generating jobs and a nation's wealth in V4 countries especially thanks to low labour costs, the educated workforce, geographical proximity to Western European markets, tax incentives and the stabilising legal environment which make V4 countries have become attractive locations for investments by global car manufacturers. The manufacture of vehicles and transport equipment has a measurable effect on the outcome and employment of studied economies. For some of the region's countries, such as Hungary, the Czech Republic and Slovakia, the mentioned sector represents around a tenth of their total output. Employment generated by domestic demand in this sector is most pronounced in Poland thanks to positive development on domestic side especially for Polish car production. The higher propensity to spend is resulting in more dynamic car sales in CEE economies mainly because of the improving situation on the labour market, rising consumer confidence, subdued inflation, oil prices still much lower than experienced in previous years and low interest rates supporting loans. The increased demand for commercial vehicles is a positive message, especially for Polish manufacturing plants, as significant volumes of light commercial vehicles are produced there (Popławski 2016). As for Slovakia it is a country with the biggest ratio of locally produced cars per person in Europe and together with Czech Republic the automotive industry it's the most important sector which production is primarily destined for export markets. As mentioned above, the increased car production for foreign market leads to the highest share of export-generated employment, which is particularly apparent in selected countries.

The process of transition brings many changes, also affects the development of agricultural sector including the fishing and the forestry sectors in the CEE countries, predominantly in V4 countries. However, we notice large differences from country to country according to the economic situation (Chloupkova 2002). Regarding this sector, we recorded notable values of employment generated by domestic demand. Particularly in Poland, it is domestic demand that determines the employment creation despite its long-term decline (more than 1 mil. jobs). This is largely due to the prevalence of small family farms employing family labour force (OECD 2018). The entrance of the Czech Republic to the European Union has brought several other problems which farmers such as low protection level of the domestic agricultural products, administration problems and lack of a processing capacity (Věžník et al. 2013). These reasons lead to a loss of job creation in domestic demand in the Czech Republic in recent years.

The privatization period and appearance of multinational companies became the problem which led to a rapid decline in domestic production as well as employment which is

also reflected in decreasing multiplier effects of employment. Our analysis also shows, that while the impact of domestic demand on job creation is decreasing, the export generates more job creation than 14 years ago. We recorded the highest share of export-generated employment, which is particularly apparent in Poland. Poland is currently the 8th largest exporter of agricultural food products in the EU. Poland's accession to the EU was one of the key factors behind the success of the Polish agricultural food product export. As a result, EU member states account for approximately 81 percent of Poland's agriculture and food products export (Kolodziejczyk 2016). Moreover, in Hungary, export creates more jobs than domestic demand.

Table 9 Employment generated by domestic demand and export (% of total sectoral employment)

	Domestic demand						Export					
A01	**2000**	**2007**	**2008**	**2010**	**2012**	**2014**	**2000**	**2007**	**2008**	**2010**	**2012**	**2014**
PL	88	78	78	72	69	63	12	22	22	28	31	37
SVK	88	64	65	62	53	63	12	36	35	38	47	38
DEU	78	68	66	60	57	54	22	32	34	40	43	46
CZ	74	59	60	57	53	50	25	41	40	43	47	50
HU	72	56	52	41	38	41	28	44	48	59	62	59
C29												
PL	32	16	15	25	27	28	68	84	85	75	73	72
DEU	34	25	26	28	25	22	66	75	74	72	75	78
CZ	34	15	14	15	11	7	66	85	86	85	89	93
SVK	24	6	7	2	5	5	76	94	93	98	95	95
HU	17	0	0	1	1	2	83	100	100	99	99	98
G47												
DEU	94	92	92	91	88	88	6	8	8	9	12	12
HU	92	91	91	91	89	88	8	9	9	9	11	12
SVK	87	71	72	78	74	74	13	29	28	22	26	26
PL	83	76	77	67	65	63	17	24	23	33	35	37
CZ	78	69	70	69	65	63	22	31	30	31	35	37

Source: own calculations, data from WIOD

Conclusion

Visegrad Four countries have become important part of European and global production chains, so developments in national economies are more sensitive to global trends. Changes in global trends, technological progress and international division of labour have affected the labour market and the opportunity to create new jobs in mentioned countries. Leontief's input-output model and its structural analysis was used to examine structural changes in employment in V4 countries employment during the period 2000-2014. The results of the paper showed that while overall employment increased, the involvement of labour in value added creation

decreased over time. The share of labour in value added creation still dominates, however the ratio is changing at the expense of labour.

The traditional sector such as crop and animal production has experienced significant job losses. The job losses were offset by new jobs in the reborn manufacturing sector, such as the manufacture of motor vehicles, where the employment increased by more than 100% over last 14 years. Car production is primarily intended for export markets and leads to the highest share of export-generated employment. However, our results have shown that the highest multiplier effect of production growth on job creation in studied sectors is in the agriculture and retail trade sectors. The automotive sector has significant lower multiplier effects on new job creation due to high automatization and imports of intermediate inputs. Interestingly, the values of multipliers in all studied sectors have decreased over the period 2000-2014, suggesting a further reduction in job creation potential.

There are still huge differences in wage levels within V4 countries and Germany, although the wage growth in the V4 was significantly faster. Moreover, our results showed that the retail trade and construction sectors are the main drivers of job creation as a result of domestic demand in the V4 countries and Germany, although jobs created by domestic demand have decreased and job creation as a result of exports has increased. This is, on the one hand, associated with increased involvement in the global production chains, but on the other hand may increase the risk of sensitivity to external shocks.

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APPENDIX

Appendix 1 Industry classification in WIOD according to ISIC Rev.4 (2000-2014)

INDUSTRY NAME	ISIC Code
Crop and animal production, hunting and related service activities	A01
Forestry and logging	A02
Fishing and aquaculture	A03
Mining and quarrying	B
Manufacture of food products, beverages and tobacco products	C10-C12
Manufacture of textiles, wearing apparel and leather products	C13-C15
Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	C16
Manufacture of paper and paper products	C17
Printing and reproduction of recorded media	C18
Manufacture of coke and refined petroleum products	C19
Manufacture of chemicals and chemical products	C20
Manufacture of basic pharmaceutical products and pharmaceutical preparations	C21

Manufacture of rubber and plastic products	C22
Manufacture of other non-metallic mineral products	C23
Manufacture of basic metals	C24
Manufacture of fabricated metal products, except machinery and equipment	C25
Manufacture of computer, electronic and optical products	C26
Manufacture of electrical equipment	C27
Manufacture of machinery and equipment n.e.c.	C28
Manufacture of motor vehicles, trailers and semi-trailers	C29
Manufacture of other transport equipment	C30
Manufacture of furniture; other manufacturing	C31_C32
Repair and installation of machinery and equipment	C33
Electricity, gas, steam and air conditioning supply	D35
Water collection, treatment and supply	E36
Sewerage; waste collection, treatment and disposal activities; materials recovery; remediation activities and other waste management services	E37-E39
Construction	F
Wholesale and retail trade and repair of motor vehicles and motorcycles	G45
Wholesale trade, except of motor vehicles and motorcycles	G46
Retail trade, except of motor vehicles and motorcycles	G47
Land transport and transport via pipelines	H49
Water transport	H50
Air transport	H51
Warehousing and support activities for transportation	H52
Postal and courier activities	H53
Accommodation and food service activities	I
Publishing activities	J58
Motion picture, video and television programme production, sound recording and music publishing activities; programming and broadcasting activities	J59_J60
Telecommunications	J61
Computer programming, consultancy and related activities; information service activities	J62_J63
Financial service activities, except insurance and pension funding	K64
Insurance, reinsurance and pension funding, except compulsory social security	K65
Activities auxiliary to financial services and insurance activities	K66
Real estate activities	L68
Legal and accounting activities; activities of head offices; management consultancy activities	M69_M70
Architectural and engineering activities; technical testing and analysis	M71
Scientific research and development	M72
Advertising and market research	M73
Other professional, scientific and technical activities; veterinary activities	M74_M75
Administrative and support service activities	N
Public administration and defence; compulsory social security	O84
Education	P85
Human health and social work activities	Q

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Other service activities	R_S
Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	T
Activities of extraterritorial organizations and bodies	U

Source: WIOD

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ASSESSMENT OF THE CLASSIFICATION ABILITY OF TRADITIONAL MODELS TO EVALUATE THE FINANCIAL HEALTH OF COMPANIES

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Abstract

Currently, there are different approaches to evaluate the financial health of companies – one-dimensional discriminatory analysis (Zmijewski X score), multi-dimensional discriminatory analysis (Altman Z scores and IN indices) and scoring methods (Quick test). These traditional models originated in the last century and are still being used with modifications. But can they correctly classify a company into one of the categories – financial health, gray zone or failure? The aim of this paper is to assess the classification capability of traditional models used to evaluate the financial health of companies, such as the Zmijewski X score model, Altman Z score, IN 05 and Quick test, through classification indices. The data used in the analysis comes from datasets from the Slovak portal Finstat, analyzing the data of Slovak companies in the IT industry between 2013 and 2017. The results of the individual financial health evaluation tests are compared based on the calculated classification indices for each test and each year. At the end of the paper we recommend one of the mentioned tests, which can correctly classify individual companies into predetermined categories.

Keywords: financial health, classification indices, Zmijewski model, Altman´s Z score, IN 05, Quick test

Introduction and literature preview

The success of the company is reflected in its the financial situation. Whether the company is financially health or threatened with bankruptcy is monitored not only by the company management, but also by its partners, investors, suppliers, banks, other creditors or even the employees of the company themselves, who are interested in the prosperity, economic and financial stability of the company. For this reason, management should regularly monitor the financial situation of the company and strive to achieve the best results.

The fundamentals of financial analysis, as we know it today, laid Beaver (1966), who firstly used a dichotomous classification t-test in one-dimensional framework and he also laid the foundations of prediction models. In addition, many other authors, tried to find one universal indicator to determine the financial health of the company, such as Zmijewski (1984), Deakin (1972) and Ohlson (1980). The main disadvantage of these models is that the same company can be classified into a group of financially healthy but also a group of companies in financial

distress based on different indicators. The authors attempt to address this by using a multivariate discriminatory analysis.

The main representative of this group of authors is Altman (1968) and his Z score. Multivariate discriminatory analysis as a tool for evaluating the financial health of companies has also been addressed by many other authors such as Taffler (1977), Springate (1978), or Neumaiers (1995).

The last group of models used to evaluate the financial health of companies are the so-called scoring methods, represented mainly by Kralicek (1993) and Argenti (1983).

In this paper we will discuss methods selected from each group of mentioned models, assessing their classification ability based on classification index. The aim of this paper is therefore to assess the classification capability of traditional models used to evaluate the financial health of companies, such as the Zmijewski X score model, Altman´s Z score, IN 05 and Quick test, through classification indices.

Methodology and Data

As we mentioned in previous part, we can quantify the financial health of company through various models. For our analysis to compare results of these models we have chosen Zmijewski X score model from univariate discriminant analysis methods, Altman Z score model and IN 05 from multiple discriminant analysis methods and Quick test from models based on the scoring method. We are going to compare these models through classification indices.

Zmijewski X score model

Zmijewski (1984) X score model adopts a probit method to model bankruptcy which uses financial ratios measuring company´s performance, leverage and liquidity. Zmijewski used for his model 40 bankrupt and 800 healthy industrial companies´ data for the period 1972-1978 and constructed following probit function:

$$Zmijewski\ X\ score = -4.3 - 4.5 * X1 + 5.7 * X2 + 0.004 * X3 \quad (1)$$

where

X1 = Net income/ Total assets = ROA

X2 = Total liabilities/ Total assets

X3 = Current assets/ Current liabilities = Current ratio

$$probability\ of\ bankruptcy = \frac{1}{1 + e^{-X\ score}} \quad (2)$$

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Zmijewski considers a breakpoint for probability of bankruptcy of 0,5. For the purposes of this paper, we have added limits around this value, which delimit the so-called grey zone, when the classification of the evaluated company into one of the groups is not unambiguous. Thus, the evaluation structure is as follows:

- probability of bankruptcy $\in < 0; 0.4)$ - financial health zone,
- probability of bankruptcy $\in < 0.4; 0.6 >$ - grey zone,
- probability of bankruptcy $\in (0.6; 1 >$ - bankruptcy zone.

Altman Z score

Altman (1968), by using Multiple Discriminatory Analysis, developed so called Z score, which is based on empirical data on failed companies over the past 5 years before bankruptcy and data for prosperous companies over the same period. The essence of this analysis is to find a linear combination of indicators that best distinguishes companies from bankruptcy and prosperity.

$$Z\ score = 0.717 * X1 + 0.847 * X2 + 3.107 * X3 + 0.42 * X4 + 0.998 * X5 \quad (3)$$

where

X1 = (Current assets - Current liabilities) / Total assets

X2 = Retained earnings / Total assets

X3 = (Profit before tax and interest) / Total assets

X4 = Equity / (Long-term payables + Short-term payables)

X5 = Sales / Total assets

The Z score is compared with the following values:

- Z score > 2.9 – financial situation is good (currently and in the future),
- 1.2 < Z score < 2.9 – range of ambiguous results, bankruptcy is possible (grey zone),
- Z score < 1.2 – financial situation is dire, probable bankruptcy.

IN 05

The Neumaier spouses (2005) of the indicators that consider the most important models and appear in the resulting indicators most frequently, have compiled an alternative model to the Altman Z score for the conditions of the Czech economy. They called this model the Index IN and IN95, respectively, according to their year of origin, i.e. 1995. This model has been modified several times, the latest version of which comes from 2005 and is called IN 05.

$$IN\ 05 = 0.13 * Y1 + 0.04 * Y2 + 3.97 * Y3 + 0.21 * Y4 + 0.09 * Y5 \quad (4)$$

where

Y1 = Total assets / Total debt

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Y2 = Earnings before interest and taxes / Interest expense

Y3 = Earnings before interest and taxes / Total assets

Y4 = Sales / Total assets

Y5 = Current assets / Short-term liabilities

The results are interpreted as follows:

- IN 05 > 1.6 – financial health,
- IN 05 between 1.6 and 0.9 – grey zone,
- IN 05 < 0.9 – bankruptcy zone.

Quick test

Kralicek (1993) used one selected indicator from each significant area of analysis, such as stability, liquidity, profitability and economic outcomes to create a point scale. His model is called Quick test and is often used mainly in Europe. It is a kind of transition between one-dimensional and multi-dimensional models.

According to Kralicek Quick test:

R1 = Equity / Total assets

R2 = (Liabilities – Cash) / Cash flow

R3 = Cash flow / Sales

R4 = EBIT / Total assets

The results of these indicators are compared to the table, with the corresponding points assigned to this indicator.

Table 10 Quick test - score indicators

Indicator	excellent (1)	very good (2)	average (3)	bad (4)	threat. insolvency (5)
Ratio of Own Equity in Total (R1)	>30%	>20%	>10%	>0%	negative
Time Required to Pay off Debt in Years (R2)	<3 years	<5 years	<12 years	>12 years	>30 years
Ratio of Cash Flow in Operation Income (R3)	>10%	>8%	>5%	>0%	negative
Percentage of Return on Total Equity (R4)	>15%	>12%	>8%	>0%	negative

Source: Bočánek (2018)

Finally, the points from all indicators are added together and the resulting value describes the financial situation of the company.

$$Quick\ test = B1 + B2 + B3 + B4 \quad (5)$$

where

B1 is the number of points corresponding to the indicator R1

B2 is the number of points corresponding to the indicator R2

B3 is the number of points corresponding to the indicator R3

B4 is the number of points corresponding to the indicator R4

The final score is interpreted as follows:

- 4 – 7 excellent results,
- 8 – 11 above-average results,
- 12 – 15 below-average results,
- 16 – 20 stagnant results.

For the purposes of this paper, the first two zones will be referred to as the financial health zone, the below-average results zone as the grey zone, and the lagging zone as the bankruptcy zone.

Assessment of the classification ability of the financial health diagnosis model

To assess the competence of this model, we are going to use methodology used by Mendelová and Bieliková (2017). They have classified the total number of *n* rated enterprises into six groups.

Group A	companies in financial distress included in the financial distress zone
Group B	companies in financial distress included in the grey zone
Group C	companies in financial distress included in the financial health zone
Group D	companies in financial health included in the financial distress zone
Group E	companies in financial health included in the grey zone
Group F	companies in financial health included in the financial health zone

The companies classified in groups A and F can then be considered as correctly classified. The companies classified in groups B and E can be considered as neutrally classified and the companies classified in groups C and D can be considered as misclassified. Altman (1968) stated, that group D is Type I Error and group C is Type II Error.

Numbers of companies classified into group *i* we marked as n_i, $i = A, B, C, D, E, F$.

Index of correct classification $I_{CC} \in [0,1]$ is

$$I_{CC} = \frac{n_A + n_F}{n} \tag{6}$$

index of neutral classification $I_{NC} \in [0,1]$ is

$$I_{NC} = \frac{n_B + n_E}{n} \tag{7}$$

and index of incorrect classification $I_{IC} \in [0,1]$ is

$$I_{IC} = \frac{n_C + n_D}{n} \quad (8)$$

Whereas $\sum_{i=A}^{F} n_i = n$, it must be true that $I_{CC} + I_{NC} + I_{IC} = 1$. The best situation is when values of I_{CC} are high and values of I_{IC} are low.

Data

Our database consists of data of Slovak companies that are in Information Technology (IT) sector for the period 2013-2017. We have filtered the sample feed to include companies:

- not cancelled, not in bankruptcy or liquidation,
- not micro-companies,
- earning more than 0€,
- which have available data for 2013-2017 period.

Results and Discussion

In order to take into account, the potential differences that may exist between different sectors in the economy, only one sector of the economy, IT, was chosen to carry out the analysis.
Within the resulting dataset, 100 financially health companies and 10 companies, that were identified as in financial distress in the next year were randomly selected. A company in financial distress was considered to be a company that in the following year met the criterion of defining a company in prolongation according to the valid legislation of the Slovak Republic, which means that the value of its payables exceeded the value of its assets, respectively the company reported negative equity.
In the analysis, we first have calculated individual models for evaluating financial health based on the methodology, described in section 2, for the period 2013-2017 separately for each year. Subsequently, we have evaluated the classification assessment of these models on the basis of the classification indices, whose calculation procedure is given in section 2.5. The resulting values of these indexes are shown in the table.

Table 11 Results of analysis

2013				
	Altman Z score	**IN 05**	**Quick test**	**Zmijewski X score**
I_{CC}	43.64%	50.00%	62.73%	60.91%
I_{NC}	50.91%	26.36%	32.73%	17.27%
I_{IC}	5.45%	23.64%	4.55%	21.82%
2014				
	Altman Z score	**IN 05**	**Quick test**	**Zmijewski X score**
I_{CC}	53.40%	59.22%	64.08%	55.34%
I_{NC}	32.04%	17.48%	28.16%	14.56%
I_{IC}	14.56%	23.30%	7.77%	30.10%
2015				
	Altman Z score	**IN 05**	**Quick test**	**Zmijewski X score**
I_{CC}	63.64%	57.27%	63.64%	66.36%
I_{NC}	21.82%	23.64%	26.36%	4.55%
I_{IC}	14.55%	19.09%	10.00%	29.09%
2016				
	Altman Z score	**IN 05**	**Quick test**	**Zmijewski X score**
I_{CC}	65.45%	60.91%	73.64%	75.45%
I_{NC}	24.55%	20.91%	24.55%	9.09%
I_{IC}	10.00%	18.18%	1.82%	15.45%
2017				
	Altman Z score	**IN 05**	**Quick test**	**Zmijewski X score**
I_{CC}	61.82%	76.36%	68.18%	67.27%
I_{NC}	27.27%	18.18%	21.82%	6.36%
I_{IC}	10.91%	5.45%	10.00%	26.36%

Source: Own calculations

As we can see in the table, in all years, except for 2017, the best assessment of the financial health of IT companies in the Slovak Republic was the Quick Test, which correctly ranked over 60% of companies every year. This test incorrectly ranked a maximum of 10% of companies, while in 2016 achieved the best results, namely the coefficient of correct classification even 73.64% and the coefficient of incorrect classification of only 1.82%.

The Altman Z score has achieved the second-best results after a Quick test. This model is the most widespread and most commonly used in practice to evaluate the financial health of companies, but even this well-known model does not guarantee the correct classification of the companies into the appropriate category (financial health, grey zone, bankruptcy). IN our case, Altman Z score in 2015-2017 has reached a correct classification coefficient of over 60%, but in 2013 it was only 43.64% and in 2014 was 53.40%. The model incorrectly categorised companies in 10% to 14.5% of cases.

The IN 05 was included in the analysis because it was constructed in the Czech Republic and we have believed that within the group of models based on multidimensional discrimination analysis, it would be more correct to categorise Slovak companies into relevant categories due to similarities in the economy. However, the results show relatively high index of incorrect

classification, 18.18% to 23.64%. The model correctly ranked 50% to 60.91% of companies. The exception is the year 2017, when this model has achieved the best results of all models, namely the correct classification index even 76.36% and the incorrect classification index only 5.45%.

The last model is Zmijewski X score, which of the analysed models achieved the worst results. In 2014, it incorrectly ranked as many as 30.10% of companies, which is the highest value of this index among all models and all years surveyed. Although in 2015 and 2016 it achieved the highest values of the correct classification coefficient (66.36% and 75.45%) among all models, it incorrectly categorised the companies in the categories even 29.09% and 15.45%.

To sum up, based on our results, we conclude that the best models for evaluating the financial health of companies in the IT sector in the Slovak Republic are the Quick test and the Altman Z score. However, we recommend to business managers to monitor the financial health of their company based on different models and follow trends in developing new alternative models that can be used to assess their health, such as neural networks or Data Envelopment Analysis.

Conclusion

Nowadays, it is very important for a company to monitor its financial health, because the models used for evaluating financial health can signal potential future problems, which management can respond to in a timely manner and make the necessary changes in the company. It is also important from the perspective of the needs of the request for a loan at the bank, which before the loan is approved, bank examine the financial situation of the company and on the basis of this information the bank accepts or rejects the request.

In this paper, we looked at the classification ability of traditional models used to evaluate the financial health of companies. We found that on the sample of data from Slovak companies from the IT industry in the period 2013-2017 the best results were achieved with the correct classification of Quick test and Altman Z score.

Future research can use alternative methods to diagnose the financial health of companies such as Data Envelopment Analysis and we are going to compare this method to the mentioned traditional models and compare their classification abilities.

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