

ACTA OECONOMICA
UNIVERSITATIS SELYE
International scientific journal
Volume 7.
No. 1

The publication of this issue was funded by the Pallas Athéné Domus
Educationis Foundation.



J. SELYE UNIVERSITY - FACULTY OF ECONOMICS

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UNIVERSITATIS SELYE**
International scientific journal

**Volume 7.
No. 1**

**2018
KOMÁRNO**

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*Acta Oeconomica Universitatis Selye is published twice a year by the J. Selye University,
Faculty of Economics, Bratislavská cesta 3322, 945 01 Komárno, Slovakia*

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ACHIEVING SUSTAINABLE DEVELOPMENT IN NIGERIA VIA INNOVATIVE EDUCATION. THE ROLE OF BUSINESS EDUCATION
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Received 21. December 2017, Reviewed 11. February 2018, Accepted 14. March 2018

Abstract This paper examines the role played by innovative teaching of business education in Nigeria universities for achieving sustainable development. The study is based on survey data obtained from the distribution of 320 questionnaires to teachers and students of Business Education in different universities in Nigeria. Results obtained from the data analysis showed that innovate teaching of business education develops and entrepreneurial mindset and acumen amongst its graduates as it teaches creative problem solving while using real life case study situations. A relatively low skill level on the part of teachers in the use of learner centred approach to teaching poses a significant challenge in achieving this and it is recommended that business education teacher utilize available training programs available in order to upgrade their learner-centred teaching skills.

Key words: Business Education, Sustainable Development, Finance, Entrepreneurship, Innovation

JEL Classification: M10, M20, O30.

Introduction

Innovation has been defined as a new idea, method, device or process. It is also viewed as the application of better solutions in order to meet new requirements and also meet existing and emerging needs. According to Zieba and Zieba (2014), innovation is defined as something original and effective which offers a solution to existing challenges as well as meeting present and future market needs. Innovation comes mainly in two forms or dimensions, which are the novelty form and process innovation. The novelty form occurs when innovation is totally new to the industry, subject area or business enterprise. The second form of innovation is known as process innovation, and it involves the changes and evolution in method of delivery or rendering of a service. It entails an improvement in what is erstwhile existent by making adjustments in order to make the final product or service new. These adjustments are made by mode of delivery, creating greater flexibility in mode of service delivery

in order to improve efficiency. According to Adeshina and Aliyu (2012), innovation has also been described as the process of employing new and better solutions for approaching issues and challenges, that meets new requirements and existing market needs. It also involves the production, assimilation and exploration of a value-added novelty in economic and social spheres, renewal and enlargement of products, services and markets; development of new methods of production and establishment of new management systems.

Sustainable development can be defined as an organizing principle for meeting human development goals without compromising the ability of future generations to meet up with the needs of both present and future generations. According to the United Nations Educational, Scientific and Cultural Organization (2006), sustainable development also refers to the act of maintaining an equilibrium between human activity and the natural environment over the long term. It entails an optimal balance between the environmental, economic and social needs and expectations of different stakeholders. Sustainable development has been in the front burner in recent times, especially for developing economies. After the promulgation of the sustainable development goals (SDGs) in 2015 by the United Nations, there has been an increase in attention to achieving these SDGs, due to the fact that all the issues pertaining to SDGs affect developing countries. Furthermore, properly highlight the challenges that directly affect the developing economies and also, attainment of these goals will bring about significant development for the country. In a related study, Dasgupta (2007) mentioned that the use of the SDGs to replace the millennium development goals (MDGs) helped in properly focusing on the needs of developing countries whilst setting targets that are realistic and measurable.

Business education is a dynamic field of study that involves teaching students the fundamentals, theories and processes of business. The aim of business education is to equip students with the skills, knowledge, attitude as well as the aptitude that will enable them to contribute positively and effectively to the business world. Business education is a dynamic subject area, and it is relevant for creating employment and economic development both nationally and globally. Business education also aims at producing graduates who are equipped with the knowledge and skills, as well as the attitudes that are needed for engaging in entrepreneurship. The elements that make up the subject area include accounting, finance, marketing and office management. These programs incorporate training and practical experience in the form of case studies, presentations, internships and interaction with experts in different business industries. Business education exposes students to general business principles as it also inculcates courses in human resources management, statistics, marketing, economics and information systems. As a dynamic subject area, the business education curriculum needs to always be in tune with current trends in business in order to produce workable solutions to existing problems. Furthermore, due to constant change in the dynamics of the business environment, economic changes as well as changes in different industries, there is a need for continuous innovation in both the course content as well as methods of teaching and assessment. This ought to be done in order to ensure that the business education curriculum is flexible and dynamic enough to meet up with current trends in the global economy.

In order for business education to be sustainable as a course of study and also provide sustainable development, there is a need for continuous innovation in order to make the subject to continually provide workable solutions to both current and emerging problems in the business world. According to Zelerinka and Pearace (2014), innovation is needed in order to make business education to be relevant to

the modern economy. Furthermore, innovation in methods of teaching, learning and assessment in business education also increases student interest in the subject area thus creating learning sustainability. Business education is also crucial in this current era of globalization and information and communication technology, where the work processes and organizational frameworks are getting increasingly flexible, dynamic, multi-tasking and performance based. According to Ugwuogo (2013), the dynamic nature of business education and needed continuous changes in teaching and learning materials as well as methods make it imperative that there be innovation in the business education curriculum. Innovation is vital for sustainability and sustainable development. Ziena and Zieba (2014) in their study mentioned that innovation has helped in bringing about the development and growth of modern firms and has helped in the paradigm shift for the development of knowledge based economy. The knowledge economy arises as a result of utilization of innovation, technological know-how as well as the aptitudes and attitudes needed to not only excel in business education but also helps making it relevant to the needs of a changing world.

Innovation in education, especially business education, brings about significant economic development. According to Naeem and Neal (2012), rapidly developing economies Brazil, Indonesia, South Africa and China were able to achieve their developmental feat due to their sound productive base and educational system that is aimed at producing innovators and job creators. They further mentioned that institutions of higher learning became innovation hubs that are used to champion production and innovation and they have strategic relationships with industries aimed to bringing about innovative business solutions. Innovative education thus exerts a significant positive effect on the overall economic performance of a country. In order to bring about innovation in business education for positioning the course appropriately, it is imperative that the course content, as well as methods of delivery and assessment are developed in such a way that students make use of modern day technologies that will enable them to fit in seamlessly to the modern-day business world. According to Otteiwel and Macfarlane (2003), teaching and learning methods ought to inculcate procedures that are used in real-life business situations. They also mentioned that assignments ought to be case studies of real-life business situations and scenarios in order to train students to develop their creative problem solving skills. In another related study, Utoware and Kren-ikidi (2013) also opined that lessons on building innovative business models as well as development of value propositions ought to be inculcated in the business education curriculum as these are part of the skills that a prospective business person has to possess. They further opined that methods of teaching business education has evolved significantly over time from only rote learning method of classroom teaching, where there is only a one-way communication between the teacher and the students to a more learner-centred approach, wherein the students participate prominently and actively in the teaching and learning process. This method of teaching encourages innovation by inculcating different measures such as simulation exercises, games and other hands on activities that will help in student retention of what they are being taught.

In order for a subject area to be sustainable, it is imperative that it keeps evolving over time so as to meet up with the changing economic and industrial trends and also changes in the subject area. For a dynamic discipline like business education, the course can only be sustainable in Nigeria if it continually keeps in tune with trends in the business world both nationally and globally. According to Aquah (2009), for business education to be sustainable and effectively contribute to national development efforts, there is a need to periodically review its curriculum so as to keep

abreast with global best practices and current business trend. He further mentioned that this will adequately prepare graduates of the course to properly fit into the world of work after graduation and also contribute effectively to the various organizations that they will end up working for and also thrive in entrepreneurship. In another study, Oliver (2008) also mentioned that in order not to become extinct, the subject area of business education ought to continually evolve towards new trends in the business world. This, he mentioned, can be achieved via the continued expansion of the scope of the subject area to inculcate elements of economics, information management systems, human resources management, information and communication technology and also other sub-areas that are relevant in the modern day business world. He thus recommended that in order to achieve this, there ought to be periodic training of teachers in refresher courses aimed at improving their knowledge and skill set in these sub-areas. Sustainability of business education also involves the subject generating workable solutions to modern day business needs. This can be mainly generated in via research carried out in higher institutions and it involves a working relationship between the business world and tertiary institutions, wherein tertiary institutions engage in outreach programs and research activities so as to showcase their research findings and how it can be of help to the business world. According to Osuala (2002), there is a need to inculcate in the business education curriculum courses that include corporate governance, sustainability and business. The study further mentioned that a systematic approach should be employed in teaching these subjects in order to appropriately equip students with relevant knowledge and skills for excelling in the business world.

Sustainable development involves meeting the needs of the present without compromising the ability to future generations to meet their own needs (Brodhag and Tailese, 2006). It also implies economic growth together with the protection of environmental quality, with each reinforcing each other. It also entails the achievement of economic growth without the exhaustion of a country's resources. According to Dernbach (2003), the most important and valuable resource of any country is its human resource. This is due to the fact that it is the human resource that harnesses other resources in order to produce output and bring about economic growth. Sustainable development thus entails the efficient utilization of human resources in order to attain significant economic growth. This also entails utilizing available natural resources as well as other tangible and intangible resources that are available in the country for achieving economic growth. Sustainable development involves the judicious use of existing resources in order to create solutions to existing and emerging challenges. It involves an efficient utilization of resources so as not to deplete them but to gain optimal utility from resources used (Cooper and Vargas, 2012). Sustainable development involves the utilization of innovation to achieve desired economic and developmental goals. Innovation equips individuals with the ability to not only utilize available resources to propound solutions to problems, but also create resources for solving these problems.

Education is indispensable in developing the human resource. This is because it develops the human mind to not only make rational decisions but to be able to identify and utilize available resources for economic and financial growth. Business education, being a dynamic subject area thus has a key role to play in this developmental target as it equips its students with the knowledge, skills and aptitudes that are vital for them to thrive in entrepreneurship and also for them to not only function optimally in their various places of work but also to have creative problem solving skills that will enable them to be able to create solutions to existing and emerging problems. According

to Yekini (2013), business education ought to equip graduates with marketable skills that are relevant to modern day business situations. Its curriculum ought to be geared towards imbuing in students the intellectual curiosity that will enable them to keep in tandem with emerging issues in business and entrepreneurship and also be able to come up with workable ideas of how to generate innovative business solutions. The advent of the knowledge economy has made it possible for human resources to become the most important resource. This has further led to the growth and development in the concept of "knowledge entrepreneurship", which is described as the ability to recognize and create an opportunity and also take action that is aimed at creating an innovative product or solution. Adequate knowledge of business education thus equips graduates with the requisite knowledge that they need to be able to identify existing opportunities for financial growth and also be able to create opportunities from existing circumstances. In their study, Oguejiofor and Ezeabasili (2014) mentioned that knowledge of business education creates resourceful graduates who are resourceful and are able to generate economic development and create employment. They thus recommended that there should be a paradigm shift towards teaching students facets of business education that is related to the knowledge economy and knowledge entrepreneurship. Business education helps professionals of every discipline to create innovative solutions to emerging challenges in their various disciplines and create solutions that will give rise to entrepreneurial and business opportunities. Business education is a facet of vocational education and has been studied in tertiary institutions in Nigeria for more than 40 years. The subject is aimed at making its graduate to be self reliant, gives graduates the skills to fit into administrative positions in the office and also be able to thrive in different disciplines. Business education also aims at creating a body of knowledge that continually provides innovative and workable solutions for entrepreneurship and business, while helping the country to achieve the sustainable development goals of ending poverty, decent work and economic growth and increased industry innovation an infrastructure. Cooper and Vargas (2004) mentioned that increased entrepreneurship is a veritable tool for developing economies for improving into the next frontier of economic development and growth, and this underscores need for improvement in the teaching and learning of business education. The study further mentioned that entrepreneurship helps in the creation of jobs and improvement in capacity utilization, and that in order for these to be effectively achieved, there is a need for a subject area that prepares prospective entrepreneurs with the theoretical basics and rudiments of creating and running business enterprises. The study concludes that business education is vital for the economic development of Nigeria and there is thus a need to periodically fine tune its curriculum so as to train students in creating workable solutions to real business problems and also be well prepared to engage in entrepreneurship careers.

Despite the tremendous advantages that business education has to offer, it is beset by challenges that could prevent it from helping Nigeria achieve sustainable development. Firstly, the curriculum of the course is not reviewed and updated often enough to be able to keep up with the modern day fast changing business world. This has created a scenario whereby obsolete forms of doing business are being taught to students, thus making them ill-equipped to thrive in the modern day business world. This has also brought about a scenario that has reduced student interest in the subject area as well due to the fact that they do not see the practicality and relevance of what they are being taught in class. According to Adeshina (2012), one of the biggest challenges that business education faces in Nigeria is the fact that the curriculum is often not in tune with modern day business trends and global best practices in entrepreneurship.

This scenario results in producing graduates who are not well prepared to be knowledge entrepreneurs and cannot thrive in the modern day knowledge economy. The study further asserted that there was a need to have a curriculum for the teaching and learning of business education that is dynamic and flexible in order to constantly be in tune with modern trends in business and entrepreneurship. Another challenge that affects the subject of business education is the relative unavailability of skilled and experienced teachers in the subject. Effective teaching of business education requires the use of information and communication technology (ICT) as well as analysis of real life modern day business scenarios in order to make business education relevant to present day business situations. This requires business education lecturers who are in tune with present day global trends, innovative, creative and are in tune with the present day world of finance and business. According to .Scerri and James, (2010), subjects such as financial statement management and business analysis requires to be taught by teachers who are experienced and knowledgeable in these subject areas and also have the ability to effectively teach these subjects to students. He further mentioned that these two subjects are an integral part of the business education discipline and it is important that business education students are knowledgeable in these subjects.

The knowledge of financial education enables students to be able to make intelligent financial decision in both business and their personal finances. Financial education can be described as a facet of business education that teaches students the ability and skills to manage financial resources effectively in order to achieve lifetime financial security and for optimal usage of financial resources. It can also be described as the process of imbibing financial literacy on individuals which gives the ability to be able to manage their finances (both personal corporate) effectively and efficiently (Zieba and Zieba (2014). Financial education is an integral part of business education. It plays a key role in preparing graduates for effective management of personal and corporate finance. Financial education has been in the front burner in recent times, especially after recent economic recessions experienced in the country. According to Utoware and Kren-ikidi (2013), it is imperative to teach students about the rudiments of financial management as it plays a key role in business success. They further asserted that financial decisions are a vital part of the entrepreneurship process and financial management skills are necessary for every business person. He therefore recommended that financial education be made compulsory in not only in business education but also in other disciplines of learning as well due to the fact that there are elements of business management involved in every discipline.

In order to effectively inculcate innovation in the teaching of business education in universities in Nigeria, there is a need to encourage a learner centred approach to the teaching and learning process. Furthermore, it is also important to have a dynamic and flexible curriculum that is in tune with modern day trends and caters to the different learning needs of students. Such a curriculum will help in stimulating student interest in the subject and also effectively contribute in national developmental efforts by properly addressing present day issues pertaining to finance, business and entrepreneurship. An innovative business education curriculum also goes a long way in tackling emerging issues in finance and business, which helps the country to be prepared for meeting the challenges that will emanate from these emerging issues. Another advantage that innovation in the teaching of business education brings to the fore is that it improves student performance in the subject as proper teaching and learning mechanisms that will make them better understand the topics being taught are employed in the teaching process. Innovative methods of teaching will also help students to better remember what they are taught and also help them effectively

apply the lessons of business education into real life scenarios. Innovative methods of teaching are aimed at enabling the students to go beyond the comprehension level of learning and get to the higher cognitive levels of synthesis and analysis. The achievement of higher and better understanding levels also helps students to apply the lessons taught them in real life business scenarios. According to Oliver (2008), the use of innovative methods in the teaching of business education goes a long way in ensuring that students understand how to turn the lessons they learn in business education to real life scenarios. They further opined that innovative measures should be inculcated in teaching business education in tertiary institutions in Nigeria in order adequately prepare students for entrepreneurial careers. An innovative form of teaching and learning of business education will create room for a flexible and robust program that will keep in tune with the present day dynamic business world and the fast changing entrepreneurship environment.

Despite the benefits that are accruable as a result of innovative business education and its contribution to sustainable development, there are still some significant challenges that militate against the effective achievement of this innovative business education for sustainable development. According to Blewitt (2015), implementing innovation in teaching and learning of entrepreneurship education is hinged on the availability of experienced and skilled personnel. He further mentioned that it is usually difficult to find business education teachers who are experienced in innovative forms of teaching and also have the knowledge of modern day global trends in business. Furthermore, the use of obsolete materials and case studies in teaching students reduces excitement in the subject area and poorly prepares the students for the modern day business world. This study is therefore aimed at exploring role that innovative teaching and learning of business education in Nigeria plays in achieving sustainable development, examining the significant challenges that militate against effective innovative business education and also promulgate workable solutions towards ameliorating this challenge.

Material and Methods

The participants from this study were drawn from eleven universities in Nigeria. These respondents are lecturers of business education in the tertiary institutions used for this study. Of these universities, twenty are publicly owned while two are private universities. Table one shows the tertiary institutions used, the population of business education lecturers and the ownership structure.

Table 1: Tertiary institutions used for the study

S/N	Name of University	Ownership Structure	Number of Business Education Lecturers
1	University of Nigeria, Nsukka	Public	27
2	Nnamdi Azikiwe University, Awka	Public	15
3	Anambra State University, Igbariam	Public	12
4	Godfrey Okoye University, Enugu	Private	9

5	Imo State University, Owerri	Public	14
6.	Alvan Ikoku College of Education, Owerri	Public	12
7.	Federal Polytechnic, Oke	Public	13
8.	Imo State University, Owerri	Public	15
9.	College of Education, Asaba	Public	18
10.	Delta State University, Abraka	Public	20
11.	Caritas University, Enugu	Private	9
12.	Federal College of Education, Umuze	Public	12
13.	University of Port Harcourt	Public	18
14.	Michael Okpara University of Agriculture, Umuoke	Public	14
15.	Abia State University, Umuze	Public	17
16.	Rivers State University of Education, Port Harcourt	Public	15
17.	Ebonyi State University, Abakaliki	Public	10
18.	Alex Ekwueme University, Ikwo	Public	15
19.	Benue State University, Makurdi	Public	14
20.	Kogi State University, Ayingba	Public	11
21.	Federal University of Agriculture, Makurdi	Public	14
22.	Federal College of Education, Eha-amufu	Public	16

Source: Field Data 2018

These universities were selected due to the fact that as part of their vision statements, they are known as “entrepreneurial universities” as they encourage student and staff enterprise. In addition, these universities also engage in outreach programs as they partner significantly with the private sector in academic and corporate research. These universities also have a good working relationship with corporate organizations as they engage in consultancy services for these organizations. Students of business education are also used in some of these consultancy projects and it affords them with the opportunity to gain hands-on experience on the workings of small business management.

Business education is taught in the five schools and is domiciled in the Faculty of Vocational and Technical Education of these schools. This is due to the fact that business education is a course that equips people with the skill that can enable them to be self-employed and directly delve into entrepreneurship. Furthermore, in order to help in reducing the rate of youth unemployment in the country and contribute significantly to government developmental efforts, business education is one of the courses that will help in meeting this target by equipping graduates with the aptitudes, knowledge and attitudes that are necessary to achieve entrepreneurial success in a variety of circumstances.

The respondents used for this study were lecturers of business education in the various universities. The lecturers teach both undergraduate and postgraduate

students. These lectures were selected from the universities, polytechnics and colleges of education. These lecturers were selected based on the fact that they have been teaching business education for more than 3 years and also have the required qualifications for teaching the course. Lecturers of business education in these universities also serve as small business consultants, thus also improving their knowledge of business management and equipping them with skill for innovative teaching.

Data for this research was collected using the instrument of structured questionnaire. These questionnaires were administered by post by the researcher, with the aid of two research assistants. A total of 320 questionnaires were administered with 302 filled and returned, indicating a 94.38% return rate. The instrument was separated into two sections. The first section focused on the profile of the respondent, glean information such as gender of respondent, age range, years of experience in teaching and also highest academic qualification. The second section of the instrument contained questions relating to key variables of the research, and was aimed to glean answers to the questions pertaining the importance of innovative teaching of business education to sustainable development, the challenges that the teachers face in implementing innovative measures that will help stimulate student interest in the subject and also improve their performance as well as practicability of what they are taught, and thirdly possible methods of ameliorating these challenges that are faced in innovative teaching in order to position business education to effectively contribute to sustainable development. Responses to the importance of innovative teaching of business education to sustainable development were measured using a 6 items on a 5-point likert scale. Sustainable development was considered by using the ability to create employment via entrepreneurship and the building of sustainable societies. Challenges faced by teachers of business education were measured using 5 items on a 5-point likert scale while measures to ameliorate these challenges were measured using 6 items in a 5-point likert scale. Data obtained from this study was analyzed using the SPSS version 20.

Results and Debate

Demographic Profile of Respondents

Results for the data analysis are presented in the following section. Table 2 shows the demographic characteristics and profiles of the respondents used for this study. The total sample number of respondents used for this study was 302, as 5.63% of the questionnaires were not returned from the initial 320 copies that were distributed. 42% of the respondents are female while 58% are male teachers. A total of 63% of the respondents were above 35 years of age while 80% of the lecturers had teaching experience of at least 3 years and above. 22% of the respondents have a Bachelor Degree as their highest education qualification while 78% of the respondents have a minimum of a masters degree and 41% have a Ph.D degree. This helped in ensuring that the respondents are well informed about the contents and issues being tackled in the questionnaire. Also, 57% of the respondents have teaching experience of 4 years and above while 43% have teaching experience of 3 years or less.

Table 2: Demographic Profile of Respondents

Variable	Frequency	Percentage	Variable	Frequency	Percentage
Gender			Teaching Experience		
Males	175	58%	≤ 3 years	172	57%
Females	127	42%	4 years – above	130	43%
Age			Academic Qualifications		
≤ 35 years	112	37%	Bachelor Degree	66	22%
36 – 46 years	112	37%	Masters Degree	236	78%
47 years – above	78	26%	P.hD	124	41%

Source: Field Data 2018

Descriptive statistics on the role of innovative teaching of business education to sustainable development

Table 3 shows descriptive statistics of the perceived contribution of innovative teaching and learning of business education to the achievement of sustainable development.

Table 3: Descriptive Statistics of Contribution of Innovative Teaching and Learning of Business Education to Sustainable Development. N=302

Variable	Mean	Standard Deviation	Variance
Improved lesson assimilation	4.78	1.05	1.81
Increased student interest	4.19	1.26	2.30
Practicability of topics	4.32	0.87	2.42
Knowledge of current and emerging issues in the subject	4.53	0.91	2.57
Developing entrepreneurial mindset amongst students	4.01	0.97	2.39

Source: Analysis of Field data, 2018

The findings in table 4 show that innovative teaching and learning of business education significantly helps students to assimilate the lessons better and also increase student interest in the subject. This is in agreement with the findings of Yekini (2013) who mentioned that the application of innovative methods of teaching business education improves students interest in the subject, enabling them to pay more and attention and thus learn better. It was obvious from the responses that innovative teaching and learning of business education contributes significantly to the achievement of sustainable development by teaching the subject area in a way that makes students assimilate the lessons quicker and better. Furthermore, innovative teaching and learning helps students to better put into practice what they are being taught and also increases student interest in the subject. Innovative teaching and learning of business education also helps students and lecturers to be better informed about current and emerging issues in the business, finance and entrepreneurship, and this will help them in better ascertaining solutions to these problems.

Descriptive statistics on the Challenges Militating Against Innovative Teaching of Business Education.

Table 4 shows results of analysis of responses on the challenges militating against implementation of innovative teaching methods in business education

Table 4: Descriptive Statistics of Challenges Militating Against Innovative Teaching of Business Education

Variable	Mean	Std. Deviation	Variance
Low level of knowledge of innovative teaching techniques	4.01	1.09	2.36
Lack of information on new business trends	3.92	0.97	2.57
Low knowledge level of emerging issues in business education	3.78	0.78	2.42
Inadequate experience of the use of innovative teaching techniques	4.21	1.21	2.93

Source: Analysis of field data, 2018

The findings in table 4 show that low level of knowledge on the part of business education teachers of innovative teaching techniques poses a significant challenge in the implementation of innovative teaching and learning of business education. Also, lack of technological facilities in the classrooms also prevents the use of innovative teaching techniques. These are in agreement with the findings of Anyaneh and Nzegwu (2015) who mentioned that lack of knowledge of innovative teaching techniques and inadequate infrastructure constitute significant challenges affecting innovative implementation of business education curriculum in tertiary institutions. The results also showed that low level knowledge of emerging issues in business education and lack of information on new business trends also significantly limit effective implementation of innovative teaching of business education. This

concurs with the findings of Utoware and Kren-ikidi (2013) who were of the view that it is important for teachers to be conversant with emerging issues in order to implement innovative techniques and new topics in the teaching of business education.

Descriptive Statistics on methods for Ameliorating Challenges of Innovative Teaching of Business Education

Table 5 shows the results for possible methods of ameliorating the challenges that militate against implementation of innovative teaching techniques in teaching business education.

Table 5: Methods of Ameliorating Challenges Facing Innovative Teaching of Business Education

Variable	Mean	Std. Deviation	Variance
Periodic training of teachers in innovative techniques for teaching business education	4.21	0.91	2.49
Utilization of available training programs on innovative teaching techniques by teachers	3.97	1.02	2.53

Results from table 5 show that periodic training of teachers and utilization of available training programs and courses by teachers will help in ameliorating the challenges faced in using innovative techniques for teaching business education. This is due to the fact that training brings them at speed with recent trends in the subject area. Furthermore, these training programs expose the teachers to emerging issues in the subject area and help them in articulating workable solutions for these challenges. Also, these programs help teachers in evaluating their skill set against global standards in the teaching of business education as they are exposed to methods used by other institutions.

Conclusion

Business education is a dynamic field of study that effectively prepares students to engage in entrepreneurship careers. This goes a long way in ameliorating the challenge of youth unemployment, bring about sustainable development. In order for business education to achieve these objectives, innovative methods of teaching need to be put in place in order to stimulate student interest, make the subject relevant and also help students in putting into effective practice the lessons learnt in class. Furthermore, innovative methods of teaching business education will equip students with creative problem solving skills that are necessary to excel in the modern day dynamic business world. Significant challenges militate against the effective implementation of innovative techniques of teaching. These challenges range from lack of experience on the part of the teachers on innovative techniques and inadequate infrastructure. In order to ameliorate these challenges, it is vital that teachers engage in periodic training programs and refresher courses in order to equip themselves with needed skills for innovative teaching of business education and also for keeping themselves abreast with current trends in the subject area. It is also vital that

needed learning aid infrastructure be put in place in order to ensure innovative teaching of business education and help reposition the subject in contributing significantly to sustainable development.

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EVALUATION OF AFRICAN SUPPLIERS OF NATURAL RUBBER WITH RESPECT TO THE INFLUENCE OF NATURAL RUBBER PROPERTIES ON PROCESSING AND THE AMOUNT OF POOR-QUALITY PRODUCTION OF AGRICULTURAL TIRES

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Received 01. May 2018, Reviewed 17. June 2018, Accepted 30. June 2018

Abstract

The subject of this study is the evaluation of African suppliers of natural rubber with respect to the influence that natural rubber properties have on processing costs and the amount of poor-quality production when manufacturing tires for agricultural machines. The assessed suppliers include Compagnie des Caoutchoucs du Pakidie, Exploitation Agricole Tehui, Liberian Agricultural Company and Société Africaine de Plantations d'Hévéas. The output of the study is based on the data obtained from certifications of rubbers supplied to a company manufacturing off-road tires in 2015 – 2017; material properties are described using the following parameters: Wallace plasticity, Mooney viscosity and Plasticity retention index. Evaluation of suppliers was performed using the Analytic Hierarchy Process.

Key words: *Tire manufacturing; Analytical hierarchy process; Supplier evaluation; Supplier selection; Supply chain management*

JEL Classification: C44, L62, M10

Introduction

Industrial companies, pressurized by their customers to decrease price while increasing product and service quality, select suppliers not only with respect to the price of inputs in manufacturing process, but also on the basis of the relevant properties that significantly influence processing costs and losses resulting from the excessive number of rejects.

Effective selection of suppliers is an important aspect of the modern concept of material flow management called Supply Chain Management (Mentzer et al., 2001). Supply Chain Management (SCM) is defined and planned as management of material,

information and cash flows within a network of interlinked organizations that add value to goods and services with the aim of satisfying the end customer's needs (Stock & Boyer, 2009). From the perspective of processing, SCM encompasses planning, purchase, manufacturing and distribution (Cooper, Lambert, & Pagh, 1997). Supplier selection is a part of strategic purchase (Ellram, 1990).

Methods used when selecting a supplier include, for instance, Discrete Choice Analysis (Verma & Pullman, 1998); Outranking Method (de Boer, van der Wegen, & Telgen, 1998); Data Envelopment Analysis (Liu, Ding, & Lall, 2000); Multiple Attribute Utility Theory (Min, 1994) and the Analytic Hierarchy Process.

The distinctive feature of the Analytic Hierarchy Process (AHP) is the linkage of mathematic models and psychology, which helps the decision-maker get a more profound understanding of the problem and find a solution that best fits the decision-maker's objective (Cheng & Li, 2001). The solution lies in decomposing the problem into a hierarchic structure consisting of sub-problems that can be solved independently (Saaty, 2008). Elements constituting such a hierarchic system include an objective that is to be achieved and alternatives that lead to achieving the goal and criteria that these alternatives describe (Chan, 2003). Superiority and inferiority of the elements is most often depicted using a pyramid. The process of selecting a supplier using the AHP may be summed up using the following steps (Pitchipoo, Venkumar, & Rajakarunakaran, 2012):

- pairwise comparisons of the alternatives with respect to the criteria,
- pairwise comparisons of the criteria with respect to the goal,
- calculation of the priorities of the alternatives with respect to the goal,
- test for consistency.

The use of AHP when selecting a supplier in different industrial sectors is mentioned, among others, by Youssef, Zairi, and Mohanty (1996), Chan and Chan (2010) or Bottero, Comino, and Riggio (2011).

The objective of this study is to evaluate African suppliers with respect to the influence that properties of the supplied natural rubber (NR) have on manufacturing costs and the amount of poor-quality production when manufacturing tires for agricultural machines. The evaluated companies include Compagnie des Caoutchoucs du Pakidie (CCP), Exploitation Agricole Tehui (EXAT), Liberian Agricultural Company (LAC) a Société Africaine de Plantations d'Hévéas (SAPH). The output of the study is based on data obtained from NR certifications supplied to a company manufacturing, inter alia, road tires in 2015 – 2017 where NR properties are described using the following parameters: Wallace plasticity (P_0), Mooney viscosity (MV) and Plasticity retention index (PRI). Evaluation of suppliers is performed using AHP, on the basis of pairwise comparisons provided in the form of expert estimates of the chief technologist of the department of agriculture tire manufacture (i.e. the "expert"). The motivation for using the AHP is the fact that the company buys NR exclusively with respect to the price while not having at hand any cost calculation of final products that would include costs dependence on processing and losses due to excessive number of rejects on the properties of the purchased NR.

In most cases, the NR quality is evaluated using the SMR (Standard Malaysian Rubber) specification that defines NR manufacturing standards and determines limits for analytic measurements of the content of impurities, volatile substances, ash and nitrogen. In order to assess NR processability, values of P_0 and MV parameters are determined taking into account the limit for assessing NR thermooxidation following the PRI parameter (Bristow & Sears, 1987). While the P_0 and MV parameters provide information about the NR melt flow, PRI expresses NR resistance to thermooxidation

(Smith, 1969). These two parameters are jointly used for setting the ideal composition of the rubber mixture that results in its optimum behavior while processed (Bonfils, Flori, & Sainte Beuve, 1999). In tire manufacturing, this encompasses NR mastication, mixing, calendering, extruding, building and vulcanization. Under ideal conditions in a given rubber-making factory, there are no fluctuations in rubber processing and the material has consistent rheological properties throughout all the processing stages (Bristow, Fuller, & Thomas, 1983). A problem occurs when there are fluctuations at a certain processing stage. For instance, when the MV is considerably higher, there is an increase in costs related to mixing rubber mixtures as the rubber needs to be eliminated in kneaders in order to achieve the viscosity necessary for mixing, which increases energy costs. Whereas when the rubber viscosity is too low, the rubber mixture components may not be mixed as needed and mechanical properties of the final products are not in line with the relevant requirements. Such products are often classified as rejects and the company incurs economic losses.

Material and Methods

Number of certifications

Certifications of natural rubber supplied to the company in 2015 – 2017 contain values of the P_0 , MV and PRI parameters as well as the date when the company received the material; containers with approx. 20 tons of natural rubber. The number of certifications conducted per Company/Month is shown in Tab. 1 below.

Table 1 Number of certifications of the natural rubber supplied in 2015 - 2017

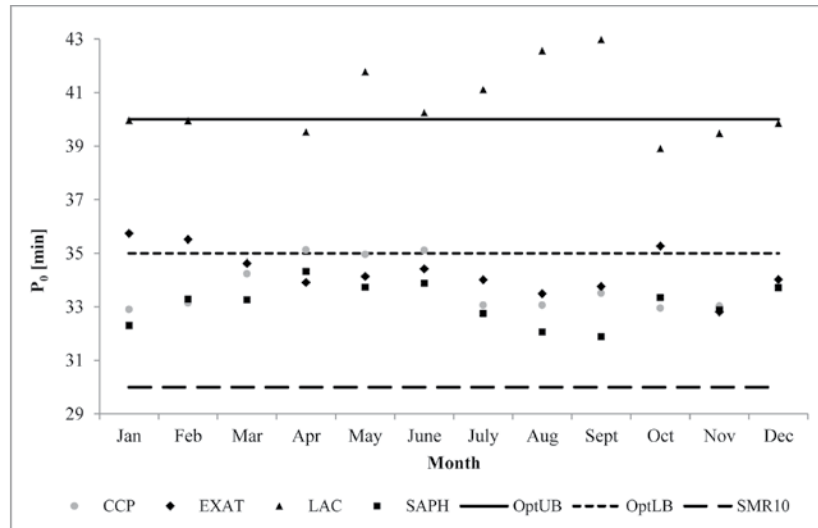
Company/ Month	1	2	3	4	5	6	7	8	9	10	11	12
CCP	996	416	740	376	696	396	256	552	460	400	380	672
EXAT	292	528	416	348	336	348	504	460	432	320	160	624
LAC	584	239	348	332	312	328	471	424	324	224	356	784
SAPH	479	458	160	109	288	192	670	480	541	194	144	752

Source: own

Parameters of supplied natural rubbers

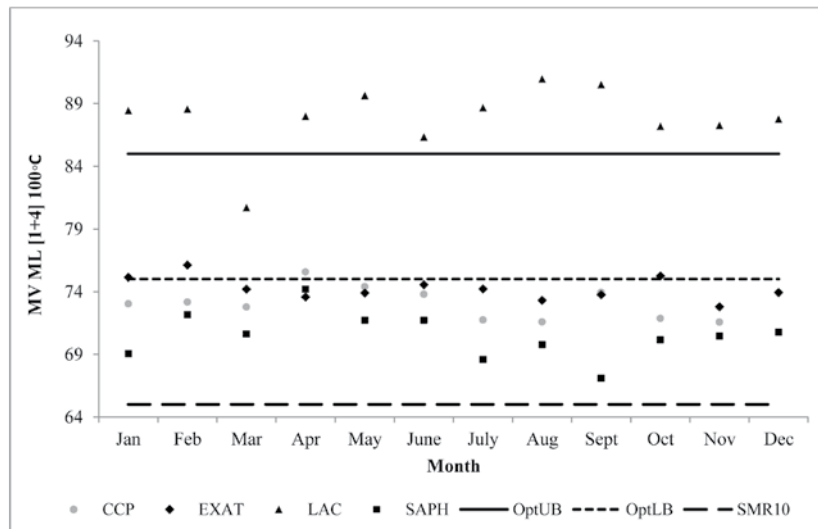
Monthly averages of the P_0 , MV and PRI parameters for the suppliers are shown in Graphs 1 – 3 below.

Graph 1 P_0 monthly averages for the suppliers



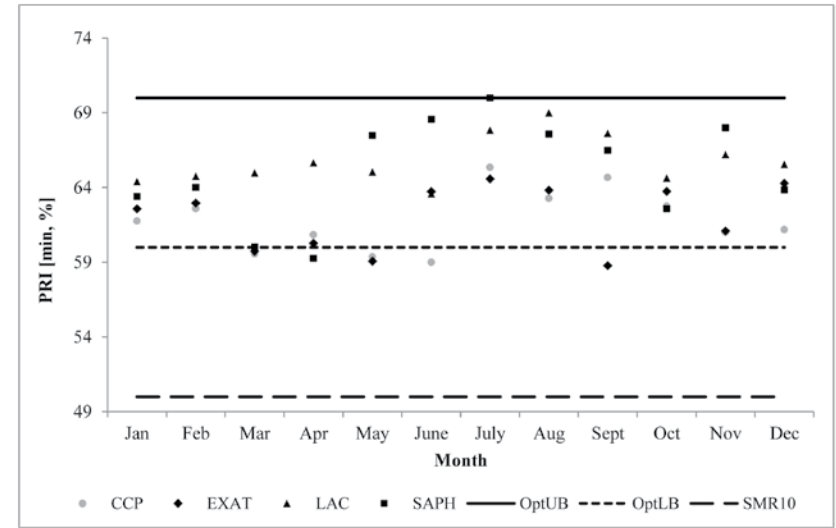
Source: own

Graph 2 MV monthly averages for the suppliers



Source: own

Graph 3 PRI monthly averages for the suppliers



Source: own

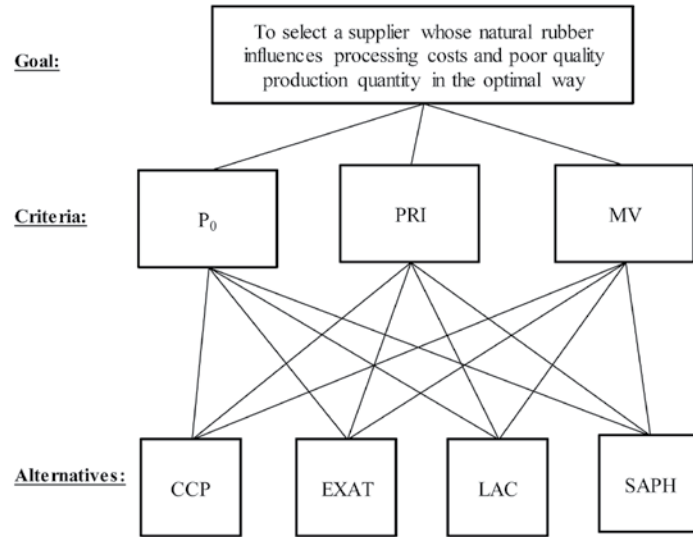
Limits ($OptLB$ and $OptUB$) are shown for each parameter in Graphs 1 – 3: the parameter value has optimum impact on processing costs and the amount of poor-quality production with respect to the setting of the company's manufacturing machinery. These limits are expert estimates. Furthermore, the graphs show parameter values given by the SMR 10 standard [see <https://www.astletrubber.com/nr/smr.html>; accessed 27/02 2018] that the company uses when taking delivery of the rubber supplied.

Graphs 1 – 3 show that average values of the examined parameters are in line with the SMR 10 standard throughout the entire year. Therefore, from the perspective of the standard the supplied natural rubber is of good quality. The other parameters fluctuate during the year with most P_0 and MV parameter values being beyond (above and below) the $OptLB$ and $OptUB$ limits. For this reason, the suppliers are evaluated using the AHP each month separately.

AHP hierarchy

The AHP hierarchy is shown in Fig. 1.

Figure 1 AHP hierarchy



Source: own

Pairwise comparisons

For pairwise comparisons provided by the expert 1 to 9 fundamental scale is used [see Al-Harbi (2001)]. Intensities 1.1, 1.2, etc. are used for elements that are very close in importance.

Pairwise comparisons of the alternatives with respect to the criteria are shown in Tab. 2.

Table 2 Pairwise comparisons – alternatives vs. criteria

Criterion		P_0				MV				PRI			
Month / Alternative		CCP	EXAT	LAC	SAPH	CCP	EXAT	LAC	SAPH	CCP	EXAT	LAC	SAPH
1	CCP	1	1/8	1/8	2	1	1/4	1/3	3	1	1	1	1
	EXAT	8	1	1	9	4	1	3	9	1	1	1	1
	LAC	8	1	1	9	3	1/3	1	7	1	1	1	1
	SAPH	1/2	1/9	1/9	1	1/3	1/9	1/7	1	1	1	1	1
2	CCP	1	1/9	1/9	1	1	1/4	1/3	2	1	1	1	1
	EXAT	9	1	1	9	4	1	3	9	1	1	1	1
	LAC	9	1	1	9	3	1/3	1	7	1	1	1	1
	SAPH	1	1/9	1/9	1	1/2	1/9	1/7	1	1	1	1	1
3	CCP	1	1/4	1/5	2	1	1/3	1/5	4	1	1/2	1/9	1/9
	EXAT	4	1	1/2	3	3	1	1/3	6	2	1	1/7	1/7
	LAC	5	2	1	4	5	3	1	9	9	7	1	1
	SAPH	1/2	1/3	1/4	1	1/4	1/6	1/9	1	9	7	1	1
4	CCP	1	9	1	7	1	9	3	7	1	1	1	9
	EXAT	1/9	1	1/9	1/3	1/9	1	1/6	1/2	1	1	1	9
	LAC	1	9	1	7	1/3	6	1	5	1	1	1	9
	SAPH	1/7	3	1/7	1	1/7	2	1/5	1	1/9	1/9	1/9	1
5	CCP	1	7	5	9	1	2	1/2	5	1	2	1/7	1/7
	EXAT	1/7	1	1/2	2	1/2	1	1/3	4	1/2	1	1/9	1/9
	LAC	1/5	2	1	3	2	3	1	9	7	9	1	1
	SAPH	1/9	1/2	1/3	1	1/5	1/4	1/9	1	7	9	1	1
6	CCP	1	5	2	9	1	1/2	1/3	4	1	1/9	1/9	1/9
	EXAT	1/5	1	1/4	2	2	1	1/2	5	9	1	1	1
	LAC	1/2	4	1	7	3	2	1	9	9	1	1	1
	SAPH	1/9	1/2	1/7	1	1/4	1/5	1/9	1	9	1	1	1
7	CCP	1	1/3	1/8	2	1	1/3	1/3	4	1	1	1	1
	EXAT	3	1	1/5	3	3	1	1/2	5	1	1	1	1
	LAC	8	5	1	9	3	2	1	9	1	1	1	1
	SAPH	1/2	1/3	1/9	1	1/4	1/5	1/9	1	1	1	1	1

8	CCP	1	1/2	1/7	3	1	1/3	1/3	4	1	1	1	1
	EXAT	2	1	1/5	4	3	1	1/2	5	1	1	1	1
	LAC	7	5	1	9	3	2	1	9	1	1	1	1
	SAPH	1/3	1/4	1/9	1	1/4	1/5	1/9	1	1	1	1	1
9	CCP	1	1/2	1/5	5	1	1	1/3	6	1	9	1	1
	EXAT	2	1	1/5	3	1	1	1/2	6	1/9	1	1/9	1/9
	LAC	5	5	1	9	3	2	1	9	1	9	1	1
	SAPH	1/5	1/3	1/9	1	1/6	1/6	1/9	1	1	9	1	1
10	CCP	1	1/9	1/9	1/2	1	1/6	1/2	3	1	1	1	1
	EXAT	9	1	1	8	6	1	3	9	1	1	1	1
	LAC	9	1	1	8	2	1/3	1	8	1	1	1	1
	SAPH	2	1/8	1/8	1	1/3	1/9	1/8	1	1	1	1	1
11	CCP	1	2	1/8	2	1	1/3	1/3	4	1	1	1	1
	EXAT	1/2	1	1/9	1	3	1	1/2	5	1	1	1	1
	LAC	8	9	1	9	3	2	1	9	1	1	1	1
	SAPH	1/2	1	1/9	1	1/4	1/5	1/9	1	1	1	1	1
12	CCP	1	1/2	1/9	1	1	1	1/2	5	1	1	1	1
	EXAT	2	1	1/8	2	1	1	1/2	5	1	1	1	1
	LAC	9	8	1	9	2	2	1	9	1	1	1	1
	SAPH	1	1/2	1/9	1	1/5	1/5	1/9	1	1	1	1	1

Source: own

Pairwise comparisons of the criteria with respect to the goal are shown in Tab. 3.

Table 3 Pairwise comparisons – criteria vs. the goal

Criterion	P_0	PRI	MV
P_0	1	1.4	0.9
PRI	0.7	1.0	0.6
MV	1.1	1.6	1.0

Source: own

Priorities of the alternatives with respect to the goal, test for consistency

The calculation of priorities of the alternatives with respect to the goal is carried out in MS Excel. Based on the alternatives vs. criteria pairwise comparisons matrix, the priority vector for each criterion is performed by dividing each element of the matrix by its column total and finding the row averages (i.e. vector $\mathbf{v}_1$). Similarly, based on the criteria vs. the goal pairwise comparisons matrix, the same procedure is applied to set priorities for all criteria in terms of importance of each in contributing to the overall goal (i.e. vector $\mathbf{v}_2$). Subsequently, priorities of the alternatives with

respect to the goal are performed by combining vectors $\mathbf{v}_1$ and $\mathbf{v}_2$ using Excel function MMULT().

The test for consistency is based on Saaty (1980). The consistency is determined by using the eigenvalue, λ_{max} , to calculate the consistency index (CI) as follows:

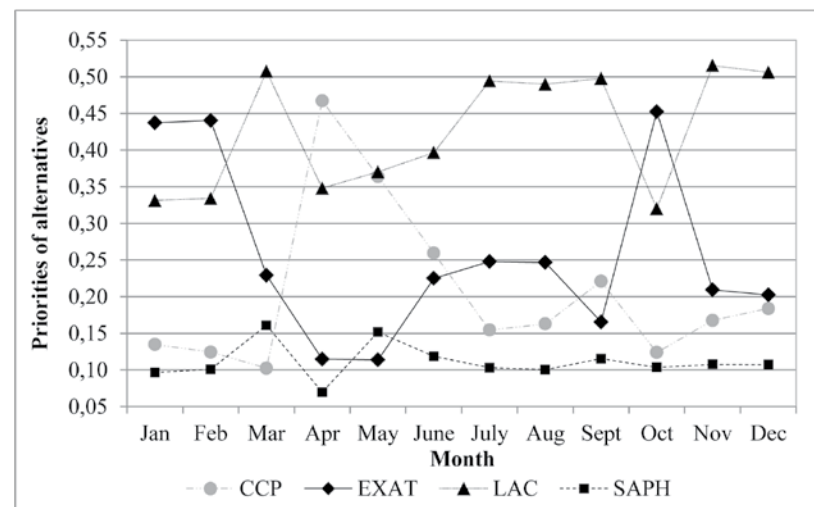
$$CI = \frac{(\lambda_{max} - n)}{(n-1)} \quad (1)$$

where n is the size of the matrix of pairwise comparisons. Judgment consistency can be checked by taking the consistency ratio (CR) of CI with the appropriate value which is 0.9 for $n = 4$ and 0.58 for $n = 3$ [see Saaty (1990)]. The CR is acceptable, if it does not exceed 0.10.

Results and Debate

Priorities of the alternatives with respect to the goal are shown in Graph 4.

Graph 4 Priorities of the alternatives with respect to the goal



Source: own

Consistency ratios for the alternatives vs. criteria pairwise comparisons are shown in Tab. 4.

Table 4 Consistency ratios for the alternatives vs. criteria pairwise comparisons

Criteria/ Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
P_0	2%	0%	5%	3%	2%	1%	3%	4%	8%	2%	2%	2%
PRI	0%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%
MV	4%	3%	5%	4%	1%	1%	3%	3%	2%	4%	3%	0%

Source: own

Consistency ratio for the criteria vs. goal pairwise comparisons is equal to 0. As the values of consistency ratios are less than 0.1, the judgments are acceptable.

Based on Graph 4 priorities of the alternatives with respect to the goal LAC is the most preferred supplier in the following months: Mar, May - Sept and Nov - Dec. EXAT has the highest priority in months Jan, Feb and Oct. CCP has highest priority in month Apr. The least preferred supplier during the year is SAPH. While preferences of EXAT and CCP fluctuate notably during the year (priorities ranging from 0.1 to 0.47), preferences of LAC are very steady and they move within the range of 0.32 and 0.52. When LAC is not the most preferred supplier in a given month it is always the second most preferred and its preference ratio when compared with the best supplier is 1.3 - 1.4. The difference in preferences is thus very small.

The results of the study show that the generally highest values of the preference of LAC are due to preferring rubber with P_0 and MV parameters that are within the $\langle OptLB, OptUB \rangle$ interval or above $OptUB$ in a situation when other suppliers deliver rubber with P_0 and MV parameter values below $OptLB$. The influence that the PRI parameter has on general preferences of suppliers is small as the parameter values move throughout the entire year almost exclusively within the optimum range given by the $OptLB$ and $OptUB$, i.e. they have the same preference with respect to goal achieving seen from the AHP perspective. Rubbers with higher P_0 and MV values consume more power when processed in a kneader, but the final products are always of very good quality. By contrast, lower values of these two parameters linked with lower molecular chain weight often result in a poor-quality product, as their dispersion might not be sufficient when mixed with fillers. The problem with poor-quality production often needs to be solved by adding in the mixture rubber of higher viscosity, which is the less preferred option.

Conclusion

In this study we applied the Analytical hierarchy process when evaluating African suppliers of natural rubber with respect to what impact the natural rubber properties have on processing costs and the amount of poor-quality production when manufacturing agricultural tires. On the basis of rubber properties described using Wallace plasticity, Mooney viscosity and Plasticity retention index parameters obtained from certifications of rubbers delivered in a company manufacturing, off-road tires in 2015 - 2017 we found out that the most preferred supplier is Liberian Agricultural Company. The evaluation is a suitable supplementary tool when selecting

a supplier with respect to the price in a situation when the manufacturing company does not have the cost calculation of final products that includes the dependence of costs on processing and losses due to excessive amounts of rejects on the properties of the purchased material.

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A COMPREHENSIVE CHARACTERIZATION AND COROLLARIES OF BULLYING AT WORK

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Received 20. November 2017, Reviewed 03. February 2018, Accepted 14. March 2018

Abstract

Workplace bullying is a phenomenon that affects employee performance and productivity. Its non-illegal status makes it easy to go unnoticed and is becoming an issue for HR managers and other actors in the employment relations. This paper examines workplace bullying to determine its types, features, prevalence in the Nigerian work environment and its effect both on the employees and on the organisation. 200 participants were selected from different departments of a Lagos area office of a federal organisation. Three hypotheses were tested. There was significant relationship between workplace bullying and staff performance. It was also discovered that there was a relationship between gender and the exposure to verbal abuse and there was a relationship between workplace bullying and job satisfaction.

Key words: *comprehensive, characterization, corollaries, bullying, work*

JEL Classification: L2, M12, M54

Introduction

Workplace bullying is a concept that has not yet received ample and exhaustive study from human resource management experts and scholars even in spite of increased attention and exploration of diverse human resources related issues in the workplace, particularly those issues directly impacting on performance and productivity. The subject of workplace bullying, though a cross cultural phenomenon requires individual and national initiatives in proffering practical solutions that take cognizance of the unique characteristics of each environment.

Misuse of power and authority in every day power relations among society members especially in the work environment constitutes a major concern in contemporary corporate studies. This negative act in power relations constantly

consequence into bullying and harassment of employees in the workplace. While not much has been done in developing countries like Nigeria, the menace of workplace bullying has attracted significant studies in the modernized economies of the world resulting in crucial legislations being enacted to battle the vice. While incidences of bullying are regular within the workplace, victims tend to be uneasy about reporting it due to the difficulties often associated with proving it. The subject of workplace bullying is particularly difficult because, workplace bullies often operate within the established rules and policies of their organization and their society. This study scrutinizes the characteristics and pervasiveness or otherwise of workplace bullying in the Nigerian workplace, the work related corollaries of workplace bullying and the possible relationship between gender and bullying in the workplace.

Literature Review

The Concept of Workplace Bullying

Several different terms are used to describe the concept ranging from workplace bullying, harassment, workplace aggression, workplace victimization, mobbing, workplace abuse etc. Workplace bullying is a significant dilemma in the workplace which is attracting increasing acknowledgment and is now a subject of concern for all stakeholders in employment relations. A foremost issue in tackling workplace bullying is the fact that there is no universal definition of the term.

However, various researchers by introducing different dimensions to the definitions have assisted in gaining helpful insights into the phenomenon. Rayner and Hoel (2009) observes that some literature define bullying from a legal perspective, while others view it from the harassment perspective. Some categorize all harmful boss behaviours and actions of mal intent directed at employees as bullying. Others separate behaviours into different patterns, labelling some of those behaviours as bullying. Fapohunda (2013) affirms that workplace bullying involves the tendency of individuals or groups to use persistent aggressive or unreasonable behaviour against a co-worker or subordinate. Workplace bullies usually use words and actions to intimidate their victims. A workplace bully may be a boss, co-worker or even subordinate. Workplace bullying can develop in many unidentified forms like being forced to stay late, being given extra work compared with the amount colleagues are given, not being allowed to take holidays, not believed if sick leave is taken, and not getting a fair increase in salary. Einarsen (2003) suggests that workplace bullying is conceptualised to occur fairly often, and over time and a disagreement cannot be called bullying if the incident is an isolated event. Adams and Crawford (1994) and the South African code of conduct (2002) concede that an act has to be repetitive for it to qualify as workplace bullying. Scales that measure alleged bullying evaluate the frequency and intensity of bullying. Agervold (2007) asserts that bullying is a social interface in which the sender employs verbal and or non-verbal communication typified by negative and forceful elements aimed at the receiver's person or his or her work circumstances. Being bullied involves the receiver experiencing this verbal and/or non-verbal communication as negative and aggressive and represents a danger to his/her self-esteem, personality or professional competence. The victims are incapable of defending themselves due to the severity of the bullying. Schieman (2008) indicates that bullying is seen as a form of violence, although more so in emotional terms and gives examples of bullying to include belittling someone's opinion, giving other's the silent treatment, undermining actions by a co-worker, insults, yelling, swearing, name-calling, threats, shouting, rude

gestures and aggressive posturing. Similarly, Owoyemi (2011) suggests that workplace bullying is a form of antisocial behaviour in the workplace that arises from unequal power between two individuals, or a group of people and another individual and/or a group of people in the workplace, which can cause distress, discomfort, physical and/or psychological harm. The South Africa Code of Conduct (2002) contends that workplace bullying is repetitive improper behaviour, direct or indirect, verbal, physical or otherwise, manifested by one or more persons against another or others, at the place of work and/or in the course of employment, which could reasonably be regarded as undermining the individual's right to dignity at work. In the same vein, Namie (2003) sees workplace bullying as "status-blind" interpersonal hostility that is deliberate, repeated and sufficiently severe as to harm the targeted person's health or economic status. Namie adds that workplace bullying is driven by the perpetrators' need to control another individual, often undermining legitimate business interests in the process.

Forms of Bullying

Bullying can manifest in several forms. Bullying behaviour can be obvious and aggressive, which could consist of: abusive, insulting, or offensive language; behaviour or language that frightens; humiliates; belittles or degrades; teasing or regularly making one the brunt of practical jokes. Again, bullying can be in form of violent, assault and stalking, which could include: harmful or offensive initiation practices; physical assault or unlawful threat.

Bullying can also be subtle and may comprise: deliberate exclusion, isolation or marginalization from normal workplace activities; intrusion on private space by harassing, spying or fiddling with personal effects or work equipment; intimidation through unsuitable personal observations, belittling opinions or unwarranted criticism. Subtle bullying behaviour also embraces: work overload; setting hard to attain or frequently changed deadlines; setting unreasonable goals; silent treatment; intentionally disallowing access to information, consultation or resources; unjust handling as regards access to workplace privileges. Olweus (1999) identifies four elements of bullying namely: power disparity (physical, intellectual, or emotional); the action is repeated over time; the action is calculated or premeditated; and there is an unequal demonstration of emotion (the bully experiences a positive emotion while the victim experiences emotional distress).

Bully Prone Organizations

Several important dynamics within the organisation structure contribute to the development and subsistence of work place bullying. Several studies including Einarsen, Hoel, & Nielsen (2003); Harvey et al (2009); Owoyemi (2011); Oghojafor, Muo & Olufayo, (2012) and Fapohunda (2013) allude to such factors like poorly implemented conflict management, socio economic and organizational modifications, poor psychosocial work environment, paucity in work designs, socially depicted position of the victim, poor moral standards, organizational separation into uniformed and non-uniformed staff, power relations, management style, witnessing bullying, authoritative and bureaucratic leadership styles.

Leymann (1996) perceives bullying which they call mobbing to be an extreme social phenomenon, triggered by extreme social stressors, causing a range of negative effects. One extreme social stressor that has been identified as an antecedent

of workplace bullying is the global economic condition. Lutgen - Sandvik (2008), Einarsen, Hoel & Nielsen (2003) argue that conflicts are more likely to occur in a working life under increasing pressure and continuous restructuring although regulating some of the emotions might reduce incidences of bullying since managers bully when the emotional responses are inadequate to deal with the continuous changes. Namie (2003) argues that any workplace can develop into a bully prone one that forces employees to battle over limited resources. He recognizes seven features of bully prone organizations as: abuse of performance appraisal procedures happening with impunity; gullible acceptance of a fascination for results; management placing superior precedence on personal friendships exceeding lawful business interests; intentionally precipitating contriving or unconsciously generating fear as an overriding required workplace feeling; disregarding emotional acumen while centring on individual's strength of personality or interpersonal assertiveness for recruitment, promotion and reward system; in-house codes of conduct that limit proscriptions to barely defined illegal episodes. These features constitute threat dynamics that produce enabling structures for workplace bullying.

However, Salin (2007) contends that these situations in themselves do not inevitably initiate bullying but only operate as facilitating dynamics where supplementary impetus or activators subsist. Again, she asserts that stimulating and precipitating factors do not consequence in bullying except the circumstances are favourable. Therefore for bullying to happen, there must be unavoidable interaction between structures and processes which categorizes into three clusters. The first cluster is enabling structures/compulsory antecedents (supposed power disparity, alleged low costs, displeasure and aggravation). The second entails inducing structures/incentives (in-house competition, reward systems, expected benefits) and precipitating processes/triggering circumstances (transformations in the composition of the work group, downsizing and restructuring, organizational changes). The Washington State Department of Labour and Industries (2011) recognizes that corporate and institutional bullying which is embedded in organization corporate culture involves placing difficult expectations on employees with sack threats overhanging and resulting in inability to achieve organizational goals, amplified occurrences of grievances, resignations, requests for transfers, absences due to sickness and increased disciplinary actions. The millennium era with intense sophistication in business functions and ideas has enhanced competition.

Corporate organizations must develop constantly in order to maintain relevance in the market scheme. The continually changing market and economy without relevant mechanisms to handle stress and reactions contribute to workplace bullying. Essentially, numerous factors have been presumed to add to the commencement of a bullying situation and they are roughly divided into two, which are personalities of the victim and the bully and the psychosocial or environmental factors. While studies like Leyman (1996) contend that the environment or psychosocial factors are the major reasons of bullying and that the personalities of the victim are irrelevant others like Einarsen (1999) believe that personality is quite important.

Moreover, studies like Einarsen Hoel, & Nielsen, (2003); Lee (2000); Neuman & Baron (2003;) suggest that several investigated group processes and societal forces are factors that result in workplace bullying, while others like Vatia (2003); Zapf & Einarsen (2003) have categorized some other traits such as the uncovered position of the victim, social ineptitude, self esteem, over achievement and conflicts with group norms. Vartia (2003) found envy, weakness of superiors, competition for tasks and advancement or superior's approval to be a vital motives for bullying. In a study by Seigne, Coyne

and Randall (2000), some of the reasons for bullying were identified as the difficult personality of the bully, the change in job situation for the alleged bully into a position of power, envy. While envy is one the generally cited factors, Einarsen and Raknes (1994) cautions that envy as recognized motive for being bullied may perhaps be a self-preserving feature and that the victims can be bullied owing to an impracticably high self esteem.

Power Relations in the Workplace

Porter, Allen & Angle (1991) indicates that power involves the capability or prospective to influence others or to control a situation. The degree of power is established by the perception of the term by the person at whom the power is focused. Porter, Allen & Angle (1991) affirms that the ability to use power is connected to three elements and their association with one another. The elements are the "agent" (influencer), the "target" (influence), and the situational environment within which they both operate. Power becomes visible when the agent gets the target to do something he/she would not have done. Workplace bullying transpires arising from conflict between people of disparate strength rather than those of equivalent strength. Branch, Ramsey and Baker (2007) note that the power differences demonstrated through several circumstances like age, gender, physical size, grade or position in the organisation, educational qualification and intelligence, being passive are some of the features of power relations.

Keltner, Gruenfeld and Anderson (2003) affirm that power in the workplace is a person's comparative capacity to transform others by offering or denying resources or administering punishments. Power constitutes a basic force in social relationships both at the workplace or otherwise. The role of power relations in the work environment comes to the fore because bullying is considered to be a consequence of some disparity in the power relations in addition to the values and norms of the workplace. In other words, workplace bullying occurs as result of interactions of various factors that occur at the organizational level.

Consequences of Workplace Bullying

Bullying behaviours like threats, offensive taunts, unwelcome and needless physical contact, social segregation, and public discredit have the propensity to deteriorate the confidence of employees and diminish competence. Bullying could become an accepted or encouraged aspect of the culture of the organisation. Curtis (2005) identifies the potential consequences of bullying to include: unfair treatment and victim blaming, false allegations and fictitious official punitive actions. Others comprise anxiety signs such as nervousness, headaches, nausea and palpitations. McKay, Arnold, Fratzi and Thomas (2008) found several unproductive corollaries of workplace bullying comprising amplified employee turnover, little motivational level, absenteeism, increased turn-over, reduced job satisfaction, low productivity and loss of self-esteem.

Statement of Hypotheses

The study postulated the following research hypotheses for testing:

H_o : There is no significant relationship between workplace bullying and employee performance.

H_o : There is no significant relationship between workplace bullying and job satisfaction.

H_o : There is no significant relationship between workplace bullying and gender.

Material and Methods

The study employed the survey method. Questionnaires were administered in a field survey in November, 2015. The study considered all groups of the respondents from the organisation under study. Both primary and secondary data sources were employed. A sample size of 200 was employed for the study consisting of all levels of staff across different departments of a Lagos area office of a federal organisation the Centre for Management Development (CMD). Interviews and focus group discussions were also conducted. Thirty (30) questionnaires were administered in the pilot study. Three null hypotheses were tested using the chi square statistical tool.

Results and Debate

Characterization of Workplace Bullying

A major objective of this study was to characterize workplace bullying. The results of the study indicate that 163(81.5%) of the respondents characterize workplace bullying as the inclination to utilize continual aggressive or irrational actions in opposition to a colleagues or subordinates using words and actions to scare their victims. 143(71.5%) testify that workplace bullying does not encourage organisational growth and development but on the contrary generates discouragement and job dissatisfaction on top of piloting various forms of unethical behaviours. 152(76%) of respondents affirm that their experiences of workplace bullying involve bosses and co-workers holding back information that consequence their work performance. 118(59%) of the respondents indicate that it includes bosses constantly verifying their efforts and failing to give recognition or commendations even on the achievement of significant assignments. 103(51.5%) characterize it as involving supervisors undervaluing their work and allocating to them jobs which are obviously not within their job descriptions. Again, 124(62%) delineate it as involving colleagues spreading rumours about them. 152(76%) see workplace bullying as entailing superiors failing to value their opinions, ideas or views or even entertaining their questions with hostile answers and consequently giving them impossible targets or assignments with unattainable deadlines.

Perpetrators of Workplace Bullying

The study results designate the principal perpetrators of bullying to include superiors or supervisors; peers or colleagues; subordinates or juniors and a combination of all these groups with the most culpable being the superiors or supervisors. 118(59%) respondents affirm that the perpetrators are the superiors or supervisors, 44(22%) respondents indicated peers or colleagues, 22(11%) respondents pointed at subordinates or juniors while 16(8%) claimed a combination of all three are perpetrators of workplace bullying. This implies that for this survey, superiors or supervisors are most guilty of perpetrating bullying in the workplace. A significant reason for this could be the authority or the power they wield and the fact that where the supervisor is the perpetrator, it is additionally hard for victim to defend themselves. On the intent and objective of workplace bullying, 178(89%) of the respondents opined that the perpetrators of bullying in the workplace do it quite intentionally; are conscious of their actions and sometimes even work to enhance their negative behaviours.

Corollaries of Workplace Bullying

Workplace bullying portends dire consequences for both the employees and the organizations. 151(75.5%) of the respondents suggest that a major outcome of workplace bullying is loss of job satisfaction. Employees often boast a strong desire to be informed; consequently where vital information is withdrawn because of workplace bullying the outcome includes low job satisfaction, low productivity and high turnover. Organizations with strong communication systems tend to benefit from lower workplace bullying and employee turnover rates. 134(67%) identified employee turnover intentions as a corollary arising from workplace bullying characterized by elevated workload and irrational censure. This confirms the findings of studies like Quine (1999); and Strandmark & Holloerg (2007) that affirm a high turnover rate as a key corollary of bullying at workplaces. Zapf and Einarsen (2003) also found that 82% of employee left their workplace just because of workplace bullying. Employee turnover is extremely costly for organizations. Considering that organizations expend a great deal in training and developing their employees all of which go to waste when such employees exit. 193(96.5%) identified sickness, anxiety and stressful as consequences of workplace bullying.

Test of Hypotheses

The study tested three research hypotheses that predicted no significant relationships between workplace bullying and gender, between workplace bullying and employee performance; as well as between workplace bullying and job satisfaction.

Hypothesis One

H_1 : There is no significant relationship between workplace bullying and staff performance.

Table 1 Relationship Between Workplace Bullying and Staff Performance.

Res	O	E	O- E	(O-E) ²	(O-E) ² /E	(X ²)Cal	(X ²)tab	Df	Level of Sig	Dec
SA	146	48	98	9604	200.1	278.30	9.48	3	0.05	S
A	33	48	-15	225	4.7					
D	13	48	-35	1225	25.5					
SD	0	48	- 48	2304	48.0					
Total	192				278.30					

Source: researcher's field survey

Performance involves work results. The vital features that establish performance include individual attributes, organizational support, work efforts and the work environment. Performance measures compel the actions of workers and are used to institute criterions to characterize anticipations and to track successes. Performance measures also motivate workers to implement, plan, and achieve specific goals. It requires a management style that is open and honest and encourages two-way communication between superiors and subordinates. It requires continuous feedback. X^2 (cal.) = 278.3, df = 3. X^2 tab at 0.05 level of significance = 9.48. Since the calculated X^2 is

greater than X^2 table value, we reject the null hypothesis (H_0). This implies a significant relationship between workplace bullying and performance. Employee performance and consequently productivity is constantly affected negatively if there is workplace bullying. Workplace bullying has direct effect on job performance. This result is similar to the findings of Salin (2007) as well as Owoyemi and Sheehan (2010) in their study on a public sector organisation in the United Kingdom which both confirm that workers exposed to bullying lose concentration on the job and consequently demonstrate poor performances on the job. The findings similarly revealed that workers who are exposed to bullying will not be satisfied with the work and the environment.

A principal consequence of workplace bullying is absenteeism which constitutes an alarming issue for organizations. Studies like Strandmark & Holloerg (2007), Adewumi, Sheehan, and Lewis (2008) and Hoel and Cooper (2003) affirm that high levels of absenteeism is noted as the result of stressful working condition arising from situations like workplace bullying. Where levels of absenteeism are high there is inevitably reduction in performances and productivity. Low productivity is therefore another corollary of workplace bullying. Employees are extremely central to organization growth and development. As Giwa (1990) contends; of all the resources an organization or nation needs human resources are the most important. Human beings make things happen and efficient human beings make things happen efficiently. Aside from being the most significant factors of production, human beings are themselves the most dynamic, complex and unpredictable resource. They combine other resources with themselves to produce goods and render services, which they themselves consume. Human resources change the constituent of all other resources and mix them in various proportions to produce the goods and render services. This underscores the fact that bosses or supervisor must understand that workers as most important contributors to the efficient achievement of the organization success and handle them carefully.

Hypothesis 2

H_0 : There is no significant relationship between workplace bullying and job satisfaction.

Table 2 Relationship Between Workplace Bullying and Job Satisfaction.

Res	O	E	O - E	(O-E) ²	(O-E)/E	(X ²)Cal	(X ² tab)	Df	Level Of Sig	Dec
SA	109	48	61	3721	77.5	113.40	9.48	3	0.05	S
A	44	48	-4	16	0.3					
D	13	48	-35	1225	25.5					
SD	26	48	-22	484	10.1					
Total	192				113.40					

Source: researcher's field survey

For any organization to be successful the satisfaction of their employees must be continuously ensured. Job satisfaction has to do with an individual's reaction to the job experience. It is how content an individual is with his or her job. Workers satisfaction is a crucial aspect of an organization's prosperity and goal attainment. It

constitutes an important issue for management and workers in any organizational setting. For the test of hypothesis two, on the relationship between workplace bullying and job satisfaction, X^2 (cal.) = 113.4, df = 3. X^2 tab at 0.05 level of significance = 9.48. Since the calculated X^2 is greater than X^2 table value, we reject the null hypothesis (H_0). Thus, there is a significant relationship between workplace bullying and job satisfaction. Job satisfaction is a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences. The several facets of job satisfaction comprise: pay, promotion, supervision, fringe benefits, contingent rewards, operating conditions, co-workers, nature of work, and communication. Majekodunmi (2008) indicates that job satisfaction is positively correlated with motivation, involvement, organizational citizenship behaviour, organizational commitment, life satisfaction, mental health, and performance, and negatively related to absenteeism, turnover, and perceived stress.

Hypothesis 3

H_0 : There is no relationship between gender and workplace bullying.

Table 3 Relationship Between Workplace Bullying and Gender.

Res	O	E	O - E	(O-E) ²	(O-E)/E	(X ²)Cal	(X ² tab)	Df	Level Of Sig	Dec
SA	116	48	68	4624	96.3	133.40	9.48	3	0.05	S
A	38	48	-10	100	2.1					
D	19	48	-29	841	17.5					
SD	19	48	-29	841	17.5					
Total	192				133.4					

Source: researcher's field survey

Gender is one of the common elements on which status disparities are founded. It is a social construct denoting the socially, culturally prescribed roles that males and female are to follow. It involves those social, cultural and physiological aspects linked to males and females through particular social contexts. Workplace bullying is typically not dependent on position or gender. King (1996) affirms that although targets of workplace bullying embrace all levels, professions, and genders, they are mostly females. X^2 (cal.) = 133.4, df = 3. X^2 tab at 0.05 level of significance = 9.48. Since the calculated X^2 is greater than X^2 table value, we reject the null hypothesis (H_0). The Workplace Bullying Institute (2010) advocates that women can be worse workplace bullies compared to men and that woman on-woman bullying is on the increase. The study asserts that thirty-five percent of Americans admit being bullied at work and that women make much nastier office bullies than men. A credible reason of the higher percentage of female bullies could be that girls are trained to censor each other from adolescence, and it is predominantly nasty amongst working women who frequently experience the need to be hyper-aggressive to get ahead particularly in male controlled occupations and environments.

Moreover, women seem to possess a greater tendency to feel intimidated by other capable women and have a propensity for being unjustly spiteful with each other and bearing elongated rancour often about inconsequential things. Aluko (2006) insists that by being unsupportive, women often harm the careers of other women. Onadeko

(2000) found that though some women deliberately evade helping other women in their careers, others choose passive-aggression to guard their interests. Ireti (2007) proposes that women are their own worst enemies because women regularly do not accord fellow women leaders similar respect as they would male leaders. Aremu (2001) found that incidences of female bosses bullying their staff (even the males) are increasing. However, cultural norms that perceive men as the problem-solvers and women as the fairer sex make it brazen for men to confess being bullied by women and those who nag about being bullied by a woman are likely to be asked to “man up” and deal with it.

Women also have greater tendencies than men to be targets of workplace bullying. The Workplace Bullying Institute (2010) found a strong gender force at play with 62% of workplace bullies being male, and women comprising 58% of workplace bullying targets. The foregoing implies that gender influences workplace bullying. The findings reveals significant differences between female and male in workplace bullying especially in terms of verbal abuse, exposure to administrative bullying and are more socially excluded than men. Rayner and Hoel (2009) observe that the verbal abuse experienced is a form of overt bullying that can come in the forms of insults, excessive teasing, gossips, slander and malicious rumours being spread about a person. Adewumi, Sheehan, and Lewis (2008) and Hoel and Cooper (2003) also affirm that women have greater exposure to verbal abuse than men. This is founded on the assertion that men in most cases are likely to protect themselves against any type of verbal assault than women.

Recommendations

Workplace bullying constitutes an ongoing and expensive dilemma for employers and employees. This study provides insights into the intricate and destructive nature of workplace bullying and aspects in the work environment that demand the attention of leaders and managers to prevent workplace bullying. Arising from its findings, this study suggests that organizations must put in place adequate measures to curb misuse of power since it has the probability of leading to damaging behaviours such as harassment and bullying in the workplace. Additional leadership skills to alleviate workplace bullying must be developed to ensure a safe and healthy working environment. The study showed that most targets and witnesses do not report incidences of workplace bullying to organization management for fear being called a weaklings or being victimized and losing their jobs. Organization stakeholders must guarantee that workplace bullying is always addressed sufficiently. This study stresses the significance of top management’s reactions to bullying. Doing nothing when reports are filed unintentionally makes the organization bullies’ partners in crime. Organizations must put in place codes of conduct on appropriate workplace behaviours and procedures for reporting and investigating allegations of workplace bullying. Moreover work cultures allowing and or aiding workplace bullying must be reassessed while ample reporting systems are establish between the human resource department and top management to register grievances on workplace bullying. Furthermore, human resource experts must be trained in enquiry procedures to guarantee appropriate examination of reported cases.

Conclusion

This paper concludes that, workplace bullying is very true in work organizations and it involves one or more individuals. Its occurrence is regular and determined and its corollaries daily continue to materialize and take it toll on the organization. Workplace bullying portends a harmful effect on both the victims. It de-motivates employees; suffocates their creativity and reduces their organization commitment. It could consequence in loss of loyalty and innovation which reduces job satisfaction. In sum, workplace bullying affects individual performance in the organisation. It is costly to both individual and the organisation.

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A TOURISM TRENDS AND DEVELOPMENT OF SELECTED ECONOMIC INDICATORS IN THE MORAVIAN - SILESIAN REGION BETWEEN 2006 - 2016

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Received 10. April 2018, Reviewed 08. June 2018, Accepted 25. June 2018

Abstract

The aim of this paper is to evaluate a tourism trends and development of selected economic indicators in the Moravian - Silesian Region between 2006 - 2016. Author put research question: Despite the increasing number of tourists in the Moravian-Silesian Region, is the below the level in the Czech Republic. Research question, based on the analysis, was confirmed. In the Moravian-Silesian Region increased between 2006 - 2016 number of tourists from 609 436 to 939 041, this is growth more than 64 % for this period and in the Czech Republic from 12 724 926 to 18 388 853, this is growth more than 69 % for this period, but in some years are larger difference. Author in this paper used regression analysis and analysis of secondary sources and study of documents. As the theoretical methods were used in this paper analysis, synthesis, abstraction, comparison and induction.

Key words: Moravian-Silesian Region, tourism, tourism trends, macroeconomic variables.

JEL Classification: C32, L83, O10

Introduction

According to the Kajzar and Václavíková (2017, pp. 41-42) tourism has become one of the most significant forces for change in the world today. With the growing volume of tourism at the same time, there are increasing demands of visitors on equipment destinations for various types of tourism. Tourism has been found to stimulate local economies, attract foreign investment, increase business activity, enhance land value, improve community infrastructure and attract the wealthy middle class. (Zeng-Xian and Tak-Kee, 2016)

Tourism is one of the most dynamic economic sectors in which especially in recent decades increasingly reflected new trends. Society changes continuously, and trends - whether economic, social or lifestyle - subsequently impact on tourism, as tourism is an integral part of our society. (Kajzar, 2014, pp. 386)

According to the Walby and Piché, (2015) tourism is social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes. Many travellers seek escape, pleasure, friendships, relaxation and unusual experiences.

The tourism industry contributes now effectively to the development of the whole regions predominantly thanks to the generation of incomes from products and services purchase to tourists and to the creation of new labour places (Kajzar and Václavíková, 2017)

We can say too something about the tourism industry. The tourism industry is a sector with an important specific weight in European economic growth, and it is therefore an economically important industry in which any improvement in the decision-making process will have great economic impact. The tourism industry requires you to have industry-specific knowledge and information to create and run a successful business. (Yawei and Ritchie, 2017)

Yawei and Ritchie (2017, pp. 70) says that the tourism industry is a sector with an important specific weight in European economic growth, and it is therefore an economically important industry in which any improvement in the decision-making process will have great economic impact. The tourism industry requires you to have industry-specific knowledge and information to create and run a successful business.

Modern tourism is closely linked to development and encompasses a growing number of new destinations. Tourism plays an important role in the Czech republic on improving the living standards of the local people by improving community's facilities and services. These dynamics have turned tourism into a key driver for socio-economic progress. The Czech Republic respectively the Moravian-Silesian Region have an extraordinary potential for the development of tourism in view of its natural and cultural heritage. In terms of international tourism plays an important role as well as its location in the center of Europe and EU neighborhood countries.

The Czech Republic has become one of the major tourist destinations in Europe. Tourism is an important factor in the Czech Republic's economy, which confirms the significant consumption in domestic, domestic and inbound tourism. Very important document of tourism in the Czech Republic is „The State Tourism Policy Concept in the Czech Republic for the period of 2014 - 2020“. The goal of the strategy is to increase competitiveness of the whole tourism sector at national and regional level, sustaining its economic performance and positive impact on socio-cultural and environmental development of Czech Republic. Visions and goals for 2014 - 2020 reflect the goals of European politics for tourism and guidelines of international organizations such as UNWTO and OECD.

The Moravian-Silesian Region is divided into six attractive tourist regions, each of which has its specific and invaluable character. According to the book "Technical Attractions in the Moravian-Silesian Region" the Beskydy Mountains may offer, in addition to their beautiful nature, numerous monuments of folk architecture. The Moravian Kravařsko-Poodří Region is enriched by many chateaus and ruins of castles. The Ostrava Region has its specific and extraordinary character given by the tradition of the deep mining of black coal. It is reflected in many technical monuments having aspirations, thanks to their uniqueness, to be listed as UNESCO monuments. Although the Opavské Slezsko Region is a narrow band of territory, it offers a wide range of monuments. The most attractive ones include chateaus, historical towns and preserved military forts. The Jeseníky Mountains are a favourite destination for tourists not only due to their natural treasures, but also due to the oldest narrow-gauge rail line with a steam train in Central Europe. The Těšín-Silesian Region is a picturesque

territory at the border with Poland, where flat meadows change to rolling hills and mountain ridges of the Beskydy Mountains and the Jablůnkovské mezihoří.

Moravian-Silesian Region is favorable natural conditions, which are supplemented by traditions and cultural heritage. A problem may prove contrary polluted area Ostrava, lack of support from the state and limiting seasonality. Most of the sites are well accessible and usable year round. (Kajzar and Václavínková, b2016)

Material and Methods

The aim of this paper is to evaluate a tourism trends and development of selected economic indicators in the Moravian - Silesian Region between 2006 – 2016. Author put research question: Despite the increasing number of tourists in the Moravian-Silesian Region, is the below the level in the Czech Republic. The main sources for this research were gained from organizations' websites Czech Statistical Office.

Research question: Despite the increasing number of tourists in the Moravian-Silesian Region, is the below the level in the Czech Republic.

Author in this paper used regression analysis and analysis of secondary sources and study of documents. As the theoretical methods were used analysis, synthesis, abstraction, comparison and induction.

McClave and Sincich (2011) say that regression analysis is concerned with unilateral dependencies, this means that examines general trends in changes in response variables (the dependent variable y) due to changes in explanatory variables (independent variable x). Correlation analysis focuses on the interdependencies.

To determine the tightness of dependence of two variables will be used for correlation analysis. Determining extent of dependence or correlation we use the correlation coefficient. The coefficient values between -1 and +1, -1 where means a perfect negative, +1, and perfect positive relationship and 0 mean no linear relationship.

Covariance provides a measure of the strength of the correlation between two or more sets of random variates. The covariance for two random variates and , each with sample size, is defined by the expectation value.

Author use regression analysis. Regression analysis deals with dependence of a quantitative variable on one or more quantitative variables. In the case of one variable depending on another variable, we talk about simple regression, as opposed to the case when there are more explanatory variables. Regression analysis aims to find a mathematical relation – an equation which in a certain sense describes changes of a random variable Y dependent on changes of random variables $X_1, X_2, \dots, X_k$. We shall assume the standard case presented in literature, i.e. the case when only some values of the variables $X_1, X_2, \dots, X_k$ are known or available.

Results and Debate

Moravian-Silesian Region: Tourism trends and selected data on tourism

The Moravian-Silesian Region is located in the easternmost part of the Czech Republic, and to its center of Prague is about 300 km as the crow flies. The Moravian-Silesian Region borders on the Zlín and Olomouc Regions, Poland and Slovakia and it is a region full of contrasts and opportunities. The mixture of beautiful countryside,

sport facilities, relaxation centres, and many cultural, architectural, sacral and technical monuments forms the picturesque and extraordinary territory of the Moravian-Silesian Region. (Kajzar and Václavínková, a2016)

Moravian-Silesian Region Moravian-Silesian region is very geographically diverse region. In the west region is the massif of Hrubý Jeseník with highest peak of Moravia, Praděd (1 491 m n. m.). In 1969 there was declared a protected landscape area. In the highest parts of the mountains there are extensive surfaces aligned with peat bogs, rock walls and frost cabins.

According to the web portal Moravian-Silesian Region, The Moravian-Silesian Region organises activities to support regional development in areas related to promoting business activities and the competitiveness of firms, investment opportunities, an innovation-based economy, education including support for universities, to the development of industrial zones and the revitalisation of brownfields and the development of the municipalities in the Moravian-Silesian Region. The activities that the Moravian-Silesian Region are already carrying out are listed in two strategic documents: the Strategy of Development of the Moravian-Silesian Region and the Regional Innovation Strategy.

The Moravian-Silesian region is not only a place to visit natural or cultural monuments, but tourists visit both spa facilities and culinary tourists to try out many local specialties. The destination visited is also evaluated by tourists according to gastronomy, respectively of the experience they have gained, because, as some research shows, gastronomy in selected destinations can influence the overall impression of the visit and some tourists go back to gastronomy. (Kivela and Crotts, 2006).

According to the Hamarneh and Kirařová (2016, pp. 99) gastronomy is often said to be a sub-sector of cultural or heritage tourism for this reason. The link between location and gastronomy has been used in some ways in tourism, including promotional efforts based on distinctive or „typical“ regional or national food. Food can also be used as a means for guiding visitors around regions and countries

The Moravian-Silesian Region offers a number of cultural monuments too, ranging from castles, chateaus to local culinary delights. We must not forget the spa and rural tourism, which is becoming more and more popular with many tourists who visit the Moravian-Silesian region. Tourist services for foreign visitors are significantly cheaper in comparison with other EU countries. (Kostková, Pellešová and Botlíková, 2015). A care of cultural heritage raises awareness of the wealth of this region; it increases visiting sites and it has a regional and some of them have international significance too, especially for the nearby and border regions. (Pellešová and Kostková, 2016)

Tourism in the Czech republic is a major economic activity at national and regional level. In 2016, this branch accounted for 2.9% of the gross domestic product of the Czech Republic (139 billion crowns). Employing 231.5 thousand people, which was 1.0% more year-on-year. Employees accounted for 82% and 18% self-employed in the industry.

Czech hotels, guesthouses and camp sites registered a record 18.4 million tourists in 2016 according to the Czech Statistics Office. The number of foreign visitors was 9,3 million. In Moravian-Silesian region increased number of tourists from 2006 to 2016 growth more than 64 % and in the Czech Republic from 12 724 926 to 18 388 853, this is growth more than 69 % for this period, but in some years are larger difference, see Table 1. According to the data of Czech Statistical Office the number of foreign visitors increased in Moravian-Silesian Region by almost 1% in 2016. As previously, most of them arrived from Slovakia and Poland while Germans and Italians accounted for the third and the fourth largest groups of foreign visitors.

Responsibility for the development of the managed area lies in hands of municipal authorities that have purposefully communicate with entities in the area, but also beyond, in order to ensure the area prosperity. (Misunova, 2015, pp. 622)

Table 1: Occupancy in collective accommodation establishments in the Moravian-Silesian Region and in the Czech Republic

	Number of Guests			Number of Guests		
	Total	Non-residents	Residents	Total	Non-residents	Residents
2 006	609 436	112 668	496 768	12 724 926	6 289 452	6 435 474
2 007	642 916	132 046	510 870	12 960 921	6 281 217	6 679 704
2 008	640 128	136 316	503 812	12 835 886	6 186 476	6 649 410
2 009	585 694	113 290	472 404	11 985 909	5 953 539	6 032 370
2 010	527 380	101 332	426 048	12 211 878	5 877 882	6 333 996
2 011	572 306	111 263	461 043	12 898 712	6 183 645	6 715 067
2 012	853 204	203 515	649 689	15 098 817	7 647 044	7 451 773
2 013	820 141	204 106	616 035	15 407 671	7 851 865	7 555 806
2 014	799 530	183 809	615 721	15 587 076	8 095 885	7 491 191
2 015	907 567	208 289	699 278	17 195 550	8 706 913	8 488 637
2 016	939 041	212 547	726 494	18 388 853	9 321 440	9 067 413

Source: Own, based data of Czech Statistical Office.

According to the Kajzar and Pellešová (2017, pp. 103) accommodation and catering facilities represent an essential part of tourism facilities in the Czech republic, which ensures the realization of tourism. Tourism to meet the needs of food, but also the interests of various forms of entertainment: Restaurants, cafeterias, grills, snack bar, bars, wine bars, cafes, pubs, chalets, huts, etc. A group of other tourist facilities in the Moravian-Silesian Region include complementary forms of tourists facilities used for recreation (playgrounds, swimming pools, saunas, gyms, bowling, ski slopes, ski trails, ski lifts, waterslide, water skiing, tennis courts, mini golf, golf, playgrounds, amphitheatres, etc.). We must not forget the devices directly promote or organize the development of tourism (travel agencies, information agencies, municipal and health services, telecommunications, etc.).

In the Table 2, you can see number of establishments, rooms and beds in Moravian-Silesian Region from 2006 to 2016.

Table 2: Selected data on tourism in the Moravian-Silesian Region

	Number of Establishments, total	Rooms	Beds
2006	465	9 406	25404
2007	469	9 527	25 676
2008	468	10 127	26 852
2009	447	9 931	25 935
2010	405	9 251	23 785
2011	464	10 418	26 520
2012	628	12 461	31 830
2013	618	12 140	30 867
2014	569	11 559	29 456
2015	576	11 742	29 923
2016	572	11 556	29 999

Source: Own, based data of Czech Statistical Office.

In the Moravian-Silesian Region reached the number of the collective accommodation establishments 572 with bed places 29 999 in the year 2016. The maximum number of the collective accommodation establishments reached in the year 2012 with 628, rooms 12 461 and bed places 31 830. Difference between 2011 is more than 150 tourism establishments. In the Czech republic is total number of the collective accommodation establishments approximately 9 000.

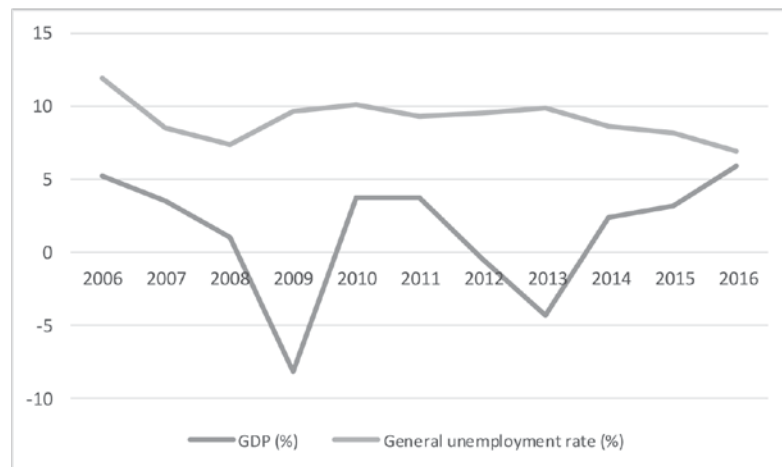
As a support of tourism trends in Czech republic, respectively in the Moravian-Silesian Region serves a microbrewery. In the Czech Republic exist more than 300 microbreweries, in the Moravian-Silesian Region exist about four dozen small breweries, the same number is in the Central Bohemian and South Moravian regions. Only Prague has more breweries, about fifty. In 2012 in Moravian-Silesian Region were only 17 microbreweries, but in the past three years there were another more than 17. In Moravian-Silesian Region, hundreds of beers can be tasted, such as the Bitter Monkey, Žabák, Rohan, Qasek, Beak, Garagemaster, Zbuj, Bumblebee, Groshak, Srshen, Zeleznik, Kohut, Kozlovjan, Bulac, Štajgr, Trubač or Ušák. In the region, the most beer varieties are concentrated in Frýdek-Místek. Besides the Radegast Brewery, there are also 12 microbreweries, so people have the chance to taste over 80 kinds of beer.

Development of selected economic indicators in the Moravian - Silesian Region between 2006 – 2016

The following part of this paper are devoted to the analysis of selected economic indicators in the Moravian-Silesian region. It is the development of selected macroeconomic indicators in the years 2006 to 2016. These indicators are general unemployment rate (%) and GDP (%). Following the evaluation, depending average unemployment rate for the total attendance at collective accommodation establishments

in the Moravian-Silesian region in the period from 2006 to 2016. Another important indicator is rated dependency developments GDP to total attendance in 2006 and 2016.

Figure 1: Development of selected economic indicators in the Moravian - Silesian Region between 2006 - 2016



Source: Own, based data of Czech Statistical Office.

The figure above shows us the evolution of the general unemployment rate (%) and GDP (%) in the Moravian-Silesian region. This is the data from the years 2006 to 2016. The chart shows that in 2009 there was a significant decline in GDP. Which could result in ongoing global economic crisis. The average growth rate of real wages declined from 2001 to 2013, in 2014 there was an increase in 2015 and to hold. The average unemployment rate remains at similar levels and in last years you can see on the figure slow improvement in the Moravian-Sileseian region.

In this part of the paper the authors compiled Correlation Table 3, which shows the development of the number of guests that stay in accommodation facilities in the Moravian-Silesian region, development of GDP (%) and calculated the parameters required for the calculation of correlation. The author investigated the dependence of the development of GDP (%) and the total attendance at collective accommodation establishments in the Moravian-Silesian region during the period 2006 - 2016.

Table 3: Dependence of development GDP (%) in total attendance at collective accommodation establishments in the Moravian- Silesian region during the period 2006-2016

	(xi) Number of Guests Total	(yi) GDP (%)	$X_i * Y_i$	X_i^2	Y_i^2
2006	609 436	5,2	3169067,2	371412238096	27,04
2007	642 916	3,5	2250206	413340983056	12,25
2008	640 128	1	640128	409763856384	1
2009	585 694	-8,2	-4802690,8	343037461636	67,24
2010	527 380	3,7	1951306	278129664400	13,69
2011	572 306	3,7	2117532,2	327534157636	13,69
2012	853 204	-0,5	-426602	727957065616	0,25
2013	820 141	-4,3	-3526606,3	672631259881	18,49
2014	799 530	2,4	1918872	639248220900	5,76
2015	907 567	3,2	2904214,4	823677859489	10,24
2016	939 041	5,9	5540341,9	881797999681	34,81
Σ	7897343,000	15,600	11735768,600	5888530766775,000	204,460
Averages	717940,273	1,418	1066888,055	535320978797,727	18,587

Source: Own

Formulas, in the methodological part, is used to calculate the parameters for determining the correlation coefficient.

$$\text{cov } xy = 1066888,055$$

$$\text{var } x = 535320978797,727$$

$$\text{var } y = 18,587$$

The correlation coefficient:

$$r = -0,5$$

$$R^2 = 22,59$$

It is a weak indirect linear dependence. In this case, increasing the number of guests influenced the development of the GDP (%) of 22, 59%.

Table 4: Dependence of general unemployment rate (%) in total attendance at collective accommodation establishments in the Moravian-Silesian region during the period 2006-2016

	(xi) Number of Guests Total	(yi) General un- employment rate (%)	$X_i * Y_i$	X_i^2	Y_i^2
2006	609 436	12,0	7303940,183	371412238096	143,6343145
2007	642 916	8,5	5456133,778	413340983056	72,02139885
2008	640 128	7,4	4727557,842	409763856384	54,54312967
2009	585 694	9,7	5667459,221	343037461636	93,63436247
2010	527 380	10,2	5355869,786	278129664400	103,1365756
2011	572 306	9,3	5322445,8	327534157636	86,49
2012	853 204	9,5	8105438	727957065616	90,25
2013	820 141	9,9	8119395,9	672631259881	98,01
2014	799 530	8,6	6904260,681	639248220900	74,57011845
2015	907 567	8,1	7383795,323	823677859489	66,19145185
2016	939 041	6,9	6487185,988	881797999681	47,72474201
Σ	7897343,000	100,068	70833482,503	5888530766775,000	930,206
Averages	717940,273	9,097	6439407,500	535320978797,727	84,564

Source: Own

Formulas, in the methodological part, is used to calculate the parameters for determining the correlation coefficient.

$$\text{cov } xy = 6439407,500$$

$$\text{var } x = 535320978797,727$$

$$\text{var } y = 84,564$$

The correlation coefficient:

$$r = -0,2$$

$$R^2 = 4,97$$

With a correlation coefficient of -0,2

With a correlation coefficient of -0,2, we can say that if the correlation coefficient is around 0, it means that the dependence between the selected variables is almost none.

Conclusion

Tourism in the Czech republic is a major economic activity at national and regional level. In 2016, this branch accounted for 2.9% of the gross domestic product of the Czech Republic (139 billion crowns). Employing 231.5 thousand people, which was 1.0% more year-on-year. Employees accounted for 82% and 18% self-employed in the industry. The Moravian-Silesian region has potential for the development of tourism in view of its natural and cultural heritage. In terms of international tourism plays an important role as well as its location in the center of Europe and EU neighborhood countries

In Moravian-Silesian region increased number of tourists from 2006 to 2016 growth more than 64 % and in the Czech Republic from 12 724 926 to 18 388 853, this is growth more than 69 % for this period, but in some years are larger difference. According to the data of Czech Statistical Office the number of foreign visitors increased in Moravian-Silesian Region by almost 1% in 2016. As previously, most of them arrived from Slovakia and Poland while Germans and Italians accounted for the third and the fourth largest groups of foreign visitors.

In the Moravian-Silesian Region reached the number of the collective accommodation establishments 572 with bed places 29 999 in the year 2016. The maximum number of the collective accommodation establishments reached in the year 2012 with 628, rooms 12 461 and bed places 31 830.

In the Moravian-Silesian Region increased between 2006 - 2016 number of tourists from 609 436 to 939 041, this is growth more than 64 % for this period and in the Czech Republic from 12 724 926 to 18 388 853, this is growth more than 69 % for this period, but in some years are larger difference. Research question, based on the analysis, was confirmed.

The author found weak indirect linear dependence between total number of guest and development of GDP (%) in the Moravian-Silesian region. In this case, increasing the number of guests influenced the development of the GDP (%) of 22, 59%. In second case with a correlation coefficient of -0.2, we can say that if the correlation coefficient is around 0, it means that the dependence between the total number of guests and general unemployment rate (%) is almost none.

Acknowledgements

This paper was supported by the Ministry of Education, Youth and Sports of the Czech Republic within the Institutional Support for Long-term Development of a Research Organization in 2018

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MEASURING THE ACCURACY OF QUANTITATIVE PROGNOSTIC METHODS AND METHODS BASED ON TECHNICAL INDICATORS IN THE FIELD OF TOURISM

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Received 14. May 2018, Reviewed 30. June 2018, Accepted 16. July 2018

Abstract

Forecasts in the business economy play a key role. An economically performing business must have an idea of the future development of its assets. Prediction is based on the use of quantitative and qualitative methods. This paper deals only with the use of quantitative methods, namely Exponential smoothing, ARIMA. In business practice, however, there is often a need for simplicity of prognostic models, which ARIMA models often do not respond to. Therefore, a calculation experiment and the use of simple indicators of technical analysis to predict the occupancy of accommodation facilities in the Czech Republic were made in this appendix. The aim of the paper is to measure the accuracy of these models compared to exponential smoothing and ARIMA based on the ex post forecasting accuracy method.

Key words: forecasting, technical analysis, exponential smoothing, ARIMA

JEL Classification: C53, G17, M21

Introduction

The prediction of economic variables plays a key role in today's econometric theory (Borch at all, 2013), (Esmalian at all, 2017). There are a lot of predictive methods, but they often hinder their practical application for their complexity. It is therefore necessary to adapt the forecasting methodology to the needs of the stakeholders (Saritas, 2013). In order for a model or method to be applied in business practice, it must also meet the requirements for simple interpretability and comprehensibility. From this point of view, the concept KISS ("keep it sophisticatedly simple") (Zellner, 2001) and the work of Green and Armstrong (2015), which confirm this theory in scientific research, are based. Research by Soyer and Hogarth (2012) has even shown that more complex static models are often difficult to understand even for academics.

The aim of this paper is to compare the accuracy of the models based on quantitative methods of Exponential smoothing and ARIMA with the degree of precision of the technical indicators used only in the prediction of financial phenomena, (especially exchange rates, securities and derivatives) on the example of quantities in tourism in the Czech Republic.

Material and Methods

The data from the tourism sector in the Czech Republic were analyzed. In the first analysis, the number of accommodation establishments as a whole, the numbers were broken down according to the type of accommodation, namely hotels and similar accommodation facilities, boarding houses, campsites of cottage settlements and tourist hostels and other accommodation facilities not mentioned elsewhere. The hotels were divided into four-star and three-star hotels and others. In the second analysis, the ex-post forecasting of the number of guests, broken down by residents and non-residents, and the number of overnight stays were again broken down into residents and non-residents, and finally the average number of nights spent in the accommodation, again broken down into residents and non-residents. The data was obtained from the Czech statistical office in the time series from 1989 to 2017.

For the analysis, it was necessary first to prepare the data for the appropriate form for modeling. Data was subjected to a thorough analysis according to Table 1. The missing data was replaced by linear interpolation.

Table 1 - Descriptive Statistic

	N	Range		Minimum	Maximum	Mean		Std. Deviation	Variance
		Statistic	Statistic			Statistic	Std. Error		
Accommodation	24	7526,00	2531,00	10057,00	7447,3333	411,30067		2014,95353	4060037,710
Hotel_in_total	24	5087,00	1263,00	6350,00	4310,2917	291,73591		1429,20822	2042636,129
Hotel_5	24	90,00	6,00	96,00	36,0000	4,82370		23,63122	558,435
SMEAN(Hotel_4)	24	622,00	31,00	653,00	324,3043	39,55799		193,79380	37556,038
SMEAN(Guesthouse)	24	3364,00	404,00	3768,00	2436,2174	173,09195		847,97390	719059,735
SMEAN(Other)	24	2179,00	188,00	2367,00	1751,8696	96,16689		471,11960	221953,679
Camp	24	324,00	192,00	516,00	461,3333	17,78797		87,14289	7593,884
Tourist_hostel	24	816,00	420,00	1236,00	996,8333	32,34868		158,47553	25114,493
SMEAN(guest)	24	13072,56	6928,00	20000,56	12754,1796	613,91268		3007,54561	9045330,569
SMEAN(nonresident_guest)	24	7121,47	3039,00	10160,47	6224,7909	370,90849		1817,07311	3301754,675
SMEAN(resident_guest)	24	6227,09	3613,00	9840,09	6528,0861	260,24978		1274,95831	1625518,700
SMEAN(number_of_night)	24	1,41	2,66	4,07	3,1791	0,07512		0,36801	0,135
SMEAN(nonresident_number)	24	0,70	2,58	3,28	2,9767	0,04026		0,19725	0,039
SMEAN(resident_number)	24	1,96	2,74	4,70	3,3881	0,10810		0,52956	0,28043

Source: own

Core descriptive statistics and data analysis and editing were performed in SPSS. Further calculations and realization of the computational experiment were realized using statistical program R with the application of TTR and FORECAST packages (Hydman, 2008) with support RkWard (Rödiger, 2012).

Exponential smoothing

Weighted averages of past values can be predicted based on exponential smoothing (Bergmeir, 2016), (Goodwin, 2017). Balances in the models usually exponentially decrease with the age of the data used (Hyndman, 2018). Exponential alignment methods can be simple exponential smoothing, Holt's exponential smoothing and Winter's exponential smoothing.

Simple exponential smoothing defines the prognosis as an exponential average and is used only for non-periodic time series. The relationship of the extended equation has the shape,

$$S_t = \alpha \sum_{i=0}^{t-1} (1 - \alpha)^i y_{t-i} + (1 - \alpha)^t S_0, \text{ where} \quad (1)$$

T is the length of the time series, $y_{(t-1)}$ is the value of the time series, $\partial \in (0,1)$ is the equalization constant and S_0 is the initial equalization value.

Holt extended Brown's exponential alignment by adaptive trend estimation of the trend component with the new balancing constant β (Vincūr, 2007). The equalization constant can be defined,

$$\beta = \beta(S_t - S_{(t-1)}) + (1 - \beta) \widehat{\beta}_{(1,t-1)}, \text{ where} \quad (2)$$

$S_t - S_{(t-1)} = \widehat{\beta}_{(0,t)} - \widehat{\beta}_{(0,t-1)}$ is the current state of the trend and $\widehat{\beta}_{(1,t-1)}$ is an adaptive estimate of the Trend Directive over time. β then the equalizing constant.

Damped trend methods (Taylor, 2003) originated as a reaction to the drawbacks of the Holt's linear method, which show a constant trend, but empirical evidence suggests that this may lead to excessive forecasts, especially in the longer forecast horizon. Methods of damped trends then include a parameter that dampens the trend on a straight line (Hyndman, 2018).

ARIMA

Auto regressive integer moving average (hereafter ARIMA) is based on the idea that the values of observation of the quantity in the time series can be understood as realization of a random process. ARIMA models are designed for stochastic trend time series, which can be stationeries by differentiation (Cipra, 2013). AR, in this short term, expresses that part of the value of the time series can be explained as a linear combination of past values, 'i' expresses the time series differences, and MA are moving averages and relies on the idea that part of the time series residue can be explained as a linear combination of past errors. The ARIMA definition (p, d, b) can be written as (Marček, 2013),

$$\varphi(B) \cdot w_t = \alpha + \theta(B) \cdot \varepsilon_t, \text{ where} \quad (3)$$

$$w_t = \Delta^d y_t \quad (4)$$

Differential operator can be expressed using the backward displacement operator as,

$$\Delta = 1 - B \quad (5)$$

Technical indicators

There is a whole lot of moving averages. Sliding averages calculate the average value of the data in the width of its timeframe. The basis is a simple moving average (SMA) and can be defined by the relationship (Kresta, 2016),

$$SMA = \frac{\sum_{i=1}^N \text{input}}{n}, \text{ where} \quad (6)$$

N is the number of days for which the SMA is numbered. Moving averages are used to smooth data in an array to help eliminate noise and identify trends. The simple moving average is literally the simplest form of a moving average. Each output

value is the average of the previous n values. In a simple moving average, each value in the time period carries the same weight, and values outside of the time period are not included in the average.

Exponential moving average (EMA) is considered to be a better tool than a simple moving average (Achelis, 2001) (Kolková, 2017) because it attaches greater weight to current data and changes in price corresponds faster than simple. It can be expressed by a relationship,

$$EMA = EMA_{-1} + K \cdot (\text{input} - EMA_{-1}), \text{ or} \quad (7)$$

$$EMA = K \cdot \text{input} + (1 - K) \cdot EMA_{-1}, \text{ where} \quad (8)$$

$$K = \frac{2}{N + 1} \quad (9)$$

His idea is therefore very similar to exponential smoothing, but the numerical calculation is simpler. It is used in countless technical indicators.

Accuracy

To measure accuracy, the root mean square error (hereafter RMSE), mean absolute percentage error (heap MAPE) and mean absolute error (hereafter MAE) are selected. As additional variables for prediction models ex ante, even R-squared, maximal absolute percentage error (hereafter MaxAE), maximum absolute error (hereafter MaxAE), and normalized Bayesian information criterion (Hyndman, 2006) and (Chen, 2017).

First, it is necessary to define a mean square error (MSE) that expresses an average square error (Marček, 2013), according to the relation,

$$MSE = \frac{1}{M} \sum_{p=n+1}^N (y_p - \widehat{y}_p)^2 \quad (10)$$

$$RMSE = \sqrt{MSE} \quad (11)$$

The standard deviation is the RMSE accuracy. These variables have the same unit as the original time series. The same is true for the MAE, which can be described by a relationship,

$$MAE = \frac{1}{M} \sum_{p=n+1}^N |y_p - \widehat{y}_p| \quad (12)$$

Other indicators, relative predictions, are expressed as a percentage. These indicators do not depend on the time series units of measure, so we can also use the forecasts of different variables to compare the accuracy, in this article, in particular, the number of guests and the number of nights. MAPE expresses an average forecast error compared to actual values by relationship,

$$MAPE = \frac{1}{M} \sum_{p=n+1}^N \frac{|y_p - \widehat{y}_p|^2}{y_p} \quad (13)$$

MaxAPE is the largest predicted error. On this basis, we can get an idea of the worst possible scenario of our forecast. Max AE is then the largest predicted error, expressed in the same units as the dependent series.

Results and Debate

The models with the highest degree of precision were evaluated using the function expert modeler. Selected models are summarized in Table 2.

Table 2 Model Description

	Model Type
Accommodation	ARIMA(0,1,0)
Hotel_in_total	Simple
Hotel_5	Holt
Hotel	ARIMA(0,1,0)
SMEAN(Hotel_4)	Holt
SMEAN(Guesthouse)	Holt
Camp	Simple
Tourist_hostel	ARIMA(0,0,0)
SMEAN(Other)	Brown

Source: own

The results show that for forecasting accommodation in total, other hotels and tourist hostels are the best models on ARIMA models with different parameters. For the total number of hotels and camps, it is more convenient to use simple exponential smoothing, for the five-star, four-star hotels and guesthouses is the best Holt's exponential smoothing option and Brown's exponential smoothing is best for other types of accommodation.

These calculations are mostly not the subject of a prediction in the enterprise economy, but in the field of descriptive economics. Business management rather than whether or not to increase or decrease the number of hotels or other types of accommodation in the foreseeable future is concerned with the occupancy and occupancy of each type of facility. Therefore, the data were analyzed by the number of guests (both residents and non-residents) in the Czech Republic, as well as the number of nights when accommodation services in the Czech Republic are searched for by residents and non-residents. Appropriate models for prediction based on classical methods are summarized in Table 3.

Table 3 - Model Description

	Model Type
SMEAN(guest)	ARIMA(0,1,0)
SMEAN(nonresident_guest)	ARIMA(0,1,0)
SMEAN(resident_guest)	Brown
SMEAN(number_of_night)	ARIMA(2,1,0)
SMEAN(nonresident_number)	Brown
SMEAN(resident_number)	Simple

Source: own

The resulting used models are different again. Moreover, ARIMA models are used for the total number of guests, including non-residents, and the average number of nights spent in accommodation facilities. For the number of residents and the number of nights spent in non-resident accommodation, Brown's exponential smoothing is used. Finally, for the total number of nights spent in residents' accommodation facilities, simple exponential smoothing is used.

Model statistic and parameters

Selected models have been subjected to accuracy testing, test results for the number of accommodation establishments and their type are shown in Table 4.

Table 4 - Model Statistics

Model	Model Fit statistics					Ljung-Box Q(18)		
	Stationary R-squared	RMSE	MAPE	MAE	MaxAPE	Statistics	DF	Sig.
Accommodation-Model_1	4.441E-16	1131,770	8,244	592,650	60,636	18,988	18	0,393
Hotel_in_total-Model_2	-0,122	596,530	7,025	285,083	60,473	24,865	17	0,098
Hotel_5-Model_3	0,840	18,698	41,579	8,638	163,005	1,397	16	1,000
Hotel-Model_4	-6,661E-16	164,788	6,160	96,412	39,893	17,872	18	0,464
SMEAN(Hotel_4)-Model_5	0,748	63,396	17,172	39,366	74,878	16,997	16	0,386
SMEAN(Guesthouse)-Model_6	0,679	521,023	31,664	369,209	269,706	21,889	16	0,147
Camp-Model_7	-0,005	65,673	9,055	28,083	114,062	9,473	17	0,924
Tourist_hostel-Model_8	-1,998E-15	158,476	13,301	103,236	137,341	11,882	18	0,853
SMEAN(Other)-Model_9	0,647	481,125	52,058	306,893	836,697	15,731	17	0,543

Source: own

Table 5 summarizes the parameters of the prediction models based on exponential smoothing according to the accuracy in Table 4. The parameters are different, of course, according to the type of model defined in Table 2.

Table 5 - Exponential Smoothing Model Parameters

Model		Estimate	SE	t	Sig.
Hotel_in_total-Model_2	Alpha (Level)	1,000	0,208	4,803	0,000
Hotel_5-Model_3	Alpha (Level)	1,520E-05	0,101	0,000	1,000
	Gamma (Trend)	0,008	1440,820	5,214E-06	1,000
SMEAN(Hotel_4)-Model_5	Alpha (Level)	0,001	0,067	0,015	0,988
	Gamma (Trend)	0,001	20,153	2,543E-05	1,000
SMEAN(Guesthouse)-Model_6	Alpha (Level)	0,093	0,153	0,609	0,549
	Gamma (Trend)	2,101E-06	0,092	2,288E-05	1,000
Camp-Model_7	Alpha (Level)	1,000	0,171	5,841	0,000
SMEAN(Other)-Model_9	Alpha (Level and Trend)	0,025	0,013	1,930	0,066

Source: own

For variables for which ARIMA models are the most suitable, such as the accommodation, hotel and tourist hostel, the parameters are listed in Table 6.

Table 6 - ARIMA Model Parameters

Model			Estimate	SE	t	Sig.
Accommodation-Model_1	Accommodation	Constant	267,130	235,990	1,132	0,270
		Difference	1			
Hotel-Model_4	Hotel	Constant	44,652	34,361	1,300	0,207
		Difference	1			
Tourist_hostel-Model_8	Tourist_hostel	Constant	996,833	32,349	30,815	0,000

Source: own

As noted above, information on the occupancy of accommodation facilities is more important for business. Even though the number of competitors is of course important information. The models defined in Table 3 were evaluated with the accuracy listed in Table 7

Table 7 - Model Statistic

Model	Model Fit statistics					Ljung-Box Q(18)		
	Stationary R-squared	RMSE	MAPE	MAE	MaxAPE	Statistics	DF	Sig.
SMEAN(guest)-Model_1	-2,220E-16	1488,913	8,234	968,886	41,967	9,649	18	0,943
SMEAN(nonresident_guest)-Model_2	0,000	761,390	8,304	479,672	41,896	9,957	18	0,933
SMEAN(resident_guest)-Model_3	0,635	788,620	8,754	523,281	56,704	11,520	17	0,828
SMEAN(number_of_night)-Model_4	0,340	0,198	3,799	0,127	15,326	9,640	17	0,918
SMEAN(nonresident_number)-Model_5	0,660	0,079	1,814	0,055	7,187	9,129	17	0,936
SMEAN(resident_number)-Model_6	0,087	0,314	5,220	0,193	23,301	10,118	17	0,899

Source: own

Models for which are the most unfavorable prediction based on exponential smoothing are summarized in Table 8.

Table 8 - Exponential Smoothing Model Parameters

Model		Estimate	SE	t	Sig.
SMEAN(resident_guest)-Model_3	Alpha (Level and Trend)	0,313	0,086	3,627	0,001
SMEAN(nonresident_number)-Model_5	Alpha (Level and Trend)	0,449	0,085	5,281	0,000
SMEAN(resident_number)-Model_6	Alpha (Level)	0,741	0,200	3,700	0,001

Source: own

For models of the total number of guests, nonresident guests and total number of nights, the ARIMA models were selected as the most appropriate models with the parameters listed in Table 9.

Table 9 -ARIMA Model Parameters

Model			Estimate	SE	t	Sig.
SMEAN(guest)-Model_1	Constant		473,590	310,460	1,525	0,141
	Difference		1			
SMEAN(nonresident_guest)-Model_2	Constant		302,455	158,761	1,905	0,070
	Difference		1			
SMEAN(number_of_night)-Model_4	AR Lag 2		0,682	0,146	4,668	0,000
	Difference		1			

Source: own

Accounting experiment – forecasting on technical indicators base

In the next part, the forecasting of the number of guests divided into residents and non-residents and the number of nights spent in the accommodation facility, again broken down into residents and non-residents, was based on technical indicators. For this experiment, the EMA and SMA indicators defined by formulas (6) and (7) were selected. Optimized models were selected for the resulting model. Optimization was subject to the length of the sliding average time period. The test period ranged from 5 days to 20 days. The results showed that for all the selected variables the 5-day moving average was the most appropriate period for testing. Altogether 90 models with EMA indicator and 90 models with SMA indicator were tested. Accuracy was assessed based on the RMSE, MAPE, and MAE indicators. The model results are shown in Table 10.

Table 10 - Results of Accounting Experiment

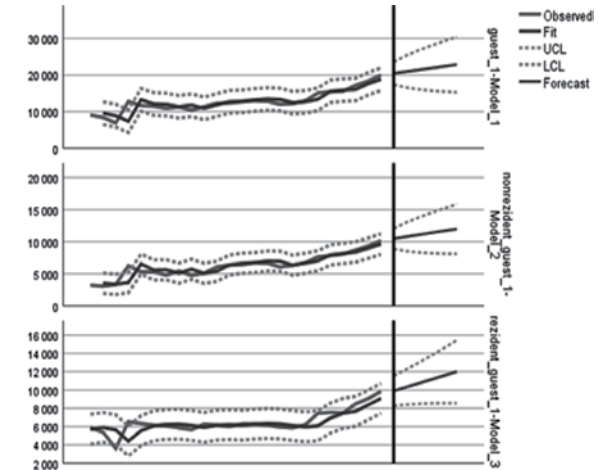
Model	Accuracy	The best Model of Expert Modeler	Technical Analysis Indicator's		
			The Best model of EMA 5-20	The best Model of SMA 5-20	
Guest	RMSE	ARIMA(0,1,0)	1488,913	3198,684	3139,76
	MAPE				
	MAE				
Nonresident Guest	RMSE	ARIMA(0,1,0)	761,39	803,7342	1742,756
	MAPE				
	MAE				
Resident Guest	RMSE	Brown Exponential Smoothing	788,62	872,3873	1483,918
	MAPE				
	MAE				
Number of Night	RMSE	ARIMA(2,1,0)	0,198	0,424535	0,405948
	MAPE				
	MAE				
Nonresident Number of Night	RMSE	Brown Exponential Smoothing	0,079	0,208974	0,255591
	MAPE				
	MAE				
Resident Number of Night	RMSE	Simple Exponential Smoothing	0,314	0,658352	0,579773
	MAPE				
	MAE				

Source: own

From the table, it is clear that the technical analysis indicators only surpassed conventional models based on exponential smoothing and ARIMA models. This is done using the EMA 5 indicator for resident guest and only when measuring accuracy using MAPE. Moreover, the difference to Brown's exponential smoothing was only very small. It is therefore appropriate to say that the suitability of the use of technical indicators is due in particular to their simplicity; the degree of accuracy of the classical models is insufficient.

In the next section, ex ante was also performed. Its results were recorded graphically in Graph 1 files for the number of guests broken down into residents and non-residents. Forecasting ex ante for the average number of nights spent in the accommodation facility is shown in the graph 2.

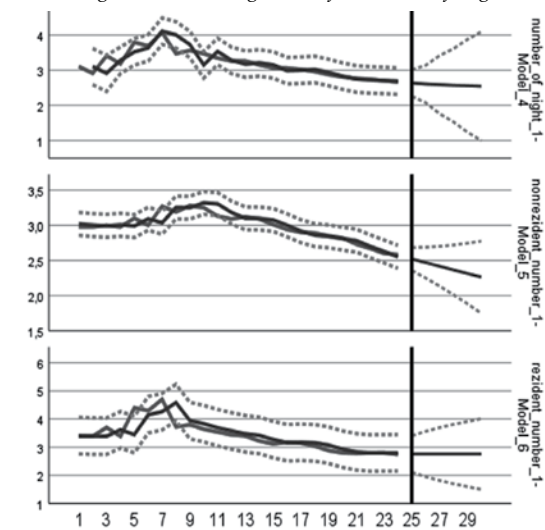
Figure 1 Forecasting ex ante for Number of Guests



Source: own

Graphs show that the number of guests will increase slightly with those accuracies. The obvious difference, however, is between the prediction of the number of residents and non-residents, where the numbers of residents will increase with the given accuracy more than for non-residents. Forecasting ex ante for the average number of nights spent in the accommodation facility is shown in the graph 2.

Figure 2 Forecasting ex ante for Number of Night



Source: own

Graph 2 shows that the average number of nights spent in one accommodation facility will drop slightly with a certain degree of accuracy. Again, there is a difference between residents and non-residents. While the average number of nights is likely to change considerably for residents, there is a clear decrease in the average number of nights for non-residents.

Conclusion

Therefore, the results can be generalized for the given sector and defined that the most suitable methods for prediction of phenomena in tourism in the Czech Republic are models based on exponential smoothing or ARIMA models for the given period. Other indicators of technical analysis, such as channel systems or oscillators, could also be the subject of further research (Kolková, 2017).

The methodology of the technical analysis indicators is in line with the principles of simplicity. The fairly easy principles that traders apply to securities and their derivatives can also be used in the corporate economy and in predicting their magnitudes. However, when using EMA and SMA, the accuracy does not reach the classical quantitative prediction models. An exception is only resident guest prediction using EMA 5 accreditations according to MAPE.

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FACTORS AFFECTING THE DEVELOPMENT OF SMEs (EXAMPLE FROM SLOVAKIA BASED ON PRIMARY RESEARCH IN NITRA REGION)

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Received 21. May 2018, Reviewed 30. June 2018, Accepted 16. June 2018

Abstract

The article deals with the factors affecting the development of SMEs based on primary research realised in Nitra Region. The aim of primary research was to provide a comprehensive assessment about different factors influences the enterprises as well as to verify the research question defined, formulate recommendations for future development of enterprises. Based on literature review we identify factors, which are considered to be important for the future development of SMEs. The questionnaire survey to verify the research question was conducted on a sample of 496 small and medium-sized enterprises. Basic and specific methods of research were used for data processing. The findings can contribute to quality improvement of the business environment in Nitra region.

Key words: Business environment, development, SMEs, Nitra Region, Slovakia

JEL Classification: M21, R11

Introduction

Exploration of the factors affecting the business environment in the various regions of the country is necessary for the formulation of recommendations to improve the economic situation in the country. The aim of the paper is to identify key areas for regional development based on factors influence the business environment of SMEs. The self-government regions of Slovakia show many differences. These differences are caused by several factors, e.g. geographical location, proximity to the state border, and others. After studying domestic and foreign literature dealing with the issue, on the basis of the prime data collection we define the factors affecting the business environment of SMEs in the region. We considered important that our selected county is within a reasonable distance from the biggest cities in Slovakia (Bratislava, Košice). Based on these pre-defined criteria we choose Region Nitra.

Enterprise as the basic unit of the country's economy is surrounded by the outside world, i.e. the business environment which can be defined as a social, economic and technical system, anything that may affect the enterprise itself.

The business environment according to V. Juričková is everything that surrounds the company, i.e. economic, political, institutional, legal, technological, ethical and also cultural conditions in which the business activity is realised and business process is conducted. (Juričková, V. et al., 2006)

Processing diagnostics of the business environment is important to consider the individual tendencies of the world environment. World environment of the business is characterized by internationalization, intellectualization, acceleration, flexibility, humanization, intensification, ecologization and elasticization (Duřová Spišáková, E. & Mura, L. & Gontkovičová, B. & Hajduová, Z., 2017). A process that is characterized by accelerating economic processes with the impact of scientific and technological development represents an acceleration, which results are applied primarily in production and trade, thus raise the rapid obsolescence of existing technology and equipment. Flexibility as the development trend of the world environment of the enterprise can be defined as a need for high adaptability of enterprise to volatile market conditions. (Belas, J. & Sipko, J. & Bilan, Y., 2015) Among world environment of enterprise is ranked intensification, which represents an effort to gain more effective evaluation of disposable sources, i.e. personnel, materials, equipments, funds, etc. resulting in increased efficiency of enterprise (Mura, L. & Ključnikov, A. & Tvaronavičiene, M. & Androniceanu, A., 2017). The global trend of ecologization has impact on the business environment, reflecting efforts to maintain and improve the environment. It is increasingly characteristics that those business activities are preferred, which fulfil demanding environmental criteria rather than economic criteria. (Majdúchová, H. & Neumannová, A., 2010; Freel, M. & Robson, P.J., 2017)

The structure of the business environment can be explored and analyzed at three levels:

- Macro environment – a summary of external factors that may affect the company.
- Micro environment – can be understood as a group of enterprises and individuals with whom the company has established contact and they directly influence its business activity.
- Internal environment of the enterprise – the internal business environment is considered to be e.g. marketing, production, innovation activities as well as the ability of the company to respond to external changes. (Šikula, M. 2006; Petru, N. & Novak, J., 2016)

Not all of the enterprises have interest in all the factors mentioned above and it is generally known that macro factors are mainly interesting for larger enterprises and investment companies, while smaller enterprises develop occasional interest in these factors, which directly affect their activities resp. the location of their activities. A. Neumann defines the so called meso-factors that are relevant for SMEs, because they represent a real daily contact with the spatial reality. Meso-factors are classified as the following: (Majdúchová, H. & Neumannová, A., 2010)

- natural environmental factors that affect the interaction of the entrepreneur, resp. the interaction of enterprise with its natural environment;

- technical and transport infrastructure, which focuses on the state of technical and support facilities with regard to the business activity;
 - general and economic culture, which consists of education, cultural maturity and positive attitude of the citizens to work and the need for entrepreneurship;
 - economic and business infrastructure i. e. developed banking services, consultation services, restaurants and other facilities;
 - pilot businesses, companies that encourage other business entities resp. influence the business environment with their activity.
- Considering the detailed investigation we can agree with the categorization.

Considering their equity options SMEs are more affected by market fluctuations. Their response to changes must be made more flexible, which is often regarded as a competitive advantage of SMEs. Due to their flexibility SMEs are able to meet the needs of the most demanding customers. Further benefit of SMEs is the potential of their employees, as they have more universal skills than employees of bigger companies. Enterprises involved in the research are the source of new technologies and innovations, resulting from the fact, that the authors of new innovations are usually independent innovators and small businesses (Strážovská, E. & Strážovská, L. & Pavlík, A., 2007; Apanasovich, N. & Heras, H.A. & Parrilli, M.D., 2016).

It is generally known that the advantages of SMEs are reflected in the region, as entrepreneurs invest their own capital and earn profit, as well as contribute to the recovery of the self-government region in large extent.

Barriers to business development of SMEs can be distinguished from different perspectives. In terms of time we can distinguish long-and short term barriers to business development. Long-term barriers are the following: improper fund contributions, lack of infrastructure and others. A typical short-term barrier example is the conversion of euro into other currencies. In terms of origin we can distinguish objective (e.g. financial crisis) and subjective (poor sales strategy) barriers to business development (Lorentz, H. & Hilmola, O.P. & Malmsten, J. & Srail, J.S. 2016; Šubertová, E., 2015).

Barriers to the development of SMEs in terms of their impact on the businesses can be divided into external and internal factors. External factors act as barriers from outside the company, e.g. legislation. Internal factors of barriers are based on the nature of the business and form the internal environment of the company. The most common internal barrier is the relationship between the owner and the company management (Russev, S. & Šubertová, E., 2013). Despite the considerable economic benefit of SMEs, we can also recognize some restrictions that apply to them. The barriers of SMEs could be summarized as the following (Majtán, Š. et al., 2009):

- negative social perception of the entrepreneur;
- less access to capital;
- entrepreneurship training;
- limited innovative capacities and low spending on research and development;
- administrative burden.

Barriers to the development of SMEs M. Sobeková-Majková (2011) divided into two groups based on whether the disadvantages are resulting from the nature of the business or specific business conditions in the Slovak Republic. A substantial part

of disadvantages arising from the nature of businesses form a limited access to finance resp. credit sources, which is caused by high-risk nature of SMEs and the limited ability of liability. Among problems arising from specific conditions of entrepreneurship in Slovakia, the author ranks high contribution burden of SMEs, the often changing and non-transparent legislation and the non-functioning capital market.

Barriers may affect businesses to extend, that may cause the disappearance of enterprise. Failure of the business can also be caused by insufficient analysis of the market, poor quality products, inefficient handling of funds, underestimation of the competition, even the lack of managerial skills (Král, J., 2012; Filipová, V. & Drozen, F. & Kubánová, M., 2016).

Material and Methods

The aim of this primary research is verification of the research question: Which factors of the business environment are important for the businesses involved in research to their future development? Based on the study of theoretical background, enterprises are influenced by many factors. These factors can be oriented on input, output resp. sales of the company or can be an instrument of the regional policy. To achieve a favourable future development of the company it is important to identify the factor and the extent to which the company is influenced by it. Questionnaire survey to verify the research question was conducted on a sample of 496 SMEs in Nitra Region from March to May 2015. When processing the data obtained, basic and specific research methods were used.

Based on research question the H0 hypothesis and H1 hypothesis as an opposite to H0 was formulated.

H₀: There is no significant relation between factors affecting the business environment and economic sectors.

H₁: There is significant relation between factors affecting the business environment and economic sectors.

To verify the research question a one-way analysis of variance (ANOVA) was used. The purpose of ANOVA (ANalysis Of VAriance) is to detect whether the different diametres of each group in our research sample are statistically significant or could be random.

Results and Debate

In primary research we focused on opinion of entrepreneurs on the business environment in Nitra region. The research questions are constructed to examine factors focusing on input, output, sales, instruments of regional policy and overall satisfaction with the business conditions in various districts of Nitra region and others.

Examination of the business environment of Nitra region we started with mapping the influence individual factors have on the enterprise. Studying the relevant literature we define 33 factors affecting the business environment and then have grouped the individual factors into 4 groups as the following:

- 1) Factors focused on input;
- 2) Factors focused on output;
- 3) Factors focused on sales;
- 4) Instruments of regional policy.

The opinion of respondents will be interpreted on the basis of main division of factors affecting the business. Respondents had to comment each factor, whether it affects or not the company involved in research.

Here we are the results of acquired data evaluation based on primary questionnaire survey. Respondents had to express their opinions about the defined factors affecting the business environment of SMEs. Based on responses from respondents we were using a basic and specific statistic method.

Table 1. One-way ANOVA – Factors focused on input

	Mean Square	Sig.	
Cost of real estate	Between Groups Within Groups	,917 ,236	,000
Rental costs	Between Groups Within Groups	,570 ,234	,019
Prices of raw materials	Between Groups Within Groups	,241 ,140	,103
Transport costs of raw materials	Between Groups Within Groups	,161 ,152	,386
Storage costs of raw materials, materials and supplies	Between Groups Within Groups	,678 ,243	,007
Employment vacancies	Between Groups Within Groups	,356 ,248	,189
Wage level	Between Groups Within Groups	,242 ,167	,182
Qualification of the workforce	Between Groups Within Groups	,638 ,224	,007
Attitude to work, e.g. loyalty, initiative	Between Groups Within Groups	,153 ,136	,345
Know-how	Between Groups Within Groups	,335 ,205	,123

Source: Primary research, own calculation using SPSS software

In case of factors focused on input, cost of real estate, rental costs, storage costs of raw materials, materials and supplies, qualification of the workforce, the P-value is less than the specified significance level, i.e. sig. < 0,05, which means, that for these factors null hypothesis is confirmed, so the difference measured in our sample is random. There is no correlation between the variables. For other factors such as price of raw materials, transport costs of raw materials, employment vacancies, wage level, attitude to work and know how is null hypothesis rejected and the alternative hypothesis is confirmed.

Table 2. One-way ANOVA – Factors focused on output

	Mean Square	Sig.	
Climatic conditions	Between Groups Within Groups	2,532 ,208	,000
Quality of inputs	Between Groups Within Groups	1,069 ,196	,000
Spatial proximity of cooperating enterprises	Between Groups Within Groups	,604 ,240	,015
Technical level of the machinery and equipment	Between Groups Within Groups	1,108 ,205	,000
Age structure of machinery and equipment	Between Groups Within Groups	1,186 ,224	,000
Energy intensity of equipment	Between Groups Within Groups	,423 ,230	,078
Licence	Between Groups Within Groups	,186 ,244	,620
Innovation potential	Between Groups Within Groups	,510 ,232	,034
Environmental legislation	Between Groups Within Groups	,867 ,240	,001
Special training of employees	Between Groups Within Groups	,604 ,244	,017

Source: Primary research, own calculation using SPSS software

In case of factors focused on output there is a little bit different situation because only two factors had significance level higher than 5%. It means that within factors focused on output such as energy intensity of equipment and license there is a relation between factors affecting the business environment and economic sectors. In case of license the relation is stronger.

Table 3. One-way ANOVA – Factors focused on sales

	Mean Square	Sig.	
Purchasing power of the population	Between Groups Within Groups	1,027 ,125	,000
Economic situation of the region	Between Groups Within Groups	,543 ,110	,000
Intensity of competition	Between Groups Within Groups	,242 ,122	,055
Transport costs	Between Groups Within Groups	,983 ,192	,000
Quality of transport infrastructure	Between Groups Within Groups	,797 ,240	,002
Enough qualified sales staff	Between Groups Within Groups	,235 ,251	,478
Well-developed marketing strategy	Between Groups Within Groups	,241 ,180	,232
Innovation in the company	Between Groups Within Groups	,408 ,172	,022

Source: Primary research, own calculation using SPSS software

Within factors focused on sales we defined significant relation between sales and intensity of competition, enough qualified sales staff and well-developed marketing strategy. The weakest significant relation is between sales and intensity of competition, and the strongest relation we found between the sales and the enough qualified sales staff. So it must be extremely important for SMEs to choose the appropriate strategy or method for selecting their future employees.

Table 4. One-way ANOVA – Instruments of regional policy

	Mean Square	Sig.	
Regional support institutions	Between Groups Within Groups	,336 ,243	,212
Regional support programmes	Between Groups Within Groups	,299 ,243	,286
Measures introduced by municipalities to protect the environment	Between Groups Within Groups	,611 ,228	,010
Local property taxes	Between Groups Within Groups	,594 ,229	,013
Local tax on motor vehicles	Between Groups Within Groups	,683 ,218	,003
Local taxes - others	Between Groups Within Groups	1,058 ,187	,000

Source: Primary research, own calculation using SPSS software

Based on one-way ANOVA analysis there is a significant relation between regional support institutions and regional support programmes as instruments of regional policy and the development of business environment and economic sectors. Based on the mentioned analysis it must be important to make contacts, partnerships with regional support institutions, because of the appropriate support program they could help SMEs to be competitive and also affect the business environment.

Considering the impact of regional policy instruments, we can declare, that majority of SMEs involved in research are not influenced by regional institutions or regional support programmes. However, it remains questionable why companies do not feel the impact of regional policy instruments. One possible reason is, that companies do not contact the regional policy institutions or they do not participate in any regional support programme.

Conclusion

Following the research objectives we have identified factors, which are considered to be important for the future development of enterprises in different economic sectors. Despite the fact that enterprises of Nitra region involved in the research represent different economic sectors and various factors influence them with different intensity, we can summarize, that the following measures are important to ensure the future development of these enterprises:

- Reduction of transport costs of raw materials and goods;
- Improving the attitude of employees to work (e.g. loyalty, initiative, etc.) and fixing an appropriate wage level;
- Improving the technical level and age structure of machinery and equipment mainly in enterprises of agricultural, industrial and construction sector;
- Improving the economic situation of the region in order to increase the purchasing power of the population.

Formulating measures taking into consideration the findings based on primary research we can conclude, that mentioned findings can significantly contribute to quality improvement of the business environment in Nitra region. We recommend to take into account the results of our research especially in formulating the future regional development plan.

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INNOVATION STRATEGIES IN THE SLOVAK ENTERPRISES

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Received 01. May 2018, Reviewed 25. June 2018, Accepted 04. July 2018

Abstract

The innovation itself is not a competitive advantage but the result of a complex system of its management, thus the enterprises should manage the innovations in a strategic, systematic and coordinated manner. The paper aims at defining the strategic approach towards the innovation management, identifying the prevalent innovation strategy type within selected sample of Slovak enterprises and its relationship to the size of the enterprise. First, the strategic approach to innovation management is characterised and different innovation strategies are identified and classified. Second, the innovation strategies in 70 Slovak enterprises are researched and the predominant strategy along with its relation to the size of the enterprise is revealed, tested and analysed. The documentary and reflective analysis of various literature sources, the questionnaire survey and selected mathematical and statistical methods are used in order to fulfil the objectives.

Key words: *innovation, strategic approach to innovation management, innovation strategy, proactive innovation strategy*

JEL Classification: O31, L26, M10

Introduction

Current era is typical for highly competitive global markets where the enterprises are forced to generate the profits based on the innovation activities. Innovation is considered to be an important factor conducive to the development of enterprises and their improved competitive advantage (Krašnicka, Glód & Wronka-Pošpiec, 2017). The effective and efficient system of innovation management leads to building and maintaining the competitive advantage of the enterprise. The enterprises should manage the innovations in a systematic and coordinated manner due to the fact the innovation itself is not a competitive advantage but the result of a complex system of its management. Also, Tidd, Bessant & Pavitt (2005, p. 37) write “although innovation is increasingly seen as a powerful way of securing competitive advantage and a more secure approach to defending strategic positions, success is by no means guaranteed”. “Innovation is a management question, in the sense that there are choices

to be made about resources and their disposition and coordination. Close analysis of many technological innovations over the years reveals that although there are technical difficulties – bugs to fix, teething troubles to be resolved and the occasional major technical barrier to surmount – the majority of failures are due to some weakness in the way the process is managed. Success in innovation appears to depend upon two key ingredients – technical resources (people, equipment, knowledge, money, etc.) and the capabilities in the organization to manage them” (Tidd, Bessant & Pavit, 2005, p. 80). The authors Havlíček, Thalassinos & Berezkinova claim that the core of the innovation management is a systematic approach to implementation of changes that should lead to improvement of the products, processes or position of the whole enterprise.

The innovation activities are a broad concept including people, processes and technologies, while these different parts could not be separated or separately managed. The innovation activities include, but are not limited to, in-house and external research and development (R & D), capital expenditure, human resource development, design and market development (Gault, 2018). The small and medium-sized enterprises (SMEs) represent a specific group of enterprises with, on one hand, a big potential for the development of the innovation activities, and on the other hand limited by the restrictions such as the access to the resources or the infrastructure for the innovation development. Innovation activities of SMEs should not be managed as a general version of innovation management of large enterprises, even though the smaller the enterprise the higher the action readiness, flexibility and the faster the decision-making process. The innovation management in SMEs should be focused on respecting the specificity of this group of enterprises, especially the lack of infrastructure for innovation management (people, equipment, finance...), but also the need for systematic approach to innovation management. As state McAdam et al. (2007), the effective development of innovation within SMEs requires both an understanding of innovation and the context of SMEs.

Theoretical background

The literature proves that for SMEs is adequate to apply a system approach in managing the innovation activities, which prevents the ideas from the effect of their spontaneous and uncontrolled generating without their implementation and feedback. The system approach and strategic approach in form of an innovation strategy seem to be the best way to manage the innovation activities in SMEs, even though the SMEs are typical for their uncontrolled and spontaneous approach towards the strategic management. The innovation strategy is a necessary prerequisite for the success of innovation activities in the enterprise. Also, Havlíček, Thalassinos and Berezkinova (2013) claim, the innovation management is based on the innovation strategy that must respect the business strategy, meaning the enterprise’s long-term missions, visions and targets. The content of the term “innovation strategy” is derived from the content of the general term “strategy”, thus it is the setting of the objectives and the ways how to achieve them, with the emphasis on the innovations. The innovation strategy is a partial strategy, it is a part of and must correspond to the complex overall business strategy. The innovation strategy is a management concept, consisting of many internal and external activities that enhance the innovative potential of the business (Lendel & Varmus, 2012). Akhlagh et al. (2013) also argue the innovation strategy guides decisions on how resources are to be used to meet the enterprise’s objectives for innovation and, thereby deliver value and build competitive advantage. According to Kazantcev & Pakhomova (2014), it is “the whole spectre of decisions that is addressed to achieve

company’s objectives in innovation activity”. The innovation strategy is the choice of the behaviour pattern of the enterprise and the taxonomy is based on the grouping of these behavioural patterns according to the common characteristics. Each type of strategy is considered as a way of action, line or direction of movements towards the goal achievement (Kazantcev & Pakhomova, 2014). Innovation strategies have been regarded as having a pivotal role in enhancing performance, market advantage, sales growth and profitability (Sandvik et al., 2014, in Hilman & Kaliappen, 2015).

Although the holistic approach to the innovation strategy is often missing in the literature as most of the researchers focus on one or several aspects of innovation strategy (Laursen & Salter 2006; Cassiman & Veugelers 2002; Zahra 1996, in Kazantcev & Pakhomova, 2014), the literature offers severe typologies and classifications of the innovation strategies (Table 1).

Table 1 The types of innovation strategies

Authors	Typology/strategy types
Kazantcev & Pakhomova, 2014	Morphological matrix of the innovation strategies, based on two components: innovation development dimensions (product novelty, technological and marketing innovations) and the innovation activities realisation – behaviour (structure of innovation activities, international orientation of innovation activities in terms of collaboration, structure of R&D partnership).
Venkatraman, 1989; Yilmaz, 2008, in Akhlagh et al., 2013	Six types of innovation strategies: aggressive, analyser, defensive, futuristic, proactive, risk taking. Based on the research, the authors found out that the proactive and futuristic strategy are the most suitable for creation and development of diversity in the performance of the enterprise.
Guan, et al., 2009 in Akhlagh et al., 2013	The following strategies were identified: leading innovator, follower, imitator, defender, technology importer.
Nielson, 2013	The strategies can fall into one of these four types or a combination of these types: breakthrough (a large, discrete step change in performance, technology and value provided to users), sustaining (incremental value gain over existing solutions available to users), new market (existing product applied in a new way for previously unrelated customers) and disruptive (simple, easy to use product intended for the masses at a much lower cost).
Cornell, 2012	The strategies are based on the open innovation concept and are suitable for small and medium-sized enterprises: inward and collaboration open innovation (commercialising SMEs), collaboration open innovation (collaborative SMEs), inward, outward and collaboration open innovation strategy (versatile SMEs), outward and collaboration open innovation (inventive SMEs).
Bowonder et al., 2010	The authors have identified 12 important strategies in 3 areas (customer excitement, competitive leadership and portfolio enrichment) in order to help transform innovations into the reality: platform offerings, co-creation, cycle time reduction, brand value enhancement, technology leveraging, future-proofing, lean development, partnering, innovation mutation, creative destruction, market segmentation and acquisition.
Rothaermel & Hess, 2010	The enterprises can decide to implement one of the four innovation strategies: recruiting and retaining superior human capital, internal R & D spending, strategic alliances, acquisitions.

Dodgson, Gann & Salter, 2008	The authors identified and classed four basic types of innovation strategies: the proactive, active, reactive and passive.
Popescu, 2005	The author has identified various possible strategies mostly for emerging markets: adapting existing products to local markets (defeaturing), developing new products to local markets (frugal innovation – functional, robust, user-friendly, growing, affordable and local), innovation and new product development from emerging markets targeting developed markets (reverse innovation).
Baldwin & Johnson (1997)	The authors differentiate four basic strategies as follows: product innovator, complex innovator, process innovator and no-innovator.
Porter, 1985	According to author, the business can maximise performance by using these three basic generic strategies: low-cost production, differentiation or focus.
Miles & Snow, 1978	Prospector (seeks new markets), analyser (operates in a cost-efficient but innovative manner), defender (stresses cost reduction) and reactor (maintains status quo and reacts under the pressure from outside).

Source: Own processing.

To make it easier, we can define three basic innovation strategies of the enterprise: the strategy of the product innovation, the strategy of the process innovation and the strategy of the combined innovation. Especially the SMEs should take into consideration the environment where they operate and other factors influencing their activities. They can consider the usage of the open innovation strategies, which seem to be suitable for this type of enterprise. For example, Vlček (2010) identified following four types of innovation strategies, which are suitable for SMEs: the strategy of product and process innovation – includes the strategy of product innovation and the strategy of process innovation itself; the strategy of innovation complexity – this is divided into the simple innovation strategy and the complex innovation strategy; the strategy of stimulating innovation setting – this strategy consists of two types, the inefficiency elimination strategy, the dominant feature strategy and the total innovation strategy; and the strategy of competition – the strategy of maximising the current value for customer (red oceans) and the strategy of maximisation the new value for customer (blue oceans). Then, Molnár & Bernat (2006) introduced the innovation strategies for SMEs based on the results of SWOT analysis: disruptive innovation strategy, asymmetric targeting, innovation sub-contractor strategy and clustering.

The investments into the research and development were considered to be the basic elements of the innovation strategy. Later, the innovation strategy became to be considered not only the investment into R & D but started to include the search for internal and external sources of knowledge, project partnerships and the outsourcing of the innovation projects as well as the protection of the innovation results or outcomes (Dosi, 1988; Veugelers & Cassiman, 1999, in Kazantcev & Pakhomova, 2014). The literature (especially the specialised one) identifies different classifications of strategies (Díaz-Fernández, López-Cabrera & Valle-Cabrera, 2014). The enterprise should choose the innovation strategy with regard to its objectives, the size and branch, or to the outside and inside environment. The innovation strategy can be a strength or a weakness of the enterprise. Also, Bouwman et al. (2017) argue that depending on their selected strategy, enterprises are facing different kinds of uncertainties that may affect the viability of their business area and suggest that these uncertainties should be taken

explicitly into account when developing the innovation and the business model. It is also recommended to know the regional innovation strategy or the innovation strategy of the country or the union of countries (e.g. EU), as they usually influence the business innovation processes which, consequently, can be appropriately managed.

Material and Methods

The innovation strategy is a tool which helps enterprises to focus and make proper decisions about further steps. Without innovation strategy, the innovation management is ineffective as the enterprise does not know the innovation objectives and the ways how to achieve them. The main aim of the paper is to research the prevalent innovation strategy within the Slovak enterprises and to confirm the assumption that the innovation strategy is dependent on the size of the enterprise. This aim was divided into three partial objectives:

1. To discuss the strategic approach to innovation management and to present the empirical knowledge on innovation strategies, including their typology and classification.
2. To identify various typologies of innovation strategies, also with the focus on the strategies suitable for small and medium-sized enterprises.
3. To research and analyse the prevalent innovation strategy within the sample of Slovak enterprises (including the hypothesis testing).

Based on the main aim and the partial objectives, we set the research question: “What is the most prevalent innovation strategy type in the enterprises in Slovak Republic?” and the hypothesis as follows: H_1 - There is a positive and statistically significant relationship between the prevalent strategy the enterprises apply and the size of the enterprise. For the purposes of this paper, the four basic types of innovation strategies based on the work of Dodgson, Gann & Salter (2008) will be taken into consideration: the proactive strategy, the active strategy, the passive strategy and the reactive strategy. We consider the proactive and active strategy to be on the active side of the strategic approach, while the passive and reactive strategy are regarded the passive strategic approach to the innovations. We also used the “no strategy” strategy in the questionnaire as we assumed that the larger the enterprise, the most likely it applies some of the active innovation strategies (the leader and the follower strategy) rather than the passive one (the adopter, the defender or “no strategy” strategy).

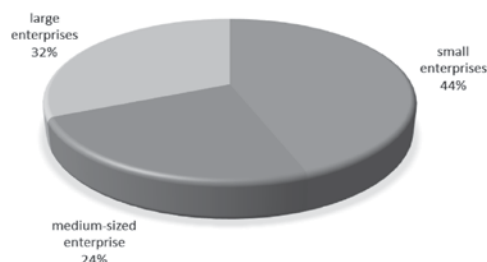
In the paper, the documentary and reflective analysis of various literature sources were used to fulfil the first and second partial objectives. The third partial objective was achieved by using selected mathematical and statistical methods and conducting the questionnaire survey. The results of the secondary research and empirical knowledge on management of innovation were presented by using the methods of analysis, synthesis, comparison and generalisation. We examined specific items of qualitative character from the questionnaire and the methods used to process the answers were based on the analysis of qualitative statistical variables (the size of the enterprise and the innovation strategy of the enterprise). The statistical variables of multinomial character were taken into consideration and the significance level of 1 %, 5 % and 10% was used ($\alpha = 0.01; 0.05$, and 0.1) in order to find the statistical association between the two statistical variables.

Results and Debate

In order to fulfil the research objectives and to confirm the hypothesis, we elaborated the questionnaire survey aimed at the usage of the innovation strategy within the selected sample of Slovak enterprises. Four basic strategy types based on the work of Dodgson, Gann and Salter (2008) and one extra type of “no strategy” strategy was taken into consideration. We assumed that there is a positive and statistically significant association between the applied innovation strategy (five innovation strategy types) and the size of the enterprise (three sizes of the enterprises – the small, medium-sized and large), hence the larger the enterprise, the most likely it applies some of the active strategies rather than the passive ones.

Total of 70 small, medium-sized and large enterprises undertook the procedure of answering the research questions. The structure of the respondents (enterprises) was as it is shown on the graph 1.

Graph 1 The sample structure



Source: Own processing.

The small enterprises represented 44 % (31 out of 70 enterprises), the medium-sized enterprises represented 24 % (17 out of 70 enterprises) and the large enterprises constituted 31 % (22 out of 70 enterprises) of respondents.

Elaborating the data from the questionnaire, we obtained following frequency distribution of the items expressing the innovation strategies in the enterprises (graph 2).

Graph 2 Innovation strategies in Slovak enterprises



Source: Own processing.

As it is obvious from the graph 2, the most prevalent innovation strategy in the Slovak enterprises is the proactive (leader) strategy (claimed by 29 % of respondents). The results are surprising, because the enterprises with the proactive innovation strategy tend to have a strong research orientation and are the technology market leaders. This is quite incompatible with the results of the innovation performance of the country as the investments into the research and development are one of the weaknesses of the Slovak enterprises. Also, taking the European Innovation Scoreboard 2017 (EIS 2017) into consideration (Hollanders & Es-Sadki, 2018), the Slovak enterprises tend to have some difficulties in the R & D area and the firm investments' indicator shows that the innovation performance relative to the EU was at the level of 27.8 % which is quite below the EU average score.

The second most used is the “no strategy” strategy (claimed by 27 % of respondents). As the sample consists of 44 % of small enterprises, the “no strategy” approach of the enterprises was expected. The innovation strategy is a specific part of the business strategy and the small enterprises are often characterised by “no-strategic-approach”, which means they do not implement the business strategy as well as its parts (such as the financial, production, marketing or innovation strategy). Comparing these results with the research carried out by Lendel & Varmus (2012) during the years 2009-2011, we can state that within the sample of 348 medium and large Slovak enterprises the current state of implementation of innovation strategies was as follows: 17.75 % of respondents did not deal with the issue of the innovation strategy, 8.66 % of respondents were in the phase of the study, 9.52 % of enterprises were in the process of deciding on the significance of the strategy for the business, while 28.57 % of surveyed enterprises were trying to implement the strategy into practice and 35.5 % said that the strategy was fully utilised. At the same time, answering the question on the intensity of approach to the innovation strategy, 32.90 % of interviewed enterprises replied they did not apply the innovation strategy. These results lead us to the conclusion, that the enterprises might have the problem with understanding the nature of the strategic approach to innovations and the innovation strategy itself. This was also revealed by Lendel & Varmus (2012), as they claim “the biggest problem is the correct understanding of the fundamental of innovation strategy, which is only average. Correct understanding referred only 12.34 % of respondents. Our obtained results also imply that the enterprises tend to evaluate their innovation strategy more positively than is the reality (or than they might have been evaluated by the independent third party). The reasons can be two: the misunderstanding of the innovation strategy nature and/or the short characteristic of the strategy in the questionnaire. The positive formulations (statements) in the active strategies (active approach to the innovations) rather than much more negative characteristics of the passive strategies (passive approach to the innovations) could have influenced the results.

The active strategy is the third most used within the enterprises (20 % of respondents); and is characterised by being prepared to quickly response to the markets needs, following the leaders on the market. The strategy uses mainly in-house applied research and development of incremental innovation. Comparing the results with the data from Community Innovation Survey 2016 (Hollanders & Es-Sadki, 2018), the Slovak Republic performed better in 2016 than in 2014 in four indicators, the SMEs innovating in-house being among them, which supports the results of our research. Within the enterprises, the least used innovation strategies are the reactive strategy (16 % of respondents) and the passive strategy (8 % of respondents). The reactive strategy is used by the enterprises which have a wait-and-see approach and focus on operations rather than the long-term strategy. The innovations developed by the defenders are

mostly incremental and copied (based on the innovations of the competitors). The passive strategy is the least one used among the enterprises and is suitable for specific sector (industry) where the enterprises just wait for the change demand from the side of the customers (e.g. automotive industry). The results might be impacted by the fact that just 6 out of 70 respondents (8.8 %) belong to the automotive industry.

Proceeding with the elaborations, the hypothesis can be confirmed. The next table (table 2) shows the frequency distribution of the items (strategy types among the three different sizes of the enterprises) and the chi-square calculations for further analysis.

Table 2 The chi-square calculations

	Small	Medium	Large	Row totals
Proactive (leader) strategy	7 (8.86) [0.37]	2 (4.86) [1.68]	11 (6.29) [3.54]	20
Active (follower) strategy	8 (6.64) [0.28]	3 (3.64) [0.11]	4 (4.71) [0.11]	15
Passive (adopter) strategy	1 (2.21) [0.67]	2 (1.21) [0.51]	2 (1.57) [0.12]	5
Reactive (defender) strategy	6 (4.87) [0.26]	4 (2.67) [0.66]	1 (3.46) [1.75]	11
No strategy	9 (8.41) [0.04]	6 (4.61) [0.42]	4 (5.97) [0.65]	19
Column totals	31	17	22	70 (Grand Total)

Source: Own processing.

To confirm the hypotheses, the calculations above were made. We elaborated the 3x5 contingency table and used the 0.05 significance level. The absolute values (the observed cell totals) are in the table along with the expected cell totals (in brackets) and the chi-square statistics for each cell (in square brackets). As the table shows, the distribution of observations for one variable is almost similar for all categories of the second variable. As we can see in the table 2, 11 out of 22 large enterprises do use the proactive strategy while 9 out of 31 small enterprises do use the “no strategy” strategy. The contingency table test was used to identify the association between the applied innovation strategy and the size of the enterprise. The calculated p-value equals 0.1921, while the chi-square statistic is 15.5073, thus the results is not significant at $p < 0.05$.

We conclude that the null hypothesis should be confirmed, hence the size of the enterprise and the type of used innovation strategy are statistically not dependent at all. We also admit, that the differences between the values in the cells are still very small and the condition of minimum value 5 in each cell of the table was not kept, which could have influenced and limit the results. Our assumption that these two variables are in mutual relationship is not confirmed, even though the table shows that the large enterprises mostly use the proactive strategy and the small enterprises mostly use the “no strategy” strategy. This is in compliance with the expectations and the literature which claims the small enterprises have a very spontaneous approach to the management of innovations and they don’t even implement a business strategy and the partial strategies (such as the innovation one) whatsoever. However, we still consider

the innovation strategy to be the important part of the overall enterprise strategy and the important prerequisite for the long-term performance of the enterprise. We can also state that there is no only one “right” strategy for every enterprise, but the enterprises should implement the strategy which is most suitable to their objectives and to their context (e.g. the inside and outside environment in which the enterprise operates), especially the SMEs. The more appropriate the strategic orientation of the enterprise, the more likely it makes the use of the market opportunities. The enterprises, especially the SMEs might not depend on sophisticated strategy (or strategic plans), but the strategic consciousness can lead them towards the success.

Conclusion

The main aim of the paper was to research the prevalent innovation strategy within the Slovak enterprises and to confirm the assumption that the innovation strategy is dependent on the size of the enterprise. Without innovation strategy, the innovation is solely the spontaneous and uncontrolled activity of the enterprise, which can lead to low innovation performance results and/or to not meeting the objectives of the overall business strategy. The strategic approach and its importance for the innovation management was discussed and the empirical knowledge on innovation strategies including their typology was theoretically presented. The literature proves that the small and medium-sized enterprises should focus on different strategies than the large enterprises due to the fact that they usually have some limitations of the strategy implementation (e.g. lack of resources).

We used various mathematical and statistical methods in order to answer the research question and test the hypothesis. We consider the size of the sample to be the research limitation as some of the values in the cells were very small and the condition of minimum value 5 in each cell of the contingency table was not abided by. Based on the research results we can conclude that the most prevalent type of innovation strategy in the Slovak enterprises is the proactive (leadership) strategy, but there is no statistically significant relation between the type of the strategy and the size of the enterprise. The “no strategy” strategy is also popular among the enterprises, mostly the small-sized ones, which is connected with the previously mentioned limitations of the strategic approach implementation (i.e. the small-sized enterprises have the size-related issues which they need to face, such as the lack of resources and no strategic orientation).

We came to the conclusion that the questionnaire survey results are quite unexpected as the proactive innovation strategy is typical for strong research orientation and technology market leadership. The result is in contrary to the statistics of the European Commission, as at the country level there is the weakness of our innovation performance in form of low level of R & D investments. This indicates that the enterprises might have considered their current strategy being more proactive than it really is in the practice. Almost the same number of respondents claimed they used the “no strategy” strategy which correspondents to the reality as well as to the sample structure (44 % of respondents were small enterprises) even more. Although the findings did not confirm our hypotheses, this research shed light on how important the strategic approach to the management of innovation in the enterprises is.

Thus, the future research can be oriented on following areas: what are the prevalent strategic types in the enterprises when compared to the previous secondary

research in the Central European area, what is the relationship between the type of the innovation strategy and other characteristics of the enterprises (such as the branch, the enterprise's main office or how long it operates on the market), what are the main factors influencing the innovation strategy preparation and implementation, what are the barriers of the innovation strategy realisation, what is the role of information and information technologies in context of developing and implementing the innovation strategy, or how to support the strategic orientation of the small and medium-sized enterprises towards the innovation. It is very important that the enterprises are aware of the innovation and innovation strategy which can be critical prerequisites for their long-term success.

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REASONS OF THE EMPLOYEES' STABILIZATION IN HOTELS IN SLOVAKIA

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Received 18. February 2018, Reviewed 05. April 2018, Accepted 09. May 2018

Abstract

The aim of the paper is to present the views of experts on personnel stabilization and to specify statistically significant factors that influence the decisions of employees to stay in hotels. A precondition for achieving the stated aim is to conduct a survey in the form of a structured questionnaire with managers and employees of chain and independent hotels in Slovakia. The survey was conducted in 2018. The views of managers and employees on solving problems associated with increasing fluctuation and the need to stabilize competent and efficient employees are assessed considering the current theoretical knowledge and the situation on the labor market in the Slovak hotel industry. The result of confrontation of managers and employees' views on stabilization is the adoption of generalizing conclusions and recommendations. The realization of these recommendations will enable to achieve the improvement in personal stabilization.

Key words: *employee retention, employee turnover, hotel, establishing employment, hospitality industry*

JEL Classification: M12, J62, L83

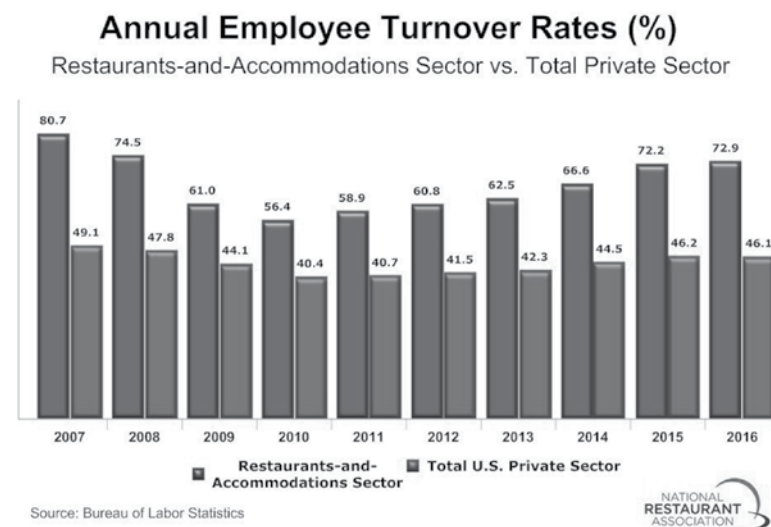
Introduction

The hospitality industry is a business sector that provides services, such as food, drink, and lodging to an individual or group of people outside of a private home (Chon, Barrows, & Bosselman, 2013).

Constant movement and change of domestic and foreign customers increases the demand for services, communication, hygiene and personal service for customers. Hotel employees are required to have disciplined approach to customers, taking responsibility for quality performance and customer satisfaction (Malachovský, Knižka, 2015). According to Kampf et al. (2017) customer satisfaction, service quality and relationship management are among measures of success in dealing with the customer point of view. The specific character of provided a product to customers requires from employees not only to provide adequate results but also to behave well (Mura et al. 2017). High quality of employees on every hotel department is the condition for customers' satisfaction. The leaving of employees from the hotel is negatively reflected

mainly by the loss of customers and business partners, the dissipation of knowledge, possible escape of sensitive information and business secrets (Armstrong, Taylor, 2015; Hitka et al. 2015). According to The National Restaurant Association's Chief Economist Bruce Grindy, „The turnover rate for employees in the restaurants-and-accommodations sector was 72.9 percent in 2016, compared to a 46.1 percent turnover rate in the overall private sector.“ The turnover figures (graph 1) presented are for the Accommodations and Food Services sector (NAICS 72). The link between turnover and satisfaction in the hospitality industry indicates that many employees are unhappy.

The rising fluctuation is reflected by the temporary productivity reductions, increased costs of maintaining functional processes, increased replacement costs for outgoing employees, a sense of insecurity of remaining employees, congestion and increasing dissatisfaction, or a bad image of the hotel as an employer (Phillips, Connel, 2003). According to Chesser (2015), replacing a staff member is time consuming and expensive. Replacement has a direct impact on the quality of the product and service delivered to the guest due to the ramp-up time required for a new staff member to achieve 100% mastery of processes and procedures. We are of the opinions that it is far better and more cost effective to invest in current staff members rather than constantly hiring, adapting and training new people (Riley, 1996; Su, 2014, Wilton, 2016). Job satisfaction is one of the important factors to improve employee retention in hotels. The link between turnover and satisfaction in the hospitality industry indicates that many employees are unhappy.



Stabilization in the hotel industry is investigated by many foreign and domestic authors (Cho et al., 2006; Davidson et al., 2006; Vetrakova, Kubala, 2016, and others). The essence of stabilization is to take and implement measures to reduce the leaving of competent employees in a way that creates the conditions for the growth of the hotel's performance, the satisfaction of both customers and employees. Carsen (2002) adds that the hotel should try to achieve the maximum stabilization of

high quality employees and those who are hard to replace after leaving. Keeping or losing the best employees can be critical to whether a hotel can maintain a competitive advantage and whether operations in the hotel run smoothly and efficiently. Employee retention is the ability of a hotel to retain its employees (Cardy & Lengnick-Hall, 2011). Simply stated, if the best employees are not retained, hotel can be negatively affected from the operational to the strategic level.

Material and Methods

Negative effects of the fluctuation are reflected in a decrease in service quality, in employee recruitment costs, and increased customer dissatisfaction. Recognizing the causes of fluctuation of skilled employees will help the managers to find ways to attract and retain skilled labor force, and at least partially prevent fluctuation. Based on prior scientific knowledge and practical experience, we formulate the subject, object, and scientific goal of exploration. The subject of the survey is personnel stabilization in chain and independent hotels operating in Slovakia. The object of the survey are selected chain and independent hotels operating in Slovakia.

The aim of the paper is to examine the current state of management and stabilization of employees in independent and chain hotels operating in Slovakia and to identify factors that significantly affect the decision of employees to stay at the hotel. We will achieve the stated goal by carrying out the following steps:

1. To find out the reasons for the voluntary departure of employees and work dissatisfaction in the surveyed hotels. We will rate the job fluctuation by comparing the survey results. The opinions of employees will be confronted with hotel managers.
2. In determining the combination of factors that have the most significant effect on personal stabilization of employees, we assume that hotel staff perceives these factors as the processes that contribute to their development, job satisfaction and decision to stay at the hotel (1), the top managers perceive them as processes that best meet the hotel's strategic goals in terms of achieving work performance and quality of service (2).
3. After evaluating the survey results obtained through the sociological survey of employees and managers, we will identify human resource management processes that have the most significant influence on the personnel stabilization of hotel staff.
4. Based on the assumption that human resource development and career development contribute to employees' job satisfaction and reduce the level of fluctuation, we verify the link between the career development and employee stabilization.

Base on the theoretical knowledge, we will combine the aim of exploration with the formulated hypotheses. The main scientific hypothesis (Ho) is the claim that the current state of staff stabilization in hotels is not in line with the expectations of employees. By partial hypotheses we confirm or do not confirm this dependency. We assume that:

- H₁: In the chain and independent surveyed hotels there are differences in reasons of working dissatisfaction and causes of fluctuation.
- H₂: There is a correlation between the career development of employees and their stabilization in the hotel.

H₃: The age of employees has a greater impact on their stabilization than their wage valuation.

H₄: The employee stabilization system is more used in chain than in independent hotels.

The set hypotheses will be evaluated based on the results of the primary survey. Structured questionnaires will address to employees and managers working in chain and independent hotels. We will compare the opinions of employees with the opinions of top hotel managers. We will evaluate the obtained results by selected mathematical and statistical methods using Excel and SPSS (Statistical Package for Social Science). The choice of statistical methods is dependent on the nature of the characters being investigated and, above all, on the purpose of their analysis. We will rely on the various types of statistical tests to verify the truth of the hypotheses. The existence of dependence between characters will be verified by the Spearman's coefficient of sequence correlation, and we will also use the Mann-Whitney test.

A survey was made up of hotels in Slovakia. According to statistics of the Slovak Tourist Agency, 635 hotels were registered in Slovakia in 2016 (www.sacr.sk, 2016). The survey excluded hotels of the class of one and two stars. The whole base file of hotels in Slovakia ranks three or more stars and consists of 429 hotels. We addressed managers of 250 hotels, with a total of 128 respondents willing to participate, including 48 managers and 80 hotel staff. The return of the questionnaires is 51%. The survey was conducted through a questionnaire survey method. The questionnaire was designed for two groups of employees, namely a group of managers and a group of staff members.

Table 1 Research sample

Identification data		Absolute (count)			Relative (%)		
		Managers	Employess	Together	Managers	Employess	Together
Gender	Men	36	35	71	75	43,75	55,47
	Women	12	45	57	25	56,25	44,53
Age	18-25	0	15	15	0	18,75	11,72
	26-35	30	20	50	62,5	25,00	39,06
	36-45	6	25	31	12,5	31,25	24,22
	46-55	6	16	22	12,5	20,00	17,19
	56 <	6	4	10	12,5	5,00	7,81
Education	Lower secondary	0	5	5	0	6,25	3,91
	Upper secondary	0	50	50	0	62,5	39,06
	Bc.	4	15	19	8,33	18,75	14,84
	Mgr./Ing.	40	10	50	83,33	12,5	39,06
	PhD.	4	0	4	8,33	0	3,13

Salary brutto	550-800	0	20	20	0	25,0	15,6
	801-1000	8	45	53	17,0	56,25	41,4
	1001-1300	6	15	21	13,0	18,75	16,4
	1301-1600	16	0	16	33,0	0	12,5
	1601 <	18	0	18	38,0	0	14,1

Source: own research

Up to 75% of respondents work in independent hotels and 25% in chain hotels. Nearly half of the respondents (47.66%) work in conference, 18.75% in wellness hotels, 15.63% in hotels with the castle character, 14.84% in mountain hotels and 3% in boutique hotels. The survey was attended by 82% of employees and managers of four-star hotels, and 18% were employees and managers of three- and five-star hotels. The largest respondents were from Banskobystrický region (26.56%), Bratislava (24.22%) and Žilinský region (22.66%).

Results and Debate

The factors of leaving the work of which we examine the significance are divided into four subgroups: working, personal (professional), organizational (management) and family. For each factor, we calculated the arithmetic mean, median, and modus. The results of the questionnaire survey showed that there are differences in the perception of the significance of the factors that affect the departure from employment between managers and employees, especially in the group of work (table 2) and personal (professional) reasons. At the test level of 0.05, the Mann-Whitney test confirmed that there were differences between the perceptions of reasons for leaving the job between managers and employees.

Table 2 The most significant work factors affecting the leaving of employees from job

Managers								
	hard work	boring work	poor workplace equipment	unsatisfactory work conditions	working time planning	overtime	dissatisfaction	overstaffed
Arithmetic mean	2,67	2,00	1,67	2,25	3,50	2,50	2,83	1,58
Median	3,00	2,00	1,00	2,00	3,00	2,00	2,50	2,00
Modus	4,00	1,00	1,00	2,00	3,00	2,00	2,00	2,00
Employees								
Arithmetic mean	2,81	2,94	2,50	2,94	2,94	2,38	3,06	1,94
Medián	3,00	3,00	2,00	3,00	3,00	2,00	3,00	2,00
Modus	3,00	2,00	2,00	3,00	4,00	2,00	3,00	2,00

Source: own research

The employees perceive as the most significant factor of leaving the work - the dissatisfaction with working conditions and hard work, while managers perceive as the most significant factor an inappropriate and demanding distribution of working time. The managers mostly change their job because of a better offer from another company and the perspective of a better job abroad. The employees mostly change their job because of minimum prerequisites for career development, opportunities for self-employment and perspective of a work abroad (Table 3).

Table 3 The most significant personal (professional) factors affecting the leaving of employees from job

Managers						
	inability to use education	the impossibility of further education	minimum career assumptions	the impossibility of self-realization	perspective abroad	a better offer from another company
Arithmetic mean	2,17	2,25	2,75	2,58	3,33	4,00
Median	2,00	2,00	2,50	2,50	3,00	4,00
Modus	3,00	1,00	2,00	3,00	3,00	4,00
Employees						
Arithmetic mean	3,00	3,25	3,56	3,44	3,06	3,56
Median	3,00	3,00	4,00	3,00	3,00	3,50
Modus	3,00	2,00	2,00	3,00	4,00	3,00

Source: own research

Consistency in opinions about the fluctuation factors was reported by employees and managers in the group of family reasons, where health reasons prevail, and in a group of organizational (management) reasons, low wages and non-transparent remuneration prevail. Fluctuation factors document work dissatisfaction. That is why we were interested whether it is possible to predict if these reasons are different in chain and independent hotels. We have verified this fact through the Mann-Whitney test. The test showed a significance level of less than 0.05 in three cases - labor, personal and family reasons. The results of the test allow us to confirm the H1 hypothesis that the chain and independent hotels surveyed show differences in reasons of work dissatisfaction and the causes of fluctuation - work, personal (professional) and family reasons play a significant role, especially in independent hotels

Stabilization of managers and other employees is a prerequisite for achieving a certainty and performance of the hotel, but the degree of stabilization has its limitations. The most significant factors that support the stabilization of employees and managers are in Table 4.

Table 4 The most significant factors of employees stabilization

Managers											
	transparent remuneration	The possibility of self-realization	set business culture	more leaders than managers	more leaders than managers	personal development and career development	wage increase during a career	reassessment of the employee's job description	engaging staff in management	work on changing the organizational culture of the hotel	measurement of employee satisfaction
Arithmetic mean	4,17	3,33	4,25	3,75	4,33	3,92	3,92	2,83	3,00	2,83	3,33
Median	4,00	3,00	4,00	4,00	4,00	4,00	4,00	3,00	3,00	3,00	3,50
Modus	4,00	3,00	4,00	4,00	4,00	4,00	5,00	3,00	3,00	3,00	4,00
Employees											
Arithmetic mean	4,19	3,63	3,88	3,38	4,38	4,19	4,63	3,50	3,44	3,00	3,44
Median	4,00	4,00	4,00	3,00	4,50	4,00	5,00	3,00	3,00	3,00	3,00
Modus	4,00	4,00	4,00	3,00	5,00	4,00	5,00	3,00	3,00	3,00	3,00

Source: own research

Examined stability factors are considered important by respondents with minimal differences in attitudes among managers who prefer feeling of value and recognition while employees prefer the opportunity to raise wages during their career. The relationship between the stabilization of employees and managers and the development of their careers was verified using the Spearman coefficient. Managers are stabilized if they are fairly rewarded, have opportunities for self-realization and have a well-established corporate culture. The dependence between career development and stabilization has not been confirmed, as most of the hotels surveyed are in the top management position. On the contrary, for employees, this assumption was confirmed.

We verified the impact of transparent and fair remuneration on the work done in combination with the age of employees. The Spearman coefficient confirmed the dependence of employee stabilization on the age of employees. In this case, the materiality level was less than 0.01. We can say that the older the employees are, the more stable they are. Dependence on the average monthly gross wage was not confirmed. The results of the survey show that the age of employees has a greater impact on their stabilization in hotels than the remuneration.

The subject of the verification was also the opinions of managers and employees on personnel stabilization in chain and independent hotels. Respondents expressed their agreement with the previously submitted claims in the Likert rating scale: 1 - I fully agree, 2 - Agree, 3 - Do not agree, 4 - Totally disagree. To evaluate

the question, we used the mean, modus, median values (Table 5). It is clear from the calculated median that managers agree with the claim that wages have the greatest impact on employee stabilization (median 1), with most employees disagreeing with this claim (median 3).

Table 5 Managers 'and employees' opinions on the statements

Managers	Mean	Median	Modus
If the employee has the opportunity to develop his / her career, he / she is a stable employee of the hotel.	1,92	2,00	2,00
Transparent remuneration of job results has the greatest impact on employee stabilization	1,50	1,00	1,00
Chain hotel staff are more satisfied with work than independent hotel staff.	2,00	2,00	2,00
The system of employee stabilization is more effective in chain hotels than in independent hotels.	1,50	1,50	1,00
Employees perceive the factors of their stabilization as processes that contribute to their development, job satisfaction and the decision to stay in the hotel.	1,67	2,00	2,00
Top managers perceive stabilization factors as processes that best meet the hotel's strategic goals in terms of achieving work performance and quality of service.	1,58	2,00	2,00
Employees	Mean	Median	Modus
If the employee has the opportunity to develop his / her career, he / she is a stable employee of the hotel.	1,77	2,00	2,00
Transparent remuneration of job results has the greatest impact on employee stabilization	2,60	3,00	3,00
Chain hotel staff are more satisfied with work than independent hotel staff.	2,36	2,00	2,00
The system of employee stabilization is more effective in chain hotels than in independent hotels.	1,94	2,00	2,00
Employees perceive the factors of their stabilization as processes that contribute to their development, job satisfaction and the decision to stay in the hotel.	1,89	2,00	2,00
Top managers perceive stabilization factors as processes that best meet the hotel's strategic goals in terms of achieving work performance and quality of service.	2,15	2,00	2,00

Source: own research

Median reached the value of 2 for the following statements:

- if the employee has the opportunity to develop his / her career, he / she is a stable employee of the hotel;
- chain hotel staff are more satisfied at work than employees of independent hotels;
- the system of employee stabilization is more effective in chain hotels than in independent hotels;

- employees perceive stabilization factors as processes that contribute to their development, job satisfaction and decision to stay at the hotel;
- top managers perceive stabilization factors as processes that best meet the hotel's strategic goals in terms of achieving work performance and quality of service.

Assessing the views of managers and employees, the results of the survey confirmed the main underlying hypothesis that the current state of personnel stabilization in hotels does not meet the expectations of employees.

Conclusion

Job satisfaction is closely linked to turnover and employee retention. The greater the individual's job satisfaction level, the more productive he or she becomes. Job satisfaction revolves around the creation of an environment where each person is valued and respected. Determining the significance of the factors that influence the increase of staff stabilization in hotels was one of the main reasons to conduct a survey in selected hotels in Slovakia. In evaluation of unfulfilled expectations and work discontent dominated working reasons, mainly hard working conditions, poor working hours, but also minimum career development opportunities, non-transparent remuneration, low wages and lack of feedback from managers on the results of their work. Managers consider as the most important factors of personal stabilization, the feeling of valuation and recognition, the right setting of corporate culture and fair remuneration. Employees would welcome opportunities for career development and personal growth, regular wage increase during their employment, a sense of valuation and recognition, transparent and fair remuneration.

Employee stabilization is a major challenge for hotels that offer services 24 hours a day and are characterized by different employment patterns. Hotel managers, who want to solve the issue of fluctuation, should keep an evidence of fluctuation, examine its causes, search for and implement measures to increase stabilization. The reason for this evidence is the need for a deeper analysis of the movement of staff in and out of the hotel. A high degree of stabilization can also include long-term low-performance employees. The strategic decision of the management is to minimize this group of employees and, on the other hand, to maximize the stabilization of top employees and those that are difficult to replace after leaving (Branham, 2004). The high rate of fluctuation can have both desirable and undesirable effects that need to be investigated. The survey has shown that gradual improvement of the working environment and creating conditions that guarantee a sense of security and safety at the workplace, transparency in accepted procedures for managing human resources from employee search to release, linking work content and performance with remuneration can help to increase stabilization of the staff needed to achieve the hotel's fluent operation.

This study was supported by VEGA No. 1/0905/16 Possibilities to implement the progressive trend of human resources management in the environment of former planned economies.

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COMPETITIVENESS OF BENELUX COUNTRIES

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Received 03. December 2017, Reviewed 16. March 2018, Accepted 16. July 2018

Abstract

Economic sustainability and building competitiveness are highly up-to-date issues to be addressed by market players and the state itself. Being able to survive under the turbulent market conditions and build market position requires competitive ability. Competitiveness can be seen as a prerequisite for further economic development. This article focuses on assessing the competitiveness of the countries forming an economic cluster. The economic cluster is formed by Belgium, the Netherlands and Luxembourg. The main objective of this article is to assess the Benelux countries in terms of their competitiveness. Further objective based on the scientific evaluation is to define the possibility of further development of market position of the states in terms of their competitiveness. We use the available macroeconomic data and the Global Competitiveness Index as competitiveness assessment tools.

Key words: *Competitiveness, Global Competitiveness Index, Belgium, the Netherlands, Luxembourg*

JEL Classification: C82, F12, F19

Introduction

To achieve positive results of economic activity is one of the basic expectations of each business entity in the current market economies. Each unit e.g. individuals, enterprises, organizations, regions and the state itself have to set objectives to achieve. The development of information technology, worldwide globalization, disappearing trade barriers, innovation and other factors encourage all the actors of the economy to perform better and achieve better results to maintain their position on the market. There is an increasing effort among the countries to gain a competitive advantage in order to maximize the contribution to the national economy. Each country is responsible for shaping its market position influenced by the economic policy of the country and the establishment of legislative framework for the entrepreneurial activity. It should be emphasized that in addition to internal factors, many other, external factors dominate this complex and dynamically changing process. Depending on whether it is a small, medium-sized or large country, its position in relation to the global scale or in relation to the regional economic or other grouping should be assessed. Because of the strengthening competition, small and medium-sized countries

are trying to improve their position in order to overtake other participants on the market (countries, enterprises, individuals) and offer the target market a certain competitive advantage.

Building national competitiveness is undoubtedly a key objective of the country's economic policy. This can only be effectively implemented if there is a rigorous and conceived development strategy based on knowledge, expertise, experience, available technology and human resources. Although the integration into larger units is characteristic, national competitiveness still remains a key issue. National competitiveness can be considered as the competitive ability of a particular country, where input factors are the local determinants. The concept of competitiveness is very complex, and it is difficult to define it clearly. The economic theory does not recognize a unified definition of competitiveness, despite the fact that many authors were trying to provide a definition for the concept. Several (and relatively similar) definitions and approaches to this technical term can be found in the scientific work of Baláz et al. (2010), Hajduová (2016), Mazák (2018a), Mazák (2018b) or Kisluhin (2012). In addition to the authors quoted, the definition of competitiveness provided by the European Commission (2017) seems to gain importance for us. The European Commission has characterized competitiveness as a form of enforcing a particular economy on the market characterized by an increased international competition of the economies and its attributes (political, legal, economic, scientific-technical or ecological). They are copying the desire formulated by the business entities which operate or will be operating in the territory of a particular economy. Based on this context, it is possible to talk about three levels of competitiveness: microeconomic, regional and macroeconomic competitiveness.

Competitiveness needs to be perceived in a wider economic context based on the perception of the economic reality. It is a driving force behind the advancement of the market economy (Mura et al., 2017 or Kiseláková et al., 2018). The development of competitiveness is possible in the economy based on market principles that allow market entities to make free decisions, manage their activities and take measures that will have positive impact on their business. If it is possible to generate economic development at local and regional level (Rivza and Kruzmetra, 2017), it will contribute to aggregated ie. national economic development. It is based on a healthy competitive environment and economic competition. This concept is followed by Dobrovič et al. (2016), who emphasize that sustainable development is possible in case of the functioning economic competitiveness. The economic sustainability of the entire system is the prerequisite not only for the development but also for the existence of the state. The authors share the opinion, for example, in Central Europe, especially in case of Slovakia, it can be said that sustainable economic development and the competitive ability of the market entities is strongly influenced by external determinants regulated by the state. It is primarily the tax regulation, a tool that can create an appropriate or less motivating competitive environment.

According to Glova (2014), financial macroeconomic regulation is the appropriate tool to ensure the economic development and competitiveness of individuals, enterprises, organizations and the national economy. The issue is clearly illustrated on the example of Central and Eastern European countries. Drynochkin and Sergeev (2016) have expanded their research to conduct a comparative analysis of the Benelux countries (Belgium, the Netherlands, Luxembourg) in relation to the study of competitiveness. An earlier research was conducted in V4 countries (Czech Republic, Slovakia, Poland, Hungary). Research of the Benelux countries is not a highly discussed issue among the experts, and relatively few scientific articles can be found even in

the scientific databases. The research of this economic cluster (the Benelux countries) was addressed by Cogen (2015). The issue of competitiveness is closely linked to the issue of foreign trade. The export-import activities of the country determine not only the economic development (or economic deterioration) of the regional or national economy, but the world economy as well. The countries successful in foreign trade with a positive balance are mainly or exclusively exporters. This means that their products and services are still competitive under the influence of strong competition. This issue was closer addressed by Grančay et al. (2015).

High-quality, affordable and demanded products contribute to competitiveness not only on the macroeconomic level of the country. The services and products are provided by businesses, mainly by small and medium-sized enterprises. Korcsmáros, Mura, Šimonová (2017) made an attempt to identify the development of small and medium-sized enterprises in order to quantify their competitiveness in the context of entrepreneurial success.

The competitiveness of enterprise, organization and the country cannot be systematically built without the existence of quality and qualified human resources (Korauš et al. 2017). Any market entity with excellent technological background but lack of human resources will be able to fulfil its mission and will not succeed in terms of competitiveness on the global market.

The theoretical overview of the issue focused on the presentation of different approaches not only to define, but also provide detailed characteristics of competitiveness. It is clear that achieving competitive advantage in comparison to other entities on the market is not easy and cannot be accidental. It is in the interest of each country and its representatives to create an appropriate and supportive environment for fair economic competition in which the individuals, businesses, organizations and the states will be able to develop their competitive ability.

Material and Methods

This part of the scientific article is providing insights into the methodological approach chosen to approach the researched issue. Creating scientific methods to research the economic phenomena is one of the most difficult stages while choosing the most adequate methodological approach. The choice of methods primarily depends on the objectives that have been set. In our case, the main objective of the article is to assess the position of the Benelux countries in terms of competitiveness. Based on the scientific assessment, the further objective is to define the possibilities of the states in terms of building their market position regarding competitiveness. Our assessment is based on the available secondary literary resources – macroeconomic data and the Global Competitiveness Index. The necessary data was gained from the database of the World Economic Forum, which is collecting the necessary data from the countries every year. When quantifying the position of individual countries of the Benelux cluster, we rely on the results gained. The core of analysis is the Global Competitiveness Index. The index assesses the ability of countries to achieve sustainable economic growth, thereby ensuring a high level of prosperity for citizens. The target of analysis are the public institutions, the infrastructure, the macroeconomic stability, the health of population and basic education, the higher education and training, the efficiency of commodity markets, efficiency of the labour market, the maturity of the capital market, the level of technological readiness, size of the market, the achieved level of business processes and the level of innovation. These are the individual components for determining

the national competitiveness of individual countries. Interpretation of the calculated value: the value achieved can range between 1 and 7 (1=minimum competitiveness, 7=maximum competitiveness). Higher the value, the more competitive the country is. The research period was 2006-2014.

Results and Debate

With presentation of the results and discussion on the topic we approach the third integral part of the scientific article. We will analyze the competitiveness of the Benelux countries based on the recalculated Global Competitiveness Index in the selected time interval. In each year, each country receives a calculated score of the level of competitiveness.

As a first step, based on the achieved score we assessed the competitive position of the Netherlands. The results are presented in Graph 1.

Graph 1 The Dutch competitiveness score according to the Global Competitiveness Index

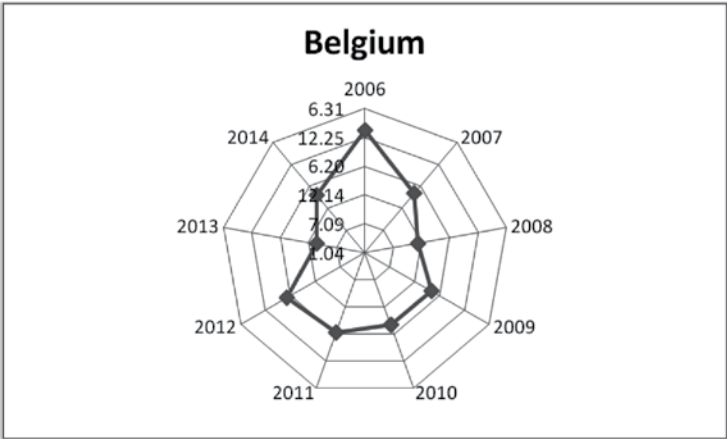


Source: data World Economic Forum, own processing

It is clear from Graph 1 that the highest values of competitiveness that were close to the maximum possible score were recorded by the Netherlands in 2006, 2010 and 2014. These values ranged from 5.56...5.50...5.45. By contrast, the lowest levels of competitiveness were recorded in 2009 and 2010 – the period of the economic crisis. It can be said that despite the economic crisis the decline of competitiveness was not significant.

In the next step, based on the achieved score we assessed the competitive position of Belgium. The results are presented in Graph 2.

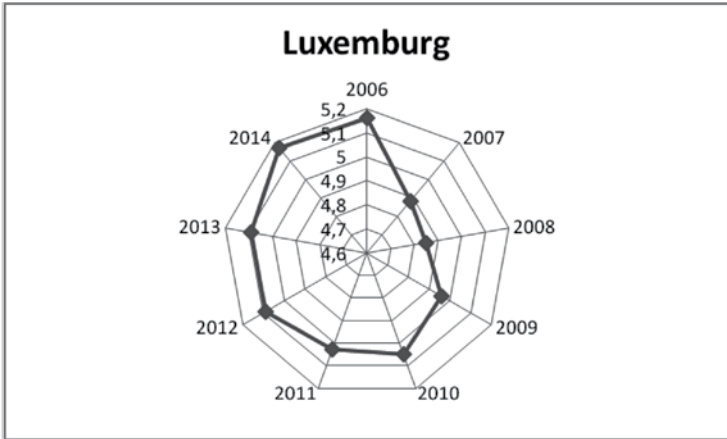
Graph 2 The achieved score of competitiveness by Belgium according to the Global Competitiveness Index



Source: data World Economic Forum, own processing

In case of Belgium, the values of the Global Competitiveness Index are lower than in the Netherlands. The highest score of the Global Competitiveness Index was achieved in 2016 (5.27) and the years of 2012 and 2011 (5.21 and 5.20). The lowest values were detected in 2009 and 2011. These results are similar to the results achieved by the Netherlands. This is due to the economic recovery during the period of the economic crisis.

Graph 3 The achieved score of competitiveness by Luxembourg according to the Global Competitiveness Index



Source: data World Economic Forum, own processing

We have analyzed Luxembourg as the last country of the Benelux cluster. Among the Benelux countries Luxembourg has the lowest rate of competitiveness measured by the Global Competitiveness Index. The values of competitiveness have not reached the magical level of 5, especially in the period of 2007-2009 and the period of 2010-2013, when the value of competitiveness oscillated around 5. This indicates that in terms of competitiveness we can talk about a country achieving the lowest level of competitiveness among the Benelux countries. The situation is illustrated in Graph 3.

Graph 3 clearly illustrates that in the first half of the assessment period the economy of Luxembourg had found it difficult to cope with the effects of the economic crisis compared to the other countries of the Benelux cluster. Following the year of 2010 the national competitiveness started to achieve better results and moved above the magical score of competitiveness.

Overall, the competitiveness of the Benelux cluster can be assessed as one of the best in the world, but similarly to the European Union we talk about the Benelux states as a homogeneous, as well as a highly differentiated zone. It is also valid regarding the competitiveness based on the calculated values of the Global Competitiveness Index by the World Economic Forum.

Conclusion

The assessment of competitiveness is one of the highly discussed macroeconomic issues at the forefront of interest of many experts. Particular attention gains the comparison of the achieved results of the individual countries, because it reveals the differences and the possible space for improvement in the future. The chosen methodology to assess the competitiveness can be considered relevant if the methodology is acknowledged by the world economic organizations. This article made an attempt to assess the national competitiveness of the Benelux countries – Belgium, the Netherlands and Luxembourg. The methodological approach applied for the assessment of competitiveness is based on the Global Competitiveness Index, introduced by the World Economic Forum. The index established by this institution is based on the philosophy of Porter. According to Porter, the national competitiveness focuses on the growth of the national economy, using a basket of determinants and government policies that form together the level of productivity in a particular country. The assessment of national competitiveness using the selected index is a complex approach, since the index takes into account more than a hundred of variables to ensure objectivity and relevancy.

Based on the values of the Competitiveness Index suggestions and recommendations can be formulated. Regarding the future we recommend to focus on targeted development and growth of the national competitiveness. It is desirable by the state to ensure adequate conditions for the competitive environment stimulating development and innovation, which are the cornerstone of the competitive state. Countries of the Benelux cluster achieve their competitiveness by using modern technologies, being involved in sharing economy, promoting innovation, providing quality education and increased production of non-food commodities.

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DETERMINANTS OF BANK PERFORMANCE IN NIGERIA: THE DYNAMICS OF INTERNALITY AND EXTERNALITY MEASURES

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Received 22. April 2018, Reviewed 30. May 2018, Accepted 30. June 2018

Abstract

This paper investigated internality and externality dynamics as determinants of bank performance in Nigeria. Towards achieving this, the paper applies quantitative estimation by means of panel data. The data analyzed were performance measures (return on equity and net interest margin), internal (loans and advances and long-term investment) and external (gross domestic product and inflation) factors. Data over the period 2006-2016, were obtained from the annual reports and accounts of banks and Central Bank of Nigeria statistical bulletin. Findings were based on the results of the Ordinary Least Square and Canonical Correlation. Findings showed that internality and externality dynamics are the determinants of bank performance among Nigerian banks except inflation rate. Also, we found that internality dynamics are the most significant factors that determine bank performance especially loans and advances. It was recommended that banks should employ efficient and effective loan recovery schemes so as to enhance performance so that they do not become insolvent.

Keywords: Bank Performance; Loans and Advances; Long-Term Investment; Gross Domestic Product; Inflation

JEL Classification: M40, M41, F65

Introduction

The Nigerian financial system is characterized by the dominant role played by banks. As a result of the pivotal role, regulatory and supervisory agencies have devised measures aimed at improving and fortifying bank performance time after time. This elucidates why banking activities and performance have attracted the interest of regulatory and supervisory agencies, bank management and researchers alike. Basically, there are two fundamental factors that determine the performance of banks: internality dynamics (bank-specific factors) such as size and asset of banks (e.g. loans and advances, long and short-term investments, advances under finance and equipment leases etc), risk management, operational efficiency among others.

On the other hand the externality dynamics (industry, environmental and macroeconomic factors) include government policies, banking landscape, political

environment, level of economic growth and so on. These factors *inter-alia*, play a momentous role in shaping bank performance. Abdus (2015) believes that while the performance of some banks improved over time, there are others whose performance deteriorated; this therefore pose questions as to what factors (both within and outside the jurisdiction of management) majorly determine the performance of banks.

Studies on the determinants of bank performance employed internality dynamics such as firm size, risk management, operational efficiency (see Camilleri, 2005; Sufiyan & Habibullah, 2009; Flamini, McDonald & Schumacher, 2009; Saleh & Islam, 2010; Duaka, 2015; Abdus, 2015) while other studies utilized externality dynamics such as industry and macroeconomic factors (see Molyneux & Thornton, 1992; Athanasoglou, Delis & Staikouras, 2006; Sufian & Chong, 2008; Kosmidou, 2008; Ramlall, 2009; Akbas, 2012, Vong & Chan, 2014; and Boitan, 2015). However, bank-specific factors such as loans and advances, long and short-term investments, advances under finance and equipment lease has not been deeply researched.

This paper is aggravated by investigating the determinants of bank performance by regressing some internality dynamics (such as Loans and Advances and Long-term Investment) and externality dynamics (Gross Domestic Product and Inflation) which has not been deeply researched but may have the tendency to influence bank performance in Nigeria. This, the paper applies quantitative estimation by means of panel data. Also, the most significant factor that determines bank performance was established. Consequently, the remaining part of this paper encompasses measures of bank performance, determinants of bank performance and extant literature, materials and methods, results and rebate. The final section dealt with conclusion

Measures of Bank Performance

There are numerous measures of bank performance which are fundamental in assessing the financial health of the activities of the banking business. Some of these fundamental measures used in assessing the financial health or performance of banks include Return on Assets (ROTA), Return on Equity (ROTE), Earnings per Share (EPS), Net Interest Margin (NIM), Dividend per Share (DPS) and a host of others. First, ROTA gauges the net profit after tax divided by total assets; this accounting ratio symbolizes the returns created from the assets financed by banks. In this regards, ROTA denotes the ability of bank's management to change bank's assets into profits (net).

Pervan, Pervan & Guadagnino (2010) assert that ROTA is a fundamental measure of managerial efficiency. In literature, ROTe, EPS and NIM are substitute measures of bank performance. Second, ROTe is the ratio of net profit after tax to total shareholders' equity. In similar way like ROTA, ROTe shows how efficient banks utilize shareholders equity to generate profits (net). Third, EPS measures profit after tax minus the preference dividend divided by the number of shares ranking for dividend. Besides, NIM is a measure of firm's performance. It measures how successful a firm's investment decisions are compared to its level of debt. NIM is calculated as a percentage of interest bearing assets (i.e. earned interest income - interest paid divided by average invested assets).

Prior empirical evidence suggests that bank-specific, industry-specific and macroeconomic factors have a statistically significant and negative relationship with ROTA and ROTe (Akbas, 2012; and Boitan, 2015). Contrarily, a study conducted by Staikouras & Wood (2000) revealed that the performance of banks is influenced by management decisions and changes in the external macroeconomic environment.

Other studies showed that bank-specific factors such as loan-to-deposit, ratio, loan-loss provision to total assets, equity-capital to total assets, operating expenses to total assets among others significantly and positively influence bank performance (Athanasoglou, et.al, 2006; Alexiou & Sofoklis, 2009; Vong & Chan, 2014; and Abdus, 2015).

On the basis of the above, we included ROTE and NIM as the measures of bank performance in our study variables since prior empirical evidence suggests that they are the fundamental variables of performance measurement. Also, ROTE and NIM were included as measures of bank performance since they are computed on the basis of shareholder's equity, profit after tax and turnover and efficient banks utilize shareholders equity to generate profits.

Internality & Externality Dynamics as Determinants of Bank Performance

The factors that determine bank performance may either emanate from internal or external sources. Internal determinants are symbolic with bank-specific factors that influence performance. Extant literature suggests that both internal and external factors determine the performance of banks (Saleh & Islam, 2010; Akbas, 2012; Vong & Chan, 2014; Duaka, 2015; Abdus, 2015; and Boitan, 2015). In this study, the internal determinants of bank performance considered are those relating to Loans and Advances and Long-term Investments. They represent the independent variables and the internality dynamics of bank performance. Loans and advances as well as long-term investments represent a part of the asset base of banks. These internality dynamics were utilized because banks are characterized by risky assets, especially the loans and advances given to customers.

On the other hand, externality dynamics as determinant of bank performance encompasses industry-specific, environmental and macroeconomic factors. In this study, two externality factors were considered as determinants of bank performance. These externality dynamics include Gross Domestic Product (GDP per capita) and Inflation Rate (INF). GDP per capita is a measure of economic growth while INF symbolizes the rate at which the prices of commodities in an economy increase. First, INF affects most economies of the world such that when there is an increase in the prices of commodities in an economy, interest rate increases. This perhaps fulfills the macroeconomic postulation that "the higher the inflation rate, the higher the interest". Thus, when interest rate increases, it is expected that bank performance should get better.

Second, banks occupy a centre-hub in the Nigerian financial system as they contribute significantly to GDP. Economic growth (GDP) demands that more loans flow from surplus to deficit users; when more loans are financed by banks in an economy, it is expected that the performance of banks should get stronger and the improved performance of banks will thus contribute towards expanding GDP. This conceivably led to the inclusion of these macroeconomic variables (GDP and INF) in our study. On the basis of the above, we hypothesized that:

H_0 : Internality and externality dynamics has no significant effect on bank performance.

Extant Literature

There are numerous studies on the determinants of bank performance in Nigeria and the world over. However, most of the studies on bank performance

determinants investigated bank-specific, industry-specific and macroeconomic factors such as loan-deposit, ratio, loan-loss provision to total assets, equity capital to total assets, operating expenses to total assets, management decisions, changes in the external macroeconomic environment, gross domestic product on performance measures such as ROTA, ROTE, NIM. In spite of the numerous empirical evidence in this area, bank-specific factors such as loans and advances, long and short-term investments, advances under finance and equipment lease have not been deeply researched. It is worthy of note that there exist, mixed results as to the factors that determine bank performance. Some studies found a statistically significant and negative relationship while there are other studies that revealed a statistically significant and positive relationship between the determinants and bank performance.

A study conducted by Abdus (2015) on factors that determine commercial bank profitability (measured by ROTA & ROTE) in Bangladesh found evidence that specific-factors such as loan to deposit ratio, loan loss provision to total assets, equity capital to total assets and operating expenses to total assets are the significant factors that determine bank profitability. However, size of bank and macroeconomic indicator do not impact on the profitability of banks in Bangladesh.

In Turkey, Akbas (2012) evaluated how bank-specific, industry-specific and macroeconomic factors influence bank profitability (measured as ROTA & ROTE). The study showed that the ratio of loan loss provisions to gross loans, ratio of total costs to total income, Herfindahl-Hirschman Index (HHI) for deposits and inflation significantly and negatively influence bank profitability (ROTA & ROTE).

Alexiou & Sofoklis (2009) investigated bank-specific measures (size, liquidity, efficiency and credit risk) and macroeconomic determinants (inflation, interest rates, GDP, private consumption and investment) determinants and bank profitability (ROTA & ROTE) in Greece and evidence suggests a relatively weak connection between bank size and profitability. However, most of the bank-specific determinants were found to significantly influence bank profitability but a dissimilar result was revealed when the macroeconomic determinants were measured.

In a study by Athanasoglou, Delis & Staikouras (2006), a mixed result was reported. Accordingly, Athanasoglou, et.al (2006) study on behavior of bank-specific, industry-specific and macroeconomic determinants (measured as GDP per capita) of bank profitability (measured as ROTE & NIM) in South Eastern European countries revealed that aside liquidity ratios of banks, all bank specific-factors significantly influence profitability. Consequently, based on extant literature on determinants of bank performance, it is obvious that bank-specific factors (loans and advances and long-term investment, advances under finance and equipment lease) have not been deeply researched. This however, formed the thrust of this paper.

Materials and Methods

In this study, panel data was employed in order to conduct an econometric modeling. Data for variables of internal determinants (loans and advances and long-term investment) and external determinants (gross domestic product and inflation) were obtained over the period, 2006-2016 from the Annual Reports and Accounts of Banks as well as the Central Bank of Nigeria Statistical Bulletin respectively. In our model, yearly data from fifteen (15) banks in Nigeria were used to gauge the relationship between bank performance and bank-specific and macroeconomic determinants. The following models were developed:

Model 1: Gauging Bank Performance Measures and Internality Dynamics
 $ROTE_{it} = a_0 + a_1LAD_{it} + a_2LTI_{it} + \varepsilon_{it}$ eq. 1_a
 $NIM_{it} = a_0 + a_1LAD_{it} + a_2LTI_{it} + \varepsilon_{it}$ eq. 1_b

In model 1, we regress performance measures (ROTE & NIM) and the internality dynamics of banks (LAD & LTI). Thus, equation 1_a gauged the relationship between ROTE, LAD and LTI and equation 1_b, NIM, LAD and LTI.

Model 2: Gauging Bank Performance Measures and Externality Dynamics
 $ROTE_{it} = a_0 + a_1GDP_t + a_2INF_t + \varepsilon_{it}$ eq. 2_a
 $NIM_{it} = a_0 + a_1GDP_t + a_2INF_t + \varepsilon_{it}$ eq. 2_b

Model 2 gauged bank performance measures (ROTE & NIM) and the externality dynamics (GDP & INF). Hence, equation 2_a estimates the relationship between ROTE, GDP and INF and equation 2_b, NIM, GDP and INF.

Model 3: Gauging the Composite Relationship between Bank Performance, Internality and Externality Dynamics
 $ROTE_{it} = a_0 + a_1LAD_{it} + a_2LTI_{it} + a_3GDPT + a_4INF_t + \varepsilon_{it}$ eq. 3_a
 $NIM_{it} = a_0 + a_1LAD_{it} + a_2LTI_{it} + a_3GDPT + a_4INF_t + \varepsilon_{it}$ eq. 3_b

Model 3 gauged bank performance measures (ROTE & NIM), internality and externality dynamics (LAD, LTI, GDP & INF). Hence, equation 3a estimates the composite relationship between ROTE, LAD, LTI, GDP and INF and equation 3b, NIM, LAD, LTI, GDP and INF. Where ROTE represents return on equity, NIM: net interest margin, LAD: loan-to-deposit ratio, LTI: long-term investment, GDP: gross domestic product per capita, INF: inflation rate; a₀, a₁-a₄ are the regression coefficients and ε_{it} error term. Additionally, LAD, LTI and GDP per capita were logged in order to avoid scaling problems since ROTE, NIM and INF are computed on the basis of ratio.

Results and Debate

The results are presented in tables and in order of precedence. First we reported the descriptive statistics; second, variance inflation factors (VIF); third, canonical correlation analysis and finally, regression summary for all the models.

Model 1: Gauging Bank Performance Measures (ROTE & NIM) and Internality Dynamics (LAD & LTI)

Table 1: Descriptive Statistics for ROTE, NIM, LAD and LTI

Variable	Obs	Mean	Std. Dev.	Min	Max
rote	154	6.542013	47.28199	-394.32	230.23
nim	154	59.30182	13.77426	0	85
loglad	154	6.706688	2.757927	0	9.2
loglti	154	2.695325	3.251262	0	8.37

Source: Researchers' Computation via STATA 13.0

Table 1 captures the descriptive statistics of the bank performance measures (ROTE: Return on Equity & NIM: Net Interest Margin) and internality dynamics (LAD: Loans and Advances & LTI: Long-Term Investment). In the table above, ROTE has a mean of 6.54 and a standard deviation of 47.28. The mean value of LAD is 6.71 with standard deviation approaching 2.76. LTI is, on average, 2.70 of total assets but with a significant variation (3.25). NIM has a mean of 59.30 of total profit and a standard deviation of 13.77. The zero minimum values for NIM, ROTE, LAD and LTI implies that some banks did not report data for the years under investigation.

Table 2: Variance Inflation Factor Result

Variable	VIF	1/VIF
loglti	1.13	0.882758
loglad	1.10	0.906978
loggdp	1.05	0.954580
inf	1.01	0.990595
Mean VIF	1.07	

Source: Researchers' Computation via STATA 13.0

From table 2, the mean VIF for all the variables does not exceed the standardized Variance Inflation Factor (VIF) level (1.07 < 10.0), suggesting that there is the absence of multicollinearity among the variables. Thus, there is no heteroscedasticity problem among the internality (LTI & LAD) and externality (GDP & INF) variables.

Table 3a: Canonical Correlation Result of the Raw Coefficients for the First Performance Variable Set

	1	2
rote	0.0015	0.0211
nim	0.0724	-0.0056

Source: Researchers' Computation via STATA 13.0

From table 3a, we observe that NIM (0.0724) was found to be the most fundamental performance indicator, followed by ROTE (0.0015). Also, the result indicates that when other variables are held constant, a one unit increase in the NIM will result to a 0.0724 increase in the score on the first canonical variate in performance measures set. In the same way, when other variables are held constant, a one unit increase in the ROTE will result to a 0.0015 increase in the score on the first canonical variate in performance measures set. Similar situations occurred in the score of the second canonical variate in performance measures set.

Table 3b: Canonical Correlation Result of the Raw Coefficients for the Second Performance Variable Set

	1	2
loglad	0.2180	0.3114
loglti	0.1964	-0.2558

Source: Researchers' Computation via STATA 13.0

In table 3b, it was revealed that LAD (0.2180) is the most fundamental internality dynamics of bank performance. This result is supported due to the fact that the bulk of bank asset comes from loan and advances granted to customers-.

Table 3c: Canonical Correlation

Canonical correlations:
0.2883 0.0436

Source: Researchers' Computation via STATA 13.0

The result in table 3c revealed that ROTE (0.2883) and NIM (0.0436) have positive connection with the sets of internality indicators (LAD & LTI).

Table 3d: Tests of Significance for all Canonical Correlations

	Statistic	df1	df2	F	Prob>F
Wilks' lambda	.915146	4	300	3.4000	0.0097 e
Pillai's trace	.0850121	4	302	3.3517	0.0105 a
Lawley-Hotelling trace	.0925498	4	298	3.4475	0.0090 a
Roy's largest root	.0906483	2	151	6.8439	0.0014 u

Source: Researchers' Computation via STATA 13.0

The tests of significance for all canonical correlations as presented in table 4d revealed that the statistics in relation to the Wilks Lamda, Pillais trace, Lawley-Hotelling trace and Roys Largest root f-statistics and probability values showed clearly that there is significant connection between the performance measures (ROTE & NIM) and those of internality indicators (LAD & LTI). This implies that there is connection between performance measures and internality indicators among Nigerian banks.

Table 4a: Regression Summary for ROTE, LAD and LTI

Source	SS	df	MS	Number of obs =	154
Model	811.871173	2	405.935586	F(2, 151) =	0.18
Residual	341232.854	151	2259.82022	Prob > F =	0.8358
				R-squared =	0.0024
				Adj R-squared =	-0.0108
				Root MSE =	47.538
Total	342044.725	153	2235.58644		

rote	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
loglad	.8670892	1.461092	0.59	0.554	-2.019735 3.753913
loglti	-.3205597	1.239391	-0.26	0.796	-2.769347 2.128228
_cons	1.590729	10.10811	0.16	0.875	-18.38087 21.56233

Source: Researchers' Computation via STATA 13.0

From table 4a, we found that R2 is .0024 which suggests 0.24% explanatory ability of the estimation for the systematic variation in the dependent variable (ROTE) with an adjusted value of 1.08. The unexplained variation is 0.9892 (98.92%). The evaluation of the slope coefficients of the explanatory variables showed the existence of positive relationship between ROTE and LAD (0.8670892) and a negative relationship between ROTE and LTI (-0.3205597). This implies that ROTE is positively influenced by LAD while negatively affected by LTI. The result is further supported by the computed t-values for LAD (0.59) and LTI (-0.26), which is less than t-tabulated (1.646), suggesting that LAD and LTI are not the major determinants of ROTE.

Table 4b: Regression Summary for NIM, LAD and LTI

Source	SS	df	MS	Number of obs =	154
Model	2400.76294	2	1200.38147	F(2, 151) =	6.81
Residual	26627.9704	151	176.344175	Prob > F =	0.0015
				R-squared =	0.0827
				Adj R-squared =	0.0706
				Root MSE =	13.279
Total	29028.7334	153	189.730283		

nim	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
loglad	.8503203	.4081513	2.08	0.039	.0438954 1.656745
loglti	.7887252	.3462199	2.28	0.024	.1046643 1.472786
_cons	51.47311	2.823669	18.23	0.000	45.89411 57.05212

Source: Researchers' Computation via STATA 13.0

From table 4b, we found that R2 is .0827 which suggests 8.27% explanatory ability of the estimation for the systematic variation in the dependent variable

(NIM) with an adjusted value of 7.06. The unexplained variation is .9294 (92.94). The evaluation of the slope coefficients of the explanatory variables showed the existence of positive relationship between NIM, LAD (0.8503203) and LTI (0.7887252). This implies that NIM is positively influenced by LAD and LTI. The result is further supported by the computed t-values for LAD (2.08) and LTI (-2.28), which is greater than t-tabulated (1.646), suggesting that LAD and LTI are the major determinants of NIM.

Model 2: Gauging Bank Performance Measures (ROTE & NIM) and Externality Dynamics (GDP & INF)

Table 5: Descriptive Statistics for ROTE, NIM, GDP and INF

Variable	Obs	Mean	Std. Dev.	Min	Max
rote	154	6.542013	47.28199	-394.32	230.23
nim	154	59.30182	13.77426	0	85
loggdp	154	4.611818	.2671845	4.27	4.95
inf	154	9.583636	3.304648	2.9	13.9

Source: Researchers' Computation via STATA 13.0

Table 5 captures the descriptive statistics of the bank performance measures (ROTE & NIM) and externality dynamics (GDP & INF). In table 5a, ROTE (GDP & INF) and NIM (GDP & INF) have similar levels for their mean values (4.61) and (9.58) respectively, but INF has much higher standard deviation (3.31).

Table 6a: Regression Summary for ROTE, GDP and INF

Source	SS	df	MS	Number of obs =	154
Model	7053.7886	2	3526.8943	F(2, 151) =	1.59
Residual	334990.936	151	2218.48302	Prob > F =	0.2074
				R-squared =	0.0206
				Adj R-squared =	0.0077
Total	342044.725	153	2235.58644	Root MSE =	47.101

	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
rote					
loggdp	-11.96713	14.29578	-0.84	0.404	-40.2127 16.27845
inf	-1.889963	1.155829	-1.64	0.104	-4.173649 .3937233
_cons	79.84494	67.8102	1.18	0.241	-54.13437 213.8243

Source: Researchers' Computation via STATA 13.0

In table 6a, we found that R2 is .0206 which suggests 2.06% explanatory ability of the estimation for the systematic variation in the dependent variable (ROTE) with an adjusted value of .77. The unexplained variation is .9923 (99.23%). The evaluation of the slope coefficients of the explanatory variables showed the existence of negative relationship between ROTE, GDP (-11.96713) and INF (-1.889963). This suggests that ROTE is negatively influenced by GDP and INF. The result is further supported by the

computed t-values for GDP (-0.84) and INF (-1.64), which is less than t-tabulated (1.646), suggesting that GDP and INF are not the major determinants of ROTE.

Table 6b: Regression Summary for NIM, GDP and INF

Source	SS	df	MS	Number of obs =	154
Model	784.266005	2	392.133002	F(2, 151) =	2.10
Residual	28244.4674	151	187.049453	Prob > F =	0.1265
				R-squared =	0.0270
				Adj R-squared =	0.0141
Total	29028.7334	153	189.730283	Root MSE =	13.677

	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
nim					
loggdp	7.244094	4.151049	1.75	0.083	-.9575443 15.44573
inf	-.3125131	.3356169	-0.93	0.353	-.9756246 .3505984
_cons	28.88838	19.68998	1.47	0.144	-10.01505 67.79182

Source: Researchers' Computation via STATA 13.0

In table 6b, we found that R2 is .0270 which suggests 2.7% explanatory ability of the estimation for the systematic variation in the dependent variable (NIM) with an adjusted value of 1.41. The unexplained variation is .9859 (98.59%). The evaluation of the slope coefficients of the explanatory variables showed the existence of positive relationship between NIM and GDP (7.244094) and a negative relationship with INF (-0.3125131). This implies that NIM is positively influenced by GDP and negatively influenced by INF. The result is further supported by the computed t-values for GDP (1.75), which is greater than t-tabulated (1.646) and INF (-0.93) less than t-tabulated (1.646), suggesting that GDP is a major determinant of NIM with a contrary result for INF.

Model 3: Gauging the Composite Relationship between Bank Performance (ROTE & NIM), Internality (LAD & LTI) and Externality Dynamics (GDP & INF)

Table 7a: Regression Summary for ROTE, LAD, LTI, GDP and INF

Source	SS	df	MS	Number of obs =	154
Model	7904.29556	4	1976.07389	F(4, 149) =	0.88
Residual	334140.429	149	2242.55322	Prob > F =	0.4768
				R-squared =	0.0231
				Adj R-squared =	-0.0031
Total	342044.725	153	2235.58644	Root MSE =	47.356

	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
rote					
loglad	.7745622	1.457621	0.53	0.596	-2.105716 3.65484
loglti	-.5645339	1.253294	-0.45	0.653	-3.04106 1.911992
loggdp	-12.4328	14.66588	-0.85	0.398	-41.41278 16.54718
inf	-1.899522	1.163998	-1.63	0.105	-4.199598 .4005538
_cons	78.41102	71.33306	1.10	0.273	-62.54404 219.3661

Source: Researchers' Computation via STATA 13.0

In table 7a, we found that R2 is .0231 which suggests 2.31% explanatory ability of the estimation for the systematic variation in the dependent variable (ROTE) with an adjusted value of -.31. The evaluation of the slope coefficients of the explanatory variables showed the existence of positive relationship between ROTE and LAD (.7745622) and a negative relationship with LTI (-5645339), GDP (-12.4328) and INF (-1.899522). This implies that ROTE is positively influenced by LAD and negatively affected by LTI, GDP and INF. The result is further supported by the computed t-values for LAD (0.53), LTI (-0.45), GDP (-0.85) and INF (-1.63), which is greater than t-tabulated (1.646), suggesting that the internality and externality dynamics are not the major determinant of ROTE.

Table 7b: Regression Summary for NIM, LAD, LTI, GDP and INF

Source	SS	df	MS	Number of obs = 154		
Model	3693.47269	4	923.368174	F(4, 149) = 5.43		
Residual	25335.2607	149	170.035306	Prob > F = 0.0004		
				R-squared = 0.1272		
				Adj R-squared = 0.1038		
				Root MSE = 13.04		
Total	29028.7334	153	189.730283			

nim	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
loglad	.8999568	.401368	2.24	0.026	.1068483	1.693065
loglti	.9276171	.3451049	2.69	0.008	.2456852	1.609549
loggdp	10.41143	4.038373	2.58	0.011	2.431554	18.39131
inf	-.239396	.3205166	-0.75	0.456	-.872741	.3939489
_cons	5.044514	19.64215	0.26	0.798	-33.76863	43.85766

Source: Researchers' Computation via STATA 13.0

In table 7b, we found that R2 .1272 which suggests 12.72% explanatory ability of the estimation for the systematic variation in the dependent variable (NIM) with an adjusted value of 10.38. The evaluation of the slope coefficients of the explanatory variables showed the existence of positive relationship between NIM, LAD (.8999568), LTI (.9276171) and GDP (10.41143) and a negative relationship with INF (-.239396). This implies that NIM is positively influenced by LAD, LTI and GDP and negatively affected by INF. The result is further supported by the computed t-values for LAD (2.24), LTI (2.69) and GDP (2.58), which is greater than t-tabulated (1.646) and INF (-0.75), which is less than t-tabulated (1.646), suggesting that the internality dynamics (LAD & LTI) and externality dynamic (GDP) are the major determinant of NIM except INF.

Conclusion

Banks play a fundamental role in most developed and developing economies of the world. Thus, the performance or how well they have performed is of importance to management, government and other parties that have interest in the business. In this paper, we investigated the determinants of bank performance (ROTE: return on equity and NIM: net interest margin) by regressing some internality dynamics (LAD: loans and advances and LTI: long-term investment) and externality dynamics (GDP: gross

domestic product and INF: inflation) which have not been deeply researched but may have the tendency to influence bank performance in Nigeria.

Using a panel dataset, we analyzed the most the most significant factor that determines bank performance for fifteen (15) banks over the period 2006-2016. The results have some insightful revelation. First, the result of the variance inflation factor showed that there is no heteroscedasticity problem among the internality (LTI & LAD) and externality (GDP & INF) dynamics. Second, we observed that LAD is the most fundamental performance indicator compared to other dynamics of bank performance. This result is supported due to the fact that the bulk of bank asset emanates from loan and advances granted to customers. Also, when other variables are held constant, a one unit increase in the NIM will result to a 0.0724 increase in the score on the first canonical variate in performance measures set. Similarly, when other variables are held constant, a one unit increase in the ROTE will result to a 0.0015 increase in the score on the first canonical variate in performance measures set. Similar situations occurred in the score of the second canonical variate in the performance measures set.

Third, it was revealed that ROTE and NIM have positive association with the sets of internality indicators (LAD & LTI). The evaluation of the slope coefficients of the explanatory variables showed the existence of positive relationship between ROTE and LAD and a negative relationship between ROTE and LTI. This implies that ROTE is positively influenced by LAD while negatively affected by LTI. Furthermore, the evaluation of the slope coefficients of the explanatory variables showed the existence of positive relationship between NIM, LAD and LTI, suggesting that NIM is positively influenced by LAD and LTI. Fourth, gauging bank performance measures (ROTE & NIM) and externality dynamics (GDP & INF), ROTE (GDP & INF) and NIM (GDP & INF) have similar levels for their mean values but INF has much higher standard deviation. In addition, the joint model showed the existence of positive relationship between NIM and GDP and a negative relationship with INF. This implies that NIM is positively influenced by GDP and negatively influenced by INF, suggesting that GDP is a major determinant of NIM with a contrary result for INF.

Furthermore, a positive relationship exists between ROTE and LAD and a negative relationship with LTI, GDP and INF. This implies that ROTE is positively influenced by LAD and negatively affected by LTI, GDP and INF, suggesting that the internality and externality dynamics are not the major determinant of ROTE while internality dynamics (LAD & LTI) and externality dynamic (GDP) are the major determinant of NIM except INF. The finding of our study is in agreement with prior empirical evidence conducted by Athanasoglou, Delis & Staikouras (2006) and Staikouras & Wood (2000).

Future research could investigate disparities in the determinants of bank performance in Nigeria according to their ownership types and a comparison could be made with banks of other countries which have related economic conditions with Nigeria. On the basis of the findings, it is recommended that banks should employ efficient and effective loans recovery schemes in order to enhance the level of their performance so that they do not become insolvent. In addition, there should be new standards for risk management (capital and credit) as a condition for enhancing bank performance, which according to the empirical evidence suggested that they affect performance of banks in Nigeria.

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EFFECTIVE INVENTORY MANAGEMENT IN THE MAINTENANCE DEPARTMENT

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Received 30. May 2018, Reviewed 01. July 2018, Accepted 16. July 2018

Abstract

The aim of the contribution is to determine the economic potential of maintenance in the inventory management of spare parts and materials used in maintenance. The partial aim is to propose the action plan steps needed to achieve the identified potential. This process is presented when applying in corporate practice. Optimization methods were used for inventory management optimization using the Planning Wizard software application. Inventory management system provides integrated platform for analysing of large amounts of spares and material inventory data. System analyses character of every item with respect to specific supplier lead times, variability of the supply, variability of the consumption and other parameters influencing inventory levels. The solution respects sporadic consumption of some spare parts and subjective evaluation of responsible specialists.

Key words: Spare parts, inventory management, maintenance.

JEL Classification: C44, M11, O14

Introduction

The sphere of maintenance is distinguished by the different approach to defining availability of spare parts. In the case of strategic decision-making concerning the amount of customer services or finished products, the availability is usually some 90-95%, which means that the amount of inventory does not always cover customer demand. However, in the case of maintenance it is necessary to guarantee 100% availability of critical spare parts (Palmer, 2004; Fleisch, Tellkamp, 2005). If such spare parts become unavailable it usually results in huge losses in production and subsequently in reduced availability of finished products for customers.

Materials Management/Maintenance and Repair Operations (the MRO) is a process of optimizing the availability of material flow and investment in spare parts and consumer materials in manufacturing companies (Willemain, et al., 2004). The objective is to minimize costs linked with spare parts and materials while guaranteeing their required availability.

The MRO differs from traditional inventory management in that the consumption does not depend on market demand but on requirements from the management department (Stock, Boyer, 2009). It is a very sophisticated process that

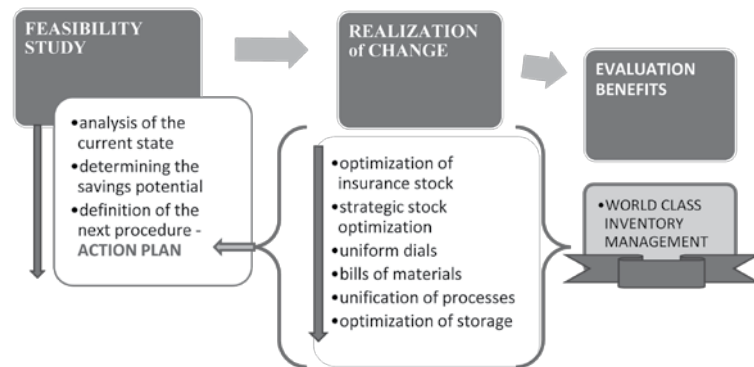
eliminates the risk of interruptions in operation or cutbacks. It decreases negative financial impacts resulting from greater amounts of spare parts and materials than needed. Therefore, it leads to a well-balanced portfolio of inventory and it decreases the amount of obsolete items in stock.

The MRO process requires forecasting of demand (consumption of spare parts and materials), risk management and optimization of spare parts and materials in stock.

Material and Methods

The entire MRO process needs to be based on a thorough analysis of inventory kept in stock by maintenance and repair operations. Such an analysis is used for determining possible savings and for defining further procedures as can be seen in Chart 1.

Chart 1 The phase of optimization of keeping spare parts and materials in stock by maintenance



Source: the authors

When applying the system of inventory management and stocktaking described in this paper we used Planning Wizard, a module intended for system maintenance. It is an integrated platform for analyzing of a great number of spare parts and data stock materials. Planning Wizard analyses the nature of every single item with respect to the supplier's delivery time, delivery variability, consumption variability and other parameters influencing inventory. Effective inventory is proposed with respect to these criteria so that the required reliability is ensured while the assets retained in materials are minimized. Planning Wizard includes a special maintenance module that makes it possible to respect strategic spare parts together with subjective assessment of responsible specialists. This platform offers a whole range of specialized procedures with the objective of defining the optimum amount of supplies in combination with consumption prognosis, calculation of safety stock with the possibility to reach 100% availability of spare parts.

Inventory analysis

The algorithm of inventory analysis is based on the assessment of the lowest possible amount of inventory, i.e. on daily changes in the number of each particular item (Mentzer et al., 2001). When conducting this analysis, it is necessary to compare input data (from company information systems) with basic logistics KPIs such as stock turnover, value of available inventory / maintenance costs ratio etc.

Inventory segmentation

An important step of the entire process is thorough portfolio segmentation following several criteria:

- ABC analysis by the amount consumed,
- ABC analysis by the value of the amount consumed,
- segmentation by turnover ratio (identification of SMI - Slow Moving Inventory),
- dividing items by availability (easily available, special, custom made),
- a special test that identifies items with sporadic consumption,
- segmentation by the time needed for order execution.

The objective of this stage is to divide a portfolio effectively into units that require different optimization approach and, in particular, they have specific requirements for inventory planning and management. An important part of this stage is the specification of relationships between spare parts and technical parts. The result is a bill of materials that allows us to monitor precisely the consumption of spare parts at different production devices, expense-to-revenue ratio throughout the life cycle of a device and to determine simply which parts are critical and strategic for the company.

Consumption prediction

After initial portfolio segmentation we can proceed to consumption prediction. At this stage it is important to distinguish between consumption that occurred during planned interruptions and repairs and consumption that was unplanned. The interruption cycle is set at this stage: naturally, it is different in every company and inconstant in terms of prediction. The following methods are used for prediction:

- Common methods used for consumption prediction for which Planning Wizard offers a varied range of statistic methods based on normal distribution of consumption of a given item. These methods are used for the part of portfolio where consumption is not of sporadic nature since these methods generally tend to overvalue the predicted amount, which is due to wrongly defined nature of consumption.
- Problems with prediction occur with items with sporadic or occasional demand. Typically, there are a high number of periods with zero consumption, relatively low consumption and oftentimes rather big dispersion. A simulation method designed by Smart and Willeman that is used in Planning Wizard is ideal for prediction of sporadic consumption. In principle, the method is simple, and it focuses on the estimate of dividing the probability of demand throughout the delivery time guaranteed by the manufacturer.

Inventory optimization

The last step is the inventory optimization itself. It is divided in two parts: the first one respects qualified results of mathematic methods of optimization (Law, 2008; Mendes et al., 2005), the other one respects high expertise of the mechanics and their subjective opinion concerning the need for spare parts.

Results and Debate

Proposal of action plans

This study goes on to present results of the steps taken under the project focused on inventory optimization in a maintenance department of an anonymous company. The company did not allow us to publish all the outputs, which is why only certain analyses are presented here.

The initial basis of the project was the creation of the action plan and schedule where actions to be taken were defined. Every activity was evaluated from the perspective of the expected benefit and predicted implementation costs (unfortunately, this information cannot be published). Table 1 shows a brief description of the way of implementation and implementation time of the planned activities including the sources needed. This was followed by the actual implementation of the project stages as described above in the section discussing methods.

Table 1 Project schedule

Initiative 1	Elimination of redundant stockpiles
Method of realization of potential	Restrictions on the purchase of new NDs and the gradual consumption of surplus stocks (reduction of fixed working capital). Sale of technologically unusable ND (direct source of finance).
Time to implement	6 months
Resources needed	External team of specialists, maintenance experts
Initiative 2	Elimination of redundant stocks of category "strategic"
Method of realization of potential	Restrictions on the purchase of new NDs and the gradual consumption of surplus stocks (reduction of fixed working capital). Sale of technologically unusable ND (direct source of finance).
Time to implement	6 months
Resources needed	Human resources, IT, maintenance experts
Initiative 3	Consolidation of inventory portfolio - unified dials
Method of realization of potential	Reduce the level of insurance stocks. Making more efficient purchases - reducing unnecessary purchases through better portfolios. Easier sales of unneeded NDs thanks to a more accurate description of the part.
Time to implement	12 months
Resources needed	External team of specialists, maintenance experts
Initiative 4	Creation of BOMs in the information system
Method of realization of potential	Reduce maintenance costs through more efficient device controlling. Reducing inventory by automatically removing unneeded parts.

Time to implement	2 years
Resources needed	External team of specialists, maintenance experts, SAP implementation
Initiative 5	Unification of process procedures to the level of internal best practices
Method of realization of potential	Savings on working capital due to more efficient inventory management. Saving your working capital by shortening your internal satisfaction time. Removing waste from human resources.
Time to implement	6 months
Resources needed	Experts in maintenance, purchasing and logistics, an external team of specialists
Initiative 6	Optimization of the storage process
Method of realization of potential	Saving cost of storage due to the elaboration of the methodology of their quantification, monitoring and motivation of responsible managers to reduce them. Saving storage capacity (space). Ability to store externally stored NDs (saving on external storage costs). Possibility to offer storage capacity for other companies (source of income). Saving operating costs through more efficient storage process settings - energy, handling technology.
Time to implement	6 months
Resources needed	Logistics experts, an external team of specialists

Source: the authors

Inventory analysis

The following analyses were conducted:

- Analysis of changes in stock kept by the maintenance department.
- Quick analysis of processes linked with inventory management, definition of critical processes and problem places in the process of inventory management by the maintenance department.
- Process benchmarking - comparison with the best practice (BP) in the given sphere (gap analysis).
- Comparison of logistics KPIs of inventory management with recommended values.
- Defining excessive inventory by individual items in the past 3 years.
- Assessment of the company's warehouse capacity.

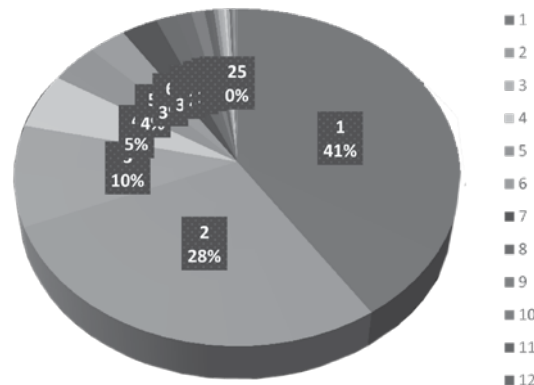
Segmentation of inventory and its prediction

When segmenting inventory items we used all the aspects mentioned in the part discussing methods. Graph 1 shows segmentation by turnover ratio.

It is based on average stock values over three years. The result of ABC analysis according to this criterion is also evident from Graph 1, there is a cumulative

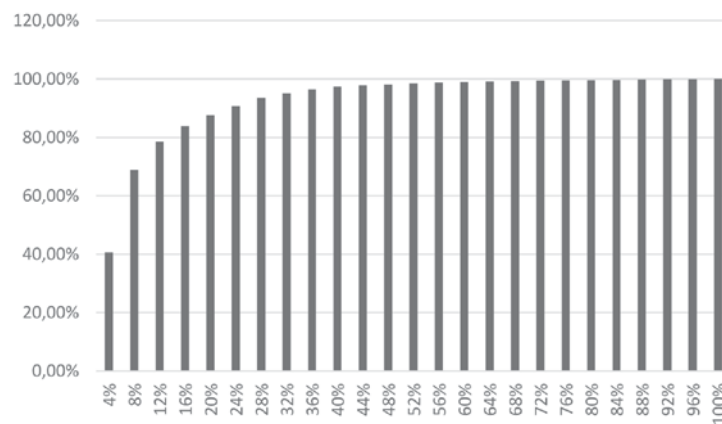
increase in inventory value. It is evident that the most problematic items of inventory are items 1, 2 and 3. These three items represent 12% of the total of 25 items and account for 78.52% of the total inventory (Graph 2). Resolving inventory item 1 represents the main source of savings (3 years without moving). Also, inventory solution item 2 can bring savings (the turnover is longer than 1 year in this case).

Graph 1 Segmentation of maintenance stocks by turnover ratio in the past 3 years



Source: the authors

Graph 2 ABC analysis

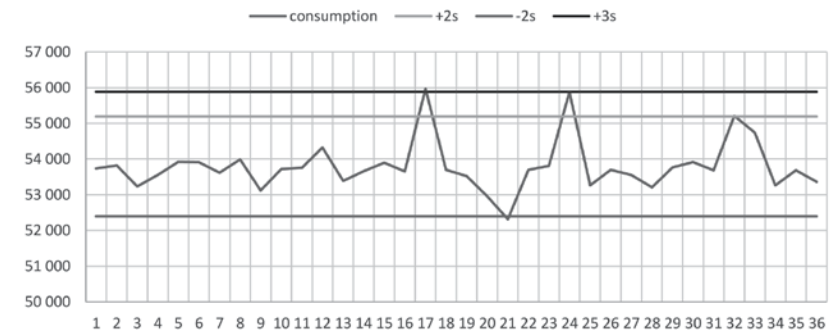


Source: the authors

In order to predict the amount of reserves needed, every item in stock was subjected to consumption analysis using the regulation diagram (sample of the selected item, see e.g. Graph 3). The upper / lower limits were defined as $\pm 2s$ (standard deviations). Furthermore, the upper / lower action limits were defined as $\pm 3s$. The

analysis evidenced that there is a considerable potential for savings in the case of most items, if the amount of items kept in stock is reduced. Nevertheless, these common statistical methods of prediction cannot be applied to items with sporadic demand.

Graph 3 Consumption analysis of selected items in the past 3 years



Source: the authors

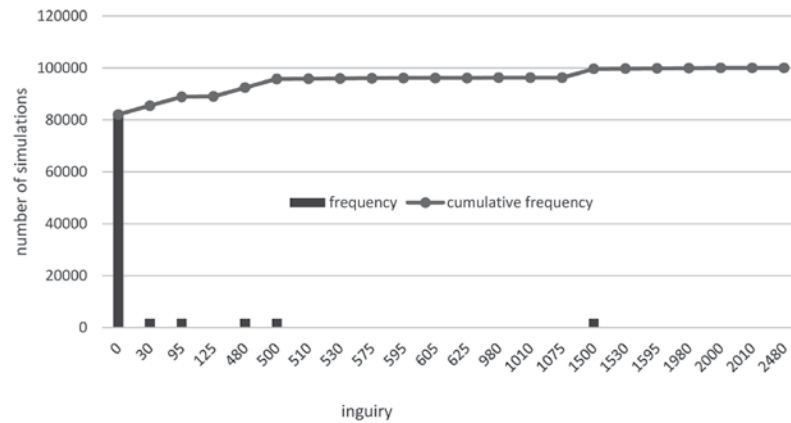
Optimalizace zásob

In order to predict consumption of items with sporadic demand we used the simulation method designed by Smart and Willeman (Willemain et al., 2004) which works on the Planning Wizard platform with a set of statistical and mathematic methods. An example of such an item and prediction of its consumption is shown as a result of simulation in Graph 4.

It is an item where the execution of order takes 63 days. This information includes variability. The available reserve before optimization was 3,169 pcs amounting to a total of CZK 420,164. It is not a strategic spare part. Results of the simulation model clearly show there is an unambiguous recommendation to decrease the current amount of the inventory. Taking into consideration the pessimistic option we can recommend decreasing the number to 1,500 pcs, which would result in saving some CZK 220,000: the actual saving would be some CZK 70-100 thousand.

The procedure when optimizing the reserve of commonly available parts that do not fall within the category of strategic (critical) spare parts is somewhat more complicated. When defining the necessary amount of spare parts which, in case they become unavailable, affect the availability of the main production devices it is essential to respect the importance of criticality. Planning Wizard offers for this item category an integrated platform for mechanics' subjective assessment of critical spare parts. Mechanics answer particular questions and their answers are used as a basis for decision-making. Another option is to conduct the entire criticality analysis, costs comparison of the options and quantifications of losses resulting possibly from the production together with many other supportive analyses.

Graph 4 Results of simulation for an item with sporadic consumption in the past 3 years



Source: the authors

Conclusion

Management of spare parts in the maintenance department is extremely demanding in terms of precise information. It is important to assess correctly the importance of every item, determine its criticality, enumerate possible losses, create relevant consumption prediction and – last but not least – work correctly with suppliers' delivery time (Menzer et al., 2001). In practice, this usually concerns hundreds of thousands of entries that can only be effectively managed using a suitable software tool (Abu-Taieh, El Sheikh, 2007). Planning Wizard offers a wide range of advanced functions and it opportunely combines quantitative approach with mechanics' subjective knowledge. Thus, it serves as a thoroughgoing assistant for appropriate and effective inventory management of spare parts in the maintenance department.

The described project implemented in the anonymous company displayed high economic potential that can be achieved by optimizing management of spare parts and materials in the maintenance department. The precondition for success is the revaluation of strategic spare parts in terms of their criticality setting of control parameters for automatic purchase and identification of excessive inventory that needs to be subsequently eliminated. Soft analytical procedures can be combined with advanced analytical tools using various software tools. At the same time, it is also important to work with maintenance staff's experience and estimates. By combining all the above-mentioned procedures interesting economic effects can be achieved.

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Author(s) – name and surname of the author(s) is indicated who contributed to the submission. The academic degree of author(s) is not submitted. The workplace of author(s) is indicated in the next line.

Abstract in English – the abstract should settle the research targets and contains short description of research as well as results and summary. The abstract should not be longer than 10 lines and must be coherent and understandable without reference to the article. All the references to the author should be made in third person, the first sentence must avoid the repetition of the title. The subject of the research should be emphasized and the summary should include the applied methods and new facts.

Key words in English – use no more than 5 words in English with small letters.

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Introduction - the introduction should provide overview of related research papers and work, proper references to bibliography, providing information about recent research in field of study. The introduction part should not include subchapters.

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Name of the publication: ACTA OECONOMICA UNIVERSITATIS SELYE
International scientific journal

Executive editor: Ladislav Mura

Authors:

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Year: 2018

Volume 7.

No. 1

The Journal is published twice a year.

Publisher: J. Selye University, Faculty of Economics, Bratislavská cesta 3322, 945 01 Komárno, www.ujs.sk, IČO: 37961632

Graphic preparation: GF KNIVES s.r.o.

Printed by: Grafis Media, s.r.o.

ISSN 1338-6581, EV 4538/12 MK SR

Price: 12,- EUR