ECONOMICS
& Sociology

CONTROLLING, COMMUNICATION AND CORPORATE CULTURE – THE OPPORTUNITIES FOR SMES

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ABSTRACT. Small and medium enterprises (SME) are the basic economic force in the European Union. Their competitiveness and successful future development are the key to European cohesion and economic growth. Controlling as a management tool supported by corporate culture and communication should offer opportunities for SMEs growth, stability and future development within the Industry 4.0 environment. The aim of this research is to determine the impact of the controlling management system, communication and corporate culture on SMEs' performance, stability and competitiveness. To achieve this aim, 371 European SMEs were researched using PAPI method, the data covered the period of 2017-2019. Two main research questions and 5 hypotheses were formulated. For evaluating the research data, statistical methods were used and the obtained results were verified by experimental testing, applying knowledge from the companies with focus on what has been changed. The research results offer important information and applied ideas in the field of communication efficiency and corporate culture with the emphasis on controlling as a managerial SMEs tool.

Introduction

The current hyper-competitive environment together with the Industry 4.0 and globalisation are creating many opportunities, which affect, inter alia, the SME sector. SMEs are the basis for national economies' stability and competitiveness. SMEs are the backbone of any economy, thus, it is always important to increase their competitiveness and long-term stability. The originality of this research is based on the search for solutions inside companies themselves using contemporary controlling management systems in relation to corporate culture and effective communication .

The research was undertaken in 2017-2019, divided into two phases. In the first phase, the research data was collected on 371 SMEs from the European Union and analysed to define significant variables which were then statistically analyzed. The research findings were experimentally tested on a randomized SMEs research sample by checking changes after applying the obtained knowledge.

This paper adds a new point of view on the controlling process: the frame of the SME´s corporate culture and the communication platform in it. SME environment is always subject to

rapid changes, shortened lead times, the dominant impact on national economies, great competence, technological backwardness, resistance to change, lack of strategic vision and lack of professionalism. However, the smaller size of these businesses enhances some communication variables which will be analysed in this study: SMEs are traditionally closer to their clients and they have stronger human resources links, family relationship included. This article analyses the importance of the controlling management system, communication, corporate culture and other variables important for SMEs' competitiveness and stability.

The aim of this research is to determine the impact of the controlling management system, communication and corporate culture on SMEs' performance, stability and competitiveness.

Our central research question has been formulated as follows:

Q1: Should controlling management system and corporate culture development be seen as an opportunity to provide extra support to SMEs' stability and competitiveness?

To answer this research question the following hypotheses were additionally formulated:

- **H1:** SMEs' corporate culture is an important component of controlling management system.
- **H2:** Controlling management system along with effective communication supported by high tech implementation are the basic factors for successful SME business performance.
- **H3:** SMEs with developed controlling management systems have higher business performance.
- **H4:** Strong corporate culture improves controlling & communication change management.

The second research question (**Q2) has been formulated as follows**:

Should controlling management system and corporate culture development be used as a tool for supporting SMEs' financial stability and competitiveness?

To answer the research question Q2 the following hypothesis was supplied:

- **H5:** The dependency between controlling management system supported by corporate culture and ROE, ROA and turnover will have the minimum moderate 0.4 – 0.7 dependency of Person´s correlation coefficient.

1. Literature review

Small and medium enterprises (SME)

SMEs are the backbone of the economy. SMEs stability and growth are an essential factor for the cohesion of the European Union and its economy. Koisova et al. (2017) sees SME as a factor which is determining the quality of the entrepreneurial environment. Based on Belás, Dvorský, Kubálek & Smrčka (2018), SMEs are the cornerstones of any economy. According Chong et al., 2019, p. 2. SMEs are an important factor for policymakers. The indispensability of SMEs for the economy is promoted by Prasetyo (2016, p. 133). Other authors also agree on SMEs as a cornerstone of economies and their growth. (Ključnikov et al. 2016; (Tomášková, Havlíček, 2018; Gama & Geraldes, 2012; Hrašková & Bartošová 2014; Rahman, et al., 2016; Belás & Sopková, 2016, Dúbravská et al., 2015; Scholleová & Čámská, 2015; Draskovic, Popov & Peleckis, 2017; Delibasic, 2016). According to Lavia & Hiebl (2014) and Oladimeji & Udosen (2019) SMEs flexibility is one of their key advantages, they also mentionin SME economy stabilization factor in comparison with larger firms. Hrašková & Bartošová (2014)

puts into context SMEs with the contemporary globalized hypercompetitive environment stating that SMEs are challenged by opportunities and trends brought by this environment.

Modern controlling management system

Modern controlling must reflect challenges created by the industry environment 4.0 and must support a flexible SMEs organizational structure. This thesis verified by Safar, Sopko, Bednar, & Poklemba (2018) states that the process of globalization and the 4th Industrial Revolution is forcing researchers to develop new SME structures, these theses are also confirmed by (Písař & Havlíček, 2018; Petrů, Kramoliš & Stuchlík, 2020). This thesis is validated and further developed by Adamowicz & Machla (2016) and Ivanová (2017). Controlling as a tool for company management and the need for its growth and development may be expressed in accordance with the work of Draheim (2010, p. 11), who sees the SMEs management processes improvement as an essential component for enterprises long term development. The orientation of modern controlling to the future and planning is also evident in (Benedic, 2015, p. 153). "Controlling is one of the new approaches which helps management to adapt better to new circumstances, to build vital and vivid organizations, capable of facing new challenges. "

Svozilová (2011), Lambovska, Rajnoha & Dobrovic (2019) see controlling as a tool for achieving established enterprises goals. The complexity of analysis of the local and remote environment of an SME as it relates to controlling is further supported by Belás et al., (2015) who sees the role of controlling as a tool oriented for planning and goals achievement. Similar conclusions are also reached by Adamowicz & Machla (2016) and Ivanová (2017).

Modern controlling can be explained with the following theory: "Controlling can support management by identifying, planning and steering decisions which contribute to the added-value of the company" (Laval, 2018, p. 13). The orientation of modern controlling on forecasting, planning, identifying and fulfilling objectives is also clear in Benedic (2015, p. 153) who considers controlling as a new management approach for stable and innovative companies ready to face new challenges. These conclusions are further validated by Písař & Havlíček (2018, p. 1172), who states and supplemented, that SMEs powered by controlling management system in cooperation with advanced information systems (ERP) are looking for market gaps, stimulating innovation activities and based on that are becoming more stable and competitive in long term. According to Cao, Myers, Tsang & Yang (2017), The importance of forecasting and controlling is fundamental to the successful growth of a company. Safar, Sopko, Bednar, & Poklemba (2018) state, that globalization and environment of Industry 4.0 are forcing SME's towards flexible managerial system development. According to Řepa (2012, p. 15) and Kupec (2018), processes must be regularly evaluated and streamlined. We can perceive controlling as a suite of overarching processes whose goal is to increase the value of the business.

Based on modern controlling literature review it is clear that authors see controlling as a tool which is based on continuous process improvement, continual analysis and planning for the achieving of more effective enterprise goals. If SMEs are using and developing their own technology level, then the controlling management system is a hi-performance tool for the SME. Modern controlling allows SMEs to be flexible in the Industry 4.0 environment, which supports the long-term stability, development, and value growth of the company.

2.3 Corporate culture and communication

Regarding the communication literature, there are some valuable contributions. Patricia Iurcovich studies SMEs platforms when they add to their structures the communication strategy. She agrees with the authors of this paper about the fact of needing professionals who are able to design a strategic communication plan and play with the required tools to reach the

goals (Iurcovich, 2012). Pedro Pablo Marín Dueñas explains in its study "Business Communication in regions with low entrepreneurial development: the case of SMEs in southern Europe" some conclusions from a quantitative research based on a survey technique with 230 small and medium firms: a low level of business development; a basic level of communication without strategic approach; low investment in this field; lack of resources; less planification; focused in their clients but limited in their media - brochures, advertising isolated action - and forgetting internal and other external targets; corporate communication management still has an embryonic state; there is no integrated structure of the different communication techniques, and lack of professionalization of the work teams. Nevertheless, SMEs are strongly interested in the improvement of this communicational variable, but the business context is not helping its implementation. The decision making in SMEs is working more with intuition than in professional parameters. To conclude, Marín suggests the need for boosting strongly the strategic and effective communication in SMEs (Marín, 2016).

The communication context described is completed by the three interrelated environments suggested by ME Mazo. There are three scenarios in which the messages are exchanged: the media context, the corporate environment and the private one, where the individuals use face to face communication with verbal and non-verbal messages, as well as the social media (Mazo, 2017, p. 205). On the second environment, the corporate one, there is a concept developed by Juan Manuel Mazo, a doctor in communication and expert in corporate culture, which is clear and useful for this SMEs study: aim-based communication. This concept includes all the communication techniques the companies use to set their goals for their target groups (Mazo, 1994, p. 20-24). This author provided in the nineties a wide frame of literature in internal, intermediate and external corporate communication.

On the identification of the different corporate stakeholders, ME Mazo shows a clear chart with them: the internal stakeholders, the intermediate and the external ones. On the internal group is identified the CEO, the managers, the senior executives, the junior executives, volunteers and trainees. On the intermediate level, there are shareholders, suppliers, collaborators, associations and trade unions. Into the external target-groups, there are clients/users, public administration -international, European, national government, regional and local ones, industry and professional associations, social civil organisations, consumer associations, media, opinion leaders and experts & public opinion/citizens (Mazo, 2015, p. 60-61). Pedro Pablo Marín Dueña contributes with psychological concepts - perception, knowledge and attitude- to the relationship between individuals and corporate target groups (Marín, 2015).

The media nowadays include online and offline messages transmission. Wang, Pauleen and Zhang focused their study on social media and how they affect B2B communication and improve business performance in SMEs. Taking into account that Social Media facilitates individual communication, it helps the messages exchange in corporations with their customers (Wang et al., 2016). With the same point of view Real, Leyva & Heredia studied the social media impact in SMEs marketing strategies with a quantitative, descriptive and transversal research: one of the conclusions is that 80% of SMEs suffers technological backwardness, resistance to change and lack of marketing strategies to adapt to the new technological environment (Real et al., 2014). One of the media more used by HR in the SMEs is email communication. Ángel Luis Meroño Cerdán had studied it some years ago. Since the Internet was popularized the email messages were the first to fill our computer files, not only for their low cost but also for their easy use and security. (Meroño, 2005). Nowadays, we can also read them in our mobile devices, smartphones or tablets. The infinite mobile applications such as Whatsapp - instant messages -, bank devices, or social media, are placing the email as the second level in interpersonal communication. But the corporate official messages are still being transmitted by the emails.

The innovation in communication management means the transmission of effective messages, in a creative and new way, in the three scenarios described. The innovation here is an ingredient needed to make sure that the receiver pays attention, understands, memorizes and does what is required. The stress of the innovation will be placed in the creative process of creating the message and the selection of a different medium with which attract the attention of the target group. An innovation process that has to fight against innumerable messages sent daily by online and offline media, much more than ever in human history (Mazo, 2017, p. 205-206).

Michele O´Dwyer prefers to speak about innovative marketing and how it manifests itself in the SMEs context (O´Dwyer, 2009). Temi Abimbola also adds to the innovation management the ability to predict future demand, as well as creating a favourable competitive stance for a firm´s output. SMEs are characterised by rapid changes, shortened lead-times and exponential innovative activities. The author identifies relevant guidelines for SMEs in order to build a successful brand (Abimbola, 2001). Meanwhile Vrgovic, Vidicki, Glassman & Walton contribute with an "open innovation" concept for SMEs (Vrgovic et al., 2012), Corso, Martini, Paolucci & Pellegrini explain the opportunities provided to SMEs by Information and Communication Technologies (ICTs). These authors focused on the area of Product Innovation (PI) and analyse 47 SMEs in Northern and Central Italy (Corso et al., 2010). The internal knowledge needed to achieve endogenous innovation goals in SMEs is studied by Li, Li, Liu & Barnes. In this case, the sample was of 213 SMEs and the research reveals that strategic controls moderate the relationship between knowledge exploitation and innovation positively, whereas financial controls appear to moderate the same relationship negatively. In conclusion, SMEs should focus on communication and the exploitation of knowledge as well as carefully consider their choice of efficient control mechanisms (Li et al., 2011). Another study, in Poland, covered by data from 109 SMEs, is held by Roman Kmieciak. In this case, the variables analysed were, in an integrated way, innovativeness, empowerment and IT capability. The findings were that the innovation activity of SMEs was positively related to technological turbulence, climate for innovation, investment in innovation and use of IT in internal communications (Kmieciak, 2012).

Innovation must be implemented by the human resources forces of each SMEs. Internal communication has been researched widely by Antonia Moreno, Sheslley A. Arbeláez and Laura C. Calderón in their paper "Internal communication tool implementation as a change generator in SMEs". The research aims to demonstrate that the correct configuration of the communication in SMEs is important to optimize the performance of the workers and to generate value for the company, as a competitive advantage. They took an SME and made a SWOT analysis: strengths, weaknesses, opportunities and threats. Through the construction of its corporate identity, they searched how to generate a sense of belonging (Moreno et al., 2015).

2. Methodological approach

Data sources

The research samples were selected in a random way so that the samples are reliable and representative. The SMEs for the research were chosen by randomized selection from The University of Finance and Administration D-base. 826 European SMEs through industry, regions and size were selected and asked for cooperation on research. Only SMEs which answered and cooperated fully on research and with only complete data were taken for this research. The final research sample had $n = 371$ (45%). The data used for this research was

taken by the research questionnaire, which collected empirical and sociological data. The research was conducted between 2017-2019 and it is still continuing.

For collecting of sociology data, the Likert scale was used. The Likert scale enables the measurement of the respondent's attitude and its strength. The Likert scale was published in 1932 by R. Likert and it should usually (not necessarily) use 5 degrees – for example, it may be 'I agree', 'I rather agree', 'half-way', 'rather disagree', 'I disagree', but maybe expressed otherwise. The advantage of this scale is that it allows you to evaluate the respondents' attitude and its weight. Hayes, (1998, p. 112). Research preparation, research sample identification, procedure methodology will be determined on the basis of Gavora (2010, p. 261).

This research was operated by the Paper Aided Personal Interview method (PAPI). The interviewer visits the respondent and assists in answering the questions. According to Barbu & Alexandra, (2011), PAPI questionnaire research can be successfully carried out for management research purposes not only nationally but also in a global environment.

An essential condition for the research is that the data will be obtained from interviews with the owners, managers, TOP management, employees and other persons so that the obtained data will have a cross-sectional character.

Reliability analysis – Cronbach´s Alpha

In the empirical research and data collection, besides the validation of the used research method, it is also necessary to verify the reliability of the data examined. For reliability analysis and proving the method of calculation Cronbach's alpha was used. According to Cronbach (1951), Cronbach's alpha takes values in the interval of 0-1. We get a value equal to one of the items that are tied linearly, so the examined sample has a high informative value. A small Cronbach's alpha value indicates low reliability of the analysed data. Usually, a value of 0.7 or higher is interpreted as high reliability of the data sample examined. Cronbach's alpha is given by:

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum_{j=1}^{k} \text{var}(Y_j)}{\text{var}(Y)}\right),$$

where k is the number of test items, var (Y_j) is the j-th scatter of the score, and var (Y) is the total score of the test. For yes / no items, the Cronbach alpha formula is simplified to a form called:Kuder – Richard´s formula:

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum_{j=1}^{k} p_j q_j}{\text{var}(Y)}\right),$$

where p_j is the probability of a correct answer to the j-th item, $q_j = 1-p_j$ is the probability of an incorrect answer. Kramer, R.S., Mileva., R. L. Kay, (2018, p. 2) report that currently studies generally cite Cronbach α as a way of expressing the reliability of the sample researched. Wijayatunga, (2016) verifies these theses and states on Cronbach's alpha that its advantage lies in the uniqueness of use and its easy interpretation for research purposes. For the Cronbach's alpha calculation will be used the statistical program IBM SPSS ver. 25. For deeper details of Cronbach's alpha computing and detailed procedure follow the SPSS ver. 25 manual.

Variables examined[1]

Controlling - Evaluation of the execution and implementation of controlling management activities in the short term. The level of controlling processes is evaluated based on the Capability Maturity Model (CMM) methodology. Rating scale: 0 = absent or insufficient, 1 = low level, 2 = medium level, 3 = excellent level with continuous improvement.

Corporate culture – Wide variable that includes trends in attitudes, opinions and behaviours within the corporation. It could be understood as "how we do things here". Rating scale: 0 = not exist or minimal, 1 = low level without development, 2 = medium level, corporate culture exists, there is no mechanism for its development, 3 = corporate culture on high level which is respecting modern trends and high standards, 4 = optimized level - the company uses high-level of corporate culture and there is a process that continuously stimulates the company in corporate culture development.

Communication - rating scale: 1 - Initial, communication is random, mostly oral, 2 - Basically Managed, communication is oriented to operational tasks, basic electronic communication is used, 3 - Managed, regular communication, electronic communication, chat, basic cloud solutions, 4 - Quantitatively Managed - communication is solved within the organizational structure of the company, information is subject to security, information transmission is focused on quality and speed of its transmission, basics of automated information and data transmission, 5 - Optimizing - strives for continuous improvement and development, as well as a motivation tool.

Technology level (Industry 4.0) - rating scale: 0 = missing or inadequate, 1 = low level, 2 = medium level, use basic technology systems, partial automation, 3 = advanced level, cloud solutions, remote control including automatic data sharing, Industry 4.0 tools partly usage ... 4 = excellent level, advanced communication technologies, production, data sharing and full Industry 4.0 tools usage.

Return on Equity (ROE) - return on equity capital ROE = net income / equity capital
Return on Assets (ROA) - return on equity capital ROA = net income / total assets
Turnover *1000 in EUR - assessment scale by annual revenue: 0=(0-199), 1=(200-399), 2=(400-999), 3=(1000-1,999), 4=(2-3,999), 5=(4-9,999), 6=(10-19,999), 7=(20-39,999), 8=(>40,000).

Pearson´s correlation analysis

The research collected data from various areas of management, enterprise financial performance and stability of the company and many others. For variables determination, the Pearson's correlation coefficient was used. Tsintsadze, Oniani and Ghoghoberidze, (2018, p. 115) authors present that the Pearson's correlation coefficient describes a linear dependence between variables. The further advantage of using Pearson's correlation is the possibility to determine the effects of the interaction of the researched factors. These conclusions are further verified by (Chornous, Ursulenko 2013); (Wijayatunga, 2016, p. 4).

The Pearson´s correlation coefficient by (Tran, 2011) is a number between -1 and +1 that measures the relationship between the two variables. A positive number indicates a positive association, while a negative number indicates an inverse association. Pearson's correlation is a measure of the relationship between two variables x and y and could be defined in terms of the occurrence correlation, ρx, y, where:

$$\rho x,y = COV\,(x,y)\,/\,\sigma x \sigma y \quad 1$$

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[1] Complete method and procedure could be shared – ask authors.

with the corresponding correlation sample $r_{x,y}$ given by:

Thus, COV (x, y) is the correlation of occurrence between x and y, where σx is the standard deviation of *x* and σy is the standard deviation of *y*. In the above formula, exemplary standard deviations *x* and *y* are exemplary. The IBM SPSS ver. 25 program was used to calculate the Pearson's correlation coefficient. Closer details of computing and procedure follow the SPSS manual.

Pearson's correlation coefficient links the strength between variables. Pearson's coefficient is a parametric statistical test to determine how tight the relationship of variables is (up to 0.2 is negligible, 0.2-0.4 is not very tight, 0.4-0.7 is moderate, 0.7-0.9 is a very tight relationship and more than 0.9 is an extremely tight relationship). At values of the Pearson's correlation coefficient above 0.4 (minimum with one of the other variables), the linkage of the variables will be significant for this research and at values above 0.7, the linkage of the variables will be interpreted as very important.

Statistical analysis, model

Research data was analyzed using methods of regression and correlation analysis to prove the dependence of variables and model definition. The following procedure is by Písař & Bílková (2019).A more detailed procedure of data analysing is in accordance with Darlington & Hayes (2017). It is important to notice, that regression method should have some drawbacks of the statistical point of view, but other point is, that this paper purpose is to quantify and explain the scale of researched variables in model and thus provide guidance on managerial changes in SMEs in the field of research problematic. From this point of view the regression drawbacks they are not essential.

Experimental testing

In the case that the minimum moderate relationship between the variables researched will be proven, a randomized research sample will be generated, and these SMEs was tested by using the research finding and research knowledge implementation. This testing will be operated for approximately 6 months.

3. Conducting research and results

Verifying the consistency and reliability of the examined sample

The analyzed sample $n = 371$ was tested for the integrity of the tested variables. The analyzed sample satisfied the data completeness to 100%.The calculation of this indicator reached a value of 0.891 for $n = 5$ variables. Cronbach Alpha value of 0.7 or more proves high reliability and consistency of the analyzed sample. **Examined data can be presented as highly consistent and reliable**.

The researched variables Pearson's correlation analysis

The researched variables Pearson's correlation analysis result is below in table no. 1. For research, it is defined that the correlation value must be minimum 0.4 in accordance with at least one other variable researched. Also, no multicollinearity (Pearson´s coefficient higher than 0.8) was not found. **All variables pass by these criteria.** All variables should be used for

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model computing.

Table 1. Variables Pearson's correlation analysis

Communication	Pearson Correlation	1	.693[**]	.730[**]	.654[**]	.541[**]
	Sig. (2-tailed)		.000	.000	.000	.000
	N	371	371	371	371	371
Corporate culture	Pearson Correlation	.693[**]	1	.711[**]	.638[**]	.536[**]
	Sig. (2-tailed)	.000		.000	.000	.000
	N	371	371	371	371	371
Controlling management	Pearson Correlation	.730[**]	.711[**]	1	.703[**]	.618[**]
	Sig. (2-tailed)	.000	.000		.000	.000
	N	371	371	371	371	371
Technology level	Pearson Correlation	.654[**]	.638[**]	.703[**]	1	.581[**]
	Sig. (2-tailed)	.000	.000	.000		.000
	N	371	371	371	371	371
Turnover	Pearson Correlation	.541[**]	.536[**]	.618[**]	.581[**]	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	371	371	371	371	371

**. Correlation is significant at the 0.01 level (2-tailed); Source own research data, own processing

The controlling management system was chosen as a dependent variable. Used procedure stepwise selection was evaluated as a procedure, which offered the best results in model building. A more detailed procedure of analyzing the data is in accordance with and according to the procedures Darlington & Hayes (2017).

The model construction

The analysis procedure continued by Entered / Removed variables to the model. Closer results are in Table 2.

Table 2. Stepwise Variables Entered / Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Corporate culture, Communication[b]	----	* Stepwise
2	Technology level[b]	----	* Stepwise
3	Turnover	----	* Stepwise

a. Dependent Variable: Controlling management; b. All requested variables entered; * Stepwise (Criteria: Probability-of-F-to-enter <= ,050, Probability-of-F-to-remove >= ,100); Source own research data, own processing

The following step of model computing by selective regression super planes is in Table 3.

Table 3. Inclusion in the final model of dependent variable Controlling management[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.656	.072	----	9.084	.000
	Communication	.402	.040	.457	10.155	.000
	Corporate culture	.372	.042	.394	8.752	.000
2	(Constant)	.525	.070	----	7.455	.000
	Communication	.294	.040	.334	7.294	.000
	Corporate culture	.271	.042	.287	6.384	.000
	Technology level	.262	.037	.302	7.062	.000
3	(Constant)	**.414**	.072	----	5.726	**.000**
	Communication	**.264**	.040	.299	6.648	**.000**
	Corporate culture	**.238**	.042	.252	5.694	**.000**

| Technology level | **.210** | .038 | .242 | 5.552 | **.000** |
| Turnover | **.129** | .027 | .181 | 4.733 | **.000** |

a. Dependent Variable: Controlling management; Source own research data, own processing

Final model – sample regression hyperplane of dependent variable Controlling management:

Controlling management = 0.414 + 0.264 * Communication + 0.238 * Corporate culture + 0.210 * Technology level + 0.129 * Turnover

The model and its usage should have an important impact. For closer explanation, if Communication value at the model is 0.264, that indicates if the value of the Controlling management (dependent variable) increases by one unit and all other explanatory variables remain unchanged, then this change causes an average of 0.264 (in units of the dependent).

This model should be used for SME management, for forecasting, planning and SMEs goals achieving. This model has great potential for SMEs future development, stability and competitiveness. All model individual t-tests are at a 1% significance level.

The following table no. 4 shows that the overall F-test model with four explanatory variables is also significant at the 1% significance level.

Table 4. The model F-test[a]

	Model	Sum of Squares	df	Mean Square	F-test	Sig.
1	Regression	239.371	2	119.686	291.829	.000[b]
	Residual	150.925	368	.410		
	Total	390.296	370			
2	Regression	257.427	3	85.809	237.015	.000[c]
	Residual	132.869	367	.362		
	Total	390.296	370			
3	Regression	265.091	4	66.273	193.727	.000[d]
	Residual	125.206	366	.342		
	Total	390.296	370			

a. Dependent Variable: Controlling management; b. Predictors: (Constant), Corporate culture, Communication; c. Predictors: (Constant), Corporate culture, Communication, Technology level; d. Predictors: (Constant), Corporate culture, Communication, Technology level, Turnover
Source own research data, own processing

Table 5 shows how the value of the multiple coefficients of determination (R-squared) gradually increased with the gradual integration of variables into the model. The model then shows a significant dependence.

Table 5. The value development of the determination coefficient (R-squared)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.783[a]	.613	.611	.640	.613	291.829	2	368	.000
2	.812[b]	.660	.657	.602	.046	49.873	1	367	.000
3	.824[c]	.679	.676	.585	.020	22.401	1	366	.000

a. Predictors: (Constant), Corporate culture, Communication; b. Predictors: (Constant), Corporate culture, Communication, Technology level; c. Predictors: (Constant), Corporate culture, Communication, Technology level, Turnover; Source own research data, own processing

The compiled model of n = 4 explanatory variables to the depended-on variable Controlling management - multiple selection coefficient R2 =, 824[c] shows 67.6% variability of the dependent variable explained by the chosen regression plane. The multiple sample

correlation coefficient R = 0.676 is closer to 1, at the level of the direct (positive) linear dependence of the explained variable on all four selected explanatory variables taken together.

Analyses data interpretation

The chosen methods for research data reliability analysis prove the high consistency and reliability of the data researched, the same as statistical analysis delivered results on a 1% significance level. Based on these findings the research results should be used for answering research questions and evaluation of given hypotheses.

H1 SMEs corporate culture is an important component of controlling management system.

Based on statistical results for analysis and designing the model it was proven that corporate culture is an important component of controlling management system in SME. The value of the Corporate culture variable on model 0.238 shows the importance of this variable. Based on these findings and depth research of the variable it was defined that a stable managerial system in the company is a necessary condition for the establishing and developing of corporate culture. In 87 % of SME researched the corporate culture was evaluated by employees on the highest level if also the controlling management system was evaluated on the highest level. 82% of respondents identified a stable management system based on controlling principles as a necessary condition for corporate culture development. The research findings show how thin the relationship is between controlling and corporate culture. Based on experimental research results testing has proven that SMEs which increased controlling level in 73% of cases increased also corporate culture. Based on these findings, the hypothesis **H1 should be declared as proved.**

H2 Controlling management system with effective communication supported by high technology level implementation are basic factors for high SME business performance.

The effective communication inside and outside a company was found as very important for any company operations, business performance and SME attractivity. Based on the model the variable Communication has value 0.264 and variable Technology level 0.210. From the model it is visible how important are these variables for a functional controlling management system and also for any company operation. Based on these findings, these results were experimentally verified on randomized SMEs. By implementation and improving the technology and communication level, also the controlling management level grows at a minimum of about one degree in 74 % of companies researched. Importantly, on average all experimentally tested companies ROE grows about 6.2 %. Based on these findings, the hypothesis **H2 should be declared as proved.**

H3 SMEs with developed controlling management system have higher business performance.

The model of dependent variable Controlling management shows the value 0.129 of explaining variable turnover. This value is important and proves the consequences between the variables researched. In general, it was found that variables researched have a high level of linear dependency at 0.618 value of Pearson´s correlation coefficient. This value is not far away from 0.7, where the strong linear dependency is starting. Based on correlation analysis and the model it was proven that change in one variable will cause a similar change in the second variable. SMEs can use these findings to for example increase turnover by increasing the level of the controlling management system. By experimental testing it was verified that improving the controlling management system by up to one level caused on average a growth of turnover of 7.2 %. The hypothesis **H3 should be declared as proved.**

H4 The definition of a strong corporate culture improves the controlling and communication change management.

The variables analysed show that the fact of creating a strong corporate culture leads to better controlling and communication change management. Based on the model it can be seen that the variable corporate culture value is 0.238, which is the important coefficient at the model. By experimental testing it was proved that people evaluate strong corporate culture as the main factor for SME higher performance in 74% and also 61% of respondents see corporate culture as one of the most important factors for their satisfaction and encourage the factor for loyalty. Especially in the 21st century in a hyper-competitive business environment, the people are the most important component of any factory and based on experimental testing and model it is visible how important are the corporate culture and its role in the business. The hypothesis **H4 should be declared as proved.**

Research question **Q1**: Should controlling management system and corporate culture development be seen as an opportunity to provide extra support to SMEs' stability and competitiveness?

Based on research findings and the proven hypothesis it is clear that the controlling management system and corporate culture are important factors for SMEs stability, its growth and competitiveness. Also, it was proven that variables such as Technology and Communication are important for current companies and their future development. In consequences with the digital age and coming Industry 4.0 it is clearly visible how important efficiency is in any business operation and also, how necessary the development of HR is. The controlling management system and corporate culture are offering ideal tools and opportunities for SMEs. **Q1 was answered.**

To answer Q2 and the following hypothesis the Pearson's correlation analysis was used to determine the relationship between the controlling management system, corporate culture and SMEs financial ratios. Results are below in table no. 1 For research, it is defined that the correlation value must be a minimum 0.4 in accordance with at least one other variable researched. **All variables pass by these criteria**. The Cronbach´s alpha computed for $n = 5$ variables shows the value 0.829, which is proving researched data of high reliability.

Table 6. Financial variables performance Person's correlation analysis

		Controlling management	Corporate culture	ROE	ROA	Turnover
Controlling management	Pearson Correlation	1	.711**	.467**	.471**	.618**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	371	371	371	371	371
Corporate culture	Pearson Correlation	.711**	1	.435**	.475**	.536**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	371	371	371	371	371
ROE	Pearson Correlation	.467**	.435**	1	.846**	.287**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	371	371	371	371	371
ROA	Pearson Correlation	.471**	.475**	.846**	1	.298**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	371	371	371	371	371
Turnover	Pearson Correlation	.618**	.536**	.287**	.298**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	371	371	371	371	371

**. Correlation is significant at the 0.01 level (2-tailed). Source own research data, own processing

H5 The dependency between the controlling management system supported by corporate culture and ROE, ROA and turnover will have minimum moderate 0.4 – 0.7 dependency of Pearson´s correlation coefficient.

Based on the findings of table 6. the hypothesis H5 should be evaluated. It is clear that variables Controlling management and Corporate culture have a moderate (0.4-0.7) level of Pearson´s correlation coefficient which is showing linear dependency between the variables researched. The conclusion of this analysis shows how important the controlling management system and corporate culture are for financial stability and competitiveness. Also, the dependency between controlling and corporate culture is important because the value of Pearson´s correlation coefficient is at the 0.711 level. These values (0.7-0.9) shows a very tight relationship of linear dependency. By experimental testing it was found that SMEs which have a controlling and corporate culture minimum on level 3, also have a ROA or ROE ratio equal to or higher than 25 %. Based on that, H**5 should be declared as proved.**

Research question **Q2**: Should controlling management system and corporate culture development be used as a tool for supporting SMEs' financial stability and competitiveness?

The findings of the research are clear. The controlling management system is a great tool for companies, which is oriented for future and continuous improvement. Corporate culture is a necessary way how to develop an environment where the people are important and will follow company goals. Especially in the 21st century the people and their knowledge value are growing rapidly and people are an agent, which is the most valuable part of the company. The controlling management system and corporate culture are creating an environment which is supporting conditions for SMEs growth and stability. Based on previous findings, **Q2 was answered**.

Discussion

The authors identify the following key factors on the controlling, corporate culture and modern communication standards.

Key controlling factors

ERP system and technology – are necessary factors for any company task in a hypercompetitive environment and coming Industry 4.0. This attitude is verified and developed also by (Písař and Havlíček, 2018, p. 1172), who state, that SMEs are limited by financial capital and there is a lack of solutions for closer cooperation between SMEs in all the EU. They offered the controlling as a management tool implemented in information systems, especially ERP systems.The controlling management system powered by using a high-performance information system ERP can therefore easily meet these requirements. Controlling as a tool for SMEs with using modern technologies is described also by Weske (2012). Durda & Ključnikov (2019) validated these approaches and develop it in consequences with social networks and startup SME. An interesting view on problematics is also offered by the Association of SME in the Czech Republic (AMSP) which publicly reports about technology and digitalization 2019 in the SMEs sector. Based on this report only 31% of SMEs are investing in Industry 4.0 production halls, only 22% invest for automatization and robotization, 74% of SMEs are investing in digital education and 34% in an ERP system with smartphone connectivity.

There are many authors who are focusing on the problematics of SME and controlling. What is important is that authors agree on the importance of control and technology and that they see their importance as crucial for the future. Based on research findings – in the controlling and technology relationship it is clear that SMEs need to invest in controlling system

development as much as technology. There is an area for improvement and how to make SMEs stronger. This is the way how to support SMEs competitiveness and long-term stability.

Change management – is crucial for an effective controlling system. Modern controlling is creating an environment of continuous improvement. This function is still requesting changes on all enterprise levels. This characteristic is essential for the healthy development of a business, but it is still human nature to reject changes. The concept of modern controlling and its advantages as an SMEs managerial system is also addressed by Kamps (2013, p.60) who describes controlling as a tool which is focused on planning and goals. These theses were verified and developed by Písař& Kupec (2019, p. 278) who pointed out the importance of auditing for the controlling management system. Samuelsson, et al., (2016) and Kamps (2013, p. 60) see controlling as important managerial tool for short-term and long-term planning in SMEs. Laval, (2018, p. 13) sees controlling as a tool which can support management by identifying, planning and steering decisions which contribute to the added-value of the company.

All these controlling functionalities can work only if people in a company will support and develop it. SMEs are usually ready to invest in technology, for new equipment, for marketing, but an investment for changes to management in a company is in a weak position. Based on research finding, only 18 % of SMEs researched are working on changes in management and only 6% is investing a minimum of 30 % of the total budget for any investment as a budget for changes to management.

The training programs, development of communication and corporate culture is a way how to reach a hi-performance tool for changes to management and healthy and strong SME. The following chapter will focus on this topic.

Key factors of corporate culture and modern communication standards

Closeness to their publics and stakeholders - Their smaller size lets the different publics be closer and interact with the others in a deeper and more complete way. The human resources links are stronger and the face to face communication is more effective than the digital one.

More flexible and friendly corporate culture - SME´s smaller structure and size provides them with a more flexible change culture in comparison with multinational corporations. Their teams will adapt faster to new markets and will develop a more innovative strategy. There are also some very small SME´s, usually a family business, with an "outdated" corporate culture. Their flexibility supported by technologies of Industry 4.0 and the closeness of their publics are not in this case being taking advantage of due to their lack of strategic management. The friendly corporate culture of the SME´s enhances the free interpersonal messages exchange among professionals.

Strategic communication management - An effective communication has to manage its target-groups and messages to obtain their communicational goals, all of them coherent with the corporate strategy -mission, values and vision. The aims are both internal and external, in order to maintain the corporate culture, the work team motivation, the brand proud, the positive corporate image and the balanced harmony among the different stakeholders. The professionalized SME´s in age of Industry 4.0 develop this factor with more effectiveness than the bigger ones, not only for their more flexible structure, but also for their higher human resources links, creativity and innovation. On the other hand, the less-professionalized SME´s apply to a lesser extent the strategic management, so the communication plan could be less accurate. Their lack of resources, the psychological "walls" among the personnel or their unprofessional communication work team prevent them from creating and releasing messages to their publics with the needed effectiveness. On the other hand, in some SME´s the strategy

is shared with stakeholders in such a positive way that we may research this variable with a deeper approach.

Innovation and creative communication - On SME´s these two factors are influencing each other. In order to create a creative and stronger brand communication should work with innovation criteria. Their small structure, the deeper relationship with stakeholders, the stronger links between target groups, their wider flexibility, the higher culture motivation and the stronger brand pride help the development of innovation and creativity. On the other hand, some negative variables could affect the process: the lack of resources usually helps the creativity but, in some cases, breaks the innovation; the psychological "walls" among the different work teams; the family culture which prefers the traditional ways of doing things than the innovative one, and unprofessional workers. The technologies of Industry 4.0 should create a "bridge" or destroy "wall" between people. In any case, a good implementation of an innovative communication strategy is also required.

Professionalization in communication - SME´s are less inclined to count on professionalized communication teams, both inside the business and with external services. The quality of their strategic decisions is strongly determined by this factor. Some SME´s are developing by themselves their communication plan, without a correct strategy, nor accuracy in their goals, media and techniques. Also, if your market opinion research is not professional, your communication approach is likely to be wrong.

Feedback systems are easier to implement - The small size and structure of the SME´s allows the implementation of better feedback systems. To "listen" to the different stakeholders is required to manage with accuracy the corporate messages.

Internal communication as the pending subject - Internal target-groups or teams are crucial for effective and successful communication. Employees -including managers, trainees and volunteers- must be motivated and proud of their company. At SME´s the smaller size helps initially the communication with each other inside the business. But the strong corporate culture could create some "psychological walls" among their members, which prevent the harmonious relationship that is needed. This variable includes two types of connection: **formal communication**, official one with vertical, horizontal and diagonal directions; and **informal communication**, unofficial and spontaneous messages -with the same directions, but much more flexible than the first one-. We have the certainty of finding the two types of messages in each and every SME´s. But we are not so sure that all of them are working on it with professionalized requirements. Both formal and informal messages must have their goals and target-groups defined. The difference between them is the communicative context and the level of formality: the first must work on the basis of the assessment of the strategic goals, and the second, trying to fix times and spaces creating a communication scenery for informal messages. The goals pursued are to inform, motivate, create a proud sense, and get them to bet for the company.

External communication, only effective in a professionalized way - In this case we include all the communication techniques, also formal and informal, where messages are released to external stakeholders: consumers - clients- customers, users, public administration, journalists from "online" and "offline" media, neighbours, institutions, other companies, different groups from society, etc. This type of technique must be developed by communication professionals. Their level of specialization is higher and the skills needed are more sophisticated. We include brand and corporate communication, product and service communication -advertising, public relations, event´s management…-, press relations, institutional communication, CSR - Corporate Social Responsibility plan-, etc.

Intermediate communication present in SME´s - There is a third category that includes other target-groups which are not gathered in the internal or external circles: they are close to the internal environment but they do not have the contract link: shareholders, suppliers,

associations... In the SME´s context, the face to face relationship or people linking by the Industry 4.0 technologies enhances effective communication.

Social media behaviour in SME´s - They are present in the three communicative categories. Social media, as an "online" messages platform, cross the contacts and the communicative spots without formal or informal criteria. The clue is which message content to use and if it helps to communicate the communication strategy or not. There are some studies on Social Media and SME´s, but none of them addresses the issue of the informal messages.

Strategy but also implementation - The effectiveness comes from a strategic point of view of the communication variables, as well as for the good implementation of the communication plan. To create an accurate strategic communication plan, with internal, intermediate and external actions -and formal and informal programs- a professional implementation and its assessment are needed.

Research limitation

The research limitation is the size of the research sample, which is limited by a high time-consuming factor given by the chosen personal researched method and also by experimental testing of reached results. On the other hand, in this way it is possible to reach highly accurate data and also by its verifying we are able to get conclusions, which are applicable for SME in a relatively short time. This research should be developed by cooperation with other research teams. We are open for cooperation, repeating of this research and possible comparison of results reached.

Conclusion

The SMEs and their competitiveness and long-term stability is an important task for governances and national economies. The controlling supported by technology is a modern tool, which is ready for the Industry 4.0 environment, and it is adaptable for any company and especially for SMEs and is simple to use. The aim of this research is to determine the impact of the controlling management system, communication and corporate culture on SMEs performance, stability and competitiveness. While undertaking the research consequences were found between the SMEs management system, technology level and also, how important and which role is played by corporate culture and communication. This research concludes that controlling and communication are both crucial tools for creating a management system which will enhance SMEs to better standards in innovation and market performance. Both are working into the special corporate culture developed in each small and medium company. The results obtained show the connection between the main variables and also offering its future research and usage in managerial practice.

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References

Abimbola, T. (2001). Branding as a Competitive Strategy for Demand Management in SMEs. *Journal of Research in Marketing and Entrepreneurship*, 3(2), 97-106. https://doi:10.1108/14715200180001480.

Adamowicz, M., & Machla, A. (2016). Small and medium enterprises and the support policy of local government. *Oeconomia Copernicana*, 7(3), 405-437. https://doi:10.12775/OeC.2016.024.

ASMP. (2019). Vyplatí se malým a středním podnikům digitalizovat výrobu?, Retrieved on October 4th from http://amsp.cz/vyplati-se-malym-a-strednim-podnikum-digitalizovat-vyrobu-2/

Barbu, A., & Alexandru, I.M. (2011). Data collection in Romanian market research: a comparison between prices of PAPI, CATI and CAWI. *Management & Marketing*; Bucharest, 6(3 349-364. Accesible from: http://www.managementmarketing.ro/pdf/articole/230.pdf

Belás, J., Dvorský, J., Kubálek, J., & Smrčka, L. (2018). Important factors of financial risk in the SME segment. *Journal of International Studies*, 11(1), 80-92. https://doi:10.14254/2071-8330.2018/11-1/6

Benedic, N. O. (2015). The Challenge of Controlling. *International Journal of Industrial Engineering and Management (IJIEM)*, 6(4), 153-163.

Cao, Y., Myers, L. A., Tsang, A., & Yang, Y. G. (2017). Management forecasts and the cost of equity capital: International evidence. *Review of Accounting Studies*, 22(2), 791-838. https://doi:10.1007/s11142-017-9391-5

Chong, S. Hoekstra, R. Lemmers, O. Van Bereben, I. Van Den Berg, M. Van Der Wal, R., & Verbiest, P. (2019). The role of small- and medium-sized enterprises in the Dutch economy: an analysis using an extended supply and use table. *Journal of Economic Structures*, 8(1), 1. https://doi:10.1186/s40008-019-0139-1.

Chornus, G., & Ursulenko, G. (2013). Risk management in banks: new approaches. *Ekonomika*. 92(1), 120-132.

Corso, M. Martini, A. Paolucci, E., & Pellegrini, L. (2010) Information and Communication Technologies in Product Innovation within SMEs- The Role of Product Complexity. *Enterprise and Innovation Management Studies*, 2(1), 35-48. https://doi:10.1080/14632440110056319.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16, 297-334.

Darlington, R.B., & Hayes, A. F. (2017). Regression Analysis and Linear Models: Concepts, Applications, and Implementation. New York: The Guilford Press.

Delibasic, M. (2016). Hypothetical Matrix for Institutional Modeling of the Basis for Economic Development in the Countries of Southeast Europe. *Montenegrin Journal of Economics*, 12(2), 147-159. https://doi:10.14254/18005845.2016/12-1/9.

Draheim, D. (2010). Business Process Technology: A Unified View on Business Processes, Workflows and Enterprise Applications. Berlin: Springer.

Draskovic, V., Popov, E., & Peleckis, K. K. (2017). Modelling of Institutional Changes in Transition Countries - the Gap Between the Theory and Practice. *Montenegrin Journal of Economics*, 13(1), 125-140, https://doi: 10.14254/18005845/2017.13-1.9

Dúbravská, M., Mura, L., Kotulič, R., & Novotný, J. (2015). Internationalization of Entrepreneurship – Motivating Factors: Case Study of the Slovak Republic. *Acta Polytechnica Hungarica*, 12(5), 121–133. https://doi:10.12700/APH.12.5.2015.5.7

Durda, L., & Ključnikov, A. (2019). Social networks in entrepreneurial startups development. *Economics and Sociology*, 12(3), 192-208. https://doi:10.14254/2071-789X.2019/12-3/13

Gama, A.P.M., & Geraldes, H.S.A. (2012). Credit risk assessment and the impact of the New Basel Capital Accord on small and medium-sized enterprises: an empirical analysis. *Management Research Review*, 35(8), 727–749.

Gavora, P. (2010). Introduction to educational research. Brno: Paido

Goller, I., & Bessant, J. (2017). Creativity for Innovation Management. New York: Routledge,

Hayes, N. (1998). Basics of social psychology. Prague: Portál.

Hrašková, D. & Bartošová, V. (2014), Kvalita podnikateľského prostredia a jej vplyv na konkurencieschopnosť podniku, EMI, 6(2), 43-51.

Iurcovich, P. (2012). La Pequeña y Mediana empresa y la función de la comunicación. Cuadernos del Centro de Estudios en Diseño y Comunicación. 40, 79-84. https://doi: https://doi.org/40

Kmieciak, R. (2019). Innovativeness, empowerment and IT capability: evidence from SMEs. *Industrial Management & Data Systems*, 112(5). https://doi:10.1108/02635571211232280

Jespersen, K., Rigamonti, D., & Jensen, M.B. (2018). *Small Bus Econ*, 51: 879. https://doi:10.1007/s11187-017-9969-0

Kamps, T. (2013). Systematic Chasing for Economic Success: An Innovation Management Approach. Hamburg: Anchor, 120.

Koisova, E., Habanik, J., Virglerova, Z., & Rozsa, Z. (2017). SMEs Financing as an Important Factor of Business Environment in Slovak Republic Regions. *Montenegrin Journal of Economics*, 13(2), 129-140, https://doi:10.14254/1800-5845/2017.13-2.8

Ključnikov, A., & Belás, J. (2016). Approaches of Czech entrepreneurs to debt financing and management of credit risk. *Equilibrium. Journal of Economics and Economic Policy*, 11(2), 343-365. https://doi:10.12775/EQUIL.2016.016.

Kramer, R.S.M., & Kay, R. L. (2018). Inter-rater agreement in trait judgements from faces. PLoS One; San Francisco, 13(8), https://doi:10.1371/journal.pone.0202655

Kupec, V. (2018). Risk Audit of Marketing Communication. European Research Studies Journal, Piraeus: International Strategic Management Association, 21(1), 125-132. Accessible from: https://www.ersj.eu/dmdocuments/2018_XXI_1_11.pdf

Lambovska, M., Rajnoha, R., & Dobrovic, J. (2019). From Quality to Quantity and Vice Versa: How to Evaluate Performance in the Budgetary Control Process. *Journal of Competitiveness*, 11(1), 53–69. https://doi:10.7441/joc.2019.01.04

Laval, V. (2018). How to Increase the Value-added of Controlling. Berlin: Gruyter, 2018, 215. Lavia, L.O. & Hiebl, M.R.W. (2015). Management accounting in small and medium-sized enterprises: current knowledge and avenues for further research. *Journal of Management Accounting Research*. 27(1), 81-119. doi: 10.2308/jmar-50915

Li, Y., Li, X., Liu Y., & R. Barnes, B. (2011). Knowledge communication, exploitation and endogenous innovation: the moderating effects of internal controls in SMEs. *R&D Management*, 41(2). https://doi:10.1111/j.1467-9310.2011.00634.x

Marín, D.P.P. (2016). La Comunicación Empresarial en regiones con un bajo desarrollo empresarial: el caso de las PYMES del sur de Europa. OBS, Lisboa.10(1), Accessible from: http://www.scielo.mec.pt/scielo.php?script=sci_arttext&pid=S1646-59542016000100009

Marín, D.P.P. (2015). Business communication in SMEs: perception, knowledge and attitude. Revista Mediterránea de Comunicación, COMPUBES. 6(2), 63-82, https://doi:10.14198/MEDCOM2015.6.2.03.

Mazo, J.M. (1994). Estructuras de la Comunicación por Objetivos. Barcelona: *Ariel Comunicación*. 603.

Mazo, M. E. (2017). Innovación en la gestión comunicativa (I): introducción al método "Caleidoscop". Perfiles actuales en la Información y en los Informadores. Madrid: TECNOS, 201-210.

Mazo, M. E. (2015). The Communication Gap in CSR between companies and social organisations. aDResearch ESIC. Madrid: ESIC Editorial, 12(12), 46-63.

Merono-Cerdan, A. (2005). El correo electrónico en las Pymes para la comunicación y gestión del conocimiento. *Universia Business Review*, 5, 70-79.

Mohammedrezaei, F., & Norman Mohd-Saleh, N. (2018). Audit report lag: the role of auditor type and increased competition in the audit market. *Accounting and Finance*, 58(2018), 885–920.

Moreno, A., Arbelaez, S., & Calderón, L. (2014-2015). Implementación de herramientas de comunicación interna como generadoras de cambios en las PYMES. Razón y Palabra, 88, México. Accessible from: http://www.razonypalabra.org.mx/N/N88/Varia/08_MorenoArbelaezCalderon_V88.pdf

O´Dwyer, M. (2009) Innovative marketing in SMEs. *European Journal of Marketing*, 43 (½). https://doi:10.1108/03090560910923238.

Pazmino, M., & González A.J. (2015). Análisis exploratorio sobre las publicaciones relacionadas con la comunicación organizacional en Pymes. *Revista Publicando*, 1, 37-45.

Oladimeji, M. S., & Udosen, I. (2019). The Effect of Diversification Strategy on Organizational Performance. *Journal of Competitiveness*, 11(4), 120–131. https://doi:10.7441/joc.2019.04.08

Petrů, N., Kramoliš, J., & Stuchlík, P. (2020). Marketing Tools in the Era of Digitization and Their Use in Practice by Family and Other Businesses. *E&M Ekonomics and Management*, 23(1), 197–212. https://doi:10.15240/tul/001/2020-1-014

Pisar, P., & Bilkova, D. (2019). Controlling as a tool for SME management with an emphasis on innovations in the context of Industry 4.0, *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 14(4), 763-785, https://doi: 10.24136/eq.2019.035

Pisar, P., & Havlíček, K. (2018). Advanced Controlling and Information Systems Methods as a Tool for Cohesion and Competitiveness of the European Union, Proceedings of the 4th International Conference on European Integration 2018, Ostrava, 1172

Pisar, P., & Kupec, V. (2019). Innovative Controlling and Auditing – Opportunities for SME. Journal of International Studies, 10(1), 277-288. https://doi:10.14254/2071-8330.2017

Prasetyo, H. A. (2016), What driver international competitiveness? An empirical test in emerging Indonesian market. *Journal of Competitiveness*, 8(4), http://dx.doi.org/10.7441/joc.2016.04.08.

Rahman, A. R., Civelek, M. C., & Kozubikova, L. K., (2016), Proactiveness, competitive aggressiveness and autonomy: a comparative study from the Czech Republic. *Equilibrium. Quarterly Journal of Economics and Economic Policy*, 11(3), 631-650. https://doi:10.12775/EQUIL.2016.028.

Real, I., Brenda, A., & Heredia, J.A. (2014). Uso e impacto de las redes sociales en las estrategias de marketing de las PyME´s. Revista de Investigación Académica sin Frontera,19.

Řepa, V. (2012). Podnikové procesy – procesní řízení a modelování. (Business Processes - Process Management and Modeling.) 2. Ed. Praha: Grada, 2012.

Safar, L. Sopko, J. Bednar, S. & Poklemba, R. (2018), Concept of SME business model for industry 4.0 environment. *TEM Journal*, 7(3), 626-637. https://doi: 10.18421/TEM73-20

Samuelsson, J. et al. (2016). Formal accounting planning in SMEs. *Journal of Small Business and Enterprise Development*, 23(3), 691-702.

Scholleová, H., & Čámská, D. (2015). Measurable Assumptions Innovative Behaviour of Firms: The Area of Financial Assumptions. SOLIMAN, Khalid S. (ed.). Proceedings of the 25th International Business Information Association Conference. Innovation Vision 2020: From Regional Development Sustainability to Global Economic Growth, 1933–1942.

Svozilová, A. (2011). Zlepšování podnikových procesů. (Improvement of Business Processes.) Praha: Grada, 232.

Tomášková, A., & Havlíček, K. (2018). Family Enterprises and their Support through Subsidies. *European Research Studies Journal*. 21(2), 23-37. Available at: https://www.ersj.eu/journal/982

Tran, M. (2011). Robustness of two formulas to correct pearson correlation for restriction of range, Georgia State University Digital Archive @ GSU. 1-2. Available at: http://proxy.cityu.edu/login?url=https://search-proquest-com.proxy.cityu.edu/docview/899270775?accountid=1230

Tasintsadze, A., & Oniani, L. & Ghoghoberidze, T. (2018). Determining and predicting correlation of macroeconomic indicators on credit risk caused by overdue credit. *Banks and Bank Systems*, 13. 114-119. https://doi:10.21511/bbs.13(3).2018.11.

Vrgovic, P., Vidicki, P. Glassman, B., & Walton, A. (2014). Open innovation for SMEs in developing countries- An intermediated communication network model for collaboration beyond obstacles. *Organization and Management*, 14(3). https://doi:10.5172/impp.2012.14.3.290.

Wang, W.Y.C., Pauleen, D.J., & Zhang, T. (2016). How social media applications affect B2B communication and improve business performance in SMEs. *Industrial Marketing Management*, 54, 4-14. https:// doi:10.1016/j.indmarman.2015.12.004.

Weske, M. (2012). Business Process Management: Concepts, Languages, Architectures. 2. Ed. Berlin: Springer.

Wijayatunga, P. (2016). A geometric view on Pearson's correlation coefficient and a generalization of it to non-linear dependencies. *Ratio Mathematica*, 30, 3-21.