

**INNOVATION, ENTREPRENEURSHIP
AND ORGANIZATIONS' BUSINESS
PERFORMANCE**

Edited by

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From the Editors

If there are concepts that have huge academic literature and are of outstanding practical significance in corporate practice, then business performance is certainly one of them. However, the authors of this special issue add interesting and exciting elements to our knowledge regarding business success and performance in many ways.

This special issue underlines that business success, which has both financial and social components, depends to a great extent on the knowledge, skills, and cooperative skills of people in the organization, and their openness to the world of external and internal stakeholders. The behavior of people, when heavily influenced by the values of the organization and its associated business ethics, has a major impact on business success. This is also true for ethically and socially controversial industries, such as pharmaceutical, alcohol and tobacco.

The research results of the authors in this special issue show that different organizational frameworks and solutions can lead to the success of a business. There is, of course, no single, infallible “recipe” leading to success. However, developing project management skills and applying a project management approach within an organization can increase the organization’s entrepreneurial ability. The key feature of such a solution is that the organization becomes more open to stakeholders and processes in its local environment. This also means that an organization’s ability to innovate, and improve the efficiency of its innovation processes, increases.

It is an exciting feature of the special issue that most of the studies deal with a specific area of the global economy, namely Central and Eastern Europe. Empirical research carried out in Poland, the Czech Republic and Hungary, and a comparative analysis of them, is a valuable contribution to the increasingly rich literature dealing with this region, as well as the academic literature in the more general sense.

The first paper by Majra Hodžić and Helena Hrůzová, “A study of project management practices in the Czech Republic,” addresses the importance of project management for organizations’ innovation and performance. Based on the example of the Czech Republic, Hodžić and Hrůzová study current practices used in the field of project management and underline the

importance of stakeholders' main demands and requests, and the level of use of project management methods. The results that are presented provide practical implications, especially for new start-ups wanting to boost their competitiveness and innovativeness, by displaying success factors for project management and the necessity for innovation in this area.

The subject of project management is continued in the second paper by Katarzyna Grzesik and Katarzyna Piwowar-Sulej entitled "Project managers' competencies and leadership styles from the perspective of organizations functioning in Poland." Grzesik and Piwowar-Sulej discuss the significance of project managers' different competencies and project leadership styles, which are especially important nowadays considering the increasing dynamics of the organizations' environment. The needed and adopted competences are compared between the strictly project-oriented organizations (implementing projects for external clients) and organizations that manage projects for internal purposes. The authors identify competencies which are important for organizations' success in the area of project management and may, in turn, lead to better business performance.

The importance of human capital for organizations' performance and competitive advantage is addressed in the third paper by Łukasz Bryl called "Human capital orientation and financial performance. A comparative analysis of US corporations". In the paper, Bryl verifies whether human capital orientated organizations generate a positive or even above-average financial performance due to: higher skills of employees, greater motivation and, thus, higher overall effectiveness. The paper has significant practical implications for both managers aiming at increased competitive advantage and investors in terms of the possible directions of stock market investments aimed at achieving above-average returns.

Financial success and high performance may also be gained by innovativeness. In the fourth paper, "An innovation capability development process for firms in developing countries: A theoretical conceptual model," Gezahegn Tesfaye and Daniel Kitaw analyze the problem of innovation capability development. The much-needed complexity of the analysis is reflected by combining both the technical and the financial aspects of innovation capability development. The proposed model identifies three key innovation capability constructs and is of practical value, especially to organizations from developing countries, as it helps to progress the innovation capabilities more effectively.

The fifth paper by Włodzimierz Sroka and Richard Szántó, "CSR and business ethics in controversial sectors: analysis of research results," addresses the issue of organizations' performance from a different perspective, namely the particular obligations toward society or the environment constituted by

corporate social responsibility. Based on the example of controversial sectors of the economy (pharmaceutical, tobacco and alcohol) Sroka and Szántó examine the scale and scope of the use of business ethics principles and practices in Poland and Hungary. The analysis provides not only significant fresh insights in this field but also shows that business ethics have an influence on business success and the corporate image of organizations.

The sixth paper, “The themes of entrepreneurship discourse: A data analytics approach” by Philip T. Roundy and Arben Asllani, considers the importance of the language used by entrepreneurs. Roundy and Asllani identify five dominant themes in entrepreneurship discourse which address, among other things, technology and professional investments. The analysis of the most recurring themes in entrepreneurship discourse, and their change over time, sets directions for future research and indicates the importance of entrepreneurship discourse for organizations’ business success.

We would like to thank all the authors for their contribution to this special issue and for sharing their research. We believe that this new research represents a valuable input to our knowledge regarding business success and organizations’ performance. We also want to thank the reviewers whose comments contributed to the improvement of the papers and the whole of this special issue.

We hope the articles presented here will be of interest to readers, scholars and researchers around the world, and that they will inspire them on to further scientific and practical research in the field of business performance.

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A Study of Project Management Practices in the Czech Republic

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Abstract

The importance of project management has hastily increased and its rapid development and tendency towards innovation has made it one of the key components of organizations' performance. Therefore, the main purpose of this paper was to conduct a systematic study of the current situation and practices in the field of project management in the Czech Republic. Four areas of project management are closely studied: stakeholders' main demands and requests, main characteristics of project management, level of use of project management methods and identification of the characteristics of the respondents. The research has an explanatory character and works with primary and secondary data. Primary data was obtained through an on-line cross-sectional survey comprising of four parts (identical to the areas studied) conducted in the Czech Republic in 2016. The questionnaire consisted of twenty questions in total and it had elements of both quantitative and qualitative research. It yielded 118 usable responses. The sample examined was random but expert - it covered organizations operating in the Czech Republic and respondents were asked to identify their professionalism and experience in the area of project management. Furthermore, the results of the authors' survey were compared with the results of similar surveys from the last five years providing secondary data. This comparison brought forth additional insights and better understanding of the theoretical grounding. The results showed a prominent relationship and, to some extent, a correlation between understanding (defining) a successful project and identifying success factors, stakeholder demands and problematic areas, displaying a complexity of working in the field of project management. Furthermore, a vaguely-defined scope was identified as the most problematic area and issue influencing project success. Overall, the study indicates the necessity for innovation, such as the development of a basic framework for project governance approaches as well as an increase in the use of available project management methods. These directions will not only improve

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project management, but will also boost entrepreneurship spirit and help modern, highly potential start-ups to be competitive in the market.

Keywords: *project management, project management methods, knowledge, stakeholders.*

INTRODUCTION

Project management is undoubtedly one of the main hot topics within most organizations. It has been increasingly used in various business fields as well as by different entities from start-ups and small companies to multinationals. Project management serves as a very valuable application platform for the entrepreneurial innovation process.

While the substantive content of project management has essentially remained unchanged for the last twenty years, the framework and approach have undergone innovative changes. This corresponds with the view of modern approaches in management which basically means that the essence is not in learning and implementing the methods and software, but in embracing the complex, overall approach of project management. This overall approach also includes project sustainability which is defined by the European Commission as the “likelihood of a continuation in the stream of benefits produced by the project after the period of external support has ended” (European Commission, 2004, p. 146). Sustainable development is even considered as a new management paradigm for managing projects in complex and dynamic environments (Gareis, 2013). The popularity and wide usage of project management have been noticeable in the Czech Republic as well. In the last few years, not only multinational companies, but a wide range of organizations including small start-ups, are orientating more towards project management approaches.

This has resulted in raised interest for the status of project management practices in the Czech Republic among researchers. Since 2012, IPMA CZ and EY (former Ernst & Young) conducted surveys attaining to get a closer overview and analyze the situation of project management in the Czech Republic. These studies provide a general overview of the situation in project management since 2012 and give us important insights about project teams coping with many issues and unsuccessful projects. However, there are still gaps in the development and elaboration of the topic in research and practice, which shows that there is a great space in project management for more research, especially in the Czech Republic.

With regards to this, the research problem grew out of our interest in the particular topic supported by the above-mentioned gaps. Observing the

current situation, the research question rose - *is it time for a boost in project management in the Czech Republic?* In order to properly address and answer the research question, the study that was carried out attained to overcome the limitations of the previous studies by conducting a cross-sectional study with carefully chosen respondents, whose professionalism and knowledge in the area of project management is proven, and at the same time focusing on four specific areas. The research concentrates on the following four areas of project management: stakeholders' main demands and requests, the main characteristics of project management in the Czech Republic, the level of use of the project management methods, and the identification of the characteristics of the respondents.

The choice of these four areas was not incidental but has its rational context:

- 1) The demanding requirements of the stakeholders at the start of any project as well as the extent of their changes during project execution have a significant (and often a dramatic) impact on the success of the project;
- 2) Although projects show clear specificities compared to other "tasks," they are internally differentiated. They vary in scope, duration, financial claims, industry, culture, risks and other characteristics or features. If we want to make analysis and comparisons, we must perceive and respect them;
- 3) Quality is a key focus area in project management. Among the ways to increase it is the application of project management methods which innovate and standardize the direction of management so as to avoid unnecessary factual and procedural non-rationalities and errors, and make communication about the project among the stakeholders more understandable.

Therefore, the main purpose of this paper was to conduct a study of the current practices in the field of project management in the Czech Republic from a multi-factor perspective according to the chosen four areas.

LITERATURE REVIEW

The following literature review comprises of subsections that provide sufficient theoretical background of the key areas and terms in the field of project management relevant for this paper. Since the paper studies project management, the first subsection focuses on the definitions and necessary explanation for this term. Subsequently, agile approach and projects are defined too. With regards to the four areas being investigated in this paper, the literature review contains the necessary theoretical framework for key elements of these areas as well. Therefore, the role and importance of the project manager as well as project stakeholders and the project life cycle are defined and discussed.

Project management definition

There are many project management definitions, but the basis is the same for all of them. With regards to the purpose of this paper being to analyze current project management practices in the Czech Republic, the authors chose four relevant definitions. The first three come from professional Project Management associations. The fourth one comes from an academic guru in Project Management.

Thus, first, the Project Management Institute defines Project Management in its oldest official PMBOK® Guide (PMI, 1996, p. 6) as “the application of knowledge, skills, methods and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project.” The definition is extended in the Guides’ third edition (PMI, 2004, p. 8): “Project management is accomplished through the application and integration of the project management processes of initiation, planning, executing, monitoring and controlling, and closing.”

The second, the International Project Management Association (IPMA) does not - due to the context of its methodology - logically target its publication (or it deliberately avoids) on a PM definition, but defines the role of a professional manager involved: “Project Management is established as the prominent method for implementing change in the world and project, program and portfolio managers are leading the way (IPMA, 2015, Foreword).

The third, the Office of Government Commerce (OGC), as the best practice method in project management called PRINCE2®, defines project management (OGC 2009, p. 4) as: “the planning, delegating, monitoring and control of all aspects of the project, and the motivation of those involved, to achieve the project objectives within the expected performance targets for time, cost, quality, scope, benefits and risks.”

The fourth, and last but not least, is an overview definition of project management expressed by Professor Kerzner (2009, p. 4) as “the planning, organizing, directing, and controlling of company resources for a relatively short-term objective that has been established to complete specific goals and objectives. Furthermore, project management utilizes the systems approach to management by having functional personnel (the vertical hierarchy) assigned to a specific project (the horizontal hierarchy).” Although this definition differs from the first ones in words, the essence of both remains the same.

Following these definitions, this study and paper perceive the project management definition to be from a modern approach in management and not the traditional one. Modern approach in this sense means that project management implementation and practice is not just about learning methods and techniques and using management support programs (application of project management tools and methods), but is also about the complex

understanding and adoption of a modern, agile and innovative project management approach that involves constant change, innovation and flexibility, as well as a great focus on project managers and project teams.

Agile project management

It is very important to incorporate an agile approach when defining and understanding the concept of project management. At first, the term agility can be used to define the dynamic and proactive act to constantly change the environment (Owen et al., 2006), and with regards to it, organizational agility can be defined as an organization's ability to be flexible and easily adaptable to changing conditions without those changes being forced (Ali, Chew & Tang, 2004).

In connection to these general definitions, agile project management can be perceived as practices that are flexible, prone to changes and easily adaptable. These practices, as well as agile project management methods, are derived from, or at least highly influenced by, the agile software – development methods (Hanadi, 2014).

The main basis of the agile project management concept are short delivery iterations supported by inevitable continuous learning (Sauer & Reich, 2009). This approach involves three main steps at the very beginning of the project - streamlined planning, precise requirement definition and solution design (Hanadi, 2014). Once the project has been started, the project team can work in a sequence of iterations that result in a more detailed, precise and realistic planning, design, testing, analysis of requirements as well as execution (Hanadi, 2014).

One of the great advantages of an agile approach is the ability to immediately modify project requirements that are reviewed by short delivery iterations. This allows projects to be more flexible, adaptable and could greatly influence customer satisfaction with a better outcome. An agile approach allows the project team to focus on scope and requirements by prioritizing them according to their importance and value for the customer (Hanadi, 2014).

The involvement of the customer in setting up the scope and requirements of the project is a crucial characteristic of the approach. It enables the project team to identify and focus on highly valued requirements and not to waste time on costly and inefficient requirements that makes no significant difference to the customer (Hanadi, 2014).

The last, but not the least, an agile approach accentuates a collaborative management approach to delivering projects, and comprises of getting customer feedback as well as enabling continuous improvements and enhancements (Hass, 2007).

Project definition

Nowadays, projects are very diverse and may have different goals, needs and requirements. In addition to that, there are many different project definitions. Considering the chosen relevant definitions of project management, as well as the authors' intentions to analyze current practices when doing projects in the Czech Republic, this work is based on the definition of a project from the PMBOK® Guide and a project definition by EY.

“A project is a temporary endeavor undertaken to create a unique product, service, or result” (PMI, 2013, p. 1). EY defines the project as a “one - time process that consists of a set of synchronized and managed activities with a defined start and end date, which is implemented to achieve the goal (taking into account time, cost and resources limitations) and which meets the specific, predefined requirements” (EY Czech Republic, 2015).

The duration of the project is the first key characteristic, because every project must have a start and end date. The uniqueness of the project is another key characteristic (PMI, 2000). The project or service created within the project should be unique in terms of differences from all other products or services in an organization. That uniqueness creates value added, which should be a major outcome of the project.

The precise duration, structure, and organizational levels on which projects are done can be determined by organizations according to their needs and specifics (PMI, 2000). It can be done at one organizational level (an example is a company integration project at top management level) or only in one unit (implementation of a new procedure in the production department), but it may also have an impact on the organization or society as a whole, and/or involve several departments (modernization and implementation of an information system).

The Standish Group International defines a project as successful if it is completed on time, within budget and in line with the originally defined scope. A project that is complete and is “functional” is defined by Standish Group as a problematic project. Projects are considered problematic if the deadline or budget was exceeded and if the scope was only partially fulfilled. If a project is canceled before completion, it is considered as an unsuccessful project (The Standish Group International, 2013).

According to Doležal, et al., 2012, the fulfillment of the Project Management Triangle does not necessarily mean the project was successful. Therefore, in practice, it is essential to use certain success criteria. There are no strictly given success criteria as projects differ in their objectives, content, realization and also have different stakeholders. In addition to these differences, the criteria may be subject to change at different phases of the project. (Roberts, 2007).

However, there are generally accepted criteria that can be used when determining criteria for a project. Consequently, criteria can be split into three basic groups - the criteria for project owners, typical operating criteria and criteria of other stakeholders, sponsors and suppliers in particular.

Although there is no precise definition and division of projects, they can be distinguished from several points of view. For the purpose of this paper, project area, duration, project costs and success criteria aspects are taken into consideration (Roberts, 2007). In addition to these aspects, there is another important aspect – the division of projects according to the nature of the activities that are being carried out. Thus, phases should be clearly set and distinguished to form the life cycle of the project (Kerzner, 2009).

Project distinction, in terms of the subject of the project, is closely related to areas that should be addressed and managed as a project. As per experience, the following areas are suitable for the implementation of project management:

- development of a new business idea;
- design and implementation of investment, construction, marketing, IT and similar projects;
- market penetration;
- reorganization and restructuring;
- development, reconstruction and improvement of products;
- research projects,
- development and implementation of new technologies.

Projects may also vary by duration (Pritchard, 2009):

- short-term projects with a duration of up to 6 months;
- medium-term projects with a duration of up to one year;
- long-term projects with a duration of more than 12 months.

From the total cost or budget point of view, projects are generally divided into low-cost, medium-cost and high-cost projects. This division depends on the individual determination of the limits (maximum amounts) and can be used for comparison of similar projects or projects in a particular organization (Pritchard, 2009).

Project manager role

The role of a project manager has changed recently in accordance to the rapidly changing environment, flexibility and uniqueness of projects. In relation to that, demands and requirements for project managers are changing (Kerzner, 2009). Tasks, for which project managers should be responsible, are elaborated in the PRINCE2® guidance (e.g., OGC, 2009). Expectations of the project manager role focus more on direct management and the management of outputs from the

project (managing project deliverables) and much less on technical skills and leading the project team in a technical direction (Kerzner, 2009).

One of the reasons is the trend of shared responsibility for tasks and activities which were previously the responsibility of the project manager solely. That means that the expectations and demands of the role of the members of the project team change as well - it is no longer enough to be an expert, but members must also have knowledge of project management (Kerzner, 2009).

Another reason is to see project management as a strategic management of a business unit and, in that case, project managers should not make decisions within the project, but they should also participate in the project strategic decisions (Kerzner, 2009).

Every project manager should have the basic skills and capabilities to ensure the successful fulfillment of the role of the project manager. These are based on the general managerial skills and abilities that the PMBOK® Guide provides (PMI, 2000):

- leadership;
- communication;
- negotiation;
- ability to solve the problem;
- influence on the organization.

IPMA centers on the continuous development of project manager competencies. In its last competence baseline edition (IPMA, 2015), IPMA redefines the competence elements into three competence areas. The competence area “people” relates to personal and interpersonal competences and comprises of 10 elements. Area “practice” includes technical aspects and encompasses 14 elements. The third area is “perspective” and defines contextual competence embracing 5 elements.

Project stakeholders

According to many definitions (e.g., Longman & Mullins, 2005; Kerzner, 2009; SPŘ, 2010 and others), stakeholders are people and organizations that are actively involved in the project and can be positively or negatively affected by the project - its result, certain activities, project realization or its non-realization.

Different projects may have different stakeholders due to different goals and content. However, there are key stakeholders in every project (PMI, 2000). The project manager is the first key stakeholder and can be defined as the individual responsible for managing the project (PMI, 2000). The customer is the first external key stakeholder and represents the individual or organization that will use the project’s product (PMI, 2000). Since there are usually more product users, there may be multiple layers of customers too.

The performing organization is also a key stakeholder as it is the enterprise whose employees are most directly involved in doing work on the project (PMI, 2000). Project team members are the core of the project - the group that performs the work on the project. The project sponsor can be an internal or external stakeholder and can be defined as the individual or group that provides the financial resources for the project.

Project life cycle

Time management is an important part of project management that can influence the overall success or failure of a project (Fiala, 2004). With regards to it, projects are divided into phases that together form the life cycle of a project (SPŘ, 2010 Fiala, 2004). Because of the uniqueness and different terms of each project, the life cycle is only generally defined and must be specified and defined according to an individual project (Roberts, 2007).

There are three most general phases of the project that can be adjusted to the needs of a particular project (can be further divided) (SPŘ, 2010):

- pre-project phase that indicates the origin of the project and includes feasibility and opportunity studies;
- project phase, which includes initiation, preparation, implementation and project completion;
- after-project phase, which includes the evaluation of the project.

According to the PMBOK® Guide (2013, p. 5), project management is “accomplished through the appropriate application and integration of the 47 logically grouped project management processes, which are categorized into five Process Groups”. These groups are namely: Initiating, Planning, Executing, Monitoring and Controlling, and Closing.

Project management in the Czech Republic in the last five years

Since project management is one of the fields of management that adapts to change rather quickly, it could be possible to develop and improve project management practices within a relatively short period of time. In order to analyze the status of the practices of project management in the Czech Republic, it was necessary to start with an overview of their status in the last five years.

There were few surveys focused on project management in the Czech Republic, and conducted in the last five years that provided a good overview of general project management topics and practices. This served as a starting point for the authors' own research.

Despite the differences in the sample of the compared surveys, the research method, the areas investigated, as well as the targeted respondents, were very similar, if not the same. The purposes and aims are also overlapping. Thus, the results of different surveys (including the authors' own research)

could be compared and the comparison afterwards brought forth additional insights and a better understanding of the theoretical grounding.

The results of the following surveys were compared: IPMA CZ surveys conducted in 2012 and 2015, EY (former Ernst & Young) surveys conducted in 2013 and 2015 and the author's survey conducted in 2016 as research for a master's thesis.

When defining a successful project, the respondents of all mentioned surveys agreed that fulfillment of the scope of the project is a key component. Simultaneously, determination of the scope of the project was identified at the same time as one of the main success factors (if done precisely and successfully) and one of the "problem areas" leading to failures of the projects (if not specified precisely and correctly).

The results of the surveys showed steady growth in the number of projects since 2012 and variety in the topics addressed by projects. However, the rate of the unsuccessful projects is still relatively high according to the compared surveys. Consequently, there is a growing need for the application of innovative, more sustainable approaches and methods.

When it comes to methods used, all surveys focused on the most used (most popular) methods and results were different. However, currently used methods in the last five years in all surveys are common methods of the traditional project management. The least used were agile project management methods.

Further details on the surveys conducted in the period of 2012–2015 are summarized in the following two sub-sections.

Surveys conducted in 2012-2013

As was already mentioned, IPMA CZ (the Czech branch of the International Project Management Association) and EY (Ernst & Young) conducted two surveys focused on project management in the Czech Republic in the last five years.

The first survey was carried out in 2012 and the aim was to map the status of project management in the Czech Republic (IPMA CZ, 2013). The survey was carried out among project managers, portfolio managers and members of the project teams. It yielded in total 178 responses during a two month period. The method used was an online questionnaire which consisted of 15 research and 8 identification questions. Most of these were closed questions with one possible answer.

The key findings of this survey pointed to the rather unsatisfactory status of project management in 2012 (IPMA CZ, 2013). More than half of the respondents were not involved in any evaluation or analysis of the impacts and benefits of the conducted projects; one third of them were unaware of the exact project budget and whether it was exceeded; 25% of them were

unaware of the project schedule; a clear goals set-up was practice for only one third of the respondents, etc. (IPMA CZ, 2013).

At that time, the main reasons for project failure were a lack of qualified and efficient human resources, incorrectly set or unsupervised processes, insufficiently implemented pre-project phase and inflexibility towards changes in project implementation (IPMA CZ, 2013).

The study that followed was conducted one year later by EY and focused on the internal projects of organizations actively involved in project management. In total, subjects from 69 organizations were involved in this study and the results showed a rather similar situation of project management as the previous study by IPMA CZ in 2012 (EY, 2013).

Additional findings from the EY study, relevant for this paper, were the increased number of projects in the Czech Republic at that time, progressing complexity of the projects, as well as expectations and skills from project managers. Moreover, the majority of the projects were from the IT field and 25% of respondents were involved in projects with duration of more than one year (EY, 2013).

Surveys conducted in 2015

As in previous years, IPMA CZ and EY conducted similar studies in 2015. The aim was the same as in the surveys before – to map the status of project management in the Czech Republic and identify its main characteristics. The method and the duration of the survey by IPMA CZ, as well as the questionnaire structure and questions, were the same as in 2012. The total number of respondents was 141 (EY & PMI CZ, 2016).

The main threats to the success of the projects were mainly pertaining from 2012. The main issue was human resources, where 67% of the respondents had problems with either overloaded or incompetent team members. Vaguely-defined scope and problems with project planning were another widely present threat, since 55% of respondents identified these amongst the main threats to the success of the project (EY & PMI CZ, 2016).

Improvements in the evaluation and analysis of the outcome of the project were noted in the survey conducted in 2015. Around 60% of the respondents were either involved in, or at least informed about, the project outcomes (EY & PMI CZ, 2016).

The approach to the EY 2015 survey was the same as in 2013. The focus was again on the internal projects of organizations actively involved in project management and in total, respondents from 123 organizations participated in this survey (EY & PMI CZ, 2016).

Similar to 2013, the increase in the number of projects within the organizations was notified. At the same time, there is a decrease in the

duration of the projects – in comparison to 2013, there is an 11% decrease in the number of projects longer than one year (EY & PMI CZ, 2016). At the same time, more than 50% of the projects were in the IT field, which is the main project management field in the Czech Republic.

Respondents also mentioned the main reasons for project failure and the key ones were problems with project scope, definition and establishment, various, unclear expectations of the project outputs, followed by inadequate risk management and insufficient staffing (EY & PMI CZ, 2016).

RESEARCH METHODS

Research approach

We used the following research process (Khotari, 2004): identification of the research problem, review of the literature, statement of research question and hypothesis, selection of the data collection method, selection of a research sample, analysis and interpretation of data.

The research problem grew out of our interest in the particular topic supported by gaps in development and elaboration of the topic in research and practice. There is a great space in project management for research, especially in the Czech Republic.

In order to address the situation properly, the research concentrates on four areas of project management and the choice was not incidental but has its rational context:

- 4) The demanding requirements of the stakeholders at the start of any project, as well as the extent to which changes during project execution have any significant (and often dramatic) impact on the success of the project;
- 5) Although projects show clear specificities compared to other “tasks,” they are internally differentiated. They vary in scope, duration, financial claims, industry, culture, risks and other characteristics or features. If we want to make analysis and comparisons, we must perceive and respect them;
- 6) Quality is one of the major focuses in project management. Among the ways how to increase it, belong the application of project management methods that innovate and standardize the course of management so as to avoid unnecessary factual and procedural non-rationalities and errors, and make communication about the project among the stakeholders more understandable.

Taking into consideration the previously explained context, the following four areas have been chosen: stakeholders’ main demands and requests, main characteristics of project management in the Czech Republic, level of use of project management methods and identification of the characteristics of the respondents.

Methodology

The study conducted consists of the analysis of primary and secondary data. There are many different methods of data collection and a few of them were used in this paper. On-line databases and scholar websites were used for “desk research” to collect secondary data. The most relevant data gathered were the results of previously conducted studies in the field of project management in the Czech Republic. The main information and results of the studies have been summarized in the previous sections.

It is important to emphasize that despite the differences in the sample of the compared surveys, the research method, areas investigated, as well as the targeted respondents were very similar, if not the same. The purposes and aims are also overlapping, thus, the results of different surveys (including the authors’ own research) could have been compared and the comparison afterwards brought forth additional insights and a better understanding of the theoretical grounding

However, the key data for fulfillment of the goals of the study were primary data. In order to have relevant and usable primary data, it is essential to make sure they are valid, accurate, objective and up-to-date; therefore, it is inevitable to conduct your own research.

The questionnaire, as one of the data collection methods, provides information about human knowledge, attitudes, preferences, as well as human behavior. The information provided is primarily descriptive (Kotler & Keller, 2011). This method can have a structured or unstructured form. If a single list of questions is used, and there is invariable access for all respondents, then the method used is a structured questionnaire. If, on the other hand, the list of questions and access can vary, this is an unstructured questionnaire (Kotler, 2007). Furthermore, different contact methods can be used for conducting questionnaires – via email, telephone survey, personal interviews, as well as an internet questionnaire (Kotler, 2007).

If the internet questionnaire is chosen as a suitable method, it can provide adequate flexibility and certain control over the sample, in addition to its great advantages of being a very quick and affordable method of data collection as well as having supreme control over personal influence (Tull, et al., 1993). At the same time, it allows the collection of a large amount of data. On the other hand, one of the features of an internet questionnaire is a small, narrow sample frame and a typically lower rate response (Tull, et al., 1993).

Another downside of using this method is keeping the personal data of the respondents, but this may be overcome by creating a questionnaire using web portals that enable the privacy and anonymity of respondents.

While taking into consideration all of the possibilities and features of different methods, as well as the aims and requirements of the study, the

authors chose an online questionnaire as the most suitable method to conduct the primary research.

This questionnaire has been cross-sectional, comprising of four parts (identical to the areas studied). The questionnaire consisted of twenty questions in total and it had elements of both quantitative and qualitative research. In addition to that, there was a complex matrix used for identification of the project management methods used. Data were collected in the period from March 10th 2016 to May 10th 2016. The focus on the data is given from a managerial perspective.

Research question and hypotheses

The research questions arise from observing the current situation: is it time for innovation and a boost to project management in the Czech Republic? According to the research question and the purpose, the main premise is as follows:

H1 Project management in the Czech Republic has been progressing significantly in the last few years.

This premise can be broken into sub-hypotheses upon focus areas studied in this paper:

H1.1 Different stakeholders and their demands and expectations make working in project management more complex.

H1.2 Project management in the Czech Republic is shifting from a traditional approach towards an innovative, agile approach.

H1.3 There is an increase in the use of project management methodology (methods).

Research sample

With regards to the purpose of research, the basic characteristics of the respondents were predetermined and thus, the target group was established according to these characteristics. Broadly, the respondent was a person who had professional experience in the field of project management in the Czech Republic. This means they had been working either as a project manager, project team member, or a member of the Project Management Office (PMO).

Respondents were asked to identify their professionalism via their job position and years of experience on projects as well as their project management qualifications. Respondents who did not prove their expertise were excluded from further analysis.

The authors assumed the most suitable method to address suitable respondents was snowball sampling. It is a non-probability method that enables future recruiting of the respondents after addressing a certain part of the target group. This method is based on approaching subjects whose

contacts were available to the authors and they could further recruit future suitable subjects among their acquaintances if they would forward the questionnaire.

Furthermore, this method involved a personal approach since the direct email address of the subject was used and authors believed this could influence them positively and increase the willingness of respondents to participate in the research. The collection of the email addresses was done initially by searching for the published data of potential respondents on the websites of large companies in the Czech Republic that are actively involved in project management as well as reaching out to acquaintances who could forward the questionnaire to suitable subjects. The largest number of respondents was generated from a publicly available document of IPMA CZ (Czech branch of the International Project Management Association), "Alphabetical List of Certified Project Managers - certificates issued in years 2001-2015".

The final number of targeted respondents who were addressed was 1010. The survey in the end yielded 118 usable responses, thus, the response rate was 12%. Taking into consideration the specifics of the study as well as the method (online questionnaire), the attained response rate was satisfactory.

RESULTS

Project success and stakeholder demands

Respondents could choose factors belonging to three different groups – risk, managerial and human factors. The factors from different groups could have been mixed and the accent was on choosing the main (key) factors. Figure 1 shows the relationship between understanding and defining the successful project and the main success factors that influence project success. The respondents could define the successful projects by following the generally accepted Project Management Triangle. The first option was the most rigorous as the project is considered successful only if it fulfills all three project management constraints – scope, time, and budget. The second option presumes exceeding the budget while fulfilling the scope and time, and the third option assumes exceeding the time, but satisfying the defined scope and budget.

Human factors were determined as the most influential and the majority of respondents chose the most rigorous definition of a successful project too. They included effective communication within and outside the team, a highly-skilled and experienced team and a team sharing the same goals and motivation to attain the best results.

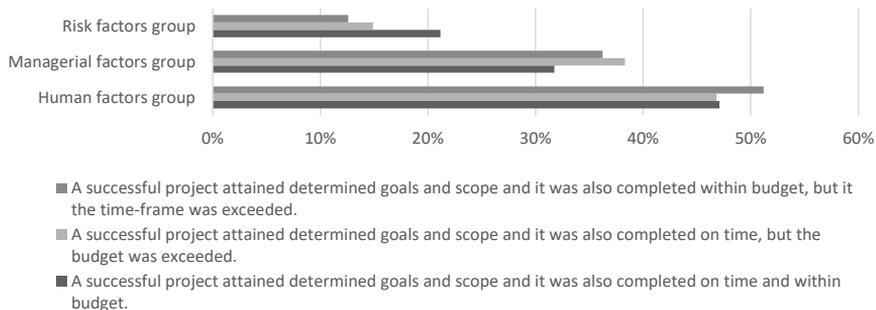


Figure 1. Success Project and Success Factors, n=118

Source: own calculations based on the survey data.

Consequently, human factors, which are most intangible and unpredictable, are the key ones even though most managerial factors are given and relatively fixed (such as financial and human resources, scope and requests of the project, etc.) and that risks represent the threats or potential opportunities for the project. Simultaneously, the relative ignorance of the respondents towards the importance of risks and their timely identification and management is assumed.

The group of respondents that perceived the project as successful although the time-frame was exceeded, had the most significant difference between the factors group as human factors take up 51% of all answers. This could presume a relationship between exceeding the time-schedule and the human factors that could affect it - the better the communication and coherence within the team, the least time exceeded.

The smallest difference between the human and managerial group factors was among the respondents who are tolerant towards exceeding the budget (9%). As a budget is usually given externally, its relationship with managerial (external) factors is evident. At first, exceeding the budget can only be accepted if allowed by management (sponsor) and it is also very often conditioned by unsuitable financial and human resources assigned from the beginning. Furthermore, an imprecise definition of scope and conditions can easily lead to budget exceeds as well. However, there is also a strong relationship between the human factors and budget exceeds. An incoherent team and miscommunication can influence outputs significantly which may end with higher budget needs.

The group of risk factors included identification, timely management and prevention of risks' activities and gained the lowest number of responses. In times of turbulence and unpredictable development this was a surprising result. It can be assumed that thorough risk management has not yet been

recognized as an important part of project management in the Czech Republic. This can be linked to the relatively high rate of unsuccessful projects in this field. Insufficient attention to the risks can be identified as one of the main weaknesses and limitations of project management in the Czech Republic.

Successful project definition was also analyzed through its connection to stakeholder demands and requests. This means that the initial, independent groups of respondents were created according to their definition of a successful project. Later in the questionnaire, respondents needed to define and choose different stakeholder demands that were divided into three groups. The same principle of three groups of human, managerial and risk-related demands and requests was used and respondents were supposed to choose the most relevant ones. The human group included sufficient number of team members as well as approach to working at weekends if needed; the managerial group included following procedures and the rules of the organization and escalation of problems to higher levels of management; the risk group consisted of reaching expected outputs no matter what the risks, as well as acceptance of the project no matter what the conditions.

In order to analyze the connection between the respondents' perception of the successful project and the perception of the main stakeholder demands, these two questions had to be analyzed together. Table 1 shows the weighted averages of groups of stakeholder demands (human, managerial and risk) calculated per the amount of chosen demands (belonging to each group) taking into consideration how the respondents defined a successful project. Values used to convert verbal answers to numerical ones in each group of stakeholders were the following: 1 (human group), 2 (managerial group), 3 (risk group). An example would be that if the respondent firstly defined a successful project as the one that attained determined goals and scope and it was also completed on time and within the budget and then chose a sufficient number of team members as the main stakeholder demand, their answer would be converted to 1 (it represents the human group of main stakeholder demands) and would be included in the first line of the Table 1.

The results show that main stakeholder demands are from the managerial group regardless of how successful a project is defined, as the weighted averages of all three definitions tend to 2.

Therefore, project managers and teams are primarily expected to follow the procedures and rules of the organization they work for (regardless of the nature of the project) and not to escalate issues to higher levels of management. Considering that decision-making within project teams is quite restricted and projects mostly differ, these demands are difficult to satisfy and cope with.

Table 1. Main stakeholder demands, n=118

Successful project definition	Weighted average
A successful project attained determined goals and scope and it was also completed on time and within budget.	1.71
A successful project attained determined goals and scope and it was also completed on time, but the budget was exceeded.	1.,66
A successful project attained determined goals and scope and it was also completed within budget, but the time-frame was exceeded.	1.80

Source: own calculations based on the survey data.

More to the point, stakeholder demands related to the risks are the least present and least significant which confirms that risks are one of the weaknesses of project management in the Czech Republic.

The identification of problematic areas in relation to the definition of a successful project was analyzed too. Table 2 shows the results obtained. The principle and calculations were performed in the same manner as explained above for the results from Table 1.

Table 2. Problematic areas of the projects, n=118

Successful project definition	Weighted average
A successful project attained determined goals and scope and it was also completed on time and within budget.	2.23
A successful project attained determined goals and scope and it was also completed on time, but the budget was exceeded.	1.53
A successful project attained determined goals and scope and it was also completed within budget, but the time-frame was exceeded.	2.21

Source: own calculations based on the survey data.

Problematic areas for approximately 60% of all respondents tend to belong to the managerial group. The most frequently chosen problematic area in general is vaguely-defined scope of the project by higher management or project sponsor. This result shows certain issues in the cooperation and understanding between the project sponsor and higher management and project team (or project manager). Vaguely-defined scope makes it almost impossible for a project to be successful as the goals and outputs are not clearly defined. Therefore, both sides can have different expectations and understanding of the project. Consequently, this could be another major

reason for the relatively high rate of unsuccessful projects in the Czech Republic and is another great weakness that should be analyzed and discussed closely.

Conversely, the results show a significant difference between the problematic areas determined by the respondents who perceive the project as successful, although the budget is exceeded, and the rest of the respondents. Most problematic areas tend to belong to the human group and the most frequently chosen were irresponsibility and lack of knowledge of PM methodology. Based on the results, exceeding the budget could be caused or driven by the presence of these areas, or if they are insufficiently or incorrectly handled and solved.

Main characteristics of project management

Main characteristics can outline the approach used as well as the overall status of project management. This section of the paper also provides valuable information for entrepreneurship in the Czech Republic, especially for innovative start-ups. The trend of high-potential start-ups is growing and entrepreneurial spirit is on the rise. Agile, innovative project management can facilitate a smooth inception and an effective, systematic organizational performance enabling long-term success and sustainability.

As shown in Figure 2, where we see projects reflecting innovation as well, one third of the projects are primarily involved in IT systems, while development of new products/services and process management make up 18% and 14% respectively of projects. These areas are important innovation drivers as innovation is one their key components. Therefore, project management is moving in the right direction and there is at least a basic awareness of the necessity and importance of innovation today. In addition to that, 20% of projects focus on modernizing technical equipment and educational training for employees (10% each). Both factors lead to the sustainable development of any business entity.

Important factor for the identification of a traditional or agile approach is the duration of the project too. A general structure of project duration in the Czech Republic is shown in Figure 3 and was calculated based on the data collected via the survey the authors conducted in 2016.

According to this structure, the majority of projects in the Czech Republic can be considered as medium-term projects. Short-term projects that last up to one year make up 38% of all projects while 14% of them are even shorter with a maximum duration of 6 months. This means that, in total, 52% of projects are not longer than one year.

At the same time, 43% of projects belong to longer medium-term projects as they last one to three years. There is only a small proportion of long-term projects with a duration of more than three years (5%).

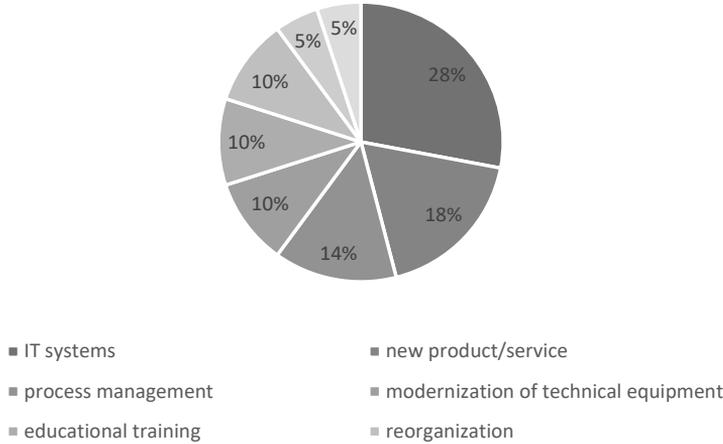


Figure 2. Project areas in the Czech Republic in the last 3 years, n=118

Source: own calculations based on the survey data.

If we combine the project areas and project duration in the Czech Republic, projects with the shortest overall duration are reorganization projects – 83% of projects last up to 12 months. However, according to the research, only 5% of projects are involved in this area. Average duration of IT projects is approximately one year or shorter. More precisely, 51% of such projects have duration of 6 – 12 months while 28% last up to three years. Although there is still a significant proportion of IT projects that last up to three years, it is evident that the majority of them are short-term projects, which corresponds with an innovative, flexible and more agile approach. Other types of projects attained similar results. 82% of projects for the development of new products/ services are approximately one year and only 3% are up to three years. This corresponds with the need for regular innovations in the market due to rapid changes, increased flexibility and stiff competition.

Usage of project management methods

The questionnaire contained a complex matrix aimed at identifying the most used methods. We identified 38 effective project management methods (and tools) that could be used in different phases. The respondents were asked to assign methods to just one project-cycle phase due to the technicalities of survey processing although some of them are suitable for more than one phase.

According to the survey responses, *Feasibility Study* is the most used and probably the most known method. More than half of the respondents used it during the pre-project phase and it is primarily used to show whether the project should be realized or not.

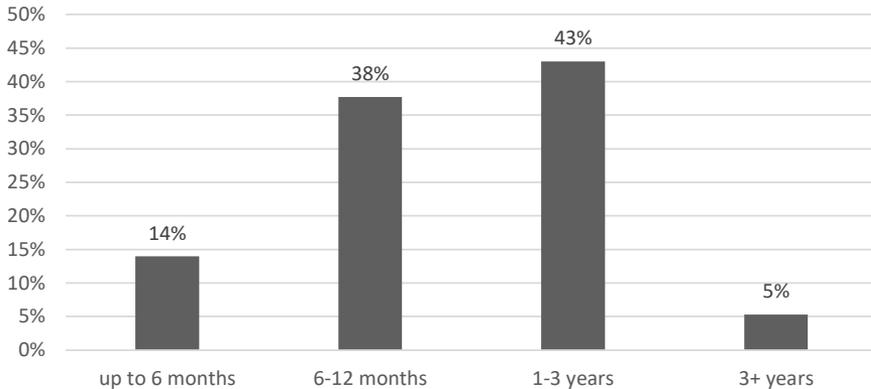


Figure 3. Project duration in the Czech Republic, n=118

Source: own calculations based on the survey data.

During the planning phase, *Work Breakdown Structure (WBS)* is the most extended method. Its popularity has been growing recently thanks to its clear output. Besides being the prevalent method of the planning phase, *WBS* is the second most used phase out of all 38 methods included in the matrix.

The most accepted method out the 38, and the most used in the after-project phase, is the Lessons Learned tool. Almost two thirds of respondents used this tool which indicates its benefit for sharing experience, increasing knowledge, learning from mistakes, as well as preventing the occurrence of negative events that could have been predicted.

DISCUSSION

The survey showed that stakeholder demands are complex and change significantly, which makes working in project management arduous. This is supported by the results of the survey that showed that, regardless of the projects' success, most complex demands and expectations were from the managerial group, which can be influenced by project managers and teams only up to a certain extent. These expectations have a tendency to be more external and can also be subject to frequent changes, which makes it more complex for project teams to understand and meet them.

Project managers and teams are primarily expected to follow the procedures and rules of the organization they work for (irrespective of the project nature) and not to escalate the issues to higher levels of management.

At the same time, decision-making within project teams is quite restricted and projects mostly differ: therefore, it is evident that these demands are difficult to satisfy and cope with. This can lead to misunderstandings within the project teams and a mismatch between the expectations and scope defined by the stakeholders and the project teams. Consequently, the results and outcomes of the project might be considered as unsatisfying.

However, this result can have certain limitations because the targeted respondents were project managers and not all stakeholders. This could have led to a biased perspective regarding stakeholder demands and expectations. At the same time, according to the authors' opinions, project managers are mainly influenced by those demands and expectations and their project management experience gives them a sufficiently broad perspective in defining and recognizing the complexity and variety of the demands and expectations they need to meet in order to successfully complete the projects. Therefore, despite certain limitations, the survey shows the complexity of the demands and expectations which results in making the work of project management difficult.

Analysis of the results of the survey, show a prominent relationship and, to some extent, a correlation between understanding (defining) a successful project and identifying the success factors, stakeholder demands and problematic areas that highlight the complexity of working in the field of project management. Furthermore, vaguely-defined scope was identified as the most problematic area and issue influencing project success. This key matter of project management makes it almost impossible for a project to be successful as the goals and outputs are not clearly defined. At the same time, the implementation of project management in many different areas of business is increasing which makes the stakeholders' demands and requests subject to change and even more complex. These results confirm that stakeholder demands are complex and change significantly, which makes working in project management demanding, and it, therefore, confirms H1.1.

There is a general increase in the level of use of basic project management methods. However, the methods that are broadly used are not very advanced and are specific to the projects. Comparison of the results of the different surveys showed that there is an increase in the use of the same project management methods; however, a broader usage has not been proven. Accordingly, H1.3 was partially confirmed. At this point, the result of the questionnaire provides a good area for discussion. It is common practice, at least when we talk about the Czech Republic, that the simplest methods are most widely used. On the one hand, there is a logical explanation; working with such methods requires "only" readily available data, their use is fast, often visually supported with simple tools. In many situations, using simplistic,

undemanding methods is certainly justified and reasonable. However, they may be - in particular for certain types of project - simplified too much and may distort a situation. Rather often in the Czech Republic the perception is that sophisticated methods are unnecessary because common sense is better and faster. They often cite a lack of time as a reason for not using enhanced PM methods. On the contrary, more complex methods, although they can provide better results (more accurate data, deeper analysis, greater complexity), may not be commonly used in practice.

One of the very strong general trends in PM is agile development. We can see efforts in agile project management development both in publishing and in practical business. Though, taking into consideration the results of the survey regarding the transformation from traditional to agile project management and the basic characteristics of both approaches, it is evident that transformation is present in only a small number of IT organizations, and mostly big multinational corporations.

This means that the overall status of project management in the Czech Republic is still more oriented towards a traditional approach rather than agile, but at the same time it provides great motivation for entrepreneurs, not only in the IT field, to benefit from agile approaches. Moreover, this can also be one of the drivers for project managers and project management experts in the Czech Republic to focus on this type of innovation and use it for improvement in terms of flexibility and timing, as well as making it leaner. However, at this moment, the results dismiss the H1.2.

Agile project management has been a largely discussed topic at many conferences and has been researched in the literature. Despite its popularity as a topic, according to the result of this study, there is no significant increase in the usage of agile project management methods. This was a rather surprising result since it does not correspond with the overall interest for this area of project management worldwide and also in the Czech Republic. Further research could focus on the causes of this outcome. It can be assumed that these causes could have both objective, subjective, emotional, cultural as well as biocritical consequences. At the moment, we can guarantee that the reason for the situation in the Czech Republic is not ignorance of agile development. The first consideration of minor interest is the cultural aspect, as Czechs are relatively conservative and restrained about new things. On the other hand, they are very creative and at the same time rational, which is not at all inconsistent with agile PM. We can assume that a significant reason is a problem in adhering to agile principles. Also, barriers may exist within company politics as well as in the acceptability of all business partners within the project. Overcoming these shortcomings and barriers is the theme for innovative solutions.

Finally, there are important empirical insights showing the broader implementation of project management, although no essential overall progress was noted in project management in the last 5 years. Thus, project management is a field for innovation.

CONCLUSION

This study looks at project management from the multi-factor perspective and addresses the current situation by indicating innovative directions of development as well as the broader application of project management methods, which have not been researched much in the region.

Taking into consideration the results of the survey conducted as well as the results of other surveys, it is evident that it is high time for innovation in the field of project management in the Czech Republic.

The study shows that stakeholder demands, related to the risks, are the least present and least significant which leads to projects being very volatile and prone to different risks that are not managed in a timely manner nor prevented. This, being one of the weaknesses of project management in the Czech Republic, shows again clear, urgent need for innovation in project management practices that could lead directly to a lower rate of unsuccessful projects.

Agile methods, as well as innovative, forward-looking methods, are rarely used among the project teams. PM methodology offers a variety of methods for each project phase that could enable an innovative approach to be implemented in project management practices and gradually lead to a substantial increase in project success.

Moreover, there is a link between the definition of a successful project and success factors, stakeholder demands and problematic areas of the project. Project teams are restrained to use a forward-thinking and progressive approach that could enable factors that better influence success and limit the influence of problematic areas.

Basic PM methods, a traditional approach and a static, ignorance of the risk perspective are neither sufficient nor effective in today's project management arena. Agile methodology, risk monitoring and prevention as well as project governance approaches reflecting stakeholder demands and requests, are the new directions project management must head in. This could be a matter of further research in this field too.

These directions will not only improve project management, but will also boost the entrepreneurial spirit and help modern, high-potential start-ups to be competitive in the market. Largely, modernized and innovative project

management will positively influence all areas of business in the Czech Republic and maintain a better position for stakeholders.

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Abstrakt

Znaczenie zarządzania projektami stale rośnie, a jego szybki rozwój i sprzyjanie innowacjom sprawiły, że jest on jednym z kluczowych elementów wyników organizacji. Dlatego głównym celem artykułu jest przeprowadzenie systematycznej analizy obecnej sytuacji i praktyk w zakresie zarządzania projektami w Republice Czeskiej. Szczegółowo analizowane są cztery obszary zarządzania projektami: główne oczekiwania interesariuszy, główne cechy zarządzania projektami, poziom wykorzystania metod zarządzania projektami oraz część identyfikacyjna charakteryzująca respondentów. Badanie ma charakter eksplanatoryjny i wykorzystuje zarówno pierwotne jak i wtórne dane. Dane pierwotne uzyskano za pomocą internetowego badania przekrojowego składającego się z czterech części (identycznych z badanymi obszarami) przeprowadzonych w Republice Czeskiej w 2016 r. Uzyskano 118 odpowiedzi. Badana próba była losowa, ale ekspercka - obejmowała organizacje działające w Republice Czeskiej, a respondenci zostali poproszeni o określenie swojego doświadczenia w zakresie zarządzania projektami. Ponadto wyniki ankiety autorów porównano z wynikami podobnych badań z ostatnich 5 lat dostarczających dane wtórne. To porównanie przyniosło dodatkowe spostrzeżenia i lepsze zrozumienie teoretycznego uzasadnienia. Wyniki wykazały wyraźną zależność i do pewnego stopnia korelację między zrozumieniem (zdefiniowaniem) udanego projektu i zidentyfikowanymi czynnikami sukcesu, oczekiwaniami interesariuszy i problematycznymi obszarami wykazującymi złożoność pracy w dziedzinie zarządzania projektami. Ponadto, niejasno zdefiniowany zakres został zidentyfikowany jako najbardziej problematyczny obszar i problem wpływający na sukces projektu. Ogólnie rzecz biorąc, badanie wskazuje na konieczność innowacji, takich jak opracowanie podstawowych ram dla metod zarządzania projektem, jak również zwiększenie wykorzystania dostępnych metod zarządzania projektami. Kierunki te nie tylko poprawią zarządzanie projektem, ale również zwiększą ducha przedsiębiorczości i pomogą nowoczesnym, wysoce potencjalnym firmom rozpoczynającym działalność w osiągnięciu konkurencyjności na rynku.

Słowa kluczowe: zarządzanie projektem, metody zarządzania projektami, wiedza, interesariusze.

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Project Managers' Competencies and Leadership Styles from the Perspective of Organizations Functioning in Poland

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Abstract

The aim of the article is to present the issue of project manager competencies and project leadership styles which occur in different types of project-oriented organizations, i.e., the strictly project-oriented organizations (implementing projects for external clients) and organizations that manage projects for internal purposes. The subject literature studies and empirical research results conducted in 100 enterprises were used to accomplish the above-defined goal. The authors discussed the specific nature of project-oriented work and the specificity of project team management. A literature review on project manager competencies and project leadership styles was conducted. Three important competencies were identified that differentiate project managers between those working in strictly project-oriented organizations and those working in organizations which perform project-based management for internal purposes, i.e., achievement orientation, sensitivity teamwork and cooperation. The analysis of applied and desired leadership styles indicated a preference by project team members for a democratic leadership style, in particular during the project implementation phase, in both types of project-oriented organizations.

Keywords: *project manager, competencies, leadership, project success.*

INTRODUCTION

A thesis can be put forward that nowadays the attention of practitioners and management theorists is focused on the increasing dynamics of organizations' functioning. In the tactics of "market players" repetitive and routine activities gradually lose importance in favor of unique and complex ventures – i.e., projects. A project is "an endeavour in which human, financial, and material

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resources are organized in a novel way to undertake a unique scope of work, of a given specification, within the constraints of cost and time, so as to achieve beneficial change defined by the quantitative and qualitative objectives" (Turner, 1993).

There is a growing interest in problems related to project management, also in the developing Polish economy. After systemic changes (the transition from socialism to a free market economy) the activities of organizations ceased to be predictable. Polish entrepreneurs started to take advantage of project management to accomplish various business goals. It is not surprising that the organization of work, in the form of projects, allows for the introduction of objective, transparent and standardized rules. These rules are, in turn, the source of structured and consistent information, fundamental for making proper business decisions. It is believed that predominantly classical project management methods are used in Poland, i.e., the ones based on the waterfall approach (Janasz & Wiśniewska, 2014). Furthermore, research on project maturity of Polish companies indicates a lower degree of maturity than in the case of foreign companies (Spałek & Karbownik, 2014).

Project management is the domain of project managers. They are responsible for the final result of the carried out project and have to be active in the course of all stages of the project. The job of a project manager has been included in the list of professions and specialties developed by the Polish Ministry of Family, Labour and Social Policy since 2014.

The theoretical concepts and research results on the competences of project managers can be found in the subject literature. The authors, discussing the analyzed problems, focus primarily on the specific types of projects or industries (Dvir et al., 2006; Müller & Turner, 2010; Dias et al., 2014). Project managers can manage various types of projects (construction, IT, organizational, etc.), which can influence the requirements regarding their knowledge and skills. They can also work in the strictly project-oriented organizations, i.e., those who implement projects ordered by an external customer (projects represent their core business) or organizations focused on repetitive activities, which manage projects for internal purposes. Based on literature studies, it was found that the problem of differences in the competencies of project managers, working in the aforementioned types of organizations, has not been studied as yet.

The publications on project management also analyze the impact of leadership style on project implementation, as well as offering tips on how to choose the right style for project team management (Müller & Turner, 2007). However, previous studies on project leadership styles have been conducted abroad. It was considered interesting to recognize and compare

with the output of the management sciences, which styles of project team management are considered desirable in enterprises based in Poland.

On this basis, the purpose of the article was defined as the presentation of project manager competencies and project leadership styles which occur in different types of project-oriented organizations, i.e., the strictly project-oriented organizations (implementing projects for external clients) and organizations that manage projects for internal purposes. The following research questions have been posed:

Q1: What competency discrepancies occur between project managers working in the strictly project-oriented organizations (implementing projects for external clients) and organizations that manage projects for internal purposes?

Q2: What are the differences in the types of studied organizations in relation to the assessment of competencies regarding impacts on project manager effectiveness?

Q3: Do the applied and desired styles of project team management in the particular project phases meet the concept of Turner and Müller?

Subject-matter literature studies and empirical research results, carried out in the years 2014-2015 in 100 project-oriented organizations, were used to accomplish the above-defined goal. The intermediate stages along the set goal realization consisted of discussing the specific nature of project-oriented work and the specificity of project team management. A literature review on project manager competencies and project leadership styles was also conducted. Next, the methodology of empirical studies (in the context of a holistic research project and the content of this article) and their effects were discussed along with the resulting conclusions.

LITERATURE REVIEW

The specificity of work in a project and project team management

Project implementation involves three types of activities: operational (basic) activities, supporting (auxiliary) activities and managerial (directing) activities. The first type of activities, i.e., operational ones consist of transforming project input data into an expected result. These activities are directly related to the development of the project subject. They involve operational project-oriented activities consisting of preparing the description of the project subject (usually in the form of project documentation) and executive activities focused on material realization of the project subject.

The second type of activities, i.e., the supportive ones serve as a backup for operational and managerial actions by creating adequate conditions for their efficient and effective implementation. They cover, e.g., the legal type of project execution support. The third type of activities refers to managerial tasks consisting of harmonizing operational and supporting activities. The latter is strictly connected with project team management. This team type is characterized by the following main features:

- it functions in a periodic mode;
- it can have a simple or a complex hierarchical structure;
- it is a sub-structure developed and based on the framework organizational structure of an enterprise.

It is worth mentioning that there are two dimensions of each project team functioning: the task dimension and the social dimension. The first one is related to the activities performed by the project team consisting of carrying out the project through its life cycle. The second one, in turn, involves developing substantive, interpersonal psychological and social relationships in a team. The task and social dimensions of a project team are interrelated. A change in one produces a change in the other. As Fujishin (2007) says, we do not really understand the subtle relationships between these dimensions, but we can be certain they do influence each other.

Even though projects can be implemented in a line unit by specialists representing one field of knowledge (e.g., the organization of an advertising campaign by a marketing team, where the department head is also the project manager), however, the interdisciplinarity requirement of contractors is more frequent in the definition of a project team or a project itself. In the functional structure, projects can be implemented by setting up a dedicated interdisciplinary project team. Such a team consists of line unit workers, delegated to work in the project on a temporary basis, or for the entire period of its implementation (full-time or part-time). The project manager is usually the line manager of this unit which takes the largest part in the project execution. In turn, the dominant type of organizational structure – according to Ansell (1993) – is the matrix structure.

Given the above, Table 1 shows the differences between work in interdisciplinary project teams and work in fixed enterprise structures (line unit). The information presented in the table identifies challenges faced by the project manager.

A project team is primarily a much more diverse team in terms of employees' characteristics (specialization, terminology, work culture). This requires developing, for each individual project, the rules regarding the way of team work, the decision-making process, resolving conflicts, reporting

on work progress and methods for making current administrative decisions (Wysocki, 2014).

Table 1. Differences between work in projects and work in a permanent, specialized unit in a given area of an organization

Comparative criterion	Characteristics of work in projects	Characteristics of work in a permanent unit of an organization
Team type	Interdisciplinary/heterogeneous	Homogenous
Team composition	May vary in the course of project implementation	Relatively stable – depending on an organization's development needs or natural fluctuation
Period of work execution	Depends on project length or project stage	Depending on the type of agreement and needs of an organization
Overriding goal of work	Introducing a change	Efficient execution of certain activities
Hierarchy	Variable	Fixed
Risk/uncertainty level	Higher	Lower
Variability of performed activities	May be high – related to changes in project parameters	Low – possibly related to the rotation in positions or permanent change of a position
Direction of employee's development	Multitasking	Specialization
Performed roles	May vary in various projects	Relatively permanent – role change is associated with changing the position in the structure
The required competencies easy to define	Low	High
Knowledge management process easy to carry out	Low	High

Source: authors' compilation based on Piwowar-Sulej (2016) and Tyssen, Wald and Spieth (2014).

Depending on the complexity of the expected project outcomes the adequate project teams will vary in sizes. Both long-term, the so-called permanent enterprise staff, and the temporarily involved employees (e.g., within the framework of employee leasing) can take part in a project. The larger the team and the more diversified employment forms, the more difficult it is to find out about and to reconcile the expectations of its individual members.

In the project-oriented organization, an employee often plays a dual role: a line unit specialist and a project team member. He/she can also participate in several projects in parallel. Thus the problem of multiple subordination of a project team member occurs, as well as the related difference of interests between superiors (competing for employee's competencies and time). This may result in difficulties with an employee's work time organization and his/her efficiency in projects and in regular daily duties.

In the case of projects, it is difficult to develop a permanent list of activities and competencies required of team members. Projects represent a unique and one-off activity, which also makes it difficult to manage knowledge in such circumstances (accumulate it, apply it in subsequent projects - with different staff composition).

According to the opinion expressed by Melcher and Kayser (1970), leadership of a project group is difficult. A project manager is faced with two sets of problems. First, there is the problem of building a team that is directly under his control. Second, he must obtain the cooperation from other departments outside his authority. They are held responsible for the project but often with little or no formal authority over groups that provide essential information and services. The above-presented project work features and project management implications require from a project manager a set of specific competencies.

The competencies of a project manager

The competencies of a project manager constitute one of the success factors, as emphasized by e.g. Kendra and Taplin (2004), Cheng and Dainty (2005), Müller and Turner (2010), Madter, Bower and Aritua (2012), Gallagher, Mazur and Ashkanasy (2015), Maqbool, Sudong, Manzoor and Rashid (2017). The competencies of a project manager result directly from the performed functions and roles, as well as the implementation of tasks (Pettersen, 1991; Cobb, 2012; Anantatmula, 2010).

Competencies can be divided into different categories. The most common one is the basic division of competencies, taking into account hard competencies (referred to as technical, professional, vocational, substantive, functional), soft competencies (interpersonal, behavioral, social) and also conceptual (strategic) competencies. Hard competencies refer to skills in

using the tools typical for a specific profession. They are needed to solve technical problems, to make decisions in specialized areas and also to train others. In turn, social competencies are based on the ability to cooperate with other people, to understand their needs and aspirations and to motivate them. Personality traits are the basis for developing such competencies. Conceptual competencies serve as a clamp binding the aforementioned two types of competencies. They represent the ability to coordinate and integrate all interests and directions of the carried out activities (Stoner & Wankel, 1986). In the past, the competencies deemed most important for effective project managers were of a more technical nature. However, it is now widely recognized that a mix of technical and people-oriented competencies are important for project managers success (Krahn & Hartman, 2004). What is more, the technical side of project management is well defined, so now attention is directed to the “soft” side, chiefly interpersonal competencies (Winter & Checkland, 2003; Dulaimi, 2005; Leybourne, 2007).

The detailed competencies of a project manager were the subject of research conducted by various researchers in different countries. For example, the research conducted by Geoghegan and Dulewicz (2008) points to 10 competencies (dimensions of leadership) which are critical for project success. Five of them are included in the group of so-called managerial competencies, four - in social competencies, and only one in intellectual competencies. Such competencies as resource management, delegating tasks, powers and entitlements (empowering), personnel development and motivation were listed among the most important ones for project success.

In another study, Gehring (2007) attempted to systematize the detailed competencies of a project manager. He distinguished the common competencies present on the lists of other authors investigating the analyzed subject matter and attributed to individual competencies the supporting personality types in line with Meyers-Briggs Type Indicator. It allowed the types of personalities supporting project realization through its consecutive phases to be identified. In turn, Dvir, Sadeh and Malch-Pines (2006) pointed out that project managers are more interested in participating in endeavors that match their personality. Some prefer to participate in imitation projects, whereas others prefer high-tech projects characterized by a high degree of uncertainty. It allows one to conclude that the personality traits of a project manager make him/her more or less competent for a particular project type, which has a direct impact on the success of a project. Hossein, Bakhsheshi and Rashidi Nejad (2011) identified which characteristics of a project manager are desirable depending on project types. The aforementioned authors also identified which characteristics of a project manager have the biggest impact

on meeting the requirements related to, for example, time, cost, and quality of the project final outcome.

The most and the least, desirable personality traits of a project manager in certain types of projects are presented in Table 2.

Table 2. Project type vs. desirable and undesirable personality traits of project managers

Project type	Most desirable personality traits	Least desirable personality traits
Urgent	integrity, meticulousness, intelligence	self-control, emotional impulsiveness, impartiality, fairness
Complex	integrity, meticulousness, creativity	impartiality, fairness, emotional impulse, enthusiasm, curiosity
Innovative	integrity, creativity, intelligence	emotional impulsiveness, impartiality, fairness, self-control
Standard	integrity, persistence, meticulousness	emotional impulsiveness, impartiality, fairness, enthusiasm, curiosity

Source: Hossein, Bakhsheshi and Rashidi Nejad (2011).

Research on the competencies of a project manager, required for the implementation of different project types, was also carried out by Dias, Tereso, Braga and Fernandes (2014). The study applied a quantitative research approach for identifying key project managers' competencies for different types of projects. The 46 competencies (technical, behavioral and contextual) provided by the IPMA (International Project Management Association) were surveyed through an online questionnaire. Three dimensions to distinguish project types were used: application area, innovation and complexity. The results showed that 13 key competencies (20%) were common to the majority of the projects. Most of these are behavioral competencies, such as ethics, reliability, engagement, openness, and leadership. A clear correlation was also observed between technical competencies and project complexity. Analysing projects with high complexity and, comparatively, with the other complexity levels, two technical competencies stand out: risk and opportunity, and team work.

Müller and Turner (2010) examined the leadership competency profiles of successful project managers in different types of projects. In order to develop leadership profiles of successful project managers in different types of projects, they adopted the assessment tool, the Leadership Development Questionnaire (LDQ), which has frequently been used in recent studies on leadership in project management. Four hundred responses to the Leadership Development Questionnaire (LDQ) were used to profile the intellectual, managerial and emotional competencies of project managers in

successful projects. Differences by project type were accounted for through the categorization of projects by their application type (engineering & construction, information & telecommunication technology, organizational change), complexity, importance and contract type. This study used a worldwide, web-based questionnaire to identify the leadership competency profiles of successful project managers in projects of a different type. By focusing on the leadership profiles of successful managers only, Müller and Turner identified differences in the strength and presence of leadership competencies of managers in different types of projects. The results support the hypothesis that project manager leadership competency profiles differ in some project types in order to be successful. Results indicate high expressions of one IQ sub-dimension (i.e., critical thinking) and three EQ sub-dimensions (i.e., influence, motivation and conscientiousness) in successful managers in all types of projects. Expressions of other sub-dimensions differ by project type. The results support the previous research, which identified different profiles of leadership competence in organizational change projects of different complexity. The present study extends these findings to engineering & construction, information & telecommunication technology projects.

The above-mentioned tool Leadership Development Questionnaire (LDQ), which is used in studies on leadership in project management, was developed by Dulewicz and Higgs (2005). These researchers did an extensive review of existing theories and identified 15 leadership dimensions, which they then clustered under three competencies of intellectual, emotional and managerial (see Table 3). Using these 15 dimensions they identified three leadership profiles for organizational change projects, which they call goal-oriented, involving, and engaging; and which are appropriate depending on the level of change to be achieved within an organization. Engaging is a style based on empowerment and involvement in highly transformational context. This leadership style is focused on producing radical change through engagement and commitment. Involving is a style for transitional organizations which face significant, but not necessarily radical, change in their business model or way of work. Goal oriented is a style focused on delivery of clearly understood results in a relatively stable context.

The organizations promoting the domain of project management and developing project management methodologies prepared detailed lists of project manager's competencies. One of the project manager's competency models, recognized among professionals, is the Project Management Competency Development Framework (PMCD Framework), developed by the Project Management Institute.

Table 3. Fifteen leadership competencies and three styles of leadership as suggested by Dulewicz and Higgs

Group	Competency	Goal-oriented	Involving	Engaging
Intellectual (IQ)	Critical analysis and judgment	High	Medium	Medium
	Vision and imagination	High	High	Medium
	Strategic perspective	High	Medium	Medium
Managerial (MQ)	Engaging communication	Medium	Medium	High
	Managing resources	High	Medium	Low
	Empowering	Low	Medium	High
	Developing	Medium	Medium	High
Emotional (EQ)	Achieving	High	Medium	Medium
	Self-awareness	Medium	High	High
	Emotional resilience	High	High	High
	Motivation	High	High	High
	Sensitivity	Medium	Medium	High
	Influence	Medium	High	High
	Intuitiveness	Medium	Medium	High
	Conscientiousness	High	High	High

Source: Dulewicz and Higgs (2003).

The PMCD Framework is a comprehensive text defining project management competencies and provides the baseline list of competencies required for project success (Gehring, 2007). The competencies in the PMCD Framework are organized into six units of competence representing groups of distinguishing competencies (see table 4). Within each unit, the competencies relating to similar action or behavior are grouped to form the competency cluster.

Project team leadership style

The style of managing people refers to the relationship between superiors and subordinates. It is based on explicit or implicit influence exerted through management behaviors realized in the played organizational role. Based on individual experience, a supervisor develops patterns of his/her own desirable behavior and the desirable behavior of his/her subordinates. The patterns of a supervisor's own behavior are related to the manner of executing managerial functions and powers, the set of accepted and applied methods and techniques used in managing people, as well as the manner of performing the organizational role. Three classical styles (Coghlan & Brannick, 2003) are the basis for describing and classifying different types of leadership styles, i.e., autocratic style, democratic style and laissez-faire style.

One of the critical factors of project success is the leadership style (Belout & Gauvreau, 2004; Turner & Müller, 2005; Feger & Thomas, 2012).

Table 4. Project manager competencies identified by the Project Management Institute

Unit of competence	Competency cluster
Achievement and Action	Achievement orientation Concern for order, quality, and accuracy Initiative Information seeking
Helping and Human Service	Customer service orientation Interpersonal understanding
Impact and Influence	Impact and influence Organizational awareness Relationship building
Managerial	Teamwork and cooperation Developing others Team leadership Directiveness: Assertiveness and use of positional power
Cognitive	Analytical thinking Conceptual thinking
Personal Effectiveness	Self-control Self-confidence Flexibility Organizational commitment

Source: Project Management Institute (2002).

Research on relationships between leadership style and project success suggested that successful project managers need to employ flexibility in their leadership style. Flexibility allows them to adjust and to apply different leadership styles that will suit changes in situations or circumstances (Prabhakar, 2005; Müller & Turner, 2007). Choosing the right leadership style can turn out to be crucial for the project outcome. The decision on which style to use in a given situation depends, to a great extent, on the intuition of a project manager and his/her ability to assess the situation correctly, as well as on his/her personal predispositions, i.e., which style suits him/her best (Frame, 2003). Apart from personal factors, the choice of leadership style is also influenced by task-oriented and organizational factors (see Table 5).

It should also be emphasized that one style of management neither can nor should be used in the course of project implementation. Each project

implementation phase is related to the specific tasks, so the manager's approach should depend on the actual circumstances at a given moment. Turner and Müller assigned management styles to project lifecycle phases and also to the structure type of the project team and the specificity of the team (see Table 6).

Table 5. Factors influencing project leadership style

Task factors	Personal factors	Organizational factors
tasks are limited in time, relatively well-defined and executed under time pressure	project implementation requires the cooperation of experts from various specialties	diverse resources being at the disposal of different organizational units in an enterprise are taken advantage of within the framework of projects
tasks are extensive, often very complex and poorly structured	the requirements regarding the competencies of a manager are diverse depending on the institutional form of project implementation	a project is characterized by instability of operation frequently imposes subordination at work
tasks are characterized by a high level of innovation and pose a high risk for an enterprise	higher than average requirements regarding communication and cooperation skills, resistance to stress and variability of roles are expected from project participants	project implementation is divided into phases and different phases are associated with various organizational problems
		employees' motivation problems represent the significant component of project implementation

Source: authors' compilation based on Trocki, Gruzca and Ogonek (2003).

Table 6. Leadership styles vs. project phases and types of project teams

Leadership style	Project lifecycle phase	Project team structure type	Team specificity
Laissez-faire	Commencement	Collective	Experts sharing responsibility
Democratic	Planning	Matrix	Many specialists are involved in several tasks
Autocratic	Implementation	Task-oriented	An individual is involved in the implementation of one specific type
Bureaucratic	Completion	Surgical	Joint work on a single task

Source: authors' compilation based on Turner and Müller (2005).

Cunningham, Salomone and Wielgus (2015) looked at six popular project management leadership styles across three industries to discover if there is commonality in each industry as well as if the preferred methodology differs from industry to industry. The researched leadership styles were coaching, strategic, laissez-faire, bureaucratic, autocratic, and democratic. The three industries surveyed were healthcare, finance, and pharmaceuticals. Data from the survey showed that all three industries identify best with strategic and democratic leadership styles. The healthcare industry preferred strategic and coaching best, the finance industry preferred strategic and democratic, and pharmaceuticals preferred strategic, coaching, and democratic styles almost equally. Bureaucratic leadership was proven to be the least preferred style across all three industries.

Much of the current work on leadership, in specialist project management literature, stresses the importance of the so-called 'transformational leadership. The relationship between the project team member and the project manager as a leader is likely to be different from the traditional leader-follower relationship in a functional hierarchy. Although the project manager is responsible for the day-to-day work of the team members, often for long periods of time, he or she often has an unclear role to play in the overall development, career plans and longer-term goals of the project team member. Project-based organizing, in particular, may undermine strong identification between leaders and followers, which is the core aspect of transformational leadership. The identification and trust-building processes involved in transformational leadership may thus be less likely to occur or less easy to achieve in such temporary, shifting relationships (Keegan & Den Hartog, 2004).

Yanga, Huang and Wu (2011) investigated the associations between the project manager's leadership style and teamwork and the impact of teamwork on project performance. These analyses showed that the increase in leadership levels might enhance relationships among team members. More specifically, the results indicate that the project managers who adopt transactional and transformational leadership may improve team communication, team collaboration and team cohesiveness. In investigating the relationship between teamwork and project performance, teamwork is positively related to project performance. The findings suggest that project success in terms of schedule performance, cost performance, quality performance, and stakeholder satisfaction can be achieved with stronger team communication and collaboration, as well as greater team cohesiveness.

Martin and Edwards (2016) explored leadership style at different managerial levels. The democratic and transformational styles of leadership were the most efficient in achieving project success. An analysis of variance revealed there is no significant relationship between project success and

leadership style, but there exists a strong association between management level and leadership style and a significant relationship between management level and project success. This suggests there is a maturity in leadership style as management level progresses, as a person should become more effective in guaranteeing project success based on how far they have progressed in the management structure of their organization.

Nauman (2012) has examined the relationship between social intelligence with leadership behavior in less virtual and more virtual teams. The findings of current research highlight the importance of social intelligence and concern for task in more virtual projects as compared to less virtual projects. The findings suggest that social intelligence does matter in the management of IT projects both less and more virtual in nature and it is imperative for more virtual projects. The results show that social awareness and relationship management are positively related to concern for task and concern for people and are found to be higher in more virtual than less virtual project team members.

RESEARCH METHODS

The research results presented in this paper are part of a holistic research project, carried out in the years 2014-2015, dedicated to managing people in project-oriented organizations. The research was "embedded" in an interpretative paradigm, which predominantly emphasizes pragmatism and coherence (for more see Smith, 1983).

In the holistic research project, pilot studies were based on focus-group interviews carried out with people holding different positions (i.e., project managers, HR staff, project work executors). Such interviews are used, e.g., as an auxiliary tool for obtaining basic data needed to define the research problems and to construct a tool in the form of a questionnaire (for more see Merton, 1987). The interviews were organized with three mini-focus-groups. In turn, in the course of proper research, the structured interview method (PAPI - Paper and Pencil Interview) was used, conducted with the above-mentioned groups of respondents (3 respondents from each organization: 1 HR specialist, one project manager and one project work executor). The questions in questionnaires were divided according to thematic blocks. Both closed and open questions were used.

This article – taking into account its purpose (i.e., identification of the required and frequently used competencies and project leadership styles) – presents the results of structured interviews with project work executors, who were employed in the surveyed enterprises.

A medium or large enterprise was the basic sample unit, in which:

- 1) Projects are implemented.
- 2) Project manager position or function is introduced.
- 3) There is an organizational structure in which two dimensions coexist - hierarchical (line units) and projects (interdisciplinary project teams).
- 4) Methodical approach to project management is used.

The sample units were divided into two types characterized in Table 7.

Table 7. The characteristics of enterprise types covered by the research

Type name	Enterprise characteristics	Examples of industries
A	Strictly project-oriented organizations, in which projects are implemented mainly for external needs (projects constitute the core business here)	Construction, contracted manufacturing, architecture, advertising, consulting, IT, research and development
B	Organizations in which projects are implemented primarily for internal needs	Mass production, transport, telecommunications, trade and commerce, healthcare, finance

The research included 100 organizations located in Poland. The research sample was balanced, i.e., covered an equal number of companies of all types (50 strictly project-oriented ones where projects constitute their core business and 50 carrying out mainly repetitive activities but managed by projects for their internal needs). When designing the research sample, it was taken into account that, while there is a certain number of first type enterprises in the market, it is difficult to identify the other organizations in which project-oriented management takes place. It is difficult to determine how big the general population is, which is why the number of organizations of these two types was balanced in the research sample. Also, within each group (A and B) a layered selection according to the examples of industries listed in table 7 (maintaining the proportions indicated in the classifications of The Main Statistical Office) was used. In the process of data collection and statistical analysis, cooperation with the Center for Research and Expertise of the University of Economics in Katowice and the Wrocław University of Science and Technology was initiated.

The identification of project managers' competencies (Q1) was based on the PMCD Framework and leadership dimensions identified by Dulewicz and Higgs presented above. In the PMCD model there are 19 competences and in the Dulewicz and Higgs model, there are 15 competences. Because certain competences (12 competences) mentioned in the indicated models are repeated, a list covering 22 competences was adopted for research.

The respondents were asked whether, and to what extent, the project managers they cooperated with were characterized by the competencies indicated in the listed theoretical concepts. They could answer based on a five-point scale, where 1 indicated that the managers definitely do not have the particular competency, 2 - rather do not have it, 3 - I cannot say, 4 - they rather have it, and 5 - they definitely have it. Logistic regression was mainly used to determine whether there is a difference in managerial competencies between type A and B organizations.

The respondents were also asked to highlight three key competencies (Q2) which determine the effectiveness of project managers. The previously developed list of 22 competencies based on PMCD concepts and 15 leadership dimensions was referred to.

The research (Q3) also used the aforementioned concept by Turner and Mueller, presenting the desired leadership styles in subsequent phases of the project. The following categorization of leadership styles was used to analyze a particular leadership style:

- laissez-faire leadership style - team members identify themselves with the specific options/variants of activities and make decisions, the methods of functioning/working in a team are flexible;
- democratic leadership style - the manager engages/involves the team members in identifying specific options/variants of activities and makes decisions him/herself, the methods of functioning/working in a team are flexible;
- autocratic leadership style - the manager him/herself determines the possible methods/variants of activities and makes decisions him/herself, the methods of functioning/working in a team are flexible;
- bureaucratic leadership style - the manager him/herself determines the possible methods/variants of activities and makes decisions him/herself, the methods of functioning/working in a team follow specific rules.

The respondents were also able to answer that they cannot clearly indicate which leadership style is the dominant one in practice and which, in their opinion, is the desired one. The results of conducted empirical research, assigned to the previously defined research questions (Q1-Q3), are discussed in the next part of the article.

RESULTS ANALYSIS AND DISCUSSION

The research on the competences (Q1 and Q2) conducted in two types of project-oriented organizations showed some differences regarding the project manager competences.

The variables for the model (Q1) were selected by comparing the differences between the mean values of manager competency assessments for the organizations of A and B type. The classified differences (higher regarding the absolute value that is higher or equal to 0.1) are shown in Figure 1.

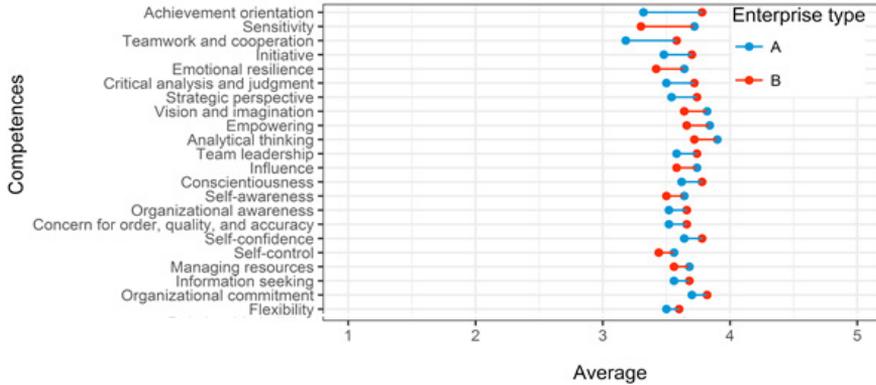


Figure 1. The differences in average project manager competency assessments by the type of organization

Further analysis covered these competencies for which the differences in assessments were higher than 0.2. This value was regarded as significant from a practical perspective. The variables (competencies) meeting this criterion are as follows: achievement orientation, sensitivity, teamwork and cooperation, initiative, emotional resilience, critical analysis and judgment and also strategic perspective. The preliminary analysis based on the reverse elimination method combined with logistic regressions with one explanatory variable showed that three variables with the highest difference should be adopted for the model, i.e., achievement orientation (AO), sensitivity (S) and also teamwork and cooperation (TC). At this point, it is worth noticing that AO and TC competencies originate from the PMCD concept by PMI, whereas S concept comes from the concept of Dulewicz and Higgs. The form of the adopted statistical model is presented below:

$$\text{Prob (organization type = b)} = 1/(1 + \exp(-X\beta)), \text{ where: } X\beta = a_0 + a_1AO + a_2S + a_3TC$$

The initial assessment was to determine whether the suggested model was significantly different from the model with a constant only (i.e., there are no variables). Upon the test result based on the reliability function quotient (d.f.: 3, P-value: 3.6e-06) it should be observed that there is a statistically significant difference between the models - obviously in favor of the model

with variables (low p-value < 0.05). Thus, at least some variables substantially explain the differences between the particular industries. In the next step, the focus was on the significance of each variable, as shown in Table 8.

Table 8. Parameters of the adopted statistical model

Competence	Coef	S.E.	Wald Z	p-value
Intercept	-3.071	1.74	-1.765	0.078
AO	1.128	0.41	2.750	0.006
S	-1.083	0.35	-3.091	0.002
TC	0.844	0.33	2.557	0.011

Wald Z statistics and the corresponding p-values are lower than the adopted significance level ($\alpha = 0.05$). This suggests that the estimated coefficients are statistically significant. The statistical tests used so far allowed the assessment of whether there are relationships between the type of enterprise and other variables, and whether these relationships can be considered relevant. However, they do not explicitly answer the question about how useful the model is going to turn out to be in the classification process, i.e., whether the knowledge of competencies is sufficient to predict the type of industry represented by the manager. The predictive capacity of the model was additionally assessed on the basis of the so-called discriminatory indexes.

The estimated coefficients allow the relationships between B industry affiliation and the competences presented by managers to be interpreted. It turns out that the higher the assessment of AO competencies or TC competencies, the higher the probability that the project manager is working in a B-type organization. In turn, the higher the assessment of S competences, the higher the probability that the project manager is working in an A-type enterprise.

Sensitivity, which means awareness of, and taking account of, the needs and perceptions of others in arriving at decisions and proposing solutions to problems and challenges, is a part of emotional competencies in Dulewicz and Higgs dimensions. The specificity of project management creates the need for the project manager to present emotional intelligence and the related competencies. In the research focused on investigating relationships between the project manager's competencies and the project success, Geoghegan and Dulewicz (2008) pointed to three competencies related to emotional dimensions, i.e., conscientiousness, self-awareness, and sensitivity as crucial for the project success. Also, in other studies, such emotional competencies as self-confidence and self-belief were presented as likely to play a significant

part in the project manager's ability to deliver a project successfully (Lee-Kelley & Leong Loong, 2003).

Thus, distinguishing S competence as distinctive for managers in A-type organizations may suggest the need for the project manager's interaction with a more diverse group of project stakeholders than in the case of B-type organizations implementing projects for internal needs. Emotional competences mainly allow developing interpersonal relationships with the broadly approached project stakeholders. On the other hand, in the case of B-type organizations, the distinction of AO and TC competencies may indicate a focus on enterprise development, which is related to the implementation of internal projects in an enterprise.

There are also some differences in competencies which determine project manager effectiveness in A and B-types organizations. Competencies indicated by the highest number of respondents (more than 10 indications) in each of the identified types of organizations were adopted for the analysis. In A-type organizations the most frequently indicated competencies, which determine a project manager's effectiveness are listed below:

- Development (D) - 36 indications – which is connected with impact and influence in which the intention is to teach or foster the development of one or several other people;
- Motivation (M) - 15 indications – which is connected with energy to achieve clear results and make an impact;
- Self-confidence (SC) - 12 indications – which means a person's belief in one's own capability to accomplish a task, and includes a person expressing confidence in dealing with increasingly challenging circumstances, in reaching decisions or forming opinions, and in handling failures constructively.

In B-type organizations – in the opinion of project work executors – the most important competencies, which decide about a project manager's effectiveness, are as follows:

- Teamwork and cooperation (TC) – the number of indications: 39 – which is understood as a genuine intention to work cooperatively with others, to be part of a team, to work together as opposed to working separately or competitively;
- Vision and imagination (VI) – which means a clear vision of the future and the impact of changes on implementation issues and business realities, and Development (D) - the number of this competence indications: 18.

Regarding the responses given to Q1 and Q2, it should be observed that TC competence, considered important for identifying discrepancies between project managers in strictly project-oriented organizations and managers in organizations that manage projects for internal needs, was selected as the key

competence determining a manager's effectiveness in B-type organizations. Having analyzed the most important competencies determining the effectiveness of managers in the organizations implementing projects for their own needs, i.e., TC, VI (vision and imagination) and D (development), it can be concluded that these competences are focused on the internal relationships in an organization.

The analysis of the empirical research results conducted in 100 enterprises project-oriented organizations indicated that, in the surveyed organizations, applied and desired leadership styles are not in accordance with the Turner and Mueller concept (Q3).

The so-called Adjusted Rand Index was applied to investigate compatibility between the model style of management within a given project phase (i.e., in accordance with the Turner and Mueller concept) and the styles indicated by the respondents as used or desired. This index is often applied to assess the degree of classification correctness. It takes the highest value equal to 1 if there is full compatibility between the model and the styles in the questions about the actually applied and the desired leadership styles. The value equal to 0 or less means that there is no compliance.

Table 9 presents how many organizations use the defined (considered as dominant) style of project team management in relation to the styles indicated as model ones in the Turner and Mueller concept.

Table 9. The discrepancies between model and applied leadership styles

Model style Applied style	Autocratic (project implementation phase)	Bureaucratic (project completion phase)	Democratic (project planning phase)	Laissez-faire (project initiation phase)
Autocratic	25	40	28	41
Bureaucratic	19	25	7	15
Democratic	47	29	50	33
Laissez-faire	5	3	8	7

The value of Adjusted Rand Index (ARI) for the question about the leadership style used by managers was 0.017, which is the value proving the absence of compliance with the model concept. Table 10 presents how many organizations prefer each type of leadership style in relation to the styles indicated as model ones in the Turner and Mueller concept.

It is worth mentioning once more, that the respondents could answer that they cannot clearly indicate which leadership style is the dominating one

in practice and which, in their opinion, is the desired one. This is the reason, why there are some differences in total numbers presented in table 9 and 10.

This result is partly different from the actual situation in Polish organizations, as the research conducted in Polish enterprises suggests that the majority of entrepreneurs prefer an autocratic leadership style (decisions are made without the involvement of employees).

Table 10. Discrepancies between model and desired leadership styles by project work executors

Model style Applied style	Autocratic (project implementation phase)	Bureaucratic (project completion phase)	Democratic (project planning phase)	Laissez-faire (project initiation phase)
Autocratic	20	26	17	3
Bureaucratic	10	16	6	5
Democratic	61	47	68	33
Laissez-faire	8	9	9	9

This may be due to the relatively widespread principle of limited confidence in employees, which results from the conviction that it is better to exercise control over an employee. However, one can also see the emerging tendency towards moving from an autocratic to a democratic leadership style (Mączyński, 2010).

On the other hand, while analysing the applied project team leadership styles, in the particular project implementation phases, two of the four examined leadership styles are the dominating ones, i.e. the autocratic style, which was most often indicated at the initial and final phase of the project and the democratic style most often pointed to in the planning and implementation phases of the project.

CONCLUSION

Within the group of the analyzed enterprises, the following three important competencies were identified, which differentiate project managers between those working in strictly project-oriented organizations and the organizations which perform project-based management for internal purposes: achievement orientation (AO), sensitivity (S) and also teamwork and cooperation (TC). Managerial competencies decide primarily about the effectiveness of project manager activities. The analysis of applied and desired leadership styles indicated project team members' preference for a democratic leadership

style in the particular project implementation phases. In turn, in terms of the actually applied leadership styles, the combination of democratic and autocratic styles prevails, however, the autocratic style is the dominating one in the initial and completion project phase, whereas the democratic style in the planning and implementation phase.

The empirical research results presented in this article are primarily of a cognitive nature. The main research limitation is the small research sample size, which does not allow the results to be generalized. In order to present the determinants influencing the picture obtained from the discussed competencies and leadership styles, it seems founded to carry out further exploratory research. The authors hope that the publication will remain an inspiration for further empirical research including a comparison between different countries.

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Abstrakt

Celem artykułu jest przedstawienie kompetencji kierownika projektu oraz stylów kierowania projektem występujących w różnych typach organizacji zorientowanych na projekty, tj. organizacjach stricte projektowych (realizujących projekty dla klientów zewnętrznych) oraz organizacjach zarządzających projektami na potrzeby wewnętrzne. Do osiągnięcia powyższego celu wykorzystano studia literatury przedmiotu oraz badania empiryczne przeprowadzone w 100 przedsiębiorstwach. Autorzy omówili specyfikę pracy projektowej i specyfikę zarządzania zespołem projektowym. Następnie przeprowadzono przegląd literatury dotyczący kompetencji kierownika projektu i stylów kierowania projektem. Zidentyfikowano trzy ważne kompetencje, które odróżniają kierowników projektu pracujących w organizacjach stricte projektowych od kierowników zarządzających projektami na potrzeby wewnętrzne organizacjach, tj. orientacja na osiągnięcie, wrażliwość, praca zespołowa i współpraca. Analiza stosowanych i pożądaných stylów kierowania wskazała, że członkowie zespołów projektowych w obu typach organizacji zorientowanych na projekty, preferują demokratyczny styl kierowania w poszczególnych fazach realizacji projektu.

Słowa kluczowe: zarządzanie projektami, kompetencje, kierownik projektu, sukces projektu.

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Human Capital Orientation and Financial Performance. A Comparative Analysis of US Corporations

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Abstract

In the knowledge-based economy, long-term corporate performance and its competitive advantage are strongly associated with human capital. Theoretical deliberations suggest that companies with greater human capital orientation (higher salaries and benefits, more training, a transformational leadership style, better equipment) might perform better than their peers with less human capital orientated strategy due to: higher skills of employees, greater motivation and thus higher overall corporate effectiveness. On the other hand, orientation towards human capital generates higher costs which may negatively affect profitability and stock market valuation. There are two aims of this paper. The first one is to state whether human capital orientated firms generate positive financial performance. The second aim is to compare financial performance of human capital orientated firms with the benchmarking sample to state if the financial performance is above-average. Research was conducted on a sample of 7,204 unique publicly listed companies from the American stock market within a ten year period (72,040 firm-year observations). Empirical studies were carried out with the help of one hypothesis. Two groups of companies were created and their results on financial performance were compared. The first group consisted of human capital orientated firms that were identified with the help of the well-known 100 Best Companies to Work For listing, in line with the Edmans (2009) approach. The second group composed of US-based publicly listed entities from 11 industries. Analysis was conducted for the 2007-2017 years. The key findings of the paper are: strategy based on human capital orientation provides high profitability and leads to above-average financial performance, mainly in the field of equity growth and stock market valuation. The paper has significant practical implications for investors in terms of possible directions of stock market investments aimed at achieving above-average returns as well as for corporate management by indicating that human capital orientation pays off. The paper fills the research gap between two points. First, it states in which financial performance pillars human

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capital orientated firms perform best. Second, it compares the results of the human capital orientated strategy with the entities from the 11 different industries. Research refers to the American publicly listed enterprises.

Keywords: *knowledge-based economy, human capital, financial performance, multinationalities.*

INTRODUCTION

Traditional human relations theories (e.g., Maslow, 1943; Herzberg, 1959; McGregor, 1960) do not perceive employees as a cost or commodity required in the production process, but rather as a key organizational asset, who are able to create substantial value by launching new products or building sustainable relationships within and outside the entity. In this sense, employees' knowledge and skills should be described as a "form of capital" (human capital). The notion of human capital was first introduced by Schultz (1961). He described human capital as a set of knowledge, skills and abilities that exist in the individual and that are used by him/her. As many authors (Guenther, Beyer, & Menninger, 2003; Huselid, 1995; Pfeffer, 1994; Prahalad & Hamel, 1990) state, an organization's human capital should be perceived as a valuable resource and as a key factor for corporate competitive advantage. Apart from knowledge, company individuals' competence, skills, experience, expertise and capabilities form human capital (Mention & Bontis, 2013). When the people in an organization acquire new knowledge, the value of the company and its intellectual capital (including human capital) are enriched (Vidotto, Ferenhof, Selig, & Bastos, 2017). As argued by Ndinguri, Prieto, and Machtmes (2012) from the perspective of knowledge, human capital has become a key resource for the organization to achieve strategic competitive advantage and thus better performance because it is difficult to be imitated. On the other hand, human capital orientation may result in increased costs in the form of higher salaries and additional benefits, as employees perceive themselves as specialists with unique expert knowledge and thus have greater earnings' expectations and employment conditions. As a result, this may lead to lower cash liquidity and a potential loss of competitive advantage.

The aim of the paper is twofold. First, to state if, and to what extent, human capital orientated firms (employee friendly) are profitable in the long term. Second, an attempt was made to compare the performance of human capital oriented entities with the results of a broad sample of companies from different industries. The research methods adopted for this study are comparative analysis and tools of descriptive statistics.

The structure of this paper is as follows: Section 1 is an introduction which leads into the literature review on human capital and prior research

in Section 2. The methodology used in the study is set out in Section 3 while Section 4 outlines the results. Section 5 is the discussion which is followed by Section 6 pointing to conclusions and limitations of the study, along with the future lines of research.

LITERATURE REVIEW

Human capital orientation - characteristics

As in the contemporary business environment, high-skilled labor is aware and capable of the need for ongoing learning, and employees strive for developing greater knowledge to respond to market competition, product innovations and more complex technologies (Appelbaum, Bailey, Berg, & Kalleberg, 2000; Batt, 2002; Snell & Dean, 1992). However, according to Stewart (1999), some employees, by no doubts, should be perceived as valuable assets, but others are only costs (often significantly high). This situation may refer not only to the entire firm but also to selected departments. As a result, Sveiby (1998), when analyzing professional and organizational skills, provides a classification of four types of employees: professional, manager, leader and support personnel. Nevertheless, two types of firms can be still distinguished based on their approach towards employees. According to Kochan and Dyer (2017), one of them can be defined as a low-road strategy firm, with the second as a high-road strategy enterprise. The features of these definitions are shown in Table 1.

Table 1 provides a clear distinction between the two types of firms. Although the first type (described as a low-road strategy) seems to be associated with industrial economy, while the second one (high-road strategy) with knowledge-based economy, in fact, both of them can achieve and preserve sustainable comparative advantage in the contemporary economy. In the case of the low-road strategy, competitive advantage derives from the fact that entities tend to minimize the costs (mostly those related to employees) which results in relatively lower prices of products and services than the competition. In turn, in the second approach (high-road strategy), firms strive to invest in their employees to increase their satisfaction, commitment and skills, which hopefully will lead to higher efficiency, lower rates of employee turnover, and/or better quality products and services, and thus a competitive advantage based on quality.

In high-road companies, the application of work teams is expected to result in greater adaptability, productivity and creativity, and to provide more innovative and comprehensive solutions to companies' problems (Beers, 2005).

Table 1. Low-road strategy vs. high-road (human capital orientation) strategy

	Low-road strategies	High-road strategies
Employees perception	costs	valuable resources
Selection of employees	casual; minimum standards	careful; high standards
Job/work design	very specialized	multiple tasks
Skill level and scope	low, narrow	high, wide
Training	limited; job specific	extensive; employee development
Job autonomy/discretion	low	high
Hierarchy	rigid differentiation between managers and workers; many managerial layers	low differentiation between managers and workers; few layers
Wages	relatively low wages	relatively high wages; additional rewards linked to performance
Motivation	extrinsic; focused on company control of workers	intrinsic; focused on self-control
Employee attachment to company	minimal	extensive
Employee voice	little or no voice or engagement; representation suppressed	informal and/or formal voice; options for engagement and representation

Source: Kochan and Dyer (2017).

Moreover, the promotion scheme is more fair and transparent, as the employees are encouraged to take part in the decision-making process within the organization, either individually or collectively. As a result, their personal attachment to the firm is greater, which is strengthened by attractive remuneration, additional benefits related to their performance, and more general and specialized training directed at personal development. Consequently, employee job satisfaction and involvement increases which may positively influence general corporate performance. The low-road strategy is the opposite of high-road strategy.

Other terms used to distinguish between two opposite strategies is the approach of Roos, Bainbridge, and Jacobsen (2001) who distinguished the following two types of enterprises: process-oriented and people-centered

companies. Such division redefines the approach towards employees and their retention rates. In the process-oriented firms, high labor turnover was unimportant as employees performed unskilled tasks. By contrast, in the people-centered entities employees are the key sources of value creation, especially in modern knowledge-based industries, so keeping them in the firm is of crucial importance. In the people-centered companies retention rate should be minimized (as talents are scarce and recruitment costs are high), whereas in the process-oriented firms retention rate may be relatively high, as employees perform simple and easy to duplicate tasks (so finding new ones should not be an obstacle) and personnel salary expectations rise slower.

Theoretical deliberations on human capital and its importance lead to the conclusion that conducting human capital orientated strategy is one of the possible ways of achieving sustainable competitive advantage. Moreover, although entities with the greatest levels of human capital awareness may be described differently, the literature provides a common general framework of companies being human capital oriented.

Human capital orientation and firm performance – theoretical deliberations

As human capital orientation is a complex phenomenon and can be analyzed with the help of numerous factors, this article concentrates on the following dimensions: investment in human capital, high skills, team performance, job satisfaction, organization commitment, citizenship behavior, and employee involvement.

Theoretical considerations on the relation between human capital investments and corporate performance lead to several crucial implications. According to, e.g., Oviedo-Garcia, Castellanos-Verdugo, and Sancho-Mejías (2014), knowledge is the most important resource, and its management plays a key role in a firm's performance. Consequently, investments in human capital may increase employee productivity and financial results (Black & Lynch, 1996; Pfeffer, 1998; Snell & Dean, 1992). Similarly, Durrani and Forbes (2003) reinforce these arguments by suggesting that company success is strongly related to the investment flow in human capital and information technology. Moreover, investment in people results in improved individual performance; increased organizational productivity; and economic development; as well as other societal benefits (Lynham & Cunningham, 2006; Nafukho, Hairston, & Brooks, 2004). As the level of human capital is increased, people develop more productive means of performing tasks, thereby increasing the overall efficiency of an entity. Black and Lynch (1996) proved that the average educational level in companies is positively related to their business efficiency. Moreover, as Appelbaum et al. (2000) suggest, high skills of the employees are a requirement for empowerment and benefit

from delaying the company, which in turn is fostered by a strong approach to develop team performance among the employees. As Crawford and LePine (2012) and Mathieu, Maynard, Rapp, and Gilson (2008) state, effective team performance must go in line with the coordination of team members' activities. Synergistic value from teams is difficult for competitors to imitate. Thus sustainable competitive advantage derives more from teams than from individuals (Barney & Wright, 1998). The efficiency and effectiveness of the team's collective learning process are positively influenced by the interaction of team members with each other and, moreover, knowledge and abilities gained by one team member can be transferred to the other team members (Ellis et al., 2003). However, as stated by Chan, Lim, and Keasberry (2003), it is possible only when teams in the firm learn through the sharing of knowledge and experience among individuals.

Human capital (as an intangible resource) is more probable to provide a competitive advantage because it is rare and socially complex, and therefore difficult to copy (Hatch & Dyer, 2004). Also, Groot and Van Den Brink (2000) state that human capital can improve firm performance through its contribution to the firm's flexibility - investments in human capital improve employability and therefore labor mobility. According to Lepak and Snell (2002), one advantage of this "resource flexibility" is the increase in the ability of the organization to deploy its labor effectively, and thus, improve firm performance. Human capital orientation may also increase employee motivation for work; thus they are more involved in task performance and understand better the vision of the company. More satisfied employees are more willing to undertake additional tasks, support the implementation of the organization's goals, as well as have a higher level of effective organizational engagement. Satisfaction from work is positively related to the employee's attitude and the level of performance of their tasks (Meyer, Allen, & Gellatly, 1990). Studies (Culverson 2002) confirm that employee commitment is an extremely important factor that allows the organization to function effectively and contributes to its success. Indeed, the involvement of the organization's human resources is the basis for its further growth and development. As suggests Randall (1987), commitment to an organization shows the relative scope of an individual's identification to the company and involvement in that organization. According to Luthans, McCaul, and Dodd (1985), organizational commitment can be described as having three major components: First, an individual's strong belief in and an acceptance of the firm's goals; second, an individual's eagerness to perform substantial effort on behalf of the company; and finally, an individual's definite willingness to maintain membership. This is confirmed by Loi, Ngo, and Foley (2006) who state that employee organizational commitment is negatively related to an

intention to leave. As a result, firms with committed employees have low turnover rates (Allen & Meyer, 1990) which links to lower costs of recruitment and training. In several studies, job satisfaction and organizational citizenship have been found to be negatively correlated with turnover intention (Tsai & Wu, 2010; Huang, You, & Tsai, 2012). Smith, Organ, and Near (1983) were the first to define the term “organizational citizenship behavior,” as a kind of non-organizational formal regulation and behavior that could not be assessed by a formal reward and punishment system. Podsakoff, Ahearne, and MacKenzie (1997) argued that citizenship behavior is a three-dimensional notion that takes into account the dimensions of “helping,” “civic virtue” and “sportsmanship.” Organ, Podsakoff, and Mackenzie (2005) explained that organizational citizenship promotes effective functioning of firms because of the increased level of commitment.

Employee involvement is crucial for survival in a world of accelerating change and increasing competitiveness (McConville, 1990), as ideas can derive from anyone, at any level, anyplace, anytime (McConville, 1990; Madjar, 2005). Consequently, employees should be motivated and encouraged for their personal involvement (Fairbank & Williams, 2001; Alves, Marques, Saur, & Marques, 2007; Neagoe & Klein, 2009). The most common goals of achieving greater employee involvement are:

- greater “tangible” benefits such as cost savings, sales increases and/or intangible advantages like higher levels of morale (Du Plessis, Marx, & Wilson, 2008). “Tangible” benefits usually result in a measurable increase in profitability;
- greater “intangible” benefits that usually relate to items such as: working conditions, employee safety, public relations or internal communication. They do affect profitability but not in a direct way (Islam, 2007);
- fostering creativity, to enhance emerging new ideas and to boost innovations, so that workplace performance is improved, and commitment and accountability among employees are increased (Buech, Michel, & Sonntag, 2010; Fairbank & Williams, 2001; Islam, 2007; Arthur, Aiman-Smith, & Arthur, 2010).

The theoretical assumptions presented above on the relation between human capital and firm performance confirm the position adopted by e. g. Shane and Venkatraman (2000) stating that the enhancement of human capital firstly enables an increase in the ability of employees to perform their daily tasks of discovering and exploiting business opportunities better (due to numerous above mentioned factors), which subsequently, positively influences financial performance (Cooper, Gimeno-Gascon, & Woo, 1994; Gimeno, Folta, Cooper, & Woo, 1997). In addition, it should be stated that

employee satisfaction is one of the accepted measurement methods of firms' human capital orientation.

Human capital orientation and firm performance – review of empirical studies

There are numerous empirical studies demonstrating the impact of human capital and human resources management practices on performance (Ashton, 2005). Some focus on the workforce itself (Carmeli & Tishler, 2004; Gupta, 1984; Gupta & Govindarajan, 1984), while others conduct deeper analysis, by studying the human resources management practices intended to develop and exploit human capital for better performance (Arthur, 1994; Delaney & Huselid, 1996; Youndt & Snell, 2004). Sánchez, Marín, and Morales (2015) found that strategic human resource practices influence employee behavior and generate positive effects on corporate performance. A study by Edmans (2009) on a sample of the *100 Best Companies to Work For in America* listing, during the period 1984-2005, suggests that employee satisfaction is positively correlated with shareholder returns (long-run stock returns) which is consistent with the human capital-centered theories of the enterprise. In turn, the link between team learning and innovativeness has been found in a study by Edmondson, Bohmer, and Pisano (2001), who proved that learning-orientated firms were better at implementing innovative technology. Moreover, Bunderson and Sutcliffe (2002) found that team learning orientation (technically measured with the help of surveys) were associated with observed process and product innovations.

Furthermore, a study by Seleim, Ashour, and Bontis (2007) on 38 Egyptian software companies, states that firm performance (due to the lack of reliable data measured by export intensity) is most influenced by a high level of human capital, understood as high skilled developers who possess distinct capabilities such as intelligence, creativity, initiation, and ambition. Such perceived human capital in software firms can introduce unique and smart software products and services that provide a profitable local and international base of customers. Research by Seleim et al. (2007) confirms previous theoretical considerations by Lepak and Snell (1999), Sveiby (2007) and Stewart (1999) that not all employees possess knowledge and skills of equal strategic importance for the firm. Thus, it is crucial to measure human capital effectiveness. A study by Nimtrakoon (2015) on 213 ASEAN technology listed entities, suggests that firms with greater human capital effectiveness perform greater ROA and higher stock returns. Similarly, studies by Bryl and Truskolaski (2015) on a sample of Polish listed IT companies, indicate human capital as the most important factor in the creation of high market value, positive ROA, but also ROE. However, research on a sample of 151

listed entities from Hong Kong (five industries: commerce, utilities, industry, properties and finance) by Yu, Ng, Wong, Chu, and Chan (2010) provide opposite conclusions. Human capital effectiveness was found to be negative and a very highly significant predictor for market value, which means that the greater the employee expenses, the lower the market valuation of the company. In this sense, investors value human capital orientated firms lower and treat employee expenses as costs, which is inconsistent with the contemporary human capital theories and studies. As a result, a firm's financial performance may be evaluated by stock exchange valuation, profitability and growth. Based on the literature review the research hypothesis adopted in this paper is as follows:

H1. Human capital orientated firms achieve above-average financial performance.

RESEARCH METHODS

Sample selection and description

Some studies (Sels et al., 2006; Way, 2002) argue that the cost of investment in human capital in the case of small firms often outweighs the gains that they might have from performing high human capital, because of the fact that small firms do not receive as many benefits from economies of scale as large firms do. Considering that approach, the sample studied in this paper will comprise of large entities only. However, identifying a human capital orientated firm is not an easy task. One of the approaches is to utilize a well-known tool, called *100 Best Companies to Work For* which is created by *Fortune* each year. A similar approach has been adopted by Edmans (2009). A survey is carried out among more than 230,000 people employed by American companies in the US and worldwide. According to the official methodology, employees evaluate their satisfaction by anonymously answering the questions concerning their workplace, including the quality of their leaders, support for their personal and professional lives, and their relations with colleagues. Moreover, *100 Best Companies to Work For* scores details such as compensation and benefits, hiring practices, recognition, training, and diversity programs. As a result, it is a relatively complex tool, which takes into account most of the important features of the human capital orientation strategy. Examples of the questions, on which the survey is based, are presented in Table 2.

As there are in total 50 questions measuring the level of the employees' satisfaction, in table 2 there are shown only the randomly chosen ones. Employees answer the questions, providing a score concerning directly their

satisfaction level on a 1-5 Likert scale (4 = *often true* and 5 = *almost always true*, are both classified as high satisfaction).

Table 2. Examples of the questions concerning employee satisfaction utilized in the *100 Best Companies to Work For* survey

Question (Likert scale (1-5))

People avoid politicking and backstabbing as ways to get things done.
Promotions go to those who best deserve them.
Managers avoid playing favorites.
Everyone has an opportunity to get special recognition.
People here are paid fairly for the work they do.
I am treated as a full member here regardless of my position.
If I am unfairly treated, I believe I will be given a fair shake if I appeal.
People look forward to coming to work here.
This is a psychologically and emotionally healthy place to work.
People are encouraged to balance their work life and their personal life.
Management shows a sincere interest in me as a person, not just an employee.
People care about each other here.
I can be myself here.

Source: own elaboration based on the 100 Best Companies to Work For methodology.

However, it should be noted that the level of satisfaction is the output score of other key elements of the human capital orientation. By utilizing this tool, research is focused on studying the following components of human capital orientation mentioned in the theoretical part of the paper which are: organizational citizenship, team performance, individual commitment and personal development. In addition, the *100 Best Companies to Work For* Survey refers to the 14 main industries (Figure 1).

Figure 1 shows that the studied sample is highly diversified, thus upcoming results potentially enable for generalization. In the listing, the most common industries are Professional services (18 entities) and Financial services and insurance (17 firms). Total employee counts are global (2,256,892). Job openings are the U.S. only. In 2017, the largest firm in terms of a number of employees was FedEx (268,784), while the smallest was Pinnacle Financial Partners (1,206). *100 Best Companies to Work For* list has been selected as the representative of human capital orientated firms and is used in this study. Their results have been compared with the performance of the largest US publicly listed entities from all industries. The benchmarking sample consisted of total 7,245 entities from 11 industries.

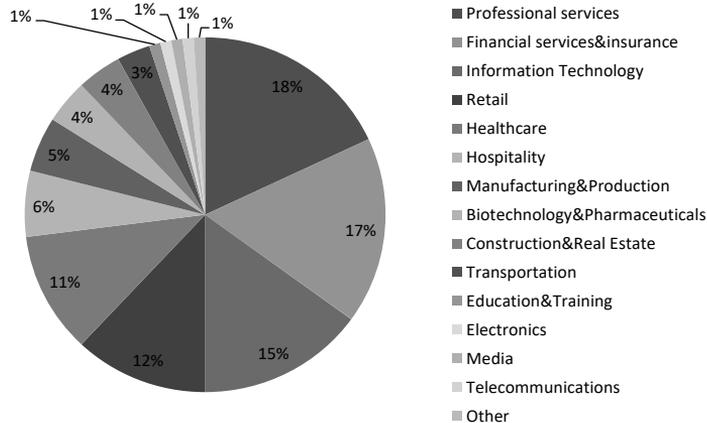


Figure 1. 100 Best Companies – Industry breakdown

Source: retrieved 12 December, 2017, from <http://fortune.com/best-companies/>.

Tools of descriptive statistics have been used in the study. In the case of mean values, a weighted average has been applied.

Time extent and sources of data

For the purposes of the study, a comparative analysis covered a ten year period (2007-2017). However, human capital orientated firms have been chosen from the listing in 2012 and 2017: thus two groups have been formed and their results have been compared with the benchmarking entities from 11 industries (energy, materials, industrials, consumer discretionary, consumer staples, healthcare, financials, information technology, telecommunication service, utilities and real estate, respectively). Some human capital orientated firms from the list of *100 Best Companies to Work For* have appeared in the benchmarking group. Thus they have been excluded from the benchmarking sample. Note that in the case of both analyzed groups, the study period amounted to 10 years. Data has been obtained from the Thomson Reuters Eikon Database.

100 Best Companies to Work For 2012 vs. 2017 listing

For the purpose of greater generalization human capital orientated firms have been omitted from the two listings: 2012 and 2017. Comparative analysis of both listings showed that their level of similarity (in terms of the same enterprises being on both lists) is 51%. In other words, 51 of the same entities were observed on the 2012 and 2017 listing. As the study list encompassed public and private companies, and it was only possible to find reliable data in

the case of publicly listed entities, the sample had to be reduced to 52 and 45 firms for the 2012 and 2017 listing respectively.

Performance measurement, assumptions and adjustments

To compare the performance of firms, their financial results have been divided into the three pillars: stock exchange performance, profitability and growth. As the period of analysis covered the global financial crisis of 2008, major fluctuations have been observed in the initial stage of the study. To avoid misinterpretation of data, extreme values (outliers) have been identified and excluded from the study. To evaluate the stock exchange performance, the share price on the 1st January 2007 has been compared with the share price on 1st January 2017. Profitability has been measured with ROA, ROE and ROS using net income (after tax) as a numerator. All absolute values greater than 100% have not been counted in the study. Growth has been evaluated by the increase in revenue, book value of the equity and net income from the 2007 to 2016 financial year.

In addition, out of the 100 companies initially designated for study, several of them had to be excluded due to the fact of not being publicly listed and thus it was not possible to obtain reliable data. In fact, the exclusion rate in the human capital orientated firms was quite high. It amounted to 55% in the case of the 2012 listing and 48% in the case of the 2017 listing. As a result, the total number of the studied human capital orientated entities was 45 in the 2012 list and 52 in the 2017 list (see Appendix 1). As previously mentioned, some companies from the 2012 list appeared on the 2017 listing, so the total number of unique human capital orientated enterprises amounted to 49.

RESULTS

Table 4 presents the general results of the conducted study. In line with the recent literature, the result shows that human capital oriented firms are not only profitable but also perform better in all studied fields than the benchmarking sample.

In the case of human capital oriented firms, their performance measured by the increase in the share price amounted to 122.7%, which means that within the period of ten years their stocks, on average, more than doubled their value. Comparatively, the rate of return of the broad studied sample showed only a 5.6% increase. Regarding profitability, the average returns on assets, equity and sales in human capital orientated firms were positive: 7.1%, 15.6% and 9.2% respectively.

Table 4. Human capital orientated firms and benchmarking sample – general results (2007-2017)

	HC firms (n=97)**	Benchmarking sample (n=7245)**
Return on investment	+122.7%	+5.6%
ROA	+7.1%	-6.2%
ROE	+15.6%	-4.7%
ROS	+9.2%	+1.5%
ΔRevenue	+99.5%	+55.6%
ΔNet income	+79.2%	+7.5%
ΔEquity	+91.1%	+49.4%

Note: * human capital orientated firms (weighted average of both 2012 and 2017 listing); ** weighted average for 11 industries.

However, in the case of the studied sample, the average profitability during the analyzed period for all entities was negative in terms of ROA (-6.2%) and ROE (-4.7%). Only ROS was positive (+1.5%) but was, however, much lower than in the case of human capital orientated firms. In terms of growth, both groups of studied companies returned positive values; however, increases in revenue, equity and net income were much higher in the case of human capital orientated firms than the benchmarking sample. The greatest difference was observed in the case of net income growth. During 2007-2017, human capital orientated firms increased their net income on average by 79.2%, while the benchmarking sample by only 7.5%.

Detailed profitability results of the benchmarking group, by industry, are presented in Table 5.

As stated before, mean values of ROA, ROE and ROS in the entire analyzed period were higher in the human capital orientated firms; however, there have been observed minor differences among the given industries. In the case of ROA, firms from only two industries (financials and real estate) performed on average a positive value, whereas nine other industries reported negative values with the greatest one observed in the healthcare industry (-22.8%). Similarly to ROA, average weighted ROE and ROS reported negative values; however the industry breakdown provides more optimistic information, as in the case of ROE, out of 11 studied industries seven of them performed a positive value, while in the case of ROS five. What is interesting is that, although human capital orientated firms outperformed benchmarking sample in the case of average values of ROE, ROE and ROS, some studied industries performed better in the case of given indices (health care in the case of ROE and financials in the case

of ROS). Meanwhile, the analyses of share prices show that human capital orientated firms provide larger stock returns than all industries.

Table 5. Human capital orientated firms and benchmarking sample - profitability results by industry

	Mean ROA2007-2017	Mean ROE2007-2017	Mean ROS2007-2017	Return on investment2007-2017
HC firms1 (n=45)*	+7.9%	+16.2%	+10.1%	+125.0% 86.8% profit 13.2% loss
HC firms2 (n=52)**	+6.2%	+14.9%	+8.1%	+120.1% 94.6% profit 5.4% loss
Energy (n=592)	-6.2%	-1.2%	+6.5%	-25.5% 30.2% profit 69.8% loss
Materials (n=444)	-8.2%	-1.9%	+1.2%	+0.9% 33.7% profit 66.3% loss
Industrials (n=872)	-2.2%	+5.0%	-0.3%	+26.0% 46.8% profit 53.2% loss
Consumer discretionary (n=961)	-0.9%	-67.0%	-1.0%	+0.1% 37.0% profit 63.0% loss
Consumer staples (n=325)	-2.0%	+5.7%	-0.3%	-18.5% 44.5% profit 55.5% loss
Health care (n=1123)	-22.8%	+16.9%	-8.0%	-22.1% 28.1% profit 71.9% loss
Financials (n=1252)	+0.9%	+1.6%	+16.3%	+36.5% 63.7% profit 36.3% loss
Information technology (n=1164)	-7.1%	+3.3%	-5.0%	-3.9% 36.3% profit 63.7% loss
Telecommunication services (n=98)	-10.8%	-3.4%	-6.4%	+8.7% 35.4% profit 64.6% loss
Utilities (n=135)	-1.5%	+4.8%	+5.6%	+65.9% 61.9% profit 38.1% loss
Real estate (n=279)	+0.6%	+2.5%	+7.1%	+43.8% 65.7% profit 34.3% loss

Note: * refers to the 2012 listing; ** refers to the 2017 listing.

Moreover, human capital orientated firms, both from the 2012 and 2017 listing, perform similarly, not only in the case of total investment return, but also in the case of the number of entities with a positive rate of return (94.6% of firms from the 2012 listing increased their share price within the ten year period, while the analogical percentage for the companies from the 2017 listing amounted to 86.8%). Such high rates, both in terms of share price increase and a number of entities with a positive rate of returns, were not observed in any of the benchmarking industries. In fact, four industries (energy, consumer staples, health care and information technology) displayed a decrease in the value of stocks. Moreover, in the majority of the industries studied (eight), there were more firms with negative rates of return than with positive ones.

The third analyzed pillar, growth performance by industry breakdown, has been presented in Table 6.

Table 6. Human capital orientated firms and benchmarking sample - growth results by industry breakdown

	ΔRevenue2007-2017	ΔNet income2007-2017	ΔEquity2007-2017
HC firms1 (n=45)*	+87.9%	+73.9%	+81.8%
	92.3% increase	75.0% increase	75.0% increase
	7.7% decrease	25.0% decrease	25.0% decrease
HC firms2 (n=52)**	+112.8%	+85.4%	+101.9%
	92.6% increase	82.4% increase	75.0% increase
	7.4% decrease	17.6% decrease	25.0% decrease
Energy (n=592)	+32.0%	-108.6%	+56.4%
	48.0% increase	28.1% increase	54.1% increase
	52.0% decrease	71.2% decrease	45.9% decrease
Materials (n=444)	+16.8%	+15.1%	+44.5%
	86.2% increase	54.1% increase	61.7% increase
	13.8% decrease	45.9% decrease	38.3% decrease
Industrials (n=872)	-29.7%	+31.1%	+44.1%
	66.7% increase	59.0% increase	63.4% increase
	33.3% decrease	41.0% decrease	36.6% decrease
Consumer discretionary (n=961)	+48.0%	+26.5%	+14.4%
	60.6% increase	54.9% increase	49.1% increase
	39.4% decrease	45.1% decrease	50.9% decrease
Consumer staples (n=325)	+84.8%	+53.7%	+56.7%
	76.8% increase	67.4% increase	60.9% increase
	23.2% decrease	32.2% decrease	39.1% decrease
Health care (n=1123)	+116.2%	-43.6%	+63.6%
	63.5% increase	51.6% increase	55.4% increase
	36.5% decrease	48.4% decrease	44.6% decrease
Financials (n=1252)	+69.0%	+56.1%	+79.0%
	57.3% increase	64.9% increase	76.6% increase
	42.7% decrease	35.1% decrease	23.4% decrease

	Δ Revenue2007-2017	Δ Net income2007-2017	Δ Equity2007-2017
Information technology (n=1164)	+70.8% 82.3% increase 17.7% decrease	-18.9% 51.8% increase 48.2% decrease	+29.9% 50.4% increase 49.6% decrease
Telecommunication services (n=98)	+49.3% 56.4% increase 43.6% decrease	-62.6% 51.2% increase 48.8% decrease	-6.6% 54.1% increase 45.9% decrease
Utilities (n=135)	+10.2% 55.6% increase 44.4% decrease	+84.4% 82.2% increase 17.8% decrease	+66.4% 83.3% increase 16.7% decrease
Real estate (n=279)	+81.7% 72.9% increase 27.1% decrease	+133.1% 70.1% increase 29.9% decrease	+83.4% 74.4% increase 25.6% decrease

Note: * refers to the 2012 listing; ** refers to the 2017 listing.

From 2007 till the end of 2016, human capital orientated firms, both from 2012 and 2017 listing, managed to increase their revenue, net income and equity with the largest growths attributed to revenue (+112.8%) and equity (+101.9%) in the case of firms from the 2017 listing. However, human capital orientated companies from the 2017 listing also performed outstanding growth. In terms of the number of entities that recorded growth of revenue, net income and equity, it was found in the majority of them, with the highest numbers attributed in the case of revenue growth (92.6% and 92.3% for 2012 and 2017 listings respectively). Meanwhile, the entities from the 10 benchmarking industries experienced an increase in revenue (the only industry with a revenue decrease was industrials). What is more, one industry (healthcare) performed on average greater revenue growth than human capital orientated firms from the 2012 listing while two industries recorded relatively similar performance. These were consumer staples (+84.8%) and real estate (+81.7%) respectively. In the case of revenue in almost all the studied benchmarking industries, there were more firms that reported an increase in revenue than a decrease; however, the ratios were smaller than in the human capital orientated firms (the only exception was energy industry).

According to net income changes over time, companies from the benchmarking sample performed worst. Four industries (energy, healthcare, information technology and telecommunication services) recorded on average a decrease in net income at the end of 2016 compared to 2007, with the largest one observed in the energy industry (-108.6%). However, in only one industry (energy), were there more entities that performed a decrease in net income. In the rest of the industries, although some of them had average negative values of net income growth, there were more entities with a positive than a negative net income change. However, in the case of net

income growth, a surprising phenomenon has been observed, namely one of the industries (real estate) outperformed on average human capital orientated firms, both from the 2012 and 2017 listing (133.1% vs. 73.9% (2012) and 85.4% (2017) respectively), while another industry (utilities) outperformed human capital orientated firms from the 2012 listing (84.4% vs. 73.9%). Similarly, in the changes to revenue and net income during 2007-2017, there have also been observed fluctuations of equity in the benchmarking group and human capital orientated firms. Almost all industries displayed growth (the only exception was telecommunication services). One industry (real estate) recorded even higher growth than human capital orientated firms from the 2012 listing but lower than the ones from the 2017 listing. The difference was also observed in the number of firms recording growth; in the case of the benchmarking sample, there was one industry (consumer discretionary) in which there were more entities recording a decrease in equity than an increase. On average, except for financials and utilities, there were more firms in the human capital orientated sample that recorded growth of equity than in the benchmarking sample.

DISCUSSION

Overall, the hypothesis concerning above average human capital orientated firms performance, is confirmed by the study results, which is in line with the previous studies of Bryl and Truskolaski (2015), Edmans (2009), Nimtrakoon (2015) and Seleim et al. (2007). However, it remains in contrast to the study of Yu et al. (2010).

Nevertheless, the conducted study and its results may be ambiguous and thus important questions may arise. First, one deals with the problem of market valuation growth, which in human capital oriented entities was much higher. One of the possible answers is that superior returns are caused not by employee satisfaction (thus, e.g., better task performance) and, by the result, in higher earnings, but because of inclusion in the *100 Best Companies to Work For* list per se. This fact (the firm presents a better image by being included in the well-renowned list) may encourage investors to buy the stocks of *Best Companies*. As an effect, their valuations have risen. A similar explanatory approach has been proposed by Edmans (2009) in his results discussion. A second question refers to the relation between being human capital orientated and performance. The answer is more than unambiguous. It is possible that companies perform better not because they are a human capital oriented firm, but because they have achieved a certain level of financial performance and, thus, they allow themselves greater

human capital spending, and through this, they have become human capital friendly. The answer to that question is crucial and goes beyond the scope of this paper. The third concern relates to the methodological part of the study. There have been two types of companies compared; one type (group) was build up from the carefully chosen entities from the *100 Best Companies to Work For*, while the second was a broad group of entities consisting of numerous firms from different industries (however outliers have been excluded). That implies difficulties with comparisons. Consequently, it would be valuable and interesting to compare human capital orientated firms from the *100 Best Companies to Work For* with companies from other popular listings. Table 7 shows the results of a comparison between the Fortune 100 (largest US companies regarding revenue), S&P 500 and NASDAQ 100 regarding profitability.

Table 7. Human capital orientated firms, Fortune 100, S&P 500 and NASDAQ 100 profitability results

	Mean ROA2007-2017	Mean ROE2007-2017	Mean ROS2007-2017	Return on investment2007-2017
HC firms1 (n=45)*	6.2%	14.9%	8.1%	+120.1% 94.6% profit 5.4% loss
HC firms2 (n=52)**	7.9%	16.2%	10.1%	+125.0% 86.8% profit 13.2% loss
Fortune 100 2017	6.0%	17.8%	7.5%	+20.7% 53.7% profit 46.3% loss
S&P 500 2017	6.2%	15.6%	10.0%	+32.4% 63.7% profit 36.3% loss
NASDAQ 100	8.1%	16.4%	11.5%	+87.3% 72.0% profit 28.0% loss

Note: * refers to the 2012 listing; ** refers to the 2017 listing.

The results presented in table 6, in comparison to the initial, previous study, show that human capital orientated firms recorded a relatively similar performance as entities from the Fortune 100, S&P 500 and NASDAQ 100 in terms of profitability. The best score, concerning ROA, ROE and ROS, among all the firms studied in Table 6 was observed in the case of the NASDAQ 100 firms, while the worst score was observed in human capital orientated companies from the 2012 listing; however, the differences were small. What is significant

is that human capital orientated firms from the 2017 listing performed best only in one of the profitability indices (stock price). In this case, the difference between human capital orientated firms was great, not only in terms of the total return on investment, but also in terms of the share of profitable firms (the worst performing group were entities from the Fortune 100 in which only 53.7% of firms recorded a positive rate of return during the 10-year study period). Results concerning growth are presented in Table 8.

In terms of revenue growth during 2007-2017, human capital orientated firms from both the 2012 and 2017 listing, outperformed Fortune 100 and S&P 500 firms; however, they recorded much smaller growth than NASDAQ 100 entities. The differences in the performance of human capital orientated firms and NASDAQ 100 companies were much more noticeable regarding net income growth; in this case NASDAQ 100 entities outperformed human capital orientated firms almost four times.

Table 8. Human capital orientated firms, Fortune 100, S&P 500 NASDAQ 100 - growth results

	Δ Revenue2007-2017	Δ Net income2007-2017	Δ Equity2007-2017
HC firms1 (n=45)*	+112.8%	+85.4%	+101.9%
	92.6% increase	82.4% increase	75.0% increase
	7.4% decrease	17.6% decrease	25.0% decrease
HC firms2 (n=52)**	+87.9%	+73.9%	+81.8%
	92.3% increase	75.0% increase	75.0% increase
	7.7% decrease	25.0% decrease	25.0% decrease
Fortune 100 2017	+50.2%	+32.2%	+57.0%
	77.0% increase	59.5% increase	69.3% increase
	23.0% decrease	40.5% decrease	30.7% decrease
S&P 500 2017	+70.2%	+76.2%	+83.8%
	80.6% increase	71.8% increase	74.5% increase
	19.4% decrease	28.2% decrease	25.5% decrease
NASDAQ 100	+286.5%	+310.0%	+317.2%
	91.8% increase	86.4% increase	79.8% increase
	8.2% decrease	13.6% decrease	20.2% decrease

Note: * refers to the 2012 listing; ** refers to the 2017 listing.

Moreover, the measurement of equity growth indicated similar results; human capital orientated firms (both from 2012 and 2017) managed to record, on average, better scores than entities from Fortune 100, S&P 500 but not better than NASDAQ 100.

To sum up the results, it should be stated that human capital orientated firms achieve above-average financial performance measured by profitability and growth; however the comparison with the US stock market indices or listings of the largest US companies indicates better scores only in terms of stock exchange performance (share price increase and number of profitable entities) and equity growth. In the case of profitability measured by ROA, ROE and ROS, similar results were observed; however, in the case of revenue, net income and equity growth, human capital orientated firms were outperformed by one of the benchmarking index - NASDAQ 100. However, as entities from the Fortune 100, S&P 500 and NASDAQ 100 should not be perceived as average ones (in most cases these are the largest and most well-known world corporations), in this sense, the proposed hypothesis in the paper has been confirmed.

CONCLUSION

This paper aimed to contribute to the human capital research by investigating how a firm's strategy, orientated at the enhancement and development of human capital, influences the company's financial performance in comparison to other firms from different industries. Because defining a company as human capital orientated is not an easy task, the author used a well-known list, *100 Best Companies to Work For*, that names most employee-friendly and human capital development orientated firms.

First, it should be concluded that being human capital orientated generates higher costs for the firm in the form of, e.g., higher salaries, training and additional benefits; however, the vast majority of the companies identified in the list are profitable. All the measured criteria (ROA, ROE and ROS) recorded strong positive values. Moreover, stock market investors value such companies; a strong average (more than double) share price increase was observed. Also, the vast majority of the studied entities recorded growth in the share price. What is important is that the study revealed that companies, from both the 2012 edition of the *100 Best Companies to Work For* and from the 2017 edition, performed well; however, entities from the 2012 listing performed better than the ones from the 2017 listing (time extent of the analysis was the same and differences were small).

Second, human capital orientation leads to above-average financial performance, mainly in the field of equity growth and stock market valuation which may derive from the fact that inclusion on the list stimulates the awareness of investors and portrays a positive image of the company. In that

sense, this study provides useful information on the possible directions of stock market investments regarding above-average returns.

Third, the results are consistent with human relations theories and most of the previous studies which argue that employee satisfaction causes greater corporate financial performance, potentially through improved motivation, skills and self-confidence.

In summary, this research has contributed to the field of human capital by focusing on US-based corporations from diversified industrial backgrounds. The paper's findings provide managers with the answer to the dilemma as to whether investment in employees brings more costs than benefits. As a limitation, the author points out that the analysis referred only to American enterprises and the human capital orientated entities comprised of only 97 firms (however, the benchmarking sample consisted of 7,252 companies). Therefore, the results should be tested in a greater number of companies, and from other countries, to check their validity and generalization possibilities. Especially interesting, would be to compare the financial performance of human capital orientated firms from developing and developed nations.

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Abstrakt

W gospodarce opartej na wiedzy kluczową rolę w osiągnięciu dodatnich wyników finansowych i utrzymania przewagi konkurencyjnej pełni kapitał ludzki. Rozważania naukowe zwracają uwagę, że przedsiębiorstwa w większym stopniu zorientowane na kapitał ludzki (ang. human capital orientated firms), czyli takie, które m. in. przeznaczają więcej środków na rozwój swoich pracowników, oferują wyższe wynagrodzenia i bogatszy pakiet świadczeń dodatkowych oraz cechują się transformacyjnym stylem zarządzania mogą generować lepsze wyniki finansowe aniżeli firmy zorientowane na kapitał ludzki w mniejszym stopniu, co wynika z: lepszych umiejętności pracowników, ich większej motywacji oraz wyższej całkowitej efektywności organizacji. W artykule postawiono dwa cele naukowe. Pierwszym z nich było stwierdzenie, że firmy zorientowane na kapitał ludzki generują dodatnie wyniki finansowe, natomiast drugim celem było porównanie wyników finansowych firm zorientowanych na kapitał ludzki z tzw. szerszym rynkiem w celu stwierdzenia, czy wyniki finansowe przedsiębiorstw zorientowanych na kapitał ludzki są ponadprzeciętne. Badania przeprowadzono wśród 7204 spółek notowanych na amerykańskiej giełdzie papierów wartościowych w okresie dziesięciu lat. W celu identyfikacji firm zorientowanych na kapitał ludzki wykorzystano listę 100 Best Companies to Work For zgodnie z metodologią zaproponowaną przez Edmansa (2009). Drugą grupę stanowiły amerykańskie przedsiębiorstwa notowane na giełdzie pochodzące z 11 branż. Kluczowe wnioski płynące z tego opracowania są następujące: strategia oparta na orientacji na kapitał ludzki umożliwia osiągnięcie nie tylko pozytywnych ale także ponadprzeciętnych wyników finansowych, głównie w zakresie: wzrostu wartości akcji i kapitałów własnych. Artykuł ma istotne implikacje praktyczne dla inwestorów w zakresie pożądanych kierunków inwestycji giełdowych, których celem jest osiągnięcie ponadprzeciętnych zysków. Co więcej, badanie wykazało, że strategia zorientowana na kapitał ludzki, mimo ponoszenia wyższych kosztów, jest opłacalna dla przedsiębiorstw. Artykuł wypełnia lukę badawczą dwojako. Po pierwsze, wskazuje, w których obszarach związanych z wynikami finansowymi przedsiębiorstwa zorientowane na kapitał ludzki radzą sobie najlepiej. Po drugie, porównuje wyniki strategii ukierunkowanej na kapitał ludzki z wynikami firm z 11 różnych branż. Badania dotyczyły amerykańskich przedsiębiorstw giełdowych.

Słowa kluczowe: *gospodarka oparta na wiedzy, kapitał ludzki, wyniki finansowe, korporacje międzynarodowe.*

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¹ Such a dichotomous division is not entirely correct, however for the needs of the theoretical part of this paper, the author will use a two-dimensional, strongly opposite classification.

² The outliers in the stock market and growth pillars (indices: return on investment, revenue, equity and income growth) have been determined based on quartile 1, 3 and interquartile range. Inner lower and upper fences have been considered in the study. In terms of the profitability pillar (indices: ROS, ROE and ROA) the outliers have been estimated as |100%|.

³ 100 Best Companies to Work For was first published in 1998 and since that time has been released every year.

⁴ In this case, companies being in any of the studied indices (Fortune 100, S&P 500 and NASDAQ 100) and on the 100 Best Companies to Work For list, were not excluded from the study.

An Innovation Capability Development Process for Firms in Developing Countries: A Theoretical Conceptual Model

*Gezahegn Tesfaye*¹, *Daniel Kitaw*²

Abstract

Firms in developing nations possess low innovation capabilities due to the absence of an adequate conceptual model that consolidates the innovation capability development (ICD) constructs tailored to their needs. To describe the ICD in these firms, research findings should have consolidated both the technical and financial aspects of innovation. However, they have provided only a little account of information on the ICD process via integrating the technical and financial aspects of innovation. The aim of this research is thus to develop a conceptual model of the ICD process which is highly valuable to firms in developing countries (FDC). Methodologically, this research is based on a broad literature review. Following this, two key findings were obtained. Firstly, three key constructs of ICD, namely knowledge accumulation, knowledge application and fund generation were identified. The first two constructs constitute the technical aspect and the third construct represents the financial aspect of innovation capability. Secondly, using these three key constructs, the research proposed a conceptual model that defines a process of ICD for the FDC. These findings imply that firms' ICD effort can be better explained by integrating the technical and financial aspects of innovation. As far as our knowledge is concerned, this paper is unique regarding providing a detailed review and discussion regarding the ICD process for FDC. In conclusion, the model can place a great emphasis on the understanding of the key constructs and their relationships to enhance the attitudes and practices of firms to develop their innovation capability.

Keywords: *innovation capability, firms in developing countries (FDC), technical aspect, financial aspect, constructs of innovation capability*

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INTRODUCTION

The global competitiveness of any organization depends upon its success in creating innovation (Zawislak, Alves, Tello-Gamarra, Barbieux, & Reichert, 2012). For firms to achieve innovation and overcome the global antagonism, they have to possess innovation capability (Lawson & Samson, 2001; Choudhury, 2010; Silvestre & Neto, 2014). Romijn and Albaladejo (2002) and Zawislak et al. (2012) attested that only those enterprises with strong innovation capabilities can make valuable contributions to their country's competitiveness. Many research works (such as OECD, 2005; Mojtahedzadeh & Chettiar, 2011; Sobanke, Adegbite, Ilori, & Egbetokun, 2013; Doroodian, Rahman, Kamarulzaman, & Muhamad, 2014) have determined that firms of developing countries (FDC) have low innovation capabilities. The authors posited that for FDC a *proper ICD process* remains a major challenge.

Gamal, Salah, and Elrayyes (2011) and Kaplan (n.d.) have discussed that R&D, patent, publication and citation data are the most commonly used innovation measures that can explain the innovation capability of developed country firms. Doroodian et al. (2014) and Bogers and West (2014) questioned the relevance of these measures to explain the innovation capability of FDC. This is because; innovation in FDC is challenged by many barriers that are not found in the advanced economies (Cirera & Maloney, 2017). As Romijn and Albaladejo (2002), Auber (2005), and Cirera and Maloney (2017) indicated, innovation capability in FDC is specified by insufficient knowledge, lack of organizational facilities, absence of R&D activities, and poor cooperation with key actors, and lack of funding for innovation. Hence, FDC must focus to a greater extent on an ICD approach.

The conceptual model by Cohen and Levinthal (1990) provided a methodology to enhance the absorptive capacity of firms through enhancing a firm's knowledge acquisition, knowledge accumulation, and knowledge application. Supported by Cohen and Levinthal (1990), Zahra and George (2002) provided a conceptual model of innovation that has added the concepts of potential and realized absorptive capacity and their dynamic interactions. Nieto and Quevedo (2005) have also discussed the key factors that affect the innovation capability of firms. Many others (e.g., Azabadi, Noorossana, Jafari, Owlia, & Saryazdi, 2012; Bo, 2015) provided a system dynamics (SD) methodology to conceptualize the interactions between knowledge acquisition, knowledge creation, and knowledge utilization using a system dynamics approach. Moreover, Zou, Gou, and Guo (2016) provided a system dynamics model to analyze the interactions between knowledge storage, absorptive capacity, and technology innovation achievements. As a limitation, the above authors mainly focused on enhancing the technical

aspects of innovation. On the other hand, Madsen and Smith (2008) underlined that the knowledge management aspect of innovation capability can only indicate the initial phase of ICD. Moreover, Hottenrott and Peters (2009) presented the need to generate a financial return from the sale of new products to sustain innovativeness. However, their studies emphasized the financial/commercial aspects of innovation. These show that the literature has provided only a very sparse account of information on the ICD process via integrating the technical and financial aspects of innovation. The present research highly argues the necessity to integrate the technical and financial aspects of innovation to *describe an ICD process* for FDC. This research is the first attempt to provide a detailed discussion to integrate these two aspects to develop an *ICD process* that FDC can find valuable. ICD covers a broad concept and many perspectives. The purpose of this article is not to provide a complete model of ICD. ICD can also include production and marketing aspects. The intention of this article is to mainly address the collective action of knowledge or technical and financial aspects of innovation that FDC is lacking to a greater extent, to boost innovation (Aubert, 2005; Hottenrott & Peters, 2009; Moohammad, Aini, & Kamal, 2014; Cirera & Maloney, 2017). We recommended that future research workers should address production and marketing to enhance the outcome of this research.

LITERATURE REVIEW

Existing ICD literature positions the concept of ICD into different constructs (see Table 1). These include network creation, knowledge acquisition, knowledge creation, knowledge accumulation, knowledge application, absorptive capacity development, technical infrastructure development (acquisition), human capital development, marketing and commercial issues. Taking into account the broad dimensions of these constructs and also referring to the way they are reflected in the literature, this research proposes two perspectives of ICD: the technical and financial/commercial aspects. Accordingly, the technical aspect incorporates the knowledge aspects to enhance the human capital, and the organizational absorptive capacity to enhance the capability to produce innovative products. The financial/commercial aspects consist of the commercialization and financial generation of the innovative products. Nevertheless, these two aspects were not discussed as supportive aspects to each other. The present literature review examines the definitions of innovation capability and elaborates how the technical and financial aspects of innovation capability have been addressed in the existing literature. In general, the literature review provides

an insight to create a link between the two aspects of innovation capability to address ICD for FDC (see Figure 1). The figure depicts that, to create innovation capability, both aspects are essential. Furthermore, the figure shows that the technical success of innovation should be accompanied by financial success and the resulting financial success, in turn, should enhance the innovation capability of firms. The resulting innovation capability will consecutively enhance the technical success and this cycle repeats to continuously develop the innovation capability of firms in developing nations.

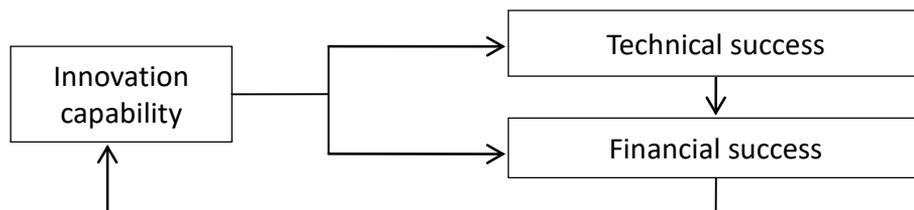


Figure 1. A conceptual approach to the literature review

Hence, the literature review first summarizes (consolidates) the views of different authors on innovation and ICD (see Table 1). Secondly, it specifically looks at the existing innovation measures and their relevance to the specificities of FDC. Thirdly, it presents the entire picture of the relevance of the existing innovation capability models to the specificities of FDC. Finally, it highlights the major gaps in the existing literature and advocates a way forward for firms in developing nations.

Narcizo, Canen, and Tammela (2017) presented different definitions of innovation capability. Particularly, Lawson and Samson (2001) defined innovation capability as the ability to continuously transform knowledge and ideas into new or significantly improved products, processes and systems for the benefit of the firm and its stakeholders. Choudhury (2010) also stated innovation capability as the ability to create new and useful knowledge based on previous knowledge. The definitions of innovation capability mainly explain the significance of knowledge acquisition and creation to enhance the knowledge base and the knowledge application capabilities of organizations. According to these definitions, innovation capability involves all the steps and efforts that firms should consider to acquire knowledge in order to develop successful products, processes or organizational systems. In the same vein, many researchers (e.g., Zahra & George, 2002; Galanakis, 2006; Liao, Fei, & Chen, 2007; Azabadi et al., 2012; Bo, 2015; Zou et al., 2016; Cheng, Yang, & Sheu, 2016) have either related innovation capability to absorptive capacity

and/or a knowledge management concept, to explain/develop the innovation capability of firms (see Table 1). However, little attention has been given to the financial aspect of innovation and its integration with the technical aspect (Madsen & Smith, 2008; Roper, Du, & Love, 2008; Hottenrott & Peters, 2009; Hall & Mairesse, n.d.).

Table 1. Main ICD constructs in academic literature

Authors	Constructs addressed
Azabadi et al. (2012)	Knowledge acquisition, knowledge creation, knowledge utilization
Bo (2015)	Knowledge transfer, knowledge storage
Cheng et al. (2016)	Knowledge acquisition, knowledge sharing
Cohen and Levinthal (1990)	Knowledge acquisition, knowledge accumulation, knowledge application
Galanakis (2006)	Knowledge creation, new product development, product success
Gamal et al. (2011)	Innovation process models, innovation inputs, innovation outputs
Hanson and Birkinshaw (2007)	Idea generation, idea development and idea implementation
Liao et al. (2007)	Knowledge sharing, absorptive capacity and innovation capability
Neely and Hii (1998)	Idea generation, selection of ideas, idea implementation
Roper et al. (2008)	knowledge sourcing, transformation and exploitation
Hottenrott and Peters (2009)	Sources of fund for innovation projects, rate of return to R&D
Hall and Mairesse (n.d.)	R&D investment in knowledge and networks, source of funds for R&D spending, return to R&D
Kaplan (n.d.)	Innovation metrics: annual R&D budget as a percentage of annual sales, number of patents filed in the past year, number of active projects, number of ideas submitted by employees, percentage of sales from products introduced in the past X years
Encaoua, Guellec, and Martinez (2006)	Innovation output in the firms of advanced countries: the number of patents, the number of publications and citations
Brooks (1994)	The relationship between science and technology
Madsen and Smith (2008)	R&D investment, marketing investment, awareness creation, returns from innovation
Czarnitzki and Hottenrott (2009)	Sources of innovation fund: external (loans from banks or other debt contracts) or internal sources (retained profits or new equity)
Romijn and Albaladejo (2002)	Determinants of innovation capability in small high-tech firms: education, prior work experience and R&D effort, external interactions and proximity in network relations

Authors	Constructs addressed
Sobanke et al. (2013)	Internal factors (education, relevant prior experience, training efforts, use of ICT), external factors (technical/management/financial support received) technological innovation
Zahra and George (2002)	Knowledge acquisition, knowledge assimilation, knowledge transformation, knowledge application
Zou et al. (2016)	Establishing networking, external knowledge source, knowledge storage, absorptive capacity, technology innovation achievements

The existing innovation measures and their relevance to the specificities of FDC

Some of the studies (Gamal et al., 2011; Kaplan, n.d.) explain that the innovation capability of firms can be evaluated by innovation inputs or outputs. As an input to innovation, Hall and Mairesse (n.d.) described that for firms in developed nations, the level of R&D expenditure had repeatedly been used as the overall indicator of their innovativeness. This is because; firms in advanced countries have a strong internal R&D capability to create/promote innovations (Bogers & West, 2014). However, Doroodian et al. (2014) described the shortcomings of using R&D expenditure to describe the innovativeness of FDC. As the authors argued, R&D expenditure may not essentially lead to innovation, and/or innovation is also everywhere and not just in the R&D lab. Brooks (1994) also said that innovation involves much more than R&D. Bogers and West (2014) specifically noted that FDC has low R&D capabilities to create innovation. Furthermore, for firms in advanced nations, the innovation output is usually specified by the number of patents, the number of publications and citations (Encaoua et al., 2006). However, particularly, patents indicate inventions rather than innovation capabilities (Droodian et al., 2014). Hence, it can be argued that focusing on R&D expenditure, patent, publication and citation data alone, cannot address the innovation capability problems of FDC. Hence, for these firms, the focus must to a greater extent be on building an ICD approach. In effect, the approach should help them to understand the interaction among different constructs of ICD by properly reviewing the existing ICD models in the literature.

The existing innovation capability model's relevance to the specificities of FDC

Some of the existing innovation models describe innovation as a sequential process of ICD (e.g., Neely & Hii, 1998; Galanakis, 2006; Hanson & Birkinshaw, 2007; Liao et al., 2007). However, ICD hardly proceeds in a sequential manner. Even though these models can be useful to provide apparent steps and explanations of the innovation process, they do not provide the required

interactions and relationships among the different factors of ICD. Many others highly associated innovation capability with the capacity to acquire, create, share and utilize knowledge (Azabadi) et al., 2012; Bo, 2015; Zou et al., 2016). As Cohen and Levinthal (1990) also indicated, a firm's innovation capabilities and competitive advantage are based on its absorptive capacity. A firm's absorptive capacity, in turn, involves the development of the capacity to assimilate existing knowledge with the application of more effort applied to learning and the subsequent retrieval. Sobanke et al. (2013) have also described the internal and external factors influencing the technological capability of firms in developing nations. However, the conceptual framework they developed, presented the complex relationship among the identified factors in a limited way. Mohammed, Sanuri, and Rahim (2014) also reviewed the research findings of many authors and listed several elements of innovation capability that can be summed up into; researching, technology acquisition, technology development capabilities through the use of R&D, and leadership capabilities. In most of these research works, the concept of innovation capability has been associated with the capability to develop knowledge and ideas to products, processes and systems. They provided only the technical aspects of ICD. This aspect of innovation capability can only indicate the initial phase of ICD (Madsen & Smith, 2008).

Hall and Mairesse (n.d.) discussed that firms have to increase investments in knowledge and networking to enhance their competitiveness. Madsen and Smith (2008) addressed that the technical success of innovation is not a guarantee for its financial (commercial) success. The authors stated that firms could suffer from low R&D funds due to funding problems and/or R&D demand shortfalls. Furthermore, Hottenrott and Peters (2009) have determined the need to successfully generate finance from the sale of new products to avoid a lack of finance and a lack of firms' innovative capability. These researchers have proposed that the commercial success of innovation can be influenced by the effects of marketing investments, awareness creation and returns from the sale of new products (Madsen & Smith, 2008; Hottenrott & Peters, 2009; Hall & Mairesse, n.d.). However, their studies mainly emphasized the financial/commercial success of innovation.

As discussed above, two research agendas (categories) are apparent concerning ICD: the innovation development (i.e., the technical aspects) and financial (commercial) aspects of innovation. However, as can be examined from table 1 and the discussion presented above, studies that address the combined and supportive efforts of the technical and financial aspects of innovation for ICD, especially in the firms in developing countries context are very sparse. Only narrow attempts have been provided by a few authors. Mojtahedzadeh and Chettiar (2011) indicated the relationship

between knowledge, innovation and the financial performance of a firm using hypothetical assumptions without providing a detailed causal relationship between them. Moreover, Roper et al. (2008) modeled an innovation value chain as a recursive process of knowledge sourcing, transformation and exploitation (marketing aspect). However, their study was not strong enough to provide the comprehensive role of absorptive capacity, knowledge accumulation and awareness creation that create and commercialize innovations. Zawislak et al. (2012) have explicitly presented a framework for innovation capability which is constituted by four key capability elements, namely technology development capability, operations capability, management capability and transaction capability. Nevertheless, their research does not give much information on how these capabilities can be developed. For instance, the roles of need recognition for innovation and network creation, the link between marketing investment and awareness creation and their effect on promoting product sales have not been emphasized in this model.

Gaps in the literature as advocacy of a new innovation model for FDC

Based on the literature review presented above, either the most commonly used innovation measures or the innovation capability models are not sufficient to develop innovation capability for the FDC. This is because; innovation in the developing countries is challenged by barriers that are not found in the advanced economies (Cirera & Maloney, 2017). The major specificities of innovation capability in FDC are the lack of human resources, rudimentary technology and organizational facilities, the absence of research and development activities, the low level of cooperation with key actors, insufficient knowledge and skills of innovation, institutional capacity such as machines and equipments and the lack of funding for innovation (Romijn & Albaladejo, 2002; Auber, 2005; Cirera & Maloney, 2017). More specifically, Cirera and Maloney (2017) noted that FDC might have neither a clear idea of the technological frontier nor the abilities to approach it. Thus, FDC needs to understand the basics of the ICD process that involves a complex and dynamic interaction among the key issues identified in the above analysis. As noted by Sobanke et al. (2013), and Cirera and Maloney (2017), innovation models have to be tailored to countries' and firms' specific nature. It is thus a prevalent issue to think of a continuous and dynamic conceptual model of ICD for FDC. This research finds the gap of integrating the two aspects of ICD as a remarkable deficiency in the literature of innovation. Hence, in this research, we argue highly that FDC needs an approach of ICD. Furthermore, the coalescing of the two aspects of innovation into a single research framework can be useful for FDC to propose innovation policy options.

RESEARCH METHOD

This research is designed into two core parts as shown in Figure 2. As a method, the literature review first identified the most commonly used definitions of innovation capability and examined the hub of the definitions. The literature review also identified the insights of different authors regarding addressing the innovation capability constructs. To undertake this, their research findings were organized and reviewed, and the innovation capability aspects (technical and financial) and the underlying constructs they identified were summarized. The literature review also portrayed the existing innovation measures and their relevance to the specificities of FDC. Furthermore, the literature review presented the existing innovation capability model's relevance to the specificities of FDC. Finally, the literature review identified the gaps in the innovation literature as an advocacy of a new ICD model for FDC.

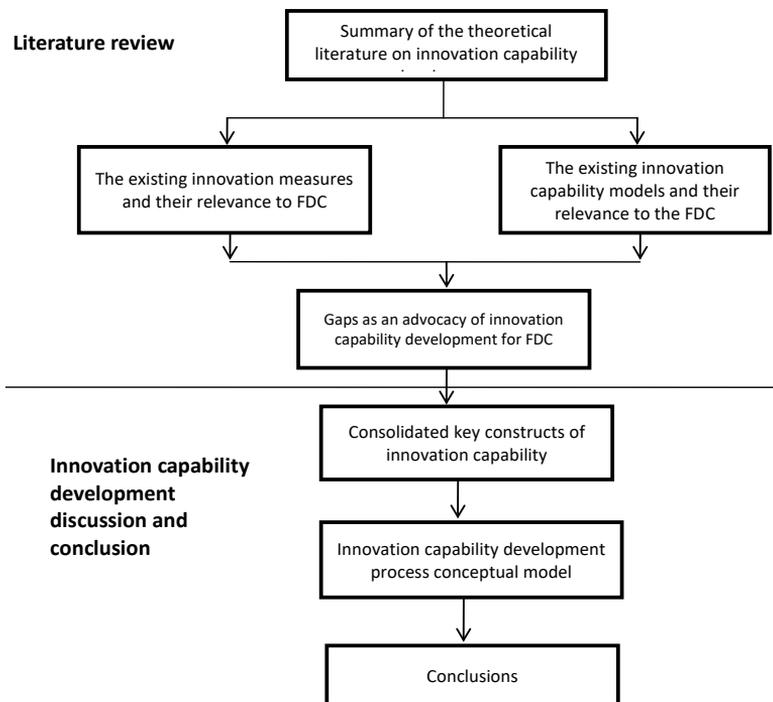


Figure 2. Research design

To review related literature, considering the aim of this research, the search phrases used were innovation capability, firm-level ICD models, and

the nature of innovation in FDC. Long search phrases are preferred here due to their power to provide helpful approaches to address papers from a variety of existing sources. This has provided us with an opportunity to review papers over a long period. Articles for the period 1998 – 2018 were considered. Using these keywords, articles in different influential and heavily cited journals in innovation, mainly from ScienceDirect, Researchgate, JSTOR, Google Scholar, and others such as world scientific, scientific information database, SAGE, Scientific electronic library online, OECD library, Blackwell publishing were considered (see Figure 3). These databases were selected based on their suitability to our actual requirements.

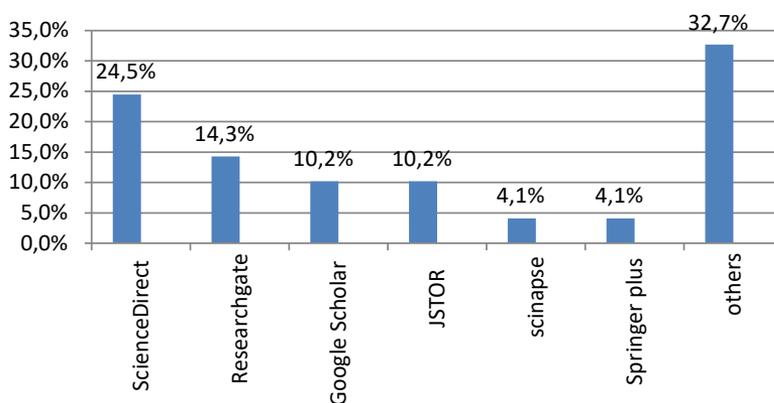


Figure 3. Databases for the selected publications

Using the search words, a total of 1009 works were found. Out of these works, 520 were rejected because of the irrelevance of their titles. The remaining 489 articles/papers were downloaded and the abstracts of all of them were scrutinized. Based on their irrelevance to the aims of this research, 440 papers were rejected. The remaining 49 papers were used to develop this paper (see Figure 4).

Two results were identified in this research. The first is the consolidated key constructs of ICD. In the existing literature, these constructs are addressed in different contexts and aspects. This research stresses the necessity to combine them into a context that FDC can easily comprehend and utilize.

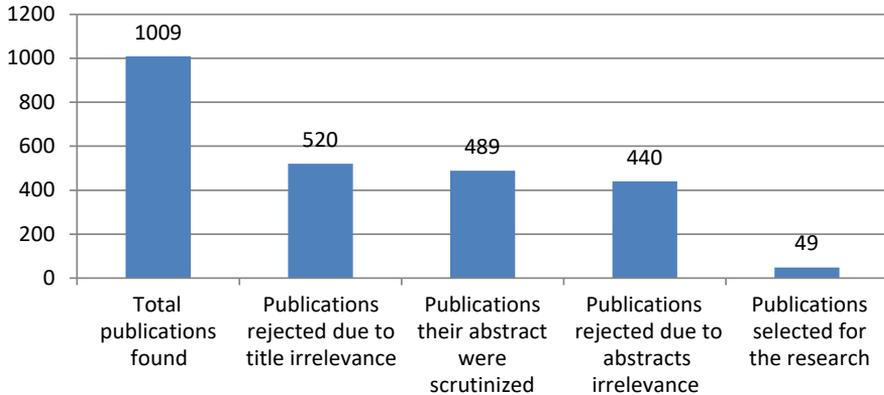


Figure 4. Articles selection process

The second result of the research is the developed conceptual model which shows a clear path of ICD. Their causal relationships have been developed to depict a scrutinized association between them. Additional key factors have also been introduced to link one construct to the other. The constructs and the added factors are connected by arrows to show a causal effect one has over the other with an arrowhead defining the direction of their causal relationships. The research finally provided conclusions on the main results of the research. Further research agendas have also been suggested.

RESULTS AND DISCUSSION

Consolidating the key constructs of innovation capability

As modeled in Figure 5, for a firm, learning knowledge from external sources should enhance the stock of knowledge of the firm. This is represented by a *knowledge accumulation* construct. Firms use the accumulated knowledge to generate and apply new ideas. The knowledge application activities constitute a second construct named as *knowledge utilization*, which in turn creates innovative outputs (such as new products). Through a dynamic process of knowledge acquisition, knowledge accumulation, and its practical application, FDC can catch up with firms in the developed world (Tefaye & Kitaw, 2017). In practice, this is where the technical success of innovation is apprehended.

Unless the new products are commercialized successfully in the market, innovation cannot generate income for the firms. That is, the new products must be sold to enhance financial returns for innovation. This provides the third construct identified as *innovation fund generation*. Financial returns will

enhance the firm’s capability to invest more in the firms’ absorptive capacity to speed up the learning process for knowledge acquisition, accumulation and application. This constitutes a recurring process that will never end if the firm is to survive and succeed competitively through innovation. Following this rationale, the current study proposes that the *ICD process* is a continuous dynamic process that should integrate the technical and financial aspects of innovation capability (see Figure 5). The integration describes the ICD process that the FDC can find more valuable. Hence, to make this conceptualization, this research identifies three key constructs that can constitute the process of ICD for FDC. These key constructs are enclosed in rectangles in figure 5. According to this research, the first two constructs (knowledge accumulation and knowledge application) constitute the technical aspect and the third construct (innovation fund generation) indicate the financial aspect of innovation capability.

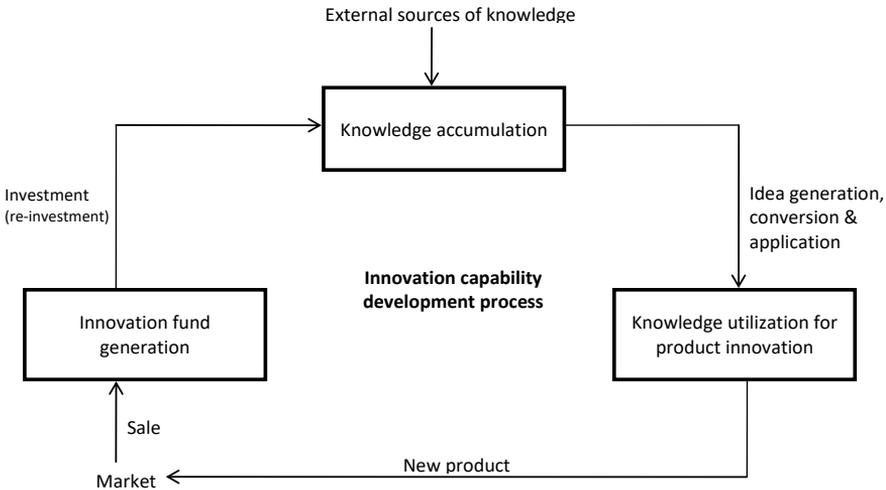


Figure 5. The three key constructs to form ICD process

Building the ICD model

The three key constructs identified, such as knowledge accumulation, knowledge utilization, and innovation fund generation, are contemplated as the building blocks of ICD for FDC. The proposed conceptual model defines the whole process of ICD.

A. Knowledge accumulation

The FDC has to realize the importance of knowledge for learning new techniques, creating core competencies, and initiating new situations (Liao et al., 2007). Knowledge accumulation (or storage) shows the number of knowledge elements that the firms have to pile up (Zou et al., 2016). It implies continual knowledge dissemination to workforces and the organizational systems. Knowledge accumulation is needed to enhance firms' absorptive capacity to generate innovative ideas and adequate human resources with appropriate skills (Cohen & Levinthal, 1990).

Hence, FDC has to undertake different learning processes to achieve the accumulation of organizational and technological knowledge and capabilities (Silvestre & Neto, 2014). As Lane and Lubatkin (1998) also strongly noted, firms rely on knowledge acquired from external sources to facilitate the development of their own capabilities. This is partially influenced by firm size, age and experience (Mazzarol, Reboud, & Volery, 2010). However, according to Ozer (2004), whatever the size of the firm, innovation development requires a continuous process that promotes the sharing of ideas and knowledge. Park (2014) has also emphasized that knowledge acquisition from external sources is crucial for the ICD of young firms. Moreover, Romijn and Albaladejo (2002), and Zahra and George (2002) emphasized that prior work experience is one of the determining factors for firms' absorptive capacity. However, Gebreeyesus and Mohnen (2013) argued that a cluster approach is the best option for small firms' innovativeness in developing countries to promote knowledge sharing and innovation. Therefore, even though the extent and content of knowledge may vary from firm to firm depending on their size, age and experience, it is inevitable for FDC to rely on external sources of knowledge. This argument is in line with the findings of Ozer (2004).

Firms with a better knowledge acquisition capability can collect more external knowledge over a given period (Cheng et al., 2016). Also, the firm's ability to acquire external knowledge is primarily determined by the nature of the external sources of knowledge and the firm's capability to network with these external sources of knowledge (Zou et al., 2016). However, prior to establishing networks with the external sources of knowledge, firms need to understand the different pressures that can force them to go for innovation. This is because most of the FDC is to a larger extent indisposed and lack the commitment to boost innovations.

forced, concentrated and accelerated to create networks with the external sources of knowledge to acquire knowledge.

Networking with external sources of knowledge

Once they realize the need for innovation, FDC has to identify the external sources from which knowledge, information, technologies and practices can be acquired (OECD, 2005). This is because, in developing countries, innovation is often associated with the adoption of foreign knowledge and technologies (Crossan & Apaydin, 2010; Park, 2014; Zou et al., 2016, Tesfaye & Kitaw, 2017). Even in firms in developed nations, 50% of all ideas and technology come from the outside (Kaplan, website). The author justified the need for a firm to continuously and systematically network with a variety of actors intended to produce and exchange knowledge and information. Sobanke et al. (2013) determined the importance of the frequency of the contacts between the firms and the external sources of knowledge. According to the Oslo Manual (OECD, 2005), the linkages can be made to acquire/access one or more of the followings: open and free information; knowledge and technology through purchasing; capital goods (machinery, equipment, software) and services embodied with new knowledge or technology through buying. External sources with which firms can network include suppliers, competitors, partners/alliances, customers, and external experts.

Absorptive capacity (potential and realized)

Nieto and Quevedo (2005) indicated that firms' absorptive capacity has a significant impact on their ability to innovate. Cohen and Levinthal (1990) define a firm's absorptive capacity as the ability to recognize the value of new external information, assimilate it, and apply it to commercial ends. Liao et al. (2007) posited that absorptive capacity is a function of employees' ability and motivation to acquire external knowledge and the willingness to use this knowledge in the firm's innovation capability. The knowledge and information identified and acquired from external sources have to be analyzed, processed and interpreted so that the firms can easily comprehend (understand) them. This promotes knowledge assimilation that allows firms to process and internalize externally generated knowledge (Zahra & George, 2002). The authors also categorized absorptive capacities as a potential absorptive capacity or a realized absorptive capacity. A firm's potential absorptive capacity determines a firm's capacity to acquire and assimilate knowledge (Zahra & George, 2002; Zou et al., 2016). These authors have also expressed that the firm's realized absorptive capacity is the firm's capacity to transform and utilize knowledge. A firm with a well-developed absorptive capacity can strengthen its knowledge base (Cheng et al., 2016). Established firms can

further enhance their absorptive capacity based on their prior knowledge (Cohen & Levinthal, 1990). Absorptive capabilities result from a prolonged process of investment (investments in people, science and technology and equipment) and a knowledge base within firms (Liao et al., 2007).

Knowledge creation

Firms in advanced countries focus more on in-house R&D development to create new knowledge. On the other hand, FDC has to focus on the modifying of the imported knowledge. From a strategic viewpoint, FDC should acquire the ability to reconfigure existing competencies and create new knowledge for innovation (Cheng et al., 2016). As these authors specifically conceived, firms have to focus on the combination of the acquired new knowledge with the existing accumulated knowledge, to create the knowledge required for innovation.

B. Knowledge utilization

The stored/accumulated knowledge serves as a direct source of ideas for innovations (Brooks, 1994). The proper utilization of this accumulated knowledge to produce innovative outputs requires the capacity to retrieve and apply the knowledge (OECD, 2005). Accordingly, the firm's accumulated knowledge base enhances its technological and organizational capabilities for the innovation achievement. Technological innovation capabilities are needed to utilize technological knowledge efficiently for product and process innovations. Organizational capabilities are essential to utilize business-related and administrative knowledge, including the ability to learn and seek solutions creatively for managerial and technical problems (Silvestre & Neto, 2014). Product innovation is achieved by introducing new or significantly improved products in technical specifications, in components and materials and in other functional characteristics. Process innovation incorporates a new or significant change in logistics, delivery or distribution methods, methods to manufacture or produce goods or services, supporting activities for processes such as maintenance systems or operations for purchasing, accounting, or computing. Managerial innovation consists of new or significant changes in organizational methods in the firm's business practices, workplace organization, and external relations. Marketing innovation integrates product design or packaging, product placement, product promotion and product pricing.

To achieve the above innovations, as noted by BPTrends (2009), there should be a good fusion between knowledge and these knowledge-centric processes. As Zou et al. (2016) posited, the relations between knowledge and technology achievement are complex and dynamic. However, to associate knowledge with technology, the concept of case management can be applied

(Davenport, 2005; BPTrends, 2009). For this purpose, firms need to have innovation case workers. They are skilled and knowledgeable workers, whose primary job is to innovate or adjust technologies and work practices through managing a complex set of value-adding steps from its conception to its completion (BPTrends, 2009). The set of interactions among individuals and other relevant participants (such as customers and suppliers) from initiation to completion can associate knowledge with the required technology. In detail, the steps involve knowledge acquisition, assimilation, transformation and application (Zahra & George, 2002; Zou et al., 2016). As Romijn and Albaladejo (2002) examined, firms adapt, improve and develop technologies based on the knowledge and technological capability they acquired. Accordingly to authors (such as Brooks, 1994; Zahra & George, 2002; Aubert, 2005; BPTrends, 2009; Cirera & Maloney, 2017), the accumulated knowledge base will then be utilized for creating procedures for processes; automating processes; improving administrative and operational processes; creating techniques and methods of design. Furthermore, it will be used to develop and commercialize products, to develop the practice of research as a source for development, to assess and assimilate new human skills and capabilities; to build the ability to assess technology in terms of its wider social and environmental impacts; and to develop more efficient strategies of applied research, to develop and refine new technologies.

C. Fund generation for innovation

One of the crucial determining factors for firms' innovativeness is the availability of financial capabilities. Sources of investment in innovation can be external or internal. External sources can be loans from banks or other debt contracts. Internal sources include retained profits from new products. Though internal sources are supposed to be the primary sources to finance innovation projects, as compared to debts, FDC is assumed to be inexperienced and less capable of generating such funds (Czarnitzki & Hottenrott, 2009). Moreover, these firms do not have the required relationships with the external sources of finance. Hence, these firms should have a return generation capability: the firm's capability to generate money from its innovation expenditures. According to the OECD (2005), total expenditure on innovation is the sum of expenditures on its innovation activities such as in-house R&D (include current expenditures including labor costs and capital expenditures on buildings and equipment specifically for R&D); external R&D; acquisition of machinery, equipment, software and buildings (excluding expenditure on those items that are for R&D); acquisition of existing knowledge from other enterprises or organizations; and all other innovation activities including design, training,

marketing, and other relevant activities. To generate these funds, firms must be able to sell a sufficient amount of its new products on the market.

Today, we are in a very competitive market, where the lifetime of most of the products is, relatively, very short. Hence, the success of launching a new product onto the market is driven by several internal and external factors. More importantly, in addition to the inherent characteristics of the new product itself, the financial return from the sale of a new product is also affected by the amount of that new products' acceptance in the market. Customers are now much more price-sensitive and quality-conscious. Particularly, in consumer goods companies, brand innovation is often more important, and this investment is usually made through marketing. Therefore, innovating products should also be accompanied by strong awareness-creation through advertising to potential customers (Sterman, 2000). They have to launch an expensive advertising campaign to bring a new product on to the market successfully (Madsen and Smith, 2008). Investing in marketing to build brand loyalty enhances the firm's first mover advantages. Strong advertising campaigns increase sales (market demand) by telling potential customers about the improvements in the qualities of the firm's product or service. It also enhances a buyer's attitudes and perceptions of the firm's business. Some of the returns from the sale of new products should be reinvested to sustain innovation capability (Madsen & Smith, 2008). That is, the firms need R&D funding to invest in the workforce, investment in equipment, investment in science and technology and new knowledge creation (Hartmann, 2003). According to Maldonado (2011), R&D investment is used to either enhance the firm's absorptive capacity via enhancing applied research capability or to enhance the firm's knowledge creation capability via enhancing their basic research capability. Both are used to enhance the stock of knowledge – including knowledge of humankind, culture and society and to devise new applications for the available knowledge. R&D investment forms a crucial share of total innovation investments (OECD, 2005). R&D spending also includes activities such as technical support, troubleshooting, product reformulations and quality testing.

Future research area

Based on the existing theoretical concepts, this research has developed a conceptual model of ICD. It has provided the interaction and relationships between the different constructs and factors identified in this research. For the sake of simplicity and understanding the complex interactions within ICD, we divided its whole aspect into technical and financial/commercial aspects. The marketing aspect is discussed along with the financial/commercial aspect.

Future research work can separately consider the marketing aspect for its detailed investigation. Furthermore, in the case that innovation requires manufacturing (example new product), future research works can consider the production issue as one of the constructs into the proposed model. In addition, to prove the practical application of the proposed model, it has to be validated based on empirical data collected from representative firms. Nevertheless, this is beyond the scope of this research. To quantitatively model a process, it is necessary to include tools to develop a better insight into processes. From this viewpoint, a quantitative system dynamic methodology can be applied to analyze the complex relationship between the constructs / the factors identified. This may need further investigation to describe the detailed variables of the proposed conceptual model of the ICD process. Moreover, mathematical relationships between the process variables can be developed, simulated and sensitivity performances analyzed, to suggest appropriate policy options to enhance the innovation capability of FDC.

CONCLUSION

Firms must possess innovation capabilities to achieve innovation and to make valuable contributions to their country's competitiveness. Nevertheless, firms in developing nations lack a proper innovation capability due to the absence of a conceptual model that provides an appropriate ICD process to their requirement. The majority of the existing literature associated ICD with the capability of developing the technical aspects of innovation, which in a real sense can only describe the initial phase of innovation. This may not be indicative of its financial success. However, studies that address the combined and supportive actions of the technical and financial aspects for ICD are very sparse.

To avoid this gap, the current study develops a continuous and dynamic conceptual model of ICD. The model integrates both the technical and financial aspects of innovation to describe an ICD process to fit the needs of FDC. The model identifies three key innovation capability constructs, namely knowledge accumulation, knowledge application, and fund generation and other important factors to link and explain the constructs. The first two constructs constitute the technical aspect and the third construct indicate the financial aspect of innovation capability.

As far as the technical aspect is concerned, FDC needs to have the capacity to recognize the external pressures of innovation to enhance their commitment to stimulate innovations. The more the firms recognize them, the more they will be influenced and forced to create networks with

external sources of knowledge. The knowledge and information identified and acquired from external sources have to be analyzed, processed and interpreted to easily internalize them. Furthermore, this knowledge has to be transformed and utilized to generate innovations. Moreover, FDC needs to have the ability to reconfigure existing competencies and create new knowledge for innovation. A firm with well-developed absorptive capacity can strengthen its knowledge base and knowledge application. Firms need to utilize technological knowledge efficiently for creating, modifying, or improving products. Product innovation is the introduction of new or significantly improved products through changes in technical specifications, in components and materials, and in other functional characteristics.

As far as the financial aspect is concerned, FDC is assumed to be inexperienced and less capable of generating funds for innovation. Firm's capability of generating financial returns from innovation will enhance their capability to re-invest in the firm's absorptive capacity, knowledge creation and marketing. Marketing investment through strong advertising campaigns is used to create strong awareness to attract potential customers. This enhances a firm's first-mover advantages and product sales, and financial returns and re-investments in innovation to sustain ICD. Finally, the proposed conceptual model can place a great emphasis on the understanding of the key constructs and the nature of their relationships to enhance the attitudes and practices of FDC to develop their innovation capability.

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Abstrakt

Firmy z krajów rozwijających się mają niskie możliwości innowacyjne z powodu braku odpowiedniego modelu koncepcyjnego, który konsoliduje konstrukty rozwoju zdolności innowacyjnych (RZD) dostosowane do ich potrzeb. Dla opisu RZD w tych firmach, wyniki badań powinny skonsolidować zarówno techniczne, jak i finansowe aspekty innowacji. Jednakże zapewniają one jedynie niewiele informacji na temat procesu RZD poprzez integrację technicznych i finansowych aspektów innowacji. Celem badania jest opracowanie conceptualnego modelu procesu RZD, który jest cenny dla firm z krajów rozwijających się. Pod względem metod badania oparte są na szerokim przeglądzie literatury, na podstawie którego uzyskano dwa kluczowe wnioski. Po pierwsze, zidentyfikowano trzy główne konstrukty RZD, a mianowicie akumulację wiedzy, zastosowanie wiedzy i generowanie funduszy. Pierwsze dwa konstrukty stanowią aspekt techniczny, a trzeci stanowi finansowy aspekt zdolności innowacyjnych. Po drugie, wykorzystując te trzy kluczowe konstrukty, zaproponowano model koncepcyjny, który definiuje proces RZD dla krajów rozwijających się. Ustalenia te sugerują, że wysiłki firm w zakresie RZD można lepiej wyjaśnić, łącząc techniczne i finansowe aspekty innowacji. Model pozwala zrozumieć kluczowe konstrukty i ich relacje w celu wzmocnienia postaw i praktyk firm dla rozwijania ich zdolności innowacyjnych

Słowa kluczowe: *zdolność innowacyjna, firmy w krajach rozwijających się (FDC), aspekt techniczny, aspekt finansowy, konstrukcje zdolności innowacyjnych.*

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Corporate Social Responsibility and Business Ethics in Controversial Sectors: Analysis of Research Results

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Abstract

Until recently, in business practice, there was a belief that companies were operating solely for the profit of their owners. Few companies have recognized the need to combine their activities with ethics, and in particular with their obligations toward society or the environment. However, the perception of ethical issues has changed radically in business over the last 20 years. If a company wants to be perceived as a reliable business partner and a respected member of the business sector, it should demonstrate a high level of institutionalization of business ethics principles and practices, and it must practice outstanding ethical behavior. This is exceptionally true in some controversial industries. The purpose of our study is to identify the scale and scope of the use of these principles and practices in two Central European countries, i.e., Poland and Hungary, in three controversial sectors of the economy, i.e., pharmaceutical, tobacco and alcohol. The data were achieved on the basis of data gathered through survey methodology. The target subjects included a group of 48 companies (25 Hungarian and 23 Polish ones). Our survey mainly focused on the degree of institutionalization of business ethics (such as the presence of a code of conduct, an employee appointed to deal with ethical issues, ethical training, and so on), the perceived ethical behavior of the firms, and their relationship with their key stakeholders. Our study confirmed that business ethics is regarded as a significant factor which has an influence on business success and the corporate image of companies from the sectors in question. However, it is necessary to emphasize that the scale of this phenomenon varies, across both sectors and countries. The level of institutionalization is somewhat higher at Hungarian firms while preventing and handling corruption cases are more at the forefront of Polish companies. Although it seems that stakeholders from Polish firms have greater ethical expectations, we did not observe significant differences between perceived ethical behavior in the

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two countries. The originality of the paper is the result of the presentation of unique qualitative research related to business ethics in sensitive sectors of the economy in two Central European countries. To the best of our knowledge, such research is relatively rare (due to the sensitive nature of the sectors analyzed) not only in these two countries but also on an international scale.

Keywords: corporate social responsibility, CSR, business ethics, ethical behavior, Central European Economies, controversial industries.

INTRODUCTION

Until recently, in business practice, there was a belief that companies were operating solely for the profit of their owners. Few companies have recognized the need to combine their activities with ethics, and in particular with their obligations toward society or the environment. It is also a reason why the essence of social responsibility and the conflict between real and simulated altruism has been turbulently discussed (Majerova, Krizanova, & Nadanyiova, 2015). A similar standpoint could be found in the literature. Many authors have quoted the views of Milton Friedman, whose well-known response on a company's social responsibility was: "a company's responsibility is to make as much money for the stockholders as possible" (Corporate..., 2017). Over time, however, the views on the role of companies in socio-economic reality, derived from classical economics, have become increasingly less relevant to the current socio-economic reality. Additionally, there have been numerous changes in the sphere of modern business operations. Globalisation, accompanied by rapid technological changes, has given rise to a completely new business environment. Under these new circumstances, the development of a modern company is determined not only by the effective use of resources and applying appropriate strategies but also by taking into account the concept of Corporate Social Responsibility (CSR) and business ethics in management processes. For example, Bhattacharya, Sen and Korschub (2011, pp. 29-30) indicate a fast-changing approach of companies to CSR:

- the concept of CSR is increasingly viewed as a business opportunity, not as an obligation,
- companies are beginning to see the role of other stakeholders such as investors, regulators, employees, nonprofits,
- the concept of CSR is being treated as a strategic, long-term approach, not as a single shot, as a one-off action in the short term.

Therefore, one may state that if a company wishes to be perceived as a reliable partner in business, it should implement elements of this concept, and indeed this concept itself (Sroka & Lórczy, 2015). In other words, companies are forced to maintain profitability and at the same time behave

responsibly (Mohr, Webb, & Harris, 2001). This relates not only to global corporations but also to small and medium-size companies, operating in developed, as well as developing, countries and a variety of sectors functioning within. Given these facts, it is no wonder that many European and American business schools run business ethics programmes (Donaldson & Fafaliou, 2003; Jastrzębski, 2012), and growing interest in ethical issues has opened a market for the services of consultants and trainers (Van Liedekerke & Demuijnck, 2012). Though companies utilize different sets of instruments in order to be regarded as ethical organizations (e.g., codes of ethics, ethical values and norms) business practice shows, however, that these companies often operate in a completely different way (Lőrinczy & Sroka, 2017). Also, one should also remember that social responsibility may only be duly carried out and implemented in the organization on condition of a favorable approach of the management understanding the need for its development (Formánková, Kučerová, & Prísažná, 2016).

The role and importance of CSR and business ethics is especially evident in controversial sectors of the economy. It is expected that firms in controversial sectors exhibit their ethical behavior and engage in corporate responsibility practices very intensively since they seek for organizational legitimacy (Reast, Maon, Lindgreen, & Vanhamme, 2013). There is no universal definition of a controversial sector (which is also called a problematic or sensitive one) as the categories sometimes overlap, and it seems that a continuum of sensitiveness can be created. One claims that the pharmaceutical industry is among the most admired and most criticized of all (Nussbaum, 2009). This view, however, may be strange to some extent. On the one hand, pharmaceutical products can save lives, they make the lives of millions of people a lot easier, and many legendary diseases have been eradicated from the world thanks to the innovations of the industry. On the other hand, the industry faces many criticisms at the same time. The basic source of this paradox is the controversial activities of the large transnational pharmaceutical companies (Kasapi & Mihiotis, 2011). Though they are sometimes praised for their unarguable successes in treating diseases and improving quality of life (DiMasi, Hansen, & Grabowski, 2003), at the same time they are heavily criticized for several reasons (Leisinger, 2005; Radoilska, 2008; Lee & Kohler, 2010). Additionally, these companies are often accused of charging high prices, applying immoral marketing practices, abandoning the poor, doing ethically questionable clinical trials, etc. (Corporate watch..., 2011). Pharmaceutical firms answer these criticisms in many ways and acting as 'socially responsible companies' is one of them. Despite these efforts, some authors like Radoilska (2008) points out that the pharmaceutical industry is no longer considered trustworthy due to the unavailability of

drugs in less-developed countries and the ‘overmedication’ of the developed world at the same time. Morsing and Schultz (2006, p. 323) also claim that “while stakeholders previously primarily attributed negative attention to particular industries (i.e., ‘sin stocks’, including companies producing tobacco, alcohol, weapons, pornography, etc.), today CSR issues have become more unpredictable and changing, and including, for example, child labor, gene-modified organisms (GMOs), hormones, union assembly rights, sweatshops, etc., which in practice are concerns across many if not all industries”.

It is generally acknowledged that Central and Eastern European (CEE) countries represent a fairly unique case regarding business ethics and corporate social responsibility. Societal infrastructure is rather weak, and one can sense a great level of distrust in corruptive public services (Habish–Jonker, 2005). Steurer and Konrad (2009) identify a significant gap between Western-European and CEE countries regarding the understanding and relevance of corporate responsibility issues, while Elms (2006) sees the lack of stakeholder activity as one of the main peculiarities concerning business ethics and corporate responsibility in the CEE region. Some similarities can be explained by the common historical roots of these countries, in that they went through two disastrous world wars and operated under totalitarian regimes (Bohátá, 1997). In examining business ethics and CEE economies, it seems especially relevant to focus on business ethics in the three controversial industries of two key CEE countries, namely Poland and Hungary. Despite similarities, there are significant differences between these countries. Poland’s economy is almost four times larger, while Hungary has a much more open economy, and therefore some significant differences were expected regarding their business ethics principles and practices.

The objectives of the study were achieved on the basis of data gathered through survey methodology. The target subjects included a group of 48 companies operating in these industries (25 Hungarian and 23 Polish ones). Our survey mainly focused on the degree of institutionalization of business ethics (such as the presence of a code of conduct, an employee appointed to deal with ethical issues, ethical training, and so on), the perceived ethical behavior of the firms, and their relationship with their key stakeholders.

LITERATURE REVIEW

Business ethics (also known as corporate ethics) is a form of applied ethics or professional ethics that examines the ethical principles and moral or ethical problems which arise in a business environment. It applies to all aspects of business conduct and is relevant to the conduct of individuals and entire

organizations. Ethical behavior and CSR can bring significant benefits to a business. For example, they may (Lőrinczy & Sroka, 2015):

- attract customers to the company's products, thereby boosting sales and profits;
- ensure that employees want to stay with the business, reducing labor turnover and therefore increasing productivity;
- attract more employees wanting to work for the business, thus enabling the company to hire the most talented employees;
- attract investors and keep the company's share price high, thereby protecting the business from takeover.

In contrast, unethical behavior or a lack of corporate social responsibility may damage a company's reputation and make it less appealing to shareholders, leading to a fall in profits.

The term 'ethic' comes from Greek (*ethikos* – customary; *ethos* - custom). It can be defined as a theory of morality, which attempts to systematize moral judgments (Paswan, 2015), or moral principles used in decision-making (Salehi, Saeidina, & Aghaei, 2012). In the common sense of the word, ethics means the rules that determine whether behavior is right or wrong. Ethics in business has a long history (Fischer & Lovell, 2009). A series of corruption scandals associated with companies such as Enron or WorldCom has changed the public perception of many entities. As a result of the scandals and abuses revealed, certain expectations relating to putting this theory into practice arose. Therefore, in the twenty-first century, business has been transformed: from the lack of accountability at the beginning, to high levels of ethical responsibility nowadays. It can thus be stated that business ethics is a scientific discipline dealing with the moral context of management and governance.

It is widely believed that business ethics are essential for today's managers. As Jamnik (2011) claims, "managers face ethical issues at work every day. It is rare for their decision not to concern the ethical aspects". There are various definitions of ethics in business in the literature, but the vast majority of them focus on the moral acceptance of the actions undertaken by the managers and employees of the organization (De Cremer, van Dick, Tenbrunsel, Pillutla, & Muringhan, 2011). Generally, it can be stated that business ethics explores and uses moral values, principles and standards that define and control the behavior of participants in business at all levels of economic life.

Business ethics and CSR are often used to refer to the same business activity. If we look carefully, the term "business ethics" comprises two words: "business" and "ethics," which cover the areas of moral principles, beliefs, values, culture, governance issues and a code of conduct for business (Dimitriades, 2007). Therefore, it can be stated that corporate social responsibility operates

on the principle that firms are obliged to meet their responsibilities to their stakeholders and also shareholders (Goel & Ramanathan, 2014).

Though CSR is a widely used concept both in the academic and corporate world, there is no clear and unbiased definition of this concept yet (Dahlsrud, 2006). Moreover, different CSR interpretations often confuse real-world practitioners. Carroll (1999) traces back the origin of the 'modern' CSR construct to the 1950s, but he claims that the concept has continuously evolved over subsequent decades. The European Commission characterizes CSR as a voluntary activity where companies integrate social and environmental concerns in their operations and interactions with their stakeholders (Green Paper..., 2001).

Another definition explains CSR through religion. CSR, as a concept, addresses the fact that profitability from business for some may come at the expense of others (Kraisornsuthasinee, 2012). Therefore companies are forced to maintain profitability and, at the same time, behave responsibly (Mohr et al., 2001). Through CSR, a company may improve its corporate performance by retaining talented employees, earn consumer and brand loyalty, reduce risk and build goodwill (Mullerat, 2010). CSR initiatives may also decrease consumers' will to buy a company's products (Sankar & Bhattacharya, 2001). There is another benefit which is more important, namely the potential impact on executive decision-making and strategy development. CSR can help managers to create more sustainable and value-creating strategies (Steele et al. 2013). Given these facts, the European Union continues to promote the CSR movement, although its implementation is diverse and the movement is not well articulated in Europe, especially in some Mediterranean countries, e.g., in Greece (Donaldson & Fafaliou, 2003). The main factors which influence CSR activities in European countries are corporate features (size, sector), general (legal system, culture, nationality) and internal factors (civil systems) (Černohorská & Putnova, 2012).

It should be emphasized that the importance of business ethics, as well as CSR, will grow (Sroka & Hittmár, 2016, p. 254), of which there can be no doubt. Salehi et al. (2012) even claim that truly global companies need to establish an environment which fosters ethical behavior. Otherwise their profitability will decrease. It is even believed that the company should create a climate conducive to ethical behavior; otherwise profitability will decline (Salehi et al., 2012). If a company wants to be perceived as a reliable business partner and a respected member of the business sector, it should demonstrate a high level of institutionalization of business ethics principles and practices, and it must show outstanding ethical behavior. This is exceptionally true in some controversial industries, such as pharma, alcohol and tobacco. This is mostly due to their nature and influence on human health.

RESEARCH METHODS

The objectives of the study were achieved on the basis of data gathered through online survey methodology. The questionnaires were submitted to a group of 200 companies operating in the pharmaceutical, tobacco and alcohol industries; 100 in each country. We received 48 questionnaires back from the targeted companies which is a 24% response rate (25 Hungarian and 23 Polish firms were included in the sample). All respondents were somehow related to business ethics or corporate social responsibility, but they represented different departments of their organizations. The relatively small size of the sample can be justified by the high level of concentration in these industries, i.e., the pool of the potential target companies is fairly small. Unfortunately, very few tobacco companies sent back the questionnaire (only 7%), but pharmaceutical companies and alcohol producers had almost an equal share in our sample (43% and 50% respectively). Due to the small response rate in the tobacco industry, we decided not to make comparisons across industries, but only across countries.)

In order to explore the business ethics practices and the organizational climate, three levels were investigated: organizational, stakeholder, and personal. Our questionnaire focused on 4 topics: (1) which elements of ethical institutions were created in the organisation, (2) how relationships with certain stakeholder groups are managed, (3) to what extent is ethical behavior supported in the organisation, and (4) we also wanted to explore the personal attitudes of the respondents towards business ethics, and ethical behavior. When studying ethical institutions and practices we relied on the governance / sustainability items detected by Kolk (2008) in her research on multinationals' reporting practices. The list was adjusted and completed with anticorruption measures due to the importance of this issue in the CEE region (Habish–Jonker, 2005).

A 1-5 Likert-scale was used for most questions (where 1 meant I totally disagree, and 5 meant I totally agree). In order to compare means across countries, the Mann-Whitney U test was applied (Mann–Whitney, 1947). It is a non-parametric test that is used to compare two sample means that come from the same population and used to test whether two sample means are equal or not. Unlike ANOVA, Mann-Whitney is a distribution-free method (Nachar, 2008), hence the two key characteristics of our sample – a relatively small amount of observations and the lack of normal distribution of the variables – justified our methodological choice.

ANALYSIS AND STUDY

We categorized ethical institutions based on how widespread these institutions were in the organizations we observed. We usually experienced that firms had clear processes to handle unethical cases, and they also had codes of conduct which regulate these cases more formally in both countries. Significantly fewer companies appointed dedicated staff members to deal with ethical issues, and even fewer firms issue CSR/Sustainability reports (CSR reports might serve as a vehicle to report on ethical cases). Regarding ethical institutions, significant differences were found across countries only in the case of anti-corruption regulations. Polish respondents talked more often about these regulations than their Hungarian counterparts (education about corruption was also more widespread than in Poland, but differences were not statistically significant). The results are presented in Table 1.

Table 1. Ethical institutions in organizations

	Hungary (%)	Poland (%)
Code of conduct	79.2	73.7
Manager/employee responsible for ethics/CSR	59.1	55.6
CSR/Sustainability report	28.6	43.8
CSR/Sustainability is part of strategy	82.6	88.9
Clear processes to handle unethical behavior	87.0	77.8
Rights guaranteed to report abuse cases	86.4	70.6
Clear regulations to avoid corruption*	52.4	78.9
Education about corruption	27.3	47.6

Some questions focused on the importance of ethical behavior within the organizations (Table 2). Our respondents – in both countries – were convinced that ethical behavior supports success, and they do not really agree with the widely-shared assumption that success in these industries can be achieved only through unethical behavior, or at least through some ‘dirty’ compromises. However, many people agreed to a certain extent that fully ethical behavior was not possible in these organizations. These findings may seem to be contradictory, but as regards tendencies, there seems to be a fairly broad consensus that ethical (and socially responsible) behavior is generally beneficial to the members of the organization and to the organization itself as well, and it will become more important in the upcoming years. It is also noteworthy that significant differences across countries were not found.

Table 2. Ethical behavior at the company

	Hungary		Poland	
	Mean	Std. Deviation	Mean	Std. Deviation
Ethical behavior supports success	4.08	0.91	3.76	1.18
Ethical behavior and CSR will be more important in 2 years	3.73	1.20	3.74	1.29
Ethical behavior supports higher sales	3.27	1.43	3.42	1.16
It is almost impossible to work fully ethically	3.17	1.19	2.95	1.16
Unethical behavior is widespread at my company	2.00	1.29	1.76	1.10

Table 3. Ethical expectations and stakeholders

	Hungary		Poland	
	Mean	Std. Deviation	Mean	Std. Deviation
Owners express what ethical behavior is	4.25	0.98	4.40	1.10
Our company considers ethical concerns about marketing	4.17	1.20	4.48	0.81
Our company performs better ethically than competitors**	3.91	0.85	4.47	0.81
Our company sponsors local events, activities	3.86	1.22	3.09	1.61
Suppliers are ethically reliable*	3.71	1.04	4.24	0.94
We consider the ethical performance of suppliers	3.13	1.32	3.67	1.43
Our clients, customers express their ethical expectations	3.04	1.22	2.90	1.58

We raised questions about the ethical performance of and relationship towards certain stakeholder groups (such as owners, suppliers, customers, etc.) in our questionnaire. We did not experience significant differences across the countries (as Table 3 shows) except in the case of competitors and suppliers. Polish firms in problematic industries are more convinced that they are superior to their competitors than their Hungarian counterparts, and they also believe more strongly that their suppliers are ethically reliable. In both countries, owners place equal emphasis on being ethical and primarily define ethical behavior. Firms in these countries also try to apply ethical marketing

initiatives. The relatively low perceived expectations from the customers came as something of a surprise.

Although one may think that in morally questionable industries the meaning of being ethical might be somewhat less clear than in other sectors, we found that for respondents in both countries it is fairly clear what being ethical at work means. However, it seems that in Poland organizational regulations pertaining to ethical behavior are more well-known to the members of the organization. Therefore Hungarian employees might gain this knowledge (i.e., how to behave in critical situations) mainly from other sources (through socialization, role models, or in other informal ways). It is quite apparent in both countries that moral dilemmas exist in the organizations observed, but people in the pharma, tobacco and alcohol industries may not have many more such dilemmas when compared to other employees in other sectors. Basically, no one admits that he or she has behaved in an unethical way recently, which is probably not surprising: even allowing for the use of anonymous questionnaires, this is a highly sensitive question to which people usually respond in a positive way (it is also consistent with what we found at organisational level: most people rejected the idea that unethical behavior is widespread in their organisation). Our Hungarian respondents stated that, when they started working in their organizations, they had strong ethical considerations – in Poland these considerations might be missing (or at least they are less solid).

Table 4. Personal attitudes toward business ethics

	Hungary		Poland	
	Mean	Std. Deviation	Mean	Std. Deviation
It is clear what being ethical means at work	4.64	0.49	4.71	0.56
Ethical considerations were important when starting work**	4.24	1.09	3.14	1.49
I am aware of regulations pertaining to ethical behavior*	3.72	1.43	4.35	1.14
Regularly faced with ethical dilemmas at work	2.76	1.39	3.00	1.38
I have at times behaved unethically	1.52	0.77	1.61	0.86

DISCUSSION

Our study confirmed that business ethics is regarded as a significant factor which has an influence on business success and the corporate image of companies from the sectors in question. Therefore, the results obtained confirm the earlier theses of Chan, Fung and Yau (2009) who drew attention to the increasing awareness and interest in ethical issues in business decision-making, especially in Europe, the positive impact of business ethics (Van Liedekerke & Demuijnck, 2012), as well as the financial performance of firms (Berrone, Surroca, & Tribo, 2007). On the other hand, the respondent's approach suggests that working in a completely ethical manner in virtually every aspect of business is practically impossible.

It is also necessary to emphasize that the scale of this phenomenon varies across the countries analyzed. The level of institutionalization is somewhat higher at Hungarian firms, while preventing and handling corruption cases come to the forefront more within Polish companies. Although it seems that stakeholders have greater ethical expectations from Polish firms, we did not find significant differences between the perceived ethical behavior in the two countries.

CONCLUSION

Over the past 20 years, the perception of ethical issues in Europe has changed substantially. Initially, they were treated more in philosophical terms, and to a certain extent referred to business. At present, ethical research is primarily focused on business issues, and thousands of people are involved in research and training on business ethics (Van Liedekerke & Demuijnck, 2012). Our research conducted in three controversial sectors of the economy, i.e., pharmaceutical, tobacco and alcohol, confirmed the growing importance of CSR and business ethics in contemporary business.

The originality of the paper is the result of the presentation of unique qualitative research related to business ethics in sensitive sectors of the economy in two Central European countries. The countries have been chosen due to significant differences between them as Poland's economy is almost four times larger, while Hungary is a much more open economy. Sectors such as pharma, tobacco and alcohol are often accused of manufacturing questionable products or applying industrywide malpractices; therefore, observing their ethical principles and practices certainly provides significant fresh insights in this field. To the best of our knowledge, such research is relatively rare (due to the sensitive nature of the sectors analyzed) not only in these two countries but also on an international scale.

The results achieved may imply a need for further research on the presented topic. It seems that some form of cyclical research, for example, if conducted every five to ten years, would allow researchers to obtain more valid data and provide some indications as to the direction in which companies from these sectors will evolve. However, this may be difficult because of the apparent unwillingness of respondents to participate in the research, though the vast majority of the companies observed (i.e., those which submitted responses) understand the need for ethical behavior in business.

It is also necessary to point out some limitations of the study. Although it covered a relatively large research sample (200 companies), only 48 completed questionnaires were eventually received. In other words, this data determines the nature of a pilotage study. Further studies should be conducted with more complete participation of representatives from the companies that were surveyed (e.g., direct interviews). Another limitation seems to be sectoral coverage. Research concentrated on selected sectors only; however, the sectors in question are highly sensitive; therefore our research may be regarded as the first step towards further studies on business ethics and CSR in other sectors.

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Abstrakt

Do niedawna w biznesie panowało przekonanie, że firmy działają wyłącznie dla zysku ich właścicieli. Niewiele firm uznawało potrzebę łączenia swoich działań z etyką, w szczególności z obowiązkami wobec społeczeństwa lub środowiska. Jednak postrzeganie kwestii etycznych zmieniło się radykalnie w biznesie w ciągu ostatnich 20 lat. Jeśli firma chce być postrzegana jako wiarygodny partner biznesowy i szanowany członek sektora biznesowego, powinna wykazywać wysoki poziom instytucjonalizacji zasad i praktyk w zakresie etyki biznesowej i musi praktykować wybitne zachowania etyczne. Jest to szczególnie istotne w niektórych kontrowersyjnych sektorach gospodarki. Celem naszego artykułu jest określenie skali i zakresu stosowania tych zasad i praktyk w dwóch krajach Europy Środkowej, tj. Polsce i na Węgrzech, w trzech kontrowersyjnych sektorach: farmaceutycznym, tytoniowym i alkoholowym. Dane zostały uzyskane na podstawie badań bezpośrednich. Próba badawcza liczyła 48 firm (25 węgierskich i 23 polskich). Badanie koncentrowało się głównie na stopniu instytucjonalizacji etyki biznesu (np. posiadanie kodeksu postępowania, pracownika wyznaczonego do zajmowania się kwestiami etycznymi, szkoleń z zakresu etyki itp.), postrzegania etycznego zachowania firm i ich relacji z kluczowymi interesariuszami. Uzyskane wyniki potwierdziły, że etyka biznesu jest uznawana za istotny czynnik, który ma wpływ na sukces biznesowy i wizerunek firmy w danych sektorach. Należy jednak podkreślić, że skala tego zjawiska jest różna w obu sektorach i krajach. Poziom instytucjonalizacji jest nieco wyższy w firmach węgierskich, natomiast w polskich firmach na czoło wysuwa się zapobieganie korupcji i postępowanie w sprawach korupcyjnych. Chociaż wydaje się, że interesariusze polskich firm mają większe oczekiwania etyczne, nie zaobserwowaliśmy istotnych różnic między postrzeganymi zachowaniami etycznymi w obu krajach. Oryginalność artykułu jest wynikiem prezentacji unikatowych badań jakościowych dotyczących etyki biznesu we wrażliwych sektorach gospodarki w dwóch krajach Europy Środkowej. Zgodnie z naszą najlepszą wiedzą takie badania są stosunkowo rzadkie (ze względu na wrażliwy charakter analizowanych sektorów) nie tylko w tych dwóch krajach, ale również w skali międzynarodowej.

Słowa kluczowe: społeczna odpowiedzialność biznesu, CSR, etyka biznesu, zachowania etyczne, gospodarki Europy Środkowej, kontrowersyjne branże

Biographical notes

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The Themes of Entrepreneurship Discourse: A Data Analytics Approach

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Abstract

Scholars are devoting heightened attention to the language of entrepreneurship and to its influence on the cognition, behaviors, and outcomes of entrepreneurs and their stakeholders. However, the primary themes that constitute entrepreneurs' language are unexamined. In this partially-inductive study, we identify the most common themes in entrepreneurship discourse and explore how they have changed over time. To map the themes in entrepreneurs' language, we use data analytic techniques coupled with text mining algorithms to analyze a longitudinal corpus of entrepreneurial discourse. Our findings reveal five dominant and recurring themes in entrepreneurship discourse – marketing activities, technology-oriented entrepreneurship, digital entrepreneurship, professional investment, and new venture entrepreneurship – and illustrate how these themes are evolving. By examining the key themes in the discourse of entrepreneurs and charting their transformation over time, our study makes theoretical and methodological contributions to entrepreneurship research. We identify the areas where the academic literature seems to be lagging practitioner discussions and suggest that scholars should evaluate research for how closely topics are calibrated with the main themes in the discourse of entrepreneurs. Our findings also produce practical implications for entrepreneurs by identifying the main themes receiving attention, which allows entrepreneurs to evaluate if the topics that comprise their day-to-day discourse align with the themes emphasized in the larger body of entrepreneurship discourse.

Keywords: *entrepreneurship; entrepreneurial communication; discourse; text analysis; data analytics*

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INTRODUCTION

Entrepreneurship scholars are embracing the “linguistic turn” in organization studies and the social sciences (Alvesson & Kärreman, 2000; Hjorth & Steyaert, 2004; van Werven, Bouwmeester, & Cornelissen, 2015). Language shapes perceptions, actions, and the outcomes of entrepreneurship by influencing entrepreneurs’ cognitive processes (Cornelissen & Clarke, 2010; Kor, Mahoney, & Michael, 2007), resource acquisition strategies (Roundy, 2014), and stakeholders’ evaluations (Martens, Jennings, & Jennings, 2007; Parhankangas & Ehrlich, 2014). Entrepreneurs’ language-use manifests in the discourse constructed during the entrepreneurial process and used to describe the novel organizations, products, and initiatives that entrepreneurs create (Clarke & Cornelissen, 2014). Entrepreneurs’ language also influences the processes of attention, identity construction, legitimation, and sensemaking, which, in turn, shape entrepreneurs’ performance (Roundy, 2016). However, the themes of entrepreneurs’ language, how they appear in discourse (i.e., the contextualized language used in talk or text; Linell, 2010), and how they change over time, are not clear.

Despite the strides made by studies of entrepreneurs’ language, research has not attempted to identify the common themes in entrepreneurial discourse. Scholars generally adopt an interpretivist approach (cf. Leitch, Hill, & Harrison, 2010), which involves examining how discourse is constructed and interpreted during social interactions. The focus of this work is capturing rich representations of higher-level discourse constructs, such as narratives and stories, rather than understanding word-, phrase-, or theme-level language. Instead, research primarily emphasizes how entrepreneurs use language and the outcomes of language-use and does not devote attention to the content and structure of entrepreneurial discourse (e.g., Lounsbury & Glynn, 2001). This represents an important omission in studies of entrepreneurs’ language because without a detailed understanding of the themes of entrepreneurial discourse it is difficult to identify the topics that are at the center of entrepreneurs’ communications and attention.

To address these omissions in prior research, in this study we examine two related questions: *what are the themes that comprise entrepreneurship discourse and how have these themes changed over time?* To explore these questions, we use a partially-inductive methodology (cf. Gioia, Corley, & Hamilton, 2013), coupled with research from linguistics and entrepreneurship, to analyze the themes that are present in a corpus of entrepreneurship discourse. Specifically, we combine MapReduce programming, a Big Data methodology (cf. Asllani, 2014), with traditional statistical methods to develop a text mining algorithm that generates insights into the contextualized themes of entrepreneurship

discourse. We identify the most common themes in the entrepreneurship lexicon and examine the extent to which they change over time.

Our study design and findings respond to calls for research at the intersection of data analytics and entrepreneurship (e.g., George, Haas, & Pentland, 2014). A greater understanding of the themes of entrepreneurship discourse represents a contribution to entrepreneurship scholarship and has implications for entrepreneurs and policymakers because it sheds light on the topics currently receiving the most attention in entrepreneurship practice, including technology-oriented entrepreneurship, digital entrepreneurship, marketing activities, professional investment, and new venture entrepreneurship. These themes were identified inductively, rather than making *a priori* assumptions about the issues that matter to entrepreneurs. This is an important distinction because it places the focus on the major themes comprising practicing entrepreneurs' discourse (i.e., practitioner discourse or discourse-in-use) rather than the themes comprising entrepreneurship scholars' discussions (i.e., academic discourse). As our findings suggest, the themes in academic and practitioner discourse are not perfectly aligned and divergences exist.

We structure the remainder of the paper as follows. First, we provide an overview of prior studies at the intersection of entrepreneurship, language, and discourse. We devote extended attention to the substantive omissions in this research that our study aims to address. We then describe the study's research design, methods, and our findings. The paper concludes with a discussion on the implications, limitations, and future directions of our research on entrepreneurship discourse.

LITERATURE REVIEW

The linguistic (or "discursive") turn in the social sciences (e.g., Harre, 2008) emphasizes the power of language to shape how reality is perceived, interpreted, and described. Social scientists' growing interest in language is motivated, in part, by the linguistic paradigm in philosophy, which laid the foundations for studying the influence of language on human cognition (Wittgenstein, 1922; cf. Lycan, 2012). Disciplines as disparate as law and criminal justice (e.g., Maynard, 1988), medicine (e.g., Greenhalgh, 1999), public health (e.g., Greene & Brinn, 2003), and agriculture (e.g., Morgan, Cole, Struttmann, & Piercy, 2002) find that language-use is not "just talk" but can influence decision making, the persuasiveness of communication, the transfer of knowledge, and how people and organizations are evaluated (e.g., Breunig & Roberts, 2017). For example, scholars studying environmental policy

decisions find that the language used to frame policies influences decision making, persuasion, and evaluation (cf. Feindt & Oels, 2005). Rydin (1999), for instance, examines the language of sustainability-focused environmental policies and, quoting Edelman (1988, p. 103), argues that environmental policy is influenced by “language games that construct alternative realities, grammars that transform the perceptible into non-obvious meanings, and language as a form of action that generates radiating chains of connotations while undermining its own assumptions and assertions.” The language contained in types of discourse, such as narratives, is so influential it has been argued that “all of our knowledge is contained in stories and the mechanisms to construct and retrieve them” (Schank & Abelson, 1995, p. 1). Because of the role of language in the construction and transmission of human culture, scholars even argue that a more accurate name for the human race is *homo narrans*, that is, “narrative humans” (Niles, 1999).

The growing attention to linguistic issues in other social science disciplines spurred organizational researchers to consider the role of language in business contexts. Language can manifest in organizations in any form that discourse can take (Chatman, 1980), including direct inter-personal interactions or written texts. Studies examine the role of language in micro-phenomena, such as employee identity construction and sensemaking, and macro-oriented phenomena, such as organizational change and legitimation (cf. Vaara, Sonenshein, & Boje, 2016). In exploring these phenomena, studies analyze the language used in texts such as annual reports (e.g., Subramanian, Insley, & Blackwell, 1993), shareholder letters (Jameson, 2000), earnings press releases (e.g., Henry, 2008), and corporate websites (Pollach, 2003).

The power of language in entrepreneurship

Entrepreneurship is the creation and pursuit of innovative opportunities to produce value for society (cf. Gartner, 1990; Shane & Venkataraman, 2000). Scholars focus on entrepreneur- and venture-level characteristics, such as alertness to new opportunities and bricolage activities (Roundy, Harrison, Khavul, Pérez-Nordtvedt, & 2017; Zollo, Rialti, Ciappei, & Boccardi, 2018) and, recently, on the system-level forces that support and promote regional entrepreneurial activities (Golejewska, 2018; Nicotra, Romano, Del Giudice, & Schillaci, 2018). Across these levels of analysis, scholars are devoting growing attention to how entrepreneurs construct, convey, and interpret their actions through language because of its central role in the entrepreneurship process (e.g., Clarke & Cornelissen, 2014; Roundy, 2016). These studies find that entrepreneurs’ language-use can impact identifying and constructing opportunities (Gartner, Carter, & Hills, 2003), developing business models (London, Pogue, & Spinuzzi, 2015), persuading stakeholders

to provide support (Spinuzzi, 2017), developing pitches, and pursuing investment (Parhankangas & Renko, 2017; Spinuzzi et al., 2015).

However, most entrepreneurship research examining discourse does not examine the specific words and themes that constitute the language of entrepreneurs. For example, Nicholson and Anderson (2005) analyze the role of discourse in sensemaking and sensegiving about entrepreneurship. They examine how the language about entrepreneurship contained in myths and metaphors presented in a British newspaper influences the image of entrepreneurship portrayed to readers. Similarly, Steyaert (2007, p. 463) argues that the social construction of entrepreneurship is conceptualized through “a myriad of linguistic forms and processes,” including discourse (Perren & Jennings, 2005), dramatization (Downing, 2005), metaphors (Dodd, 2002), and storytelling (Pitt, 1998). Roundy (2014) examines how the narratives constructed by social entrepreneurs influences their ability to secure professional investment. Although these studies increase understanding about how entrepreneurs use language to construct discourse and communicate, they do not examine specific word- or theme-level patterns. These studies also do not base their findings on a large corpus of text; instead, they focus on the discourse of small samples of entrepreneurs and ventures, rather than examining a broad sample of discourse across sectors.

A study by Parkinson and Howorth (2008) is an exception. They interview social entrepreneurs and then use corpus linguistics software and critical discourse analysis to identify common linguistic themes such as “local issues,” “collective action,” “geographical community,” and “local power struggles.” Moss, Renko, Block, and Meyskens (in press) and Parhankangas and Renko (2017) also examine word-level linguistic characteristics in their analyses of how entrepreneurs communicate about their ventures on crowdfunding platforms. They find that entrepreneurs’ linguistic styles impact audiences’ resource allocation decisions.

These studies and others (e.g., Lounsbury & Glynn, 2001; Martens et al., 2007) improve our understanding of the role of language and discourse in entrepreneurial activities. However, important issues remain unaddressed. First, as described, scholars examining entrepreneurial discourse primarily adopt interpretivist and social constructivist perspectives (Fenton & Langley, 2011) that are based on ethnographic and qualitative methods. Interviews are often used to capture language. However, as Achtenhagen and Welter (2007) argue, “the use of language in entrepreneurship research has potential far beyond the use of interviews” (193). Entrepreneurship researchers generally do not use quantitative methods focused on measuring and mapping the precise composition of language. Studies are also not based on a large corpus of text, in part, because analyzing such data is challenging using hand-coding

methods, which is the primary methodology in prior work. Scholars also tend to examine entrepreneurs' language in specific, localized settings (e.g., a specific organization or city); however, the national (and international) discourse about entrepreneurship has not been examined. These represent important omissions in prior research because the primary themes of entrepreneurship, and the topics receiving attention by entrepreneurs, are not clear without analyzing the precise content of entrepreneurial language and without examining the meta-discourse about entrepreneurship. The study described in the next section seeks to address these omissions in entrepreneurship research.

RESEARCH METHODS

To answer our guiding research questions (i.e., what are the most prominent themes in entrepreneurship discourse and how have these themes evolved over time), we used a Big Data programming approach (MapReduce) and text mining software to analyze a large corpus of web content. Big Data is defined as data with the following characteristics: high volume, velocity, and variety (Katal, Wazid, and Goudar, 2013). Big Data is generated by sources such as social networks, web server logs, web page content, banking transactions, and financial markets. A unique set of processing and storage techniques are used to handle the challenges of collecting and analyzing Big Data (Asllani, 2014; White, 2012). Linguistic data can be analyzed with text mining methodologies, described in detail in the next section, which are used to process large amounts of text and to identify non-obvious patterns in a corpus (i.e., a collection of text; Feldman & Sanger 2007). Text mining reveals patterns and quantifies emerging keywords and phrases, which provide insight into a corpus's linguistic structure and themes (Baker et al. 2008; Morley & Bayley, 2009).

Due to the complexity and size of our dataset, we created a modified version of a traditional word-count algorithm (Dean & Ghemawat, 2008). Using a word-count algorithm with a large corpus can be challenging because it requires significant time to process the text in the corpus. We modified a MapReduce algorithm (described in detail in the next section) to run in a distributed file system (a Hadoop cluster with four nodes) and to perform the embarrassingly parallel computations in reduced time. "Embarrassingly parallel computing" is a programming concept used to describe computation problems that can be divided into a large number of parallel tasks with little effort (Herlihy & Shavit, 2012). Our word-count algorithm is a typical parallel computing task, which is used to make data analysis more manageable.

Research design

The lack of prior theoretical work on the themes of entrepreneurial discourse suggests the appropriateness of exploratory, partially-inductive research design. Inductive research is appropriate when it is not clear *a priori* what specific constructs (or, in our study, words and themes) should be measured. Inductive studies generate data-driven theoretical and empirical insights rather than testing *a priori* theoretical frameworks. With a purely inductive design, the researchers design a study with limited (or even no) preconceptions about how a phenomenon works and allow the data to guide what questions are asked and, ultimately, what theories are informed.

Since we use guiding research questions about the themes of entrepreneurial discourse to focus our analysis, our study is appropriately described as *partially*-inductive (cf. Gioia, Corley, & Hamilton, 2013). A benefit of this approach is that it limits the influence of the preconceived notions and assumptions of the researchers about what themes are important—or should be important—in entrepreneurship. Minimizing the influence of such assumptions is critical because one of the main aims of the study is to understand if the themes of practitioner discourse align with, diverge from, or challenge the main topics examined by entrepreneurship scholars. If instead, we tested for themes identified from the entrepreneurship literature *a priori*, we would be unlikely to uncover themes that are unique to practitioner discourse.

In addition to the distinction between deductive and inductive approaches, there are also important differences between qualitative and quantitative methods for text analysis (cf. Berelson, 1952; Roberts, 2000). A text can be analyzed using qualitative methods that rely on researchers hand-coding texts for themes and subthemes (cf. Bowen, 2009). The advantage of this approach is that the researcher is directly analyzing the data, rather than using a computer-automated text analysis (CATA) program, which allows for rich and nuanced analysis of the data (Graebner, Martin, & Roundy, 2012). The chief downside of the qualitative approach, and the primary reason we adopted quantitative methods, is that hand-coding is a time-intensive process best-suited to relatively small datasets and corpora of text (Laver, Benoit, & Garry, 2003; Monaghan, Chater, & Christiansen, 2005). As described below, our dataset and research design produced a large corpus comprised of several million words and over three thousand web pages. It would have been very cumbersome to hand-code such a large dataset. Another advantage of quantitative text analysis approaches is that they are “hands-off” in that they rely on algorithms, not subjective perceptions, to identify common words and themes.

Data collection

Our data source was the 2016 “Forbes Best 100 Websites for Entrepreneurs.” The “Forbes Best...” is a list of website selected annually (since 2013) by Forbes writers. The websites are selected for their:

“ability to address a range of topics of interest to entrepreneurs. Frequent posts and content quality helps get a nod. The list is a combination of practical tools – sites to crowdfund like Rock The Post or AngelList, or sites with educational resources, like Stanford’s eCorner – and inspirational advice from bloggers like Seth Godin and Steve Blank.” (Forbes, 2013).

We chose the “Forbes Best...” list, rather than compiling our own list of websites, to limit idiosyncratic researcher (and academic) bias and because the Forbes list seemed to represent a broad range of entrepreneurial discourse (e.g., discourse about starting a venture, acquiring funding, selling, and scaling). Also, Forbes relied on nominations from the entrepreneurship community to compile the list, asking for websites “that can address a wide range of topics, like how to start up, establish your brand, build a bang-up team and secure that seemingly elusive round of capital” (Forbes, 2015). The fact that Forbes “crowdsourced” at least some of the list suggests that the list contains websites that are, in fact, important to entrepreneurs. Although there are other lists of “top entrepreneurship sites” (e.g., Entrepreneur.com’s “8 successful online entrepreneurs you should be following”), the Forbes list was the most wide-reaching and comprehensive we could find.

In selecting the “Forbes Best ...” list, we analyzed sites to ensure that they represented forums for entrepreneurial discourse. We ensured that entrepreneurship was the primary focus of the sites, rather than a niche interest. We also examined each site at different points in its history to ensure that the focus of the domain name had not changed. One of the reasons we ultimately selected the Forbes list is because most of the sites were structured as blogs (i.e., rather than reproducing a story from another source, each posting had an identifiable author with a point of view) and readers could comment on each posting, which allowed for two-sided, interactive communication (a dialogue).

We constructed a corpus of text by sampling discourse from each of the websites at two different dates, per year, for a 16-year period (2001-2016). Using the Internet Archive (www.archive.org) and its “Wayback Machine” feature, for each website two “snapshots” of the discourse content were captured from each year. A list of the uniform resource locators (URLs) for each site and each snapshot was generated. We then downloaded the web content into a Hadoop Distributed File System (HDFS) containing the text

from each site. The content of the websites was downloaded using the *wget* utility, defined as:

```
$ wget -l 2 -i url_list
```

where:

- **\$** is the prompt in the Linux environment terminal;
- **wget** is a freely-available utility for downloading files from the web that supports HTTP, HTTPS, and FTP protocols (i.e., the protocols that allow data communication on the web), and retrieval through HTTP proxies. **wget** is non-interactive, meaning that it can operate in the background of other operations. The command creates local versions of remote websites which are submitted to the HDFS for further processing;
- **-l 2** indicates level 2 inclusion in the download process. Level 1 of a URL represents the main page of the website and is normally named *index.html*. Level 2 represents the webpages that are linked to the main page;
- **-i** indicates the input, which can be found in the file named *url_list*;
- **url_list** is a text file containing the list of web page addresses from which the content should be downloaded.

We then created a MapReduce program to read the text between <body> and </body> tags in the index file of the website. Table 1 provides a summary of our data collection methodology.

Overall, we downloaded 3,434 webpages spanning 2001 to 2016 and used this data for the text mining methodology. On average, 215 unique webpages (from the Fortune 100 Best websites) were downloaded each year. The number of webpages is not equivalent to the number of websites because, as described, we analyzed data two levels deep (i.e., the main page for each website and the pages linked to the main page). That is, for a year in which all of the Fortune 100 websites are available at least 200 webpages were analyzed (the 100 websites at two points during the year). Finally, the number of webpages analyzed per year increased over time (as more webpages became available in recent years); however, we normalized our findings by year totals. These methods generated a corpus of entrepreneurial discourse of over 3 million words (3.55 gigabytes of raw text).

Data analysis

After constructing the corpus of entrepreneurship discourse, our analysis consisted of two parts: (1) identifying the major themes and (2) charting the trends of themes over time.

Table 1. Summary of data collection and analysis steps

Methodological step	Description
Data collection	
Identified the data source	“Forbes Best 100 Websites for Entrepreneurs”
Created text corpus	Used the Internet Archive to find the URLs of each website at two points per year from 2001-2016 Used the wget utility (Linux command) to capture and download the text of the websites of the selected URLs two-levels deep Created a corpus of 3,434 files (approximately 3 million words)
Stored and organized data	Stored the downloaded text in a Hadoop Distributed File System (HDFS) with four clusters
Data analysis	
Cleaned the corpus	Used a modified MapReduce program to eliminate common words (“stop words”), HTML tags, and other symbols
Identified the most common words	Used a modified MapReduce program to identify the most common words and phrases
Identified the most common themes	Used exploratory factor analysis to identify themes in the most common words in the corpus.
Examined changes in the themes over time	Calculated the average frequency index for each theme during a given year

We began by modifying a MapReduce algorithm (Dean & Ghemawat, 2008) to count the frequency of each word in the corpus. The program also eliminated common words (e.g., “the,” “and”), HTML tags, and other symbols. Figure 1 contains pseudo code for the MapReduce program. The MapReduce algorithm was executed in a Hadoop cluster with four nodes. The most frequently used words for each year were selected and processed to eliminate duplicates. We also created obvious groupings (e.g., combining words like *knowledge* and *information* into *information*) and identified words sharing the same stem (e.g., *finance*, *financial*, and *financing*). Table 2 contains the full list of 126 words used in the factor analysis described below.

Identification of themes

We used exploratory factor analysis (EFA; Fabrigar & Wegener, 2011) to identify themes in the most commonly occurring words in the corpus. Table 2 shows the overall model parameters for the EFA.

Table 2. The words of entrepreneurship discourse

acquisition	development	LLC	small business labs
advertising	digital marketing	market	small business
analytics	downline	marketing	small business administration
angel	due diligence	merger	sociable
angel investors	edge	mobile	social
application	entrepreneur	money	social enterprise
appraisal	entrepreneurial ecosystem	movable type	social entrepreneur
asset	Facebook	multi-level marketing	social good
barter	family	network marketing	social innovation
benefits	fast company	networking	social media
big data	feed	new venture	social network
bootstrap	financing	offices	software
business	focus	online	sole proprietorship
business advice	funded	opportunities	Stanford
business blogger	funds	option	startup
business filings	game	outsourcing	startup community
business incubator	general partnership	partnership	startup lawyer
business valuation	home based business	patent	startup lessons learned
capital	idea	people	startups
coaching	independent contractor	planning	stock
company	innerpreneur	player	story
computer	innovation district	product	strategic alliance
consumer direct marketing	internet	public relations	summary
copyright	intrapreneur	resources	team
corporation	investors	sales	tech
creator	joint venture	SBA	tech crunch
customer	limited liability company	services	technology
data	limited partnership	share	venture
data analytic	trademark	shift	venture blog
technorati	Twitter	valley	venture capital
trade	success	VC	
women	line of credit	small	

Once we identified the most frequent keywords, we calculated the frequency index f_{ij} of each key word i in webpage j as follows:

$$f_{ij} = \frac{F_{ij}}{T_j} \quad (1)$$

where F_{ij} is the frequency of keyword i in j and T_j is the total number of words in webpage j . To calculate F_{ij} and T_j we ran the MapReduce algorithm for each full webpage, with the keyword list as an input to the program.

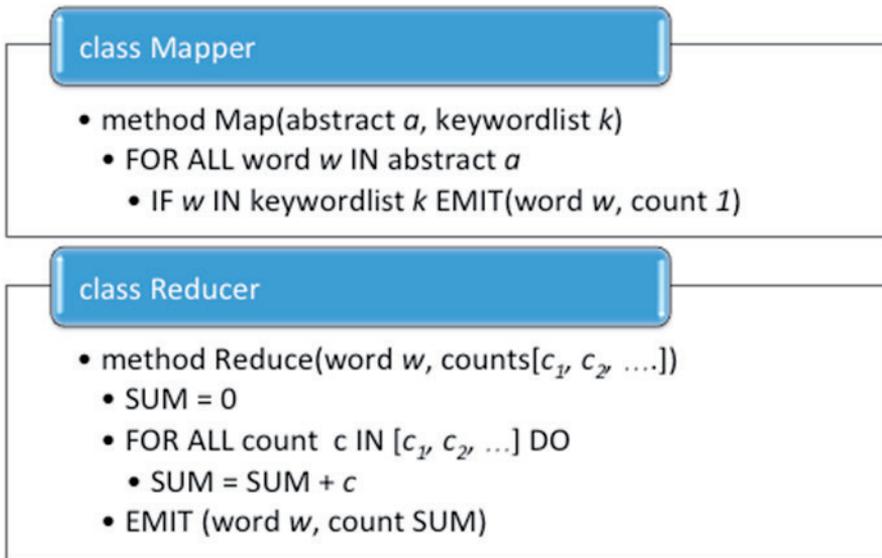


Figure 1. Modified MapReduce program used to identify frequent words

The Kaiser-Meyer-Olkin (KMO) value of 0.70 indicates that our data is suitable for factor analysis (Cerny & Kaiser, 1977). Bartlett's test of sphericity tests the hypothesis that the variables are unrelated and, thus, unsuitable for structure detection and factor analysis. A low significance value (<0.001) indicates that factor analysis is, in fact, useful with our data (Snedecor & Cochran, 1989).

Table 4 contains the factor correlation matrix. Five independent factors – themes – of entrepreneurship discourse were identified. Table 5 contains the strongest-loading words on each of the five themes. In the factor analysis, words with loadings of .30 and greater were retained (following the recommendation of Brown, 2006).

Table 3. Model validity for factor analysis

Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy		.702
Bartlett's Test of Sphericity	Approx. Chi-Square	40282.785
	df	903
	Sig.	.000

Table 4. Factor correlation matrix

Factor	1	2	3	4	5
1	1.000	-.146	.009	.026	.205
2	-.146	1.000	.327	-.145	-.168
3	.009	-.327	1.000	.290	.142
4	.026	-.145	.290	1.000	-.070
5	.205	-.168	.142	-.070	1.000

Note: Extraction Method: Principal Axis Factoring; Rotation Method: Promax with Kaiser normalization.

Table 5. Exploratory factor analysis

Factor	Professional investment	Technology-oriented entrepreneurs hip	Digital entrepreneurship	New venture entrepreneurship	Marketing activities
venture capital funds	0.849				
venture capital vc	0.814				
	0.776				
venture capital	0.587				
vc	0.575				
technology		0.906			
software		0.843			
services		0.635			
shift		0.56			
Twitter		-0.416			
share			0.670		
social			0.601		
Facebook			0.464		
team			0.401		
mobile			0.355		
people			0.349		
startups				0.829	

Factor	Professional investment	Technology-oriented entrepreneurs hip	Digital entrepreneurship	New venture entrepreneurship	Marketing activities
angel				0.800	
startup				0.777	
small_business					0.534
data					-0.468
online					0.375
marketing					0.373
sba					0.338
sales					0.328

Note: Extraction Method: Principal Axis Factoring; Rotation Method: Promax with Kaiser Normalization; Rotation converged in 7 iterations.

FINDINGS

The study aimed to identify the key themes in entrepreneurship discourse and to examine if these themes changed over time. In the following sections, we describe the five most common themes and their main characteristics.

Marketing activities. The most commonly occurring theme in entrepreneurship discourse, appearing in over 42% of websites included in the corpus (Figure 2), is comprised of keywords such as *marketing*, *sales*, and (customer) *data*. Given the focus of the words that loaded on this factor, we labeled this theme *marketing activities*.

Many of the foundational writings about entrepreneurship are from the work of economists (e.g., Cantillon, 1730; Knight, 1921; Say, 1816; Schumpeter, 1934). As entrepreneurship developed into an established academic field, management became its “home” discipline (Shane & Venkataraman, 2000). However, there is a growing stream of research at the intersection of marketing and entrepreneurship (cf. Hills & LaForge, 1992; Hills & Hultman, 2011). This work takes a “demand-side” perspective that emphasizes how entrepreneurs’ market their ventures to consumers (e.g., Priem, Li, & Carr, 2012), rather than a “supply-side” perspective focusing on the characteristics of entrepreneurs (Kaish & Gilad, 1991).

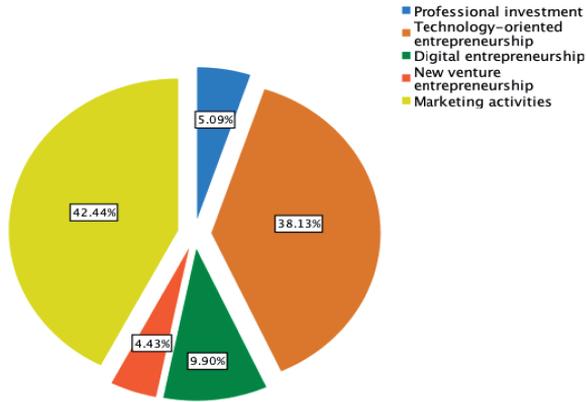


Figure 2. The representation of themes in entrepreneurship discourse

It is notable that the discourse of actual entrepreneurs reflects the increasing academic emphasis on entrepreneurs' marketing practices. This theme indicates that while it is important for entrepreneurs to create cutting-edge products and technologies, entrepreneurs are increasingly doing so by adopting a customer-centric mindset and using strategies (like design thinking; Elsbach & Stigliani, 2018) to understand consumers and gather customer data.

Technology-based entrepreneurship. The second most common theme in the corpus of discourse revolved around a cluster of words and phrases involving *technology-based entrepreneurship*. This theme appeared in over 38% of websites. The highest factor loadings in this category included words such as *technology, software, services* (as in "cloud-based services" and "software as a service"), and *technology shift*.

In the period studied (2001-2016), there is a growing focus in research and practice on technology entrepreneurship (Ratinho, Harms, & Walsh, 2015; Shane & Venkataraman, 2003). Technology entrepreneurship is at the intersection of two phenomena: technological innovation and entrepreneurship (Mosey, Guerrero, & Greenman, 2017). It involves the pursuit of an opportunity that "assembles and deploys specialized individuals and heterogeneous assets that *are intricately related to advances in scientific and technological knowledge* for the purpose of creating and capturing value for a firm" (Bailette, 2012: 9; emphasis added).

Individuals engaged in technology entrepreneurship assemble “resources and structures to exploit emerging technology opportunities” (Liu et al., 2005). Scholars acknowledge that technology entrepreneurship is not only a source of product innovation and technological advancement but serves as a potent mechanism for generating economic development (Bailetti, 2012). Findings suggest that technology entrepreneurship is also now a central theme in practitioner entrepreneurship discourse.

Digital entrepreneurship. A distinct theme also emerged around *digital entrepreneurship*, which included words such as *social (media)*, *share*, *Facebook*, and *mobile*. Digital entrepreneurship is a specific type of technology entrepreneurship focused on the pursuit of opportunities related to products and services based on digital media and other information technologies (Davidson & Vaast 2010: 2; Nambisan, 2017). This theme, which appeared in approximately 10% of websites in the corpus, includes the host of new business models being created around social media activities (cf. Hanna, Rohm, & Crittenden, 2011; Khajeheian, 2013) and corresponds to the digitalization of many industry sectors (Autio, Nambisan, Thomas, & Wright, 2018).

Professional investment. Another theme is comprised of keywords, such as *venture*, *capital*, *funds*, and *VC*, and phrases like *venture capital*. Because of the shared focus of these words, we labeled this theme “*professional investment*.” Professional investors, such as venture capitalists, are commonly-pursued by entrepreneurs as early-stage sources of funding that can complement (and come at a later stage than) other sources of startup funding, such as family and friends, angel investors, crowdfunding, and an entrepreneur’s personal wealth (Ascher, 2012; Gompers & Lerner, 2001; Wong, Bhatia, & Freeman, 2009). The importance of early-stage professional investment in supporting the scaling of high-growth ventures makes it unsurprising that discussions about such investment are one of the primary themes of entrepreneurship discourse. In sectors in which entrepreneurs pursue exponential (“hockey stick”) growth, such as internet technology, early-stage professional investment often represents a key source of funding that gives entrepreneurs access to the funds they need to develop their products, engage in R&D, hire a sales force, and create a marketing campaign (e.g., Davila, Foster, & Gupta, 2003). As Figure 2 illustrates, the venture capital theme was present in approximately 5% of discourse in the corpus. This percentage may reflect that, while professional investment is an important topic amongst some types of entrepreneurs, only a small

percentage of entrepreneurs are creating the types of fast-scaling ventures that need or can generate the type of returns that appeal to such investors. ***New venture entrepreneurship***. A final theme was comprised of words, like “startup,” which are a direct reference to new businesses and the creation of new organizations. Words associated with this theme were only present in less than 5% of the discourse, which might seem surprising given it is a corpus of entrepreneurship discourse; but there are at least two explanations for the theme’s low frequency relative to other common themes. First, words that are directly related to the creation of new organizations, such as “new venture,” might not need to be explicitly stated because the discourse was collected from entrepreneurship websites. In other words, there may be an implicit understanding that conversations are about activities involved in the creation of new firms and, thus, it is not necessary to overly use words like “startup” or “new venture” (e.g., articles about marketing challenges in new ventures, might simply refer to “marketing challenges” because the understanding is that the focus is new firms).

More subtly, the low prevalence of the *new venture entrepreneurship* theme, relative to the other themes, may reflect the fact that entrepreneurship is increasingly not confined to the creation of new organizations (Morris & Jones, 1999). Rather, contemporary definitions of entrepreneurship (and “entrepreneurial”) emphasize that entrepreneurship is the creation of innovative organizations, products, or initiatives that create value (Nasution et al., 2011; Roundy, Bradshaw, & Brockman, 2018). Pursuing opportunities for innovations that produce value can be done outside the startup context, such as in established organizations (cf. work on corporate entrepreneurship; Kuratko, Hornsby, & Covin, 2014; Zarei, 2017), or as part of causes, movements, or other types of temporary organizations that do not require the establishment of formal (fully-incorporated) ventures (Burke & Morley, 2016). Entrepreneurship discourse reflects these broader views of entrepreneurial phenomena.

The evolution of themes in entrepreneurial discourse

To examine how the themes identified in the previous section changed over time, we calculated the average frequency index for each theme during a given year, as:

$$F_{yt} = \frac{\sum_{i=1}^{|T_t|} f_{iy}}{|T_t|} \quad (2)$$

where:

t = the theme number ($t = 1, 2, \dots, 5$)

y = the year ($y = 2001, \dots, 2016$)

F_{yt} = the frequency of theme t in year y

T_t = the set of keywords in theme t .

$|T_t|$ = the cardinality of set T_t , that is, the number of keyword each set T_t
 f_{iy} = frequency of keyword i in year y

Figure 3 represents the frequency of each theme during the 2001-2016 period.

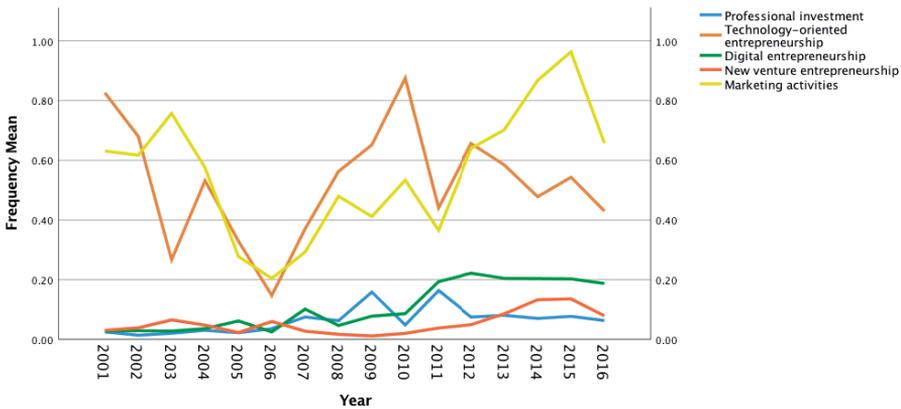


Figure 3. The evolution of themes in entrepreneurship discourse

The figure indicates that the five themes can be further classified into two superclusters consisting of *marketing activities* and *technology-based entrepreneurship*, which during the span of the study were the most frequently-occurring themes in entrepreneurship discourse, and *digital entrepreneurship*, *professional investment*, and *new venture creation*, which were less dominant (occurring in less than 20% of the corpus) but have a continuous (albeit slightly increasing) presence during the past 16 years. One way to interpret these findings is that they indicate that marketing and technology are at the core of discourse about entrepreneurship while conversations about digital entrepreneurship, investment, and new venture activity are supplemental themes.

Several additional trends emerge when examining the themes separately. For instance, “digital entrepreneurship” steadily increased from 2001 to 2010,

presumably as the social media sector grew in prominence. From 2010-2012, there was a steep increase in digital entrepreneurship discourse, which has since leveled off. One possible explanation for the plateauing of the theme is that as social media platforms like Twitter and Facebook have become ubiquitous, the creation of business models and innovations based on digital technologies became an accepted part of entrepreneurship and, hence, a theme in entrepreneurship conversations that receives less attention. Furthermore, it is intuitive that *technology-based entrepreneurship* is a more common theme over time than *digital entrepreneurship* because the former is a more general type of entrepreneurship that includes a wider range of business models, industries, and products. Similarly, *marketing activities* is a more commonly occurring theme than professional investment because all ventures must interact with customers, but a smaller percentage pursue (and receive) professional investment. Overall, entrepreneurs' language reflects what is occurring in both the startup community and the general marketplace.

DISCUSSION

The role of language in constructing and describing entrepreneurial activities is a topic receiving increased interest (cf. Clarke, Cornelissen, & Healey, in press; Spinuzzi, 2016). The theme-level content of entrepreneurship discourse is, however, not fully understood. Two overriding questions guided our study: what are the primary themes of entrepreneurship discourse? Moreover, how have these themes changed over time? Below, we summarize the answers we uncovered and examine the contributions and implications of our findings to scholars and practitioners.

Contributions to scholarship

Despite growing attention to the discourse of entrepreneurs, we know surprisingly little about the specific themes that constitute their language. In this study, we identify the five most common themes in entrepreneurship discourse (marketing activities, technology entrepreneurship, digital entrepreneurship, professional investment, and new venture entrepreneurship) during the past 16 years. In doing so, we uncover, arguably, the most frequently discussed topics among entrepreneurs and the issues that they are giving the greatest attention. By creating a corpus from a range of national and international websites (from the Forbes Best 100 Websites for Entrepreneurs), we were able to identify the key themes in general entrepreneurship discourse, rather than focusing on the discourse tied to a specific subset of entrepreneurs, organizations, or industries. We were also able to approach the analysis

without *a priori* assumptions about what themes are most important to practicing entrepreneurs. By identifying the word- and phrase-level patterns that create distinct themes in entrepreneurship language, we make several conceptual and empirical contributions to entrepreneurship research.

First, our findings provide empirical support for intuitive trends in entrepreneurship, such as the rise of technology and digital entrepreneurship. To the extent that entrepreneurship discourse both reflects and helps to construct what is given attention (e.g., Logan, 1999), the themes we identify represent the issues that entrepreneurs devote most of their attention to discussing. Related to this point, the findings also call into question whether the concepts receiving the most attention from scholars are the main topics comprising entrepreneurship discourse. For most of the themes, there is alignment between the existence of a robust stream of academic research and a vibrant practitioner discourse (e.g., technology entrepreneurship; professional investment; new venture entrepreneurship).

However, for two themes – marketing activities (in an entrepreneurship context) and digital entrepreneurship – the academic literature seems to be lagging practitioner discussions, which suggests that more research is needed on these aspects of entrepreneurship. For instance, the stream of research that has developed at the marketing and entrepreneurship “interface” (e.g., Hills & Hultman, 2011), the creation of academic organizations focused on this topic (e.g., the Entrepreneurial Marketing special interest group (SIG) in the American Marketing Association), and the scholarly events dedicated to marketing issues in entrepreneurship (e.g., the Global Research Symposium on Marketing and Entrepreneurship), are all making in-roads in drawing attention to the importance of marketing in entrepreneurial activities. However, in many respects, this research is still considered a “niche” topic within the broader academic conversation about entrepreneurship. Our findings suggest that marketing issues are front-and-center in practitioner discourse and should occupy a more central position in academic conversations.

Furthermore, it is useful to think about what the two dominant themes in entrepreneurship discourse – technology entrepreneurship and marketing – represent. On a deeper level, the creation of new technologies is core to what entrepreneurs do and represents a primary form of “value creation” (e.g., Lepak, Smith, & Taylor, 2007). The introduction, development, and delivery of innovative technologies is central to the function that entrepreneurs serve in the marketplace. However, for entrepreneurs to be financially viable, they must also engage in “value capture” (Fayolle, 2007), which involves “the appropriation

and retention by the firm of payments made by consumers in expectation of future value from

consumption” (Priem, 2007, p. 220). Marketing activities are key to capturing value (Mizik & Jacobson, 2003). Thus, the dominant themes in entrepreneurship discourse reflect the two guiding logics – value creation and value capture – that entrepreneurs must manage.³

An interesting, although counter-intuitive, finding is the lack of evidence in practitioner discourse for some of the main themes in entrepreneurship research. Most notably, the topic of “opportunity,” and the examination of how entrepreneurs construct, discover, and develop new opportunities, is one of the most intensely researched topics in the entrepreneurship discipline (cf. Short, Ketchen, Shook, & Ireland, 2010). The word opportunity (and its variants), however, did not load on any of the five main themes we identified. There are at least two explanations for this result. First, opportunity may be a concept so pervasive in entrepreneurship, and so fundamental to the phenomenon, that entrepreneurs do not find it necessary to draw explicit attention to it. If so, then there is an unstated assumption among entrepreneurs that most conversations involve some aspect of turning an opportunity into a viable business. In contrast, “opportunity” may instead be a concept that scholars devote significant time to understanding while entrepreneurs focus on more concrete topics and practices (Gartner, Stam, Thompson, & Verduyn, 2016). Entrepreneurs may not spend time thinking and discussing concepts like opportunity because they are viewed as ethereal and not directly involved in day-to-day entrepreneurial activities. Our findings suggest that research is needed to examine the degree to which the opportunity concept plays a role in the practices of entrepreneurs.

The prevalence of the “digital entrepreneurship” theme, particularly post-2010, suggests that scholars should devote more attention to the growing digital infrastructure (Nambisan, 2017) and how it is changing entrepreneurial activities. For instance, research is needed on how entrepreneurs harness “technological affordances (Gibson, 1977) created by digital technologies and infrastructures,” and how the digitalization of the economy represents an “economy-wide redesign of value creation, delivery, and capture processes” (Autio et al., 2018: 74). At the same time, scholars should be attuned to changes in the tenor of entrepreneurial (and consumer) discourse about digitization as there may be a growing dialogue about the negatives of the digitalization of society and a developing counter-cultural movement away from digital to analog (e.g., Sax, 2016). Overall, our findings contribute to entrepreneurship research by serving as a reminder that scholars should be aware of the main themes in discourse about entrepreneurship to ensure that their research has some relevance to practitioners (cf. Vermeulen, 2007).

³ We thank an anonymous reviewer for suggesting this line of thinking.

Our study also has methodological implications. Most research on entrepreneurship and discourse employs qualitative methods, such as interviewing and ethnographic observation, and utilizes small samples comprised of entrepreneurs from the same organization, industry, or geographic area. Our findings illustrate the use of quantitative, computer automated text analysis (CATA) and a “Big Data” approach (Asllani, 2014). Our methodology allowed us to construct a broadly-representative corpus of entrepreneurship discourse comprised of over 3 million words and over 3000 unique webpages. To the best of our knowledge, we are the first scholars to use this type of methodology in the context of entrepreneurship discourse. Our methods, which we describe in detail and can be followed by other researchers, represent an innovative approach to analyzing entrepreneurs’ language.

Implications for practitioners

Research examining entrepreneurship discourse consistently finds that the language entrepreneurs use to conceptualize and describe their ventures matters. Language is not merely a reflection of cognition or behaviors; it can shape thinking and action (Lewis, 1966). For this reason, if entrepreneurs want to participate in conversations about entrepreneurship (e.g., when pitching their ventures or when gathering information from other members of their entrepreneurial ecosystem; Roundy, 2016), it is important for them to be aware of the main themes in entrepreneurship discourse so that they can tailor their language accordingly.

The content of the specific themes we identify also has implications for entrepreneurs. For example, entrepreneurs should acknowledge the important role played by marketing and what can be gained by taking a consumer perspective. Although this might seem like an obvious insight, many entrepreneurs, because of their backgrounds in non-business disciplines such as engineering and computer science, adopt a product- rather than customer-focus (Rosen, Schroeder, & Purinton, 1998). However, as evidenced by the high frequency of discussions about marketing and consumer activities, entrepreneurs are devoting an increasing amount of their discourse to marketing issues. At the same time, even though it was one of the least common of the five primary themes, discussions about professional investment still appeared in between 5% and 18% of website discourse. Given the extremely small percentage of firms that qualify for and receive professional investment (cf. Rao, 2013), this theme may actually be *over*-represented in entrepreneurs’ conversations. That is, entrepreneurs may be too concerned with discussing “how to attract venture capital” rather than pursuing other funding options such as bootstrapping or crowdfunding (e.g., Belleflamme, Lambert, & Schwienbacher, 2014). Thus, entrepreneurs could use our findings to assess

what they are spending their time discussing and to assess whether other topics should be the focus of their attention and discourse.

Limitations and directions for future research

Despite the contributions of our research, it was not without limitations, which serve as directions for future research. First, our sample was comprised entirely of discourse from entrepreneurship websites. Although our sample produced a large corpus, it is not exhaustive of all types of entrepreneurship. Thus, while the corpus is representative of larger conversations about entrepreneurship, there may be some groups that are not part of these conversations. For example, there are some types of entrepreneurs, such as traditional small business entrepreneurs, that may be less likely than entrepreneurs who are growing rapidly-scaling ventures to take part in the discussions of the websites we examined. Furthermore, the “Forbes Best 100...” list is only a sample of global entrepreneurship discourse and has the limitation of only representing English-speaking journals. Research is needed examining the discourse of entrepreneurs outside the Western context.

In addition, as we have noted, our corpus is comprised of discourse from practitioners and does not reflect academic discourse about entrepreneurship. An important direction for future studies is formally analyzing the extent to which discourse contained in scholarship about entrepreneurship is lagging (or leading) practitioner entrepreneurship discourse. To explore this issue, researchers could create a corpus, similar to the one constructed for this study, but comprised of a collection of academic entrepreneurship articles from the same period as our study (e.g., all articles published in a particular journal or set of journals). Our text mining methodology could then be used to identify the main themes in academic entrepreneurship discourse to determine how they have changed over time and how much scholarly discourse matches or diverges from practitioner discourse.

An additional avenue for future research is to go beyond examining themes to analyze the deeper-level linguistic characteristics of entrepreneurship discourse. For example, CATA software, such as the Linguistic Inquiry and Word Count (LIWC) program, could be used to examine the social and psychological properties of entrepreneurial discourse, including its emotionality and concreteness (cf. Pennebaker et al., 2001).

CONCLUSION

Entrepreneurship is increasingly viewed as a potent engine for unlocking economic potential and generating value. Language is involved in all facets

of entrepreneurship, including when entrepreneurs “develop an innovation, look at possible markets, conduct market research, seek intellectual property protection, develop a business model, describe a product, identify a value proposition, and pitch to stakeholders” (Spinuzzi, 2016, p. 316). Thus, it is important to understand what comprises entrepreneurial discourse. The study described in this paper represents the first steps toward mapping entrepreneurship discourse and identifying its key themes. We hope that our findings stimulate thought, debate, and ultimately future research, which produces a deeper understanding of the language of entrepreneurs.

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Abstrakt

Uczeni poświęcają dużo uwagi językowi przedsiębiorczości i jego wpływowi na poznanie, zachowanie i wyniki przedsiębiorców oraz ich interesariuszy. Jednak podstawowe tematy, które stanowią język przedsiębiorców, są wciąż niepoznane. W tym częściowo indukcyjnym badaniu identyfikujemy najczęstsze tematy dyskursu na temat przedsiębiorczości i badamy, jak zmieniały się one z czasem. Aby zidentyfikować tematy w języku przedsiębiorców, używamy technik analizy danych połączonych z algorytmami wyszukiwania tekstów i przeprowadzamy długoterminową analizę istoty dyskursu o przedsiębiorczości. Nasze badania ujawniają pięć dominujących i powtarzających się tematów w dyskursie na temat przedsiębiorczości. Są to: działania marketingowe, przedsiębiorczość ukierunkowana na technologię, przedsiębiorczość cyfrowa, inwestycje profesjonalne i przedsiębiorczość z zakresu nowych przedsięwzięć. Wskazując

kluczowe tematy dyskursu przedsiębiorców i przedstawiając ich transformację w czasie, nasze badanie wnosi teoretyczny i metodologiczny wkład w badania nad przedsiębiorczością. Wyznaczamy obszary, w których literatura akademicka wydaje się być opóźniona w stosunku do dyskusji praktyków i sugerujemy, że uczeni powinni oceniać badania pod kątem tego, jak ściśle tematy są skalibrowane z głównymi tematami w dyskursie przedsiębiorców. Nasze odkrycia przynoszą także praktyczne implikacje dla przedsiębiorców, identyfikując główne tematy, na które zwraca się uwagę, co pozwala przedsiębiorcom ocenić, czy tematy, które składają się na ich codzienny dyskurs, są zgodne z tematami podkreślanymi w szerszym dyskursie na temat przedsiębiorczości.

Słowa kluczowe: *przedsiębiorczość, komunikacja między przedsiębiorcami, dyskurs, analiza tekstu, analityka danych.*

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Book Review: Directions of Development of Public Administration in Poland

Aleksander Jakimowicz¹, Lech Nieżurawski²

Reflections on the sidelines of the book by Daniel Rzeczkowski (2014), *Potencjał Innowacyjności Sektora Administracji Publicznej [Innovative Potential of the Public Administration Sector]*. Warsaw: Wydawnictwo Naukowe PWN. Pages 164. ISBN, EAN: 9788301174590.

The cognitive purpose of Daniel Rzeczkowski's book is the explication of the reasons of a gradual decline of Poland's position in the international ranking of innovativeness of the e-Government sector. The ranking is prepared every two years by the UN. According to the basic claim of the work, that objective cannot be achieved without transition to a local level and explaining how the public sector of administration works, and how it functions at the level of communes. This entails using case study as one of the basic research methods. The reasons for the selection of the Warmia-Masuria Province have been made clear in the work. The research hypotheses assumed by the author have inclined him to undertake research on human capital resources on a wider scale in the above-mentioned province. On the one hand, the web pages of commune offices, and the bulletins of public information placed there, are evaluated as potential innovation carriers and, on the other, what we have here is a unique attempt at the identification of systematic errors in the process of public services rendering. In connection with the latter, the author refers to the hypothesis of rational expectations. The research issue raised in the work should be regarded as non-trivial and practical. Also, the innovatory approach consists in proposing methods of comprehensive evaluation of the public administration sector at the level of communes. Besides, the book has certain theoretical advantages. The conclusions drawn

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on the basis of the empirical research have allowed the author to propose development of such a model of perception gaps, in which local and central multimedia customer service offices would become a mechanism for the elimination of the gaps.

The work, constituting the subject matter of the present discussion, consists of the introduction, the contents, seven theoretical-empirical chapters, the conclusion and the bibliography. In the first chapter, the reasons for undertaking the research, the objectives, the scope of research work, the research hypotheses and the applied methodology are presented. The author has undertaken an extremely important and, at the same time, challenging task of explicating the reasons for the systematic decline of the Polish public administration sector's innovativeness. The search for a comprehensive method of evaluation of the e-Government sector at a local level and an attempt at an identification of innovativeness in the customers of public administration communal offices, indicate the genuineness of this study. In the research proceedings exemplification was used, which allowed the author to fluently shift the considerations from an international to a local level in order to "point out the factual gaps in the system of public services rendering in this region" (p. 10) in the example of communes and of the condition of human capital in the Warmia-Masuria Province. The logical structure of the work presented in this chapter involves the separation of three pillars of research – two empirical and one theoretical. The first empirical pillar covers the research on the quality of public services rendered online. It involved the application of an analysis of focuses on the evaluation of the communal office's web pages and public information bulletins found there. The second empirical pillar involved the evaluation of human capital in the region in question and the application of the principle of correspondence analysis for the purposes of the detection of the systematic errors occurring in the processes of communication between a civil officer and a customer. The theoretical pillar refers to service quality models and processes of reduction of the perception gaps predicted by these models. Here, once again, the innovatory character of this work shows that, since the proposed-by-the-author multimedia services office, whose design is discussed later in chapter seven, it turns out to be the searched-for mechanism of gaps reduction. Integration of all the themes of this work, empirical and theoretical, has provided a basis for the elaboration of a synthesis, consisting in formulating indications aimed at raising Poland's position in the UN's ranking, thus specifying the necessary conditions for triggering the innovativeness potential inherent in the people entering into interaction with the public administration sector.

One of the advantages of this work is making a reference to wkinomics – a new school of economic thinking based on four principles: openness,

peering, sharing, and acting globally (Tapscott and Williams 2006 2012). Wikinomics is based on seven non-standard business strategy patterns: peer pioneers, ideagoras, prosumers, new Alexandrians, platforms for participation, a global plant floor, and a wiki workplace. The author applies these patterns in his empirical research, which becomes particularly evident in chapter six, where the evaluation of the presumptive potential of the innovativeness occurring in the public administration sector was carried out. Among the author's interesting achievements, the elaboration of a genuine measure of innovativeness potential should also be mentioned; one applied to the evaluation of the communal sector of public administration. It is based on both the UN standards of public sector innovativeness and on some selected wikinomic ideas. The measure takes into consideration economic phenomena. On the one hand, it indicates the necessity to treat the communal public administration offices web pages as platforms for participation (in the sense of the wikinomics) and on the other, it proves that the triggering of presumption processes is an adequate method of managing the natural creativeness and innovativeness of offices' customers. The innovativeness potential measure, presented in this work, utilizes thirteen qualitative-quantitative criteria evaluating the functioning of public administration communal offices from the angle of both supply and demand.

The second chapter is devoted to a detailed discussion of the methodology applied in the evaluation of e-Government systems in the particular countries. Here, the construction of the E-Government Development Index and its components: the index of services provided online, the coefficient of the telecommunication infrastructure and the coefficient of human capital, is clearly explained. In the final part of chapter two, the changes in Poland's position in the international E-Government Development Index Ranking in the years 2008–2012 are shown against the background of central-eastern European countries. It turns out that the stagnation in the development of the public administration sector has taken place in the whole region except for Russia and Moldavia, where very rapid improvement has been observed. That would suggest the possibility of exploitation of the solution developed by the author for the Warmia-Masuria Province, not only in the other regions of Poland but also in neighboring countries. The correctness of this line of reasoning follows from the existence of the common ground of the stagnation of the public administration sector in the region in question. Thus, the research proceedings are exhaustive as they began with the exemplification leading from global macroeconomic issues to local problems, and were concluded with a synthesis which leads from the level of Polish communes to an international level. The author is perfectly aware of the inadequacies of UN methodology. Adequate as it is for the purposes of macroeconomic

analysis and international comparisons, it fails at a local level when Polish communes are concerned. Hence, there occurred a need to develop a suitable measure of innovativeness potential, which could take into consideration the specificity of public administration communal offices. As has already been pointed out above, the author has lived up to that task perfectly.

In chapter three, selected issues pertaining to the quality of public administration sector services are raised. After a brief discussion about the necessity for adjustment of the quality of public sector services to the standards pertaining in the private sector, the author discusses the Gummesson 4Q model of offering quality, one which takes into consideration four types of quality: of the design, of the production and delivery, of the relationship and of the result. This model has provided valuable guidelines, which were used in the empirical studies presented in the further sections of this work. In the chapter in question, the model of perception gaps was also included, which is particularly useful in the public sector. The sources of these gaps are the divergences between people's expectations concerning the functioning of public administration offices and the authentic condition of these offices. A relatively interesting problem raised in this chapter is pointing to the possibility of explication of perception gaps on the basis of the hypothesis of rational expectations, familiar in economics. It allows one to interpret these gaps as a result of systematic errors occurring in the communication processes between a customer and a civil officer. Such an approach was support for the practical evaluation of the presumption innovativeness potential, which was performed in chapter six. Another remarkable contribution made by the author is the use of a modified matrix of importance-performance for the interpretation of the results provided by the maps of correspondences.

Chapter four contains a general description of the Polish e-Government sector. The legal grounds of this sector's functioning were indicated, the Electronic Platform of Public Administration Services (e-PUAP) was characterized and the elements of the long-term strategy, aimed at the implementation of the idea of open office, were listed. While assessing the condition of e-services in the last decade, the author discovers that, in spite of its initial successes, we are nowadays facing stagnation in the growth of the e-Government sector, as only a very small number of public services are fully available online.

In chapter five, the author undertook the challenging task of examining the evaluation of the quality of public services rendered online by communal public offices in Warmia-Masuria Province. The research focused not only on determining the extent to which customers' needs are met but also on describing the ability of offices to exploit the innovation potential of the

users. The criteria for the evaluation were developed in such a way as to take into consideration both the proposals of the prosumer approach, postulated by wikinomics and e-Government ideas. The methodology applied here is adequate for this type of task. The communal web pages were evaluated in accordance with the standards of the WAES system (*Website Attribute Evaluation System*), i.e. a multi-criteria system of evaluation of online services involving the binary method. Next, using the k-means method, the clustering of communes was performed by dividing them into four groups, depending on the quality of their websites (low, average, high and very high). Similarly, the quality of communal public information bulletins was assessed. The scores obtained by the particular offices depended on the online availability of the information concerning each of the offered public services, and also on the fact of attachment or non-attachment of suitable forms to each of them. The scores were assigned using the binary system – either a given feature was present or not. As before, the clustering of communes was performed using the k-means method. They were divided into four groups, depending on the quality of their bulletins of public information (low, average, high and very high). The clustering of communes into wealth categories from the point of view of the online services and public information bulletins run by them is a very important cognitive tool, both from the theoretical and the practical point of view. Indeed, not only does it allow for an adequate qualitative description of the phenomenon under study but it also defines the tasks that each commune has to face, indispensable to unlock its supply- and demand-related factors of innovation.

As far as the evaluation of the web pages and public information bulletins is concerned, the research consisted of two stages. The first stage of the research was carried out in 2009, whereas the second was in 2012. In this way, the analysis does not have a static nature, it is not limited to only one point in time, but it is dynamic and long-term. The intertemporal comparisons have established that communal offices of public administration are constantly aiming at quality improvement of their websites, but the progress in this field is still unsatisfactory. The author emphasizes the fact that communes are aware of the necessity for a fuller satisfaction of customers' needs. It can be best seen in the example of services such as access to archives, where language versions other than Polish are made available, or assistance in navigating through the site. However, the road to a new type of administration postulated by wikinomics and the UN is still very long. The situation with mailing lists for citizens and possibilities of submitting forms electronically is not much better. It follows from the studies that the progress in the sphere of quality improvement in the communal public information bulletins is a little faster; however, it concerns only the first ten criteria. The scores for public consultancy, surveying clients,

service cards and states of affairs, however, are very low. One of the advantages of the chapter is the maps showing the spatial arrangement of communes belonging to the groups, determined by the quality of their websites and by the quality of their public information bulletins.

Chapter six, which is mainly empirical, starts with a discussion about a relatively new category in economy – prosumption, on which wikinomics is based. The essence of prosumption is the blurring of distinctions between the classical producer and the consumer by including the latter in the processes of designing, creating and producing goods and services. In accordance with the principles of wikinomics, the development of prosumption processes – based on social networks – is inevitable, as it is the only way to unlock the customers' potential of innovation and creativity and is also an effective method of lowering the costs of research-development studies in enterprises. However, this calls for a change in the traditional business model of firms and for handing over some part of the control over a product or service to the prosumer communities. These changes are not only limited to the private sector but are increasingly the more frequent concern of the public sector. The objective of chapter six is to evaluate the prosumption potential of innovation which could be used by the public administration bodies of a selected province. In this research, the method of a questionnaire survey was used. It helped identify the needs and conditions of servicing the clients and the communication processes between a customer and a civil officer, as well as determining customers' preferences and expectations. The respondents were adult residents of the province who had been clients of the office at least once. The sample should be considered representative. The estimation error was at a level of 3%, with a confidence ratio of 0.95, which pointed to the sample number being not smaller than $N = 1067$. This condition was fulfilled. The representativeness of the results was increased due to the application of post-stratification of data.

For the purposes of evaluation of the study results, correspondence analysis was applied, whose use had been preceded by statistical verification of numerous hypotheses, crucial from the angle of the research objectives. Making use of the co-existence of phenomena, a segment of customers – carriers of the greatest innovation and creation potential – was determined. Taking into consideration such criteria as a professional career or their household's development, they were either people starting out in life or people with a stable position in society. They declared a readiness to create prosumer social networks supporting the development of public administration; however, unfortunately, their potential has not been exploited so far. In the chapter in question, the hypothesis of rational expectations was also exploited in order to identify the systematic errors occurring in

the processes of interpersonal communication between civil officers and their clients. The proposed-by-the-author transition from the basic activity of public administration offices to the network may bring two kinds of advantages. Firstly, it may help use the natural creativity of people from the public sector which would, however, require not only access to the Internet but also a change in the model of public services rendered in the direction of the society's greater participation in the resources and databases (partner system). Secondly, the sources of irrationality, widely analyzed in this work, may get neutralized by the very act of offices placing most of their activity on the Net. According to the author, the hypothesis of rational expectations in combination with prosumption provides a possibility to realize the basic ideas of e-Government.

In chapter seven of this work, the project of a multimedia customer servicing office is presented, one resulting from both the theoretical considerations and from those conducted in the previous chapters. It is the crowning glory of the research, a synthesis consisting in combination of all the themes of the work in one consistent piece. Here the supply- and demand-related methods of unlocking the innovation potential of public administration are indicated. The most important initiatives pertaining to the supply side are the changes in the state's information and servicing structure. It particularly concerns the e-PUAP system, which – in accordance with the principles of *wikinomics* – requires changes involving its transition to a social platform of participation and innovation. It would allow the state to share quickly and efficiently its information resources with its citizens, entrepreneurs and other public administration units. Multimedia customer servicing offices would be very helpful in the realization of these ideas and they should operate both at a local and central level. They would constitute a valuable addition to the e-PUAP system. Unlocking the innovative potential on the demand side requires actions aimed at the popularisation of prosumption attitudes and the implementation of social networking websites as indispensable elements of the process of public services rendering.

The detailed solutions concerning the provision of the particular public services, accepted in the multimedia customer service offices, should take into consideration the specific character of these services. There should be as many detailed solutions as the number of public services made available online. For this reason, in chapter seven, a reference was made to a case study and the present functioning of one of the most complex public services in Poland – a service involving obtaining a decision concerning building development conditions – was compared with its multimedia solution. For this purpose, diagrams were made identifying the users of a particular kind of service, the bodies participating in the decision-making process, the specific

administrative procedures connected with obtaining a decision concerning building development conditions, as well as suitable maps of the activity involved in the process. As a result, it turns out that the multimedia solution is the best way of implementing the technological and organizational progress in the public administration sector and it does not involve any additional legislation, such as changes in the administrative law.

In conclusion, a reference to the realization of the research goal was made and it was shown that it had been achieved. All four research hypotheses have been positively verified. Also, the necessary conditions for getting the Polish public administration sector out of the state of stagnation in which it is now immersed were formulated.

While reading the work, certain critical comments also come to mind. The first one concerns the lack of a consistent approach to the hypothesis of rational expectations. The reader may have an impression that rational expectations are understood by the author in terms of Muth's conception (p. 107), and so the condition of rationality would consist in the compatibility of the subjective expectations of public administration offices clients with a suitable economic theory. At the beginning everything is correct and, in the present case, the theory in question is the public services model discussed in chapter three, the one which takes into consideration the wikinomics presumption postulate and the main assumptions of e-Government. However, the model considered in the work has distinctly the character of a pattern, and so rationality is understood, in fact, as the degree of accordance of the expectations with this model, and so finally as the degree of reduction of perception gaps predicted by this model. By the same token, what we have in this book is to do with rationality tied to a system of values, where it is a continuous variable which may assume values from a certain interval. As it is a relative feature, its natural interval of changeability should be the open interval from 0% to 100%. The extreme values should be omitted as unreal. Thus, what we have here is a certain system of partial rationality. Consequently, a departure from the traditional stream of research on the hypothesis of rational expectations has taken place.

The author begins his studies on expectations in the classic way and makes use of the direct method of observation of the expectations. In order to collect the data he applies a qualitative survey research and during the data analysis he notices the equivalence between the method of Gourieroux and Pradel's (1986) contingency tables and the applied-by-himself correspondence analysis (p. 13). During the next stage of the analysis, however, he quits the classic methods of studies on rationality and foregoes the standards of the expectations rationality tests in favor of determining the co-existence of phenomena. Such proceedings should be regarded as appropriate since

it had resulted from the non-traditional views on rationality, in which it is understood as a certain kind of distance of the factual condition from the pattern. In this approach, a consolidation of a certain state of irrationality (or of a low level of rationality) is a systematic error – constituting the equivalent of a gap in the public services model – in spite of the fact of undertaking attempts at its elimination. This issue is an attempt at a new approach to the rationality of expectations of the clients making use of a very specific kind of services, namely public services. That is why it should have been discussed in detail in the book and the reader may feel dissatisfied with this connection.

The author should have expanded to a greater extent the methodological part and noted that the theory of graphs (networks) provides alternative methods of examination of the issues raised in this work. Their application could help clarify the considerations, in spite of the fact that these methods correspond to some extent to correspondence analysis. Indeed, the subject matter of his studies is the bipartite graph, whose nodes belong to two disjunctive sets and no edge connects the nodes from the same set. The nodes are the units under study, namely the set of public administration offices and the set of their clients, understood as physical persons and entrepreneurs, whereas the interactions between them are represented by the edges. Therefore, the interaction inside the set of offices and inside the set of clients is not taken into consideration. In such an approach, it immediately transpires that only the cases of G2C (*government to citizen*) and G2B (*government to business*) are under examination, while the case of G2G (*government to government*) was omitted in the work, although it would have followed from the declaration in the first chapter (p. 12) that it would be considered.

Tapscott and Williams (2006), in their book on wkinomics, encourage the readers to add subsequent chapters to it since this new science, characterized by a non-standard perception of management processes, is only in the making. The book by Daniel Rzeczkowski meets that challenge since it constitutes a successful attempt at combining the basic ideas of prosumption with the conceptions of e-Government and their practical application.

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