ISSN 0350-137X UDK: 338 (497,1)

ЕКОНОМИКА

3

LXVI NIŠ, 2020

МЕЂУНАРОДНИ ЧАСОПИС
ЗА ЕКОНОМСКУ ТЕОРИЈУ И ПРАКСУ И ДРУШТВЕНА ПИТАЊА

ЕКОНОМИКА

Часопис излази четири пута годишње Година LXVI, VII-IX 2020, број 3

ИЗДАВАЧ: Друштво економиста "Економика" Ниш
СУИЗДАВАЧИ: Институт за економику пољопривреде - Београд, Економски факултет у Суботици, Факултет за менаџмент - Сремски Карловци, Друштво економиста Ниша, Факултет за примењени менаџмент економију и финансије МЕФ - Београд

1. Часопис "Економика" покренут је јула 1954. године и под називом " Нишки привредни гласник" излазио је до јуна 1957. године, а као "Привредни гласник" до краја 1969. године. Назив "Наука и пракса" носио је закључно са бројем 1/1973. год. када добија назив "Економика" који и данас има.

2. Часопис су покренули Друштво економиста Ниша и Друштво инжињера и техничара Ниша (остало као издавач до краја 1964. године). Удружење књиговођа постаје издавач почев од броја 6-7/1958. године. Економски факултет у Нишу на основу своје одлуке броја 04-2021 од 26.12.1991. године постао је суиздавач "Економике". Такође и Економски факултет у ПриШтини постао је суиздавач од 1992. године. Почев од 1992. године суиздавач "Економике" је и Друштво за маркетинг региона Ниш. Као суиздавач "Економике" фигурирали су у току 1990-1996. године и Фонд за научни рад општине Ниш, Завод за просторно и урбанистичко планирање Ниш и Корпорација Винер Брокер Ниш.

3. Републички секретаријат за информације СР Србије својим Решењем бр. 651-126/73-02 од 27. новембра 1974. године усвојио је захтев "Економике" за упис у Регистар новина. Скупштина Друштва економиста Ниша на седници од 24. априла 1990. године статутарном одлуком потврдила је да "Економика" има статус правног лица. На седници Скупштине Друштва економиста Ниш од 11. новембра 1999. године донета је одлука да "Економика" отвори посебан жиро-рачун.

4. Према Мишљењу Републичког секретаријата за културу СР Србије бр. 413-516/73-02 од 10. јула 1973. године и Министарства за науку и технологију Републике Србије бр. 541-03-363/94-02 од 30. јуна 1994. године "Економика" има статус научног и ранг националног часописа "Економика" је почев од 1995. добила статус међународног економског часописа.

5. УРЕДНИЦИ: др Јован Петровић (1954-1958), Миодраг Филиповић (1958-1962), Благоје Матић (1962-1964), др Драгољуб Стојићковић (1964-1967), др Миодраг Николић (1967-1973), др Драгољуб Симоновић (1973-1984), др Миодраг Јовановић (1984-3-4/1988), др Драгољуб Симоновић (1990-2019), др Зоран Симоновић (2019-до данас).

ЧАСОПИС ЈЕ ИНДЕКСИРАН У СЛЕДЕЋИМ БАЗАМА:

ERIH Plus	RePEc	DOAJ
Index Copernicus	CEEOL	SHERPA / ROMEO
EBSCO host	EconPapers	ProQuest
J-Gate	CABI	EZB
SSRN	ECONLIT	CNKI

Лектор за енглески језик
ВЛАДИМИР ИВАНОВИЋ

Компјутерска обрада текста и графике:
МИЛАН Д. РАНЂЕЛОВИЋ

Ликовна опрема:
ПЕТАР ОГЊАНОВИЋ, ДРАГАН МОМЧИЛОВИЋ

Адреса:
"Економика" Друштво економиста
18000 Ниш, Максима Горког 5/36

Телефон Редакције: +381 (0)18 4245 763; 211 443
е-маил: zoki@medianis.net; ekonomika@sbb.rs WEB: http://www.ekonomika.org.rs
Жиро рачун: динарски 160-19452-17

Штампа:
"MEDIVEST"
18000 Ниш
Тираж: 300 примерака

INTERNATIONAL JOURNAL
FOR ECONOMIC THEORY AND PRACTICE AND SOCIAL ISSUES

ЕКОНОМИКА

The Journal is issued four times a year. Year LXVI, VII-IX 2020, Vol. 3

PUBLISHER: Society of Economists "Ekonomika", Nis
COPUBLISHERS: Institute of agricultural economics - Belgrade, Faculty of Economics - Subotica, Faculty of management - Sremski Karlovci, Economic Association of Nis, Faculty of Applied Economics and Management Finance MEF - Belgrade

1. The journal EKONOMIKA was initiated in July 1954. It was published as "Nis Economic Messenger" till June, 1957 and as "The Economic Messenger" till the end of 1969. The title "Science and Practice" it had till the issue 1/1973 when it changed its name into EKONOMIKA as it entitled today.

2. The Journal was initiated by the Society of Economists of Nis and the Society of Engineers and Technicians of Nis (the latter remaind as the publisher till the end of 1964). The Society of Accountants became its publisher starting from the issue no. 6-7/1958. The Faculty of Economics, Nis, on the basis of its Resolution No. 04-2021 from December 26, 1991, became the co-publisher of EKONOMIKA. Likewise, the Faculty of Economics of Pristina became the co-publisher since in 1992. Starting from 1992, the co-publisher of EKONOMIKA has been the Society for Marketing of the Region of Nis. Other co-publishers of EKONOMIKA included, in the period 1990-1996, the Foundation for Scientific Work of the Municipality of Nis, the Institute for Spatial and Urban Planning of Nis and the Corporation Winner Broker, Nis.

3. The Republic Secretariat for Information of the Socialist Republic of Serbia, by its Resolution No. 651-126/73-02 from November, 27, 1974, approved of EKONOMIKA's requirement to be introduced into the Press Register. The Assembly of the Society of Economists of Nis, at its session on April 24, 1990, by its statutory resolution, confrmed the legal status of EKONOMIKA. At the session of the Assembly of the Society of Economists, Nis, on November 11, 1999, the resolution was adopted the EKONOMIKA was to open its own bank account.

4. According to the Opinion of the Republic Secretariat for Culture of the Socialist Republic of Serbia No. 413-516/73-02 from July 10, 1973 and the Ministry for Science and Technology of the Republic of Serbia No. 541-03-363/94-02 from June 30, 1994, EKONOMIKA has the status of a scientific and national journal. Starting from 1995, EKONOMIKA has been having the status of international economic journal.

5. EDITORS: dr Jovan Petrovic (1954-1958). Miodrag Filipovic (1958-1962), Blagoje Matic (1962-1964), dr Dragoljub Stojiljkovic (1964-1967), dr Miodrag Nikolic (1967-1973), dr Dragoljub Simonovic (1973-1984), dr Miodrag Jovanovic (1984-3-4/1988), dr Dragoljub Simonovic (1990-2019), dr Zoran Simonovic (2019-till the present day).

THE JOURNAL IS INDEXED IN THE FOLLOWING BASES:

ERIH Plus	RePEc	DOAJ
Index Copernicus	CEEOL	SHERPA / ROMEO
EBSCO host	EconPapers	ProQuest
J-Gate	CABI	EZB
SSRN	ECONLIT	CNKI

Lector
VLADIMIR IVANOVIC

Prepress:
MILAN D. RANDJELOVIC
Cover:
PETAR OGNJANOVIC, DRAGAN MOMCILOVIC

Address:
"EKONOMIKA", Society of Economists
18000 Nis, Maksima Gorkog 5/36

Phone: +381 (0)18 4245 763; 211 443
e-mail: zoki@medianis.net; ekonomika@sbb.rs WEB: http://www.ekonomika.org.rs

Bank Account: 160-19452-17

Printed by:
"MEDIVEST"
18000 Niš
Copies: 300

САДРЖАЈ / CONTENT

ОРИГИНАЛНИ НАУЧНИ РАДОВИ / ORIGINAL SCIENTIFIC ARTICLE

ЕКОНОМИКА
ISSN 0350-137X, EISSN 2334-9190, UDK 338 (497,1)
Vol. 66, july-september 2020, № 3
P. 1-13

Ivana Simić[1]
University of Niš, Faculty of Economics

ORIGINAL SCIENTIFIC ARTICLE
doi: 10.5937/ekonomika2003001S
Received: January, 15. 2020.
Accepted: May, 14. 2020

ARE MANAGERS AND LEADERS ONE AND THE SAME?[2]

Abstract

Although the debate about the relationship between management/manager and leadership/leader has been present in management science for decades, there is still no final general agreement about the character of the mentioned relationship. For many years the prevailing approach, according to which there is no relevant equality between management/manager and leadership/leader, has been replaced with a different one which highlights the high level of overlaping and similarity between the mentioned categories. In this paper, these two approaches are only conditionally labeled as traditional and contemporary. Accordingly, the key features of both these approaches are presented. The author of the paper considers that all these analyses of the relationship between management/manager and leadership/leader, which do not take into account the fact that within an organization it is possible to identify two prominent types of leadership/leaders (formal and informal), are defective and incomplete. The paper emphasizes that the relationship between management/manager and formal leadership/leader is not identical to the relationship between management/manager and informal leadership/leader.

Key words: *manager, leader, traditional approach, contemporary approach.*

JEL classification: M540.

ДА ЛИ СУ МЕНАЏЕРИ И ЛИДЕРИ ЈЕДНО ТЕ ИСТО?

Апстракт

Иако је дебата по питању односа између менаџмента/менаџера и лидерства/лидера у менаџмент науци присутна већ деценијама, она још увек није резултирала неким јединственим ставом. Деценијама преовлађујући приступ према којем између менаџмента/менаџера и лидерства/лидера не постоји знак једнакости, током последњих година уступа место другачијем приступу који истиче висок ниво преклапања и сличности између наведених категорија. У раду се ова два приступа само условно означавају као традиционални и савремени и истовремено се указује на њихову суштину. Аутор овог рада сматра да су све

[1] simivana68@gmail.com, ORCID ID 0000-0002-2167-9791,

[2] The paper is a result of research based on the obligation arising from the Agreement (number 451-03-68/2020-14/200100), signed by the Ministry of Education, Science and Technological Development of the Republic of Serbia and the Faculty of Economics, University of Niš.

оне анализе које приликом разматрања односа између менаџмента/менаџера и лидерства/лидера не узимају у обзир чињеницу да је у организацијама могуће идентификовати два изражена типа лидерства/лидера (формално и неформално) мањкаве и некомплетне. У раду се истиче да однос између менаџмента/менаџера и формалног лидерства/лидера није идентичан односу који постоји између менаџмента/менаџера и неформалног лидерства/лидера.

Кључне речи: менаџер, лидер, традиционални приступ, савремени присуп.

Introduction

Although the management practice, manifested through the application of certain management techniques, dates back to ancient civilizations (Pindur et al., 1995, p. 59), and the beginnings of management theory to the second half of the nineteenth century, the more intensive usage of the term management started right after the Second World War (Engwall et al., 2016, p. 1). The upward line in the theoretical and practical utilization of the expression "management" has resulted in numerous, but also very different interpretations of many issues closely related to it. Some of these differences can be the result of various approaches to certain management topics, addressed by individual management theorists. Other can be identified as a consequence of the evolutionary character of management itself, as well as of the critical attitudes towards the content that management theory offers.

Regardless of the variety of the reasons that induce heterogeneity in the interpretation of particular management subjects, its general consequences are, more or less, expected. Although the differences in opinions can lead to progress and to further development of management science, they may lead also to a confusion generated by difficulties or inability to objectively examine certain categories relevant not only to management theory, but also to management practice.

The aim of the paper is to explain the origin and character of one out of many confusions within management theory and, hopefully, to point out the possibility of its resolution. The emphasis is on the perplexity that manifests itself by different interpretations of the relationship between management/manager and leadership/leader. Starting from the fact that the mentioned confusion is, to a certain extent, caused by the differences in the manner in which management/managers and leadership/leaders are determined, the section that follows points out to them firstly. Thereafter, different approaches are presented to illustrate the range of the ways in which management theorists have explained the relationship between management/manager and leadership/leader. In the concluding part the opinion of the author of the paper regarding the relationship between management/manager and leadership/leader is presented.

The confusion in management science

There is still no consensus among management theorists with regard to how management and manager should be defined. Regardless of the plethora of the literature

devoted to that issue, the theory of management still does not offer any single, universal, or generally acceptable definition of the mentioned categories. Most authors who have made an effort to define management have done it from their own point of view and with the possible "reliance" on one of, often subjectively selected and at the specific moment prevailing, definitions of management. Therefore, in the abundance of definitions that can be found in the literature, there are those that are similar to each other, as well as those that differ significantly. A chronological overview of some of them, offered by certain most prominent management theoreticians, are presented in the text that follows.

Frederick Winslow Taylor, one of the founders of management science defined management as: "The art of... knowing what you want man to do, and then seeing that they do it in the best and cheapest way" (Kaehler & Grundei, 2018, p 22). As an "art", management is also defined by Taylor's contemporary Mary Parker Follett. She described management as "the art of getting things done through people" (Stoner & Freeman, 1989). Opposite to the aforementioned, but also mutually different, are the definitions of management created in the last decades of the twentieth century. Thus, for example, Peter F. Drucker believes that management is: "the specific organ of the new institution whether business enterprises or university, hospital or armed service, research lab or government agency... It devotes a social position and rank but also a discipline and field of study" (Drucker, 1986, p. 9).

On the other hand, Rendal B. Dunham and John Lepley Pierce define management as: "the process of planning, organizing, directing, and controlling organizational resources (human, financial, physical, and informational) in the pursuit of organizational goals" (Dunham & Pierce, 1989, p. 6). Donald C. Mosley, Paul H. Pietri and Leon C. Megginson point out that the management is: "the process of planning, organizing, leading, and controlling the activities of employees in combination with other resources to achieve organizational objectives" (Mosley et al., 1996, p. 15).

Even the first decades of the twenty-first century have not resulted in formulation of any universal or unique definition of management. Thus, for example, Stephen P. Robbins and Mary Coulter advocate that: "Management involves coordinating and overseeing the work activities of others so that their activities are completed efficiently and effectively" (Robbins & Coulter, 2012, p. 8). The same authors perceive the manager as "someone who coordinates and oversees the work of other people so that organizational goals can be accomplished" (Robbins & Coulter, 2012, p. 8). On the other hand, Derek Rollinson (2005) defines the manager as: "a person formally appointed to a role in the organisational hierarchy, associated with which is the formal authority (within prescribed limits) to direct the actions of subordinates. Among other things the role is concerned with some combination of planning, organising, directing and controlling the activities of human resources towards the achievement of set organisational objectives" (Rollinson, 2005, p. 346).

Samuel C. Certo and S. Trevis Certo define management as "the process of reaching organizational goals by working with and through people and other organizational resources" (Certo & Certo, 2012, p. 7). John R. Schermerhorn, Jr. asserts that "Management is the process of planning, organizing, leading, and controlling the use of resources to accomplish performance goals" (Schermerhorn, 2013, p. 14), while "A manager is a person who supports, activates, and is responsible for the work of others" (Schermerhorn, 2013, p. 14). Richard L. Daft highlights that management is "the

attainment of organizational goals in an effective and efficient manner through planning, organizing, leading, and controlling organizational resources" (Daft, 2016, p. 4).

It is obvious that the differences in management definitions are more noticeable if we compare definitions made in the first half of the twentieth century with those created at the end of the twentieth or at the beginning of the twenty-first century. These differences might be the result of not only more complete perception of the character of management, but also the consequence of the evolution of management itself.

The different definitions of management, as well as managers, are just one of the reasons which, consequently, led to a divergent understanding of many other categories within management theory, or categories closely related to management. One of such categories, which has deepened the confusion in management theory, is leadership, as well as the terms closely related to it (e.g. leading, leaders).

Although leadership, as a theme, is mentioned in different disciplines (management, psychology, sociology, political science, public administration, and educational administration) (Van Fleet, 1975, p. 40), which to a certain extent limits the possibilities for its unique definition, the fact is also that within one and the same discipline (such as management) leadership is defined differently. According to R. M. Stogdill, "there are almost as many definitions of leadership as there are persons who have attempted to define the concept" (Stogdill, 1974, p. 7). Only several definitions of leadership and leaders which are present in management theory, are offered in the text that follows.

So, for example, John. P. Kotter (1988) defines leadership as: "the process of creating a vision for others and having the power to translate it into a reality and sustain it" (Rollinson, 2005, 341). Gary Yukl and David Van Fleet (1992) consider leadership as: "a process that includes influencing the task objectives and strategies of a group or organization, influencing people in the organization to implement the strategies and achieve the objectives, influencing group maintenance and identification, and influencing the culture of the organization" (Yukl, Van Fleet, 1992, p. 149).

Donald C. Mosley and his colleagues determine leadership as: "A process of influencing individual and group activities toward goal setting and goal achievement" (Mosley et al., 1996, p. 393). The same authors define leading as: "The management function of influencing employees to accomplish objectives, which involves the leader`s qualities, styles, and power as well as the leadership activities of communication, motivation and discipline" (Mosley et al., 1996, p. 16).

Stephen P. Robbins and Timothy A. Judge defined leadership and leading in the similar way. According to the mentioned authors leadership is "the ability to influence a group toward the achievement of a vision or set of goals" (Robbins & Judge, 2017, p. 419), while leading is "a function that includes motivating employees, directing others, selecting the most effective communication channels, and resolving conflicts" (Robbins & Judge, 2017, p. 41).

According to Derek Rollinson (2005) leadership is: "a process in which leader and followers interact in a way that enables the leader to influence the actions of the followers in a non-coercive way, towards the achievement of certain aims of objectives" (Rollinson, 2005, p. 342). The same author claims that the leader is: "someone who occupies a role which involves conforming to a set of behaviourial norms and expectations emanating from followers, in return for which they confer on the leader a degree of power that (within prescribed limits) allows the leader to influence their actions" (Rollinson, 2005, p. 346).

Bruce E. Winston and Kathleen Patterson point out that the leader is: "... one or more people who select, equips, trains, and influeces one or more follower(s) who have diverse gifts, abilities, and skills and focuses the follower(s) to the organization's mission and objectives causing the follower(s) to willingly and enthusiastically expand spiritual, emotional, and physical energy in a concerted coordinated effort to achieve the organizational mission and objectives" (Winston & Patterson, 2006, p. 7).

The above, as well as many other definitions of leadership/leaders that exist in theory (Berber et al., 2019, p. 169), are dominantly related to the so-called formal leadership, or formal leaders. Parallelly with the formal within the organization exists and significantly affects its business the so-called informal leadership and informal leaders. The fact is that the largest number of research on leadership within the organizational environment is dedicated to formal leadership and formal leaders (Stincelli, Baghurst, 2014, p. 2). Also, the fact is that between formal and informal leadership/leaders there are significant differences, and that these two types of leadership and leaders cannot be treated in the same way.

The differences in definitions of management/manager, as well as dissimilarities in leadership/leader definitions, with dominant focus on the formal and negligence of the informal leadership/leader, can only be considered as some of the reasons that caused a formidable confusion in the theoretical interpretation of the relationship between management/manager and leadership/leader. The great interest of theoreticians for this relationship enabled the identification of two dominant approaches. In this paper, these two approaches are designated as traditional, on the one hand, and contemporary, one the other. Their essence is presented in the section that follows.

Management/managers vs. leadership/leaders: the traditional approach

A more intense debate about the relationship between management/manager and leadership/leader in terms of their conceptual delineation began in 1977 when Harvard Business Review released the paper "Managers and Leaders: Are They Different?" authored by Abraham Zaleznik (Zaleznik, 2001). In this paper, for the first time, management and leadership are treated as "two separate functions" (Azad et al., 2017, p. 1). By specifying the differences between managers and leaders in detail, Zaleznik points out that they are primarily concerned with (Table 1): attitudes towards goals, conceptions of work, relations with others and sense of self (Zaleznik, 2001).

After Zaleznik, the view that there is a clear and obvious distinction between management/manager and leadership/leaders has been advocated by many other theorists. One of the most famous is certainly John P. Kotter (Kotter, 1990; Kotter, 2001). His book "A Force for Change: How Leadership Differs From Management," (1990) is devoted to explaining the character of the mentioned difference. At the very beginning of the book, Kotter indicates that, in the daily conversation, the term leadership is used in two different ways or two different meanings. In the first, leadership is used to designate "a process that helps direct and mobilize people and/or their ideas" (Kotter, 1990, p. 3). In the other, leadership is used to point out "a group of people in a formal position" (Kotter, 1990, p. 3). The latter way of using the term leadership was categorically rejected by Kotter with

the explanation that, in his opinion, some people in a formal position "lead well, some lead poorly, and some do not lead at all" (Kotter, 1990, p. 3). Consequently, although Kotter is completely aware of the fact that "the majority of people who are in positions of leadership today are called managers ..." (Kotter, 1990, p. 3), which coincides with the latter meaning of the term leadership, Kotter states that such an understanding of leadership is not acceptable to him because it "suggests that leadership and management are the same thing ..." (Kotter, 1990, p. 3).

Table 1: Managers vs. Leaders

	MANAGERS	LEADERS
ATTITUDES TOWARD GOALS	Take an impersonal, passive outlook	Take a personal, active outlook. Shape rather than respond to ideas. Alter moods, evoke images, expectations.
	Goals arise out of necessities, not desires	Change how people think about what is desirable and possible. Set company direction.
CONCEPTIONS OF WORK	Negotiate and coerce. Balance opposing views.	Develop fresh approaches to problems.
	Design compromise. Limit choices.	Increase options. Turn ideas into exciting images.
	Avoid risk.	Seek risk when opportunities appear promising.
RELATIONS WITH OTHERS	Prefer working with people, but maintain minimal emotional involvement. Lack empathy.	Attracted to ideas. Relate to others directly, intuitively, empathetically.
	Focus on process, eg. *how* decisions are made rather than *what* decisions to make.	Focus on substance of events and decisions, including their meaning for paricipants.
	Communicate by sending ambiguous signals. Subordinates perceive them as inscrutable, detached, manipuative. Organization accumulates bureaucracy and political intrigue.	Subordinates describe them with emotionally rich adjectives; e.g. «love», «hate». Relations appear turbulent, intense, disorganized. Yet motivation intensifies, and unanticipated outcomes proliferate.
SENSE OF SELF	Comes from perpetuating and strengthening existing institutions.	Comes from struggles to profoundly alter human and economic relationships.
	Feel part of the organization.	Feel separate from the organization.

Source: based on Zaleznik, 2001, p. 1.

Based on such one-dimensional perception of leadership (which takes into consideration only one of the meanings of leadership and neglects other ones) John P. Kotter specifies the key differences between leadership and management (Table 2).

After such an obviously incomplete explanation of the relationship between leadership and management, John P. Kotter points out that it is necessary to establish a close link between them. In this regard, he states that: "This does not mean that

management is never associated with change; in tandem with effective leadership, it can help produce a more orderly change process. Nor does this mean that leadership is never associated with order; to the contrary, in tandem with effective management, an effective leadership process can help produce the changes necessary to bring a chaotic situation under control" (Kotter, 1990, p. 7). It is obvious that although Kotter insists on the differences between management and leadership, he simultaneously points to their mutual complementarity in the organizational environment.

Table 2: Comparing Management and Leadership

	MANAGEMENT	LEADERSHIP
CREATING AN AGENDA	Planning Budgeting – establishing detailed steps and timetables for achieving needed results, and then allocating the resources necessary to make that happen	Establishing Direction – developing a vision of the future, often the distant future, and strategies for producing the changes needed to achieve that vision
DEVELOPING A HUMAN NETWORK FOR ACHIEVING THE AGENDA	Organizing and Staffing – establishing some structure for accomplishing plan requirements, staffing that structure with individuals, delegating responsibility and authority for carrying out the plan, providing policies and procedures to help guide people, and creating methods or systems to monitor implementation	Aligning People – communicating the direction by words and deeds to all those whose cooperation may be needed so as to influence the creation of teams and coalitions that understand the vision and strategies, and accept their validity
EXECUTION	Controlling and Problem Solving – monitoring results vs. plan in some detil, identifying devitions, and then planning and organizing to solve these problems	Motivating and Inspiring – energizing people to overvcome major political, bureaucratic, and resource barriers to change by satisfying very basic, but often unfulfilled, human needs
OUTCOMES	Produces a degree of predictability and order, and has the potential of consistently producing key results expected by various stakeholders (e.g., for customers, always being on time; for stockholders, being on budget)	Produces change, often to a dramatic degree,and has the potential of producing extremely useful change (e.g., new products that customers want, new approaches to labor relations thathelp make a firm more competitive)

Source: Kotter, 1990, p. 6.

The opinion that leaders and managers are different is also represented by many other authors (Bennis & Nanus, 1985; Toor & Ofori, 2008; Fairholm, 2002; Baruch, 1998). Thus, for example, pointing to the difference between managers and leaders, Warren Bennis and Burt Nanus emphasize that: "managers are masters of routine, they accomplish, they are efficient; whereas leaders are masters of change, they influence, they are effective" (Bennis & Nanus, 1985, p. 21).

Starting from the viewpoint that leadership and management are "two completely different functions," and managers and leaders are "not the same people", Shamas-Ur-Rehman Toor and George Ofori point out the conceptual, definitional, functional,

etymological, development and behavioral differences between those processes, as well as between their key subjects (Toor & Ofori, 2008, p. 61). Regardless of the identified differences, Toor and Ofori note that today's organizations need "leaders with managerial capabilities and managers with leadership qualities" (Toor & Ofori, 2008, p. 69).

It is obvious that the foregoing theoreticians insist on a clear distinction between management/manager and leadership/leader. At the same time, they point to the mutual complementarity of management and leadership, as well as to the necessity of simultaneous presence of managers and leaders within the organization (Kotter, 1990, p. 7; Toor & Offori, 2008, p. 69). Moreover, some of them consider that the functions of managers and leaders within the organization can be performed by one and the same person (Fairholm, 2002, p. 8). The aforementioned, only as one of the dilemmas impose the following: if managers and liders are different, how can one person be both manager and leader at the same time?

The explanations of the foregoing theoreticians about the relationship between management/manager and leadership/leader, are in the paper only conditionally classified into the so-called traditional approach. Although the author of this paper considers that those explanations contain some limitations, a dose of abstraction, illogicality and obvious inconsistency (which creates a sort of confusion concerning the relationship between management/manager and leadership/leaders), mentioned features are not of the crucial importance for the author to classify these explanations into the so-called traditional group. Namely, the key criterion for their classification in the traditional approach is chronological, more precisely the first time those confusing explanations of the relationship between management/manager and leadership/leader have appeared in the literature.

Management/managers vs. leadership/leaders: the contemporary approach

Confusing stances offered by the representatives of the traditional approach have launched a debate about their validity and sustainability (Mabey, 2007). As a result of not only a critical attitude towards the traditional approach, but also as a consequence of more objective observations of the characteristics of contemporary organizations, the quality of modern managers, as well as the demands imposed on today's managers, a different approach has appeared in the literature (see: Kolodziejczyk, 2015, p. 123). In the paper that approach is only conditionally designated as a modern or contemporary one. It advocates the practical inseparability of leadership from management. Considering the manner in which the interconnection between leadership and management is explained, it is possible to identify two variants within this approach.

One of the variants of the modern approach (to the relationship between management/manager and leadership/leader) is the one according to which the leadership is considered as just one out of the four sub-processes within the management process, while leadership qualities are attributed to managers. The vision of management as a process that, in addition to planning, organizing and controlling, also includes leadership, and the manager as a subject simultaneously responsible for the management process and for the leadership sub-process, are advocated by the authors (Mosley et al., 1996;

Gulati, et al., 2017) whose view is primarily based on some of more current and dominant management definitions.

So, for example, in their book "Management: Leadership in Action" Donald C. Mosley and his colleagues emphasize that leadership is only part of management and that management, apart from leadership, also includes other management functions (planning, organizing and controlling) (Mosley et al., 1996, p. 393). At the same time, Mosley and his colleagues point out to the extraordinary importance that leadership has for the successful accomplishment of entire management function. For the purpose of emphasizing that significance, in the aforementioned book, Mosley and his colleagues use the terms manager and leader alternately whenever they talk about managers (Mosley et al., 1996, p. 19). In doing so, they are completely aware of the fact that they interpret leadership in a more comprehensive way which, objectively speaking, is not inherent to it (Mosley et al., 1996, p. 393).

Ranjay Gulati and his colleagues (2017) point out that "the distinction between management and leadership is often very subtle" as well as that "most people use the terms interchangeably (when they refer to the operation of a business)" (Gulati et al., 2017, p. 8). Gulati and his colleagues consider that the so-called leadership skills are inherent to managers. Namely, starting from the fact that one of the traditional categorization of managerial skills includes: technical, interpersonal and conceptual skills, Gulati and his colleagues believe that leadership skills are identical to interpersonal managerial skills (Gulati et al., 2017, p. 9).

The second option of the modern approach to the relationship between management and leadership is based on the view that management and leadership are two identical processes, that is, managers and leaders are one and the same. Thus, for example, Boris Kaehler and Jens Grundei consider that making any difference between management/manager and leadership/leader is illogical and artificial and, as such, it should be abandoned (Kaehler & Grundei, 2018, p. 13-14). Namely, the mentioned authors consider that it is impossible to observe leadership isolated from the other management functions (planning, organizing and controlling). In other words, except from "leading people", leaders should also plan, organize and control resources and activities within organization. On the other hand, according to Kaehler and Grundei, managers can not be distanced from leading people. Therefore, the two authors claim that management and leadership are one and the same concept and that any idea of their mutual separation should be abandoned (Kaehler & Grundei, 2018, p. 14). At the same time, Kaehler and Grundei state that there are very few contemporary authors who, like them, equalize leadership and management. Henry Mintzberg is one of them (Kaehler & Grundei, 2018, p. 14).

Henry Mintzberg believes that although it is conceptually possible to make a certain distinction between leadership and management, in practice such a dissimilarity is not feasible, nor necessary, and admits that he even does not understand the attempts to make such a delineation: "Frankly, I don't understand what this distinction means in the everyday life of organizations… How would you like to be managed by someone who doesn't lead? ... Well, then, why would you want to be led by someone who doesn't manage?" (Mintzberg, 2009, p. 8)

The view that management and leadership are one and the same is also represented by a group of authors in their paper "Leadership and Management Are One and the Same"

(Azad et al., 2017). Based on a detailed research of the literature dedicated to the terms: lead, leading, leadership, leader, manage, management, management, and manager, within the respective databases (PubMed, EBSCO, Scopus, Emerald, JSTOR, Business Source Premier, Google Scholar, and ERIC) (Azad et al., 2017, p. 1), the authors of the mentioned paper conclude that "no scientific evidence exists to support the described differences between leadership and management ..." (Azad et al., 2017, p. 1). The same authors claim that leadership and management are not only complementary, but that, in fact, they represent one and the same concept. They point out that, even if it is possible to separate these two concepts in theory, it is impossible to separate them in practice. In doing so, they particularly emphasize the practical inseparability of leadership from management within a high-performing organization. In this context, they state that, in theory separately identified skills necessary for the successful realization of management and leadership functions, in practice manifest themselves through an inseparable continuum created between these functions (Table 3) (Azad et al., 2017, pp. 1-2).

Table 3: Leadership and Management Continuum

LEADERSHIP		MANAGEMENT
Focuses on people		Focuses on things
Articulates a vision		Executes plans
Trusts & develops		Directs & coordinates
Creates change		Manages change
Uses influence	⟷	Uses authority
Authority comes from personal relationships		Authority stems from position in the organization
Thinks strategically		Determines long-term objectives and strategies
Delegates responsibility		Acts decisively
Appropriate risk taking and innovation		Decides how to use personnel and other resources

Source: Azad et al., 2017.

The stance that managers are leaders at the same time, is also present in some practical research. Thus, for example, in one of them which was dedicated to the testing of leadership power, conducted by the Center for Creative Leadership, it was stated that "the respondents in that research were primarily managers" (Bal, et al., 2008, p. 6).

Conclusion

Regardless of the abundance of the opinions offered within the two presented approaches, the author of this paper considers that it is not possible to accept any of them completely and without any limitations. The key reason is that all of the presented opinions are predominantly based on the analysis of the relationship between management/manager and the so-called formal leadership/leader, ignoring the fact that within the organization, in parallel with formal, there are also informal leaders and informal leadership. The processes of formal and informal leadership are different processes within the organization. There is also a significant difference between formal

and informal leaders as subjects primarily responsible for these processes. It turns out that the relationship between management/manager and formal leadership/leader is not identical to the relationship that exists between management/manager and informal leadership/leader. In that sense, the mentioned relations can not be interpreted correctly in a unique way.

When it comes to the relationship between management/manager and formal leadership/leader, management can be considered as a wider and more comprehensive concept. Namely, regardless of the differences between theoreticians in terms of how to define management, according to the most current definitions, management is perceived as a process that includes planning, organizing, leading, and controlling, as its key subprocesses, while the manager is mentioned as the only subject responsible for the overall management process. In order to be able to successfully accomplish the activities that form the content of the formal leadership sub-process, the manager must, among other things, have at his/her disposal the sets of those qualities (knowledge and skills) that any leader should have (for example, an informal leader within the organization, political leader, a leader in a society, etc.).

Due to the above mentioned, in management theory, but also in management practice, it is not recommended to insist on the category of formal leaders within the organization. According to the author of this paper, such insistence only encourages further confusion regarding the relationship between management/manager and leadership/leader.

The character of the relationship between management/manager and informal leadership/leader is different. It happens that, besides formal, it is possible to identify the informal leadership processes within organization. Those processes are not an integral part of the management process. Therefore, the flows and activities of informal leadership processes in the organization are not directed by managers, but by informal leaders. Any member of the organization can be an informal leader. It turns out that the processes of management and informal leadership are not interconnected, as well as that, managers are not the same as informal leaders.

References

Azad, N., Anderson, H. G. Jr., Brooks, A., Garza, O., O'Neil, C., Stutz, M. M., & Sobotka, J. L. (2017). Leadership and Management Are One and the Same. *American Journal of Pharmaceutical Education*, 81(6), Article 102, 1-5. Retrieved from https://www.ajpe.org/doi/pdf/10.5688/ajpe816102

Bal, V., Campbell, M., Steed, J., & Meddings, K. (2008). The Role of Power in Effective Leadership. Center for Creative Leadership. Retrieved from www.ccl.org/wp-content/uploads/2015/04/roleOfPower.pdf

Baruch, Y. (1998). Leadership – Is That What We Study? *The Journal of Leadership Studies*, 5(1), 100-124.

Bennis, W., & Nanus, B. (1985). *Leaders: The Strategies for Taking Change*. New York: Harper-Collins Publisher

Berber, N., Slavić, A., Miletić, S., Simonović, Z. & Aleksić, M. (2019). A Survey on Relationship between Leadership Styles and Leadership Outcomes in the Banking Sector in Serbia. *Acta Polytechnica Hungarica*, 16(7): 167-184.

Bobera, D., Strugar-Jelača, M. & Bjekić, R. (2017). Analysis of leadership styles in medium and large companies on the territory of the Republic of Serbia. *Anali Ekonomskog fakulteta u Subotici*, (37), 117-127.

Certo, S. C., & Certo, S. T. (2012). *Modern Management: Concepts and Skills*. New Jersey: Pearson Education, Inc.

Daft, R. L. (2016). *Management*. Boston: Cengage Learning.

Drucker, P. F. (1986). *Management: Task, Responsibilities, Practices*. New York: Truman Talley Books, E. P. Dutton.

Dunham, R. B., & Pierce, J. L. (1989). *Management*. Glenview, Illinois: Scott, Foresman & Company.

Engwall, L., Kipping, M., & Üsdiken, B. (2016). *Defining Management: Business Schools, Consultants, Media*. New York: Routhledge, Taylor & Francis Group.

Fairholm, M. R. (2002). *Defining Leadership: A Review of Past, Present, and Future Ideas*. Washington: Center for Excellence in Municipal Management. Retrieved from https://www.researchgate.net/profile/Matthew_Fairholm/publication/283048404_Defining_Leadership/links/56278d6d08aed9017d45f3d9/Defining-Leadership.pdf?origin=publication_detail

Gulati, R., Mayo, A. J., & Nohria, N. (2017). *Management: An Integrated Approach*. Boston: Cengage Learning.

Kaehler, B., & Grundei, J. (2018). *HR Governance: A Theoretical Introduction*. Springer. Retrieved from https://www.researchgate.net/publications/326844028_HR_Governance_A_Theoretical_Introduction

Kolodziejczyk, J. (2015). Leadership and Management in the Definitions of School Heads. *Athens Journal of Education,* 2(2), 123-136.

Kotter, J. P. (1990). *A Force for Change: How Leadership Differs From Management*. New York: The Free Press.

Kotter, J. P. (2001). What Leaders Really Do? *Harvard Business Review* (Reprint RO111F), December. Retrieved from https://www.ndti.org.uk/uploads/files/HBR_What-Leaders-Really-Do.pdf

Kumle, J., & Kelly, N. J. (1999). Leadership versus management. *Supervision,* 61(4). 8-10.

Mabey, C. (2007). *Developing Effective Managers and Leaders*. Edinburgh: Edinburgh Business School.

Mintzberg, H. (2009). *Managing*. San Francisco: Berret-Koehler Publishers.

Mosley, D. C., Pietri, P. H., & Megginson L. C. (1996). *Management: Leadership in Action*. HarperCollins College Publishers Inc.

Pielstick, C. D. (2000). *Formal vs. Informal Leading: A Comparative Analysis*. (2000). Working Paper Series 00-04-Sept2000. Retrieved from http://openknowledge.nau.edu/1643/7/Pielstick_CD_2000_FrankeWPS_00-04%281%29.pdf

Pindur, W., Rogers, S. E., & Kim, P. S. (1995). The history of management: a global perspective. *Journal of Management History,* 1(1), 59-77.

Robbins, S. P., & Coulter, M. (2012). *Management*. New Jersey: Pearson Education, Inc.

Robbins, S. P., & Judge, T. A. (2017). *Organizational Behavior*. Pearson.

Rollinson, D. (2005). *Organisational Behaviour and Analysis: An Integrated Approach*. London: Financial Times Prentice Hall.

Schermerhorn, J. R. Jr. (2013). *Management: Learn, Succeed*. USA: John Wiley & Sons, Inc.

Stincelli, E., & Baghurst, T. (2014). A Grounded Theory, Exploration of Informal Leadership Qualities as Perceived by Employees and Managers in Small Organizations. *International Journal of Business Management and Economic Research (IJBMER)*, 5(1), 1-8.

Stogdill, R. M. (1974). *Handbook of Leadership: A Survey of the Literature*. New York: Free Press.

Stoner, J. A. F., & Freeman R. E. (1989). Management. Englewood Cliffs, New Jersey: Prentice-Hall.

Toor, S. U. R., & Ofori, G. (2008). Leadership versus management: How They Are Different, and Why. *Leadership and Management in Engineering*. April, 61-71.

Van Fleet, V. D. D. (1975). Changing patterns of significant authors on leadership and managerial effectiveness. *Journal of Management*, 1, 39-44.

Winston, B. E., & Patterson, K. (2006). An Integrative Definition of Leadership. *International Journal of Leadership Studies*, 1(2), 6-66.

Yukl, G., & Van Fleet, D. D. (1992). Theory and Research on Leadership in Organizations. M. D. Dunnette and L. M. Hough (Ed.), *Handbook of Industrial and Organizational Psychology* (pp. 147-197). Palo Alto, California: Consulting Psychologists Press, Inc.

Zaleznik, A. (2001). Managers and Leaders: Are They Different? *Harvard Business Review,* HBR Classic. Reprint RO401G. Retrieved from http://websites.uwlax.edu/kincman/390%20Paperwork/Managers%20and%20Leaders%203.pdf

ЕКОНОМИКА
ISSN 0350-137X, EISSN 2334-9190, UDK 338 (497,1)
Vol. 66, july-september 2020, № 3
P. 15-26

Svetlana Sokolov Mladenović[1]
University of Niš, Faculty of Economics

ORIGINAL SCIENTIFIC ARTICLE
doi: 10.5937/ekonomika2003015S
Received: March, 18. 2020.
Accepted: May, 14. 2020

APPLICATION OF INSTITUTIONAL INNOVATION IN TRADE – EXPERIENCE OF MARKET-DEVELOPED ECONOMIES

Abstract

One of the main features of trade in developed market conditions is innovation. Almost no sector of the economy is so intensely prone to change and innovation as trade. For this reason, trade development experience of market economies so far is extremely rich and provides opportunities for some generalization and analysis of certain principles in the processes of development and implementation of innovation in trade. In addition, innovation in trade is markedly diverse and abundant, with institutional innovation occupying a significant place. In line with the above, the subject of this paper relates to the analysis of the application of institutional innovation in trade. The objective of the paper is to review the achieved level of institutional innovation in trade of the developed economies. Based on the available secondary data sources, we conduct an empirical study to test the hypothesis of the importance of institutional innovation for the positioning of trading companies. The ANFIS method was used to test the hypothesis. The results of the research showed that the introduction of institutional innovations influences on the positioning of trading companies.

***Key words**: trade, trade institutions, theories, life cycle, trading companies*

***JEL classification:** L81, O31*

ПРИМЕНА ИНСТИТУЦИОНАЛНИХ ИНОВАЦИЈА У ТРГОВИНИ-ИСКУСТВА ТРЖИШНО РАЗВИЈЕНИХ ПРИВРЕДА

Апстракт

Једно од основних обележја трговине у развијеним тржишним условима јесу иновације. Скоро ни један сектор привреде није тако интензивно подложан променама и иновацијама као што је трговина. Из тог разлога су и искуства досадашњег развоја трговине тржишно развијених привреда изузетно

[1] svetlana.sokolov@ekonomski.rs, ORCID ID 0000-0002-9367-4252
This paper is the result of research on obligations under the Agreement on the Implementation and Financing of the Scientific Researche in 2020 (registration number 451-03-68 / 2020-14 / 200100) concluded between the Ministry of Education, Science and Technological Development of the Republic of Serbia and the Faculty of Economics, University of Niš

богата и пружају могућности за одређена уопштавања и анализу извесних законитости у процесима развоја и имплементације иновација у трговини. При томе, уочава се и изразита разноврсност и бројност иновација у трговине, где институционалне иновације заузимају значајно место. Полазећи од ових чињеница, предмет истраживања овог рада односи се на анлизу примене институционалних иновација у трговини. Циљ рада јесте сагледати достигнути ниво институционалних иновација у трговини тржишно развијених привреда. На бази расположивих секундарних извора података, спроведено је емпиријско истраживање којим је тестирана хипотеза о значају институционалних иновација за позиционирање трговинских компанија. Коришћен је АНФИС метод за тестирање хипотезе. Резултати истраживања су показали да увођење институционалних иновација утиче на позиционирање трговинских компанија.

Кључне речи: трговина, трговинске институције, теорије, животни циклус, трговинске компаније.

Introduction

In today's conditions, trade is increasingly becoming the epitome of a dynamic and competitive economic sector. There are numerous reasons for such qualification, as evidenced by the different results of theoretical and practical research. One of them is the permanent and intensive application of innovation in trade, which further qualifies it as an innovation-intensive economic sector. Innovation itself is the fundamental basis of economic progress, regardless of the characteristics of the socio-political system. Thus, Schumpeter (1950) says that competition through innovation is much more significant than competition through price. From this perspective, innovation greatly influences changes in the structure of trade. In doing so, innovation in trade is abundant and diverse. Authors agree that all innovation in trade, generally speaking, can be classified into institutional, functional and technological (Sokolov Mladenović & Vukojević, 2019). Institutional innovation plays a leading role in trade, seen in the long run. It is reflected in the permanent process of market entry, development and disappearance of one group of trade institutions and the emergence of another. In doing so, trade institutions denote different organizational forms, systems, and methods of conducting trade activities. The presence of trading institutions on the market is marked by different forms of competition and market appearance of trading companies. They are mostly reflected in the development of the sales network of trading companies. Each trade institution has its own life cycle, which includes the phase of market entry, growth, saturation, decline and disappearance, or revitalization and upswing. These phases reflect institutional innovation in trade of economies with different level of socio-economic development. Given that the focus of research in this paper is institutional innovation in trade, the paper is divided into three segments. The first part of the paper analyzes the theoretical aspects of institutional innovation in trade. The second part of the paper analyzes the achieved level of institutional innovation in trade of market economies. In the third part of the paper, we conduct research to test the hypothesis of the importance of institutional innovation for positioning of trading companies.

Theoretical backgrounds of institutional innovation in trade

Numerous theories can explain the growth and development of trade institutions. In other words, there are several concepts or theories used to scientifically explain changes in trading institutions, i.e. institutional innovation, given different stages of the life cycle they go through. Generally speaking, these theories provide a conceptual framework for understanding the evolution of trade institutions but also for defining the strategy for their further development. They can be divided into three groups (Gilbert, 2003; Morgan, 2015; Pantano et al., 2017): 1) Environmental theories, 2) Cyclic theories and 3) Conflict theories.

Environmental theories explain changes in trade as a result of changes in the wider environment, such as the crisis in the country's economy, changes in consumer lifestyles, changes in legal regulation, and the like. There are a number of factors that influence changes in trade, such as economic, political, cultural, sociological, demographic, etc. Some of these factors have a direct effect on changes in trade, such as the impact of regulation regarding the opening hours of retail outlets on market supply. On the other hand, some factors have an indirect impact on trade development, such as the employment of women that has changed consumer and purchasing habits. Environmental theories include (Picot-Coupey, Viviani & Amadieu, 2018): macroanalytic theories, dialectical process theory, adaptive behavior and natural selection theory, and market structure and developmental stages theory.

Cyclic theories assume a scenario or pattern in the form of a cycle by which changes in trade can be predicted. This group of theories include (Reynolds et al., 2007): point-of-sale theory, drive-shape dynamics theory, retail harmonic theory, life cycle theory, and life-rhythm law.

Conflict theories assume that changes in trade arise as a result of the mutual relationship between traders, their competitive behavior and adaptation to market innovation. This group of theories includes (Hristov, 2007): mixed assortment trading theory, market gap theory, and polarization theory.

Based on the previous theories, it is possible to identify certain principles arising in the development of trade institutions so far, i.e. the principles underlying institutional innovation in trade (Hristov & Reynolds, 2015; Pantano, 2016; Lovreta et al., 2019):

- As a rule, most developed market economies have institutional as well as other innovation in trade;
- In the less developed economies, the process of accepting institutional innovation in trade is steadily intensifying;
- The process of implementing institutional innovation in trade intensifies as a whole, to shorten the life cycle of trade institutions;
- Major trading companies dominate the process of implementing institutional innovation;
- Institutional innovation is present not only in classical but also in modern forms of trade.

Theoretically and practically speaking, institutional innovation in trade takes place in a particular social environment. It consists of three components: competitors,

manufacturers and consumers. This environment determines the intensity of application of institutional as well as other innovation in trade. In other words, it depends on the manufacturers, consumers and competitors whether or not institutional innovation will be applied in trade. Trading companies are very often viewed as adapters, but very often as original holders of institutional innovation on the local market, which is especially evident in the process of internationalization of trade. Thus, the transfer of institutional innovation in trade between countries with different levels of market development gains in importance. By expanding their operations onto different markets, i.e. through the process of internationalization, trading companies introduce and transfer institutional innovation. Their transfer requires a certain level of economic development, a flexible trade policy, but also an appropriate level of overall education of the population. Thus, some studies have shown difficulties in transferring supermarket technology to less developed countries (Ćuzović, Sokolov Mladenović & Ćuzović, 2019). Specifically, the supermarket technology is based on a constant and rich supply of energy, prepackaged products prepared for widespread use, on modern services and communication, but also on a wide and diversified offer of products and services. Therefore, it is understandable that the development of supermarkets faces fierce resistance from small retailers with traditional sales systems. Their strength varies by country. So, the final word on the success of institutional innovation, in addition to the level of socio-economic development, is to be given by consumers. They are in a position to accept or reject certain institutional innovation, which gives them a significant and sensitive role in the overall processes of implementing innovation in trade.

The achieved level of institutional innovation in trade of market economies

The competitive environment influences the ongoing process of institutional innovation in trade. The disappearance of one group of trade institutions and the emergence of new ones is one of the important trends in trade. This is especially pronounced through (Evans, 2011; Cao, 2014; Pantano, 2016): 1) new trading forms due to changes in consumer lifestyles, 2) shorter life cycle of trading institutions, as new trading forms reach the stage of maturity more quickly, 3) competition among different trading institutions, 4) application of modern technology in trade institutions.

An illustrative example of the ongoing process of institutional innovation in trade is the world's leading retail chains, in terms of sales volume. Based on the latest *Global Power of Retailing 2019* report, one can see the dominant trading institutions or formats used by the largest trading companies in their portfolio. The ten largest trade chains and their trade formats (institutions) are presented in Table 1.

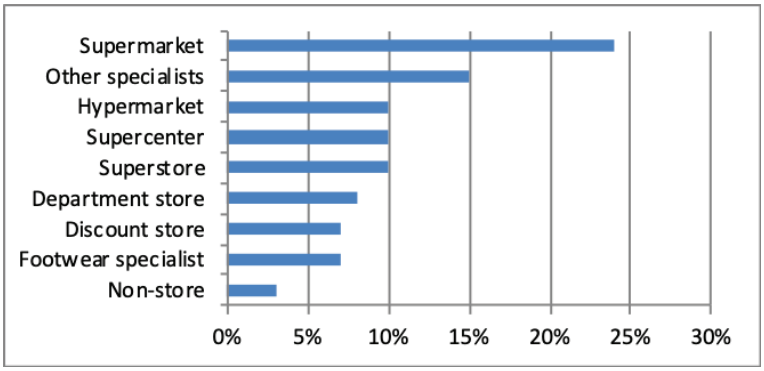
Table 1: Top 10 trade companies, 2017.

Rank	Name of company	Country of origin	FY2017 Retail revenue (US$)	FY2017 Retail revenue growth	Trade institutions (formats)	Countries of operation	% Retail revenue from foreign operations
1	Wal-Mart Stores, Inc.	US	500.343	3,0%	Hypermarket/ Supercenter/ Superstore	29	23,9%
2	Costco Wholesale Corporation	US	129.025	8,7%	Cash & Carry/ Warehouse Club	12	27,2%
3	The Kroger Co.	US	118.982	3,2%	Supermarket	1	0,0%
4	Amazon. com, Inc.	US	118.573	25,3%	Non-store	14	36,8%
5	Schwarz Group	Germany	111.766	7,4%	Discount store	30	58,9%
6	The Home Depot, Inc.	US	100.904	6,7%	Home Improvement	4	8,4%
7	Walgreens Boots Alliance, Inc.	US	99.115	2,1%	Drug Store/ Pharmacy	10	11,9%
8	Aldi Einkauf GmbH & Co. oHG	Germany	98.287	7,7%	Discount store	18	65,1%
9	CVS Health Corporation	US	79.398	-2,1%	Drug Store/ Pharmacy	3	0,8%
10	Tesco PLC	UK	73.961	2,8%	Hypermarket/ Supercenter/ Superstore	8	20,7%
Top 10			1.430.353	6,1%		12,9	25,1%
Top 250			4.530.059	5,7%		9,5	23,6%

Source: Global power of retailing, 2019.

The previous table shows that the 10 largest trading companies use different trading formats or institutions, both classical and contemporary. The use of trade formats (institutions) by the 250 largest retail chains (as a percentage) is shown in Figure 1.

Figure 1: Trade formats of the 250 largest retail chains



Source: Authors calculation

Figure 1 shows that supermarkets have a significant share (24%) in the business portfolio of the largest trading companies, despite the fact that in many market economies, supermarkets are in the saturation phase of their life cycle (Ćuzović, Sokolov Mladenović & Ćuzović, 2017). Hypermarkets (10%), superstores (10%), as well as discount stores show a significant share. Specifically, numerous economic factors have opened the door for increased expansion of discount stores, especially the so-called hard discount stores. These are business formats that follow an aggressive "daily low pricing" strategy with prices 20 to 30% lower than supermarket prices. They offer a limited range of high-turnover products, with a small number of products and brands within each category (Saini & Sahay, 2014). These characteristics of hard discount stores, on the one hand, and the low purchasing power of consumers with the need to buy at the lowest possible prices, on the other, are the reason why hard discount trading companies in their business portfolios report an increased growth rate in the countries where they are present. An example is *Lidl*, part of the German *Schwarz Gruppe*, which is expanding in the countries of the former SFRY. Starting its business with 15 discount stores on the Serbian market in October 2018, *Lidl* has reached 37 discount stores, which are currently present, and it announces further business expansion (https://kompanija.lidl.rs/).

In addition, modern and electronic forms of institutional innovation are also characteristic of trade, which is a direct consequence of the application of modern information and communication technology (Stevanovski & Pavloska–Gjorgjieska, 2016). An illustrative example is *Amazon.com*, which brings together classic and contemporary trading institutions. By annual revenue, the company is today the largest electronic bookstore in the world and the seventh largest employer in the United States. Two years ago, the company introduced a new store format called AmazonGo that has no cashier or cart. Consumers enter the store, register with a mobile phone, pick up products off the shelf, and then exit without being checked. Crucially, there are systems that, thanks to artificial intelligence and computerized data processing, identify what the consumer has purchased and, upon his or her exit from the store, calculate the electronic transaction.

Research methodology and hypotesis

Previous theoretical considerations suggest that trade is an innovation-intensive sector of the economy, especially in the institutional innovation segment. For this reason, we test the hypothesis of the importance of introducing institutional innovation for success or ranking of trading companies in the list of the most successful ones. The empirical research relates to the 250 largest trading companies, from 2012 to 2017, based on Deloitte Touche data (Global Power of Retailing 2014-2019).

Although the mathematical modelling of the trade formats on the success (ranking) of trade companies has been studied already, the main goal in this paper was to apply artificial intelligence technique, adaptive neuro-fuzzy inference system (ANFIS) (Petković et al., 2012) , for the testing of hypothesis of impact of the trade formats on the ranking of trade companies.

After the defined research sample, it is necessary to determine the data that will be subject to analysis. Since the aim is to explore the importance of trade formats (institutions) on the positioning of trade companies, for the purpose of this study, data on the number of used trade formats will be taken from the last six Global Power of Retailing reports. At the same time, according to the available report data, trade companies positioning' relative to the competition will be analysed based on their ranking in the observed reports. The number of trade formats and the number of countries represent the first and the second input for the ANFIS analysis. Rang represent the output parameter of the ANFIS network. Therefore ANFIS network should determine the ranking. The number of trade formats used by trade companies is a determinant of their position in the top 250 world trade companies. In addition to the number of used trade formats, the number of countries where a trade company operates is a statistically significant determinant of ranking among the top 250 trade companies.

Research results and discussion

As it pointed out, ANFIS method was used ANFIS network has 5 layers which perform the specific operation on the given data samples. In this study ANFIS network has two inputs which represent the number of trade formats and the number of countries. Based in the inputs, ANFIS network should estimate the ranking parameter. The main core of the ANFIS network is fuzzy inference system. The fuzzy inference system operates with fuzzy inputs. The inputs are converted in fuzzy values by membership functions.

Table 2 shows the descriptive statistics of the input and output parameters. Data in Table 2 shows that the standard deviation in respect of ranking equals the mean value, i.e. that the analysed trade companies are among the better-ranked ones (in this case, among the top 70). The mean number of countries in which they operate is 14, but there is also a large standard deviation, so, according to this criterion, there is a large dispersion. In terms of the number of trade formats, the mean value is 3, and standard deviation around 1. This means that the sample includes almost an equal number of observations of those who use only one trade format and those who use two or more trade formats. Results of descriptive statistics related to the correlation coefficient between the dependent and independent variables are shown in Table 3. Table 3 show that there is no strong correlation (greater than 0.7) between the dependent and independent variables, but that there is certain correlation among them, which provides for the right to proceed with further research.

Table 2: Results of descriptive statistics

	Mean	Std. Deviation	N
Ranking	17,39	14,279	119
Num. of trade formats	3,05	1,171	119
Number of countries	14,36	10,160	119

Source: Authors calculation

Table 3: Correlation coefficients

		Ranking	Num. of formats	Number of countries
Pearson Correlation	Ranking	1,000	-,541	-,600
	Num. of trade formats	-,541	1,000	,658
	Number of countries	-,600	,658	1,000
Sig. (1-tailed)	Ranking	-	,000	,000
	Num. of trade formats	,000	-	,000
	Number of countries	,000	,000	
N	Ranking	119	119	119
	Num. of trade formats	119	119	119
	Number of countries	119	119	119

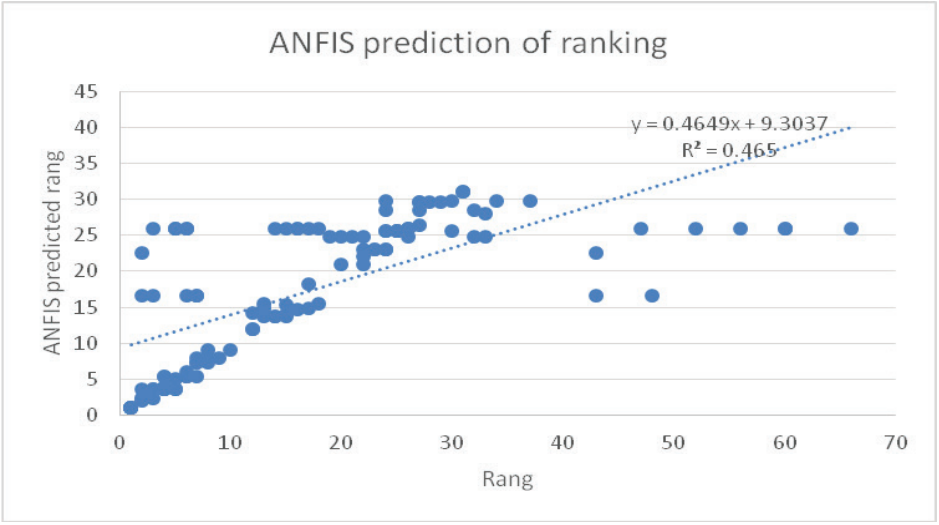
Source: Authors calculation

Figure 2 shows the ANFIS prediction of ranking based on number of trade formats and number of countries. Statistical indicators for the ANFIS model are: coefficient of determination of the prediction is 0.465, Pearson coefficient is 0.6819 and the root means square error (RMSE) is 10.4. This indicates that the constructed ANFIS model, which includes the number of trade formats used and the number of countries where a trade company operates explains almost 50 per cent of the variance in the position in the ranking (ranking among the top 250 trade companies).

Standard multiple regression analysis gives the following results: coefficient of determination of the prediction is 0.288, Pearson coefficient is 0.537 and the root means square error (RMSE) is 12.154. This indicates that the constructed multiple regression model, which includes the number of trade formats used and the number of countries where a trade company operates explains almost 30 per cent of the variance in the position in the ranking (ranking among the top 250 trade companies).

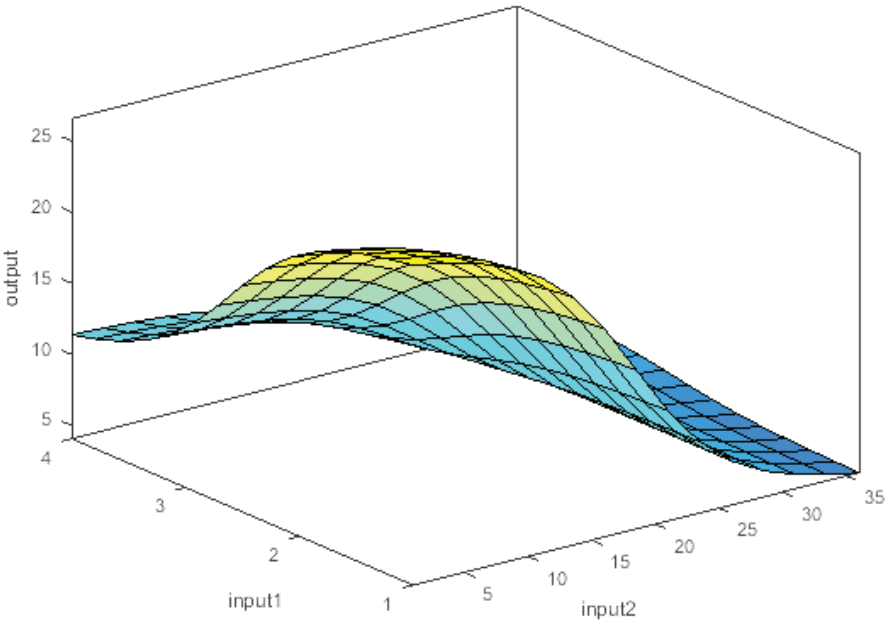
One can conclude that the ANFIS outperforms the standard regression analysis. Figure 3 shows the ANFIS prediction surface based on the two given inputs.

Figure 2: ANFIS prediction of ranking



Source: Author

Figure 3: ANFIS prediction of ranking based on the two given inputs



Source: Author

Conclusion

Numerous and varied theoretical and practical studies in the field of trade and trade management show that innovation in trade can be divided into institutional, functional and technological. In this regard, seen in the long run, institutional innovation is of the utmost importance for trade. It gets its expressive form through a continuous process of development, saturation and disappearance of one group of trading institutions and the emergence of another, with different forms and methods of conducting trade activities. The achieved level of institutional innovation in trade is largely conditioned by socio-economic factors, so that the market developed countries record more intensive application of institutional innovation in trade, in comparison with less developed countries. One can make certain generalization, as well as the analysis of the principles in the development of institutional innovation in trade based on different theories and concepts, which was the research subject in the first part of the paper. The second part of the paper analyzed the application of institutional innovation by the 250 largest trading companies, according to the latest report by Deloitte Touche. The analysis showed that supermarkets and hypermarkets dominate the business portfolio of the largest trading companies, with a growing tendency for discount stores and e-shops. The third part of the paper described empirical research on the basis of available data sources. The database consisted of six annual reports (2012-2017) ranking the 250 largest trading companies in the world. The ANFIS method was applied to test the hypothesis of the importance of institutional innovation for ranking trading companies in the list of the most successful ones. The research results showed that the introduction of institutional innovation in the business portfolio of a trading company improves its ranking in the list of the most successful trading companies.

References

Šumpeter, J.A. (1950). Capitalism, Socialism and Democracy. New York: Harper Bros.

Sokolov Mladenović, S. & Vukojević, V. (2019). Innovation as a driver of modern retail. Facta Universitatis, 16 (2), 171-182. https://doi.org/10.22190/FUEO1902171S

Gilbert, D. (2003). Retail Marketing Management, Pearson Education Limited, Harlow, England.

Levy, M., Weitz, B.A. & Grewal, D. (2013). Retailing Management. New York: McGraw-Hill.

Picot-Coupey, K., Viviani, J-L. & Paul, A. (2018). Determinants of retail store network expansion via shop-inshops. International Journal of Retail & Distribution Management, 46 (10), 915-943. https://doi.org/10.1108/IJRDM-08-2016-0139

Reynolds, J., Howard, E., Cuthbertson, C. & Hristov, L. (2007). Perspectives on retail format innovation: relating theory and practice. International Journal of Retail and Distribution Management, 35 (8), 647-660. DOI: 10.1108/09590550710758630

Hristov, L. (2007). Innovating as a retailer: executive perspectives. The European Retail Digest, 2 (55), 7-16.

Lovreta, S., Končar, J., Petković, G., Bogetić, Z. & Stojković, D. (2019). Kanali marketinga. Beograd: Centar za izdavačku delatnost Ekonomskog fakulteta.

Ćuzović, S., Sokolov Mladenović, S. & Ćuzović, Đ. (2019). The impact of social and cultural factors on success of trade internationalization. Business Excellence, 13 (1), 57-76. https://doi.org/10.22598/pi-be/2019.13.1.57

Ćuzović, S., Sokolov Mladenović, S., Ćuzović, Đ. (2017). Impact of Retail Formats on the Development of Food Retailing. Entrepreneurial Business and Economics Review, 5 (1), 11-26. https://doi.org/10.15678/EBER.2017.050101

Saini, G.K. & Sahay, A. (2014). Comparing retail formats in an emerging market. Journal of Indian Business Research, 6 (1), 48–69. https://doi.org/10.1108/JIBR-03-2013-0026

https://kompanija.lidl.rs/

Global Power of Retailing 2014-2019. Retrieved January 20, 2020 from: https://www2.deloitte.com/rs/en/pages/consumer-business/articles/global-powers-of-retailing.html

Petković, D., Issa, M., Pavlović, N.D., Zentner, L. & Ćojbašić, Ž. (2012). Adaptive neuro fuzzy controller for adaptive compliant robotic gripper. Expert Systems with Applications, 39, 13295-13304. https://doi.org/10.1016/j.eswa.2012.05.072

Global power of retailing 2019. Retrieved January 20, 2020 from: https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Consumer-Business/cons-global-powers-retailing-2019.pdf

Morgan, E. (2015). 'Plan A': Analysing Business Model Innovation for Sustainable Consumption in Mass-Market Clothes Retailing. Journal of Corporate Citizenship. (57), 73-98. https://doi.org/10.9774/GLEAF.4700.2015.ma.00007

Pantano, E., Priporas, C-V., Sorace, S. & Iazzolino, G. (2017). Does innovation-orientation lead to retail industry growth? Empirical evidence from patent analysis. Journal of Retailing and Consumer Services, 34, 88-94. https://doi: 10.1016/j.jretconser.2016.10.001

Pantano, E. (2016). Benefits and risks associated with time choice of innovating in retail settings. International Journal of Retail & Distribution Management, 44 (1), 58-70. https://doi.org/10.1108/IJRDM-03-2015-0047

Hasanov, A. (2019). Relevant economic factors affecting franchise operations in the services and trade sectors. *International Review*, (3-4), 38-49. https://doi: 10.5937/intrev1903038H

Hristov, L. & Reynolds, J. (2015). Perceptions and practices of innovation in retailing, challenges of definition and measurement. International Journal of Retail & Distribution Management, 43 (2), 126-147. https://doi.org/10.1108/IJRDM-09-2012-0079

Evans, J.R. (2011). Retailing in perspective: the past is a prologue to the future. International Review of Retail, Distribution and Consumer Research, 21 (1), 1-31. https://doi.org/10.1080/09593969.2011.537817

Vojvodić, K. (2019). Brick-and-mortar retailers: Becoming smarter with innovative technologies. *Strategic Management*, 24(2), 3-11.https://doi: 10.5937/StraMan1902003V

Cao, L. (2014). Business model transformation in moving to a cross-channel retail strategy: a case study. International Journal of Electronic Commerce, 18 (4), 69-95. https://doi.org/10.2753/JEC1086-4415180403

Stevanovski, M. & Pavloska-Gjorgjieska, D. (2016). Electronic Commerce as an Integral Part of the Digital Economy with emphasis on its application in the Republic of Macedonia. *Ekonomika,* 62 (1), 113-124. https://doi:10.5937/ekonomika1601113S

ЕКОНОМИКА
ISSN 0350-137X, EISSN 2334-9190, UDK 338 (497,1)
Vol. 66, july-september 2020, № 3
P. 27-36

Sandra Stojadinović Jovanović[1]
Academy of Professional Studies Western Serbia, Užice

Bojan Krstić[2]
University of Niš,
Faculty of Economics

Vladimir Radivojević[3]
University of Priština with temporary seat in Kosovska Mitrovica,
Faculty of Economics

ORIGINAL SCIENTIFIC ARTICLE
doi: 10.5937/ekonomika2003027S
Received: March, 28. 2020.
Accepted: May, 04. 2020.

NEW APPROACH TO TRADE AND ITS COVERAGE

Abstract

Contemporary trade flows increasingly take place via foreign direct investment flows, consequently we can no longer analyze them only classically, and through the prism of the existing methodology and statistic coverage. Therefore, the purpose of the paper is to point out the need for the new approach to trade flows and their coverage. The research has led to the setting up of a proposal for the new trade coverage, which, by including the primary trading channel, complements the existing, classic approach to trade flows and leads to more realistic trade picture. Only a real picture of trade flows may be adequate guidance to the economic and trade policy makers of the country in conducting these policies and making adequate strategic trade decisions.

Key words: *trade, foreign direct investments, foreign affiliates, export, transnational companies, FATS.*

JEL classification: *F14, F21, F23.*

НОВИ ПРИСТУП ТРГОВИНИ И ЊЕНОМ ОБУХВАТУ

Апстракт

Савремени трговински токови се све више одвијају кроз токове страних директних инвестиција због чега их не можемо више анализирати само на класичан начин и кроз призму постојећег методолошког и статистичког обухвата. Зато је циљ рада указивање на потребу за новим приступом трговинским токовима и њиховом обухвату. Истраживање је водило ка постављању предлога за нови обухват трговинских токова, који, тиме што је укључио доминантни облик трговања, допуњава постојећи, класични приступ трговинским токовима и води ка реалнијој слици трговине. Једино реална слика

[1] sandrassj28@gmail.com, ORCID ID 0000-0003-1383-0225

[2] bojan.krstic@eknfak.ni.ac.rs, ORCID ID 0000-0003-4597-6819

[3] vladimir.radivojevic@ymail.com, ORCID ID 0000-0002-3928-0623

трговинских токова може бити адекватан путоказ носиоцима економске и трговинске политике земље у вођењу ових политика и доношењу адекватних стратешких трговинских одлука.

Кључне речи: *трговина, стране директне инвестиције, стране филијале, извоз, транснационалне компаније, ФАТС.*

Introduction

During the second half of the 20th century the activities of transnational companies (TNCs) mainly contributed to the growth of trade flows. Nowadays, the main part of trading takes place via foreign direct investment (FDI) flows of TNCs, their international production, and sales of affiliates abroad.

TNCs are incorporated or unincorporated enterprises comprising of the parent enterprises and their foreign affiliates (UNCTAD, 2004, p. 345). By undertaking direct investments abroad, TNCs establish affiliates on host countries' markets (foreign affiliates). Different motives influenced their expansion, including resource seeking, market seeking, efficiency seeking and capability seeking (Duning, 1993, pp. 56-61). These companies are a key vehicle of FDI flows in the world economy. Thus, their expansion was accompanied by the expansion of FDI.

The possible impacts of FDI on the economies, especially on host economies, are numerous (Dunning, 1994; Kurtishi-Kastrati, 2013). Their impact on trade is the subject of numerous papers and research. Some authors consider FDI and trade as substitutes, while others consider them complementary (Pugel & Lindert, 2000). Some authors find substitution (Markusen, 1983), and some do not (Lipsey & Weiss, 1984; Brainard, 1997; Broadman, 2005), while some find both substitution and complementarity (Blonigen, 2001; Head & Ries, 2001). Besides these numerous findings regarding FDI and trade relation, the important issue to consider is whether the approach and analysis of trade flows should be changed due to this relationship, especially because companies are selling more through the transactions of their foreign affiliates than through the arm's-length trade and traditional export.

Just because of the close relationship and intertwining of FDI flows and trade flows in the contemporary global economy, the trade can no longer be analyzed classically and by means of the existing methodology and statistic trade coverage. Hence, the paper focuses on issues how to cover and analyze trade flows in contemporary conditions. Thus, the subject of the paper is an emphasis on the necessity for the new approach to contemporary trade flows, which will, by including the primary trading channel – foreign affiliates' trade, provide more comprehensive and realistic presentation of total trade flows, as well as, individual country trade flows. Consequently, the aim of the paper is to point out the need for the new approach to trade flows and their coverage. The given proposal for establishing the new statistic and methodology coverage, registering and calculating trade value is crucial. It shows how to calculate export, how to include it and register it statistically, i.e. how to calculate the values of country's export and, accordingly, the value of the country's trade.

The application of research methodology is determined by the specific nature

of the research subject. Firstly, the existing, current international trade methodology is presented. The analysis of relevant international publications and trade statistics data, lead to the detection and synthesis of the shortcomings of the existing international trade methodology and coverage, and its inappropriateness to the contemporary methods of trading. Besides, an inductive method is used in order to get conclusions from research. Secondly, the newly developed trade statistics and methodology is presented, which has been created in order to include activities of foreign affiliates, including foreign affiliates' trade, which is primarily important in this approach. Previous research and findings enable the setting up of the proposal of a new trade coverage and calculation which brings a new approach to trade flows and its coverage. At the same time, the proposal discovers the differences between the current and the new export value and trade picture of the country, and helps to show the possible way in which the trade analysis should go.

The classic trade statistics and methodology

The classic methodology and statistical coverage of trade is based on the UN methodology of international trade statistics (UN, 1998), which includes only classic trade transactions that take place across national borders and are recorded in the national balance of payments accounts. UN (2010) recognizes changes in the way international merchandise trade is conducted and encourages countries to separately record goods which cross borders as a result of transactions between related parties. However, these are recommendations and the dynamics of their adoption depends on national statistical authorities.

The main source used for collecting the statistical data for trade in goods is Customs records. Data collecting systems register transactions related to transfer of goods across the border. In this way, the existing international merchandise trade statistics also include in its range the goods crossing the border as a result of transactions between parent companies and their firms founded by direct investments (foreign affiliates), which represents the trade between parts of one and the same company (TNC) located in different countries.

Regarding trade in services, the data on this trade is obtained by evaluating this trade on the basis of such services payment value which is related to services implementation abroad. This payment is registered in the country's balance of payments.

However, balance of payment data is not adequate for providing the real measure of the scope of trade in services for many reasons. Many services which are performed abroad are not recorded in the official statistics, because in many cases payments for those services are not registered. Another important disadvantage is the fact that many services are increasingly being performed via transfer of services production abroad, i.e. by TNCs' affiliates in other countries, which makes the existing calculation incorrect because these services are not taken into account.

FDI flows are also registered in the balance of payment as financial flows, but these data are not suitable for determining their connection with classic trade flows of either goods or services.

Such as it is, the classic methodology and statistic concept of trade is characterized by certain deficiencies and a number of measurement and comparability problems (Lindner et al., 2001). In addition to these deficiencies observed and explained so far,

the main shortage is its insufficient adjustment to contemporary trading conditions characterized by the increasing role of TNCs.

It must be kept in mind that at the beginning of the 21st century there are 103,786 TNCs with their 892,114 affiliates abroad (UNCTAD database, 2015) which accomplish around 50% of gross world product and they make 2/3 of the world trade, while a half of this share, that is 1/3 of the total trade, goes to intra-firm trade taking place within these companies.

Since 1990, owing to the large amounts of FDIs, indirect export of goods and services via TNCs' foreign affiliates has become the major channel of trade performance, while the direct export of goods and services, which is performed across the national borders and registered in the official trade statistics, has become the secondary channel of trade activities (Stojadinović Jovanović & Krstić, 2019). Due to the activities of TNCs, the trade does not only include classic trade in goods and services, but also the indirect export via affiliates abroad and FDI flows.

Contemporary export of goods and services does not only have a direct form. It also has an indirect one, via TNC affiliates which parent companies establish in foreign countries worldwide, and that is not taken into account by current methodology and statistical coverage of trade.

By means of direct investment, TNCs shift a part of their production abroad – into foreign affiliates (international production). Goods produced in such a way can be sold in the host country's market or can be exported to the third country's market. The important fact is that this affiliate, even though it is under the direct control of its parent company, represents an individual legal entity in relation to its founder, i.e. represents an individual company established in another country and it operates according to the national legislation of that host country. That means that foreign affiliates are treated as residents in the host country, i.e. they have the same treatment as other domestic, indigenous, national companies.

When the official trade statistics of a particular host country registers export and import, it registers sales and purchases of all of that country's companies made with foreign countries; in that way trade transactions of foreign affiliates in a given country (transactions between foreign affiliates located in a given country and their parent companies abroad and other subjects on the markets outside of the host country) are registered in the existing official trade statistics of the host country and are included in the officially registered import and export figures of that country, same as transactions of other residents.

TNC carries out the indirect export by means of its affiliates' sales. But since those affiliates are located in the market of the host countries, those sales are not statistically registered as the export of TNC's home country. In addition to that, when affiliates located in the market of the host country perform the export, that export is also not registered as export of the home country, but instead it is registered statistically as the export of the host country. This indicates irregularities on two bases:

- On one hand, from the aspect of the home country, it means that the home country is not attributed appropriate values of its companies' export which they carry out – either by domestic sales of its affiliates on the host country's market or by export of these affiliates from the host country's market to third countries' markets;
- On the other hand, from the aspect of the host country, it means that it is

attributed sales, i.e. export of affiliates of foreign companies, because they are located on its territory.

The observed deficiencies of the classic methodology and statistical coverage of the trade limit the existing framework of our analysis of the trade flows, as well as, our efforts to comprehend it realistically and completely. Also, these deficiencies lead us to think differently about trade flows, the way they are realized, and the way they should be statistically recorded and captured if we want to have their realistic picture.

As for coverage, registering and analysis of trade in goods, as well as, trade in services, we must bear in mind the perceived phenomenon that the trade flows and investment flows intertwine, and that changed trading conditions obviously lay down new methodological challenges, and require a new approach to trade flows, its coverage and analysis.

The newly developed trade statistics and methodology

The newly-developed trade statistics and methodology is Foreign Affiliates Trade Statistics (FATS). It has been developed for statistical coverage of different activities of foreign affiliates, such as sales (turnover) and/or output, employment, value added, export and import of goods and services, number of enterprises or establishments and other variables.

FATS has initially been formulated in the Manual on Statistics of International Trade in Services – MSITS (UN et al., 2002) for the need of international trade in services statistics. MSITS just like the WTO General Agreement of Trade in Services (GATS) recognizes that companies in one economy can also deliver services internationally by means of foreign affiliates' activities abroad, which should be measured in FATS.

The essential thing is that both in MSITS and in GATS coverage, domestic sales by foreign affiliates are included under the name of "international trade in services". This means that the sales that the affiliates of foreign companies have made to the market of host economies are treated as trade in services across national borders, or that domestic sales are treated as foreign sales.

Besides MSITS, recommendations for FATS and for statistics on Activities of Multinational Enterprises (AMNE) have been given in the OECD Handbook on Economic Globalisation Indicators (OECD, 2005) and in OECD Benchmark Definition of FDI (OECD, 2008), recognizing that FATS variables should be compiled for all foreign affiliates, not only those in the services. This means expanding the scope to trade in goods, and thus to all activities of foreign affiliates.

FATS may be developed as inward FATS, for foreign-owned affiliates in the compiling economy, and outward FATS, for foreign affiliates of the compiling economy.

The coverage, the compilation of FATS variables, their attribution, and other issues relating FATS and FATS development are arranged by aforementioned international publications, primarily by MSITS[4] (UN et al., 2010).

Regarding FATS coverage, it is recommended to include majority-owned foreign affiliates (MOFA), owned either by one investor or investors group.

[4] MSITS 2002 has been revised in 2010 (MSITS 2010) in order to conform with the System of National Accounts 2008 and the 6th edition of the Balance of Payments and International Investment Position Manual (UN et al., 2010).

In FATS compilation, two basic approaches are possible: the implementation of separate surveys for FATS or the identification of a subset of foreign firms by using existing data on firms-residents. In both approaches, available sources, existing data on FDIs and company statistics should be used.

All these issues relating FATS, especially those regarding the attribution of variables, and recommendations made regarding them, represent guidance in setting up a new approach to trade flows and their coverage.

A proposal for the new trade coverage

In setting-up a proposal for the new trade coverage the first important thing that has been taken into account is the fact that since 1990, due to the large amount of FDIs and TNCs' activities, indirect export of goods and services via TNCs' foreign affiliates has become the major channel of trade operations, and the direct export, registered in the official trade statistics, has become the secondary trade channel.

Besides, when setting-up the proposal, it has been started from that very fact that countries do not export goods and services only directly, but indirectly as well, via foreign affiliates. That indicates that the new approach to trade flows and coverage must be laid out by including the activities of foreign affiliates.

Starting with the newly developed statistics, idea that foreign affiliates' sales should be registered separately and attributed adequately, and also having noticed all aforementioned deficiencies of the existing methodology and statistics trade coverage and limited framework of our current classic trade analysis based on it, we have come to the conclusion that in methodology approach and statistic registering it is necessary to include and attribute particular trading transactions differently, in order to make our trade analysis more complete and adequate.

It can be observed that from the aspect of the home country of the (transnational) company, the sales of its company realized through its foreign affiliates are not registered as the country's trade, where they should be registered. These sales include the domestic sales of the affiliate on the host country's markets (domestic sales) and exports of the affiliate to third country's markets (these exports are registered but as host countries' exports).

It is therefore necessary to attribute these foreign affiliate's sales (domestic sales + exports) to the home country of the affiliate's parent company and also to deduct these sales from the host country's trade figures. Besides, it is also needed to attribute the sales of foreign affiliates of the host country's parent enterprises abroad to the host country.

Based on all aforementioned, a proposal can be set up representing a new way of calculation of the world trade (Stojadinović Jovanović, 2013) and also a proposal representing a new way of calculation of the individual countries' trade, i.e. their export (Stojadinović Jovanović, 2010), as follows:

A proposal for the new trade coverage and export calculation

	Export of the country (registered in official trade statistics)
-	Export of the foreign affiliates from the country to the third country's markets
-	Domestic sales of the foreign affiliates on the country's market

+	Sales of foreign affiliates of the country's parent enterprises abroad
=	Export of the country (new value)

where:
the sales of foreign affiliates of the country's parent enterprises abroad encompass domestic sales of foreign affiliates of the country's parent enterprises on the host country's markets and export of foreign affiliates of the country's parent enterprises from the host countries to the third country's markets.

This new way of trade coverage and calculation will help us obtain different export values and trade values of individual countries, which are more appropriate to the contemporary ways of trade flows performing, and more realistic, giving us the different, new trade values and analysis compared to the current one.

Expectations from the implementation of the proposal

The implementation of the given proposal in the trade coverage and export calculations can provide important findings and reveal new picture of individual countries' trade.

Depending on the value of export of the foreign affiliates from the country to the third country's markets, domestic sales of the foreign affiliates in the country's market and sales of foreign affiliates of the country's parent enterprises abroad, the value of export determined according to the proposal can significantly deviate from the value of official trade statistics export. Namely, export value of individual countries, according to the official foreign trade statistics, can be significantly higher than the export value determined according to the proposal.

Apropos, the value of export calculated according to the proposal can be lower than the value of export according to the official trade records. The reason for that is the fact that the foreign companies can perform an important part of the country's exports, whose value, according to the proposal, is deducted from the classically calculated exports of the host country, because we need to attribute it to the country of the ultimate investor (regarding to the FATS methodology, on which the proposal is also based).

This trade coverage and calculation of export according to the proposal also enables us to determine the amount of the country exports which is controlled by national capital and indigenous companies. Therefore, the important thing that the proposal brings is the calculation of the export value which represents indigenous export.

It can be also expected that the difference between the values of officially registered exports and exports calculated under the given proposal will be influenced by the volume of FDI flows of the country. Thus, for a small FDI outflows from the country it could be expected to result in a negligible number of foreign affiliates of the country's companies abroad and their slight sales, and based on that, a very small value is added to the classic, official export value when calculating export according to the given proposal.

As long as the country has much higher FDI inflows than FDI outflows it could be expected that the export value determined according to the given proposal for the country will be considerably smaller than the export value determined according to the classic calculation.

For a higher FDI inflows into the country, it could be expected to result in a larger

number of foreign affiliates in these countries and, consequently, in both higher export and sales of these affiliates. However, these are the exact values which we deduct from the value of classic export in the given proposal, the result of which is a reduction of classic export value on the basis of foreign affiliates' activities in these countries bigger that the increase based on sale which foreign affiliates of these countries realize abroad. Therefore, as a result, it could be expected these countries to have smaller export value according to the given proposal than when applying the classic calculation.

For the countries with large FDI outflows it could be expected a larger number of foreign affiliates abroad and their large sales and, consequently, larger sales of foreign affiliates of domestic companies. And because this item (sales of foreign affiliates of domestic companies) is added to a classical official value of exports, it would contribute to the increase in export value calculated according to the given proposal and new trade coverage.

Hence, it could be expected that the countries with large FDI inflows, larger than FDI outflows, would have smaller export value calculated according to the given proposal than according to the classic concept. While for the countries with large FDI outflows, larger than FDI inflows, it could be expected the opposite – the larger export value according to the given proposal than the value of classic export.

If the value of the country's export according to the given proposal is much smaller than officially registered classic export it means that the "real" value of the country's export, i.e. indigenous export controlled by national capital, is much smaller than official statistics shows. And it reveals a less favorable picture of domestic export and trade.

However, only such a method of calculation makes it possible for us to comprehend the real amount of the export of the country, i.e. to find out how much of the export is controlled by foreign capital and how much is controlled by domestic capital. Consequently, by offering us a real picture of trading flows, it allows making adequate strategic trade decisions and leading adequate policy. Also, the given proposal opens the door for further suggestions and improvements of future trade coverage and analysis.

Conclusion

The existing, classic approach to trade has not sufficiently been adjusted to contemporary trading conditions and new forms of goods and services delivery abroad. Balance of trade and the existing official trade figures show only one face of the reality of the trading flows. They do not include the dominant trading form in the contemporary world trade and in that way they limit the existing framework of our trade analysis and our efforts to perceive it realistically and comprehensively.

The proposal presented in the paper – proposal for the new trade coverage and calculation, including a dominant form of trading – trading via foreign affiliates – complements the existing, classic trade concept and makes possible the new approach to trade flows and their coverage.

The use of the given proposal would reveal a new, more realistic trade picture of the country, sometimes more favorable sometimes less favorable. But only by having a real picture of trading flows, economic and trade policy creators can lead adequate policy and make adequate strategic trade decisions.

Therefore, in order to observe the trade flows of individual countries, as well as,

of the whole world completely, and comprehend and analyze them adequately, each following trade analysis should be based on this new approach to trade, given proposal and trade coverage.

Also, the paper makes space for further suggestions and improvements of the given proposal and future trade coverage and analysis.

References

Blonigen, B.A. (2001). In search of substitution between foreign production and exports. *Journal of International Economics*, 53(1), 81-104.

Brainard, S. L. (1997). An Empirical Assessment of the Proximity-Concentration Trade-off between Multinational Sales and Trade. *American Economic Review,* 87 (4), 520-544.

Broadman, H.G. (Ed.). (2005). *From Disintegration to Reintegration: Eastern Europe and the Former Soviet Union in International Trade*. Washington: The World Bank.

Dunning, J. H. (1993). *Multinational enterprise and the global economy*. Wokingham: Addison Wesley.

Dunning, J. H. (1994). Re-evaluating the benefits of foreign direct investment. *Transnational Corporations*, 3 (1), 23-51.

Head, K., & Ries, J. (2001). Overseas Investment and Firm Exports. *Review of International Economics*, 9(1), 108-22.

Kurtishi-Kastrati, S. (2013). The Effects of Foreign Direct Investments for Host Country's Economy. *European Journal of Interdisciplinary Studies*, 5(1), 26-38.

Lindner, A., Cave, B., Deloumeaux, L., & Magdeleine, J. (2001). *Trade in Goods and Services: Statistical Trends and Measurement Challenges.* Paris: OECD Statistics Brief, 1 (3).

Lipsey, R.E., & Weiss, M.Y. (1984). Foreign Production and Exports of Individual Firms. *The Review of Economics and Statistics*, 66(2), 304-08.

Markusen, J.R. (1983). Factor movements and commodity trade as complements. *Journal of International Economics*, 14(3-4), 341-356.

Načinović-Braje, I., & Galetić, L. (2019). Top management remuneration in a post-transition economy: Does company ownership make a difference?. *Strategic Management*, 24(2), 34-44.

OECD. (2005). *OECD Handbook on Economic Globalisation Indicators*. Paris.

OECD. (2008). *OECD Benchmark Definition of Foreign Direct Investment*. Paris.

Pugel, T. A., & Lindert, P.H. (2000). *International economics*. USA: The McGraw-Hill Companies Inc.

Stojadinović Jovanović, S. (2013). A Proposal for New Coverage of International Trade Flows. *Actual Problems of Economics*, 4 (142), 480-486.

Stojadinović Jovanović, S. (2010). *Novi pristup u analizi međunarodne trgovine*.

Doktorska disertacija, Ekonomski fakultet Univerziteta u Beogradu, Beograd, Srbija.

Stojadinović Jovanović, S., Krstić, B. (2019). *Trade Competitiveness in the Global World Economy*. In B. Krstić (Ed.), Improving the Efficiency and Competitiveness of Enterprises and National Economies - problems, factors, determinants, strategies and solutions (pp. 1-19). Niš: Faculty of Economics Univesity of Niš.

UN. (1998). *International Merchandise Trade Statistics: Concepts and Definitions 1998*.

UN. (2010). *International Merchandise Trade Statistics: Concepts and Definitions 2010.*

UN, EC, IMF, OECD, UNCTAD, & WTO. (2002). *Manual on Statistics of International Trade in Services (MSITS)*.

UN, EC, IMF, OECD, UNCTAD, & WTO. (2010). *Manual on Statistics of International Trade in Services (MSITS)*.

UNCTAD. (2004). *World Investment Report 2004*. UN: New York and Geneva.

UNCTAD database (2015). Web table 34. Retrieved February 1, 2020, from http://unctad.org/Sections/dite_dir/docs/WIR11_web%20tab%2034.pdf

ЕКОНОМИКА
ISSN 0350-137X, EISSN 2334-9190, UDK 338 (497,1)
Vol. 66, july-september 2020, № 3
P. 37-45

Kristina Jauković Jocić[1]
Darjan Karabašević[2]
Goran Jocić[3]
University Business Academy in Novi Sad,
Faculty of Applied Management, Economics and Finance, Belgrade

ORIGINAL SCIENTIFIC ARTICLE
doi: 10.5937/ekonomika2003037J
Received: June, 16. 2020.
Accepted: July, 20. 2020.

THE USE OF THE PIPRECIA METHOD FOR ASSESSING THE QUALITY OF E-LEARNING MATERIALS

Abstract

The weights of evaluation criteria could have a significant impact on the results obtained by using multiple criteria decision-making methods, which is why a number of methods have been proposed for determining them. In this article, the use of a newly proposed method for determining criteria weights, the PIvot Pair-wise RElative Criteria Importance Assessment (PIPRECIA) method, is presented in the case of determining weights of criteria for assessing the quality of e-learning materials. The main goal is to define which criteria are the most important and have the crucial influence on the quality of e-learning material, as well as to demonstrate the applicability of the proposed method and the simplicity of its application.

Keywords*: PIvot Pair-wise RElative Criteria Importance Assessment, PIPRECIA, SWARA, e-learning*

JEL classification: *C44, I29, M15*

ПРИМЕНА PIPRECIA МЕТОДЕ У ЕВАЛУАЦИЈИ КВАЛИТЕТА МАТЕРИЈАЛА ЗА ДАЉИНСКО УЧЕЊЕ

Апстракт

Тежине евалуационих критеријума могу имати значајан утицај на резултате добијене применом метода вишекритеријумског одлучивања, те су предложене бројне методе за одређивање истих. У овом раду је приказана примена недавно предложене методе за дефинисање тежине критеријума под називом PIPRECIA (PIvot Pair-wise RElative Criteria Importance Assessment) метода, која је примењена у случају одређивања тежине критеријума за оцену квалитета материјала за даљинско учење. Основни циљ је дефинисање критеријума који имају највећи значај и кључни утицај на квалитет материјала за даљинско учење као и приказивање применљивости и једноставности примене наведене методе.

Кључне речи: PIvot Pair-wise RElative Criteria Importance Assessment, PIPRECIA, SWARA, даљинско учење

[1] kristina.jaukovic@mef.edu.rs, ORCID ID 0000-0002-7113-6269

[2] darjan.karabasevic@mef.edu.rs, ORCID ID 0000-0001-5308-2503

[3] goran.jocic@mef.edu.rs, ORCID ID 0000-0001-9863-974X

Introduction

The use of information and communication technologies to disseminate knowledge is currently very topical. As a result, numerous e-learning platforms have become available, and numerous courses have been developed.

The emergence of more e-learning platforms as well as the emergence of a large number of courses has led to the need to assess their quality. Therefore, the definition of criteria for evaluating the quality of e-learning platforms, as well as determining the criteria for evaluating courses on them, has become a relevant and frequent topic. Apart from determining the criteria, as well as the sub-criteria for evaluation, determining their relative importance is also of current interest and significance.

In the field of multiple criteria decision-making (MCDM), a number of different approaches for determining the significance of criteria have been proposed so far (Popovic et al, 2019a; 2019b; Stanujkic et al., 2017b). Some of the current and prominent ones are the following: the AHP method (Saaty, 1980), the DEMATEL method (Gabus and Fontela, 1972), the Step-Wise Weight Assessment Ratio Analysis (SWARA) method (Kersuliene et al., 2010), the BWM method (Rezaei, 2015), and the FUCOM method (Pamucar et al., 2018).

Despite the fact that the SWARA method is a relatively newly-proposed MCDM method, it has been successfully used to solve many decision-making problems, such as: rational dispute resolution (Kersuliene et al., 2010), an architect selection (Kersuliene and Turskis, 2011), a supplier selection (Yazdani et al., 2016), personnel selection (Karabasevic et al., 2016a, 2016b), ERP system selection (Shukla et al., 2017), the evaluation of third-party reverse logistic provider (Mavi et al., 2017), the evaluation of solutions for reduction of transport pollution (Zavadskas et al., 2019), and the reduction of greenhouse gas emissions (Balki et al., 2020)

In the above-mentioned articles, the SWARA method is mainly used in combination with other MCDM methods, whereby it was used to determine the criteria weights.

In comparison with other methods intended for determining the criteria weights, the SWARA method is less complex for using, from the standpoint of the questioned persons (Stanujkic et al., 2015).

However, the first step in applying the SWARA method is a selection of criteria and their ranking according to their expected importance in descending order. This means that all participants in the evaluation have to agree on the expected importance of the criteria, which makes the SWARA method less applicable for solving some problems. Therefore, Stanujkic et al. (2017) proposed the adoption of the SWARA method that does not require the consent of the respondents regarding the expected significance of the criteria, under the name PIvot Pair-wise RElative Criteria Importance Assessment (PIPRECIA) method.

This feature makes the PIPRECIA method suitable for gathering the respondents' attitudes through the use of interactive questionnaires, which is why it was used in this article for determining the importance of the criteria for assessing the quality of e-learning materials. This is why the remaining part of the paper is organized as follows: in the first part, the computational procedure of the PIPRECIA method is presented and, in the second part, the criteria for assessing the quality of e-learning materials are presented. In the third part, a case study is given with the aim to determine the significances of the criteria. Finally, the conclusions are given.

The computational procedure of the PIPRECIA method

The computational procedure of the PIPRECIA can be expressed as follows (Stanujkic et al., 2017a):

***Step* 1**. Determine the relevant evaluation criteria and sort them in descending order, based on their expected significances.

***Step* 2**. Starting from the second criterion, determine the relative importance s_j as follows:

$$s_j = \begin{cases} > 1 & when\ C_j \succ C_{j-1} \\ 1 & when\ C_j = C_{j-1} \\ < 1 & when\ C_j \prec C_{j-1} \end{cases} . \quad (1)$$

***Step* 3**. Determine the coefficient k_j as follows:

$$k_j = \begin{cases} 1 & j = 1 \\ 2 - s_j & j > 1 \end{cases} . \quad (2)$$

***Step* 4**. Determine the recalculated weight q_j as follows:

$$q_j = \begin{cases} 1 & j = 1 \\ \dfrac{q_{j-1}}{k_j} & j > 1 \end{cases} . \quad (3)$$

***Step* 5**. Determine the relative weights of the evaluation criteria as follows:

$$w_j = \frac{q_j}{\sum_{k=1}^{n} q_k} . \quad (4)$$

The use of PIPRECIA method in group decision-making environment

Many real decision-making problems require the involvement of several, or even more, decision-makers. In such cases, the resulting weights that represent the attitude of the group made up of *K* decision-makers can be done in the following manner:

$$w_j^* = \left(\prod_{k=1}^{K} w_j^r \right)^{1/K} , \quad (5)$$

$$w_j = \frac{w_j^*}{\sum_{j=1}^{n} w_j^*} , \quad (6)$$

where w_j^* denotes the geometric mean of the weights of criterion *j* obtained by surveying respondents.

Criteria for assessing the quality of e-learning materials

E-learning platforms and e-learning materials have been the subject of many studies. As a result of these studies, several criteria have been proposed, such as clear learning goals, objectives and outcomes, presentation of a domain in a meaningful and engaging way; nature of learning activities; elicitation of learners' understanding, and so on.

Hamtini and Fakhouri (2012) emphasized the following groups of criteria as the ones that cover the majority of the requirements for quality functioning of each e-learning platform, which are: social networking tools, productivity tools and software installation, administration tools and security, presentation tools and material distribution, and management features. All of these criteria are further elaborated on a certain number of sub-criteria that cast light on every feature important for good functioning of the e-learning platform. Beside the characteristics connected to the quality of the platform itself and its content, Cidral et al. (2018) involved one more dimension which engages the user aspect of the learning process.

With the aim of performing the comparison of the selected e-learning platforms, in the paper by Ouadoud et al. (2016) the utility and usability groups that involve a certain number of evaluation criteria are suggested. Büyüközkan et al. (2010) elicited the seven criteria appropriate for the evaluation of e-learning platforms and they are: right and understandable content, complete content, personalization, security, navigation, interactivity, and user interface. The extensive list of the criteria and sub-criteria pointed at the evaluation of the quality of the content of e-learning platforms is demonstrated in the paper of Al-Alwani (2014). As some of the significant articles devoted to this problem, the following can be mentioned: Alessi and Trollip (2001), Govindasamy (2002), Sun et al. (2008), Spratt and Lajbcygier, (2009), and so on.

Case Study

In this case study, the significance of the seven selected criteria was determined based on 24 successfully completed interactive questionnaires. The interactive questionnaires were designed to graphically and numerically present the significance of the criteria after entering respondents' attitudes, and thus allow respondents to eventually correct their attitudes. The interactive questionnaire was emailed to 40 addresses. Responses are obtained from 29 respondents, with 24 surveys filled-in correctly.

The criteria, which are defined on the basis of the examined literature previously presented, for assessing the quality of e-learning materials are as follows:

- C_1, Level of content,
- C_2, Presentation method,
- C_3, Teaching method,
- C_4, E-learning environment,
- C_5, Learning materials,
- C_6, Quality of multimedia content, and
- C_7, Group work and interactivity.

The responses, computational details, and weight obtained from the first of three randomly selected respondents are shown in *Tables 1*, *2* and *3*.

Table 1: The weight of criteria obtained from the first respondent

Criterion	s_j	k_j	q_j	w_j
C_1		1	1	0.16
C_2	1.00	1.00	1.00	0.16
C_3	0.90	1.10	0.91	0.14
C_4	1.00	1.00	0.91	0.14
C_5	1.00	1.00	0.91	0.14
C_6	0.80	1.20	0.76	0.12
C_7	1.10	0.90	0.84	0.13
			6.33	1.00

Table 2: The weight of criteria obtained from the second respondent

Criterion	s_j	k_j	q_j	w_j
C_1		1	1	0.15
C_2	0.90	1.10	0.91	0.13
C_3	1.00	1.00	0.91	0.13
C_4	1.00	1.00	0.91	0.13
C_5	1.20	0.80	1.14	0.17
C_6	0.90	1.10	1.03	0.15
C_7	0.80	1.20	0.86	0.13
			6.76	1.00

Table 3: The weight of criteria obtained from the third respondent

Criterion	s_j	k_j	q_j	w_j
C_1		1	1	0.16
C_2	0.80	1.20	0.83	0.13
C_3	0.90	1.10	0.76	0.12
C_4	1.20	0.80	0.95	0.15
C_5	1.00	1.00	0.95	0.15
C_6	1.00	1.00	0.95	0.15
C_7	1.00	1.00	0.95	0.15
			6.38	1.00

The weights obtained from all respondents are presented in the *Table 4*, while the group weights calculated by using Eqs (5) and (6) are shown in the *Table 5* and *Figure 1*.

Table 4: The weights obtained from all respondents includen in evaluation

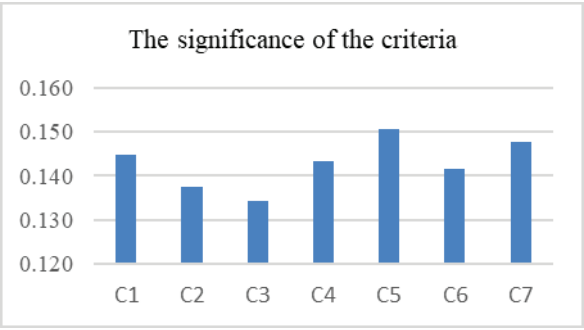
	C_1	C_2	C_3	C_4	C_5	C_6	C_7
R_1	0.16	0.16	0.14	0.14	0.14	0.12	0.13
R_2	0.15	0.13	0.13	0.13	0.17	0.15	0.13
R_3	0.16	0.13	0.12	0.15	0.15	0.15	0.15
R_4	0.14	0.14	0.13	0.13	0.16	0.14	0.16
R_5	0.13	0.11	0.12	0.12	0.18	0.18	0.16
R_6	0.15	0.13	0.13	0.16	0.16	0.14	0.14
R_7	0.12	0.11	0.11	0.12	0.15	0.15	0.22
R_9	0.12	0.16	0.16	0.16	0.14	0.12	0.15
R_{10}	0.15	0.15	0.14	0.15	0.15	0.13	0.13
R_{11}	0.16	0.13	0.12	0.13	0.13	0.16	0.16
R_{12}	0.14	0.14	0.13	0.16	0.14	0.16	0.14
R_{13}	0.13	0.11	0.10	0.15	0.16	0.16	0.18
R_{14}	0.17	0.12	0.12	0.13	0.16	0.16	0.15
R_{15}	0.14	0.16	0.14	0.13	0.13	0.15	0.15
R_{16}	0.13	0.12	0.14	0.15	0.15	0.15	0.15
R_{17}	0.13	0.13	0.15	0.16	0.15	0.15	0.13
R_{18}	0.13	0.16	0.16	0.16	0.15	0.12	0.12
R_{19}	0.17	0.15	0.15	0.15	0.15	0.12	0.12
R_{20}	0.14	0.16	0.15	0.15	0.15	0.12	0.14
R_{21}	0.15	0.14	0.14	0.15	0.15	0.13	0.16
R_{22}	0.16	0.16	0.14	0.14	0.14	0.13	0.13
R_{23}	0.15	0.15	0.13	0.14	0.16	0.13	0.13
R_{24}	0.13	0.13	0.16	0.14	0.16	0.14	0.14

Table 5: The group weights of the criteria for assessing the quality of e-learning materials

	Criterion		w_j	w_j	Rang
C_1	Level of content		0.144	0.145	3
C_2	Presentation method		0.137	0.138	6
C_3	Teaching methods		0.133	0.134	7
C_4	E-learning environment		0.143	0.143	4
C_5	Learning materials		0.150	0.151	1
C_6	Quality of multimedia content		0.141	0.142	5
C_7	Group work and interactivity		0.147	0.148	2
		Σ	0.994	1.000	

As it can be concluded from the table 5, the most significant criterion is the criterion denoted as C_5, 'Learning materials', followed by the criteria C_7 and C_1.

Figure 1: The group weights of the criteria for assessing the quality of e-learning materials



Conclusion

E-learning platforms, as well as e-learning materials, have been the subject of many studies. In order to assess their quality, the determination of the weights of the evaluation criteria is of great importance. In this paper, the PIPRECIA method was successfully applied for the purpose of the determination of the weights.

Therefore, based on the conducted research, two basic conclusions can be drawn.

The first conclusion relates to the importance of the criteria and states: Based on the examined group, the most important criterion is 'Learning materials', followed by the criteria 'Group work and interactivity', and 'Level of content'. Based on the research conducted, the least significant criterion is 'Teaching methods'.

The second conclusion concerns the application of the PIPRECIA method in order to determine the significance of the criteria. This method has already been applied with interactive questionnaires to determine the relevance of the criteria. The conducted research confirms its applicability with interactive questionnaires, especially when respondents have support for its usage.

References

Al-Alwani, A. (2014). Evaluation criterion for quality assessment of E-learning content. E-Learning and Digital Media 11(6), 532-542.

Alessi, S.M. & Trollip, S.R. (2001). Multimedia for learning: methods and development. Boston, MA: Allyn and Bacon.

Balki, M. K., Erdoğan, S., Aydın, S., & Sayin, C. (2020). The optimization of engine operating parameters via SWARA and ARAS hybrid method in a small SI engine using alternative fuels. Journal of Cleaner Production, 120685.

Büyüközkan, G., Arsenyan, J., & Ertek, G. (2010). Evaluation of e-learning web sites using fuzzy axiomatic design based approach. International Journal of Computational Intelligence Systems, 3(1), 28-42.

Cidral, W. A., Oliveira, T., Di Felice, M., & Aparicio, M. (2018). E-learning success determinants: Brazilian empirical study. Computers & Education, 122, 273-290.

Gabus, A., & Fontela, E. (1972). World problems, an invitation to further thought within the framework of DEMATEL. Battelle Geneva Research Centre: Geneva, Switzerland.

Govindasamy, T. (2002). Successful implementation of e-learning pedagogical considerations. Internet and Higher Education, 4, 287–299.

Hamtini, T. M., & Fakhouri, H. N. (2012). Evaluation of open-source e-Learning platforms based on the Qualitative Weight and Sum approach and Analytic Hierarchy Process. In Proceedings of the International Multi-Conference Society, Cybernetics and Informatics (pp. 1-7).

Karabasevic, D., Stanujkic, D., Urosevic, S., & Maksimovic, M. (2016a). An Approach to Personnel Selection Based on SWARA and WASPAS Methods. BizInfo (Blace) Journal of Economics, Management and Informatics, 7(1), 1-11.

Karabasevic, D., Zavadskas, E. K., Turskis, Z., & Stanujkic, D. (2016b). The framework for the selection of personnel based on the SWARA and ARAS methods under uncertainties. Informatica, 27(1), 49-65.

Kersuliene, V. & Turskis, Z. (2011). Integrated fuzzy multiple criteria decision making model for architect selection. Technological and Economic Development of Economy, 17(4), 645-666.

Kersuliene, V., Zavadskas, E. K., & Turskis, Z. (2010). Selection of rational dispute resolution method by applying new step-wise weight assessment ratio analysis (SWARA). Journal of business economics and management, 11(2), 243-258.

Mavi, R. K., Goh, M., & Zarbakhshnia, N. (2017). Sustainable third-party reverse logistic provider selection with fuzzy SWARA and fuzzy MOORA in plastic industry. The International Journal of Advanced Manufacturing Technology, 1-18.

Ouadoud, M., Chkouri, M. Y., Nejjari, A., & El Kadiri, K. E. (2016, October). Studying and comparing the free e-learning platforms. In 2016 4th IEEE International Colloquium on Information Science and Technology (CiSt) (pp. 581-586). IEEE.

Pamucar, D., Stevic, Z., & Sremac, S. (2018). A new model for determining weight coefficients of criteria in MCDM models: Full consistency method (FUCOM). Symmetry, 10(9), 393.

Popovic, G., Stanujkic, D., & Karabasevic, D. (2019). A framework for the evaluation of hotel property development projects. *International Journal of Strategic Property Management*, 23(2), 96-107.

Popovic, G., Stanujkic, D., Brzakovic, M., & Karabasevic, D. (2019). A multiple-criteria decision-making model for the selection of a hotel location. *Land use policy*, 84, 49-58.

Rezaei, J. (2015). Best-worst multi-criteria decision-making method. *Omega*, 53, 49-57.

Saaty, T. L. (1980). *Analytic Hierarchy Process*. McGraw-Hill: New York, NY, USA.

Shukla, S., Mishra, P. K., Jain, R., & Yadav, H. C. (2016). An integrated decision making approach for ERP system selection using SWARA and PROMETHEE method. International Journal of Intelligent Enterprise, 3(2), 120-147.

Spratt, C. & Lajbcygier, P. (2009). E-learning technologies and evidence-based assessment approaches. London: Information Science Reference, IGI Global.

Stanujkic, D., Karabasevic, D., & Zavadskas, E. K. (2015). A framework for the Selection of a packaging design based on the SWARA method. Inžinerinė Ekonomika-Engineering Economics, 26(2), 181-187.

Stanujkic, D., Zavadskas, E. K., Karabasevic, D., Smarandache, F., & Turskis, Z. (2017a). The use of the PIvot Pairwise RElative Criteria Importance Assessment method for determining the weights of criteria. Romanian Journal of Economic Forecasting, 20(4), 116-133.

Stanujkic, D., Zavadskas, E. K., Karabasevic, D., Turskis, Z., & Keršulienė, V. (2017b). New group decision-making ARCAS approach based on the integration of the SWARA and the ARAS methods adapted for negotiations. *Journal of Business Economics and Management*, 18(4), 599-618.

Sun, P. C., Tsai, R. J., Finger, G., Chen, Y.-Y., & Yeh, D. (2008). What drives a successfule-learning? An empirical investigation of the critical factors influencing learner satisfaction. Computers and Education, 50, 1183–1202.

Yazdani, M., Hashemkhani Zolfani, S., & Zavadskas, E. K. (2016). New integration of MCDM methods and QFD in the selection of green suppliers. Journal of Business Economics and Management, 17(6), 1097-1113.

Zavadskas, E. K., Čereška, A., Matijošius, J., Rimkus, A., & Bausys, R. (2019). Internal combustion engine analysis of energy ecological parameters by neutrosophic MULTIMOORA and SWARA methods. Energies, 12(8), 1415.

ЕКОНОМИКА
ISSN 0350-137X, EISSN 2334-9190, UDK 338 (497,1)
Vol. 66, july-september 2020, № 3
P. 47-54

Vanja Erceg[1]
Tihomir Zoranović[2]
University of Novi Sad, Faculty of Agriculture

ORIGINAL SCIENTIFIC ARTICLE
doi: 10.5937/ekonomika2003047E
Received: March, 16. 2020.
Accepted: May, 04. 2020.

REQUIRED COMPETENCIES FOR SUCCESSFUL DIGITAL TRANSFORMATION

Abstract

In the middle of the Fourth Industrial Revolution there is a digital transformation that will completely change our understanding of business. The development of Industry 4.0 with technologies such as Cloud computing, the Internet of Things, and artificial intelligence will significantly impact on current business models. In order to successfully implement the digital transformation and survive in the global market, companies must own adequate intellectual capital. Apart from technical skills, employees will need to adapt to the new digital strategy, organizational structure, and business culture. In response to this trend, there is a need to establish new professions in companies. The aim of this paper is to try to find the answers to the next questions: which professions are needed to be introduced to companies that are digitally transformed and what is their role, as well as what competencies are necessary for company executives to successfully slow down digital transformation.

Key words: *competences, digital transformation, CIO, CDO*

JEL classification: *O3, J24, M15*

КОМПЕТЕНЦИЈЕ ПОТРЕБНЕ ЗА УСПЕШНО СПРОВОЂЕЊЕ ДИГИТАЛНЕ ТРАНСФОРМАЦИЈЕ

Апстракт

У средишту Четврте индустријске револуције налази се дигитална трансформација која ће у потпуности променити наше разумевање пословања. Развој индустрије 4.0 са технологијама као што су CLOUD computing, Интернет ствари и вештачка интелигенција значајно ће утицати на тренутне моделе пословања. Да би успешно спровеле дигиталну трансформацију и опстале на глобалном тржишту, компаније морају да поседују адекватан интелектуални капитал, који се огледа у знању и вештинама запослених. Осим промене потребних техничких вештина запослени ће морати да се прилагоде новој дигиталној стратегији, организационој структури, као и култури пословања. Као одговор на овај тренд појављује се потраба за успостављањем нових професија у компанијама. Циљ овог рада је да пронађе одговоре на питања које професије је потребно увести у компаније које се дигитално трансформишу и

[1] vanja.erceg@gmail.com, ORCID ID 0000-0002-7451-6216

[2] tihomir@polj.uns.ac.rs, ORCID ID 0000-0003-2564-5000

која је њихова улога, као и које компетенције је неопходно да поседују руководиоци компанија како би се успешно спровела дигитална трансформација.

Кључне речи: цомпетенцес, дигитал трансформатион, CIO, CDO

Introduction

For several decades, technological progress has caused changes in business, social and economic relations. Technology trends such as social networks, Cloud computing, Big Data, artificial intelligence, the Internet of Things, and mobile technologies have a significant impact on processes, products, services and business models. Information technology is entering all areas of users' lives (Urbach, Drews, & Ross, 2017). Specifically, technological innovations provide access to data that was not available so far (Nikolic, Vesic, and Cogoljevic, 2019), but also these and other opportunities that provide new digital technologies represent one of the biggest challenges companies face today (Singh & Hess, 2017). In the digital age, flexible and rapid adaptation of information systems is crucial. In the cases where the IT function cannot adapt to the new requirements, companies have to establish new business functions. With new business functions, there is a need for new professions. Also, knowledge management in the company becomes an imperative for successful business (Hebibi, Raimi and Milicićević, 2019). These changes in the labor market significantly affect the competencies that companies require from employees, as well as the way companies employ staff (Fitsilis, Tsoutsa, & Gerogiannis, 2018). According to (Slvić, Bjekić, & Berber, 2017) the importance of social networks such as e.g. LinkedIn and Facebook is growing in search of adequate staff. The structure of workers required for modern business is changing because modern technologies require trained and educated staff who are ready for continuous training (Stankić, Stojković, & Soldić-Aleksić, 2018).

Even with a clear vision and an agile approach to realize and stimulate innovation, some companies still cannot cope with the challenges of digital transformation. Namely, unless the managers and employees have the adequate competencies required by digital transformation, it cannot be executed. Competence means a set of skills, knowledge and attitudes (Vey, Fandel-Meyer, Zipp, & Schneider, 2017). Today coaching is mentioned as one of the most important values of profit-oriented companies. Specifically, coaching introduces a performance improvement technique that provides tools at the individual and organizational levels that help in the path to success (Szabó, Slavic, & Berber, 2019).

The development of digital technologies is driving change that provides opportunities for more efficient business (Paunović and Veljović, 2018). Unlike the long-established term information technology (IT), the term is digitally used to specify that something is different (Tumbas, Schmiedel, & Vom Brocke, 2015). Specifically, more and more business departments are using digital technology to start innovation, in ways that go beyond the traditional capabilities of IT departments (Tumbas, Berente, & vom Brocke, 2018). Until recently, the Chief Information Officer (CIO) was responsible for the digital use of innovation. However, for several years, companies have been expecting their CIOs to expand their roles from technology to business strategies, to achieve greater business value (Singh & Hess, 2017). In regard to this background, businesses

realize the need to introduce a new profession that will take responsibility for the jobs that the digital age imposes (Earley, 2017). In response to this demand, more and more companies are establishing an additional position at the highest level of management, and create a profession called Chief Digital Officer (CDO). The role of a CDO can be centralized or decentralized. Regardless of positioning, CDOs are there to make digital transformation a strategic priority in companies (Singh & Hess, 2017).

Methodology

The standard methodology of systematic literature review recommended by (Brereton, Kitchenham, Budgen, Turner, & Khalil, 2007), (Kitchenham et al., 2009) and (Kitchenham et al., 2010) was applied in the paper. The following are the required steps by the systematic literature review protocol.

Defining research questions

The research questions considered in the paper are:

RQ1: What professions appear with the digital transformation and what is their role?

RQ2: What competencies are required to successfully transmit digital transformation?

Analyzing the relevant literature selected on the basis of selected criteria, it can be seen that digital transformation has become a key topic in modern business flows (Erceg & Zoranović, 2019). With the advent of this trend, it comes to the appearance of new professions that are necessary for modern business. RQ1 is set up to identify the new professions needed to manage digital transformation. Also, new jobs require the use of digital technologies, embracing the digital culture, changing the organizational structure and implementing a digital strategy, and sets up RQ2 to gain insight into the competencies needed to carry out digital transformation.

Finding relevant research

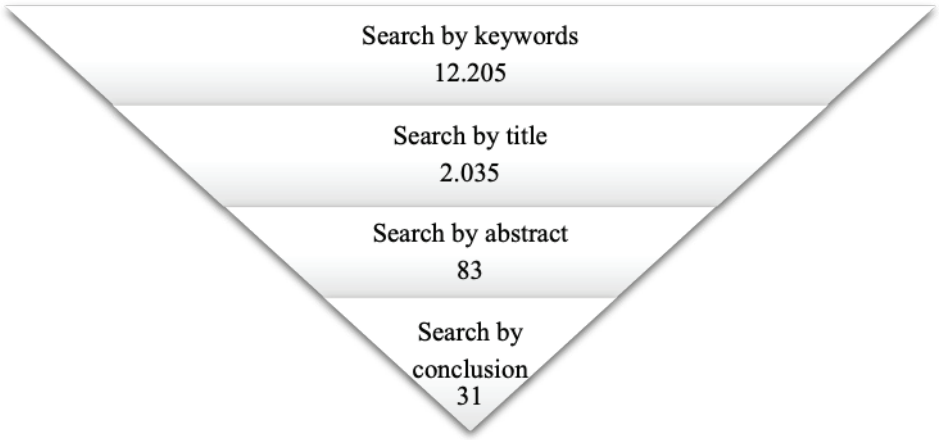
A search of the relevant literature for the topic was conducted manually at the Kobson Electronic Library (https://kobson.nb.rs/). The works were selected first by keywords, then by title, then by abstract and finally by conclusion. Keywords used for job search are: competences, digital transformation, CIO, CDO. The search for papers was conducted in English because of the relatively small number of data relevant to the topic in Serbian.

Defining study inclusion and exclusion criteria

The studies included in the study were published in the period 2015-2020. In addition to the time period, the criterion that the studies had to satisfy was that they were scientific papers published in a scientific journal or conference proceedings, doctoral dissertations and books. In the first search phase, 12,205 papers were found based on keywords. In the next step, based on the title were selected 2,035 papers which are considered to be relevant to the research topic. The following criterion referred to the

selection of abstract-based works and 83 studies were selected. According to (Brereton et al., 2007), abstracts of information technology and software engineering papers are not sufficient to draw a conclusion if the study is relevant, so it is necessary to read the conclusions. According to this, after reading the conclusions there were selected 31 relevant studies. (Scheme 1).

Scheme 1. Phases of the process of selecting relevant studies



Source: Autor

Qualitative assessment

A systematic review of the literature was qualitatively assessed using criteria developed at the York University, Center for Reviews and Dissemination (CDR) Database of Abstracts of Reviews of Effects (DARE). The criteria are based on four questions:

1. Are the criteria for inclusions and exclusions studies dangerous?
2. Does the process of searching studies cover all relevant studies?
3. Is the quality of the chosen studies assessed properly?
4. Are the basic data of study adequately presented?

In order to be included in the consideration, the studies had to meet all four criteria. The evaluation of the quality of the research material according to the defined criteria, as well as the extraction, analysis and synthesis of data from relevant studies, was performed using Mendeley software.

Research results and Discussion

Digital transformation is associated with a fundamental shift in peak performance and captures and include the external and internal dimensions of the enterprise (Erceg & Zoranović, 2019). The success of digital business transformation is largely determined by the competencies of a digital strategy executor who nurtures a digital culture and which is able to change existing and establish a new business model. Risk-taking becomes a cultural norm as digitally mature companies seek new levels of competitive advantage (Kane, Palmer, Phillips, Kiron, & Buckley, 2015). Equally

important is that employees want to thrive and work for a business that is committed to digital advancement. According to (Aleksic-Glisovic, Jerotijevic, & Jerotijevic, 2019) motivation for employees is a combination of meeting their needs and expectations about working conditions at a workplace. Company executives must take this into account to attract and retain the best staff. Therefore, digital transformation cannot be carried out without competent individuals who truly understand its meaning and complexity (Vey et al., 2017).

(Vey et al., 2017) In addition to their essential competencies, managers who believe in managing digital transformation should be professional and persistent in the face of employee resistance to digital transformation, continually support organizational change and actively help shape a culture that is reflected in ongoing learning, change and innovation. The ability to adapt quickly to change also stands out as an important feature. Perri Hevitt, chief digital officer at Harvard University, says that agility is more important than technology skills. It is agile processes that emphasize the importance of informal communication between actors, advocate small development teams instead of large structured units, and emphasize the value of any activity in the process of product or service development, while those activities that do not add value to the product are considered unnecessary (Erceg, Ciric, & Zoranovic, 2019).

According to (Earley, 2017), a CDO influences business in the following ways: A CDO can increase the visibility of process issues and focus attention on innovation, unlike a CIO that does not have such breadth. The CDO focuses on cultural changes in the company. The CDO educates other executives about the importance of data. The CDO is focused on changing the process. The CDO focuses on the issue of data quality. It is important to emphasize that data quality management requires considerable effort because of the large number of stakeholders, processes, systems and applications that are affected. Data quality management is a key process for maintaining a competitive position in the market, because the quality of business decisions depends directly on the quality of the information. Poor data quality can lead to low data efficiency and consequently serious decision-making errors, which can later cause irreversible losses for the company (Erceg, Sheres, & Zoranovic, 2019).

(Singh & Hess, 2017) identified five competencies that CDOs should have. The first group of skills were called IT competencies. Specifically, new digital products and services are IT-based, so the CDO must understand IT applications and basic infrastructures, as well as how they can be upgraded and modified. The second group of competencies involves change management skills. The CDO needs to understand what new digital technologies mean for the business of the company and their customers. Not only do they need to understand what business models, business processes and customer needs are, but they also need to know the workings of various business functions, such as finance, marketing, sales, human resources and more. The third category of competence is inspirational skills. The CDO should be able to persuade all decision makers and employees that the need for digital transformation emerges and to highlight the benefits that will come from that transformation. In this regard, a CDO should have the ability to successfully overcome the resistance and barriers of employees which are often present in traditional corporate cultures. The fourth category of competence could be called digital pioneering skills. This means that the CDO must create a cohesive digital vision for the company. The CDO plays the role of a digital pioneer in the company, which requires a visionary mindset. The fifth

feature that should excel at CDO is perseverance. Employees will not always accept the profound changes required for digital transformation, so the CDO needs to be persistent in its decisions in order for digital transformation to be successful.

According to (Fitsilis et al., 2018) the competencies required for digital transformation can be grouped into four categories. The first category refers to the technical competencies related to a specific job, such as process understanding and knowledge management. The second category is methodological competencies that include pre-emptive thinking, research skills, analytical skills, problem-solving ability and decision-making ability. The third group refers to social competencies, namely communication skills, teamwork, leadership skills and the ability to transfer knowledge. And the fourth category is personal competences, such as flexibility, motivation for continuous training and ability to work under pressure.

(Butschan, Heidenreich, Weber, & Kraemer, 2019) consider that the role of human capital is crucial to drive innovation in companies. They divide competencies into the following categories: the first category is cognitive competencies, which they describe as the ability and motivation of employees to continuously learn and create new aspects in their work environment. Also, without technical knowledge combined with a general understanding of digital trends, it is not possible to use new tools and methods that are necessary for digital transformation. The next category is social competence. A large amount of information is collected in a very short time, so obtaining useful information in such situations, and even more so transferring that information, is a very difficult task. In addition, teamwork ability and flexibility are the defining traits. The next category is process competencies. Manufacturing processes are networked, flexible and agile, so it is required process understanding and a comprehensive approach. Employees, apart from performing their jobs, must actively follow parallel processes at both horizontal and vertical levels.

Table 1. Overview of competencies by author

Year	**Authors**	**Competency**				
2017	Vey et al.	perseverance	introduction of culture	agility		
2017	Earley	innovation	introduction of culture	data management		
2017	Singh & Hess	tehnical	change management	innovation	introduction of culture	perseverance
2018	Fitsilis et al.	tehnical	methodological	social	personal	
2019	Butschan et al.	cognitive	social	process		

Source: Autor

As new professions related to digital transformation are still evolving, this means that their role is different for different organizations (Tumbas et al., 2018). Most authors state that, in addition to technical skills, it is imperative that digital transformation executives possess the ability to agile adapt to change and perseverance in implementing transformation, especially when implementing digital culture into traditional structures (Table 1). Social skills and a methodical approach to process management are key to successful implementation of digital

transformation. According to (Urbach & Ahlemann, 2018) digital transformation in most companies required skills and competencies which are not immediately available. Although they can be developed within companies, they take a long time, which is not always available. This is why partnerships and networking are becoming increasingly important.

Conclusion

New technologies associated with digital transformation promise to improve business performance but require competencies that need to be improved. Classical IT tasks, such as working on IT infrastructure and application development, are increasingly overshadowed by the new demands of the digital age. New competencies such as IT service management, IT innovation prioritization, IT architecture management, change management as well as connecting customers, suppliers and partners are gaining in popularity. Traditional IT functions are not able to meet the demands of digital transformation, and it is necessary to introduce new professions. In addition to previous CIOs, digital transformation is introducing a new profession called CDO, which has adequate competencies for its implementation and whose vision is strategically oriented.

References

Brereton, P., Kitchenham, B. A., Budgen, D., Turner, M., & Khalil, M. (2007). Lessons from applying the systematic literature review process within the software engineering domain. Journal of Systems and Software, 80(4), 571–583. https://doi.org/10.1016/j.jss.2006.07.009

Butschan, J., Heidenreich, S., Weber, B., & Kraemer, T. (2019). Tackling hurdles to digital transformation – The role of competencies for successful IIoT implementation. International Journal of Innovation Management, 23(4), 0–5. https://doi.org/10.1142/S1363919619500361

Earley, S. (2017). The Evolving Role of the CDO. IT Professional, 19(1), 64–69. https://doi.org/10.1109/MITP.2017.4

Erceg, V., Ćirić, Z., & Zoranović, T. (2019). Maturity in Agile Software Development Processes. Aplied Internet and Information Tehnology, IX, 353. https://doi.org/10.1111/j.1471-0528.1994.tb13676.x

Erceg, V., Šereš, L., & Zoranović, T. (2019). Data Quality Assesment. Applied Internet and Information Tehnologies, IX, 353. https://doi.org/10.1111/j.1471-0528.1994.tb13676.x

Erceg, V., & Zoranović, T. (2019). Digitalna transformacija poslovanja u poljoprivredi: Redizajn poslovnih rpocesa. Agroekonomika, 48(85).

Fitsilis, P., Tsoutsa, P., & Gerogiannis, V. (2018). Industry 4.0: Required personnel competences. International Scientific Journal "Industry 4.0," 133(3), 4.

Kane, G. C., Palmer, D., Phillips, A. N., Kiron, D., & Buckley, N. (2015). Strategy, Not Tehnology, drives Digital Transformation Becoming a Digitally Mature Enterprise. MIT Sloan Management Review. Retrieved from https://kityna.ga/146142.pdf

Kitchenham, B., Pearl Brereton, O., Budgen, D., Turner, M., Bailey, J., & Linkman, S. (2009). Systematic literature reviews in software engineering - A systematic literature review. Information and Software Technology, 51(1), 7–15. https://doi.org/10.1016/j.infsof.2008.09.009

Kitchenham, B., Pretorius, R., Budgen, D., Brereton, O. P., Turner, M., Niazi, M., & Linkman, S. (2010). Systematic literature reviews in software engineering-A tertiary study. Information and Software Technology, 52(8), 792–805. https://doi.org/10.1016/j.infsof.2010.03.006

Paunović, L., & Veljović, A. (2018). Modelling of the information system for monitoring the activities of a travel agency. Menadzment u Hotelijerstvu i Turizmu, 6(1), 31–39. https://doi.org/10.5937/menhottur1801031p

Singh, A., & Hess, T. (2017). How Chief Digital Officers Promote the Digital Transformation of their Companies. MIS Quarterly Executive, 16(1), 31–44. Retrieved from http://cdoclub.com.

Slavić, A., Bjekić, R., & Berber, N. (2017). The role of the internet and social networks in recruitment and selection process. *Strategic Management*, 22(3), 36-43.

Stankić, R., Stojković, D., & Soldić-Aleksić, J. (2018). The analysis of the needs for business informatics specialists at the labor market of Serbia. Anali Ekonomskog Fakulteta u Subotici, 54(39), 235–247. https://doi.org/10.5937/aneksub1839235s

Szabó, S., Slavić, A., & Berber, N. (2019). Coaching and its effects on individual and organizational performances in Central and Eastern Europe. Anali Ekonomskog Fakulteta u Subotici, 55(41), 67–80. https://doi.org/10.5937/aneksub1941067s

Tumbas, S., Berente, N., & vom Brocke, J. (2018). Digital innovation and institutional entrepreneurship: Chief Digital Officer perspectives of their emerging role. Journal of Information Technology, 33(3), 188–202. https://doi.org/10.1057/s41265-018-0055-0

Tumbas, S., Schmiedel, T., & Vom Brocke, J. (2015). Characterizing multiple institutional logics for innovation with digital technologies. Proceedings of the Annual Hawaii International Conference on System Sciences, 2015-March, 4151–4160. https://doi.org/10.1109/HICSS.2015.498

Urbach, N., & Ahlemann, F. (2018). IT Management in the Digital Age. https://doi.org/10.1177/1045159513499551.

Urbach, N., Drews, P., & Ross, J. (2017). Digital Business Transformation and the Changing Role of the IT Function. MIS Quarterly Executive, 16(2), 2–4.

Vey, K., Fandel-Meyer, T., Zipp, J. S., & Schneider, C. (2017). Learning & Development in Times of Digital Transformation: Facilitating a Culture of Change and Innovation. International Journal of Advanced Corporate Learning (IJAC), 10(1), 22–32. Retrieved from https://online-journals.org/index.php/i-jac/article/view/6334

ЕКОНОМИКА
ISSN 0350-137X, EISSN 2334-9190, UDK 338 (497,1)
Vol. 66, july-september 2020, № 3
P. 55-71

Vuk Miletić[1]
Zoran Jovanović[2]
High School of Academic Studies "Dositej", Belgrade
Žarko Pavić[3]
The College of Business Economics and Entrepreneurship, Belgrade

ORIGINAL SCIENTIFIC ARTICLE
doi: 10.5937/ekonomika2003055M
Received: May, 28. 2020.
Accepted: July, 08. 2020.

EVALUATION OF MANAGEMENT METHODS AND TECHNIQUES REGARDING QUALITY IMPROVEMENT OF SERBIAN ORGANIZATIONS' BUSINESS

Abstract

The subject of this paper is how domestic organizations can ensure excellent business quality and sustainability in the market by implementing a systematic business concept in which management is recognized as a powerful process for achieving high business performance. The premise is that competent management is a prerequisite for creating quality organizations and achieving results of total business excellence by combining other factors. The research is aimed at identifying and evaluating the primary obstacles in improving the quality of business of Serbian organizations which are on the market at different levels and lengths, and identifying the elements needed for the intended improvement with a focus on the importance of using modern management methods and techniques in organizations with different management styles, as well as a lack of knowledge of the management staff. In order to establish an effective management system that drives the development of a quality and sustainable organization, it is necessary for the management to understand current business trends as well as to establish new values at all levels of business that will contribute to the achievement of success. To confirm the premise, the analysis method, the synthesis method, and the method of multiple comparisons and statistical test were used.

Key words: *organizational quality, management system, business success, performance.*

JEL classification: *L25, M12, O32*

ЕВАЛУЦИЈА УПРАВЉАЧКИХ МЕТОДА И ТЕХНИКА У КОНТЕКСТУ УНАПРЕЂЕЊА КВАЛИТЕТА ПОСЛОВАЊА СРПСКИХ ОРГАНИЗАЦИЈА

Апстракт

Предмет истраживања у овом раду је како да српск организације осигурају изврсни квалитет пословања и своју одрживост на тржишту, применом

[1] vuk.miletic88@gmail.com, ORCID ID 0000-0002-6250-6803
[2] zojo30@yahoo.com, ORCID ID 0000-0002-8659-1547
[3] zarkopavic@yahoo.com, ORCID ID 0000-0003-3778-2299

системског бизнис концепта у коме је менаџмент препознат као моћни процес за постизање високих пословних перформанси. Полазна претпоставка је да је компетентан менаџмент потребан услов за креирање квалитетних организација и постизање резултата тоталне пословне изврсности, комбиновањем других фактора. Истраживање је усмерено на откривање и евалуацију примарних препрека у развоју унапређења квалитета пословања српских организација, различитог нивоа и дужине битисања на тржишту и идентификовању елемената потребних за намеравано унапређење, са фокусом на важност адекватног коришћења савремених метода и техника менаџмента у организацијама које имају различит менаџмент стил, као и недостатку знања запослених из области управљања. Ради успостављања ефективног система менаџмента који покреће развој квалитетне и одрживе организације, неопходно је да исти разуме актуелне трендове пословања, као и да успостави нове вредности на свим нивоима бизниса који ће допринositи остварењу успеха. Ради потврђивања полазне хипотезе коришћени су метод анализе, метод синтезе и метод вишеструког упоређивања и статистичког теста.

Кључне речи: *квалитет организације, систем менаџмента, пословни успех, перформансе.*

Introduction

One of the many problems that are present in every organizational environment is adequate organization of the managerial position. Namely, the management is and has always been a source of impulse and an important factor which determines the direction of a quality organization's development orientation. In order to survive and to grow successfully in an increasingly demanding market, organizations must use and continually improve management systems as a tool for improving their performances and for increasing the overall capacity of their sustainability. It is confirmed that a deeper understanding is necessary to incorporate the managerial system into the current business milieu to a greater degree than it currently is, for such an understanding is a necessary supposition for the strategic reorientation of numerous organizations that plead quality business conduct on the market.

The successful management of a contemporary organization should be integrated (Adelsberger, 2014), systematic, system-oriented and transparent, with constant performance improvement, oriented toward users and all interested parties. The application of different management systems and styles in organizations (Delić, N., Emić, A., 2015) is a regular occurrence. It is inconceivable that an organization should function without being based on multiple management systems. The overall management of an organization contains multiple systems of management, which makes for a comprehensive, consistent and non-conflicting set. Some of these systems are organized according to the experience and ideas of the management of the organization, and some according to the demands and rules of international and/or national standards. The synergy of reciprocal relationships and the operation of technology (Turban, McLean, Wetherbe, 2003), innovation and change is at work, and the management system is the necessary integrating factor.

There are different elements and management systems in the business practice of economic entities that significantly influence their business success. In order to effectively manage an organization (Miletić, 2017), the management must identify and evaluate the benefits of integrating different systems including the realization of the organization's strategic goals.

It is evident that organizations cannot be of good quality and cannot develop only through cost reduction and reengineering. Innovative programs as a function of the current and future business of organizations and their management become a major segment and impetus for their aggressive growth through which the dynamic changeability of products and technology is realized.

Adequate management systems of organizations have a significant impact on enhancing the quality of their successful functioning. Quality organizations operating in the same or similar environments can compete using different competitive systems (Namiki, 2011, p. 50-52) due to the unlike strategic orientations of their management and other internal characteristic capabilities. Also, it is striking that organizations with the ability to innovate (Berber, Lekovic, 2018), not only products and processes, generally perform better than others.

Quality of the organization

The success or any organization lies in the center of the management's deliberation (Cho, Pucik, 2005), with the inevitable question of how to measure and evaluate business success. The quality of an organization primarily reflects the degree to which the sum of its unique attributes meets the requirements of the target market. An organization defines its own unique characteristics through numerous elements of business success (Miletić, Berber, 2019). These characteristics are the authentic features of the organization and its employees.

Certainly, there is no single recipe and precise understanding of how to build a quality and competitive organization. The starting point in the process of creating a successful organization is for the top management to evaluate the current state of their quality. To achieve this goal, benchmarking can be used (Bešić, Đorđević, 2014), that is, organizations can compare themselves to other organizations that produce similar/same products or provide similar/same services (Worley, Williams, Edward, 2014). Different management systems use different benchmarks, standards and guidelines for self-assessment across different business areas. The results obtained can be used to gather information about the level of maturity of an organization's quality (Carlton, Perflof, 2005).

In this sense, organizations that strive for sustainable business success need to constantly identify the factors of their success (Miletić, Božilović, 2015). The criteria for the evaluation of their performance have been changing along with the changes in the business environment. Hence, nowadays the success factors of organizations (Perren, 2000) are related not only to the quality of the products and services they deliver to their customers (Leković. Đokić, 2014), but what is especially valued is the continuity of their business, the issues of adequate environmental management, the health and safety of the employees, socially responsible business, (Sekulić, Pavlović, p. 59-69), etc.

In the function of sustainable business quality continuity, the organization is expected to establish new success factors over time, above all to use modern management methods and techniques, and to raise performance evaluation criteria. All the more so, because the modern world market is looking not only for an international focus on business, but also for creating competitive strategies that ensure high performance.

In the situation of generating business success, the top management of the organization is expected to understand current business trends (Cvjetković, 2016) and, accordingly, to establish a supportive climate and culture at all levels of action that will contribute to the achievement of expected performance. By strengthening its identity through measurable values, an organization's management can raise the quality level of its performance by applying different types of management systems.

Management system

In order to achieve high performance (Cokins, 2009) in a saturated and constantly changing market and to increase the capacity of its sustainability, Serbian organizations must necessarily use adequate management systems as tools to improve overall results. The fact is that management technology is the oldest and it is emerging as a solution to the problems associated with the business success and high performance of each organization (Todosijević, 2015, p. 129). The intensification of changes caused, above all, by technology and innovation, consequently imposes the need for innovative technology for managing complex dynamic systems. This means that the success of a particular organization can only be realized if business processes are systematically being improved using new management methods and/or improving the performance of the organization.

Thus, in an increasingly unpredictable business environment, organizations need to develop and use management systems and tools that provide increased preparedness to address the consequences of change. Even more so since long-term planning as a management system based on extrapolation of the past into the future no longer has any useful value in the practice of domestic organizations. In addition to the serious conceptual errors of national economic policy that led to the collapse of the former giants, such as Electronics and Mechanical Industry from Niš, Magnohrom from Kraljevo, Prva petoletka from Trstenik, Goša from Smederevska Palanka, etc., the business failure of numerous domestic organizations has also been caused by an inadequate system of management of many domestic organizations. Obvious examples are Smederevo Ironworks and RTB Bor, which have become profitable after changing the management system.

The success of an organization, therefore, requires strategic planning and the agreement of its quality level with the set of its personal attributes (Radović-Marković, 2017). This means that the organization must encourage the need for change with its employees and to actively develop the process of managing and implementing promotion programs.

An organization must manage the changes that the business environment brings, first of all, by improving and applying new knowledge, modern management methods and techniques, developing integrated management systems, developing

and applying information technologies, and standardizing the quality of its business (Miletić, Jovanović, Jeremić, 2017, p. 37). A valid management system involves more than just establishing processes or proven procedures. An organization strives to base its own management system on the principles of effectiveness, by supporting the use of advanced business strategies, using benchmarks in line with its business activities, ensuring the realization of strategic goals of the organization, initiating innovation and competitiveness, applying various tools for improving business processes, ensuring the availability of resources for achieving goals, establishing dynamic communication with all interested stakeholders. Through this effort an organization encounters primary obstacles that need to be addressed by generating expected performance.

A successfully established management system drives the development of the organization towards achieving results in such a way as to reach the highest level of quality of products and services, and to ensure the efficiency and effectiveness of business processes and maximum performance. To achieve these goals, successful organizations use an expanded process model that recognizes the synergy of various activities and benchmarks for improving business quality.

Research methodology

Research on the quality of business of domestic organizations implies that this success should include finding options for effective management of the organization. The premise of the research is that maintaining stable development and business success of the organization depends, among other factors, on the adequate use of modern management methods and techniques.

The research was realized as an empirical cross section study for the purpose of describing the studied phenomenon and analyzing the relations between the building elements of the subject factor. In addition to the basic explicit method, at the stage of setting the theoretical framework of the work the speculative bibliography method was used, and in the process of processing and interpreting the results, the method of multiple comparison and statistical test. Surveying was used as a research technique to collect data and information.

The research was conducted on a sample of 138 organizations selected from the database kept by the Business Registers Agency of the Republic of Serbia. When selecting organizations in the sample, the decisive factor was the success of their business.

The purpose of the questionnaire was to gather information on the quality of business operations of organizations in the national economic milieu, as well as to identify the primary obstacles that limit the improvement of their quality of business, accentuating the change in the management system.

The questionnaire was specifically designed for the purpose of this research and contained questions related to the evaluation of the use of modern management methods and techniques by the surveyed organizations in order to find ways of more efficient business conduct. It was envisaged that an element could have been rated as very significant, both is and is not significant, and not significant. Differences in determining obstacles in the development of improving the quality of business of Serbian organizations, taking into account the answers received by the respondents,

were addressed by a ANOVA test, non-parametric $\chi 2$ test (existence of a statistically significant difference for Sig≤0.05 values).

Primary sources of information and knowledge were mainly used in the research segment presented in this paper.

Descriptive statistics

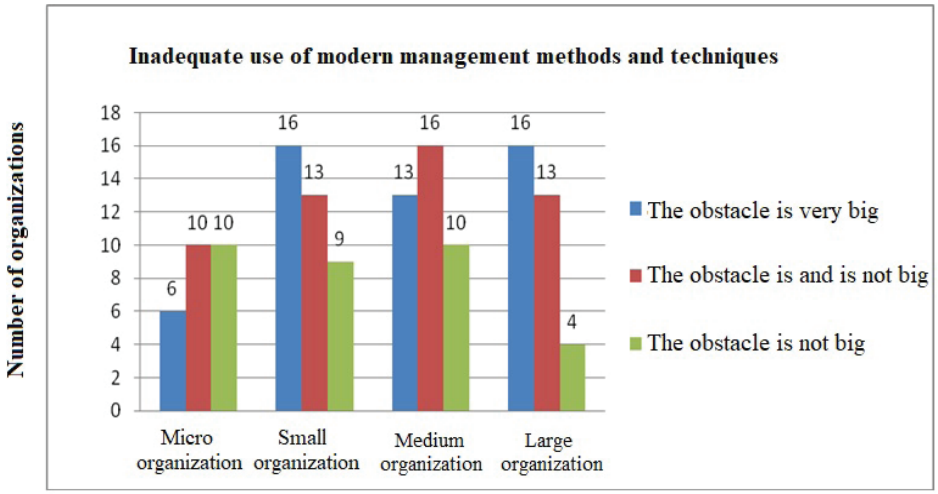
Evaluation of the factors that influence the improvement of business quality in Serbian organizations started with the identification of determining factors of business, with reference to the impact that the appropriate application of management methods and techniques has. Respondents were asked to determine the elements that contribute to improving the quality of their business excellence. They were able to rate the factors as very significant, as significant and not significant, and as not significant. The obtained results at first glance point to the fact that improvements in the quality of business by the surveyed managers were singled out as a special factor of Af-120, 77.2%, which significantly contributes to the increase of their competitive ability. Furthermore, the results indicate that, in addition to relevant knowledge, several factors that were identified as very significant (the percentage ranged from 78.8% to 88.2%) were employee training, development of integrated management systems; the application of modern management methods and techniques as a very significant factor Af-86, or 76%, is and is not a significant factor Af-40, 29.4%, and not a significant factor Af-12, 9.6%; improving the technical and technological basis of business (Miletić, 2016, p. 212).

The research also sought to evaluate the necessary elements to improve the quality of business of Serbian organizations within the organizations themselves. The obtained results show that in the largest percentage, the application of modern management methods and techniques stands out as a much required factor of Af-81, 51.6%; is and is not required Af-47, 34.6%; not required, Af-8 5.6%.

It is obvious that the business of local organizations today is influenced by numerous factors from the environment, whose impact on the quality of business is extensive. All of these factors can at the same time be basic obstacles, but also necessary factors for the development of the organization to the level of quality of business excellence. Adequate application of modern dominant management technology is one of the factors that contribute to the realization of the intended effects of improving the quality of business of Serbian organizations.

Differences in identifying the obstacles to improving the quality of business of domestic organizations, taking into account the answers given by organizations of different sizes, were addressed a non-parametric $\chi 2$ test (existence of a statistically significant difference for values of Sig≤0.05).

Chart 1 presents the results of assessing the inadequacy of using modern management methods and techniques as an obstacle to the development of improving the quality of business of domestic organizations.



Source: Author

Chart 1. Inadequate use of modern management methods and techniques as an obstacle to improving the quality of business of domestic organizations

Table 1 shows that the significance of the difference in the answers Sig. = 0.289> 0.05, so it can be concluded that there is no significant difference in the assessment of the use of modern management methods and techniques.

Table 1. Significance of differences in the assessment of inadequate use of modern management methods and techniques as an obstacle to improving the quality of business of organizations operating in Serbia

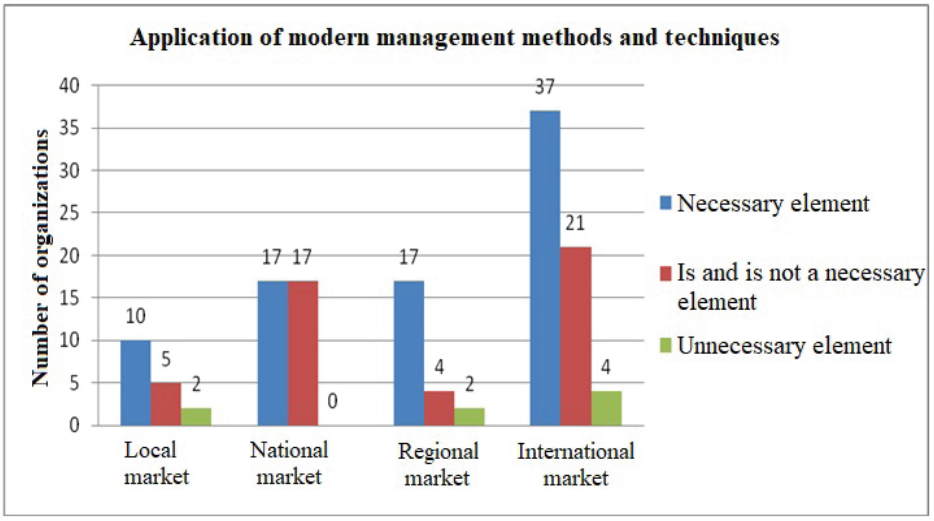
	Value	df	Sig.
Pearson Chi-Square (χ2 Chi square)	7.353	6	.289

Source: Author

Certainly, lack of managerial knowledge is a significant obstacle to raising the level of quality of business of organizations of different sizes. The results of Sig. = 0.468> 0.05 indicate that there is no significant difference in the lack of knowledge as an obstacle to improving the quality of business regardless of the size of the organization.

Differences in determining the necessary elements for improving the competitive - qualitative abilities of Serbian organizations evaluated by respondents of different levels of business were addressed by a nonparametric χ2 test (existence of a statistically significant difference for values of Sig≤0.05).

Chart 2 presents an assessment of the application of modern management methods and techniques as an element necessary for developing the competitiveness of Serbian organizations, evaluated by organizations operating at different levels.



Source: Author

Chart 2. Assessment of the application of modern management methods and techniques as an element necessary to improve the business of Serbian organizations

Table 2 presents the importance of applying modern management methods and techniques by organizations operating at different levels. The results show that Sig. = 0.168> 0.05, so it can be concluded that the level of business of an organization does not significantly affect the evaluation.

Table 2. Importance of evaluating the application of modern management methods and techniques as an element needed to improve the quality of business of national organizations

	Value	df	Sig.
Pearson Chi-Square (χ2 Chi square)	9.109	6	.168

Source: Author

Continuous improvement of management knowledge of all employees is of particular importance for raising the business potential of Serbian organizations. The effectiveness and success of a knowledge management program depends primarily on the manager's attitude regarding the matter. The advancement of knowledge in the field of management technologies determines their sustainable success by implementing all the necessary activities through an appropriate process. Organization management itself is an ongoing process, the purpose of which is to establish the strategic orientation of the organization and to ensure that it achieves its intended goals.

In this sense, the results of the research show that Sig.=0.033<0.05, which means that differences in the level of an organization's business significantly influence the

assessment of the importance of continuous improvement of all employees for the level of their business excellence.

In order to evaluate the importance of an adequate management system regarding the improvement of the quality of business of Serbian organizations to become more competitive in the domestic and foreign markets, a two-factor analysis of the impact of business length and business level on the characteristics of the organization has been conducted. Respondents were asked to rate certain characteristics in the business from 1 to 5, with 1 being the lowest and 5 being the highest rating. A two-factor analysis found that business length and business level influence differences in performance characteristics of an organization, as a prerequisite for creating high-performance organizations. A value of 0.05 was taken as the level of statistical significance (there is a statistically significant difference for all Sig≤0.05 values).

Table 3 gives the mean values of the rating of the level in which the management of the organization is consistent and clear, observed in organizations that operate for different periods of time and operate at different levels for each level and length of business. Standard deviation represents the deviation of the mean of the rating, and N stands for the number of respondents in the sample. One can notice that organizations operating at the regional level, and among them those operating from 6 to 10 years, have best evaluated the level at which management in the organization is consistent and clear.

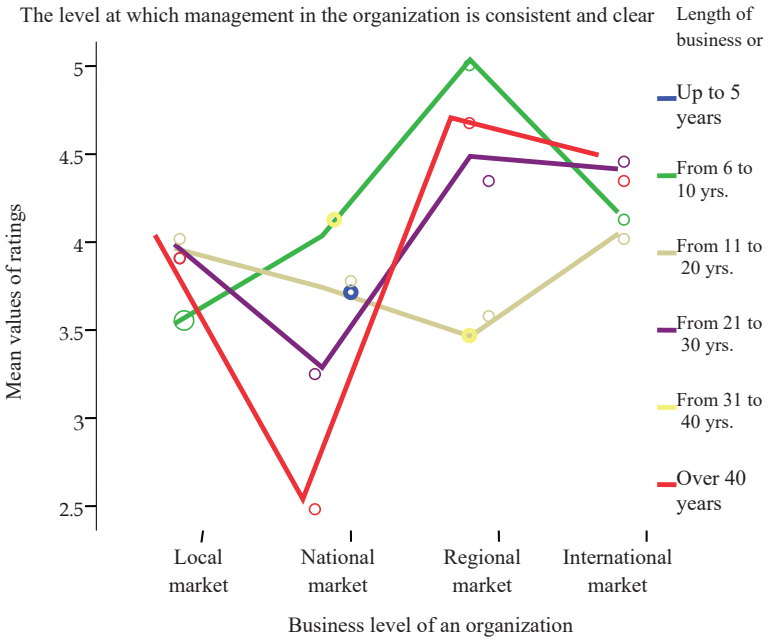
Table 3. Mean values of ratings of the level in which the management of the organization is consistent and clear

Business level	Length of an organization's business	Mean	Std. Deviation	N
Local market	From 6 to 10	3.50	.577	4
	From 11 to 20	4.00	.000	3
	From 21 to 30	4.00	.000	8
	Over 40 years	4.00	.000	2
	Total	3.88	.332	17
National market	Up to 5	3.71	1.254	7
	From 6 to 10	4.00	.000	2
	From 11 to 20	3.78	.441	9
	From 21 to 30	3.30	1.252	10
	From 31 to 40	4.00	.000	2
	Over 40 years	2.50	.577	4
	Total	3.50	.992	34
Regional market	From 6 to 10	5.00	.000	2
	From 11 to 20	3.50	.535	8
	From 21 to 30	4.50	.577	4
	Over 40 years	4.67	.500	9
	Total	4.26	.752	23

International market	From 6 to 10	4.13	.834	15
	From 11 to 20	4.08	1.084	12
	From 21 to 30	4.43	.746	21
	From 31 to 40	3.00	.000	3
	Over 40 years	4.45	.522	11
	Total	4.23	.838	62
Total	Up to 5	3.71	1.254	7
	From 6 to 10	4.09	.793	23
	From 11 to 20	3.84	.767	32
	From 21 to 30	4.09	.921	43
	From 31 to 40	3.40	.548	5
	Over 40 years	4.19	.895	26
	Total	4.01	.873	136

Source: Author

Chart 3 presents the mean values of the ratings of the levels in which organizations have clearly defined goals and elements to achieve them. It can be seen that the best rated organizations operating in the regional market for 5 to 10 years are organizations that have clearly defined goals and elements necessary for their successful achievement.



Source: Author

Chart 3. Mean values of ratings of the level at which management within the organization is consistent and clear

The influence of the interaction between the length of the organization's business and the level of business on the assessment of the level in which management in the organization is consistent and clear is given in Table 4. In the Business Level/Business Length column Sig=0.002, which is less than 0.05, so it can be concluded that there are significant differences in the level of ratings in which management in the organization is consistent and clear. The influence of the interaction between business level and business length is statistically significant.

Table 4. The influence of the interaction of variables Business level and Business length on the rating of the level in which management within the organization is consistent and clear

Variables	Df	Mean Square	F	Sig.
Business level	3	2.104	3.589	.016
Business length	5	.356	.606	.695
Business level/ Business length	10	1.776	3.029	.002

Source: Author

After analyzing the joint influence, the analysis of separate influences followed. The Sig column for business level shows a value of 0.016, which is less than 0.05, so it is concluded that the level of business of an organization has a significant impact on the ratings of the level in which management in the organization is consistent and clear. The Sig column for business length shows a value of 0.695, which is greater than 0.05, so it is concluded that the length of business does not significantly affect differences in ratings. Based on this, it can be concluded that the level of business and the length of business have a significant impact on the ratings of the level in which the management in the organization is consistent and clear, viewed through the combined influence of variables, while individual influence is significant only at the business level. It is noted that the individual impact of the level of business quality differs. A subsequent test identifies which organizations, depending on the level of business, differ in ratings using the Tukey test. Table 5 shows that the ratings of organizations operating on the national and regional markets, as well as the national and international markets, differ in terms of the degree to which management in organizations is consistent and clear.

Table 5. Comparative analysis of organizations at different levels of business in ratings of the level in which management within the organization is consistent and clear

(I)Business level of an organization	(J) Business level of an organization	Mean differe-nce (I-J)	Standa-rd de- viation	Deviation significan-ce (Sig)	95% Confidence interval	
					Lower limit	Upper limit
Local market	National market	.38	.227	.338	-.21	.98
	Regional market	-.38	.245	.414	-1.02	.26
	International market	-.34	.210	.361	-.89	.20
National market	Local market	-.38	.227	.338	-.98	.21
	Regional market	-.76(*)	.207	.002	-1.30	-.22
	International market	-.73(*)	.163	.000	-1.15	-.30
Regional market	Local market	.38	.245	.414	-.26	1.02
	National market	.76(*)	.207	.002	.22	1.30
	International market	.04	.187	.998	-.45	.52
International market	Local market	.34	.210	.361	-.20	.89
	National market	.73(*)	.163	.000	.30	1.15
	Regional market	-.04	.187	.998	-.52	.45

Source: Author

The respondents were further asked to indicate the leadership style in organizations. Table 6 presents comparative statistics on the existence of differences in HR policy in organizations with different management styles. It can be noted that differences in leadership style significantly influence the decisions in the selection of employees to be educated in the management field Sig = 0.002.

Table 6. Differences in HR policy in organizations with different management styles

		Sum of Squares	df	Mean Square	F	Sig.
Work habits of employees in the organization	Between Groups	2.032	3	.677	.717	.543
	Within Groups	124.608	132	.944		
	Total	126.640	135			
Positive response of employees to education and training programs, as well as their willingness to undergo education and training	Between Groups	1.476	3	.492	.364	.779
	Within Groups	178.642	132	1.353		
	Total	180.118	135			
Allocation of resources of the organization for employee education and training	Between Groups	7.323	3	2.441	1.478	.224
	Within Groups	218.081	132	1.652		
	Total	225.404	135			
Fairness when choosing which employees to educate	Between Groups	19.922	3	6.641	5.161	.002*
	Within Groups	169.843	132	1.287		
	Total	189.765	135			
The level at which the idea of business culture in an organization is realized	Between Groups	3.900	3	1.300	1.321	.270
	Within Groups	129.865	132	.984		
	Total	133.765	135			
The level at which employees in an organization share responsibility for both the success and failure of the organization	Between Groups	11.687	3	3.896	2.852	.040*
	Within Groups	180.305	132	1.366		
	Total	191.993	135			
Teamwork in the organization	Between Groups	17.861	3	5.954	6.536	.000*
	Within Groups	120.249	132	.911		
	Total	138.110	135			
Employees in the organization as sources of creativity and new ideas	Between Groups	12.250	3	4.083	3.642	.015*
	Within Groups	147.985	132	1.121		
	Total	160.235	135			

Source: Author

The subsequent Tukey test found among which organizations with different leadership styles there are differences by looking at variables that possess a significant difference in ratings.

The subsequent Tukey test in Table 7 presents the differences in decision making when selecting employees to be educated in organizations with different leadership styles. Organizations with an autocratic and participatory leadership style and organizations with an autocratic and democratic leadership style demonstrate a difference.

Table 7. Fairness when selecting employees who will be educated in organizations with different management styles

Fairness when selecting employees who will be educated		Mean difference (I-J)	Standard deviation	Deviation significance (Sig)	95% Confidence interval	
(I) Management style in an organization	(J) Management style in an organization				Lower limit	Upper limit
Autocratic	Participatory	-.767(*)	.260	.020	-1.44	-.09
	Democratic	-.848(*)	.278	.015	-1.57	-.12
	Not sure	.250	.455	.946	-.93	1.43
Participatory	Autocratic	.767(*)	.260	.020	.09	1.44
	Democratic	-.081	.231	.985	-.68	.52
	Not sure	1.017	.427	.086	-.10	2.13
Democratic	Autocratic	.848(*)	.278	.015	.12	1.57
	Participatory	.081	.231	.985	-.52	.68
	Not sure	1.098	.438	.064	-.04	2.24
Not sure	Autocratic	-.250	.455	.946	-1.43	.93
	Participatory	-1.017	.427	.086	-2.13	.10
	Democratic	-1.098	.438	.064	-2.24	.04

Source: Author

Respondents were asked to fill in the number of employees who have received training in management for the past year. Table 8 shows that there are differences in all observed characteristics: size of the organization, ownership structure, length of business, activity, business sector and level of business of the organization all influence the differences in the number of employees who have been trained in the field of management.

Table 8. Differences in the number of persons who have undergone training in management in organizations with different characteristics

Characteristics of an organization	Number of people who have undergone management training in the last year		
	Value $\chi 2$	df	Sig.
Size of the organization	89,751	24	0.000*
Ownership structure of the organization	31,891	16	0.010*
Length of business of the organization	72,508	40	0.001*

Activity of the organization	29,891	16	0.019*
Business sector of the organization	407,952	168	0.000*
Level of business of the organization	44,300	24	0.007*

Source: Author

It can be concluded that there is a significant difference in the ratings of those organizations that have an autocratic leadership style and those who were unsure about the leadership style in the organization. There are differences in organizations with a participatory and democratic leadership style and in organizations where respondents are uncertain about the management style.

Results and discussion

The purpose of the research was to gather information on the state in the national economic environment and to identify the obstacles and the chances for domestic organizations to apply modern management methods and techniques in order to develop their own competitive ability and achieve superior business results.

The conducted research confirmed that improving the quality of business of Serbian organizations is the focus of their management, especially since improving the quality of business by the surveyed managers was singled out as a separate factor to which attention must be paid in order to make the organization as competitive as possible on the market. The results of the research further showed that factors of business excellence of the surveyed organizations that stand out are the development and application of information technologies, procurement of modern technological solutions and equipment, standardization of business quality, continuous improvement of knowledge of all employees and investment in the development of local brands. The biggest primary obstacles in improving the quality of business operations of domestic organizations are lack of knowledge, inadequate use of modern management methods and techniques, outdated equipment and technologies, insufficiently stimulating business environment, lack of resources, business that is not based on international standards, and inadequate implementation of marketing concepts.

Responses from organizations at different levels of business varied significantly in terms of the elements necessary to improve the quality of business of Serbian organizations. It is concluded that the level of business significantly influences the evaluation of promotion factors, with particular emphasis on the lack of management knowledge and the inadequate use of modern management methods and techniques. In more than half of the organizations (the largest percentage), none of the employees has been in management training in the past year.

The length of business and the level of business of an organization have a significant common influence on all attributes of organizations, and they are seen as characteristics which an organization of total business excellence should possess. The level of business of an organization significantly affects the differences in the level in

which the management in the organization is consistent and clear.

Depending on the decision makers and the management style, significant differences occur in the area of allocating resources for employee education and training.

The results of the research confirmed the hypothesis and showed that the size of the organization, the length and level of business of the organization, the application of modern management methods and techniques, and continuous improvement of management knowledge of employees in the organization significantly affect the improvement of the quality of Serbian organizations and overall performance.

References

Adelsberger, Z, R., (2014). Integracija sistema upravljanja prema aneksu SL, *Kvalitet*, Beograd, No. 1-2.

Anđelković, A., & Radosavljević, M. [2018]. Improving order-picking process through implementation of warehouse management system. *Strategic Management*, 23(1), 3-10.

Berber, N., & Lekovic, B. (2018). The impact of HR development on innovative performances in central and eastern European countries. *Employee Relations, 40*(5), 762-786.

Bešić, C., Đorđević, D. (2014). *Benčmarking*, FTN Čačak

Delić, N., Emić, A. (2015). *Strateško vođstvo i stil vođenja kao ključni factor provođenja strategije i unapređenja kvaliteta*. "QUALITY 2015", Neum, pp. 549-554

Derrick, B; Ruck, A; Toher, D; White, P (2018). "Tests for equality of variances between two samples which contain both paired observations and independent observations" (PDF). *Journal of Applied Quantitative Methods.* 13 (2): 36*–47.*

Leković, K., Đokić, I. (2014). Marketing aspect of corporate social responsibility. *Anali* Ekonomskog fakulteta u Subotici, pp. 335-352

Miletić, V. (2016). *Liderski koncept poslovanja - funkcija kreiranja organizacije visokih performansi*, Univerzitet "Union - Nikola Tesla", Beograd

Miletić, V., Miletić S., Berber, N., (2019) How high are the performances of organizations in the Republic of Serbia? *Facta universitatis*, *Series: Economics and Organization,* Niš, Serbia, Vol. 16, No 2, pp. 215-228,

Miletić, V., Jovanović, Z. Jeremić, Lj. (2017). Progresive Managament System - a Development and Organization Manager to Success. *Ekonomika*, Niš, no. 3, pp. 35-43.

Miletić, V., Božilović, S. (2015). Analysis of Possibilities for Improving Serbian Companies' Business Activities. *Facta univesitatis, Series: Economics and Organization*, Vol. 12, No 4, pp. 259-268.

Miletić, V. (2017), *Adjustment challenges of Serbian organizations to changed market competition conditions*, VIII Iinternational scientific practical Belgorodski conference, Gosudarstveny tehnologičesky University, Belgorod, pp. 199-205.

Namiki, M. (2011). Successful Share-building Strategies for High - technology Companies. College of Business, Graduate School of Business Administration, Rikkyo University, *Business Review*, No.4 pp. 50-52.

Pavlović, N., & Čelić, I. (2020). Analiza konkurentskih strategija iz perspektive malih i srednjih preduzeća. *Menadžment u hotelijerstvu i turizmu*, 8(1), 101-110.

Perren, L., (2000), Factors in the growth of micro-enterprises (part 2): exploring the implications, *Journal of small business and enterprise development*, 7(1), pp. 58-68.

Радовић-Марковић, М. (2017). Подстицање резилијентности предузећа у Србији. Н-СК "*Трендови у пословању",* Београд

Szabó, S., Slavić, A., & Berber, N. (2019). Coaching and its effects on individual and organizational performances in Central and Eastern Europe. *Anali Ekonomskog fakulteta u Subotici*, (41), 67-80.

Sekulić, V., & Pavlović, M. (2018). Corporate social responsibility in relations with social community: Determinants, development, management. *Ekonomika*. 64(4), 59-69.

Todosijević, R., (2015), Promene u strategijskom menadžmentu izazvane inovacijama i ključnim tehnologijama, *Anali* Ekonomskog fakulteta u Subotici, no. 34,

Turban, E., E. McLean, & J. Wetherbe, (2003), Informaciona tehnologija za menadžment: transformisanje poslovanja u digitalnu ekonomiju. Zavod za udžbenike i nastavna sredstva, Beograd

Carlton, W. D., Perflof, M. J. (2005). Modern Industrial Organization, Adision Wesley, Boston, USA,

Cokins, G. (2009), Performance Management: Integrating Strategy Execution, Methodologies, Risk, and Analytics, Hoboken, New Jersey: John Wiley & Sons,Inc.

Cho, H. and Pucik, V. "Relationship between innovativeness, quality, growth, profitability, and market value." *Strategic Management Journal*, no. 26: 555-575. 2005

Cvjetković, M. (2016). *Analiza ključnih faktora unapređenja poslovanja i konkurentnosti preduzeća*. dd TF "Mihajlo Pupin" Zrenjanin

Worley, C. G., Williams, T. D., Edward, E. (2014). The Agility Factor: Building Adaptable Organizations for Superior Performance. *Jossey-Bass*, aug.

ЕКОНОМИКА
ISSN 0350-137X, EISSN 2334-9190, UDK 338 (497,1)
Vol. 66, july-september 2020, № 3
P. 73-80

Sanja Doncic[1]
Business applied studies Academy, Belgrade

ORIGINAL SCIENTIFIC ARTICLE
doi: 10.5937/ekonomika2003073D
Received: May, 22. 2020.
Accepted: July, 08. 2020.

TESTING THE CAUSALITY BETWEEN BITCOIN PRICE AND THE GOLD PRICE IN THE GLOBAL MARKET PRIME BY GRANGER'S TEST

Abstract

The paper examines the existence of a causal relationship in Grangers' sense between the movement of Bitcoin prices and the price of gold at the global financial market, in order to answer the question whether it is possible to predict the movement of the Bitcoin price based on the movement of the price of gold in the world market, but also vice versa. The survey was conducted from January 1, 2019 to December 1, 2019. In the research was used the Granger causality test (1969). The research results show that historical data on the movement of gold prices in the world market cannot be used to predict the change in value and price movements of Bitcoin. On the other hand, the survey results indicate the possibility of a reliable application of the use of historical data on the movement of value and price of Bitcoin.

Key words: the Granger causality test, Bitcoin, VAR model, VECM model

JEL classification: *C22, C23*

ТЕСТИРАЊЕ КАУЗАЛНОСТИ ИЗМЕЂУ БИТЦОИНА И ЦЕНЕ ЗЛАТА НА СВЕТСКОМ ТРЖИШТУ ПРИМЕНОМ ГРАНГЕРОВОГ ТЕСТА

Апстракт

У раду се испитује каузална веза у Гренгеровом смислу између кретања цене Битцоина и цене злата на глоалном финансијском тржишту како би се одговорило на питање да ли је могуће предвидети кретање цене Битцоина на основу кретања цене злата на светском тржишту, али и обратно. Истраживање је спроведено у периоду д 1 јануара 2019. Године до 1. децембра 2019. Године. У истраживању је коришћен Гренгеров теста каузалности (1969). Резултати истраживања показују да историјским подаци о кретању цене злата на светском тржишту не могу да се користе за предвиђање промена у вредности и цени Битцоина. Са друге стране, резултати истраживања указују да је могућа поуздана примена историјских података о кретању вредности и цене Битцоина за предвиђање цене злата.

Кључне речи: the Granger causality тест, Bitcoin, VAR модел, VECM модел

[1] belosevic.sanja@yahoo.com, ORCID ID 0000-0002-9300-8284

Introduction

The subject of special interest in the recent years of the media, professional and scientific public is the possibility of predicting the movement of the value and price of Bitcoin, not only because of the growth of its value as electronic money, but also because of the growing interest in Bitcoin as a financial and speculative asset (Kristoufek, 2014, Smigić-Miladinović, 2018). Specifically, the rise in its popularity, thanks in large part to the rapid growth in its value, has caused an increasing number of scientific papers to examine the relationship between Bitcoin trading volume and its value. The causality between the trading volume of an asset and the growth of its value has been explored in numerous papers and its mechanisms are more or less commonly known by Karpoff (1987), Li et al., 2016), (Balduzzi et al., 2001), (Chiarella et al. , 2016) and (Puri and Philippatos, 2008). Characteristic of the market is the appearance of nonlinearities and structural breaks in the data on the historical movement of values and prices of Bitcoin. From this reason investigation of this phenom requires the application of non-parametric tests. Hence, previous studies, such as the research by Balcilar et al (2017) examined the possibility of predicting the price and value of Bitcoin by applying non-parametric tests that focused on analyzing the causality between Bitcoin trading volume and Bitcoin yield and volatility. Typically, these studies were used a causality-in-quantiles test to examine the causally-consequential relationship between selected phenomena. However, the results of these studies indicate that trading volume can be used to predict the yield and value of Bitcoin, except in a situation where the Bitcoin market is in bear and bull mode. Also, research indicates that trading volume cannot be used to predict yield volatility at any point of conditional distribution. The possibility of establishing a causal relationship between trading volume and the price of Bitcoin indicates a weak form of inefficiency of this market as trading volume information is transmitted to the market and embedded in its value (Chen et al., 2001). In the context of the efficient market hypothesis and the martingale of the process describing the efficient market, this means that this market is inefficient and that all econometric models built on the "random walk" hypothesis, that is, the asset valuation models based on the hypothesis of market efficiencies are not realistic (Radivojevic, 2014, 2015, 2017a,b). This indicates that models that are not based on the efficient market hypothesis should be used to predict the value movement, or price of Bitcoin.

Adding to the foregoing the fact that in recent years the Bitcoin market has been s, in a constant mode of bear-and-bull regimes, and is quite volatile, then there is a need to look at other ways of predicting movement of price and retursn of Bitcoin. Since in recent years the gold market has also been the subject of considerable interest, primarily because of its volatility and reflection of global economic trends, not only those related to economic and financial flows, but also broader, socio-political, so it is very interesting to consider the possibility of using data on the movement of the price of gold in the global market in the context of the ability to predict the movement of value and price of Bitcoin. This is especially important given that the gold market is a reflection of global economic developments, on the one hand, and the fact that Bitcoin is becoming increasingly important as an asset, ie. investment alternative, on the other hand. Therefore, the purpose of this paper is to apply the Granger causality test in order to answer to the question of whether the movement of the price of Bitcoin at the global financial market can be predicted on the basis of the movement of the gold price.

Theoretical background of the issue in the context of the methodology used

In the context of the subject matter of the research of this paper, the application of the Granger causality test would imply that based on a set of data on the movement of gold price it would be possible to forecast a future movement of Bitcoin price better than only conducting such forecast on the basis of the time series of the historical data about the Bitcoin price movement. In other words, on the assumption that there is an available set of information about the movement of the gold price (x) and the movemnet of price of Bitcoin (y) at a certain moment (t) (the information set Ω_t) of the form (x_t, ...x_{t-j} , y_t, ...y_{t-i}), the data about gold price at the moment (t) (x_t) can be said to be Granger-causal for the Bitcoin price data (y_t) wrt. Ω_t if the variance of the optimal linear predictor for predicting a Bitcoin price at the moment t+h (y_{t+h}), based on the available set of pieces of information at the moment (t) (Ω_t) has a smaller variance than the optimal linear predictor for y_{t+h} only based on the data about the movement of the gold price from the prior period, for any h.

For the reason of the said, the data about the gold price (x) can be said to Granger-cause y if, and only if $\sigma^2_1(y_t : y_{t-j}, xt-i) < \sigma^2_2 (y_t : y_{t-j})$, with j and i = 1, 2, 3, ...n, and σ^2 representing the variance of the forecast error.

Mathematically, the above can be expressed as follows (Granger, 1969):

$$B_t = \alpha + \sum_{t=1}^{m} \beta_i (B)_{t-i} + \sum_{j=1}^{n} \tau_j (Au)_{t-j} + \mu_t \quad (1)$$

и

$$Au_t = \theta + \sum_{t=1}^{p} \phi_i (Au)_{t-i} + \sum_{j=1}^{q} \psi_j (B)_{t-j} + \eta_t \quad (2)$$

Where are:

- *Au – gold price*
- *B* – Bitcoin price
- μ and η are the residuals which are assumed to μ and $\eta \sim IID\ N(0,1)$.

According to Radivojevic et al. (2019), using the least squares method, it is possible to test the following four hypotheses:

1. that there is unidirectional causality from a change in Bitcoin price towards a change in the gold price, but not the other way around. Mathematically stated:

$$\sum_{j=1}^{n} \tau_j \neq 0 \text{ и } \sum_{j=1}^{q} \psi_j = 0$$

The foregoing means that a change in the price of Bitcoin increases the prediction of a change in the price of gold.

2. that there is unidirectional causality from a change in the gold price towards a change in a Bitcoin price, or:

$$\sum_{j=1}^{n}\tau_j = 0 \text{ и } \sum_{j=1}^{q}\psi_j \neq 0$$

3. that there is the Granger causality in any direction whatsoever, i.e. that:

$$\sum_{j=1}^{n}\tau_j \neq 0 \text{ и } \sum_{j=1}^{q}\psi_j \neq 0$$

4. that there is no Granger causality in any direction whatsoever, i.e. that:

$$\sum_{j=1}^{n}\tau_j = 0 \text{ и } \sum_{j=1}^{q}\psi_j = 0$$

The application of the Granger causality test boils down to proving one of these hypotheses, which provides an answer to the question whether a change in the value and price of Bitcoin can be predicted based on a change in the price of gold.

An empirical study of Granger causality between Bitcoin price and the price of gold

Data of movements of the Gold price and Bitcoin price were collected from CoinMarketCap's official website for the period January 1 - December 31, 2019. Daily data on the price of gold and Bitcoin price were used, noting that the price of gold is expressed in dollars. The daily logarithmic[2] yield rates were calculated using the following form:

$$R_{i,t} = \log\left(\frac{P_{i,t}}{P_{i,t-1}}\right)$$

Where are:
$R_{i,t}$ - The rate of return of gold / Bitcoin in a day (t).
$P_{i,t}$ - represents the price of gold / Bitcoin in a day (t).

The first step in the application of the Granger causality test implied the examination of the stationarity of the time series and the determination of the number of the unit roots (the order of integration). For that purpose, the ADF test was used in the paper. The results of this test are given in Table 1.

[2] See Radivojevic et al (2016) for more details on the reasons for applying logarithmic returns.

Table 1. The results of ADF test

Variables	Level		Difference	
	stat.	p-value	stat.	p-value
Bitcoin	1.998	0.1147	16.608	0.000
Gold	0.000	0.000		

Source: (Author's)

As can be seen, the Bitcoin returns time series has the non-stationarity problem in level data. It was only after the application first difference technique was used the series is become stationaty. As both series were not non-stationary at the same level, no cointegration test was used in the paper. In the case where both series are non-stationary at the same level, some of the cointegration tests should be applied (see Curcic, et al. 2020 for details). According to Curcic, et al. (2020) in the case of cointegration, instead of the VAR model, it is necessary to use the VECM model. After testing for stationarity, the optimal lenght length was determined in the paper. For this purpose, the ACI criterion was used in the paper. According to this criterion the optimal lag length in the case of Bitcoin is 10 (-6.885), while in the case of gold it is 1 (-3.773).

The resuts of the Granger causality test for the equation (1) and (2) are shown in Table 2.

Table 2. The resuts of the Granger causality test for the equation (1) and (2)

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	0.000612532	0.00228597	0.2680	0.7890	
gold_1	0.0104406	0.0642810	0.1624	0.8711	
gold_2	−0.0158977	0.0634715	−0.2505	0.8024	
gold_3	−0.107711	0.0632175	−1.704	0.0897	*
gold_4	0.00328073	0.0637074	0.05150	0.9590	
gold_5	0.0778247	0.0635394	1.225	0.2219	
gold_6	−0.0567166	0.0632926	−0.8961	0.3711	
gold_7	−0.0972254	0.0633583	−1.535	0.1262	
gold_8	0.122348	0.0643424	1.902	0.0584	*
d_Bit_1	0.343314	0.307601	1.116	0.2655	
d_Bit_2	0.337510	0.400330	0.8431	0.4000	
d_Bit_3	0.515127	0.443662	1.161	0.2468	
d_Bit_4	0.838642	0.456556	1.837	0.0675	*
d_Bit_5	0.782688	0.459806	1.702	0.0900	*
d_Bit_6	0.924008	0.445360	2.075	0.0391	**
d_Bit_7	0.615623	0.396731	1.552	0.1221	
d_Bit_8	−0.0267461	0.305144	−0.08765	0.9302	
R-squared	0.073728				
F-tests of zero restrictions:					
All lags of gold F(8, 237) =	1.3428	[0.2231]			

All lags of d_Bit F(8, 237) = 1.0521 [0.3977]	1.0521	[0.3977]			
All vars, lag 8 F(2, 237) = 1.8148 [0.1651]	1.8148	[0.1651]			
	Coefficient	Std. Error	t-ratio	p-value	
const	0.000	0.000475469	−0.03103	0.9753	
gold_1	0.00551133	0.0133701	0.4122	0.6806	
gold_2	0.00735445	0.0132017	0.5571	0.5780	
gold_3	−0.0185087	0.0131489	−1.408	0.1606	
gold_4	−0.00649274	0.0132508	−0.4900	0.6246	
gold_5	0.00391543	0.0132159	0.2963	0.7673	
gold_6	−0.0120088	0.0131645	−0.9122	0.3626	
gold_7	−0.0304292	0.0131782	−2.309	0.0218	**
gold_8	0.00935434	0.0133829	0.6990	0.4853	
d_Bit_1	−0.849608	0.0639793	−13.28	<0.0001	***
d_Bit_2	−0.723278	0.0832664	−8.686	<0.0001	***
d_Bit_3	−0.547454	0.0922792	−5.933	<0.0001	***
d_Bit_4	−0.616260	0.0949611	−6.490	<0.0001	***
d_Bit_5	−0.444460	0.0956370	−4.647	<0.0001	***
d_Bit_6	−0.341730	0.0926324	−3.689	0.0003	***
d_Bit_7	−0.176815	0.0825179	−2.143	0.0332	**
d_Bit_8	−0.155129	0.0634682	−2.444	0.0152	**
R-squared	0.475120				
All lags of gold F(8, 237) =	1.1144	(0.3541)			
All lags of d_Bit F(8, 237) =	25.117	(0.0000)			
All vars, lag 8 F(2, 237) =	3.2589	(0.0402)			
Autocorr.	F(4, 468)	(0.6992)			
ARCH effect	17.801 (9)	(0.0376)			

Source: (Author's)

The absence of autocorrelation indicates the consistency of the estimator since the data were independently distributed. The absence of an ARCH effect for a confidence level of 1% means that there is conditional homoskedasticity. The results of the causality test indicate that model 1 rejects the null hypothesis that a change in the value and price of Bitcoin is not causality in the Granger sense, or in the second model it accepts the null hypothesis that a change in the price of gold is not a causality in the change of the value and price of Bitcoin. In other words, these findings suggest that one cannot better predict the movement of the Bitcoin price by applying a series of data related to the movement

of the gold price, in comparison to the case when using the historical data series of the value, that is, the price of Bitcoin. In simple terms, the movement of the price of gold cannot be used to predict future Bitcoin prices. On the other hand, the results show that the movement of the price of Bitcoin can be used to predict the price of gold in the world market.

Conclusion

This paper is devoted to investigating the existence of a cause and effect relationship in Grangers' sense between the movement of the Bitcoin price and the price of gold in the global market to answer the question whether it is possible to predict the movement of the value and price of Bitcoin based on data on the movement of the price of gold from the previous period, but also vice versa. The survey was conducted in the period from 1 January to 31 December 2019.

The research results show that historical data on the movement of gold prices in the world market cannot be used to predict the change in value and price movements of Bitcoin. On the other hand, the survey results indicate the possibility of a reliable application of the use of historical data on the movement of value and price of Bitcoin.

References

Balduzzi, P., Elton, E. and Green, T. (2001). Economic News and Bond Prices: Evidence from the U.S. Treasury Market. Journal of Financial and Quantitative Analysis, 36(4), 523–43.

Bradfield, J., (2007), Introduction to the Economics of Financial Markets, Oxford University Press, Oxford,

Chiarella, C., Kang, B., Nikitopoulos, C. S., and To, T-D. (2016). The return-volatility relation in commodity futures markets. Journal of Futures Markets, 36, 127–152.

Curcic, N., et al. (2020), Examining Causality Between Market Share and Profitability, Textile industry, (in printing).

Djordjevic, A., (2018), Primena naprednih tehnilogija u oblasti međunarodnih finansija, Ekonomika, Vol. 64, No. 1, str. 95-104.

Fama, E., (1970), "Efficient capital markets: A review of theory and empirical work", The Journal of Finance, No. 25, pp. 383-417.

Federal Register. (2011). Bank Secrecy Act Regulations; Definitions and Other Regulations Relating to Money Services.

Glaser F., Zimmermann K., Haferkorn M., Moritz C., Siering M. (2014). Bitcoin -asset or currency? Revealing users' hidden intentions, Twenty Second European

Conference on Information Systems, Tel Aviv.

Granger, C.W.J. (1969). Investigating causal relation by econometric and cross-sectional method, Econometrica, 37, 424–438.

Karpoff, J.M. (1987). The relation between price changes and trading volume: a survey. Journal of Financial and Quantitative Analysis, 22, 109–126

Kristoufek, L. (2014). What are the main drivers of the Bitcoin price? Evidence from wavelet coherence analysis. PLoS ONE 10(4): e0123923. doi:10.1371/journal.pone.0123923

Kubát M. (2015), Virtual currency bitcoin in the scope of money definition and store of value, Procedia Economics and Finance, 30, 409 – 416.

Li, H., Zhong, W. and Park, S.Y. (2016). Generalized cross-spectral test for nonlinear Granger causality with applications to money–output and price–volume relations. Economic Modelling, 52, 661–671.

Mousavi, H. (2018). The U.S. financial crisis and its impact on the global oil market. *International Review*, (1-2), 119-130.

Peters, E., (1994), Fractal Marкet Analysis: Applying Chaos Theory to Investment Analyzing and Forecasting Futures Prices and Economics, John Wiley and Sons, Chichester.

Puri, T.N. and Philippatos, G.C. (2008). Asymmetric Volume-Return Relation and Concentrated Trading in LIFFE Futures. European Financial Management, 14, 528 - 563.

Radivojevic, N., et al. (2019), „Econometric model of non-performing loans determinants", Physica A: Statistical Mechanics and its Applications, 520(April), 481-488.

Radivojevic, N., et al (2016), The new hybrid VaR approach based on EVT. Estudios de Economia, 43(1), 29-52.

Radivojevic, N., Sabot-Matic, Z., Mirjancic, B., (2017a): "New Historical bootstrap value at risk model", Journal of risk model validation, Vol. 11, No. 4, pp. 57-75.

Радивојевић, Н., (2014), Управљање тржишним ризицима на финансијским тржиштима у настајању применом модела вредности при ризику, Докторска дисертације, Економски факултет у Крагујевцу.

Radivojevic, N., Curcic, V., N., Vukajlovic, Dj. (2017b). Hull-White's VaR model: Case study of Baltic Equities market, Journal of Business economics and Management, 18(5), 1023-1041.

Smigić-Miladinović, J., (2018), Bitcoin – stanje i trendovi, Ekonomika, Vol. 64, No. 4, str. 109-120.

ЕКОНОМИКА
ISSN 0350-137X, EISSN 2334-9190, UDK 338 (497,1)
Vol. 66, july-september 2020, № 3
P. 81-94

Vladimir Knežević[1]
Dragan Ivković[2]
Aleksandra Penjišević[3]
Union- Nikola Tesla University, Belgrade, Faculty of management, Sremski Karlovci

ORIGINAL SCIENTIFIC ARTICLE
doi: 10.5937/ekonomika2003081K
Received: May, 22. 2020.
Accepted: July, 08. 2020.

INSTITUTIONAL ECONOMICS AND ECONOMIC DEVELOPMENT

Abstract

This research deals with the relationship between economic quality of institutions and economic development. For obtaining the value quantification of institutional quality, we measured rankings of 138 most important national economies based on three pillars of competitiveness, and we used Gross national product per capita to measure development. We applied Spearman`s rank correlation coefficient based on these two parameters for measuring the relationship between ranking of national economies. There is no doubt that a strong direct relationship was recognised. The value of the result lies in the identification of institutional economics as the major cause for different development levels of certain countries. This implies that in case of value measurement of our country, also the most efficient tool would be to put focus on increase of institutional quality.

Key words: *institutional economics, economic development, rank correlation.*

JEL classification: *A13, K 23, K25.*

ИНСТИТУЦИОНАЛНА ЕКОНОМИЈА И ПРИВРЕДНА РАЗВИЈЕНОСТ

Апстракт

Ово истраживање се бави везом између квалитета институционалне економије и привредне развијености. За квантитативну оцену квалитета институција смо израчунали ранг 138 најзначајнијих националних економија на бази три стуба конкурентности, а за меру развијености смо користили бруто национални производ по глави становника. Везу између рангирања националних привреда по ова два параметра смо самеравали користећи Спирманов коефицијент ранга. Неоспорно је утврђена снажна директна веза. Вредност резултата је у идентификацији институционалне економије као главног узрока различите развијености појединих зе-

[1] 1010brojevi@gmail.com, ORCID ID0000-0002-0714-175x

[2] dragan.Ict@gmail.com, ORCID ID 0000-0001-5330-9878

[3] aleksandra_penjisevic@yahoo.com, ORCID ID 0000-0002-0898-6818

маља. Из тога произилази да би и у случају наше земље најделотворније било акценат ставити на подизање квалитета институција.

Кључне речи: институционална економија, привредна развијеност, корелација ранга.

Introduction

One of the most everlasting and fundamental issues of macroeconomics is economic development. Most authors undoubtedly assume this as alpha and omega of economics. On the other hand, society also expects economists to contribute to economic development. Taking into account the fact that human needs have no limit and they must consistently be satisfied in every increasing scope and range, all this is completely logical and predictable. Economic development is always beyond sufficiency. There is and there will be an increasingly strong and steady demand for welfare and services. Beyond any doubt, the practice appears to be an evidence indicator that has a possibility to reach this.

The population of all countries, whether rich or poor, has priority to achieve higher rate of economic development. Not only is this vital in the circumstances of economic crisis, but it is also urgently required in the era of prosperity. Briefly, economic development has always been in the centre of attention and interest of almost all members in any community.

This was the main motive and initiator of the development of economics as a science. Economists have always endeavoured to recognise and explain the way in which economy works in order to provide economic system development with increasing efficiency and with the final aim, which is to enhance prosperity. Following this growth, economics has been at its best during the last 200-300 years through so-called classical and neoclassical school.

The greatest historical economic growth remarked this period, particularly since the end of the 17th century until the second half of the 20th century when these theories were perfectly complete and had a dominant role. However, after this period, certain economic problems appeared and there was a need for further development of economics, for the purpose of solving these problems. As it usually happens, the beginning of the transformation was based on criticism of neoclassical economic school, and as unlikely as it may seem, on denial of its initial principles. "The quality of economic and political institutions was believed to be external for a long time, and macroeconomic stability and accumulation of human capital were known as an important guideline of growth …." (Krstić et al., 2018, p. 9)

Institutional economics emerged from these processes, and its growth started by detecting the drawbacks of existing paradigm and attempts to revitalise macroeconomic theory through identifying and solving the problems that were neglected during the era of classical and neoclassical economics. Institutional economics appeared in this way and after a while, it was followed by new institutional economics.

Development of Institutional economics began and its first phase had roots in criticism of basic principles of neoclassicists. That is entirely common and represents the first and crucial step to the development of any science. It is not easy to take it, but in the intellectual sense it is not the hardest step. As a process, criticism itself is not the most demanding phase

that can sometimes be even intellectually acceptable. It is very hard to deny this phase, and the critic can often feel privileged to be part of a political opposition leader in a democratic society. In fact, almost no one is able to deny the reliability of his belief. However, shortly after that, the new theory faces problems that require further necessary steps to be taken.

After critical consideration of the hitherto dominant theory, the second step includes building of coherent alternative, or to be more precise, the process in which a new content complements economics. Our assumption here refers to the development of methodological apparatus, in fact, of indicators that can serve as a tool to define and quantify the quality, precisely, performances of economic institutions in a specific society. Economists determined certain parameters for assessment and measuring economic growth before institutionalists, so institutionalists need to define their own parameters as well.

The third step refers to empirical testing of the importance of new inventions. To be more precise, given the fact that we define the indicators of institutional economics, their relationship with economic development of particular economies containing listed institutional capacity should be identified and possibly measured. Indeed, this is not simple. Some parameters are very complex for measurement, no certain statistic tracking exists, etc. But, regardless of the unbiased methodological difficulty that every science experiences, particularly a new one, if it has tendency to survive and develop further, it needs to undertake these necessary steps.

Everything previously mentioned inspired us to formulate the aim of our research, which is: to make an attempt to define the relationship between the institutional quality of the economic system and economic development. To what extent does the quality of institutional economics affect economic development? Does building and operating of institutions mean "residual" in macroeconomics, as it used to be believed, or is it a significant factor? We believe that this research will respond to the questions.

Theoretical background

As previously mentioned, institutionalism took the first steps at the beginning of the last century in the form of criticism of initial base of neoclassical economies (Gligorijević, 2014). The second phase, which happened at the end of the 20th century, meant the beginning of peculiar integration accompanied by neoclassical economics and building of the categorical apparatus of this relatively young science which has been called a new institutional economics since then.

We conclude that this contemporary institutional economics took the second essential step to the development of the young science. It incorporated institutionalism into the neoclassical economic paradigm. It also described institutions as a dynamic endogenous element of economic development and promoted fundamental categorical apparatus in order to study them.

Institutionalists have been loyal to their initial assumption that technology is a fundamental economic element (Leković, 2010). They do not deny efficient market system and its importance. On the contrary, "… highly competitive markets encourage institutional transformation, "(Wasilewski & Wasillewska, 2019, p. 31). The government was implemented only in economics by Institutional economics, as an inevitable and crucial element in building macroeconomic results. "Putting the spotlight in their research of economic issues on the

status of organization and control, namely, formation and reform of authority structure, institutionalists fully study economics, pointing out the importance of institutions such as laws and legal norms, property, contracts and corporation regulated by authority. Accordingly, the authority encompasses the control of the prices established by a company, but excludes their limits. According to institutionalists, economics does not represent a neutral mechanism, but the making decision process in which individual economic parties struggle so hard to reach a better status and business results. Economics is more than just a market to them. Economics means institutions that create the market whose development depends on them and they affirm market efficiency" (Leković, 2010, p. 8).

Consequently, we reach the first and fundamental question which institutionalists have been interested in since the very beginning, and that is the problem which refers to authority and property. Economics does not rely on neutral economic laws, however, the analysis of real economics should include complex authority system whose framework must not be exceeded. The key point if any economic system is similar to that one in Marxism, property rights over means of production. The answer to the question who the owner is and how the property rights are regulated and secured is of a great importance. Since the beginning point of this movement growth of macroeconomic concept, institutionalists consider this as the most significant question. This is the base for building the complete construction of an economic system that designs the framework within which the whole economy operates under those who control the market.

Associated with institutionalists, as previously mentioned, not only do institutions represent a significant endogenous element of the economy, but they are also a very dynamic factor at the same time. Permanent process of the vital long-term trait of institutional development and its formalisation through perplexing and legal system development is noticed. This certainly depends on the impact and role the country has in the development of human society due to the fact that all the regulations were inherently formed as informal (conventional norms, Custom Law, ethics...), after that it turned into legal norms. However, in spite of this tendency, informal structures will always be present. "Formal structures are rigid, but informal rules and models of behaviour and communication value networks, ideas, expectations and personal agenda are established within their framework" (Bogićević, 2018, p. 42).

To sum up, property institution is a set of social norms that regulate the utility of limited resources, and they can be of a material and non-material nature as well. Not only does this institution use, but it also enjoys the income derived from that property and alienates the property and/or assigns it on a temporary basis. The institute of private property that proved its superiority over the other modalities is believed to be the essential prerequisite for economic efficiency in this contemporary world. This efficiency is first and foremost based on the exclusive right of the owner to appropriate property income and on taking the consequences of possible negative business results. The regulation of rights to permanent or temporary property assignment, jointly with taking the consequences, contributes to the most possible rational use of property, in fact, economic resources.

In addition to the property issue, the next pillar of institutional economics is contract complexity that is proceeded to property relation issues in a natural way. A contract is an agreement of interested parties and it refers to depicted subject on property, flow of goods, doing the service and other aspects of doing business and prosperity as

a whole. Interested parties agree on the will for cooperation in the contract and this has legal effect. Nevertheless, the contract also covers contractual obligations and their enforcement, in fact, breach of contract penalties. This enforcement may involve the third party, which is usually the state, but it can also be the result of self-regulation in respect of smart contracts.

The instrument that guarantees the contract terms to be respected must indicate that failure to respect terms of the contract is not worth the risk of penalties, which means that if the breaching party fails to fulfil the contract obligations, they suffer the consequences in terms of profit and deception of another contract party. Thus, performance success of this second pillar of economic institutions depends on enforcement efficiency which ensures that contract terms are respected. This enforcement may appear in various forms, yet it can generally be classified into several categories:

1. Physical force
2. Expropriation of property
3. Damage to Reputation

It is obvious that in the analysis of the institutional economic impact on economic development, smart contracts do not have a bad effect in practice. Contemporary practice requires more significant contract terms whose fulfilment must be guaranteed by a third party, commonly governmental or non-governmental organisations (association, legislature and so on). Considering the fact that fulfilment of terms in such contracts is of a great importance for the economy, the parties that ensure the fulfilment of contract obligations are becoming increasingly important as well. In reality, it is the government and the quality of its judicial system. This implies that apart from penalties for the breaching party, it is also essential to know how fast and probable is its efficient enforcement.

Except for the property and contracts, the third pillar of institutional economics refers to transaction costs. This issue had completely been neglected until institutionalists appeared. In the analysis neoclassicists relied on the belief that these costs were not, in fact, real at all. In order to define the concept of transaction costs, it is necessary to clarify what transaction means in institutional economics. Transactions primarily refer to the performance of specific activities that are aimed at exchange of various material and non-material welfare and services. Transaction inevitably and invariably means transfer of property ownership right over the transaction subject between participants of this process. From a legal point of view, transaction includes the contract whose terms are aimed at preventing or minimising possible disputes between business participants.

In other words, any transaction consists of three elements: conflict of interest between the participants, their mutual dependency and implementation or establishment of particular system due to business performance. The last mentioned matter means transaction regulation through institutional agreement, which is an essential requirement to perform it.

"The mere fact that resources have limitations, requires specific measures to be taken for the purpose of protecting them, however, this strongly demands certain costs. Because of this, each economy has particular alternative costs that act as the value of the necessary quantity of welfare which must be left behind by an economic party for purpose of property ownership protection, as well as the guarantee that contract terms

will be respected, namely, the costs relating to exchange and/or proprietary security rights appear. This concerns the presence of transaction costs that reduce the framework of mutually beneficial exchange" (Leković, 2010, page 129).

Such costs, along with economic development, show a tendency to increase, therefore the purpose of institutional development is to reduce them. This can also be applied to exchange in the market framework and to inter-company exchange with the same problems.

Costs can appear in different forms: finding a business partner (1), defining (2), measurement (3), performance (4), opportunistic behaviour (5) and control (6). In other words, this includes a wide range of costs and that range is not primarily associated with the welfare and service development, but with the domain of exchange and the quality of institutions. The obstruction of trade here can be compared to mechanical abrasion. More developed institutions deliver reducing transaction costs and bringing economic results closer to the theoretical optimum predicted by neoclassical economics.

As we elaborated three basic frameworks of institutional economics that highly affect economic development, we need to give a brief summary of economic development which is one of the most essential macroeconomic issues. First of all, it is of a great importance to outline that growth and development are not the same. Growth is a narrower term that is primarily quantitative in nature. It treats economic progress as the increase of output within one economy. Development is a more complex term, to which growth is the most important prerequisite and part of it, but it contains quality contents, and the most significant place is traditionally in possession of economic structure reform. Furthermore, the aspect of distribution, as well as the attitude to natural resources should be integrated in order to conduct the entire analysis on the development of one country. Moreover, one of the traits of development is a high rate of employment and widely spread economic relationships at the international level.

We can summarise that publications of institutional economics and economic development are truly rich, however, there are still some interests of economic science that have not been studied yet. With reference to institutional economics, the impression is that the system for quality measurement of some social communities has not been developed yet in this sense. For this reason, quantification, assessment and ranking of existing countries is complicated from this point of view. In terms of economic development, circumstances are better, although drawbacks are also present. Namely, regardless of the more developed system of indicators, statistic volume is still unsatisfactory on a global scale. Thus, the lack of reliable and efficient data complicates analyses and further progress of economic development theory.

Research Methodology and Hypotheses

In regard to the subject of our research, which would be a global relationship between the quality of institutions and the level of economic development, this task is yet to come, as this subject has not been investigated enough. The assumption that more prosperous institutions are in favour of economic development arises, but is that so? Even though the relationship exists, what is it like and what is its intensity like? In order to make an effort to answer these questions, our first point must be the test of particular

research hypothesis. Our fundamental hypothesis (H0) is that the quality of institutions and the level of economic development have no significant mutual relationship.

In order to test the validity of introduced hypothesis, we need to start from the available data. In the process of resource selection, our main idea was to rely on respectable long-term editions at a global level. Our choice was a traditional annual report of World economic forum (WEF) relating to competitiveness in the world.

"The report on global competitiveness", covers numerous countries and indicators, gives a complete analysis of competitiveness of any observed economy in an absolute sense according to value of indicators, as well as in a relative sense, providing comparison to other countries. Its universality reflects in the fact that it synthesises in its framework more than a half of results covered in the report of the World Bank (WB) "Doing Business".

12 pillars of competitiveness are constructed here through data combination. These pillars can be grouped in three sections, yet they altogether create a synthetic global index of competitiveness (GCI). The basic factor of competitiveness consists of the following pillars: Institutions, Infrastructure, Macroeconomic stability and Health care and Primary education. The efficiency factor includes the following pillars: Higher education and training, Efficiency of the goods market, Labor market efficiency, Financial market sophistication, Technological readiness and Market size. Finally, the inventiveness factor consists of only two pillars, namely: Business process sophistication and Innovation (Martin, et al. 2010, p. 9)

Institutions are the first and one of the most significant pillars of global competitiveness. It is estimated that in Basic requirements of competitiveness of an economy, institutions have equal impact like the other three pillars, which means 25%.

The impact of Public institutions is essential. Thus, they cover three fourths of the pillar structure, whilst the rest refers to Private institutions.

We have to emphasise that among over a hundred indicators which are observed by WEF on the highest level of pillar decomposition, six of them were taken from the report "Doing Business", which confirms that the report on terms and conditions of doing business is to a great extent integrated into Global competitiveness report. The following indicators are concerned:

1. Security of investors
2. Tax rate in total (% profit share)
3. Enterprise establishment (number of procedures)
4. Enterprise establishment (time)
5. Employee resigning costs
6. Law security index (of debtors and creditors).

We can conclude that the Report of WEF is indeed the most quality review of competitiveness of global economies, including business requirements in each economy. We selected the following indicators of institutional economics from the report and they simultaneously represent competitiveness factors, which are: institutions, welfare market efficiency and labour market efficiency. It is important to highlight here that institutions primarily refer to property and contract issues, whilst welfare and market efficiency and labour market efficiency mostly refer to transaction costs issues.

With reference to the level of economic development, we chose the indicator of gross national product per capita, calculated in accordance with the current exchange rate of American Dollar. We are aware of the fact that economic development issues are complex, and that development can be tracked through many indicators, however, we had to choose one indicator, commonly known and widely accepted. It is more important to choose the

methodology of measuring quality of national economic institutions. In regard to development indicators, we had to be careful about the data availability for the biggest part of observed economies. It is also significant to point out that calculation based on the current exchange rate does not affect comparison between countries, it has nothing to do with timespan, but with the milestone of one year (2018). This time we can neglect two main disadvantages of such display of development degree, and that is non-treating of economic dynamics and division of national income. We will use these data from the database of WB that are the most thorough. In this manner we will examine the relationship between economic development and quality of institutional economics illustrated in the WEF Report for 2018, and this report covers 140 most significant global economies.

We will explain one more methodological remark. During the process of result analysis and global economy performances, in our opinion only relative dimensions are reasonable, but not individual quantity indicators and quality evaluation. This occurs because terms such as economic development and quality of economic institutions have no their own personal practical maximum or minimum. The value of any economy viewed from any of these four aspects is reasonable only in comparison to other economies. Therefore, it is the rank of each economy that is vital, not the value of the indicator itself.

Results and Discussion

The subject of our research is identifying the relationship between two synthetic indicators which are economy ranking according to quality of institutions and economic development. Nevertheless, here we face the problem of a universal indicator, which is ranking in accordance with institution quality, considering the fact that we mentioned we were going to use three measures on this point. As we have the rank for each of the three indicators individually, we decided to do the calculation for each country. Then, we performed ranking starting from the smallest amount (the country containing the most advanced institutions), until the one with the biggest amount (the country containing the least developed institutions). In this way, we obtained the results given in Table 1. Apart from this illustration of institutional development, or precisely said, parallel with it, we showed the condition of economic development in the analysed countries according to the data of the WB for the same year (GNI p.c. Atlas method – current US$).

Table 1: Country ranking based on institutional and economic development

Country	Development of Institution Ranking	Rank Based on GNI p.c.	Country	Development of Institution Ranking	Rank Based on GNI p.c.	Country	Development of Institution Ranking	Rank Based on GNI p.c.
Albania	52	79	Ghana	67	100	New Zealand	2	23
Algeria	130	84	Greece	86	37	Nicaragua	110	101
Angola	138	92	Guatemala	94	80	Nigeria	104	103
Argentina	108,5	51	Guinea	123	120	Norway	17	2
Armenia	44	81	Haiti	134	121	Oman	53	44

Australia	15	11	Honduras	91	99	Pakistan	124	109
Austria	19	14	Hong Kong	4	13	Panama	73	47
Azerbaijan	42	85	Hungary	76	46	Paraguay	95	74
Bahrain	34	32	Iceland	21	4	Peru	68	68
Bangladesh	120,5	105	India	77	102	Philippines	64	88
Belgium	24	17	Indonesia	56,5	87	Poland	49	48
Benin	111	119	Iran	133	75	Portugal	29	33
Bolivia	129	92	Ireland	16	8	Qatar	32	6
B&H	117	73	Israel	25	22	Romania	48	54
Botswana	69	64	Italy	51	25	Russian F.	71,5	27
Brazil	115,5	60	Jamaica	56,5	78	Rwanda	46	123
Brunei	38,5	26	Japan	14	19	Saudi Arabia	55	34
Bulgaria	58	61	Jordan	75	82	Senegal	81,5	112
Burkina Faso	102	126	Kazakhstan	47	63	Serbia	62	69
Burundi	135	132	Kenya	66	107	Seychelles	35	43
Cambodia	106	113	Korea	45	27	Sierra Leone	127	129
Cameroon	79	110	Kuwait	81,5	24	Singapore	1	9
Canada	13	18	Kyrgyz R.	96	114	Slovak R.	67	38
Chad	140	125	Lao	105	97	Slovenia	30	31
Chile	26	45	Latvia	38,5	40	South Africa	65	72
China	60	58	Lebanon	113,5	65	Spain	40	28
Colombia	85	70	Lesotho	90	113	Sri Lanka	115,5	84
Congo	119	106	Liberia	120,5	128	Sweden	12	10
Costa Rica	50	53	Lithuania	36,5	39	Switzerland	6	1
Cote d'Ivoire	108,5	108	Luxembourg	9	3	Tajikistan	70	117
Croatia	80	49	Macedonia	93	76	Tanzania	103	116
Cyprus	27	29	Malawi	101	131	Thailand	63	67
Czech Republic	43	36	Malaysia	22	55	Trinidad &Tobago	83,5	41
Denmark	8	7	Mali	128	120	Tunisia	107	90
Dominican R.	78	66	Malta	28	30	Turkey	87,5	56
Ecuador	118	71	Mauritania	136	115	Uganda	97	127
Egypt	125,5	95	Mauritius	41	52	Ukraine	83,5	96
El Salvador	113,5	89	Mexico	92	59	United Arab E.	23	21
Estonia	20	35	Moldova	74	94	United Kingdom	7	19
Eswatini	99	86	Mongolia	71,5	91	United States	3	5
Ethiopia	122	122	Montenegro	36,6	62	Uruguay	59	42
Finland	10,5	15	Morocco	87,5	93	Venezuela	137	50
France	31	20	Mozambique	131	130	Viet Nam	98	98
Gambia	100	124	Namibia	54	77	Yemen	139	118
Georgia	33	83	Nepal	125,5	118	Zambia	112	111
Germany	10,5	16	Netherlands	5	12	Zimbabwe	132	104

Source: Authors, acc. to Schwab, K (Eds.). (2018) and WB

Since the value of element marks that we are analysing (institutional economics and economic development) is shown by their rank in qualification list, in order to determine the degree of relationship between figures, we will use the correlation of ranking. Determination of rank correlation is mostly based on Spearman`s rank-order correlation, where d_i represents distinction between the order and i -element.

$$r_s = 1 - \frac{6 \cdot \sum_{i=1}^{n} d_1}{N \cdot (N^2 - 1)} \quad (1)$$

We highlight that in the process of country ranking based on quality of institutional economics, countries with the same value appear, so in that case the rank is defined as an arithmetic environment of numeric figures of the places that the country would take in the order of country listing if their rank was different.

Table 1 shows that the number of the analysed countries is 138, so the value of rank-order correlation is as follows:

$$r_s = 1 - \frac{6 \cdot \sum_{i=1}^{n} d_i}{N \cdot (N^2 - 1)} = 1 - \frac{6 \cdot 520844,46}{138 \cdot (138^2 - 1)} = 0,8018 \quad (2)$$

The value of 0,8018 shows a high direct dependency, which means that the increase of the quality of institutional economics leads to a considerable increase of gross national income per capita.

The value of determination coefficient is:

$$r_s^2 = 0,8018^2 = 0,6429 \quad (3)$$

Which indicates that 64,29% of economic growth variables can be explained through variations in institutional economics, and 35,71% represent the consequences of other factors.

In any case, economists that deal with institutional economics in current conditions are not surprised at these results. It is they who confirm the significance of the analysed aspects within this framework for the purpose of economic development. This supports the perception that experts have clearly seen and experienced while examining social reality in this framework.

The problem that we think stills exists is a relatively underdeveloped apparatus of methodology used for measuring the quality of institutional economics and its consistent application to most global economies performed by authoritative organisations. This deficiency is not the obstacle instead of it is more the challenge to a further development of this field following this method. Other macroeconomic sciences that originated a long time before this one encounter the same difficulty. Is it not the same case with the economic development issue?

Here we endeavoured to perform the quantification and relationships between institutional development level and economic development. We used ongoing data available to the biggest part of the global economy and they were collected and analysed by the most respectable international organisations. We consider it as maximum at the moment, as well as the challenge for the purpose of further progress in this fascinating field of a great importance.

In our opinion, this paper contributes to domestic macroeconomic publications in terms of quantification of the importance of institutional economics for the purpose of economic development at a global level. On the other hand, if there is anything enriching the theory,

that can be applied to the practice in our environment. Namely, if we proved that the variation within economic development with the result of two thirds could be explained through the variation of economic institutions, can this not be the guideline for founders of the economic system and policymakers of economic policy? Is it not then imperative to examine the theory which implies that the development of our economy is, by far, driven by investment, where foreign direct investments are highlighted?

Conclusion

We elaborated the essence of institutional economics and its primary categorical apparatus. We discovered relatively underdeveloped practice of wider quantification assessment and ranking of institutional economics and its development at a global level. Consequently, the complexity of relationship determination between institutional economics and economic development in a broader sense emerges here. Filling in this gap was the objective of our research. The aim was to offer the idea of development level measurement of institutional economics and to find the evidence for the relationship of this phenomenon with the level of economic development.

To measure institutional development, we created another indicator, integrating three pillars of WEF competitiveness, however, in order to measure economic development, we used the WB data of GNI p.c. for 2018. In this manner, we ranked global economies relying on the two criteria, then we used Spearman`s rank-order correlation. We determined the value of 0,08018, which shows highly direct dependency. This implies that the increase of the quality of institutional economics leads to a significant increase of gross national income per capita. The value of determination coefficient is 0,6429. This shows that 64,29% of economic development variations can be explained through variations in institutional economics, and 35,71% belong to the consequences of other factors. The research findings clearly illustrate that the initial hypothesis has not been proven. On the contrary, the relationship between the quality of institutional economics and the level of economic development is highly important and direct.

The research findings are basically evident and they represent quantification on a broad sample with numerous parameters. But, this does not show that such research should be ceased here. Our opinion is that this research is nothing more than a small contribution to the initiative concept. Three questions are essential in this phase. The first question refers to the lack of the data referring to a great number of national economies. For this reason, we analysed 138 countries, although we are aware of the fact that their number exceeds these figures. Regardless of the fact that the analysed countries represent dominant and the biggest part of global economy, territory and population in every sense, more precise results require larger capacity of countries, even though this would not primarily affect the final result.

Secondly, the need to work on methodological apparatus improvement for quantification of institutional economics and its development is obvious, as well as economic development itself. All this would enlarge the base that was available to us in this research. Finally, to reach maximum effect of the research issues, it would be useful to apply as long period of time as it is possible for marked indicators and this period would be timespan of 10 years.

We did this research for two main reasons which we estimate reasonable, taking into account contemporary domestic economics. First of all, we get the impression that

institutional economics does not take the place it deserves in Serbian economic framework, we consider it is almost neglected. In our opinion, this is a disadvantage due to its introduced relationship with economic development. The second reason for dealing with this subject refers to encouragement of new theoretical efforts to objectivise and quantify the quality of institutional economics as much as possible.

As economic development in our country has not been developed enough, we strove to draw attention of economic policy representatives to possible solutions. It is obvious that the development of economic institutions is neglected, and that subvention parties of direct investment have no option for the position of the economic development leader.

References

Bogićević, M. B. (2018). Pokušaj sistematizacije teorije organizacije XX veka in Anali Ekonomskog fakulteta u Subotici, Vol. 55, br. 41/2019, 037-054

Bromley, D. W (2006). Sufficient Reason: Volitional Pragmatism and the Meaning of Economic Institutions. Princeton University Press.

Galbraith, J. K. (1973). Power & the Useful Economist in American Economic Review 63,1–11.

Gligorijević, N. (2014). Institucionalne promene u funkciji unapređenja efikasnosti privrede. Neobjavljena doktorska disertacija, Ekonomski fakultet Univerziteta u Nišu, Niš, Srbija.

Ivković, D., & Knežević, V. (2019) Korporativno upravljanje, Fakultet za menadžment, Sremski Karlovci

Knežević, V., Ivković, D., & Vujičić, S. (2013): Competitiveness and Development of National Economy in Economic Analysis, No 1-2/2014,111-127

Krstić, B., Krstić, M., & Đekić, I. (2018) Sustainability of Development and growt – crisis, distribution of income and inequality in Economic and sustainable development, Vol.2, br.1/2018, 1-12

Leković, V. (2010). Institucionalna ekonomija. Kragujevac, Ekonomski fakultet Univerziteta u Kragujevcu

Martin, I., Blanke, J., Hanouz, D., Geiger, T., & Mia, I. (2010) The global competitiveness index: Beyond the global economic crisis in The global competitiveness report 2010-2011 Geneva: World economic forum, 9

Samuels, W. J. (2007), The Legal - Economic Nexus, Routledge

Schmid, A. Allan. (2004). Conflict & Cooperation: Institutional & Behavioral Economics, Blackwell.

Schwab, K. (Eds.). (2010). The global competitiveness report 2010-2011 Geneva: World economic forum, Retrieved January 12, 2020, from http://www.weforum.org/reports

Schwab, K. (Eds.). (2018). The global competitiveness report 2018 Geneva: World economic forum, Retrieved January 12, 2020, from http://www.weforum.org/reports

Stefanović, Z. (2012). Politička ekonomija globalizacije – modeli kapitalizma i institucionalna evolucija, Niš, Ekonomski fakultet Univerziteta u Nišu

Wasilewski, A., & Wasilewska, A. (2019) Financing the research and development activity for the agri-food sector and rural areas in Western Balkan Journal of Agricultural

Economics and Rural Development, Vol. 1, br.1(1-84), 29 – 41

Živković,A., & Ristić, K. (2019) Analysis of the functional domain of doctrinal approaches in monetary theory and policy, in Ekonomika, Vol. 65, october-december 2019, № 4, P. 53-62, doi:10.5937/ekonomika1904053Z

World Bank (2019) Doing business 2019, Retrieved January 12, 2020, from: www.doingbusiness.org

World Bank (2019) www. https://data.worldbank.org/indicator, Retrieved January 12, 2020.

ШАБЛОН / ТЕМПЛАТЕ ЗА ПИСАЊЕ РАДОВА

Име аутора (Font size 10 Normal) Times New Roman (SR-Cyrilic)
Факултет или институција и Град (Font size 10 Italic)

НАСЛОВ СРПСКИ (Font size 11 Bold)

Апстракт

Текст апстракта на српском ...

***Кључне речи**:*

NASLOV ENGLESKI ili neki drugi jezik (Font size 11 Bold)

Abstract

Tekst apstrakta na engleskom ili na nekom drugom jeziku…

Key words:

НАСЛОВ (Font size 11 Bold)

Текст (Font size 10)……...

Литература

1. Списиак литературе

Veličina strane 170mm x 240mm
Margine: Top 30mm Bottom 20mm
Left 22mm Right 22mm

CIP – Каталогизација у публикацији
Народна библиотека Србије, Београд

33+657
ЕКОНОМИКА : међународни часопис за економску теорију и праксу и друштвена питања = international journal for economic theory and practice and social issues / главни и одговорни уредник Зоран Симоновић. - Год. 20, бр. 1/2 (1973)- . - Ниш : Друштво економиста"Економика", 1973- (Ниш : Medivest). - 24 cm
Тромесечно. - Текст на енгл. језику. - Је наставак: Наука и пракса = ISSN 0558-3063. - Друго издање на другом медијуму: Економика (Online) = ISSN 2334-9190
ISSN 0350-137X = Економика (Ниш)
COBISS.SR-ID 26903