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Cohesion of RBV and Industry View for Competitive Positioning

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Abstract

The discussion on competitive advantage started about half a century ago but foundational theories still lack connectivity. The resource-based view (RBV) concentrates on concepts internal to a firm and disregards the world outside, whereas the industry view neglects internal antecedents and consequences.

This review paper examines complementation of leading endogenous and exogenous theories on competitiveness and combines most influential concepts on firm resources and industrial forces to a complementary picture for strategic positioning. Seminal works from Edith Penrose and Michael Porter as well as subsequent research have been investigated on connectivity and togetherness. Inside-out constructs on resources and capabilities must match outside-in constructs on industry and markets in order to achieve competitive advantage.

The article includes conceptual discussions of resources, capabilities, and assets. Resources combine to capabilities that are qualified services and value chain activities. Resources can be acquired on markets, while capabilities must be developed within organizations.

Keywords

Competitive advantage, RBV, Resource, Capabilities, Industrial organization, IOE, SWOT.

Introduction

Strategy in business and economics is a field that comprises manifold areas, levels, and phases. It is being discussed among scientists from various groundworks and viewpoints, each dealing with specific sections and linkages to other subjects within the space of strategy science. There is no sole description for strategy that is generally accepted; it appears multi-dimensional. Mintzberg (1987, p. 20) provided five different definitions for strategy that interrelate in various manners, and that in some ways compete, and in other ways complement each other. Mintzberg and Lampel (1999) classified ten different schools of scientist groups that take different dimensions and positions on strategic management. Kenworthy and Verbeke (2015) counted 194 different theories in empirical research displayed in strategic management journals. No model, concept, or theory can cover all factors influencing strategy. However, consistency and

coherence are required within the set of external and internal strategic objectives. This article attempts to identify connections between some of the most cited strategy theories with different perspectives, the endogenous and the exogenous view on a firm, and examines their complementation.

Two considerations should be brought into an optimal equilibrium: What a firm *might* do in view of chances in the environment and what a firm *can* do in view of abilities (Andrews, 1971, p. 85). Porter's analytical tools support answers to the first question, while Penrose's ideas refer to the latter. The same applies to two out of four strategy components defined by Andrews (1971, p. 9): First, market opportunity, and second, corporate competence and resources. The first component is the key subject in Michael Porter's recognized monograph 'Competitive Strategy' (1980) and his subsequent contributions; the second component is core in the resource-based view (RBV), to which Edith Penrose (1959)

principally contributed. Both elements and both authors provided understandings from different directions that are central in strategy formulation and competitive positioning (Grant, 1991).

Porter's market-oriented approach, also referred to as industrial organization economics (Black & Boal, 1994; Conner, 1991; Hoskinsson, Hitt, Wan, & Yiu, 1999), is outside-in, meaning the strategic position of the firm depends on the analysis of the famous five forces. Penrose's approach goes the other way, inside-out. The resources possessed by the firm determine both, the rate and the direction of growth. Available productive services may drive expansion and raise competitive advantage (Penrose, 1959, p. 76). Both approaches seem to be antithetical. Indeed, they ask different, frequently complementary questions (Teece, Pisano, & Shuen, 1997, p. 516). Hooley, Broderick, and Möller (1998, p. 98) denote them two streams of research from relatively independent literatures. They mention coherence and propose contemplating both streams together for competitive positioning and strategy formulation. However, their appealing suggestion is insufficiently substantiated.

Although Porter and Penrose delivered highly influential contributions to strategic management science, their basic concepts have barely been analysed in depth for consistency. The terms 'Porter' in conjunction with 'Penrose' in search category 'Article title, Abstract, Keywords' of Scopus database results in just two hits for business and economics. One of them presents Ludwig von Mises as the one who linked the industrial and resource-based views, since he supervised the dissertations of Penrose's and Porter's supervisors (Powell, Rahman, & Starbuck, 2010). Powell et al. (2010) relate to scientific predecessors but did not provide any argument on connections in the contents of the scientific works from Penrose and Porter. The other hit, a more cited paper from Hoskinsson et al. (1999), acknowledges Porter's and Penrose's contributions to strategic management research. The authors considered significant theoretical and methodological bases but did not find cohesiveness between RBV and the industry view.

The main goal of this paper is to investigate in supplementation of Penrose's and Porter's foundational views. This article tries to answer the research question 'Are theoretical groundworks on competitiveness by Penrose and Porter complementary for strategic positioning?' The paper compares notions from Porter, Penrose, and

subsequent influential research on competitive advantage to investigate in matching traits and cohesiveness. It presents ideas that connect the industry-based view to RBV and vice versa and indicate their complementary scope for analysing the inside/outside fit of strategic moves. An enhanced conceptional model is suggested for competitive positioning integrating the market/industry view, RBV, the macro-environment, and SWOT. Furthermore, definitions of resources, capabilities, and assets are reviewed and revised for more clarity and distinction. For practitioners, a template is proposed to assess own resources and capabilities in comparison with competitors.

1. Literature review on cohesion of RBV and industry view

The following literature review is subdivided in three parts. It starts with comparing Porter's and Penrose's traditional concepts and continues with short reflections on cohesiveness of RBV and industry view. Thereafter, more recent opinions on connectivity between RBV and the industry view will be presented.

1.1. Revisiting the roots of RBV and industry view

Penrose's early monograph 'The Theory of the Growth of the Firm' from 1959 is one most esteemed scientific contributions in strategic management and represents the groundwork for RBV. Porter's books 'Competitive Strategy' (1980) and 'Competitive Advantage' (1985) are also highly distinguished publications that have been pointing the way to strategic analysis. Those works have been examined for relatedness. The following paragraphs provide arguments in support of the thesis that Porter's industry view is interrelated to Penrose's ideas and RBV.

Porter's generic strategies require resources and specific skills. A strategic choice on a particular position in the competitive space depends on both. If a firm decides to pursue one of Porter's (1980) three generic strategies, it must develop or acquire its resources and skills accordingly. A cost leadership position, for example, would require low-cost distribution networks, highly efficient processes, modern productions technologies, lean management skills, etc. In contrast, a differentiation strategy would need strong marketing and product engineering capabilities. Focus strategy must possess skilled

resources that are directed to particular target buyers (Porter, 1980, pp. 40-41).

Available managerial resources and the services they provide are sources of competitive advantage and incentives for a firm's growth (Penrose, 1959, p. 85). Porter (1980, p. 65) expressed the same idea in a different way. He included general management ability as an item in the list of business key areas to examine core capabilities and abilities to grow.

Porter (1985) introduced the generic value chain that depicts activities in all functional areas of a firm. Services imply functions and activities that productive resources perform (Penrose, 1959, p. 22). Value chain analysis is therefore an evaluation of activities and is essentially the same as the analysis of productive resources within a firm and the services they render.

Heterogeneity in RBV and differentiation rely on uniqueness. In RBV, specific sets of resources associated to various skills and capabilities are prerequisites for sustained superior returns (Rugman & Verbeke, 2002, p. 770). In a similar way, Porter (1980, pp. 39-41) suggested that unique combinations of skills are required for a differentiation strategy to earn above-average returns. Resource heterogeneity is a unique bundle of resources that is valuable and rare (Barney, 1991, p. 107). The unique character of a firm is the heterogeneity of available productive services from its resources (Penrose, 1959, p. 67). Hence, superior rents can be achieved by differentiating from competitors that rely on unique skills or capabilities composed of various resources.

Beside heterogeneity, Barney (1991, p. 101) described resource immobility as another key feature for sustainable competitive advantage. Certain unique characteristics of a firm are hard to copy, hard to imitate, or hard to substitute. Penrose (1959) and Barney (1991) mainly referred to human resources and to their knowledge, experiences, and relationships, while Porter (1980, pp. 172-174) elaborated on technological mobility barriers. These barriers include product technologies, process technologies, and proprietary know-how that should be protected by patents. Otherwise, mobility barriers will diffuse and tend to lower competitive advantage. Herewith, Porter supplements the immobility feature in RBV in three ways. First, by including technology as proprietary, i.e. as a unique capability. Second, by introducing the diffusion effect. Third, by referring to patents to protect competitive advantage.

Isolating mechanisms from the internal RBV correspond to the entry barriers that Porter (1980) described from an industrial standpoint (Mahony & Pandian, 1992, p. 371). Isolating mechanisms are barriers to imitation that are characterized by uniqueness and distinctiveness of resources, capabilities, and assets in RBV strategy literature. Mahony and Pandian (1992) regarded RBV and the Porter framework as complementary. For instance, sharing of intangible assets like brand names or know-how might promote economies of scale that constitutes a major source of barriers to entry (Porter, 1980, pp. 7-9).

RBV characterizes capabilities as a source for sustained superior returns (Rugman & Verbeke, 2002). The link between higher returns and capabilities has also been discussed from the industry view. Functional areas must be examined to determine a firm's current position in relation to the five forces and to identify core capabilities in each key area. Examples for functional key areas include research, product development, operations, marketing, and distribution. Ascertained core capabilities indicate abilities for strategic moves and for growths to gain above average returns (Porter, 1980, p. 63-67).

The SWOT framework supports portraying cohesiveness of RBV and industry view. SWOT analysis describes links between internal and external models of competitive advantage (Barney, 1991, p. 100). Black and Boal (1994) explained that the external 'OT'-analysis, particularly on Porter's five forces, is importantly useful but limited. They suggest starting strategy analysis on RBV considering the internal part of SWOT. In his introduction, Porter (1980) proposed consideration of opportunities and threats to determine external boundaries for strategy formulation. Besides, strengths and weaknesses on internal factors are suggested to be examined, e.g. assets and skills, financial resources, etc., to detect internal limits. As part of a consistency test, resource fit should be checked in order to ascertain resource availability and organization's ability to change for achieving the objectives.

1.2. Resources and capabilities must fit to the external environment

Internal strategic objectives must match external strategic objectives and vice versa. Anupindi, Chopra, Deshmukh, Van Mieghem, and Zemel (1999, p. 23) mentioned the need for strategic fit, i.e. consistency between the selected strategic

position for competitive advantage and capabilities that a firm uses to accomplish that advantage. The target position is set by the balance of what a firm might do grounded on exogenous factors and what a firm is capable of performing. Anupini et al. (1999) suggested a two-pronged analysis for business strategy: First, competitive analysis of the industry in that an organization will compete, and second, critical analysis of skills and resources. Rowe, Mason, Dickel, Mann, and Mockerl (1994) defined strategic management as the decision process to align internal capabilities of a firm with opportunities of the environment. The firm must then adapt internally to reach the target position in the long run. Amit and Schoemaker (1993) noted that the resource-based view is complementary to Porter's industry analysis. They provided a figure of key constructs with resources, capabilities, and assets on the firm side vis-à-vis the industry side covering Porter's five forces and environmental factors. The allocation of necessary resources to implement long-term objectives is also central in Chandler's definition of strategy (1962, p. 13): Strategic decisions cannot be made before both sides are entirely analysed. Mahony and Pandian (1992, pp. 366-367) regarded RBV as additional theoretical value for the firm's strategic direction, since it considers available resources inside the firm beside market opportunities outside. As the environment is complex and changing over time, managers must continuously gauge and rearrange organizational resources in order to meet needs from the environment. (Johnson, Scholes, & Whittington, 1988, pp. 78-79). Kor and Mahoney (2004) argued for a proper match of resources and capabilities with external opportunities. This idea is in line with the dynamic capabilities approach to adjust internal settings to external changes (Teece et al., 1997).

Priem and Butler (2001, p. 36) regarded the notion of *value* as "elemental strategy concept" that is exogenous to RBV, namely markets and customers. In contrast to them, Parnell (2006) emphasized value delivery in context with RBV and market control. He argued that value and market control are functions of resources of a firm that may be evaluated by applying RBV. Black and Boal (1994, p. 132) pointed out that value of resources are their combinations according to strategic fit to the external environment.

Hoskinsson et al. (1999) reviewed roots and developments in the theoretical field of strategic management and showed swings of a pendulum.

They see RBV as an inside swing of the pendulum in contrast to Porter's industrial organization approach, that is, the outside swing of the pendulum. Insufficiently, they did not discover links or complements between the inside and outside. However, their rephrasing (Hoskinsson et al., 1999, p. 439) of Barney's (1991, p. 106) explanations on valuable resources precisely expresses the interrelationship between the internal RBV and the external industry view from Porter: "Value refers to the extent to which the firm's combination of resources fits with the external environment so that the firm is able to exploit opportunities and/or neutralize threats in the competitive environment." Combination of resources is crucial, as Penrose (1959) pointed out earlier.

Spanos and Lioukas (2001) conducted empirical tests and concluded that RBV and Porter's framework do not only co-exist but are also complementary to explain business performance. Both provide views on sources for competitive advantage in a balanced way.

1.3. Recent research on cohesion of RBV and industry view

After having portrayed some foundations of strategy and relevant literature around the millennium, newer publications will be presented as follows.

Kraaijenbrink, Spender, and Groen (2010) comprehensively reviewed critiques on RBV. The authors simply stated that development of RBV had been complementary to the industry view. They explained why RBV is not a replacement of the industry view. Yet, they did not elucidate on complementation.

Ritala and Ellonen (2010, pp. 374-379) highlighted interdependency for competitive advantage but displayed just one argument for complementation of resource-based theories and industrial organization economics. RBV's attention is on unique resources and capabilities. In case of low hurdles to enter a market, connectivity of industry analysis and resources/capabilities becomes relevant. In response to increasing competitive pressure, a firm needs to provide more distinctive capabilities than its rivals.

De Wit and Meyer (2014, pp. 184-191) regarded markets and resources as paradox on business level strategy but emphasized the fit. They suggested taking and adopting two perspectives: The inside-out, i.e. views on

resources, competences and capabilities, and the outside-in, especially the five forces from Porter. The alignment of the two sides is the key to a firm's success. When choosing a competitive position in the environment, feasibility must be internally ensured, that is, resources and capabilities must be available, be developed, or be obtained.

Huang, Dyerson, Wu, and Harindranath (2015) examined how temporary competitive advantage can be converted to sustainable competitive advantage. They considered both, RBV and industry view, as core elements to competitive success but realized that studies on competitive advantage are mostly anchored to one side. In their article, Huang et al. (2015) integrated both views into one framework and called two driving forces: endogenous forces from resources and exogenous forces from market position. Both are sources of competitive advantage that result in higher profitability. The connection of the two streams increases economic rents or company performance.

Dixit (2016) described a case of a hospital offering orthopaedic and spine services in which RBV was analysed along with the industry view and a network perspective. Other hospitals may apply this analytical approach to accomplish sustainable competitive advantage.

Napshin and Marchisio (2017) regarded RBV and the industry view as most significant theoretical models in strategic management courses in the USA. They introduced the institution-based view as a supplement and connected it to the other two.

Again, SWOT is considered as an established methodology for strategic positioning (Helms & Nixon, 2010). The SWOT framework was rediscovered by Bell and Rochford (2016) for learning purposes. They stressed the integrational characteristics of SWOT and suggested to combine it with internal analysis (RBV), external analysis (five forces), and PESTEL. Liu, McKinnon, Grant, and Feng (2010) carried out an empirical study with logistics service providers and identified SWOT as a way to anticipate aspects and arguments from both sides to explain competitiveness.

2. Conceptual model for competitive positioning

Togetherness of Porter's industrial concepts and RBV has been reflected. Both views, one outside the firm, the other inside, are complementary to

gain and maintain competitive advantage. Moreover, both approaches are the key to setting the strategic target, that is, the future location in the competitive sphere. Strategic formulation should consider both views simultaneously for making well-adjusted decisions towards a firm's future position. Thus, a conceptual model for competitive positioning is proposed (figure 1) derived from Amit and Schoemaker (1993). Their key constructs demonstrate the complementing phenomenon of Porter's and Penrose's concepts but give reason for some refinements. First, as a conclusion from literature review, endogenous and exogenous strategic objectives are mutually dependent. Second, SWOT is supplemented because it provides arguments for combining both sides. Third, the linkages between resources, capabilities, and assets are revised as demonstrated in the next section. Fourth, macro-environmental forces were added. They do not only affect the industry, but also the firm's resources and capabilities.

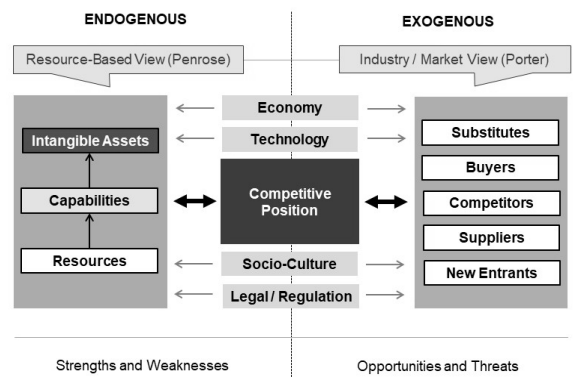


Figure 1 Conceptual model for competitive positioning
Source: Adapted from Amit and Schoemaker, 1993.

Amit and Schoemaker (1993) assigned technology and regulation as environmental factors to the industry part, whereas the author regards macro-environmental factors such as regulation, socio-culture, technological progress, and other economics, as influencers to both sides, resources and industry. Capabilities adjust on technology changes (Teece et al., 1997, p. 512). For example, new developments in technology will change production systems and processes inside a company and can also impact the transactions between buyers and suppliers. Politics, resulting in legislation and regulation, also affect resources, e.g. occupational health acts constrain resource availability out of standard working hours. Dynamics in socio-culture have

also influences on a firm's infrastructure (e.g. use of enterprise social networks). Macro-environmental factors, often referred to as PEST or PESTEL in various sequences of the letters, must be considered on impacts that are internal to the firm as well as on effects in the industry.

3. Resources and capabilities

3.1. Diverse understandings on RBV core elements

Ambiguity exists with respect to the core elements of RBV: Resources, capabilities, and assets. There are manifold interpretations and various definitions within the body of strategy knowledge.

Cousins (2005, p. 407) uses the terms resources and capabilities interchangeably, while other scholars understand capabilities and competences as synonyms (Peppard & Ward, 2004, p. 174; Wade & Hulland, 2004, p. 109). Thereafter, one could logically deduct that resources are competences. This reasoning would be valid but false (Van de Ven, 2007). Resources are also regarded as collection of all capabilities and all assets of a firm (Hooley et al., 1998, p. 101; Wade & Hulland, 2004, p. 109), as a part of a function (Haapanen, Hurmelinna-Laukkanen, & Hermes, 2018), or as tradable/non-tradable assets stocks/flows (Saranga, George, Beine, & Arnold, 2018, p. 34). Resources that are hard to copy might be seen as firm-specific assets (Teece et al., 1997, p. 516). Resources also might be understood in context with customers, markets, or products. In Eisenhardt's and Jeffrey's opinion (2000, p. 1107), resources act in activity systems to address customers and markets in differentiated ways for competitive advantage. As part of a process, dedicated or specialized resources carry out a determined set of activities, e.g. aligned to a product (Anupindi et al., 1999, p. 10).

Diverse definitions of assets do not increase understanding of the topic. Amit and Schoemaker (1993) regarded strategic assets as resources and capabilities that are difficult to trade or tough to copy. Barney (1991) saw assets as firm resources along with capabilities, knowledge, and more. Kamasak (2017, p. 261) allocated assets, such as intellectual property rights, to the group of intangible resources items. Luo, Zhang, Bose, Li, & Chung (2018) expressed information technology as asset and as resource in the same article.

So, there are many inconsistencies about resources, assets, and the links between them. The

newer the perspectives on the concept of resources, the more increases confusion. The author tries to provide more clarity by recommending the following definitions for capabilities and by recalling some early notions in the next section.

Capabilities relate to organizations (Saranga et al., 2018). Drnevich and Croson (2013, p. 485) defined capabilities as "a firm's capacities to deploy resources, usually in combination, using organizational processes, to affect a desired end". Helfat and Peteraf (2003, p. 999) referred a capability of a firm to an organizational ability to perform coordinated activities by using resources to achieve a defined result.

3.2. Recalling foundational ideas for redefinitions

Penrose (1959, p. 21) offered the groundworks for a rich distinction of resources that are tangible by definition. *Resources* are either physical objects used for production (e.g. plant, equipment, raw materials) or humans with various skills who are contracted by the firm. *Skills* might be creativity, knowledge, experience, etc. and always relate to human resources. In contrast, other authors relate skills to capabilities (Kamasak 2017; Wade & Hulland, 2004). Penrose (1959, p. 22) enumerated administrative, financial, legal, technical, and managerial work forces as human skills. A special skill at top management level is integration, i.e. knowing what managerial resources to combine and how to integrate them in effective ways (Kor & Mesko, 2013). Resources are inputs to production (Helfat & Peteraf, 2003, p. 999). The different types of resources provide activities in various combinations.

A firm's *capabilities* are linked activities or bundles of them that special resources, i.e. skilled humans and/or physical objects, provide in efficient and organized ways for delivering a differentiated product. Capabilities always refer to organizations since they are based on sets of activities to that various resources contribute. Typical examples of capabilities are tasks and processes within the fields of primary or support activities of the generic value chain from Porter (1985, p. 37) that is implicit in the model depicted as figure 2. Porter (1980, pp. 64-67) listed capabilities in the areas products, distribution, marketing, sales, operations, research, engineering, costs, financial strength, organization, general managerial ability, portfolio.

According to Whittington (2008, p. 272), strategy should build on rare, hard-to-imitate, and hard-to-substitute *resources*. In contradiction to him, this paper suggests that strategy should build on rare, hard-to-imitate, and hard-to-substitute *capabilities* that might end up in intangible assets that can be protected by rights. Resources by themselves do not make the ultimate distinction from competitors but their qualities, skills, and the way they combine to capabilities make the difference.

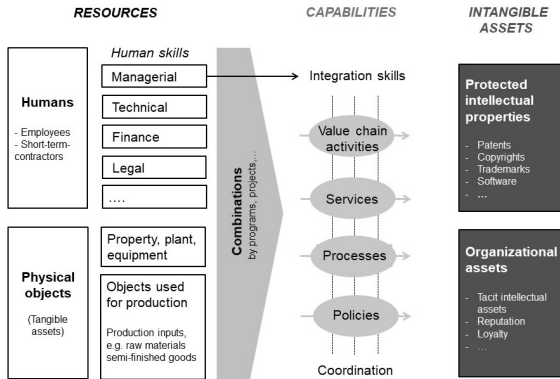


Figure 2 Resources, capabilities, and intangible assets
Source: Author

Core capabilities are the few ones that a firm carries out particularly well and in distinguished ways compared to competitors. *Competences* are core capabilities on business unit level and enhance competitive advantage. *Core competences*, in the eyes of Prahalad and Hamel (1990), are seen on corporate level by composing various competences to several core products managed from different business units within a company.

Rothschild (1976) classified capabilities into five main categories: Abilities to conceive and design, to produce, to market, to finance, and to manage. All categories contain human resources with specialized skills. Besides, categories contain physical resources, processes, policies, and organization in various ways. Rothschild's classification provides a suited platform to verify required capabilities but gives reason for improvements by adding contemporary management processes (e.g. project management, IT management) and by distinguishing between activities (or services) and required resources to perform them. Figure 3 exhibits a template as suggestion for assessment and development of capabilities based on Rothschild's ideas (1976). It is to analyse what should be carried out and what

resources are required to support the strategic position. The effectiveness of resources and the services they provide need to be thoroughly checked. Recognition of the organization's relative capabilities can draw on analysis of strengths and weaknesses of capabilities in all functional areas (Porter 1980, p. 111). The template also helps to identify areas in which a company significantly performs better than its rivals, i.e. core capabilities.

Essentially, RBV is about internal growth of *assets* (Peteraf, 1993, p. 188). Integrating Penrosean ideas and principles of financial accounting, the author recommends applying the notion of assets as

- physical resources used to produce (e.g. property, plant, equipment) or as inputs to production, and
- intangible assets that are
- protected intellectual properties (e.g. patents, copyrights, trademarks, confidential documents, software), and/or
- organizational assets (e.g. tacit intellectual assets, reputation, loyalty).

The author's definitions exclude financial capital, often expressed as financial asset or as monetary resource, by reason of interrelatedness to other external factors. Funding of a firm is a strategy of its own and requires further strategic lenses. Capital flows must be balanced between rents that shareholders demand and retained earnings that can be used for company growth.

3.3. Capabilities must be developed internally or acquired from external organizations

Resources can generally be transferred via markets for human resources or for physical objects. For example, skilled human resources, providing required experience and knowledge, can be contracted on labour markets. Physical objects, such as production materials and engines can be bought or leased. Buildings can be constructed or rented. Intellectual property rights can also be gained if traded on markets, e.g. by licensing. In contrast, capabilities cannot be bought off the shelf. They are immanent to a firm and must be developed within an organization. Capabilities make their organization's value and are not transferable to other organizations. Likewise, experience is not transferable from one human resource to another.

Capability category	Required skills (from human resources)	Required physical resources (physical assets)	Capabilities (activities, services, processes, policies)	Intangible assets (e.g. patents, software)
New product development				
Procurement, Supply				
Production, Manufacturing				
Marketing, Sales				
Information systems				
Project management				
.....				

Figure 3 Template for assessing capabilities and needed resources

Source: Adapted from Rothschild, 1976.

It takes considerable time and money to establish capabilities within the own organization. Managers must think about accessing capabilities from other firms that have already established those capabilities and integrate them, loosely or tightly, within the own organization. The need to acquire productive services to complement existing activities might motivate a merger or an acquisition (Pitelis, 2009). Salter and Weinhold (1982) gave similar resource-based reasons for acquisitions. First, to supplement resources that already exist. Second, to complement resources for more effective combinations (synergies). Furthermore, acquisition strategies can also be oriented towards products to join attractive markets (Wernerfeld, 1984). From a combined resource-based and industrial viewpoint, acquisitions of organizations or alliances are to move to the strategic target position. If a firm does not develop capabilities internally and does not integrate them by acquisitions or alliances, it may contract other firms to purchase goods or services for transaction costs (Williamson, 1975).

Conclusion

Literature analysis showed that traditional theories from Edith Penrose (1959) and Michael Porter (1980) complement each other. Inside-out constructs on resources and capabilities must match outside-in constructs on industry and markets in order to achieve competitive advantage. This article proposes taking both views at the same time for strategy formulation. Available competences may enable or motivate strategic moves of a firm in the competitive field. Also, strategic decisions in response to the five forces result in changes of capabilities and

resources. A conceptual model for competitive positioning extends existing theories on complementation of RBV and industry view. It provides a broader picture including SWOT and macro-environmental factors that impact both sides of the proposed conceptual model, the endogenous and the exogenous.

The terms resources, capabilities, and assets were defined by recalling the resource descriptions from Penrose and by considering capabilities as value chain activities that combine resources. Own resources and capabilities must be aligned to exogenous strategy and be assessed in comparison with competitors. A template for capability assessment has been proposed for application in practice. Capabilities can only be developed within organisations. Inter-firm cooperation, mergers, and acquisitions are alternative approaches for gaining needed capabilities from other organizations.

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Mediating Effects of Educational Level on Job Related Characteristics – Job Satisfaction Relationship

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Abstract

This paper will analyze the mediating influence of educational level on job related characteristics-job satisfaction relationship. The main research questions are whether the level of education influences job satisfaction. In order to answer this question, MANOVA was applied using the data obtained by the primary research on a sample of 813 employees in the companies in Serbia. Results of the study showed that job satisfaction is rising with increasing the level of education, except in case of highest level of education. Also, all job related characteristics (except contingent rewards) have significantly different influence on job satisfaction of employees with different levels of education. The results also showed that pay has greater influence on job satisfaction of the lowest educated employees than it has on job satisfaction of others. For employees with secondary education, communication and relationship with co-workers has such influence. For job satisfaction of employees with higher level of education, relationships with superiors and operating procedures have greater influence, while for the highest educated employees those are fringe benefits and nature of work.

Keywords

Job satisfaction, education of employees, job related characteristics, human resources, human resource management.

Introduction

There is no doubt that human resources are the key organizational resource. They are the only resource that can create and use other resources which will otherwise be a bunch of useless things. The importance of human resources also lies in the fact that they can be the source of sustainable competitive advantage of organizations (Barney, 1991; Wright, McMahan & McWilliams, 1993). However, many studies found that positive influence of human resources on organizational performances and competitiveness depends on their attitudes (Cole & Cole, 2009). Particularly, it was found that human resources are the most productive and use their full potential towards achieving organizational goals when they are *satisfied with*

their job (Gu & Chi, 2009; Latif et al., 2011; Kuzey, 2012).

In many studies it was found that job satisfaction influences numerous important outcomes in workplace, such as: turnover intentions (Saeed, Waseem, Sikander & Rizwan, 2014; Larkin, 2015; Azeez, Jayeoba & Adeoye, 2016), organizational citizenship behavior (Foote & Li-Ping Tang, 2008; Vatsa, 2013; Swaminathan & Jawaha, 2013), organizational commitment (Azeem, 2010; Azeez et al. 2016), job performance (Gu & Chi, 2009; Chamundeswari, 2013; Bin, 2016) etc. Many studies also confirmed that job satisfaction of employees, as their attitude, has significant economical impact on organizational

performances (Gu & Chi, 2009; Latif et al., 2011; Kuzey, 2012).

Job satisfaction can be defined as an attitude towards work that occurs as a result of cognitive, affective and evaluative individual reactions to a number of different job related characteristics (Judge, Thorensen, Bono, & Patton, 2001). It is an extremely complex phenomenon for many reasons. Firstly, because there are a number of jobs related characteristics that can induce a sense of job satisfaction among the employees. Secondly, there are a number of different individual factors (age of the employees, level of education, stage in career development, gender etc.) that may affect that certain job related characteristics could be more important for some groups of employees than for others. The influence of these (individual) factors on employees' job satisfaction has been in the focus of many studies (Wharton, Rotolo, & Bird, 2000; Azeem, 2010; Azeez et al. 2016). This paper will examine the influence of education on job related characteristics – job satisfaction relationship, since we believe that influence of this mediating variable is insufficiently investigated, especially in domestic literature.

The main *research problems* of this paper are to examine whether the level of employees' education influences their job satisfaction and to identify those job related characteristics that have the greatest influence on job satisfaction of employees with different levels of education in the organizations in Serbia. The aim of the paper is to propose the set of human resource management (HRM) practices that will result in more satisfied employees with all educational levels.

The paper is organized as follows. Firstly, it will give an overview of the literature on the concept of job satisfaction and education and presents the hypothesis. The second part will explain the methodology, present the results and discussion. The final part of the paper will present conclusion and recommendations for HRM.

1. Literature review

Job satisfaction is one of the most frequently studied topics in management and industrial psychology from the moment when Hoppock (1937) introduced the notion of this concept. The reason for that is significance of this topic, but also its complexity since the final answers on many questions in this area are still missing.

Job satisfaction is often defined as “a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences” (Locke,

1976, p. 1304). Spector (1997) further states that job satisfaction can be viewed either as a global feeling arising from a particular job or, as a constellation of different attitudes about different job related characteristics. Such perceptions of job satisfaction are quite clearly delineated in the literature. In that line, for example, Wright et al. (1993) points out that job satisfaction is the general attitude of the individual to the job, while other authors state that job satisfaction is a multi-dimensional concept affected by various job related characteristics, such as: pay, working conditions, relationships with colleagues and superiors, and the like (Spector, 1997; Oshagbemi, 1999; Giri & Kumar, 2010). Spector (1997), however, states that in the observation and analysis of job satisfaction it is much more useful if the second, analytical approach is used (facet approach) because in that case it is easier to identify job related characteristics that do not produce satisfaction of employees, or not sufficiently. Based on this finding management may create solutions for improvement of each job related characteristic (Spector, 1997).

There are different opinions about the factors which can influence job satisfaction. According to Judge and Klinger (2008) all studies that so far have investigated causality of job satisfaction in its essence were based on three types of assumptions which produced three models of job satisfaction. Those models are (Judge & Klinger, 2008):

- Situational model,
- Dispositional model, and
- Interactional model.

The situational model of job satisfaction is based on the premise that job satisfaction stems from the job characteristics or other aspects of the environment. This model is also based on the assumption that all people have similar needs and that they can be met by the same job characteristics and, hence, produce job satisfaction (Hackman & Oldham, 1980; Hauff, Richter, & Tressin, T. 2015).

The dispositional model of job satisfaction states that certain relatively stable personal characteristics influence job satisfaction regardless of the job characteristics and situation (Judge, Heller, & Mount., 2002). The factors whose influence has been investigated according to dispositional model are: psychological characteristics of employees, demographic characteristics, etc. There are many studies that examined the impact of psychological personality traits on job satisfac-

tion (Judge et al., 2002). Five-dimensional personality model known as *Big Five* model was usually used in these studies. Based on this model individuals distinguish upon following dimensions: extraversion, openness to experiences, conscientiousness, agreeableness and neuroticism (McCrae & Costa, 1991). Most of the papers confirm the strong correlation between these traits and job satisfaction. For example, based on the meta analysis that included all studies from the 1930s to the end of the 20th century, Judge and his colleagues (2002) have shown that there is a statistically significant correlation between job satisfaction and emotional stability of employees, as well as that there is a significant correlation between job satisfaction, on the one side, and neuroticism, conscientiousness and extraversion, on the other (Judge, Heller & Mount, 2002).

Finally, the interactional model of job satisfaction is based on the assumptions that when there is congruence between the organization and the employee in terms of the values and norms of behaviour, many positive outcomes, such as organizational citizenship behaviour, low fluctuation, job satisfaction, etc., arise (Chatman, 1989). Generally speaking, this model relies on the postulate of the theory of person-environment fit according to which when there is congruence in this relationship, positive attitudes, feelings and behaviour of employees emerge.

The study we conducted is based on the assumption that job satisfaction is influenced by job related characteristics (situational model). There are different explanations of the key job related characteristics that cause employees' satisfaction. Among traditional explanations, the most famous are Herzberg's (1965) and Locke's (Locke, Smith, Kendall, Hulin, & Miller, 1964). Herzberg (1965) explains that there are whole groups of factors that affect satisfaction / dissatisfaction with the job. According to him, job dissatisfaction is related to working conditions such as: control, salary, company policies, physical working conditions, job security, etc., while job satisfaction is conditioned by the work results, such as: promotion, recognition, personal development, success at work and the like (Herzberg, 1965). Lock et al. (1964) explains that there are a huge number of factors that can affect employees' satisfaction which occurs if the actual outcome of work is in line with the desired one (Lock et al., 1964). Job related characteristics that we analyzed are specified in Spector's *Job Satisfaction Survey* (Spector, 1985). According to this author, all job related

characteristics that might influence job satisfaction of the employees are divided into nine groups, such as: pay, promotion, fringe benefits, contingent reward, relationship with supervision, relationship with co-workers, operating procedures, nature of work and communication.

The significance of each job related characteristic for job satisfaction can be different for partial groups of employees (for younger and older employees, for men and women, for highly educated and low educated personnel etc.). So, different mediating variables can influence job related characteristics – job satisfaction relationship. In this paper, we will examine the mediating influence of level of education on job related characteristics – job satisfaction relationship.

Although there are a certain number of studies that examined this relationship in the literature, the level of education was mainly examined within one-dimensional models of job satisfaction. Empirical studies that examined mediating influence of level of education on job related characteristics – job satisfaction relationship are rare, especially in the countries in transition. For this reason, we will examine whether the level of education has a significant influence on job related characteristics – job satisfaction relationship of employees in the organizations in Serbia. We will observe job related characteristics in accordance with Spector's nine-dimensional model.

2. Hypothesis

Most of the previous research shows that job satisfaction is rising with increasing the level of education. This can be explained by the fact that more educated people generally earn more, progress faster, have a better job, and consequently their job satisfaction is higher (Clark, 1996; Wharton et al. 2000). However, there are claims that the increase in the level of education leads to increased expectations of employees that may not always be accompanied by the growth of wages and a faster progression, which can cause their dissatisfaction (Allen, 2001; Ilies & Judge, 2003). But nevertheless, people with higher levels of education generally have higher expectations, which motivate them to further learn and grow. Consequently, a higher degree of informal education leads to further improvement of their knowledge and skills, which enable them to progress more quickly and become more satisfied with the job. Starting from the above our first hypothesis is:

H1: Job satisfaction is higher among employees of a higher education level compared to lower educated employees.

In addition to the investigation of the relationship between education levels and job satisfaction in general, the mediating influence of level of education on partial job related characteristics – job satisfaction relationship is also important. According to Maslow's theory of hierarchy of needs, different needs in humans occur depending on their lifestyle. However, the core message of Maslow's theory is fulfil the needs of low-level influences the development needs of higher rank. Having in mind that employees of different levels of education are at a different level of needs, our second hypothesis and its sub-hypothesis are:

H2: Different job related characteristics have different influence on job satisfaction of employees with different level of education.

H2a: The pay and contingent reward have greater influence on job satisfaction of employees with the lowest levels of education (primary education) compared to more educated employees.

H2b: The communication and relationship with co-workers have a greater impact on job satisfaction of employees with secondary level of education compared to other employees.

H2c: The relationships with superiors and operating procedures have a greater impact on job satisfaction of employees with higher level of education compare to other employees.

H2d: The promotion, fringe benefits and nature of work are dimensions that have greater impact on job satisfaction for employees of the highest level of education compared to less educated employees.

3. Sample and procedure

In order to test previously mentioned hypothesis, the primary research was conducted. We were investigating influence of job related characteristics on job satisfaction of employees with different levels of education, based on the attitudes of employees in organizations in Serbia. The research was carried out in the period from June to September 2016. The whole procedure of sampling was realized in two phases. In the first phase we used convenient sampling that included students at the final year of economics study who in the period of the research were on internship all

across Serbia. In this way we obtained the data. One part of the questionnaire included questions related to general information about the respondents: gender, age, years of service, level of education, and position in the organizational structure. The second part of the questionnaire included questions related to job characteristics which influence their job satisfaction. We used Spector's Job Satisfaction Survey (JSS) (Spector, 1985). This questionnaire is designed to assess employee attitudes towards nine aspects of job that could influence job satisfaction, such as: pay, promotion, fringe benefits, contingent rewards, supervision, co-workers, operating procedures, nature of work and communication. Each aspect of job is assessed with four items (Spector, 1985) by using five-point Likert scale, ranging from 1 – strongly disagree, to 5 – strongly agree. An answer of 4 or more points expresses satisfaction, while answers of 3 points express neutral opinion and below 3 points express dissatisfaction.

The study initially included 1000 respondents, employed in 28 organizations operating on the territory of the Republic of Serbia (mainly south-east of Serbia). Out of 1000 distributed questionnaires, 813 were usable, while 187 questionnaires were rejected due to inaccurate or incomplete answers. In the structure of the sample, females accounted for 42.8%, while the share of men was 57.2%. Regarding the age structure, the situation was as follows: 4.9% of respondents were under 25, 9.5% were between 26 and 30, 32.8% were between 31 and 45 year, 38.6% were between 46 and 60, and 14.2% were over 60. The sample structure by level of education is given in Table 1.

Table 1 Structure of employees according to the level of education

Level of education	Number of employees	Percentage (%)
Primary	30	3.7
Secondary	432	53.1
Higher	102	12.5
The highest	249	30.6
Total	813	100.0

Source: The authors

According to the data from Table 1, 53.1% of employees have secondary education, 30.6% have highest education, while 12.5% have high education and only 3.7% have primary education. Originally, in the questionnaire, respondents were offered a somewhat broader range of education levels. Namely, in addition to primary education

(II-degree), three degrees of professional qualifications (II, III and IV degrees), are included in the category "Secondary education". The category "Higher education" includes employees with all variations of VI degrees, while the category "highest education" includes all variants of degree VII. In the "Highest Education" category, we included respondents who answered that they had MSc and PhD as well. In Table 4, "primary education" is numbered as 1, "secondary education" is number 2, "higher education" - number 3 and "highest education" – number 4.

4. Results and discussion

In order to check the consistency of the questions in the questionnaire, Cronbach's Alpha was first calculated. The values of Cronbach's Alpha of 0.906 indicate very good reliability and internal agreement of the scales in the sample. Compliance of individual items with total results is shown in Table 2.

According to the data in Table 2, for column Total Correlation of Questions, there is a high degree of correlation of each item with total results. Since all values in the Cronbach's Alpha column in case of deleting questions are less than the final alpha value (0.906), it is advisable for all items in the existing scale to remain, and that this scale is comparable to research based on such a scale. Also, the mean correlation between the items is 0.513, and the correlation of the pairs of items is from 0.384 to 0.767, which indicates that the correlation between the items is strong.

Table 2 Measuring scale compliance

Questions	Total correlation of questions	Cronbach's Alpha in case of questions exclusion
Pay	.809	.886
Promotion	.795	.886
Fringe benefits	.721	.892
Contingent rewards	.641	.899
Supervision	.621	.900
Co-workers	.809	.886
Operating procedures	.440	.905
Nature of work	.558	.901
Communication	.748	.891
Cronbach's Alpha	.906	
Sample size	813	

Source: The authors

Descriptive statistics and multivariate analysis of variance were applied to verify the validity of the hypothesis. After checking the assumptions related to the implementation of MANOVA - the size of the sample, the normality of distribution, the linearity, the homogeneity of the matrix of variance and covariance, the multicollinearity singularity, we conclude that all the conditions for the implementation of the multivariate analysis of variance have been met.

Table 3 Multivariate tests

	Value	F	degrees of freedom	p-value	Part. Eta Squared	
Intercept	Pillai's Trace	.950	1677	9	.000	.950
	Wilks' Lambda	.050	1677	9	.000	.950
	Hotelling's Trace	18.850	1677	9	.000	.950
	Roy's Largest Root	18.850	1677	9	.000	.950
	Pillai's Trace	.338	10.42	27	.000	.158
Education level	Wilks' Lambda	.763	11.85	27	.000	.132
	Hotelling's Trace	.338	12.52	27	.000	.145
	Roy's Largest Root	.351	20.96	9	.000	.222

Source: The authors

Table 3 provides a set of multivariate tests that indicate that there is a statistically significant impact of the level of education on the level of job satisfaction. The results of multivariate analysis are shown in Table 4.

As Table 4 shows, job satisfaction differs among employees with different level of education. Also, job satisfaction is rising with increasing the level of education, except in case of highest level of education. So, our first hypothesis (H1) is partially confirmed.

More precisely, the least job satisfaction is found among the least educated employees (primary level of education-3.69). Somewhat higher average job satisfaction is characteristic for employees with secondary level of education (3.91). The highest level of job satisfaction is found among employees with higher education (3.96). However, job satisfaction of the most educated employees (highest level of education) is slightly lower compared to the previous level of education

(3.93). This can be explained by specific circumstances in Serbia. Serbia is characterized by a high level of unemployment and it is very common that people with the highest level of education accept low paid jobs (because they do not have the possibility of choosing), so their job satisfaction is lower than expected.

Table 4 MANOVA test

Causes of job satisfaction	Level of education				F	p-value	Partial Eta Sq.	Bonferroni Test
	1	2	3	4				
Pay	4.25	4.04	3.88	3.75	15.16	.000	.144	1-3-1-4-2-4-2-3
Promotion	3.15	3.58	3.61	4.26	11.88	.000	.082	1-2-1-3-1-4-2-4
Fringe benefits	4.06	3.97	4.06	4.86	14.51	.000	.064	1-4-2-4-3-4
Contingent rewards	4.31	4.65	4.84	3.87	3.42	NS*	.013	-
Supervision	3.70	3.88	4.01	3.88	2.23	.003	.007	1-2-1-3-1-4-2-4
Co-workers	3.40	3.91	3.86	3.87	13.06	.000	.046	1-2-1-3-1-4
Operational procedures	3.95	3.80	3.96	3.45	10.74	.007	.055	1-4-2-4-3-4
Nature of work	3.08	3.49	3.65	3.95	12.44	.000	.040	1-2-1-3-1-4-2-4
Communication	3.36	3.81	3.79	3.48	13.52	.000	.054	1-2-1-3-1-4-2-4-3-4
Total satisfaction	3.69	3.91	3.96	3.93				
Number of respondents	30	432	249	102				

*NS – Non significant

Table 4 also shows that contingent rewards are the only job related characteristic which has no statistically significant different influence on job satisfaction of employees with different levels of education. The mean values of this job related characteristic (between 3.87 and 4.84) are above the average job satisfaction (3.87). So we may conclude that contingent rewards are very significantly for job satisfaction of all employees regardless of a level of education. All other job related characteristics (pay, promotion, fringe benefits, operating procedures, communication, relationship with supervision and co-workers) have significantly different influence on job satisfaction of employees with different levels of education (information of statistically significant differences between career stages in all characteristics can be found in Table 4 in the column p-value and Bonferroni column). So, our second hypothesis (H2) that different job related characteristics have different influence on job satisfaction of employees with different levels of education is partially confirmed (with the exception of contingent rewards). The highest variability in the job related characteristic – job satisfaction relationship conditioned by level of education are in the following job related characteristic: pay (Partial Eta Squa-0.144, There is no difference between 1-2 level of education as well as 3-4 level of education – Bonferroni) and promotion (Partial Eta Squa-0.086, There is no difference between 2-3 level of education as well as 3-4 level of education – Bonferroni).

Regarding the sub-hypothesis H2a, we assumed that pay and contingent reward have greater influence on job satisfaction of employees with the lowest levels of education (primary education) compared to more educated employees. The results in Table 4 indicate that employees' satisfaction with pay is the highest among the most uneducated employees, and it decreases with increasing levels of education. But this is not the case with contingent rewards. As noted above, this job related characteristic has approximately the same impact on the job satisfaction of employees with all education levels. Having in mind previously presented results we may conclude that sub-hypothesis H2a is not confirmed.

Sub-hypothesis H2b was that communication and relationship with co-workers have a greater impact on job satisfaction of employees with secondary level of education compared to other employees. The results we obtained show that employees' satisfaction with communication (3,81 /3,61 average). A similar situation is with the other job related characteristics. Satisfaction with relationship with co-workers (3,91) is higher among employees with secondary level of education compared to other employees as well as compared to average job satisfaction with this job characteristics for all employees (3,91 /3,76 average). We may conclude that hypothesis H2b is confirmed.

Sub-hypothesis H2c was that the relationships with superiors and operating procedures have a greater impact on job satisfaction of employees with higher level of education compared to other employees. The results we obtained show that employees' satisfaction with both job related characteristics among employees with higher level of education is higher compared to other employees as well as compared to average job satisfaction with those job related characteristics for all employees (relationships with superiors 4.01/3.86 average; operating procedures 3.96/3.79 average). Therefore, we may conclude that hypothesis H2c is confirmed.

A similar situation is with sub-hypothesis H2d. The results we obtained show that employees' satisfaction with promotion, fringe benefits and nature of work among the highest educated employees is higher compared to other employees as well as compared to average job satisfaction with

that job related characteristics. We may conclude that hypothesis H2d is confirmed

Conclusion

Based on the above, it can be concluded that job satisfaction is a very important phenomenon in working place, which can be moderated by numerous factors. In this paper we investigated influence of level of education on job related characteristics – job satisfaction relationship of the employees in enterprises in Serbia. We examined whether education influences job satisfaction of employees in enterprises in Serbia as well as whether different job related characteristics (specified in Spector's model) have different influence on job satisfaction for employees with different levels of education.

It was found that job satisfaction is different among the employees with different levels of education, and that it increases with the increase of the levels of education, except in the case of the highest educated employees. This finding can be explained by the specific circumstances in Serbia. Due to the high level of unemployment rate, employees with the highest level of education often accept the jobs that do not correspond to their competences.

Research has also shown that the level of education mediate the relationship between jobs related characteristics and job satisfaction. The only exception is contingent rewards. The satisfaction with contingent rewards is equally very high for all employees regardless of their level of education. The research further showed that various forms of rewards (pay, contingent rewards, fringe benefits) the have greatest impact on job satisfaction of employees with the lowest level of education (primary education). This can be explained by the fact that in Serbia the average pay, although not high, has a high significance. It enables this category of employees to satisfy their basic existential needs which are the most important for them. Based on the obtained results, we see possibility for increasing the job satisfaction of this group of employees in improving the communication, as well as in improving the relationship with co-workers. Communication can be improved by introducing the new channels of communication, such as „open doors” where higher level management will reserve a couple of hours of week or month for communication with employees. Also, in today's digital era, when almost everyone has basic knowledge of using IT technology, introducing electronic channels of

communication would be also a suitable measure. Enhancing relationship with co-workers could be achieved by introducing more team's assignments and rewarding for teams' results.

The communication and relationship with co-workers are job related characteristics that have a higher influence on job satisfaction for employees with secondary education than for others. Based on the obtained results (low average satisfaction) we see possibility for increasing the job satisfaction of this group of employees in improvement the possibility for promotion as well as in nature of work. Higher satisfaction with promotion could be achieved by strictly implementation of the principle that achieved results in the past should be the primary criteria for advancement and not other criteria (not, for example, political background or something else). Improvement in domain of nature of work could be achieved by introducing job rotation, job enlargement, and job enrichment.

Research has also shown that the relationships with superiors and operating procedures have a greater impact on job satisfaction of employees with higher level of education compared to other employees. We see possibility for improving the human resources management practices regarding this category of employees in their redeploying or in redesigning their job so that work tasks become more motivated and challenging. Job characteristics model introduced by Hackman and Oldham (1980) would be a suitable solution.

Finally, the research showed that employees with the highest level of education are the most satisfied with fringe benefits, promotion and nature of work. Among these job related characteristics they are the most satisfied with fringe benefits. This can be explained by the fact that fringe benefits are usually the highest for this category of employees, and at the same time, the needs that can be met by them are highly ranked. We see opportunity for increasing the job satisfaction of this category of employees in improving the communication since this job related characteristic is the most unfavourably assessed by them. As we said earlier, introducing new channels of communication and higher visibility of higher level of management would be useful measures.

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Electronic Human Resource Management (e-HRM): A New Concept for Digital Age

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Abstract

The digital age causes significant changes in the business environment. As one of the most important components of the modern business environment, technological environment and information technology (IT) influenced the development of many areas of business. The most notable changes are happening in the production of hardware and software, and industrial production, but also in the management where decision support systems have long been in use. Within the management, IT receives a special role in human resources management. Electronic Human Resource Management (e-HRM) is a concept which involves the use of Web-based technologies for providing the services regarding the human resource management in the organization, and to which access have a wider range of organization's stakeholders - starting from the HRM department, via managers to employees. The aim of this paper is to highlight the importance of the concept of e-HRM, its most important features, advantages, potential drawbacks, as well as to show the level of usage of e-HRM in Serbia. The methodology of the paper includes theoretical analysis of the available literature and data on e-HRM and empirical analysis of data on the use of e-HRM in organizations in Serbia. The analysis was conducted on the database of Cranet research in 2015/2016 by using the SPSS software. The authors point out that e-HRM is a kind of innovation that promotes, develops and facilitates the practice of HRM, both for the department of human resources and for managers and employees.

Keywords

E-HRM, information technologies, Cranet, Serbia.

Introduction

The last few decades have witnessed the intense and dynamic development of IT that deals with its impacts in various human resource jobs, starting with the way information and communication, and many daily activities.

The impact of IT development did not bypass the most of business entities that, thanks to the application of this technology and its innovative solutions, forever changed the way of performing different business activities. One of the areas that also did not remain "spared" new ways of performing activities and tasks is the HRM function in organizations. Thanks to the application of IT today, there is almost no single

segment of the scope of operation of this function in which IT did not find its application and irreversibly changed the way in which many activities had been carried out by then. The activities that mostly "underwent" changes are the collection, keeping and updating of employees' data, then activities in the field of recruitment and selection of candidates, the manner of employee training, performance management, etc. Although the primary motive for the implementation of IT within the HRM function was to optimize procedures in carrying out the above activities, other positive effects such as cost reduction, better quality of services provided, productivity increase, etc., also emerged. It is therefore not

surprising that an increasing number of organizations use IT solutions within this function, as well as increasing the complexity of applications themselves in this field. It is important to emphasize that the primary task of this function has not changed. It remains the same, which is "to enable organizations to have an adequate number and structure of employees that will be available at the right time and in the right place at affordable costs and which will be motivated to achieve the organization's current and strategic goals" (Ma & Ye, 2015, p. 76). However, what has changed with the use of IT is the way this function accomplishes this task. By digitizing and automating administrative and transactional activities, it can do so in a more efficient way. At the same time, the application of IT within the HRM function enables employees to devote more time to those activities that create greater value for organizations, that is, the design of more effective policies in the HRM field that contribute to the improvement of organizational performance by which it (HRM) becomes the real strategic partner in business (Parry & Tyson, 2011). Basically, it can be said that the application of IT within the HRN is dual. First of all, this technology is used to connect spatially separated entities by enabling them to interact interactively with the performance of various HRM activities, irrespective of whether they are in the same room or on different continents. Additionally, IT enables the partial or complete substitution of human labor in performing various tasks in the field of HRM, which practically becomes a means of their execution (Slavić & Berber, 2013, p. 238).

The widespread use of IT in the realization of HRM activities has influenced the emergence of a new HRM concept. It is a concept that is known in academic literature as e-HRM, while in practice it is more often called e-HR (Foster, 2009). In any case, this is a concept that implies the use of IT to provide various services from the human resource management domain in an organization, and which approach has a wide range of stakeholders, starting with HRM department, through managers, employees, potential employees, and other stakeholders.

Considering the widespread use of IT for performing HRM activities, the aim of this paper is to point out the significance of e-HRM concept, its most important characteristics, advantages, potential shortcomings, and to explore the level of use of e-HRM in Serbia. The paper includes a theoretical analysis of available literature and data

on e-HRM, as well as an analysis of empirical data on the use of e-HRM in organizations in Serbia. The analysis was carried out on the database of the Cranet Research from 2015/2016, by using the SPSS software. The work itself is structured in a way that the introductory considerations, is followed by a review of the literature referring to e-HRM, while in the second part of the paper the explanation of the research methodology, the presentation of the research results, their discussion and concluding considerations are derived.

1. The review of the literature

In order to better understand the e-HRM concept, we will first give an overview of the meaning of another term commonly used, which is the Human Resource Information System (HRIS). When it comes to the Human Resources Information System, it implies systematic procedures for collecting, storing, maintaining, updating and distributing data on human resources of the organization (Tannenbaum, 1990), where the main user of this system is the HRM function (Ruel, Bondarouk & Looise, 2004). The goal of using this information system is to improve the performance of the HRM function by which it indirectly exerts a positive influence on the entire operation of the organization. On the other hand, when it comes to e-HRM, this concept refers to the application of strategies, policies and practices related to human resources in organizations with support or full reliance on web technology (Ruel, Bondarouk & Looise, 2004, p. 365) whereby this technology can be used by employees of HRM department, as well as other employees in the organization, potential employees, as well as the management of the organization (Bradić Martinović, 2011). Summarizing the difference between e-HRM and HRIS, Ruel and his associates (Ruel, Bondarouk & Looise, 2004) indicated that the HRIS includes systems that are only used by the HRM department, while the aim of e-HRM is primarily to serve to the other users, too.

Regarding the term e-HRM itself, its origin has been linked to the 1990s, with the idea of the emergence of e-commerce (Lengnick-Hall & Moritz, 2003). Thus, according to the reputation of e-commerce, the prefix "e" was used in HRM, which resulted in the name of the e-HRM concept (Ha, 2011, p. 20). However, when it comes to understanding the essence of the e-HRM concept, it is noticeable that there is still no single view.

This is explained by the fact that different authors put emphasis on different aspects of e-HRM. Thus, when explaining the essence of e-HRM, some authors place an emphasis on the transactional side of e-HRM, that is, the fact that HRM activities are more easily administered, other authors, place emphasis on technology that provides access to human resources data, while the third group of authors puts emphasis on the strategic aspect of e-HRM. When it comes to the first group of authors, some of them point out that e-HRM is such a concept in which it enables improvements in the administration of human resource activities and transactions (Kettley, & Reilly, 2003, p. 3). Similarly, Voermans and Van Veldhoven (2007, p. 887) point out that e-HRM represents administrative support for HRM by using internet technology. When it comes to the second group of perceptions, where the focus is on technology, it is stated that e-HRM implies the application of IT for networking or support between at least two individual or collective entities in their realization of HRM activities (Strohmeier, 2007, p. 20). Also, in this group of views, it is the belief that e-HRM represents the application of different types of technologies that enable managers and employees to have a direct access to human resources data and various administrative applications (Watson & Wyatt, 2002, p. 43). We also mention Bondarouk and Brewster (2016) that indicate that e-HRM focuses on all integration mechanisms and all the content of human resources management that is transmitted through IT, which aims to make the HRM processes more consistent, more efficient, with better quality, and which should create long-term opportunities for the stakeholders of the organization. Finally, when it comes to the third group of authors, it is indicated that e-HRM is, in fact, a comprehensive name that covers all possible mechanisms and interactions between HRM and IT aimed at creating value for employees and managers in the organization, as well as for entities outside of them (Bondarouk & Ruel 2009, p. 507).

However, if it were necessary to provide the simplest definition of e-HRM, then e-HRM represents cross-cutting and interrelation between HRM and IT, or the use of web technologies for the implementation of policies, practices, and procedures of HRM (Ruel, Bondarouk & Looise, 2004). E-HRM, in fact, consists of the

configuration of computer hardware, software and electronic networks that enable the execution of HRM activities. At the same time, the degree of physical presence of hardware and software and the degree to which they are used to coordinate individual and group transactions in the HRM area, irrespective of the geographical constraints and organizational horizontal and vertical differentiation of users, determines the level of development of e-HRM in organizations (Marler, & Parry, 2016).

Since there are differences in understanding the role of e-HRM in organizations (but also in the level of applied hardware and software development), it is natural that there are differences in e-HRM levels. In this regard, Lepak and Snell (1998) consider that there are three levels of e-HRM: operational, relational and transformational. In the opinion of the above-mentioned authors, the operational e-HRM refers to the administration of data related to earnings of employees, as well as their personal data. Thanks to the application of IT in this domain, employees are able to update themselves on their own, or that may be done by HR staff. The goal of applying IT for these needs is to reduce costs and increase the efficiency of the HRM function or to have as many transactions as possible in the unit of time, especially when it comes to calculating earnings. Practice truly confirms that the introduction of e-HRM enables the increase in the efficiency of the HRM function through reduction of personnel in the human resources service, increasing the speed in the process realization, reducing costs and relieving staff from administrative tasks (Ruel, Bondarouk & Looise, 2004; Strohmeier, 2007; Bondarouk, Parry & Furtmueller, 2017; Micu, Capatina, Micu & Schin, 2017).

When it comes to relational e-HRM Lepak and Snell (1998), point to the IT support for business processes through its application in the field of employee training, recruitment of candidates, employee performance management, etc. Thus, for example, the application of IT in recruiting of candidates enables this activity to be performed by advertising of the need to fill a job position via an organization's website or through specialized sites. In addition, interested candidates can also apply by the IT and the Internet. An overview of other HRM activities in which IT finds its application is given in Table 1.

Table 1 The application of IT in the implementation of basic human resource management activities

HRM activities	HRM tasks	Integrated IT support
Administrative support	Basic employee records(presence, absence, earnings, etc.).	Database management, attendance recording systems, registration.
HR planning	Statistical analysis of fluctuation, planning the need for labor force	Trend analysis, simulation models, etc.
Job analysis	Management of business description and specification data, analysis of organizational structure	Documentation of results of job analysis, visualization of existing and planned organizational structure
Recruitment	Process planning, documentation recruitment implementation	Creating, registering and managing data from advertisements, application forms, support for classical and on-line recruitment, use of social networks
Training and development	Research on the educational and developmental needs of employees, planning of training programs, organization of training, storage of teaching materials.	On-line questionnaires, analysis of development trends, data management, implementation of e-learning programs.
Individual performance management	Performance measurement	Documentation, analysis, feedback, trend analysis
Compensation	Creation of salary structure, salary modeling, level of compensation analysis	Analysis, calculation based on internal and external information

Source: Karoliny, M. & Poór, J., 2017, pp. 376-377.

Finally, when it comes to the third level of e-HRM, which Lepak and Snell (1998) designate as the transformational e-HRM, it is, in their opinion, related to the realization of activities in the HRM area that have a strategic importance for the organization which are knowledge management, employee development in accordance with the strategic goals of the organization, support to virtual teams, information exchange, etc. However, about the extent to which these activities will really have an impact on the formulation and implementation of the organization's strategy, there are different points of view. Some authors point out that e-HRM has not yet used its potential to raise the strategic importance of HRM function in the organization (Tansley, Newell, & Williams, 2001). On the other hand, there are points of view based on empirical research according to which e-HRM has enabled better integration of the HRM function with the organizational strategy (Ruel, Bondarouk & Looise, 2004). Finally, there is also research that has shown that e-HRM is more generally used for administrative purposes than for making strategic decisions, but that there are some organizations in which e-HRM provided a better quality of information on human resources than in the case of organizations which do not use e-HRM (Burbach & Dundon, 2005).

From the stated levels of implementation of e-HRM, the key objectives of introducing this concept are also derived. These are: increasing the efficiency of HR policies and procedures

(Obeidat, 2016), increasing operational efficiency, improving the quality of services provided and increasing the strategic importance of the HRM function (Lepak & Snell, 1998). Parry and Tyson (2011, p. 336) added two more goals: empowering managers to carry out various activities from the HRM domain as well as standardization of procedures from this area. However, Armstrong (mentioned in Slavić & Berber, 2013, p. 239) has an even more detailed approach, which states that the implementation of the e-HRM concept enables the improvement of activities and processes from the HRM domain by achieving the following goals:

- improve quality of information available,
- reduce the administrative burden on the HR department,
- improve the speed at which information is available,
- improve the flexibility of information to support business planning,
- improve services to employees,
- produce HR metrics,
- aid human capital reporting,
- improve productivity,
- reduce operational costs and
- manage people's working time more effectively.

However, despite the indisputable advantages of implementing the e-HRM concept, certain potential shortcomings and challenges are also

present. A few of them stand out as key are (Kaur, 2013, p. 37):

- **Illegal access and use of information:** This is one of the main disadvantages of e-HRM because the data contained in the databases is available to anyone who can access them in a lawful or illegal manner and that these data can be used for different purposes. In other words, they can be "hacked", deleted, etc.
- **Lack of appropriate staff:** Although implementation of the e-HRM concept can be motivated by a reduction in the number of employees, there may be a lack of staff within the HRM function that possesses the appropriate technical KSAs necessary for the implementation and servicing of the e-HRM system, so there may be a need for their recruitment and related costs.
- **Errors when entering data:** In order to successfully operate the e-HRM system, it is necessary to avoid errors when programming this system, but also when using different applications. However, whenever the human error factor is concerned, they are not excluded.
- **Interpersonal contacts are reduced:** Since the implementation of the e-HRM concept mainly involves individual work, the number of employees' interpersonal contacts is reduced when performing work tasks, which in some of them can lead to the feelings of isolation.
- **Inadequate use of the e-HRM capabilities due to the inflexible way of thinking of employees:** In order to make full use of the benefits provided by the e-HRM concept, employees within the HRM function change the way they think, as many have proven to be certain about the use of modern technology as such, but also its possibilities. However, if transformations in the technology of carrying out work tasks are not accompanied by a transformation of the way of thinking and organizational culture, the introduction of the e-HRM concept can be transformed into a "financial fiasco".
- **The threat to the function of HRM.** Since the implementation of the e-HRM concept can lead to a surplus of employees in this function, the basic postulates on which the significance of this function is based, that is, the human resource is the most

important resource of an organization that enables the achievement of its goals and mission, will be demolished.

In the end, it should be emphasized that the mere introduction of the e-HRM concept is not without challenge, as any change, especially radical, and that it can cause more or less resistance. Since this concept has been in use for some time, it is possible to specify certain recommendations that would be useful to take into account during its implementation. Namely, before it is considered that a particular aspect of the e-HRM is being implemented, it is necessary to ensure the acceptance of change by employees and other stakeholders and ensure that the new processes in the implementation of HRM activities are aligned with the entire HRM system. In addition, it is necessary to train staff how to perform the previous activities in a new way using IT and appropriate applications. In all this, support and commitment of top management for all entities involved in the implementation of this concept is needed (Nivlouei, 2014, p. 153).

In order to investigate the level of the application of e-HRM in organizations in Serbia, the authors of the paper have explored empirical data. In the following part, we presented the methodology of the Cranet project and the results of the analysis.

2. Methodology

The research in this paper was based on the data of the Cranet research, the international network of business schools. This international network, coordinated by Cranfield School Management, organizes comparative research on human resource policy and practice using a standardized questionnaire. The research is carried out every four years (Steinmetz, Schwens, Wehner, & Kabst, 2011; Brewster, Mayrhofer, & Reichel, 2011) in over 40 countries of the world (Lazarova, Morley, & Tyson, 2008).

The aim of the research is to provide high-quality data for the academic, public and private sectors, as well as for human resource management students, and to create new knowledge about human resource management practice in different countries of the world. The questionnaire is translated into the language of the country in which the survey is conducted, thus achieving local adjustment and a clearer understanding of the issue. The standardized questionnaire used in the research is divided into

six parts: HRM activities in an organization, staffing practice, employee development, compensation and benefits, relationships with employees and communications, and organizational details (Leković, Slavić, & Berber, 2015; Slavić, Bjekić, & Berber, 2017).

As the only member of the international scientific network from Serbia, in 2008, for the first time, the Faculty of Economics in Subotica, University of Novi Sad, participated in an international study on human resources management activities with 50 analyzed organizations. In the first half of 2015, 160 organizations from the territory of Serbia were investigated. Answers to questionnaires were provided by executive managers or HR managers in organizations with more than 50 employees.

Table 2 Structure of organizations surveyed by a number of employees (N = 160)

Organization size (by number of employees)	Frequency	%
1-249	97	60.6
250-1000	42	26.3
1000+	21	13.1
Total	160	100.0

Source: Research of the authors based on the Cranet data for Serbia.

The data from Table 2 indicate that the largest share of analyzed organizations in Serbia in 2015 was in the group of small and medium enterprises (60.6% of organizations), according to the number of employees, from 1 to 250 workers. Large companies were around 27% (over 250 workers in the organization). Very large enterprises, over 1000 workers, made up 13% of the total sample.

Table 3 Ownership structure of organizations surveyed (N = 160)

Ownership	Frequency	%
Private	105	66
Public	54	34
Mixed	0	0
Other	0	0
Total	159	99.4
Missing	1	0.6
Total	160	100

Source: Research of the authors based on the Cranet data for Serbia.

The data from Table 3 indicate that the largest share of analyzed organizations in Serbia was in the private sector, 66%, while in the public there are 34% organizations.

About 45% of enterprises are engaged in production, while around 55% of organizations

are in the service sector. The largest share of organizations analyzed in 2015 in Serbia are from food, trade, telecommunications and IT sectors.

For the purposes of this research and pointing to the practice of using e-HRM in organizations, the following variables have been analyzed:

- Use of the e-HRM in an organization;
- Use of the self-service system for managers;
- Use of the self-service system for employees.

For the purpose of a more detailed analysis, the mentioned variables were placed in relation to the variables of the size, sector, and industry of the enterprise in order to determine the level of use and representation of these systems in organizations in the Republic of Serbia. Data analysis was done using the SPSS statistical program, by using descriptive statistics and the Spearman's Chi-Square test.

3. Results

Data from figure 1 shows the frequency of using e-HRM for the implementation of HRM activities. The data indicate that 58% of organizations in Serbia on a sample of 160 companies use this system to provide HR activities to their employees. 42% of organizations do not use e-HRM.

The module for self-service managers for performing various HRM activities is used by only ¼ of surveyed organizations (around 26%), while the vast majority of companies still do not have this opportunity for their managers. This system allows managers to access data on employees with whom specific managers cooperate, enabling them to perform certain HR activities (for example approving holiday requests, tracking the absence of employees, setting up and tracking the achievement of employee goals, approving costs, proposing employees for promotion, analyzing information about failures and abandonment of organizations, etc.).

The employee self-service module enables human resource professionals and employees to manage employee-based data. They can, if it is foreseen by the level of access to the system, have insight into all their data, and some data may change. Depending on the specific solution in the enterprise, access to data can be provided within the intranet, and then the security of the system is

higher, but also via the internet, in which case the availability of data is greater (Bradić-Martinović, 2011, p. 187). According to Figure 1, it is evident that around 1/5 of the analyzed organizations use

this module, or more precisely 18.4%. The largest percentage of organizations from Serbia does not offer the possibility of independent access of employees to the data on staff.



Figure 1 Representation of e-MLP in organizations in Serbia (%)
 Source: Research of the authors based on the Cranet data for Serbia.

Since the e-HRM usage frequencies are shown and the self-access module for HR data for managers and employees, in the following part of the text data on the mentioned variables are attached to the HRM strategy, HR department, and business strategy, as a determinant of the strategic approach to HRM.

According to the data in Table 4, it is evident that if organizations have HR departments, then e-HRM, self-service for managers and employees modules will be represented in a larger part of organizations.

Table 4 Use of E-HRM, self-service for managers and employees in relation to the existence of HRM department

		Use of e-HRM (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of HR department (%)	No	68.2	31.8	100.0	$\chi^2 = 17.256$ p=0.000	Phi=0,328 p=0,000
	Yes	31.9	68.1	100.0		
Total		41.9	58.1	100.0		
		Use of self-service for managers (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of HR department (%)	No	93.2	6.8	100.0	$\chi^2 = 11.263$ p=0.001	Phi=0,265 p=0,001
	Yes	67.2	32.8	100.0		
Total		74.4	25.6	100.0		
		Use of self-service for employees (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of HR department (%)	No	97.7	2.3	100.0	$\chi^2 = 10.129$ p=0.001	Phi=0,253 p=0,001
	Yes	75.7	24.3	100.0		
Total		81.7	18.4	100.0		

Source: Research of the authors based on the Cranet data for Serbia

In the case of e-HRM, data indicate that if there is an HR unit in the organization, then 68% of organizations will use e-HRM ($\chi^2 = 17,256$; p = 0,000). The strength of this relationship is expressed by the coefficient Phi = 0.328 (p = 0.000), which indicates that this is a weak, statistically significant link between the observed binary variables. In the case of using independent access for managers, the data indicate that if there

is an HR department in the organization, about 33% of organizations will use the mentioned module ($\chi^2 = 11,263$; p = 0.001). The strength of this relationship is expressed by the coefficient Phi = 0.265 (p = 0.001), which indicates that this is a weak, statistically significant link between the observed binary variables. When considering data on the use of autonomous access to the employee's system, it is evident that if there is a

department for HRM in the organization, then 24.3% of organizations will also use an independent approach to employee data ($\chi^2 = 10.129$; $p = 0.001$). The strength of this

relationship is expressed by the coefficient Phi = 0.253 ($p = 0.001$), which indicates that this is a weak, statistically significant link between the observed binary variables.

Table 5 Use of E-HRM, self-service for managers and employees in relation to the existence of HR strategy in an organization

		Use of e-HRM (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of HR strategy (%)	No	62.7	37.3	100.0	$\chi^2=20,512$ $p=0,000$	Phi=0,358 $p=0,000$
	Yes	26.9	73.1	100.0		
Total		41.9	58.1	100.0		
		Use of self-service for managers (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of HR strategy (%)	No	89.6	10.4	100.0	$\chi^2=13,923$ $p=0,000$	Phi=0,295 $p=0,000$
	Yes	63.4	36.6	100.0		
Total		74.4	25.6	100.0		
		Use of self-service for employees (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of HR strategy (%)	No	93.8	6.2	100.0	$\chi^2=10,969$ $p=0,001$	Phi=0,263 $p=0,001$
	Yes	73.1	26.9	100.0		
Total		81.7	18.4	100.0		

Source: Research of the authors based on the Cranet data for Serbia

According to the data in Table 5, it can be concluded that if organizations have a human resource management strategy, e-HRM, independent access for managers and employees to the data on employees will be included in a larger share of organizations.

In the case of e-HRM use, data indicate that if organizations have a specific HRM strategy, then 73% of organizations will use e-HRM ($\chi^2 = 20,512$; $p = 0,000$). The strength of this relationship is expressed by the coefficient Phi = 0.358 ($p = 0,000$), which indicates that this is a weak, statistically significant link between the observed binary variables. In the case of self-service for managers, the data indicate that if there is an HR strategy in the organization, about 37% of organizations will use the mentioned module

($\chi^2 = 13,923$; $p = 0,000$). The strength of this relationship is expressed by the coefficient Phi = 0.295 ($p = 0,000$), which indicates that this is a weak, statistically significant link between the observed binary variables. When considering data on the use of self-service for employees, it is evident that if there is a strategy for HRM in the organization, then 27% of organizations will also use an independent approach for an employee to use staff data ($\chi^2 = 10,969$; $p = 0,001$). The strength of this relationship is expressed by the coefficient Phi = 0.263 ($p = 0,001$), which indicates that this is a weak, statistically significant link between the observed binary variables.

Table 6 Use of E-HRM, self-service for managers and employees in relation to the existence of business strategy in an organization

		Use of e-HRM (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of business strategy (%)	No	80.0	20.0	100.0	$\chi^2=13,451$ $p=0,000$	Phi=0,291 $p=0,000$
	Yes	36.7	63.3	100.0		
Total		41.9	57.9	100.0		
		Use of self-service for managers (%)		Total	Chi-square	Sig.
		No	Yes			
Existence of business strategy (%)	No	95.0	5.0	100.0	$\chi^2=4,937$ $p=0,026$	Phi=0,176 $p=0,026$
	Yes	71.9	28.1	100.0		
Total		74.4	25.6	100.0		
		Use of self-service for employees (%)		Total	Chi-square	Sig.
		No	Yes			

Existence of business strategy (%)	No	100.0	0.0	100.0	$\chi^2=4,897$ $p=0,027$	Phi=0,177 $p=0,027$
	Yes	79.0	21.0	100.0		
Total		81.7	18.5	100.0		

Source: Research of the authors based on the Cranet data for Serbia

According to the data from Table 6, it is evident that if organizations do not have a business strategy, then in e-HRM, an independent approach to the data on employees for managers and employees will be represented in a smaller share of organizations.

In the case of using e-HRM, the data indicate that if there is a business strategy in the organization, then 63.3% of organizations will use e-HRM ($\chi^2 = 13.541$; $p = 0.000$). The strength of this relationship is expressed by the coefficient Phi = 0,291 ($p = 0,000$), which indicates that this is a weak, statistically significant link between the observed binary variables. In the case of the use of self-service for managers, the data indicate that if there is a business strategy for the organization, about 28% of the organizations will use the mentioned module ($\chi^2 = 4,937$; $p = 0.026$). The strength of this relationship is expressed by the coefficient Phi = 0.176 ($p = 0.026$), which indicates that this is a weak, statistically significant link between the observed binary variables. When considering data on the use of the self-service system for employees, it is evident that if there is a business strategy in the organization, then 21% of organizations will also use an independent approach to employee data on employees ($\chi^2 = 4.897$; $p = 0.027$). The strength of this relationship is expressed by the coefficient Phi = 0.177 ($p = 0.027$), which indicates that this is a weak, statistically significant link between the observed binary variables.

Conclusion

Over time, the role and importance of the HR function have changed in a way that changed the attitude towards the human capital, but also in a way how technological changes occurred, since it always provides a framework for structuring business processes and activities. More recently, this feature gets a very powerful ally for its development in the form of IT and electronic systems. Namely, owing to the IT and electronic systems transactional, daily, HR activities such as monitoring and attendance records, absences, sick leave, annual leave, salary payments, benefits, stimulation, training, tracking achievement of goals, duration of employment and completion of

work contract of employees, the planning of necessary workers in relation to the dynamics of the work of the organization, etc., are carried out faster, more accurately, and easier than before. At the same time, through this connection between IT and HRM, the new HRM concept was developed and named e-HRM. Taking into account its increasingly widespread application and importance, both for carrying out daily transaction activities in the HR domain, as well as for strategic management of human capital in the organization, the paper dealt with the basic characteristics of this concept, its advantages, and potential challenges.

The paper points out that the key advantages of such a system are the faster, more accurate and easier processing of information about employees, cost savings, the release of HR managers from administrative tasks, increased access to HR data, standardization of HR processes within the company, more consistent and up-to-date data on employees and their performance, and the like. In short, using the e-HRM concept, this function is able to achieve a significant positive impact on the entire operation of the organization, as its application increases the efficiency and effectiveness of its work.

Although the benefits of implementing the e-HRM concept are significant, as confirmed by the research presented in this paper, e-HRM has several shortcomings, which are also indicated. These disadvantages are mainly attributed to the system's inflexibility, the accuracy of the data entered, the confidentiality of information and legal issues, such as system abuse and internet networks during working hours. It is necessary to pay attention to all these potential hazards, since e-HRM should primarily facilitate and speed up the HR process, rather than slowing it down and caving.

The paper also presents the results of an analysis of the data on the use of the e-HRM system in organizations in the Republic of Serbia. The data showed that in Serbia, only half of the organizations, out of 160 respondents, use such systems. In the case of the use of the system/module for self-servicefor managers and employees, this percentage of organizations is

even smaller, only ¼ organizations in terms of managers, and 1/5 when it comes to other employees. When considering the use of e-HRM in relation to the existence of HR department, HR strategies and business strategies in the organization, in all cases, organizations use e-HRM and modules for independent data access to a greater extent when possessing mentioned elements. This tells us that the development of the HRM process, viewed from a strategic angle, contributes to the understanding, implementation and the use of modern technological achievements in this field.

The practical implication of this paper is reflected in the presentation of the most important e-HRM opinions, highlighting the benefits, but also the constraints that managers need to know and analyze if they decide on the introduction of e-HRM. Also, as the HR process is an integral part of the wider business process, it is important to know all the implications of the e-HRM application. Introducing organizations with e-HRM capabilities allow for a more secure and successful implementation of such a system, which can lead to different benefits, which have already been mentioned several times in the work. E-HRM is especially important for organizations in Serbia since only about half of the organizations use it. The introduction of such a system could lead to cost savings and greater efficiency in HR departments and other business processes. Also, since e-HRM allows for less time spent on administrative activities, HR experts could pay more attention to strategic outcomes in HR, which would significantly strengthen the position and importance of the HR function in organizations. This is particularly important if we have in mind that all developed economies of the world and successful organizations are based on the assumption that employees, as human capital, are one of the main factors of success and a sustainable competitive position in modern business.

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Funding Bright Ideas in the Dark Continent

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Abstract

This work explores the potential of small businesses and entrepreneurs, in developing countries, and Nigeria more specifically, in exploring the opportunities offered by social media based crowdfunding.

The aim is to propose a framework for funding bright ideas that have the capacity to support economic growth in the African continent and create continuous employment and prosperity for its people. The means for achieving such a transformation is proposed here as social media based crowdfunding. Some variables identified in this study are also visible in some other parts of the world like Asia and South America, and thus, the solutions recommended here can be translated (with some minor adjustments) to such markets.

The research uses data taken from a range of fundraisers in the United Kingdom and Nigeria, to “determine the effects of social media as a crowdfunding platform for startups, particularly in the developing world”.

Keywords

Crowdfunding, entrepreneurship, SMEs, fundraising, developing countries, social media.

Introduction

According to Banji (2017), the small and medium enterprise (SME) sector in developing countries faces an under-funding crisis. The major problem entrepreneurs and SMEs face in the developing world is access to much needed funding, required to help them start, scale or save their businesses (Gbandi & Amisah, 2014). The African continent is often referred to as the dark continent, because of the slow pace of development in the region characterized by; little or no access to power, poor quality of life, poverty of wide strata of population, internal crises, religious intolerance, corruption, sickness and diseases. In addition to this, the very low internet penetration levels and high cost of access to the internet, has further made it difficult for people within the continent to tap into a global online marketplace.

Over the past four decades, the Dark Continent has struggled to put economic policies in place to foster development in every ramification. As a

result, entire populations rely on a single source of economic resource for the sustenance of the very fabrics of society; In Nigeria it is oil, in Ghana it is gold, etc., while in the Western/developed nations, ideas executed brilliantly with technology have leveraged the dependence on national economic resources.

This paper presents the early phase of a research that seeks to explore novel approaches to crowdfunding as an alternative investment instrument for SMEs and entrepreneurs in the developing world. Access to a global network of potential online donors, can help bridge the gap between bright ideas and the required funding needed to propel such ideas into tangible success in the Dark Continent.

The remainder of the paper is structured as follows. Section 2 introduces crowdfunding in the developed and the developing world. Section 3 discusses related work, while section 4 provides an account of the methodology followed in this

research. Section 5 is focused on the outcomes, whilst section 6 presents the concluding comments on this work.

1. Crowdfunding

1.1. Crowdfunding in the developed world

Gerber et al. (2012) defined social media based crowdfunding as the practice of raising small amounts of capital from a large number of people, usually over the Internet. Delivorias (2017) provides some useful information on the growth of the crowdfunding industry in Europe and illustrates that the concept of crowdfunding is a financial revolution in the developed world. Lehner (2013) emphasized the relevance of crowdfunding by describing the concept as a core driver of social capital for entrepreneurs in the developed world, which is evidenced by the fact that some analysts estimated the global crowdfunding industry to be worth \$5.1 billion in 2013 and \$1.6 billion in the USA alone in 2014 (Barnet, 2014). According to the world's leading crowdfunding research firm, Massolution (2015), and supported by analysis from sources such as Juniper (2016) and Barnett (2015), they expand the discussion on the growth of the crowdfunding industry by stating that the crowdfunding industry's growth in six years is phenomenal. According to their analysis, the industry reported \$880 million in 2010, showing a relatively small market with minimal growth potential. In 2013, the industry reported \$6.1 billion and expanded by 167% to reach \$16.2 billion by the end of 2014. The industry doubled the amount raised in 2014 to reach an astonishing \$34.4 billion in 2015. The crowdfunding industry is growing at a tremendously fast pace in the developed world. Why the developing world is yet to embrace, encounter and benefit from this growing new financial phenomenon is largely unknown. However, this study reveals the key factors and variables that affect the ability and efficacy for social media based crowdfunding to take root in developing countries with emphasis on the African continent.

1.2. Crowdfunding in the developing world: challenges and opportunities.

An important barrier to innovation is the availability of early-stage funding (Cosh, Cumming & Hughes, 2009). This school of thought is supported by Kuppusswamy and Bayus (2015) who state that "Given the difficulties that newly established ventures face in their attempt to attract fi-

nancing from angel investors, banks and/or venture capital funds, some entrepreneurs are now tapping into large, online communities of consumer-investors called "crowdfunding".

Ariyo (1999) pointed out that one of the major problems in the developing world is the difficulty entrepreneurs and SMEs have to put up with, in order to obtain capital to fund their projects, ideas and or grow their businesses. The reason for this challenge can be attributed to the fact that most SMEs and indigenous entrepreneurs in the developing world are unable to provide collaterals to source for bank loans, neither do they have the privilege and access to venture capitalists or other influential and affluent family members who can bridge the gap between their ideas and the funding required to turn it into a profitable business venture. These factors make it almost impossible to secure funding for their businesses or ideas (Beck & Kunt, 2006).

According to a statement issued by the Central bank of Nigeria (2017) small and medium enterprises (SMEs) are very critical to the development and growth of any economy as they possess great potentials for employment generation, output diversification, improvement of local technology, development of indigenous entrepreneurship and forward integration with large-scale industries. However, in Nigeria, there has been gross and visible under-performance of the SMEs sub-sector and this has largely undermined its contribution to economic growth and development. The CBN attributed this under-performance of the sector to a lack of funding for SMEs in the country. According to the (FSS 2020 SME Sector Report, 2017), key issues affecting the SMEs in the country can be placed in four categories namely: unfriendly business environment, poor funding, low managerial skills and a lack of access to modern technology. Amongst these, the shortage of finance occupies a very central position. In Nigeria for instance, the fragile economic environment and absence of requisite infrastructure has rendered SME practice costly and inefficient, thereby worsening their credit competitiveness. While the CBN has made yet another commitment to invest and/or approve the sum of N500 billion in debenture stock into the SME sector via the Bank of Industry (BOI) very little has changed. The problem of a lack of funding for SMEs in Nigeria has lasted over two decades.

As illustrated by Beck and Kunt (2006), most SMEs and indigenous entrepreneurs in the developing world are unable to provide collaterals to

source for bank loans; neither do they have the privilege and access to venture capitalists or influential and affluent family members. Taiwo, Falohun and Agwu (2016) further confirms that SMEs are generally very susceptible, with a large number of SMEs shutting down due to difficulty in accessing credit facility and or loans from banks and other financial institutions. The Organisation for Economic Co-operation and Development, (2017) report only re-confirms the fact that SMEs are still struggling to access funding from lenders. They insinuate that access to credit facilities for SMEs and entrepreneurs has witnessed a sharp-downturn between 2015 and 2017 across several industries in many countries, especially developing nations. Whilst access to funding is the core factor that has made it difficult for SMEs and entrepreneurs to create meaningful value in developing countries, other factors such as: the low levels of internet penetration, low social media penetration, poverty of wide strata of population, high cost of internet access, fraud concerns, lack of adequate ICT infrastructure, poor online payment options and government policies towards crowdfunding has somewhat rendered the concept of crowdfunding as an alternative fundraising instrument inaccessible to SMEs and entrepreneurs in the markets in question.

These factors make it almost impossible for SMES and entrepreneurs to secure funding for their businesses and double as challenges to fundraising for SMEs and entrepreneurs in developing countries, particularly in Nigeria and most African countries.

1.2.1. Barriers to crowdfunding adoption in the developing world

The concept of crowdfunding is yet to be embraced and practiced in most developing nations, particularly in Nigeria, for a number of reasons. As exemplified in the preceding sections of this paper, some of the identified reasons are: government policies towards crowdfunding, the low levels of internet penetration, poor social media penetration in the region, poverty of wide strata of population, absence of adequate ICT infrastructure and online payment options, lack of knowledge about the concept and benefits of crowdfunding by both potential fundraisers and funders, fraud concerns, levels of technology maturity or immaturity, etc. These identified factors will ultimately decide the efficacy of a crowdfunding framework and the practice of crowdfunding as an alternative fundraising instrument in the region.

1.2.2. Relationship between internet penetration/adoption levels and online fundraising

According to Mckinsey & Company (2014), well over 60% of the world's population remains offline. Without a determined strong push to remove the crucial deterrents to internet adoption, very little may change. This analogy simply means that more than 4 billion people stand the risk of being left behind. If this is the reality of the situation, it means that all the potential for social media based crowdfunding or the ability to source for funds over the internet as illustrated by the World Bank (2013) research carried out by the information for development programme [Infodev] is completely lost to entrepreneurs and SMEs in the developing world. *Crowdfunding as a concept cannot be actualized without the wide spread of internet access.* Early research into the market this study focuses on shows that out of a population of a little over 173.3 million, only approximately 30% of Nigerians are online and or have the ability to go online, whilst approximately 70% from a total of over one billion Africans are offline. India, Latin America and many parts of China also have a tremendously high offline population. (Africappractice, 2014). The core reasons for the high offline population are; (i) the very low levels of internet penetration in the region, (ii) poverty of wide strata of population and (iii) an unreasonably high cost of internet access. Furthermore, those who go online spend only a few minutes on platforms like Facebook and Yahoo mail, and either log out to save data or run out of data altogether. While mobile phones are having a wider penetration in the region, contemporary literature has not shown how that development has impacted and influenced a wider internet usage/penetration in the region.

Table 1 Barriers to Internet adoption

Barriers directly affecting consumers	Incentives	Low incomes and affordability	User capability	Infrastructure
	1. Lack of awareness of Internet Relevant use cases	1. Low income or consumer purchasing power	1. Lack of digital literacy	1. Lack of mobile Internet coverage or network access
	2. Lack of relevant (e.g., local, localized) content and services	2. Total cost of ownership for device	2. Lack of language literacy	2. Lack of adjacent infrastructure (e.g., grid electricity)
	3. Lack of cultural or social acceptance	3. Cost of data plan		
		4. Consumer taxes and fees (Note that the Nigerian government just complicated this further by introducing taxes on consumer internet data purchases)		
Root causes (e.g. providers, government/regulatory, industrial)	A. High content and service provider costs and business model constraints	A. Challenging national economic environment	Under-resourced educational system	A. Limited access to international bandwidth
	B. Low awareness or interest from brands and advertisers	B. High device manufacturer costs and business model constraints		B. Underdeveloped national core network, backhaul, and access infrastructure
	C. Lack of a trusted logistics and payments system	C. High network operator costs and business model constraints		C. Limited spectrum availability
	D. Low ease of doing business	D. High provider taxes and fees		D. National ICT strategy that does not effectively address issue of broadband access
	E. Limited Internet freedom and information security	E. Unfavourable market structure		E. Under-resourced infrastructure development (e.g., FDI limits)

Source: Literature review; expert interviews; McKinsey & Company (2014)

The above factors are the core deterrents to internet adoption and these factors are predominant in the developing world. Until these barriers are eliminated, internet adoption and ultimately crowdfunding practices will be impracticable in the region.

A Facebook study in 2015 reinforced the findings of McKinsey and Company (2014) by revealing that the three key factors that keep people offline are: lack of infrastructure, affordability, and lack of relevant content for people in their indigenous languages (Firstpost, 2015). A much neglected reason why people do not use the internet is because they are not aware of the internet.

A 2013 survey and report by IAMAI found that 69 percent of Indian survey respondents cited a lack of awareness of the Internet as a reason they were not online. This challenge also extends into urban centres as well, where 21 percent of the respondents in a 2011 survey of Ethiopian residents in Addis Ababa said they did not know what the Internet is. While the predominant reasons why most people are disenfranchised from the internet is attributed to lack of infrastructure, low income and affordability, poverty, lack of awareness or use cases of the internet, high access to internet enabled devices i.e. mobile phones and com-

puters, high cost of data packages, digital literacy and language proficiency etc; a much neglected barrier is the absence of local content in native languages of the offline population. Chang (2015) illustrated that there are 7100 languages in use globally, while only 5% of such languages are represented on the internet today. To be exact, the English language represents over 60% of all websites and information on the internet while the vast majority (approximately 80%) of online content is only available in 10 languages, which approximately only about 3 billion people speak as their first language. This means that many individuals across the globe are completely oblivious of the internet's potential or cannot use it since there is very little or no useful content in their native language.

The availability of relevant local content is a foremost incentive towards the spread of the internet and or massive global internet adoption. Crowdfunding cannot be global or beneficial when over 4.4 billion people are offline. Most of the offline populations come from the Dark Continent i.e. Africa and most parts of Asia. According to Luxton (2016) while writing on behalf of the world economic forum, presented findings that Rwanda, Kenya, Uganda, Ethiopia and South Sudan have a 67% offline population representing 75 million people, while Mckinsey & Company (2014) identified that Nigeria has a 62% offline population representing 108 million people and a 38% Internet penetration level representing 65.3 million people. The predominant factors that deter this offline population from going online are: low internet penetration in the region, lack of adequate ICT Infrastructure, affordability, skills awareness and cultural acceptance, and local adoption and use. The key question here is, if majority of the population is offline in developing countries, who will fund the bright ideas in such environments? If the focal point of the concept of crowdfunding is to democratize access to capital, the very fact that a great number of potential fundraisers and crowd investors are disenfranchised from participating in a global online crowdfunding marketplace, renders the concept of crowdfunding as a failure.

2. Related work

Early studies into the reasons why the developed world is yet to embrace, practice and benefit from "Crowdfunding" as a concept are largely due to certain key factors and or variables that are predominant in such markets. According to Saxton and Wang (2014) owing to the broad diffusion of

social networks, alongside the rapidly growing interest in online giving and the web-high outreach potential, more and more organizations are increasingly integrating social media into their fundraising efforts. Agrawal, Catalini and Goldfarb (2011) pointed out that crowdfunding activities have demonstrated to have a truly global presence through the means of specialized social media fundraising platforms like Kickstarter and Indiegogo. Drury and Stott (2011) illustrated how the widespread internet access benchmarked by fundraising social networking platforms and driven by the emancipation of the crowd, propose new opportunities for entrepreneurs to gain startup capital via a crowdfunding process. While the above situations and analogies are generally acceptable realities, which led Zheng, Dahui, Jing and Yun (2014) to conclude that the popular practice of crowdfunding has drawn the attention of the research community; what was left out in the discussion is the fact that contemporary literature does not discuss how to apply such systems in the context of developing countries with lower internet penetration, energized by factors such as the absence of infrastructure, high internet access prices, illiteracy, low income and affordability, digital illiteracy and language proficiency, poverty of wide strata of population, poor ICT infrastructure, etc. Consequently, the potential of the application of social media based crowdfunding models in developing countries is unclear. Hence, there is still scope to investigate the various models of crowdfunding through social media in the context of developing economies, as a means of energizing entrepreneurship and the funding of bright and brilliant ideas that could boomerang into economic growth and prosperity in the Dark Continent.

Whilst scholars and authorities in the field of crowdfunding lay claim that the concept has “democratized access to capital” on a global scale, as emphasized by Keongtae and Hann (2014), the question is: has access to capital really been democratized on a global scale?

According to findings from researches carried out by Greenstone and Mas (2012) and by Laderman and Reid (2010), it was evident that providing small businesses with much needed capital has become more crucial in recent times and crowdfunding has been viewed as a viable alternative for raising such needed capital.

According to several studies carried out by Agrawal, Catalini and Goldfarb (2010), Keongtae and Hann (2014), Belleflamme, Lambert and

Schwienbacher (2014), and Keongtae and Viswanathan (2014), on the subject of crowdfunding, one key theme that is continuously eminent is the fact that the entire concept of crowdfunding is to democratize access to capital by making it possible for small businesses, entrepreneurs and inventors who have little or no access to funding and/or means of accessing such funds from other traditional methodologies like banks via loans, from investors in the form of seed funds or from influential families and personalities to reach out to an eager crowd and secure funding over the internet for their projects. Thus, as observed by Keongtae and Viswanathan (2014), entrepreneurs usually become financially disadvantaged because of several factors such as their age, race, educational background, and/or social groups, which ultimately hinders their ability to secure funding for their projects.

Keongtae and Hann (2014) explained that crowdfunding as a concept can only be viewed as being successful if it provides a new channel of capital to entrepreneurs who have very promising ideas, but are having difficulties in raising money from conventional funding sources irrespective of the *geographical locations* of such entrepreneurs.

Most researchers approach this question from a myopic and outright bias perspective. It is possible for a few researchers to lay claim that the question of crowdfunding’s potential to democratize access to capital has been answered and proved by taking selective statistics from the global crowdfunding industry growth and numerous success stories put forth by successful fundraisers. If the concept of crowdfunding and its practice is still alien and non-applicable in developing countries like Nigeria, Cameroon, Ghana, Botswana, Zimbabwe, Congo Brazzaville, Kenya, etc, then the opportunity to raise funding for their creative projects from the crowd, is lost to the millions of entrepreneurs, indigenous business practitioners and small-scale businesses in such regions. If the enablement of web 2.0 technology or later is non-existent or adequately harnessed to provide a new fundraising instrument to entrepreneurs in such regions who are trapped in the traditional methods to accessing capital with over 90% of them completely credit unworthy; then the concept of crowdfunding can be said to be a failure. This is a difficult analogy for many crowdfunding theorists to accept in the developed world; however, the findings of this paper show that the concept of crowdfunding is still alien in the Dark Continent whilst an abundance of bright business

ideas exists in the region. At the same time, little focus has been put by the existing studies on utilizing social media platforms as well as coupling them with off-line strategies for unleashing the potential of crowdfunding in the developing world.

3. Methodology

Due to the absence of significant previous work in the area of social media based crowdfunding in the developing countries, this research has adopted an exploratory approach. The design of the study was based on an interpretative paradigm and qualitative analysis (Merriam, 1998, p. 15). In accordance with this method, 20 fundraisers in the United Kingdom were selected to participate in the study followed by another 20 fundraisers in Nigeria. The purposive sampling technique has been used for the data collection (Saunders, Lewis, & Thornhill, 2012). The UK based fundraisers were selected first in order to understand typical challenges associated with online fundraising in the developed world, and then the Nigerian fundraisers were approached next in an attempt to understand why the fundraisers in developing countries cannot embrace the models of crowdfunding practiced in the UK. At the end of the qualitative study, certain key themes were identified which helped in developing a set of research propositions.

Data collection adopted in-depth interviews via use of questionnaires with open-ended questions and a few closed ended questions. This approach ensured that the interviews were structured thus yielding a straightforward thematic analysis and identification of common patterns in fundraisers opinions.

4. Research outcomes

4.1. Key themes

The thematic analysis of the interviews has resulted in a number of key themes identified for both the UK and Nigerian participants. These are compared in Table 2.

Table 2 Identified key themes from the qualitative study.

Key Themes by the UK participants	Key themes by the Nigerian participants
Economic prosperity	Poverty of wide strata of population
High levels of social media penetration	Low levels of social media penetration
Technology maturity and adequate online payment options	Poor online payment options energised by technological immaturity.
High levels of Internet penetration	Low levels of internet penetration
Low levels of fraud concerns and associated risks	Very high levels of fraud concerns and risks
Low cost associated with internet access	High costs associated with internet access and data plan packages

Source: The authors

4.2. Constructs associated with the crowdfunding framework

This work has identified four key variables that affect the practicability and or efficacy of establishing a crowdfunding framework and/or model in developing countries. While these four key variables will be discussed briefly in this section, further research is intended for carrying out a comprehensive empirical study, where the identified factors will be introduced into contemporary crowdfunding literature and investigated using standard research frameworks. These factors are:

1. Level of internet penetration. Over 70% of Nigerians do not have access to the internet due to poor infrastructure, high cost of internet access, low incomes and affordability and poverty of wide strata of population. Those who live in rural areas are completely disenfranchised and have never used the internet for once. The researcher proposes a nation-wide internet adoption policy with strategic steps towards its achievement.

2. Level of social media penetration. Surprisingly, Facebook released data in 2016 revealing that only 30 million Nigerians had accounts with the giant social network whilst the remaining 143.3 million Nigerians are yet to get involved with social media. This can be attributed to the fact that there is a lack of internet access and a general nonchalant attitude towards utilizing social media and or social networking platforms which is a predominant factor that keeps the remaining 143 million Nigerians away from the internet. According to Shane and Cable, (2002), Wasko and Faraj (2005) and Saxton and Wang

(2014), social network ties are the number one factor that leads to a successful crowdfunding effort. The data in this study also re-enforces and validates that point. The poor social media penetration in the developing world is another reason why most online fundraising activities results to failure as fundraisers are unable to take advantage of the social network effect.

3. Levels of technological penetration/maturity and the number of online payment options available. Technology advancement is the greatest revolution of the 21st century and nothing can be achieved without designing, developing and deploying suitable technology. The lack of online payment structures like Paypal, Stripe, etc in the region energized by the poor ICT infrastructure in most parts of the developing world has made it difficult for many banks to facilitate easy over-the-net payments for its users, whilst making it difficult for fundraisers and donors/crowdfunding platforms to harness the power and potential of web 2.0 technology, which snowballs into making contributions over the internet near impossible. Online and or social media based crowdfunding cannot be actualized in the region until online payment structures are fully functional.

4. Poverty of wide strata of population. If both the founders and funders are living below the poverty line, where will donations come from? We must re-open the discussion about the elimination of poverty by creating employment and conducive environments for people to earn a decent living before crowdfunding can be actualized in most parts of the developing world.

4.3. Research propositions

The research indicates that the presence of the aforementioned factors in the developing world, are the primary reasons why; i) the concept of crowdfunding has not been encountered and embraced in the developing world, ii) the current models of crowdfunding in the developed world cannot be translated to developing context. Any crowdfunding model and or framework proposed for developing countries must take these factors into consideration.

Furthermore, the following propositions can be made.

- The evidence gathered indicates that the levels of internet penetration are having a negative impact on crowdfunding in Nigeria

- The evidence gathered indicates that the levels of social media penetration are having a negative impact on crowdfunding in Nigeria
- The evidence gathered showed that where there is a high level of technological penetration, there is a parallel high level of online payment options and vis a vis.
- The evidence gathered revealed that the higher the level of poverty, the lower the fundraising in a fundraising environment, and vis-a vis.

Conclusions

Social networking platforms have facilitated new ways of raising and giving money and, in turn, brought changes to the set of factors associated with success in raising funding for entrepreneurs. However, the study reveals that the concept of crowdfunding is still alien in developing nations. Nigeria was used as the focal point in this study because it is the most populous country in Africa. If crowdfunding can be non-existent in the region, how much more in smaller countries with worse cases of internet penetration and wider stratification of poverty amongst its population.

The current models of crowdfunding practiced in the United Kingdom and by extension, in the developed world, cannot be translated into a developing world context and/or market.

Variables such as: the low levels of internet penetration, low levels of social media penetration, poverty of wide strata of population, levels of fraud concerns, and poor technology penetration, i.e. lack of ICT infrastructure and minimal/non-existent internet based payment options, are the core barriers that affect the introduction and efficacy of crowdfunding practices in developing countries.

Whilst the above factors have a significant impact on crowdfunding in the markets in question, an independent model that combines an offline and online fundraising framework, is most likely to be effective in developing countries, despite the visible presence of the factors that pose as challenges to crowdfunding in the region. A formulation and evaluation of such a framework represents a direction for future research in this area. **SM**

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Redefining the Management Roles: Response to Digital Networking and Access to a Large Amount of Information

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Abstract

The achievements of digital age lead to necessary transformation of current elements of management into the new successful composition of modern management in the 21st century. Digitization has affected new ways of monitoring business processes, employees and external stakeholders, causing a large amount of information to be processed and treated in the right way. In such a business environment, a new mindset of managers is required, the one that relies on social intelligence, media literacy, computer-like thinking and virtual collaboration.

The topic of the research is the analysis of implementation of innovative interpersonal, information and decision-making role. The aim of the paper is to determine the need for redefining the existing management practices into innovation-oriented one.

On the one hand, on the path of transformation of management roles there will be application of high density digital social networks and decentralization in order to multiply business relationships and form a large information database in which managers can be found as recipients, senders and spokespersons of information. The above mentioned networks should be oriented to networking with external stakeholders to provide market intelligence. In this way, managers access diversified information easier and faster and should recognize their compatibility with an organization's nature and business area. On the other hand, managers are faced with a new strategic framework that indicates a set of possible decisions when assimilating and exploiting obtained information. Also, managers are challenged to leave the common decision-making path, which in many cases results in adoption of routine business decisions, and to move towards a non-linear and unstructured decision-making process, leading to the adoption of creative and innovative business decisions. The goal is forming a paradoxical decision-making framework that allows innovative behavior of organization, by making business decisions which are flowing towards situational changes and enabling realization of long-term sustainability in business. Since a manager as an individual decision maker can process only a smaller amount of new information, trends point to application of joint decision-making model.

Implementation of innovative management roles was analyzed in 50 large companies on the territory of the Republic of Serbia. Analysis was performed using the Mann-Whitney test and correlation analysis. Research results indicate the existence of differences in organizations' level of innovation, depending on whether they apply innovative oriented interpersonal roles and decision-making roles or not. Also, statistically significant correlation of high intensity emerged between the use of innovative oriented interpersonal management roles and the degree of innovation in organization, and medium intensity correlation between the application of decision-making role and organization's degree of innovation. The above mentioned results of the study indicate the importance of redefining management roles through focus on innovation and the role of interpersonal and decision-making roles, applying new business models.

Keywords

Information role, decision-making role, digital social networks, the theory of information processing.

Introduction

In a modern business environment, the basic task of managers is to create an innovative and sustainable working environment in which employees can fulfil their obligations and set goals by applying the principle of collaboration (Tengblad, 2006; Akhtar, 2011; Ramezani Khabiri, Alvani, & Tondnevis, 2011, p. 559). Innovatively oriented managerial roles of managers who keep the pace with the ever-increasing innovations in the digital era should provide creative and innovative thinking at all hierarchical levels in organization in order to create an innovative organizational culture. Such organizational culture will stimulate the continuous realization of better performance. Therefore, the subject of the research is the analysis of innovative implementation of interpersonal, information and decision-making role, where innovations in the area of digitization have the greatest impact on information roles and decision-making roles. For this purpose, it is necessary to carry out the observation of the traditional groups of management roles (Mintzberg, 1975) through the framework of innovative management, in order to distinguish those that managers need to apply in the digital era. This would determine the need to redefine the existing management practice into an innovative oriented one, which is the aim of this research.

Both internal and external variables have a critical impact on the nature of management roles. Some of the critical factors of impact are organizational climate, nature of work, mindset of managers and other employees, as well as their relationship on the one hand and the situation in the environment on the other, taking into account the degree of dynamism and innovation. Identified critical factors should be considered from an innovative angle. In that way, we can determine the need and the possibility of innovating managerial practice with the aim of improving managers' and employees' creativity, identifying a continuous training program in response to technological progress and innovative trends of all participants in the environment.

Observing the management roles, the path of achieving greater innovation of the organization is reflected in: leadership behavior of managers aimed at accepting risks in order to achieve the greatest possible innovation; directing managers to create links through greater openness to make new acquaintances and the possibility of successful collaboration in the future; the

openness of management to the inflow of new information with the aim of sharing them with all employees and combining in different ways; orientation of managers as decision makers to anticipate future chances on time, proactive action and making creative decisions.

1. Classification of management roles

One way of explaining managerial practice is through the analysis of the applied managerial roles defined by the author, H. Mintzberg. The aforementioned author points out three basic groups of management roles stemming from one another.

Interpersonal roles as the first group of management roles derive from the authority and relationship at the manager-employee level and the manager-other participants in the business level. The group of interpersonal roles includes:

- Managers who have a role of a leader, deriving from the position of managers in the organization and with the routine character. It involves carrying out various ceremonial duties which requires adequate representation of the organization to other market participants. Method of this role's implementation influences created reputation of an organization as well as an opinion from the perspective of competitors, business partners and consumers, who will therefore make decisions about business or consumption in the future.
- Managers as leaders who have the power to persuade employees and lead the organization in order to achieve positive business results. The tasks of managers on this path are: motivation, encouragement and continuous training of employees, which affects dedication, productivity and quality of the work force.
- Managers who have the role of creating links, both internal and micro-links to employees at all levels along a hierarchical scale as well as a macro connection with external market participants. Another division of relationships relates to their nature, which can be business or political. Business relationships arise as a relationship: management – top management of other organizations, manager – suppliers, manager – competitors and manager – business

partners, while political relationships develop as a relationship: manager – state authorities. The intensity of mentioned relationships can be strong or weak, which affects the quality of the results of the established relationship, that is: secrecy, reliability, timely information and their maximum usefulness on the one hand and unreliability, obsolescence and inability to process such information on the other. The strength of relationships depends on a number of factors, such as: available time, emotional state, degree of intimacy and reciprocity (Granovetter, 1973, p. 1361). In this way, an external information system is formed, which represents the database, together with internal information, for making decisions, strategies and goals (Strugar Jelača, 2015, p. 99).

Information roles constitute the second group of management roles and are based on information gathered from interpersonal manager relationships. Within this group of roles, the main task of the manager is to collect as much information as possible using new channels of communication, and to make their selection in order to form a database of relevant information that will ensure more efficient management and proactive decision-making. Within this group of roles, the following manager roles are distinguished:

- Recipient of information, who has the task to continuously scan and control internal and external business environment. When implementing this role, it should be taken into account that information is not knowledge (Deming, 1996, p. 95) and that they should be analyzed in accordance with the defined criteria in order to ensure their quality application and produce real new knowledge.
- Information provider has the task of minimizing the emergence of a centralized information base that is available only to managers, but should ensure their timely expansion in order to maximize utility. Therefore, in this situation managers need to determine which information should be passed, when and who to. Therefore, the formation of a decentralized information system is encouraged, which will enable dissemination of privileged information,

with the full implementation of the principles of secrecy and confidentiality towards external participants.

- A spokesman who has the task of informing the general public, or interested external stakeholders. The fund of this information greatly influences functioning of these groups in the near future, such as the steps of business partners on the topic of joint activities, consumers in the form of their further purchases and loyalty, as well as the moves by competitors in the field of imitation or counteraction.

The formed information base should be the basis for implementing managerial role of managers such as the role of decision making. This group of roles is implemented through the following individual roles:

- Manager as an entrepreneur should recognize the chance at the right time, and initiate the change and implementation of innovative activities in order to use it. Also, it is necessary to be a person of the idea, which will encourage formation of effective project proposals within the project portfolio and conduct constant monitoring of project results.
- Problem solving manager is a manager who, on the path of introducing novelties into existing business practices, is faced with a situation of discontinuity and possible conflicting situations that need to be corrected in time. There is a wide range of possible problems, some of which are internal, such as employee resistance to introduced changes, misunderstanding of new ways of doing business or the inability to implement newly set tasks, as well as problems of an external nature such as loss of business partners, termination of previously concluded business contracts, loss of major suppliers, etc. (Strugar Jelača, 2015, p. 101). Therefore, the manager should be responsible for resolving conflicts and removing obstacles that hinder cooperation or make it difficult (Deming, 1996, p. 59).
- The manager in the role of resource allocator has the obligation to provide necessary resources for the realization of the desired novelties, as well as the solution of the problems that were created, and then to perform an efficient allocation of resources. This role should be

implemented by the principle of identifying priority innovative activities along with the parallel implementation of the principle of minimizing wastage of available resources.

- The manager as a negotiator should contact and contract with adequate business partners in order to ensure the successful realization of innovative activities while achieving synergistic effect. The manager should act as a negotiator along the whole innovation cycle – from the proposal to realization – and even afterwards when it is necessary to ensure adequate implementation of innovations.

An efficient manager should not be directed to individual application of management roles, but on the integrated and parallel implementation of all the roles, taking into account their interdependence and need for coordination.

2. Innovative framework of management roles as an answer to the changes in digital era

The way in which the role of interpersonal groups is carried out is directly related to the manager's mental set. Therefore, implementation of innovative-oriented interpersonal roles correlates with manager's innovative capacity, such as existing expertise, possibility and the desire to acquire new knowledge that will focus on creative problem solving. These elements represent inputs, while under the effects of applying interpersonal management roles innovative performance at the level of the whole organization is reflected. In order to do this, interpersonal relationship between managers and employees should go in the direction of: participatory involvement of employees and group thinking, use of creative potential and specialized knowledge of employees, encouraging innovative performance of employees together with their personal satisfaction. Managers who possess a wide range of skills and expertise have the opportunity to realise interpersonal roles in an innovative manner. In the role of a frontman, they perform routine business obligations of social interest in a new way by propagating the innovative work of the organization. In the role of a leader, they lead the organization with the maximum use of available and hidden innovative potential of employees. In the role of link creators, they encourage the creation of a broad base of new

knowledge that is realistic and compatible with the business ideology of the organization (Strugar Jelača, 2015, p. 172).

Since innovations mean the activities of processing information (Kleinschmidt, Brentani, & Salomo, 2010, p. 200), one of the key innovatively motivated roles is a group of informative roles. The creation of an information base is carried out by creating traditional and virtual social networks. The theory of social networks points to all possible connections that are established in order to increase innovative level of business, such as links between employees and relationships with external members, in order to provide a greater degree of awareness of the changes and necessity of their implementation (Strugar Jelaca, 2015, p. 174). Within the mentioned theory we distinguish the networks of large and small density, with high density networks indicating all established interconnections between internal members of the organization as well as internal and external ones, while low density networks are of the most centralized character, which indicates a lower number of established connections between the mentioned group (Buchel, Nieminen, Armbruster-Domeyer, & Denison, 2013). A large number of established connections with external participants allow obtaining a wider differentiated information base, while a large number of internal links along the entire hierarchy scale allows the flow of large amounts of heterogeneous information, which can be combined in different ways and form different innovative results. Therefore, this type of network is characteristic of a modern business environment, especially when using diversified new ways of communication based on digitization. It also provides information flow in both directions from external participants to management and from management to all employees. High density networks on the one hand have higher innovative potential but their constant analysis is necessary in order to form the basis of objective and real knowledge, while centralized networks on the other hand have less innovative potential and therefore are less demanding when it comes to coordination and collaboration. Social networks are classified also based on the strength of the links within them, which can be strong or weak. Strong networks lead to active, constant and solid collaboration among participants, which facilitates information exchange, enables acquisition of useful information and encourages greater transparency.

However, one of the shortcomings of these relationships that often take a routine character is that they are constantly being implemented and most often among members of the same area, which leads to a lower degree of novelty. Weak networks are based on new relationships that are just established, which are occasional and therefore can lead to major novelties. The emphasis is on the formation of as many networks using innovative communication channels, but not only putting emphasis on quantity, but also on the quality of established connections, which directly determines usefulness of the information received.

In addition to the need to establish a large number of innovative social networks, innovative implementation of information roles requires application of the theory of organizational processing of information when implementing innovative activities. All members of an organization should be focused on processing information on the market, technological changes, competitor organizations and resources in order to implement their transformation into an innovative strategy (Moenaert, Caeldries, Lievens, & Wauters, 2000, p. 361). By applying this concept of learning, organizations become market intelligent acquiring new external information on economic, political and social changes that have impact on organizational business, latent consumer needs, and technological changes (Slater & Narver, 1995), on the one hand, as well as information on business ideology and values that are being strived for, which directly defines the conceptual framework for information processing. Strategic position of the organization influences the scope of the access to global information, while the possibility of interaction between managers and employees with geographically dislocated sources of information depends on the established channels of communication, their ability to access diversified information and their compatibility with the nature of the organization and the area in which it operates (Strugar Jelača, 2015, p. 176). However, a number of organizations do not use the theory of organizational processing that leads to their short-sightedness, under the influence of a strategic myopia, and to a stereotyped view of managers trapped in the framework of their previous knowledge and inert to new information. This behavior causes the organization's innovative activity to stifle. It is necessary to establish a balance in the processing of the information obtained taking into account financial aspect,

providing the desired benefit of the information received and the acceptable cost of arriving thereon. The ultimate result of processing new information should be their sharing. The process of sharing can be characterized as a process of distributing information about consumers and competitors among the employees of all departments, which will lead to a general understanding (Sinkula, 1994) of the business environment with the formation of a new perception of the market situation. Employees who are part of sharing system have a sense of belonging, often identify with the organization, establish intense coordination and communication with others, which leads to a more creative and innovative approach to business, while minimizing possible conflicts and confrontations. Strategic decision-making has long been one of the central managerial activities in all organizations, whether they are small, large, non-profit, profitable, public or state owned (Elbanna & Child, 2007, p. 562). Information capacities within the decision-making process are therefore managers who absorb and process information about a problem or business opportunity with the aim of choosing new strategic options. When making decisions, individuals are rationally restricted which in some cases leads to incomplete understanding of the strategic position of an organization and turns to application of cognitive frameworks that influence the formation of a subjective view of the environment, leading the process of making strategic decisions and business actions (Nadkarni & Barr, 2008, p. 1395). Then stereotypical decisions are made that limit innovative behavior. A modern business environment requires implementation of a creative and innovative decision-making process characterized by non-linearity and absence of structure, which carries with it a greater risk with the possibility of radical progress or erosion of business. Prior to this, the entrepreneurial character of managers is emphasized when making innovative decisions, taking into account differentiated perspectives. Depending on whether stereotypical or creative decisions are made, the managerial decision-making process that can be routine-business or paradoxical depends on it. The paradoxical decision-making framework allows managers to make decisions in line with situational changes aimed at achieving long-term sustainability of operations. In this type of decision-making, contradictory forces from the environment forming the information base are

taken into account and include a large number of quantitative, qualitative, financial and non-financial information (Hanh, Preuss, Pinkse, & Figge, 2014, p. 470). By combining various information interactions, there is a set of alternative decisions among which one should choose the optimal one that will secure the position of a true leader and pioneer innovator. Also, application of the paradoxical framework requires implementation of a collective decision-making model because the manager as an individual decision maker can process a limited amount of information at the same time (Arendt, Priem, & Ndofor, 2005, p. 681).

Based on the previously presented theoretical framework, the following research hypotheses have been identified:

1. There is a difference in achieving innovative performance at the organization level, depending on the nature of the application of management roles.
2. There is a positive link between the level of innovation and the application of innovative leadership roles.

3. Methodology and research results

The questionnaire is structured in three parts, where the first part of the questionnaire analyzes basic characteristics of the surveyed large legal entities and their management, the second part analyzes implementation of innovative management practice through analyzing implementation of all the three groups of management roles by respondents, and the third part analyzes innovative business results for a period of 5 years, taking into account the number of all kinds of innovations. The questionnaires were distributed to 70 e-mail addresses of managers of large legal entities in the territory of the Republic of Serbia. There were 52 completed questionnaires, with three questionnaires considered invalid because they did not provide answers to all the questions. Given that 70 questionnaires were sent and 52 completed ones were received, in percentage 74% of survey respondents responded to the survey.

Using Mann-Whitney non-parametric test, H1 hypothesis testing was conducted to determine if there was a difference between managers' management roles and the degree of innovation of the organization.

Table 1 Mann-Whitney test

Innovative managerial practice	Number of companies	Mean ranks	Sum of ranks
Traditional interpersonal roles	29	17.83	517.00
Innovative-oriented interpersonal roles	20	35.40	708.00
Total	49		
Traditional information roles	29	22.60	655.50
Innovative-oriented information roles	20	28.48	569.50
Total	49		
Traditional decision-making roles	30	20.95	628.50
Innovative decision-making roles	20	32.33	646.50
Total	50		

Source: The author, adjusted according to Strugar Jelača, 2015, p. 237

The results of the conducted test indicate that there are differences in the level of innovation among organizations using innovative-oriented interpersonal (Man-Whitney = 82,000; Asymp. Sig = .000) and decision-making roles (Man-Whitney = 163,500; Asymp. Sig = .007) compared to those using traditional management roles.

Table 2 The difference in the degree of innovation of the organization in relation to the nature of the applied management roles

	Interpersonal roles	Information roles	Decision-making roles
Mann-WhitneyU	82.000	220.500	163.500
Wilcoxon W	517.000	655.500	628.500
Z	-4.374	-1.423	-2.709
Asymp. Sig	.000	.155	.007

Source: The author, adjusted according to Strugar Jelača, 2015, p. 237

The following table shows the results of the correlation analysis carried out in order to test H2 hypothesis. The aim of the correlation analysis is to identify those management roles that stimulate a higher level of innovation of the organization.

Table 3 Relationship between management roles and the degree of innovation of the organization

Management roles		Innovation of the organization
Interpersonal roles	ρ	.696**
	p	.000
	N	49
Information roles	ρ	.208
	p	.152
	N	49
Decision-making roles	ρ	.381**
	p	.006
	N	49

Source: The author, adjusted according to Strugar Jelača, 2015, p. 237

The conducted correlation analysis points to the existence of a positive statistically significant strong correlation between the application of interpersonal management roles and the degree of innovation of the organization ($\rho = .696$; Sig. = .000), while between the application of decision roles and the degree of innovation there is a statistically significant positive correlation of medium intensity ($\rho = .381$; Sig. = .006).

Taking into consideration the questions from the questionnaire which describe each group of management roles, it has been established that a higher degree of organization's innovation depends on the manner in which the management roles are applied. A greater degree of innovation is achieved if the manager:

- represents the organization as an innovative oriented,
- encourages implementation of innovations in the business plan,
- constantly identifies ideas for innovation, which should have innovative potential, be realistic and can be successfully realized;
- considers himself an original and creative person and acts in accordance with that statement,
- successfully solves conflicts arisen by giving a constructive solution. Potential conflicts arise because each innovation leads to the breakdown of existing business routines, which leads to more frequent delays and problems,
- encourages negotiation and cooperation with business partners and thus achieves a synergistic effect and can realize financially more demanding and more risky innovative proposals,

- constantly strengthens and refreshes a network of contacts that directly affects the expansion of the information base and thus encourages the creation of new knowledge,
- has good relationships with clients and partners and easily enters joint ventures.

Previously conducted analyzes indicate the confirmation of both research hypotheses, so the companies that are striving for greater innovation should apply innovative-oriented management roles in the manner explained in the previous section.

Conclusion

The defined problem of the research is aimed at obtaining the answer to the research question: Does the implementation of managerial roles by managers of all levels in large organizational systems contribute to innovation in an environment that abounds in change? Taking into account the statement that organizational systems represent open business systems that are subject to change, empirical research has indicated that organizations that want to survive and grow by achieving greater innovation at the organization level and thus keep pace with innovations need to innovate managerial practice, transforming interpersonal and decision making roles. The two sets of management roles and their innovative implementation encourage greater innovation.

The interpersonal roles of managers, such as the frontman, the leader and the creator of the relationships encourage greater innovation of organizations. The manager as a leader presents the organization itself as an innovative oriented and thus encourages the search for potential areas of business that need to be innovated; the leader creates an adequate business environment by creating a healthy environment for innovation and defining business guidelines necessary to achieve the positive business results of an innovative management activity; a manager who constantly creates connections through the continuous improvement of personal communication network and establishes good relations with clients and partners appears as a driver of innovations (Strugar Jelača, 2015, p. 266).

The analysis of link between application of information roles and the degree of innovation did not reveal a statistically significant positive correlation. However, individual analysis of information roles indicates that managers, as both

recipients and information and its providers, play an important role in growth of the degree of organization's innovation, especially in a modern business environment that abounds in new information and channels leading to it.

Observing the final managerial role of managers as decision makers, it has been identified that managers who take the role of a problem solver by finding new ways to solve them, as well as managers who establish business cooperation with potential partners in the area of joint implementation of innovations, encourage a higher degree of innovation of an organization.

Conducted research indicates theoretical framework as well as the suggested behavioral guidelines for managers that will enable more innovative behavior and business results.

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According to Mirković (2001), “The use of data warehouses may be limited, especially if they contain confidential data” (p. 201).

Mirković (2001), found that “the use of data warehouses may be limited” (p. 201). What unexpected impact does this have on the range of availability?

If the author is not named in the introductory phrase, the author's last name, publication year, and the page number in parentheses must be placed at the end of the quotation, e.g.

He stated, “The use of data warehouses may be limited,” but he did not fully explain the possible impact (Mirković, 2001, p. 201).

➔ Summary or paraphrase

According to Mirković (1991), limitations on the use of databases can be external and software-based, or temporary and even discretion-based. (p.201)

Limitations on the use of databases can be external and software-based, or temporary and even discretion-based (Mirković, 1991, p. 201).

➔ One author

Boškov (2005) compared the access range...

In an early study of access range (Boškov, 2005), it was found...

➔ When there are **two authors**, both names are always cited:

Another study (Mirković & Boškov, 2006) concluded that...

➔ If there are **three to five authors**, all authors must be cited the first time. For subsequent references, the first author's name will be cited, followed by “et al.”.

(Jovanov, Boškov, Perić, Boškov, & Strakić, 2004).

In subsequent citations, only the first author's name is used, followed by “et al.” in the introductory phrase or in parentheses:

According to Jovanov et al. (2004), further occurrences of the phenomenon tend to receive a much wider media coverage.

Further occurrences of the phenomenon tend to receive a much wider media coverage (Jovanov et al., 2004).

In “et al.”, “et” is not followed by a full stop.

➔ Six or more authors

The first author's last name followed by "et al." is used in the introductory phrase or in parentheses:

Yossarian et al. (2004) argued that...

... not relevant (Yossarian et al., 2001).

➔ **Unknown author**

If the work does not have an author, the source is cited by its title in the introductory phrase, or the first 1-2 words are placed in the parentheses. Book and report titles must be italicized or underlined, while titles of articles and chapters are placed in quotation marks:

A similar survey was conducted on a number of organizations employing database managers ("Limiting database access", 2005).

If work (such as a newspaper editorial) has no author, the first few words of the title are cited, followed by the year:

("The Objectives of Access Delegation," 2007)

Note: In the rare cases when the word "Anonymous" is used for the author, it is treated as the author's name (Anonymous, 2008). The name Anonymous must then be used as the author in the reference list.

➔ **Organization as an Author**

If the author is an organization or a government agency, the organization must be mentioned in the introductory phrase or in the parenthetical citation the first time the source is cited:

According to the Statistical Office of the Republic of Serbia (1978), ...

Also, the full name of corporate authors must be listed in the first reference, with an abbreviation in brackets. The abbreviated name will then be used for subsequent references:

The overview is limited to towns with 10,000 inhabitants and up (Statistical Office of the Republic of Serbia [SORS], 1978).

The list does not include schools that were listed as closed down in the previous statistical overview (SORS, 1978).

➔ **When citing more than one reference from the same author:**

(Bezjak, 1999, 2002)

➔ When several **used works by the same author were published in the same year**, they must be cited adding a, b, c, and so on, to the publication date:

(Griffith, 2002a, 2002b, 2004)

➔ **Two or more works in the same parentheses**

When two or more works are cited parenthetically, they must be cited in the same order as they appear in the reference list, separated by a semicolon.

(Bezjak, 1999; Griffith, 2004)

➔ **Two or more works by the same author in the same year**

If two or more sources used in the submission were published by the same author in the same year, the entries in the reference list must be ordered using lower-case letters (a, b, c...) with the year. Lower-case letters will also be used with the year in the in-text citation as well:

Survey results published in Theissen (2004a) show that...

➔ To **credit an author for discovering a work**, when you have not read the original:

Bergson's research (as cited in Mirković & Boškov, 2006)...

Here, Mirković & Boškov (2006) will appear in the reference list, while Bergson will not.

➔ When **citing more than one author**, the authors must be listed alphabetically:

(Britten, 2001; Sturlasson, 2002; Wasserwandt, 1997)

➔ When there is **no publication date**:

(Hessenberg, n.d.)

➔ **Page numbers must always be given for quotations:**

(Mirković & Boškov, 2006, p.12)

Mirković & Boškov (2006, p. 12) propose the approach by which “the initial viewpoint...

➔ **Referring to a specific part of a work:**

(Theissen, 2004a, chap. 3)

(Keaton, 1997, pp. 85-94)

➔ **Personal communications, including interviews, letters, memos, e-mails, and telephone conversations**, are cited as below. (These are *not* included in the reference list.)

(K. Ljubojević, personal communication, May 5, 2008).

FOOTNOTES AND ENDNOTES

A few footnotes may be necessary when elaborating on an issue raised in the text, adding something that is in indirect connection, or providing supplementary technical information. Footnotes and endnotes are numbered with superscript Arabic numerals at the end of the sentence, like this.¹ Endnotes begin on a separate page, after the end of the text. However, Strategic Management journal **does not recommend the use of footnotes or endnotes.**

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