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**Leadership, Innovative Work behavior and Software Development
Companies in Romania**

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Abstract: Considered to be a phenomenon whose complexity is growing within the last decade, organizational innovation has a different specific, according to the analysis level it refers to. This paperwork will only take into consideration the concept of innovation as a process, and will not focus on the results as a specific outcome of the innovation process. Leadership is the new driver for innovation; among the many theories and styles of leadership, the greatest impact on the process of innovation appertains to the transformational leadership; the new organizational order focuses on the reinventing the business models and processes, rather than developing new products and processes. The results highlight the effect of innovation for the business models and market launching, as the transformational leaders become highly specialized organizational assets. The outcome for the organizational processes that imply both transformational leadership and the process of innovation can only be seen through the innovative work behavior of both individuals and team members. This research will focus on quantifying these behaviors within software development companies in Romania, where the used instrument was Workplace Innovation Scale (WIS) as introduced by McMurray and Dorai in 2003. Results will show that transformational leadership practices are common within organizational behaviors, and their influence on innovation and organizational members creativity is significant for all the four considered scales: organizational innovation, climate for innovation, individual and team innovation.

Keywords: leadership; innovation; innovative work behavior

JEL Classification: M12

Foreword

Software development companies in Romania represent one of the focus subjects of the IT industry around the world, for the achieved performance, rapidity and reliability they offer. Leadership is being performed within these subjects on a rather basic level, while innovative work behavior highlights the employees inefficient and incomplete personal development, and an acute need for transformational leaders to perform.

Advocates of transformational leadership expressed their confidence that the arrangements specific for the past shall not guide the future. Therefore, software development industry in Romania is expected to fully develop and achieve innovative results not only at organizational but mostly at individual level, while transformational leaders adapt their tactics for the specific and age of the industry.

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1. A Leadership Theoretical Basis

Once the economic evolution started, the leadership phenomenon was given a remarkable amount of attention, while many disciplines started to get use out of it. Peters et. al. (1982) writes about the pivotal role of leaders in organizations, with an increasing role in development and values maintenance areas. Started with Schein (1992) and continuing to Bass (1998) leaders' evolution is studied, results showing an increasing role of leaders in transposing change that leads to innovation, and a modified organizational climate and also organizational culture. At this moment in time, measuring leadership becomes a factor of a major importance.

Within the next section, leadership will be revealed throughout operationalized definitions according to the historic timeline of its evolution.

1.1. Leadership Theories and Styles

This section reveals the most prevalent leadership theories that were issued, starting with the trait personality theory, the contingency (also known as situational) leadership theory, and the transformational leadership theory.

a. Trait Personality Theory of Leadership

As Horner (1997) observes, since the debut of the 20TH century, leadership was primarily observed throughout the observation and definition of traits, attributes and leaders' personal qualities (McCrae et. al., 1989). One of the prevalent theories of the century was that leaders are born and not made. Many scholars analyzed this assumption, concluding that if there could be identified the traits that differentiate leaders from followers, it would be more efficient for companies and organizations to recognize those individuals and place them into leadership positions.

Since the trait theory was amongst the first developed, questionnaires dominated the methodology used for identifying the best leaders. As McCrae et. al. (1989) claim, early investigations derived from the most prevalent model of personality and leadership of the time, the Five Factor Model of Personality (FFM). The measures considered the following five factors:

Extroversion	Reliable-sociable, quiet-talkative, inhibited-spontaneous
Agreeableness	Irritable-good natured, ruthless-soft hearted, selfish-selfless
Conscientiousness	Careless-careful, undependable-reliable, negligent-conscientious
Neuroticism	Calm-worrying, hardy-vulnerable, secure-insecure
Openness	Conventional-original, unadventurous-daring, conservative-liberal

Despite the numerous attempts of identifying the perfect instrument that hunts leaders, by analyzing personality and physical characteristics, no consistent results were gathered. The majority of the definitions focused on personality traits and theory, but without being able to find support for the assumptions underlying the issued definitions. Tests revealed this theory lacks within ongoing adjustments, and was further abandoned. There are some of the personality aspects studied that survived, charisma for example, an important factor to be considered when evaluating leadership traits for further development within an individual. As Howell et. al. (2005) observe, the focus of leadership drifted, and started considering the environment, so a wider view towards identifying leaders.

b. Contingency/Situational Theory

Specific for the 1970' and 1980', situational leadership occupied the thoughts and tables of researchers, by including the context or the situation of there leadership could be retrieved. Perrow (1970) issues a theory stating the leadership style can be interpreted throughout dependent and independent variables, meaning that leadership depends more on something else while the independent variable focuses of the setting or on the task. As Osborne et. al. (1998) later observe, some empirical evidence stated to emerge, such as the situational and contingency models of leadership. In 1988, Saal and Knight emphasized the idea of leadership effectiveness as an interaction between three characteristics: traits and behavior of a leader, but also the context, the environment he acts within, where a fourth dimension started to be added, namely the leadership effectiveness. The most supported conclusion specific of the time is that leadership can be determined according to the situation the leader is working in.

Contingency and situational researchers and theorists took into consideration the fact that leadership is effective if determined through an analysis of the leader and the situation he is engaged in, without emphasizing the traits and the leaders' personality, as previous theories did. But problems between theory and practice still subsist, since it became a very difficult task to match a leader with a specific situation. Vecchio (1996) performs a meta-analysis of contingency leadership theory, where more than 1300 studies were considered. Findings showed a negative result, meaning that it is difficult if not impossible to generalize about leadership and leaders that act within given environments. Similar to the previously analyzed theory, the contingency leadership theory was determined as being inconsistent and could not match data.

Summing up, leadership theorists started from leadership as a contextual sum of factors, and developed a larger stage, where behavioral items were included. Later theories leaned towards adding group team members, the newly-developed theory being known under the name of transformational/transactional strategic and full range leadership theory.

c. Transformational Leadership Theory

Knows and the interaction between leaders and their followers seen as collaborators, employees, team members etc., transformational leadership theory is one of the most cited in the literature for the last three decades. Starting with 1970's when a shift of the leadership literature brought forward the transformational theories, only in 1980's a consolidated approach was issued.

First distinction between transformational and transactional leadership belongs to Downtown in 1973, but only Burns in 1978 (Leithwood et. al., 1996) associated the theories of transformational leadership with data. The starting Burns theory approached leadership as a reciprocal process that includes persons with similar values, political views and economic behavior, in context of conflict or competition, with the purpose of achieving goals beneficial equally for leaders and followers.

Bass (1985) continued the previous research towards leadership, issuing a theory that still stands, assuming that each leadership style is at any of the ends of a continuum. He observed that most of the leaders show different degrees of transformational and transactional features. Leaning towards transformational instead of transactional leadership, Bass develops with Avolio in 1997 the full range leadership model.

Gardner (1990) defines leadership as being the accomplishment of purpose when considering groups, which are led by leaders and also by innovators, thinkers, individuals with entrepreneurial attitude and behavior. As it can be easily observed, leadership is transposed from the trait work of a single

individual to the one of group goals. Gardner did not exclude from his definition a range of phenomena which may not be part of the presently-recognized leadership theory. The full range leadership model is the most developed model recognized by the literature; the scales as presented by Bass and Avolio are laissez faire, management by exception – passive, management by exception – active, contingent reward, idealized influence – attributed and behavior, inspirational motivation, intellectual stimulation, individualized consideration (Bass et. al., 2020).

As can be seen, leadership is considered to be a continuum, where the transformational leadership styles are active and most effective, compared with the passive and avoidant leaders, whose results are least efficient and effective.

As Zhu et. al. (2005) observe, transformational leadership is one of the main factors that contributes to improving performance within organizations. The integration needed within the current work environments require a specific set of skills and abilities that need more than the requirements of the traditional leadership styles. For this reason, leadership focus shifted from management by exception styles to intellectual stimulating, inspirational and motivational characteristics (Bass, 1997).

Compared to transactional leadership, the transformational style is considered to be most effective in promoting organizational performance (Palmer et. al., 2001). This revolutionary leadership style has the role of raising the follower's confidence levels while the leader is broadening their needs, in order to develop and achieve the highest potential. It is shown that transformational leadership implicitly includes emotional, but also intellectual and also moral engagement, while the given environment, followers' performance reaches beyond expectations. A number of studies highlight the loyalty, the commitment but also the satisfaction and attachment of followers towards organizations whose environments are led by transformational leaders (Pitman, 1993).

As opposed to transformational leadership results, the transactional style does not register great achievements in terms of organizational change (Leithwood et. al., 1996). In this view, the worker and the organization are traditionally enhanced, where the power of the upper organizational level individual is used for completing tasks. In contrast, the transformational leaders try to involve followers within organizational activities, by satisfying them under higher needs (Bass, 1985). Transformational leaders are seen to be the initiators of change, while innovativeness imply creating something new from an old process or habit (Murphy, 2019); it results that from a theoretical point of view, innovation implications within leadership theory are not only visible, but also quantifiable.

1.2. Leadership Styles

While the theoretical part evolved, implementing leadership within organizations resulted into different leadership styles that could be considered, according to different organizational environments that were taken into consideration. Transactional leadership style is divided through three components: a. contingent reward; b. management by exception (active); c. management by exception (passive). A transformational leaders' activity takes into consideration the contingent reward scheme in order to explain to the followers the organizational performance expectations and to appreciate a good performance (Stefani, 2019). On the other side, transactional leaders set their focus on contractual basis as a main motivational factor, adding extrinsic rewards in order to motivate. Management by exception consider leader behavior by detecting deviations from an expected behavioral pattern of the follower.

The applications of both transformational and transactional leadership styles is different, according to the context and the constraints faced; a transactional leadership style is preferred within the

technological environments, where precision, and technical expertise is the main focus; transformational leadership is a soft version, specific for more diplomatic environments, with an increased human interactions, need for motivation and respect for human emotions (McGregor, 2003).

Transformational leaders consider the higher needs of a society, as self-actualization, self-esteem, driving followers in an area of self-sacrifice that will benefit both organizational goals but also self interest (Bass, 1995). Leaders that manifest idealized influence consider the needs of the followers, and result into generating a shared risk-taking attitude (Jung et. al., 2008). Inspirational motivation set goals through challenge and encouragement; intellectual stimulation results into followers inspiring to increase their creativity levels and to innovate when solving problems.

Transformational leaders have a high respect for their relationships with their team members, by showing individualized consideration for satisfying their needs for achievement, self-efficacy, empowerment and also personal growth. Cummings et. al. (2018) concluded that “leadership style alone could not be linked to patient mortality”; the same authors study shows that opposed to autocracy, leaders who encouraged human interaction under the form of transformational leadership style acquired better work quality results.

2. Innovative Work Behavior

When attempting to create a correct organizational structure and implement processes, one will need to enhance value creation and idea implementation; but sustaining innovation will ultimately require an organization to rightfully capitalize its employees innovative work behaviors. Literature suggests that a company can innovate as long as its employees can; so the innovative continuity is a direct result of individual employees work. There are two different situations for when an employee innovates: at first the nature of the job requires a certain innovativeness degree, but secondly, and the most important, the voluntarily expression of spontaneous innovation at work, on which companies should rely on if they wish to be market leaders (Khalili, 2016).

Innovative work behavior is arbitrary when is not being considered for a certain formal reward or internal recognition system, so it is not a part of a job description (Janssen, 2000). As Ramamoorthy et. al. (2005) explains, the employee tendency to engage in extra-roles activities can result into an increased team and/or organizational performance and effectiveness.

As Janssen (2000) claims, there are three interrelated tasks in regard with employee behavior: idea generation, idea promotion and ultimately, idea realization. After forming new ideas that may benefit the organization or the working groups, the idea seeks for internal and external support in order to finally be realized, meaning producing a model that will be tested within the working groups but also the entire organization, if needed.

Since the assumptions according to which the innovative work behavior results into positive achievements, researchers manifested an increasing attention towards the innovative work behavior promotion; as a consequence, numerous organizational factors have been studied, in order to determine if they are dominant for implementing an innovative work behavior (Janssen et. al., 2004). The results were focused on the western countries and cultures; given this situation, it is important to establish whether the innovative work behavior determinants will hold true within East-European context. As Mumford (2000) claims, the innovation capacity of a given organization can only reside within intelligence, imagination and also creativity specific for most of its employees; this means that

the development and the innovation implementation reside within the employees' implication and support.

3. Methodology

With the purpose of analyzing the link between leadership and innovative work behavior, the instrument used was a 5 Likert scale questionnaire, from 1. Totally agree to 5 totally disagree, split among two different topics: leadership and innovative work behavior.

As subsequently shown, the innovative work behavior questionnaire comprises 24 questions split between four different topics: organizational innovation, climate for innovation, individual innovation and team innovation.

The leadership questionnaire comprises 20 questions and four dimensions: individualized consideration, intellectual stimulation, idealized influence and inspirational motivation.

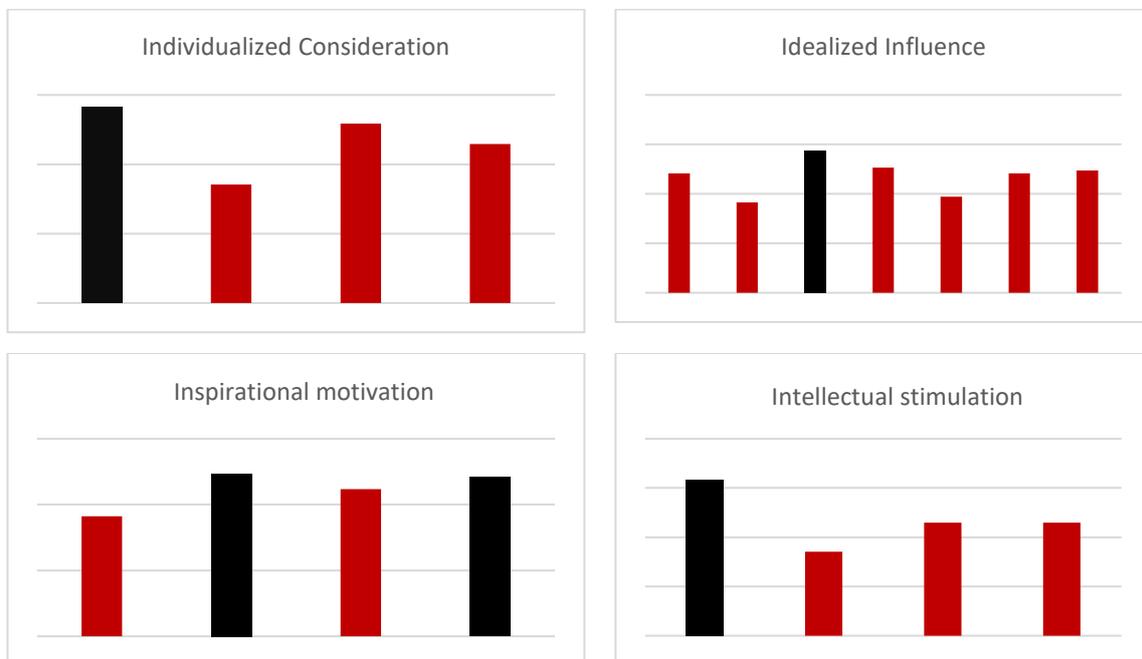


Figure 1. Leadership within Software Development Companies

Source: own calculations

When considering the leadership dimensions, results show that among software development companies in Romania, followers mostly appreciate to be nurtured, for leaders to spend time and teach them, but also to develop a strong sense for achieving personal goals; it must be added the importance for existing a collective sense for achieving objectives that will ultimately result into a convincing vision for the future endeavors.

If individually considered, software developers appreciate the least if they are considered rather as a simple being than a group member; this means that in terms on leadership and innovation, theories in regard with transformational leadership results do not necessarily apply for this case. Another apparently not important feature for software development companies and their employees is the capacity of leaders to optimistically express themselves about the future; given the working environment and conditions, this intrinsic aspect is self-explainable, since this type of companies value

performance and are only task/time oriented, the accent being drawn over efficiency and less over efficacy. The same result was achieved in regard with the inspirational motivation from leaders to followers, since it appears that it is not very important for an IT employee for the leaders to associate and share their experience among the working groups; again, this result it is not surprising since leadership and results within the given industry does not have the place to be shared and valued, the communication environment being very dry and human interaction incomplete. Another downward feature is represented by the different perspectives in solving problems which seems to be at a tie within the scores; a possible explanation may be residing in the programming language capabilities of integrating an infinite number of perspectives for solving problems, therefore explaining the low score that was registered.

Case study: the relation between leadership and innovative work behavior within software development companies in Romania

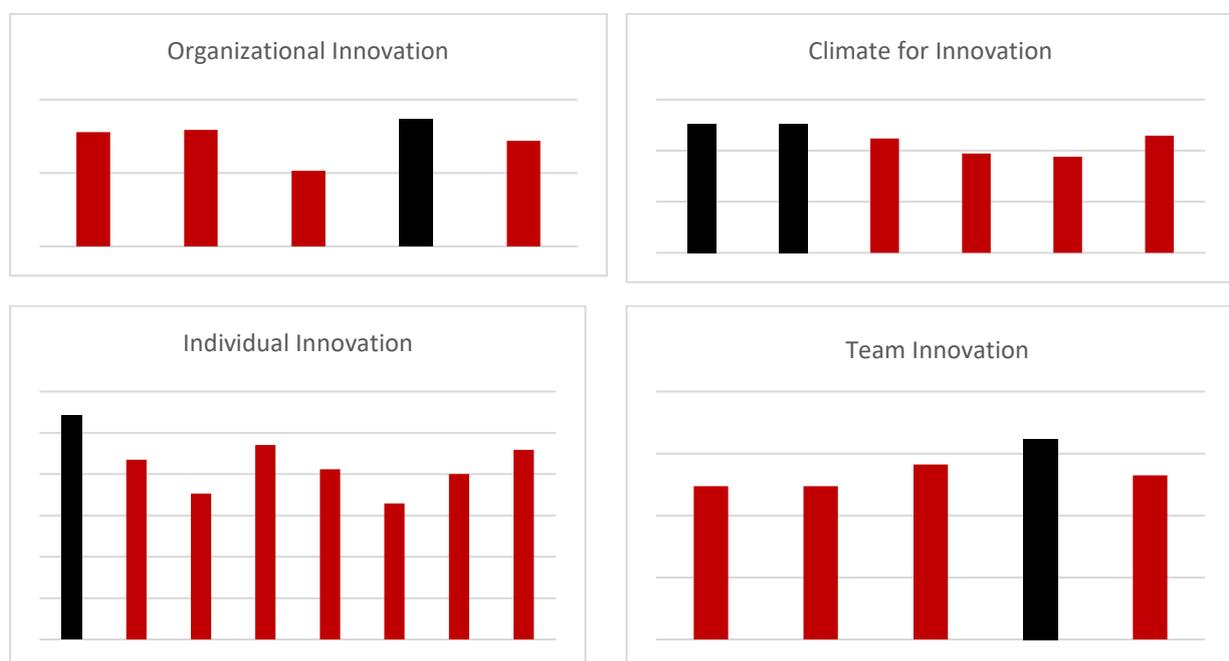


Figure 2. Innovative Work Behaviors within Software Development Companies

Source: own calculations

When considering the innovation degree and the workplace – software development companies, it can be easily seen that the most valued conditions for the employees are: the existence of implemented systems and procedures for learning and individually developing, along with the fact that creative thinking comes from leaders that promote it, through individual discussion and training; when considering the individual innovation, it is utmost important for the performance of an individual to be measured according to its own creativity, while working in teams highlight the importance of unusual circumstances and uncertainty for the task system and its accomplishments.

On the opposite side in regard with workplace innovation, with a low importance an organizational level can be found the idea that workplace innovation is linked with the organizational business goals; climate for innovation brings into light a low importance for the followers to be allowed by leaders to learn actively from their own mistakes, since within this industry, this is one of the most common ways of achieving performance, being commonly spread and not seen as a granted feature. On an individual level, it is not important for one's innovativeness to express himself freely within the staff

meetings, while when about team innovation, seems not to matter this occasion for solving complex problems, since the personality matrix of a software developer leans towards introverted characters rather than extroverted, so the need for communication and cooperation is rather low.

Final Remarks

If linking leadership and workforce innovation in software development companies, a specific pattern can be drawn: transformational leadership must adapt according to the specificity of the industry and the characters of the individuals that mirror the needs for solving problems and achieving results of the organization; leadership appears to be important for the beginner levels that feel insecure about their work and need encouragement; at this level, innovation is not else but a job requirement. But when achieving experience and display performance, group tasks become on the theoretical level a condition for innovation, but in practice it seems that seniors prefer to work and innovate alone, since one of the most prized characteristics of innovation in software development companies is being considered alone for one own results and performance.

It is important to note that from a scale from 1 to 5, the mean of the features considered for both leadership and workforce innovation does not go beyond 2.5 meaning several things: 1. Most of the software development companies are young, with processes and procedures that are still being implemented and tested; 2. The age of the software developers and educational background do not allow them to develop as literature expects, since they start at a young age to be programmers, and such a job is time consuming, not allowing them to develop hobbies; 3. The personal profile of a software developer shows a rather introvert individual, not being predisposed to work in teams or manifest itself further that its own screen; 5. Leadership, despite the fact that it is a buzz word among software development companies, appears not to be practiced professionally, but rather on a low to medium level; 6. Workforce innovation is perceived to be an organizational business characteristic rather than transposed into individual performance.

Romania is an IT market suffering from an explosive amount of offers for software development projects, being performance oriented and considered to be low-cost. This is being reflected by the results from the two questionnaires applied within two different software development companies; given this rapidly increasing market, we consider that on a situational level, transformational leaders will be emphasized and their area of focus will migrate from individual to group dynamics.

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