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Interpersonal and Organizational Dimensions of Leaders' Transformational Behaviours Measured by LPI©

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This paper discusses characteristics of leaders' transformational behaviours by using the five-factor Exemplary Leadership model measured by Leadership Practices Inventory (LPI©) (Kouzes & Posner, 2002). Literature is scarce on investigating the psychometric properties of this instrument. In this study factor analysis, cluster analysis and ANOVA are used for identifying changes of the internal variable structure of Leadership Practices Inventory© and examining correlations between leadership scales and objective variables on a sample of 1638. The main goal of this paper is to report on a new, two-dimensional factor structure found, in which one of the factors represents a development-motivation (i.e., stimulation), and the other, a vision-organizational transformation dimension. Through identifying the two-dimensional structure, this research statistically confirms the literature suggestion (Northouse, 2001; 2019) about the existence of an interpersonal and an organizational dimension of transformational behaviours. Along the two factors an original cluster structure of 'transformational leadership' and 'non-leadership' and hypothetical further clusters are proposed. By using the factors, significant relations between leadership activities and management levels, leaders' qualifications, as well as organizational variables like ownership, sector, size, and functional unit are found. Beyond their theoretical implications, the results of this research can be used in management education, self-development of managers, and managerial practice.

Keywords: *Transformational Leadership; Leadership Behaviours; Leadership Practices; Leadership Practices Inventory (LPI©) by Kouzes and Posner; Leadership Development.*

Introduction

The main topics of traditional leadership research in the 20th century were leader traits, behaviours, and leadership contingencies. Traditional leadership perspectives put leader-follower dyad, and small group effects into focus, and let some critical questions unanswered especially about the role and methodology of large-scale transformations (Buchanan & Huczynski, 2004, p. 741; cit. by Feher & Kollar, 2012). By the late twentieth century catalysing and implementing change at all levels of the organization became a critical challenge for managers (see, e. g. Kanter *et al.*, 1992; Kotter, 1996; Buchanan & Huczynski, 2004, p. 741; House *et al.*, 2004; Feher, 2011; Kotter & Cohen 2012; Ibarra, 2015). In the evolution of the leadership thought a theoretical response to these large- and multiple-level change requirements can be seen in the appearance of New Leadership. (Bennis & Nanus, 1985, Bryman, 1992) New Leadership is distinguished from Traditional Leadership by its emphasis on charisma, vision, and transformation (Bryman, 1992).

Representative trends of New Leadership are charismatic (House, 1977; Conger & Kanungo, 1988), visionary (Nanus, 1992) and transformational (Burns, 1978; Bennis & Nanus, 1985; Tichy & Devanna, 1986; Kouzes & Posner, 1987; Bass, 1990) leadership.

The term transformational leadership was used first by Downton (1973). According to Burns' widely known concept of 'transforming leadership' (1978) transformation is a process between leader and follower creating a connection that raises the level of motivation and morality in both the leader and the follower. The aim of transformation is improving the performance of followers and developing them to their fullest potentials (Bass & Avolio, 1990). In his theory Burns (1978) identified transformational leadership in a contrast to transactional leadership which focuses on traditional exchanges (e. g. financial rewards and incentives, promotions) that occur between leader and followers. Transformational leadership uses different ways of influencing, non-traditional motivational tools, and rewards like being attentive to the needs and motives of the followers and developing their potentials (Burns, 1978). In other words, transformational leadership assumes an emergence of a different kind of reciprocal relationship between leader and follower which can be called a 'transformed transaction' (Feher, 2010; Feher & Kollar, 2012).

Since the 80s Transformational Leadership (due to ethical considerations to be meant *Authentic* Transformational Leadership; Bass & Steidlmeier, 1993) has gained wide recognition by practice and research (Lowe & Gardner, 2001; Antonakis, 2012; Northouse, 2019; Kouzes & Posner, 2021). During its evolution it has become an encompassing

approach describing attempts to influence individuals, groups, organizations, and entire cultures.

It models how leaders can initiate, develop, and carry out significant change in organizations (Northouse, 2019, p. 177). It can be used to identify and characterize diverse types of leadership phenomena, e g. specific interactions on a one-to-one level as well as broad attempts to influence organizations (Northouse, 2001, p. 136). The concepts and measurement tools of Transformational leadership are widely used in current research on organizational innovativeness (see, for example, Jelaca *et al.*, 2020; Bilan *et al.*, 2020).

One of the streams of research that have contributed in unique ways to the conceptualization of transformational leadership is the works of Kouzes and Posner (Northouse, 2019, p. 174–175). This paper discusses characteristics of the leaders' transformational behaviours described by Kouzes' and Posner's model of Exemplary Leadership and measured by Leadership Practices Inventory/LPI© (Kouzes & Posner, 1987; 2002; Posner, 2016; Kouzes & Posner, 2021).

For developing their model Kouzes and Posner used first interviews (1987). By the help of an extended number of interviews, case analyses and survey questionnaires (Leadership Practices Inventory/LPI©) the authors further developed their findings about the five fundamental practices that enable leaders to get extraordinary things done in organizations (Kouzes & Posner, 1995; 2002).

The five fundamental practices of admired leaders are as follows. "Model the way" is about leadership values, philosophy, and guiding principles. "Inspire a shared vision" is about the leaders' ability to paint a "big picture" of what the organization aspires. "Challenge the process" means changing the status quo and challenging existing work methods. By "Enabling others to act" leaders develop relationship with followers and empower them. "Encourage the heart" means supporting and recognizing subordinates. (Kouzes & Posner, 1987; Anderson, 1992; Feher & Kollar, 2012; Northouse, 2013; Posner, 2016; Kouzes & Posner, 2021). The model of Kouzes and Posner emphasises behaviours and has a prescriptive quality (Northouse, 2019, p. 177). Xu *et al.* (2015) have found correlations between the ethical duties of leaders and factors of Kouzes and Posner's five-role model.

Throughout the last decades the model has become a key conceptual source for leadership development activities worldwide, and LPI© one of the most widely used assessment instruments. Kouzes and Posner (2002) note that LPI© has proven robust in the assessment and development of leadership capabilities. Antonakis (2018, p. 68) refers to the model and accompanying measure for their special impact on leadership practice. Recent research and review articles based on LPI© have covered topics related to leadership development programs (e.g., Konuk & Posner, 2021; Clavelle & Prado-Inzerillo, 2018; Diaz *et al.*, 2019) as well as issues of the relationship between leadership behaviours and different variables, for example, culture (Casa *et al.*, 2021), and grit (Caza & Posner, 2019).

Regarding the examination and confirmation of the five-factor structure of leadership influence described by the Exemplary Leadership model (Kouzes & Posner, 2002; Posner, 2016) there is a shortage in current literature. Previous studies (Sandbakken, 2004; Tourengeau & McGilton, 2004) had found different three-factor structures assessed by LPI©. For these reasons in this article the factor structure of the model is examined.

In the literature of transformational leadership Northouse (2001; 2019) suggests that leaders attempt to influence others at different (i.e., individual, organizational) levels. Therefore, a special emphasis of this study is on the possible differences in the targets of the leadership influence (i.e., changes to be catalysed and implemented at individual vs. organizational levels).

As for the relationship between transformational leadership and hierarchical position of the leader there are also controversary results in literature (Burns, 1978; Bass & Avolio, 1990; Kouzes & Posner, 2002; Sur & Pasad, 2011; Edwards & Gill, 2012; Elsaid & Mostafa, 2015; Posner, 2016; Kouzes & Posner, 2021). Therefore, in this paper we investigate whether there are differences in the *occurrence* of transformational leadership practices and behaviours along management hierarchy levels. Following Kouzes and Posner (1995; 2002) and related research (Posner 2016; Herman *et al*., 2017; Diaz 2018; Diaz & Lituchy 2019; and Burkman *et al.* 2019) also the relationship between LPI© dimensions and further objective variables (gender, age, qualifications, organizational ownership, sector, function, and size) are examined.

Literature Review

Transformational leadership has been widely researched by qualitative (see e. g.: Kouzes & Posner, 1987; Atwater *et al.*, 1991; Bass & Riggio, 2006) and quantitative instruments. Regarding quantitative analytical methods for the measurement of Bass's model of transformational leadership, the MLQ (Multifactor Leadership Questionnaire) is used (Bass & Avolio, 1997; 2000). The MLQ instrument (Bass & Avolio, 2000) contains 45 behaviour items and reflects on 3 dimensions, and 9 scales of leadership. The dimensions and scales are as follows: Transformational Leadership (Inspirational motivation, Idealized influence, Charisma /Perceived charisma, Behaviours/, Intellectual stimulation, Individualized consideration); Transactional Leadership (Management by exception /active/, Management by exception /passive/); Laissez-faire leadership. MLQ survey instruments include Observers' (360-grade) and Self-reporting questionnaires. Internal reliability of scales bears a 0.8 Cronbach's alpha value which refers to a high-level of consistency. The original 9 factor structure has not been confirmed by all relevant MLQ leadership research (Tejeda *et al.*, 2001).

For the measurement of the full spectrum Avolio, Bass (1988) leadership model Podsakoff *et al.* (1990) developed another instrument, the Transformational Leadership Behavioural Inventory. Through factor analysis they identified 4+1 dimensions of transformational and transactional leadership. Transformational leadership is represented by the dimensions: Core transformational leadership activities, High performance expectations, Individualized support, and Intellectual stimulation. Transactional leadership is measured through the factor Contingent reward.

Alban-Metcalfe and Alimo-Metcalfe (2000) developed their Transformational Leadership Questionnaire in the early 2000s. The instrument consists of 76 items, and 9 scales. The internal reliability alpha values are high, systematically above 0.85. The scales include leadership behaviours like concern for others; empowerment; integrity; accessibility; clarifying boundaries and involving subordinates in decisions; encouraging critical and strategic thinking; inspiring others; being decisive; showing political sensitivity.

For the measurement of their leadership model dimensions Kouzes and Posner developed the „Leadership Practices Inventory" (LPI)©. The aforementioned five fundamental practices (Model the way/MTW, Inspire a shared vision/IASV, Challenge the process/CTP, Enable others to act/EOTA, and Encourage the heart/ETH) are measured through 30 leadership behaviours. Internal reliabilities (Cronbach alphas) of the instrument with a database involving nearly 60,000 respondents were reported to range between 0.81 and 0.91 (Kouzes & Posner, 1995; Posner, 2016).

Reports on psychometric properties of the LPI© include Carless *et al.* (2000), Carless (2001), Kouzes & Posner (2002), Posner (2016), Galante & Ward (2017). Regarding the discriminant validity of LPI Carless (2001) found that the instrument assessed an over-arching higher order transformational leadership. Sandbakken (2004) reports on a three-factor structure (Transforming the Organization, Supporting Actions, Modelling the Way), and so do Tourengeau and McGilton (2004), but their factor structure reflects partly different leadership activities (Cognitive practices, Behavioural practices, and Supportive practices). Regarding the examination and confirmation of the five-factor structure of Kouzes's and Posner's model (2002; Posner, 2016; Kouzes & Posner, 2021) a lack can be found in recent literature.

Given earlier controversary results and the lack referred to in recent literature in this study an examination is presented on the factor structure of the behaviours and practices measured by LPI©. Different models of transformational leadership have been investigated from many aspects, for example regarding the relationship between transformational leaders' behaviours and their effects on followers (Podsakoff *et al.*, 1990), personality and transformational leadership (Hautala, 2006; Brown & Reilly, 2009), as well as relationships among transformational leadership, charisma, credibility, and organizational performance (Williams Jr. *et al.*, 2018). The relationship between transformational behaviours described by LPI and demographic and contextual factors have been part of the research of Kouzes and Posner (1995; 2002) and Posner (2016). The used demographic and contextual variables included gender, age, qualifications, organizational ownership, sector, function, and size. Recent research on the relationship of transformational behaviours and objective variables have covered age (Herman *et al.*, 2017), gender (Diaz, 2018; Diaz & Lituchy, 2019), organizational size (Burkman *et al.*, 2019), and hierarchical level (Kouzes & Posner, 2021).

Posner (2016) suggests that responses on LPI are not systematically related to demographic and contextual variables however some earlier and recent research contradicts to this suggestion concerning the factor of education (Stout-Stewart, 2005) and age (Herman *et al.*, 2017). Regarding contextual issues a focal problem is the relation between transformational behaviours and organizational hierarchical levels. As noted, by the end of the last century there became an urging need to address challenges of change not only at the organizational but at all levels in an organization. (Buchanan and Huczynski, 2004) In accordance with the original principle of Burns (1978) Bass and Avolio (1990) suggested that transformational leadership is not reserved for top managers but can be practised at different organizational levels. The concept of Kouzes and Posner (2002; 2021) is consistent with this principle. The authors stress that exemplary leadership practices described by their model are open for use to everyone and can be used even by followers to become leaders.

Partly controversially to these postulations and related findings Sur and Pasad (2011) found significant difference in the occurrence of transformational leadership behaviours along organizational levels. Their research reports that behaviours of members of upper management show more characteristics of transformational leadership than those of middle and supervisory management members. Edwards and Gill (2012) confirm that the behaviours of middle and supervisory managers show less transformational characteristics. Other research shows no clear relation between organizational levels and transformative leadership behaviours (Elsaid & Mostafa, 2015; Kouzes & Posner, 2021). Once differences are to be found in the occurrence of transformational behaviour along organizational levels logically a question can be raised about possible differences in the type of the leadership influence, as well. According to level/scope the leader's wished influence can be of interpersonal (one-to-one, group) or organizational level.

As noted earlier transformational leadership is an encompassing theory describing attempts to catalyse and implement change at different levels of the organization (Northouse, 2001; 2019). Certain concepts of the theory (Bennis & Nanus, 1985, Tichy & Devanna, 1986) lay special emphasis on the broad organizational systemic and cultural effects of the leadership influence, whereas the concept of Bass (1990) is more oriented towards interactions on the one-to-one and group level.

The model of Kouzes and Posner (1987) entails leadership influence behaviours logically specifiable as those targeting interpersonal (one-to-one and group) as well as broader systemic and cultural effects. For a categorization of the types of the leadership influence behaviours see e. g.: Feher (2009).

Based on the theoretical overview the research problems can be summarized as follows:

- to confirm/revise the factor structure of LPI©,
- to explore the relationship between transformational leadership behaviours and objective variables, i.e., management levels, gender, age, qualification, organizational ownership, sector, organizational function, and size of the organization,
- to identify differences detectable by LPI© in the *targets of the leaders' attempts to influence* (exerting influence at interpersonal vs. organizational levels).

Therefore, the research questions of this paper investigating the leadership practices and behaviours of the Kouzes and Posner (1987) model are:

1. Can the five-factor structure of Kouzes's and Posner's model (2002; Posner, 2016; Kouzes & Posner, 2021) be confirmed on our sample or the existence of other structures (e.g., three-factor structures by Sandbakken (2004); or Tourengeau and McGilton (2004)) will be detectable?

2. Is there a difference in the *occurrence* of leadership practices and behaviours along management levels, gender, age, qualification, and organizational ownership, sector, function, and size?

3. Can a difference be detected in the *target of the leaders' attempts to influence* (exerting influence at interpersonal vs. organizational levels)?

Methodology

For data collection on leadership practices and behaviours the Leadership Practices Inventory (LPI)© authored by Kouzes and Posner (2002) was used under a special permission by Wiley. The questionnaire contains 30 statements (concerning 30 behaviours of managers). The 30 behaviours are grouped into 5 ways of behaving that – as referred to earlier – are called fundamental "leadership practices". Each fundamental leadership practice entails 6 behaviours. The fundamental leadership practices as afore mentioned are the following: MTW, IASV, CTP, EOTA, ETH. Each behavioural statement (30) in the questionnaire grades the answers on a scale of 10 points (1= almost never, 10= almost always) (Kouzes & Posner, 2002; 2007). The LPI© instrument is available in a Self-reporting and an Observer version. In this paper results from the Observer version are presented in which respondents were requested to make statements concerning the behaviours of their supervisor. For this research reliability and validity tests for LPI were conducted. This research focuses on construction and convergent validation (Rozsa *et al.,* 2006).

For testing construction validity factor analysis is used (Goodwin, 1999; Atkinson *et al.,* 2011; Lu, 2006; Kollar, 2019b). After examining the internal structures of the items and data reduction it is investigated whether the cumulative and associated variables form a well-interpretable conceptual system. The test is completed by a comparison between the created factors and the original item structure. For examining the suitability of data KMO, Bartlett test, correlation matrix, and anti-image matrix is used. For factor definition Kaiser, Jolliffe, variance ratio criteria are also considered. Analyses by main component and image process are run, and varimax rotation is used to create a well-discernible factor structure (Goodwin, 1999; Atkinson *et al.*, 2011; Lu, 2006; Kollar, 2019b). Regarding convergent validity Sosik and Megerian (1999) Fitzgerald and Schutte (2010), and Sur and Prasad (2011) have found that transformational leadership is associated with factors such as self-awareness, self-organization, personal efficiency, drive, and determination (Kollar, 2019b). For examining convergent validity of LPI© in this research its relation to personal efficiency (internal motivation and the conceptual system of self-management) is investigated. For the investigation of the latter variables, statements about personal efficiency were defined (source: authors' own research) and included into the questionnaire. These statements were to be evaluated on a scale of 1 to 6, depending on the degree to which the respondents agreed with the statements. For convergence validation Pearson's correlation coefficients were used (Feher & Kollar, 2012; Kollar, 2019b).

The national examinations started on small samples by Feher and Kollar (2012; 2013). Enlarged sample data collection for national population started in 2017 by „snowball" method, a non-probability sampling procedure. The sample was periodically examined on distribution of attributes of independent variables (gender, age, management levels, qualifications, and organizational variables i.e., ownership, sector, function/department, size) to ensure a match between sample and population distributions. To eliminate over-or underrepresentation quota-sampling procedure was applied (Kollar, 2017; Szabo & Kollar, 2018; Kollar, 2019a; Kollar, 2019b).

In the process of data collection, 1638 respondents – employees at organizations from diverse sectorial and other segments in Hungary – evaluated the leadership practices of their immediate supervisor. 43 % of evaluated managers are women and 57 % are men. The evaluated leaders are average 45 years old. The standard deviation of age is 9.37.

As a further feature of the sample, the longevity in managerial positions, it can be stated that the examined managers spent on average more than 10 years in managerial position. The standard deviation of years of managerial experience is 7.81. The analysis included mainly executive managers (40.7 %) Middle managers (29.4 %) and first line (supervisory) managers (29.9 %) are close to the same proportion.

As for qualifications, 86,9 % of the evaluated managers are degree-holders (a markable over-representation considering their proportion within the population), whilst 12,6 % have secondary-school education, and 0,5 % primary school education.

34.5 % work for an organization that is privately owned and headquartered in the surveyed country. 28.2 % of the evaluated managers work for a multinational organization, while 37.3 % work for a fully or largely state-owned organization. The largest proportion (12.4 %) of those included in the sample works in the field of "other services". 9.8 % of the surveyed persons hold management positions in "trade", 9.6 % in "public administration", and 9 % in "financial sector". The subjects work in a somewhat similar distribution (5–7 %) in agriculture, IT, manufacturing, healthcare, public services, and education. In the smallest proportion, 0.9% of "social services", 0.6 %, "culture" and 0.5 % of "research and development" were included in the sample. (Regarding sectorial distribution the sample shows over-representation for agriculture and services whilst manufacturing is under-represented.)

The distribution between organizational functions is the following: general management functions 33 %; service and client relations 16 %; finances and accounting 11 %, marketing and sales 9 %, operations and logistics 10 %; and other 21 %. Regarding organizational size 42 % of the evaluated managers work for organizations with an employment number between 1–99, 31 % for those between 100–499, 10 % for those between 500–999, and 17 % for those over 1000.

Results

In this study factor analysis (Sajtos & Mitev, 2007; Ketskeméty *et al.*, 2007; Field, 2013) is used for identifying changes of the internal variable structure of the LPI© Observer on the sample.

Prior to analysis, survey data were checked for being suitable for performing the analysis. As a first step, the Kaiser-Meyer-Olkin index was examined.-There are several benchmarks for the adoption of the KMO indicator. Following Székely and Barna (2002), values above 0.5 were accepted. The value of the KMO indicator calculated for the variable system is 0.983. The significance value for the Bartlett test was $p < 0.01$. As a final step in examining the preconditions, MSA (Measures of Sampling Adequacy) values were analysed. Values ranged from 0.972 to 0.989, which still does not justify the exclusion of items.

In determining the factor numbers, the Kaiser criterion was applied. Based on it the number of factors whose own value is greater than 1 was determined. These factors explain nearly 71% of the information content of the entire variable system. Factor analysis was performed using the image method. For better interpretability of the data, varimax rotation was performed on the factor "A" matrix.

The developed factor structure is shown in Table 1. The first factor included all items of the "Encourage the heart (ETH)" and "Enable others to act (EOTA)" practices, and four statements (1.; 11.; 16.; 21.) of the „Model the way (MTW)" practice. The second factor includes behaviours from the "Inspire a shared vision (IASV)" and "Challenge the process (CTP)" practices. Besides, two items belonging to " Model the way (MTW)" have been added to the second factor (6, 26) (Kollar, 2019b).

In the resulting new dual structure one factor can be interpreted as a developmental and motivational (i.e., stimulation) dimension, and the other as a vision - organizational transformation dimension. If we take this line of thought further, it can be said that the first factor describes the moments of leadership towards the individuals/groups while the second factor those towards the organization (Kollar, 2019b).

Based on this, by the example of the Kouzes, Posner model we can statistically confirm the literature suggestion– as worded, for example, by Northouse (2001; 2019)–that transformational leadership can be interpreted as a broad approach, including not only micro, interpersonal level attempts to change but also efforts to change structures, systems of the whole organization.

The internal consistency of the item groups can be deduced from the Cronbach's alpha index. In case of the developmental-motivational factor, we can calculate 0.975. If we examine the values belonging to each item, we can state that the internal reliability would in no case change (increase) if the given item were excluded. The corrected total item correlation is above 0.7 in all cases. The lowest coefficient is observed for item 24. (Gives people a great deal of freedom and choice in deciding how to do their work (EOTA). This means that item 24. is associated with the least total score. A high Cronbach's alpha value (0.961) can also be expected for the vision-organizational transformation scale. The lowest (0.633) item correlation coefficient is observed for item 28., indicating a stronger-than-average correlation with the full-scale score. If item 28 were excluded, the reliability of the vision transformation scale would increase by only 1 thousandth.

In connection with the research question on leadership levels, it was formulated as an additional goal to cluster the observed leaders along the two factors developed based on the items of the LPI© Observer. Since we are working with a database of a large element number, it would be expedient to use a K-mean clustering procedure, however, the disadvantage of the method is that the number of groups is to be determined in advance. Therefore, in the first part of the analysis a hierarchical procedure including the Ward method was used. The fracture of the coefficient chains occurred at the last step.

Based on this, the number of clusters can be determined in two, depending on the development-motivation and the vision-organizational transformation factors. A following step was to divide the study units (observed leaders) into two groups using the K-mean procedure.

Table 1

Rotated Factors

LPI© items (behaviours # 1-30)	Items	Factors	
		1	2
30.	Gives the members of the team lots of appreciation and support for their contributions (ETH)	,756	
10.	Makes it a point to let people know about his/her confidence in their abilities (ETH)	,752	
20.	Publicly recognizes people who exemplify commitment to shared values (ETH)	,731	
14.	Treats others with dignity and respect (EOTA)	,730	
19.	Supports the decisions that people make on their own (EOTA)	,726	
5.	Praises people for a job well done (ETH)	,709	
21.	Builds consensus around a common set of values for running our organization (MTW)	,702	
9.	Actively listens to diverse points of view (EOTA)	,687	
29.	Ensures that people grow in their jobs by learning new skills and developing themselves (EOTA)	,660	
15.	Makes sure that people are creatively rewarded for their contributions to the success of projects (ETH)	,657	
24.	Gives people a great deal of freedom and choice in deciding how to do their work (EOTA)	,632	
11.	Follows through on promises and commitments he/she makes (MTW)	,611	
4.	Develops cooperative relationships among the people he/she works with (EOTA)	,610	
25.	Finds ways to celebrate accomplishments (ETH)	,596	
16.	Asks for feedback on how his/her actions affect other people's performance (MTW)	,565	
1.	Sets a personal example of what he/she expects of others (MTW)	,555	

LPI© items (behaviours # 1-30)	Items	Factors	
		1	2
27.	Speaks with genuine conviction about the higher meaning and purpose of our work (IASV)		,702
17.	Shows others how their long-term interests can be realized by enlisting in a common vision (IASV)		,682
2.	Talks about future trends that will influence how our work gets done (IASV)		,670
22.	Paints the "big picture" of what we aspire to accomplish (IASV)		,666
7.	Describes a compelling image of what our future could be like (IASV)		,661
13.	Searches outside the formal boundaries of his/her organization for innovative ways to improve what we do (CTP)		,653
3.	Seeks out challenging opportunities that test his/her own skills and abilities (CTP)		,652
8.	Challenges people to try out new and innovative ways to do their work (CTP)		,643
23.	Makes certain that we set achievable goals, make concrete plans, and establish measurable milestones for the projects and programs we work on (CTP)		,617
26.	Is clear about his/her philosophy of leadership (MTW)		,606
12.	Appeals to others to share an exciting dream of the future (IASV)		,605
6.	Spends time and energy making certain that the people he/she works with adhere to the principles and standards that we have agreed on (MTW)		,599
18.	Asks "What can we learn?" when things don't go as expected (CTP)		,581
28.	Experiments and take risks, even when there is a chance of failure (CTP)		,552

Source: *KollAr (2019b); LPI© by Kouzes and Posner (2002)*

The two groups were named "non-leadership" and "transformational leadership". (Figure 1.)

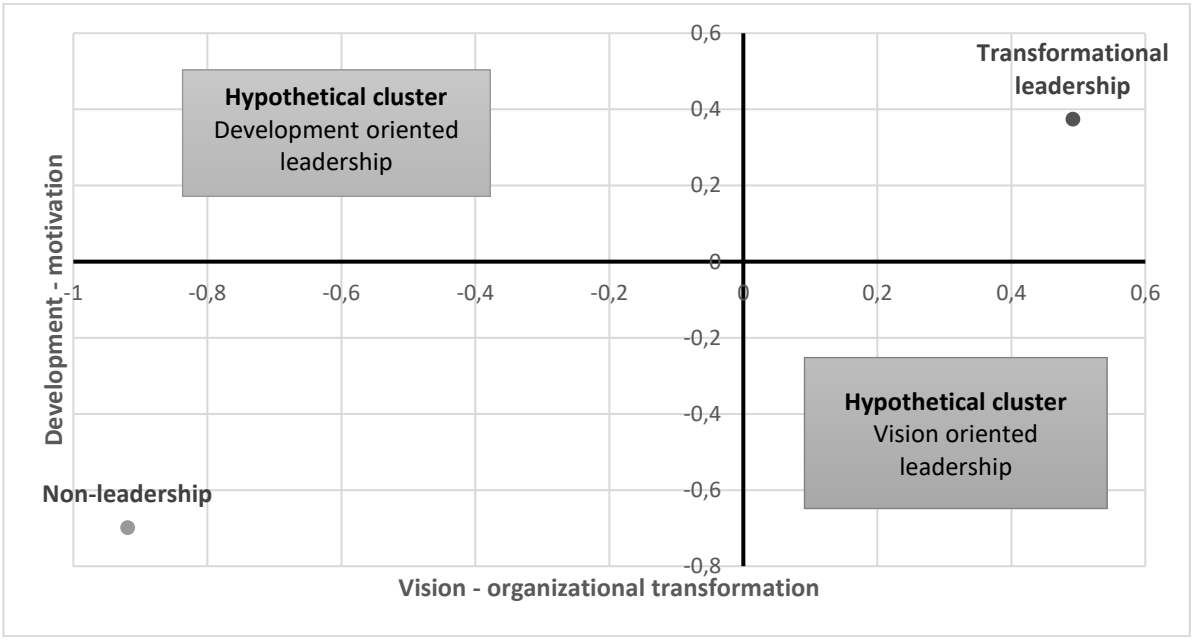

Figure 1. Cluster Centroids
Source: *Authors' own Editing*

Figure 2 shows the factor coordinates assigned to the observation units as a function of development-motivation (stimulation) as well as vision-organizational transformation dimensions. Based on the figure, it can be concluded that the leaders who were included in the transformative cluster are more compact and closer to each other in the space formed by the two scales than those who were included in the non-leadership cluster. We can also see in the figure that some observation units, although classified in one cluster or another, are located further away from other members of the groups. These elements can also be interpreted as "salient" cases. We can assume that "transformative leaders" form a more homogeneous group for each leadership practice. "Non-leaders" are much more heterogeneous. In their case, there are also observation units who received higher evaluations in the dimensions of development-motivation as well as vision-organizational transformation. This confirms us in the assumption that further behavioural combinations and styles can be identified along the two factors, despite the fact, that the fit of the cluster model has a less acceptable goodness index in 3 or 4 cluster groupings

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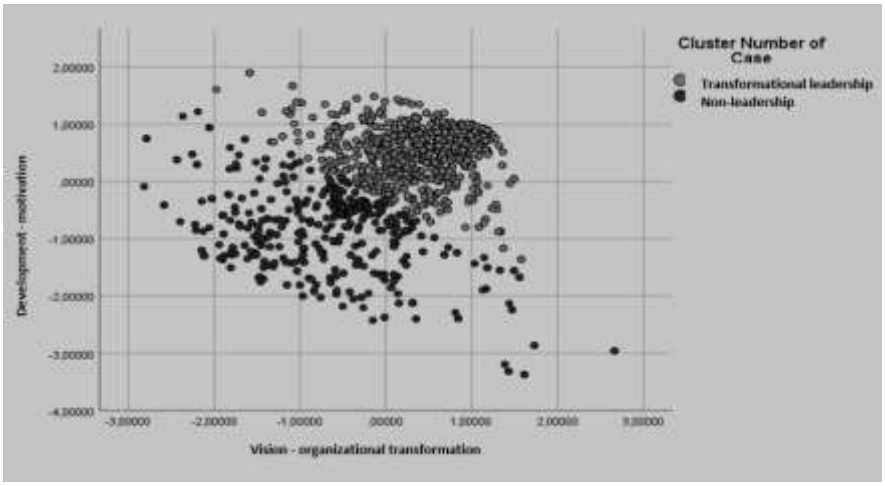

Figure 2. Grouped Scatter of Development-Motivation (Stimulation) by Vision-Transformation by Cluster Number of Cases
Source: *authors' own editing*

To support the identified cluster structure in Transformational leadership a further step is convergent validation (Rozsa *et al*., 2006). For a proper examination of convergent validity, a "self-efficacy" scale was constructed with 14 statements about the conceptual system of self-management and the motivation of the leader.

Through further factor analysis a two-factor structure can be identified behind the 14 items of the overall self-efficacy factor. The first factor includes items of self-management, managerial work efficiency, and satisfaction with the job and the work efficiency. The second factor captures a more emotional side, namely internal motivation state (Kollar, 2019b).

Table 2. shows the matrix of correlation coefficients between the established factors of Transformational Leadership and Self-Efficacy. In each case, the coefficients were recorded at a margin of error of 1 %. The correlation coefficient between development-stimulation and self-management scales is 0.561, indicating parallel orientation and moderate tightness. The relationship between the development-motivation (stimulation) and the leader's motivation scales is also unidirectional, but the value of the correlation coefficient (0.252) refers to a weaker relationship than the average. From these results it can be concluded that managers often characterized as recognizing, listening to, and supporting, empowering their subordinates, are more efficient and effective in setting personal goals and prioritizing own tasks (Kollar, 2019b).

The organizational (vision-transformation) scale is also in a medium-to-direct relationship with the self-efficacy factors, and within those especially with the leader's motivation item. Results indicate that managers who are more characterized by behaviours like searching for opportunities, changing the status quo, experimenting, risk taking, are typically more determined, show more initiative, and are more delighted in their tasks.

Comparing the two transformation scales from the perspective of the factor 1 model of personal efficacy it is shown that personal efficacy is in a medium-strength relationship with the development-stimulation and in a stronger relationship with the vision-transformation dimension. The moderate correlation coefficients confirm the convergent validity of the established transformational leadership scales, too, but for determining that the two scales really measure what we want to measure, further examinations are necessary (ibid).

Table 2

Correlation Coefficients of Transformational Leadership and Self-Efficacy Factors

		Self-efficacy 2 factors Self-management	**Self-efficacy 2 factors Motivation**	**Self-efficacy 1 factor**
Development-motivation (stimulation) (REG)	Pearson Correlation	0.561	0.252	0.576
	Sig. (2-tailed)	0.000	0.000	0.000
	N	1638	1638	1638
Vision- transformation (REG)	Pearson Correlation	0.434	0.586	0.706
	Sig. (2-tailed)	0.000	0.000	0.000
	N	1638	1638	1638

Source: *Kollar (2019a; 2019b)*

After the examination of internal reliability and the convergence validation of the factor structure the yielded two clusters (Transformational leadership, and Non-leadership) are examined along the following objective variables: gender, age, qualification, and organizational ownership, sector, function, and size.

As shown in Table 3 male executives are more frequently evaluated by their subordinates to possess transformational attributes while from women 6 % more people are classified in non-leadership clusters. The Chi2 test associated with the cross-table analysis shows significant differences between the distributions. (Chi2=6.986; df=1; $p<0.01$) (Kollar, 2019a; 2019b).

Table 3

Distribution of Leaders per Cluster Related to Gender

		Gender		Total
		Male	Female	
Transformational leadership	N	633	434	1067
	%	67.80 %	61.60 %	65.10 %
Non-leadership	N	300	271	571
	%	32.20 %	38.40 %	34.90 %
Total	N	933	705	1638
	%	100.0 %	100.0 %	100.0 %

Source: *Kollar (2019a; 2019b)*

Regarding qualifications the proportion of managers with higher (tertiary) education who are in the "transformational" cluster is 66,6 %, while 33.4 % from this segment fall into the "non-leadership" category. From respondents with secondary education 56.3 % are "transformative" and 43,7 % show "non-leadership" behaviours. Few managers with a primary school education were included in the sample, therefore trends can be formulated with some reservations. As shown in Table 4 only 25 % of those who have a primary level qualification are "transformative leaders", and 75 % of them fall into the "non-leadership" category. During the Chi2 trial related to the crosstab analysis, those with the lowest qualification were excluded from the examination due to their low number of elements. In summary, results show that leaders with a higher level of education were more characterized by subordinates as "transformational" than those with intermediate or primary level of qualifications. ($Chi2 = 8.484$; $df = 1$; $p < 0.01$) (Kollar, 2019a; 2019b).

Table 4

Distribution of Leaders per Cluster Related to Qualification

		Qualification of managers			Total
		Primary	Secondary	Tertiary	
Transformational leadership	N	2	116	949	1067
	%	25.0 %	56.3 %	66.6 %	65.1 %
Non-leadership	N	6	90	475	571
	%	75.0 %	43.7 %	33.4 %	34.9 %
Total	N	8	206	1424	1638
	%	100.0 %	100.0 %	100.0 %	100.0 %

Source: *Kollar (2019a; 2019b)*

Regarding average age values, only a very small difference can be found between the transformational and non-leadership clusters (Table 5). The Wilk's lambda index is 0.997, which has insignificant effects on the discriminant function. Based on this, it can be concluded that the assumed age of the leader does not determine their evaluation on the transformation scale (ibid.).

Table 5

The Average Age and Distribution of Leaders per Cluster

		Mean	Distribution
Transformational leadership	age of leader	44.660	9.2018
Non-leadership	age of leader	45.651	9.6656
Total	age of leader	45.005	9.3751

Source: *Kollar (2019a; 2019b)*

As far as managerial levels are concerned, it can be observed that 60.6 % of supervisory level managers are in the "transformational" and 39.4 % of them in the "non-leadership" clusters. This ratio for middle and top-level managers is 69.3-30.7 %, and 65.5-34.5 % respectively.

Table 6

Distribution of Leaders per Cluster Related with Managerial Levels

		Managerial Levels			Total
		Supervisory Level Manager	Middle Manager	Senior Executive	
Transformational leadership	N	297	334	436	1067
	%	60.6 %	69.3 %	65.5 %	65.1 %
Non-leadership	N	193	148	230	571
	%	39.4 %	30.7 %	34.5 %	34.9 %
Total	N	490	482	666	1638
	%	100.0 %	100.0 %	100.0 %	100.0 %

Source: *Kollar (2019a; 2019b)*

In summary, within middle managers there is a higher proportion of those who have been characterized by transformative traits. (Chi2 = 8.468; df = 2; p <0.05) To further nuance the results related to management levels, indices were calculated ((average-minimum) / scope) * 100) along the "development-motivation" and "visioning-organizational transformation" dimensions.

Although the differences are small it can be stated that middle managers scored higher on the development-motivation (F = 1.696; df = 2; p> 0.05), while top managers scored higher on the vision-organizational transformation scale. (F = 5.086; df = 2; p <0.01) In the case of the former, no significant difference can be detected between the category averages, however, in the case of the latter the difference can be statistically justified, although there have been only a few points difference between the mean values. (Figure 3) (Kollar, 2019a; 2019b).

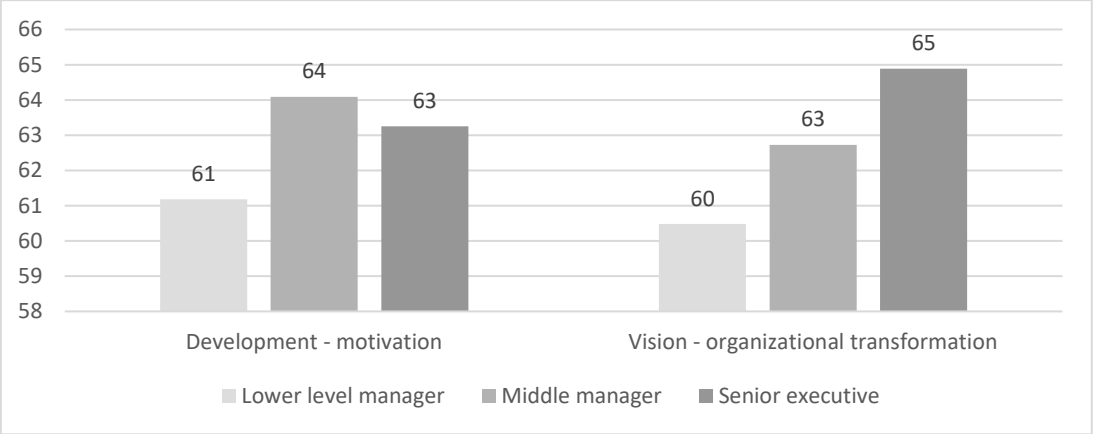

Figure 3. Means of TL Scales by Management Levels
Source: *Kollar (2019a; 2019b)*

As for organizational ownership, "state-owned", "multinational owned", and "private, headquartered in the home country" segments were differentiated. The proportions between "transformational" and "non-leadership" categories in these categories were 60.7-39.3 %, 74.5-25.5 %, and 62-37.7 % respectively. (Table 7).

Summarized, it can be stated that the leaders of multinational organizations were characterized most by transformative signs. (Chi2 = 24.930; df = 2; p <0.01) (ibid.)

Table 7

Distribution of Managers per Cluster Depending on Ownership

		Totally or Mostly Owned by the State	Multinational Owned	Private, Headquartered in the Home Country	Total
Transformational leadership	N	371	344	352	1067
	%	60.7 %	74.5 %	62.3 %	65.1 %
Non-leadership	N	240	118	213	571
	%	39.3 %	25.5 %	37.7 %	34.9 %
Total	N	611	462	565	1638
	%	100.0 %	100.0 %	100.0 %	100.0 %

Source: *Kollar (2019a; 2019b)*

For examining the relationship between leadership behaviours and organizational sectors we have used 11 sectorial categories (Table 8). Table 8 shows that for each category managers are in greater proportion in the "transformative" cluster, but the extent of distribution varies across sectors. Regarding the "non-leadership" cluster the highest proportions are to be found in the field of education, health care and agriculture. As for transformational behaviours, they mostly characterize IT / telecommunications and financial sector managers. (Chi2 = 33.171; df = 10; p <0.01) (Kollar, 2019a; 2019b).

Table 8

Distribution of Managers per Cluster Depending on the Sector

		Cluster		Total
		Transformational leadership	Non-leadership	
Public Administration	N	98	59	157
	%	62.4 %	37.6 %	100.0 %
Education	N	64	50	114
	%	56.1 %	43.9 %	100.0 %
Manufacturing	N	119	68	187
	%	63.6 %	36.4 %	100.0 %

		Cluster		Total
		Transformational leadership	Non-leadership	
Services	N	252	115	367
	%	68.7 %	31.3 %	100.0 %
Health Care	N	55	41	96
	%	57.3 %	42.7 %	100.0 %
IT/Telecommunication	N	92	20	112
	%	82.1 %	17.9 %	100.0 %
Commerce	N	98	63	161
	%	60.9 %	39.1 %	100.0 %
Financial Sector	N	103	44	147
	%	70.1 %	29.9 %	100.0 %
Public Services	N	80	44	124
	%	64.5 %	35.5 %	100.0 %
Agriculture	N	80	60	140
	%	57.1 %	42.9 %	100.0 %
Other	N	26	7	33
	%	78.8 %	21.2 %	100.0 %
Total	N.	1067	571	1638
	%	65 %	35 %	100 %

Source: *Kollar (2019a; 2019b)*

The findings on the relationship between leadership behaviours and organizational functions (Table 9) are partially in accordance with what could be observed regarding sectorial differences. Transformational behaviours mostly characterize managers of IT functional units. The proportion of managers in the transformational cluster is also higher for managers of R&D functional units and of the category "other". It is to be pointed out that managers in the latter category were included in the sample in lower number. In their case, the sensitivity to the outstanding data is higher. ($Chi2 = 21.246$; $df = 9$; $p < 0.05$) (ibid.)

Table 9

Distribution of Managers per Cluster Depending on the Organisational Unit

		Cluster		Total
		Transformational Leadership	Non-Leadership	
Management of the Organisation	item no.	347	194	541
	%	64.1 %	35.9 %	100.0 %
Service Operations and Customer Care	item no.	176	79	255
	%	69.0 %	31.0 %	100.0 %
Personnel, HR	item no.	76	42	118
	%	64.4 %	35.6 %	100.0 %
Finance, Accountancy	item no.	108	74	182
	%	59.3 %	40.7 %	100.0 %
Sales, Trade, Marketing	item no.	100	54	154
	%	64.9 %	35.1 %	100.0 %
PR, Communication	item no.	4	9	13
	%	30.8 %	69.2 %	100.0 %
Production, Technology, Logistics	item no.	101	59	160
	%	63.1 %	36.9 %	100.0 %
IT	item no.	54	11	65
	%	83.1 %	16.9 %	100.0 %
R&D	item no.	34	16	50
	%	68.0 %	32.0 %	100.0 %
Other	item no.	67	33	100
	%	67.0 %	33.0 %	100.0 %
Total	item no.	1067	571	1638
	%	65.1 %	34.9 %	100.0 %

Source: *Kollar (2019a; 2019b)*

Examining the variable organizational size Table 10 shows that transformational behaviours were more characteristic for managers of organizations with higher number of staff. In their case, the proportion of transformational leadership is close to 70 %. In the categories of smaller organizations, a higher proportion of non-leadership clusters is characteristic by the exception of the organizational category "20-49 people". In this category nearly 70 % of managers belonged to the transformative leadership cluster according to the subordinates' opinion. ($Chi2 = 20.591$; $df = 6$; $p < 0.05$) (ibid.).

Table 10

Distribution of Managers per Cluster Depending on the Number of Employees

		Cluster		Total
		Transformational leadership	Non-leadership	
<20	N	142	98	240
	%	59.20 %	40.80 %	100.0 %
20-49	N	152	68	220
	%	69.10 %	30.90 %	100.0 %
50-99	N	118	99	217
	%	54.40 %	45.60 %	100.0 %
100-199	N	207	91	298
	%	69.50 %	30.50 %	100.0 %
200-499	N	148	71	219
	%	67.60 %	32.40 %	100.0 %
500-999	N	112	52	164
	%	68.30 %	31.70 %	100.0 %
1000<	N	188	92	280
	%	67.10 %	32.90 %	100.0 %

Source: *Kollar (2019a; 2019b)*

Discussion and Conclusions

The research question #1 of this study was about the internal variable structure of the questionnaire. In this research, contrary to Carless (2001) who found that the instrument assessed an over-arching higher order transformational leadership, furthermore Sandbakken (2004), and Tourengeau and McGilton (2004) who reported on different types of three-factor structures, and, also contrary to the basic five-factor model (Posner, 2016; Kouzes & Posner, 2021) a two-factor structure was found. The statements in the questionnaire could be paralleled with the leader's interpersonal level (I. e. developmental-motivational), and organizational level (I. e. system-forming) actions (Kollár, 2019a; 2019b). Paralleling the logic of the original dimensions of LPI©, the first factor included all items for the "Encourage the heart (ETH)" and "Enable others to act (EOTA)" practices, as well as four items for the Model the way (MTW) (1; 11; 16; 21.) practice. The second factor included items related to "Inspire a shared vision (IASV)" as well as "Challenge the process (CTP)" practices. Besides, two items belonging to the "Model the way (MTW)" (6; 26) were included in this factor.

Regarding the interpretation of the factors, the first factor can be called the developmental-motivational dimension, and the second can be called the visioning-organizational transformation dimension. If we continue this line of reasoning, it can be said that the items of factor 1. describe the moments of attempts to influence followers as individuals/groups, while the items of factor 2. describe the moments of attempts to transform the organization as a system (Kollár 2019a; 2019b). Based on this, we can statistically underpin the assumption that, in addition to the transformative effect on subordinates, the transformation as described by Kouzes and Posner in their model of Exemplary Leadership© can also be interpreted in a system of structural relations. The results can be paralleled in the literature (Northouse, 2001; 2019) with the suggestion that transformational leadership is a broad concept and can be interpreted both at interpersonal and organizational levels.

Regarding the research issue related to management levels (as part of research question #2), the research found that within middle managers there is a higher proportion of those who have been characterized by transformative traits than within senior executives though the difference between the different hierarchical levels is small. This result can be paralleled with the findings of Elsaid and Mostafa (2015). In their study, they could not clearly demonstrate the impact of managerial hierarchical levels on transformative leadership practice. This result is also in line with what was suggested by Kouzes and Posner (2021) about that leadership difference can be made regardless hierarchical position.

Concerning the relationship of Transformational leadership with some further objective variables (gender, qualification, age, organizational size, sector, and function) the research results indicate the following. Regarding gender, male executives are more evaluated by the respondents to possess transformational attributes. This is contrary to the results of Posner (2016) who found significant higher scores for women leaders, and from a specific aspect to Diaz & Lituchy (2019) whose results suggest that female and male participants attribute similar levels of importance to the role of the leader in the inspiring a shared purpose dimension. Further examinations are needed whether the difference of our research results to other research results–besides broader societal reasons–could be (partly) attributed to gender differences within respondents. As far as qualification is concerned, results indicate that leaders with a higher level of education are more characterized by subordinates as "transformational" than those with intermediate or primary level of qualification. This is in line with the research of Stout-Stewart (2005) who found a positive relationship between education and LPI© scale scores and contradicts to what is suggested by Posner (2016). Regarding age, research results indicate no significant relationship with the managers' evaluation on the transformation scale. This is in line with Posner (2016) but partly contradicts to the results of Herman *et al.* (2017) who found that leaders with a managerial experience of more than 30 years score higher on all five leadership practice scales.

Examining the variable organizational size, data show that transformational behaviours were more characteristic

for managers of organizations with higher number of staff. Partly controversial to this are results from recent research by Burkman *et al*. (2019) from the field of educational leadership indicating that the leadership practices of school leaders do not vary systematically on basis of factors associated with the size of the district or school system, although some differences by school size can be observed.

Transformational leadership practices are observable in many different societal-economic segments (for LPI© scores see, for example, Posner, 2016; McCain, 2010) irrespective of sector, ownership, organizational function differences. The results of this research indicate though that the proportion of managers falling into the transformational leadership cluster is higher in the IT / telecommunications and financial sector, and transformational behaviours mostly characterize managers of IT functional units.

Regarding the issue of the target of the leaders' attempts to influence (research question #3) reference can be made to the results reported above on the factor structure of LPI (research question #1. As shown, data from our research can be paralleled with activities related to management levels. In terms of top management tasks, the emphasis is more on attempts to transform the whole organization and less on transformation at the interpersonal level. Top managers tend to be more characterized by visioning, strategic planning, and efforts to implement controlled change that permeates the organization, but, as our results show it, these activities also characterize middle managers in part.

In evaluating the results, we would emphasize that our research is not considered complete and certain limitations are to be recognized. In this respect contextual and methodological issues can be addressed.

As for contextual issues time factor can be seen as one of especially high relevance. Concerning organizational environmental effects, for example, patterns of work co-ordination, supervision and communication have been considerably changed and are in flux through the pandemic, and the new developments in digitalization/artificial intelligence. Societal values are under constant change, e.g., challenges regarding sustainability, diversity, and the needs for work/life balance and humanistic work experience require new responses and solutions.

Concerning methodological aspects, in future certain limitations to representativeness due to data collection method are to be handled. For further research we plan to include 360º leadership assessments into research methodology; to complete the questionnaire with additional objective variables regarding structure, innovation potential, values, decision rules, and processes of the organization; to include more independent variables describing leader's traits, behaviours, and competencies; as well as investigating the effect of transformational leadership on the engagement and performance of followers.

As for theoretical and practical implications, this paper adds to the research on the psychometric properties of the model of Kouzes and Posner (2002) by proposing a new, two-dimensional structure of leadership practices, and offers managerial use of the results in education, self-development, and organizational practice. Regarding specific sectorial and organizational implications, the results (under certain limitations) suggest that large, international organizations and innovative organizational sectors and functions are most advanced in terms of transformational leadership. From this follows that certain leadership behaviours in these segments might potentially serve as behavioural models for leaders of other companies and organizational functions striving for growth and/or modernization.

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