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## 1. BACKGROUND OF THE TOPIC, OBJECTIVES

Successful organizational operations often include keywords such as rapid adaptation to market changes, learning, ability for renewal, employee engagement, satisfaction, and inspirational capability of the management. The history of leadership was often characterized by passing fashion trends and trendy buzzwords, but in my opinion, we are confronted with important content that expresses the economic and social realities of our time in these terms. The justification of these designations is explained by environmental uncertainty. This characteristic, and within this, environmental predictability, is often described by some as an analogy to turbulence, while others associate different metaphors with the phenomenon. (e.g. Prahalad 2009; Kotler and Caslione 2011; Handy 2008a; 2008b; 2016; Taleb 2012)

Taking into consideration the environmental conditions that can be described along these characteristics, it can be stated that leadership plays a more critical role in the operation of organizations. The increasing complexity and complexity of changes in the environment as well as the complexity of the system itself are even more important for the leaders. (Komor 2009, Kotter and Cohen 2012, House et al. 2004, Ibarra 2015) As critics of the idea Schermerhorn et al. (1994) highlighted that although the leaders' impact on the organisation can be debated by some authors (Newark 2018) the necessity of changes, alterations, adaptation, reaction, proactive thinking and innovation is accepted. The question now is, "How?" Due to the peculiarities of the complexity of the changed political and legal, economic, technological and socio-cultural forces, the leadership theoretical research also demanded a change of paradigm. Authors (Yukl 2010, Northouse 2013) refer to contemporary personal leadership appearing in the 80's as new leadership. The new approach includes charismatic, transformational, vision-centred doctrines, and related and emotional intelligence-based approaches. (Fehér 2010a) The basic assumption of transformational management is that in a precarious and predictable environment, managers need not only focus on the relevant tasks within the given framework. There is a need to put great emphasis on changing the current situation, innovation, entrepreneurship. In addition, leaders need to pay attention to the conscious transformer (developer) influence on their employees and their own development. Depending on these, management theory studies have tried to find answers to what factors stand behind the change in the followers and how to align the employees with a common vision. The results appreciated the importance of values, attractive vision, charisma, emotions, and symbols. (Fehér 2010a; Fehér 2010b)

Despite the fact that the national books on managerial theory mention it, sometimes even a chapter is dedicated to the so-called new leadership paradigm, in Hungary it is a less frequently empirically researched area which forms less of an integral part of the mainstream leadership. The application of mostly Anglo-Saxon results always raises some of the questions and possible limitations of its

national adaptation. The new and emerging leadership theories call for their practical confirmation, utilization and examination of the specific features of implementation. Fehér, in his 2004 doctoral dissertation, explores the possibilities and some practical and theoretical questions of transformational leadership in Hungary. In his paper, he adds new elements to the analysis and interpretation of the emerging issues of the theory. It states that more detailed empirical examination of transformational leadership and its relationship with some objective variables (ownership, business, hierarchical level, etc.) should be carried out within the framework of the national relations system.

### **1.1. Objectives**

I consider my doctoral dissertation as the continuation of Fehér's 2004 work. In my dissertation, I deal with the examination of contemporary leadership theories and approaches, especially with the transformational trend. I present the role of leadership within management. I look at the major leadership theories that led to the emergence of the new leadership paradigm. I deal with the peculiarities of transformational leadership. I analyse the relationship between transformational leadership and historical leadership theories. I will compare the special features of each school, present the theory of measuring leadership behaviour and the research results that were obtained within the subject of transformational leadership. In connection with my dissertation, I will empirically examine the characteristics of transformational leadership in the national organizational system. The operational objectives are as follows.

- O<sub>1</sub>: Adapting Leadership Practices Inventory to examine transformational leadership
- O<sub>2</sub>: Examining the behaviour and practice of executives in the formal organizations in Hungary through the perceptions of their employees and their leadership self-assessment
- O<sub>3</sub>: An examination of some independent variables in relation to leadership behaviour
- O<sub>4</sub>: Examining the relationship between leadership practices and behavioural patterns

### **1.2. Research questions and hypotheses**

- Q<sub>1</sub>: Can the actions of transformative leadership on individuals and organizations be distinguished?
  - H1: Leadership practices and behaviours associated with transformative leadership can be grouped into acts directed at individuals and systems in independent dimensions
- Q<sub>2</sub>: What psychological factors can the characteristics of each style dimension be traced back to?

- H2: There is a significant correlation between transformational leadership and personal efficiency
- Q<sub>3</sub>: Do the objective factors basically determine the characteristics of leadership styles or does each attribute outweigh the variables?
  - H3: Statistically justifiable differences can be observed in the field of transformational managerial practices between female and male leaders.
  - H4: Leaders with higher education can be better characterized by transformational marks than those with a lower level of education.
  - H5: There is a statistically justifiable correlation between the age of the leader and the transformational issues.
- Q<sub>4</sub>: Which leadership levels does transformational leadership approach affect the most, and what roles can it play at other levels?
  - H6: Different levels of leadership are characterized by different traits of managerial transformational motives
- Q<sub>5</sub> - a: What structural framework is most prevalent in transformational leadership?
- Q<sub>5</sub> - b: Can structural barriers be discovered to transformational leadership?
  - H7: Regardless of the business activity, ownership, or organizational function, transformational leadership can be present in any organizational segment.

## 2. MATERIAL AND METHODS

### 2.1. Data collecting methods

My research related to my doctoral dissertation is based on two parts. First, I would like to have a picture on the specific features that can be observed in the national practice of transformational leadership behaviour in some organizational segments and along with other independent variables involved in the research by means of the so-called "observer" method first, and second, by using self-evaluation technique. The data was collected by the Observer and Self versions of the Leadership Practices Inventory (hereinafter referred to as LPI).

The applied questionnaires (LPI Observer; LPI Self) are made up of 3+1 structural units. In the first part, socio-demographic questions (gender, age, experience, qualifications, position, organization data, such as ownership, sector, specialist area, number of employees) had to be answered. The Leadership Practices Inventory Observer and Self version are placed in the next unit. The versions for self-evaluation and external evaluators differ in person and in style (Self = first person singular, Observer = third person singular.) A personal efficiency scale was also developed to further assess the measuring instruments. In the questionnaire for external evaluators, I asked about additional basic data of the evaluators (gender, age, experience, etc.)

Questionnaires were made available offline and online. In the first phase of data collection I worked with the snowball technique. The method belongs to the group of non-probability sampling procedures. Consequently, data collected by snowball techniques may not be considered representative, i.e. they do not accurately describe the population. To match the pattern distribution within the population, the distribution of the attributes of independent variables (e.g. gender, age, management levels, qualifications, scope of activity) were periodically examined. Regarding the characteristics of the population, the Microcensus 2016 - "Changing the Occupational Structure and its Characteristics in Hungary" and "The Economic Activity of the Population" published by the Central Statistical Office and the related data tables have been taken into consideration. (CSO, 2018) During the periodic data analysis, some ratios showed either over-or underrepresentations. In order to eliminate this, I also applied a quota-sampling procedure by direct request to avoid significant distortion within the specified categories associated with the variables due to the deviation in the number of items. It is important to add that the latter sampling technique was not always effective. Respondents' willingness in this case was significantly lower. Hereinafter, the sample is described in detail due to the two types of data recording (LPI Observer, LPI Self).

## 2.2. Data analysing methods

In connection with my research, in addition to translation, I have performed LPI-related reliability and validity tests. Reliability expresses the accuracy of a measuring instrument. The generally accepted reliability index within psychometrics and social sciences is the Cronbach alpha index, which is based on test halving, with the difference that it takes into account the average of all coefficients obtained in the possible half-variation. The value may be 0 to 1. The closer the value of the index to 1 is, the more information can be deduced from the internal consistency of the scale. (Heo et al. 2015)

Validity expresses that the measuring unit really measures what it has been designed for. There are several approaches to the validity criteria (for details see Rózsa et al. 2006). In my dissertation, I primarily deal with the construction and the convergent validation. For the construction validity test I use factor analysis based on Goodwin (1999), Atkinson et al. (2011) and Lu (2006). I examine what internal structures the LPI items take, and after the data reduction whether the cumulative and associated variables form a well-meaning conceptual system and how well the created factors overlap the original item structure. Before the factor analysis, I examine the suitability of the data by means of the KMO, Bartlett test, correlation matrix, anti-image matrix. Several criteria (Kaiser, Jolliffe, variance ratio) are also considered to define these factors. I also run the analysis by main component and image process. I use varimax rotation to create a well-discernible factor structure.

Convergent validity is the validity that is related to another construct, with some degree of coexistence. Rózsa et al. (2006) note that in the case of convergence validity, too strong a correlation coefficient is unacceptable, since in this case the same construct is weighed. In order to properly examine the validity, I have constructed a "self-efficiency"<sup>1</sup> scale. Sosik and Megerian (1999) Fitzgerald and Schutte (2010) Sur and Prasad (2011) have shown that transformational leadership is related to factors such as self-awareness, self-organization, personal efficiency, drive and determination. Accordingly, I defined 14 statements about internal motivation and the conceptual system of self-management. The respondents had to evaluate each one on a scale of 1 to 6, depending on the degree to which they agreed with the statements. I carried out convergence validation by using Pearson's correlation coefficients measured between transformational leadership and personal efficiency scales.

In my dissertation, I examine the types of leadership that can be distinguished along the established factors. Various methods, hierarchical (ward procedure) and non-hierarchical (k-means) clustering methods are used for grouping. In connection with the analysis, I describe the characteristics of the developed clusters along the socio-demographic and organizational variables involved in the data collection. To test the effect of the independent variables, I primarily use

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<sup>1</sup> Here and now, the term used is not analogous with Albert Bandura's „self-efficacy” concept.



Chi<sup>2</sup> tests related to cross-table analysis. In the case of the scales created during factoring, I calculate indexes. Depending on the number of attributes of the independent variables, I examine the differences between the category averages with an independent t-test and some variance analysis.

Questionnaires were made available offline and online. In the first phase of data collection I worked with snowball technique. Due to the periodic analysis of the distribution of attributes of some independent variables, I also applied a quota sampling procedure by direct request to avoid significant distortion within the specified categories of variables due to the difference in the number of items.

### 3. RESULTS

#### 3.1 Exploring the system of behavioural characters that describe transformational leadership

In my dissertation, I analysed the pattern of the LPI Observer's internal variable structure for the sample I collected. While shaping the final factor structure, I did the analysis with the "image process", as well. I used varimax rotation again. The first factor included items for the "encouragement of hearts" and all other elements related to "helping others to acting" practices and the four statements (1.; 11.; 16.; 21.) on showing the way. For the second factor, items "promoting common ideas" and "challenging current solutions" have been added. Two factors belonging to "showing the way" have been included in this factor (6, 26) If we examine the factor weights for each of the statements, we will still find items that may be related to both factors, but while considering the content of items a more understandable factor model was developed. Considering the interpretation of the factors, the first factor can be regarded as a development stimulation factor and the second as a vision-transformational-dimension. In the course of the research, a personal (self) efficiency line has been compiled. The purpose of each item was to serve as control variables to examine the validity of the scales created by LPI items describing transformational leadership behaviour.

With regards to the interpretation of the results, it can be said that the first factor included items related to personal self-management, the efficiency of managerial work, and job satisfaction as well as satisfaction with efficiency. The items in the second factor capture a more emotional side of leadership, the internal motivation state. In summary, it can be stated that the "two-factor" model provides a more intelligible solution. I continued to work on that.

Table 1. shows the matrix of correlation coefficients between the established factors. 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 development stimulation and motivation scales is also unidirectional, but the value of the correlation coefficient (0.252) refers to a weaker relationship than the average. In summary, we can conclude that the managers who have been evaluated by the subordinates to be often characterized by recognizing, listening to, supporting the work of the staff, empowering the subordinates, are more efficient and effective in targeting personal goals and prioritizing their tasks.

The vision transformation scale is also in a medium-to-direct relationship with the self-management and motivation factor. The tightness of the link is stronger for the motivation factor. Leaders whose job description is better characterized by searching for opportunities, changing status quo, experimentation, risk taking, typically more determined, more willing to perform, are delighted in their tasks,

but their subordinates are more in agreement with the statements on which self-management descriptors are found. If we compare the two transformation scales with the 1 factor model of personal efficiency scale, we can conclude that personal efficiency is in a medium-strength relationship with development stimulation and in a stronger relationship with the vision transformation dimension.

Due to the moderate correlation coefficients, we can conclude the validity of the established transformational leadership scales, but in order to determine that the two scales really measure what we want to measure, further examinations are necessary.

Table 1 Correlations between transformational and self-efficacy scales

		Self-efficacy 2 factors self-management	Self-efficacy 2 factors motivation	Self-efficacy 1 factor
development stimulation (REG)	P. Corr	0.561	0.252	0.576
	Sig.	0.000	0.000	0.000
	N	1638	1638	1638
vision transformation (REG)	P. Corr.	0.434	0.586	0.706
	Sig.	0.000	0.000	0.000
	N	1638	1638	1638

Source: author's own editing

### 3.2 Examination of the correlations between single independent variables and transformational leadership scales

In summary, it can be stated (Table 1) that the proportion of male executives is higher among those who are evaluated by their subordinates to possess transformational attributes while in the case of women we see that 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)

Table 2 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
	%	100.00%	100.00%	100.00%

Source: author's own editing

Figure 1 shows the mean of the factor scores for LPI Self data scales, along with male and female executives. From the figure, it can be seen that male managers, in the case of each scale, were more in agreement with the transformational leadership statements than the female leaders. The result of the t-test test suggests that although differences between women and men can be observed in self-evaluation, we cannot justify a gender-specific deviation. In the case of development stimulation ( $t = 1.254$ ,  $df = 339$ ,  $p = 0.211$ ), vision making ( $t = 0.351$ ;  $df = 339$ ;  $p = 0.726$ ) and transformation ( $t = 1.226$ ;  $df = 339$ ;  $p = 0.221$ ) there was no detectable statistical difference between the category averages.

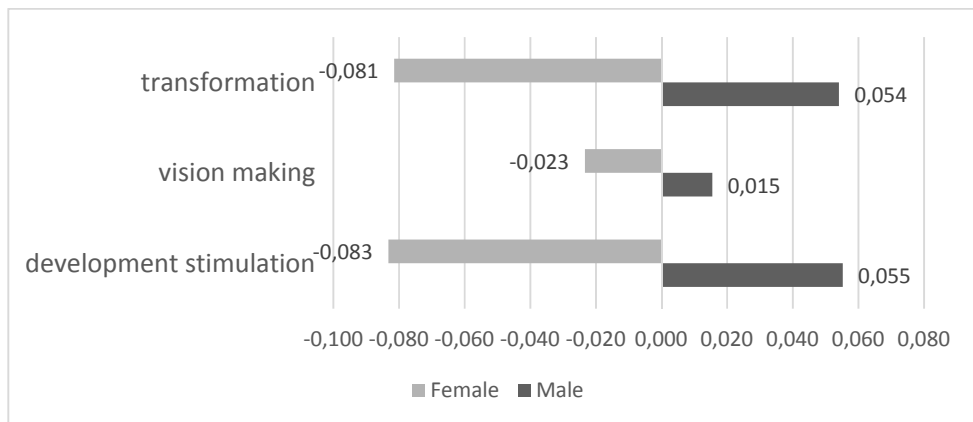


Figure 1 The average values of the factor coordinate of the single transformational scales depending on gender

Source: author's own editing

In summary, it can be concluded that the result of the cross-table analysis strengthens the acceptance of the hypothesis, but the result of the t-test suggests that the characteristics of the leadership practice are not dependent on gender.

66.6 % of managers with tertiary education were classified into the "transformational" cluster. 33.4% were classified in the "non-leadership" category. 56.3 % of leaders with secondary education are "transformative", 43.7% of them are in the "non-leadership" cluster. Few leaders with a lower level of qualification were included in the sample. Consequently, we can formulate trends with some reservations. Regarding their clustering rate, 25% are "transformative leaders", 75% of them are in the "non-leadership" group (Table 2). During the Chi2 trial related to the crosstab analysis, I excluded from the examination those with primary education due to their low number of elements. Based on the results, it can be summarized that managers with a higher level of qualification were characterized by more subordinates with transformational

marks than those with intermediate or primary level of education. ( $\chi^2 = 8.484$ ;  $df = 1$ ;  $p < 0.01$ )

Table 3 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: author's own editing

Based on the self-evaluation data (Figure 2), I examined the differences between the managers with different qualification by means of an independent t-test. Based on the descriptive statistics it can be stated that leaders who have declared that they have a higher education degree are more in agreement with conveying behavioural attitudes than those with a secondary education degree. Based on the results of the statistical tests, I could detect a significant difference in the transformation scale ( $d = -2.121$ ;  $df = 33.12$ ;  $p = 0.042$ ). In the case of the future vision ( $t = -1.845$ ;  $df = 339$ ;  $p = 0.066$ ) and the development stimulation scale ( $t = -1.622$ ;  $df = 339$ ;  $p = 0.106$ ), I could not justify the difference between the category averages based on the t-test. As a constraint on the generalization of the results, it should be noted that managers with a high degree of qualification have been included in the sample, which can distort the results.

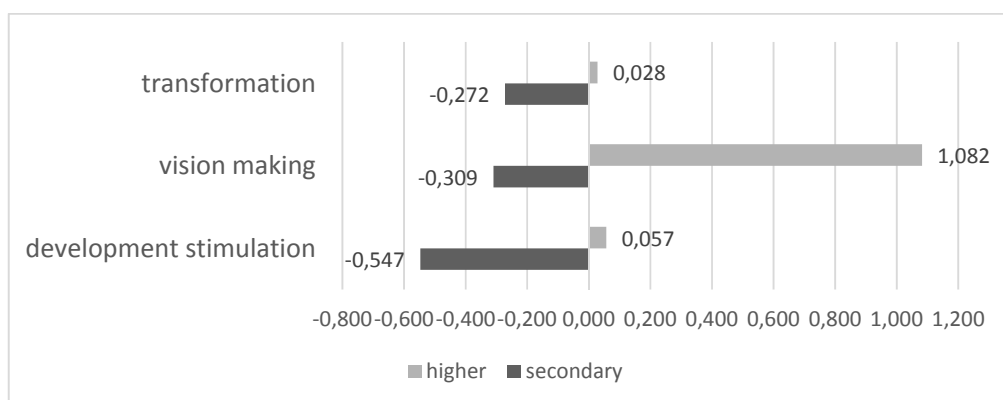


Figure 2 The average values of the factor coordinate of the single transformational scales depending on qualification

Source: author's own editing

There is a very small difference between the average age of each group (Table 4). The Wilk's lambda index is 0.997, which has insignificant effects on the

discriminant function. Based on this, we can conclude that the assumed age of the leader does not determine their evaluation on the transformation scale.

Table 4 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: author's own editing

In self-evaluation data, I studied the relationship between development-stimulation, vision-making, transformation scales and age, work and management experience with Pearson's correlation coefficients. In the variable system, the dependent-independent relation cannot be interpreted. We can conclude only co-habitation from the correlation coefficient. It can be stated that the only correlation between age and development stimulation is statistically  $p < 0.05$  significance level relationship. On the basis of the coefficient (-0.127) we can conclude a very weak relationship in the opposite direction.

In the case of (lower level) executives at work it can be observed that 60.6% of them were "transformational" and 39.4% of them were in the "non-leadership" clusters. For middle managers this ratio is 69.3-30.7%, respectively. 65.5% of top managers were classified as "transformational", while 34.5% were classified in the "non-leadership" category. It can be summarized that regarding the average number of middle managers the ratio of those with transformational attributes is high. ( $\chi^2 = 8.468$ ;  $df = 2$ ;  $p < 0.05$ )

Table 5 Distribution of leaders per cluster related to tasks

		leadership tasks			Total
		manager at work	middle manager	senior manager	
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: author's own editing

The results related to the managerial levels were further indexed<sup>2</sup> along the "development-stimulation" and "vision-transformation" dimensions. I analysed that the index averages for leadership levels differ statistically from each other by variance analysis. The results are shown in Figure 3. The deviations are only one to two percentage points, but it can be seen that the middle managers are in a higher position in the development stimulation scale ( $F = 1.696$ ;  $df = 2$ ;  $p > 0.05$ ), while top executives have achieved a higher score on the vision transformation scale. ( $F = 5.086$ ;  $df = 2$ ;  $p < 0.01$ ) For the former, there is no significant difference between category averages but as for the latter one, statistical deviation can be justified.

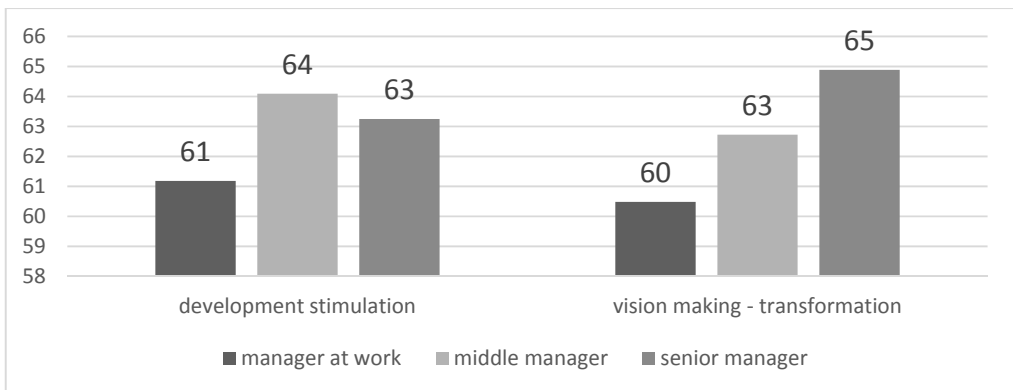


Figure 3 Average values of TL scales depending on the task

*Source: author's own editing*

Based on self-assessment, depending on the task (Figure 4) it can be stated that the items belonging to the scale of transformation were best agreed with by the middle management positions. In the vision making for the future scale, it is well-perceived that managers at work (lower level) have indicated the lower values of the Likert scale. On the basis of self-assessment, top executives could totally agree about items related to the vision. In connection with the development-stimulation scale, it must be mentioned that middle managers are mostly characterized by behavioural actions aimed at the development and encouragement of staff. In order to interpret the results in detail, it is to be noted and somewhat foreseeable that the vision of transformational leadership is more typical of the top executives. I found a statistically justifiable difference between the category averages ( $F = 10.795$ ;  $df = 2$ ;  $p < 0.01$ ), which can be explained by the fact that the (lower level) managers are far less in agreement with the content of the items in the scale. This is confirmed by Tukey's Post Hoc analysis. The test at  $p < 0.01$  level is significant in the manager at work - middle management and senior management context.

<sup>2</sup>  $((\text{average} - \text{minimum}) / \text{range}) * 100$



Figure 4 The average values of the factor coordinate of the single transformative scales depending on the tasks  
*Source: author's own editing*

60.7% of managers in state-owned organizations were "transformational", while 39.3% were in the "non-leadership" cluster. In the largest proportion, 74.5% of managers in multinational corporations were regarded as "transformational". 25.5% of them belonged to the non-leadership cluster. Most leaders of the Hungarian private organizations were also grouped in the "transformative" cluster, 62%, and 37.7% in the so-called "non-leadership" group, respectively (Table 5). Summarizing the results, it can be stated that most of the leaders of multinational organizations were characterized by transformative signs. ( $\chi^2 = 24.930$ ;  $df = 2$ ;  $p < 0.01$ )

When examining organizational segments, I have aggregated the original attributes into 11 categories to equalize the number of items. Table 6 shows that for each segment, the evaluated managers are in greater proportion in the "transformative" cluster, but regarding the extent of distribution we can also find greater differences in some segments. It can be observed that the largest proportion of leaders in the field of education, health care and agriculture are in the "non-leadership" cluster. Transformational signs mostly characterized IT / telecommunications and financial sector managers. ( $\chi^2 = 33.171$ ;  $df = 10$ ;  $p < 0.01$ )



Table 6 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%
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: author's own editing

Examining clusters depending on the organizational unit statements partially in accordance with industry findings can be made. The proportion of managers in the transformational leadership cluster is the highest in IT as the functional unit. The percentage of managers in the transformational group is also higher for research and development, and for those in other areas. I would point out that managers in this functional area 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)

Depending on the size of the organization (Table 7), it can be concluded that in larger proportions the managers of organizations with higher number of staff were characterized by transformational marks. In their case, the transformational leadership cluster includes 70% within each category. It can be seen that organizations with a lower number of employees have a higher proportion of non-leadership clusters than the other categories. This trend is "broken" by organizations employing between 20 and 49 people. In their case,

nearly 70% of the number of managers belonged to the transformative leadership cluster according to the subordinates' opinion. ( $\text{Chi}^2 = 20.591$ ;  $\text{df} = 6$ ;  $p < 0.05$ )

Table 7 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%	100.00%
20-49	N	152	68	220
	%	69.10%	30.90%	100.00%
50-99	N	118	99	217
	%	54.40%	45.60%	100.00%
100-199	N	207	91	298
	%	69.50%	30.50%	100.00%
200-499	N	148	71	219
	%	67.60%	32.40%	100.00%
500-999	N	112	52	164
	%	68.30%	31.70%	100.00%
1000<	N	188	92	280
	%	67.10%	32.90%	100.00%

Source: author's own editing

Analyzing the LPI Self data, along the size of the organization (Figure 5) it can be stated that in the transformation dimension the leaders of organizations employing 50-99, 100-199, 200-499 and 400-999 employees achieved a relative higher score. Units with lower (between 20 and 20 and 49) employee number and the largest ones of the organizations are in the negative direction of the mean. In their case, executives agreed with the statements related to transformation to a lower degree. ( $F = 2.442$ ;  $\text{df} = 6$ ;  $p = 0.025$ ). In the vision making scale, it is also observed that the leaders of organizations employing fewer employees, while the leaders of the higher-ranking institutions, were more in agreement with the vision and future-related items. In this case there is no significant difference between category averages ( $F = 1.538$ ;  $\text{df} = 6$ ;  $p = 0.165$ ). The transformational character captured by the encouragement and development of staff is typical of organizations with the highest number of employees, while the leaders of smaller institutions disagree with the scale-related statements. The difference is not statistically verifiable ( $F = 1.470$ ;  $\text{df} = 6$ ;  $p = 0.188$ ).

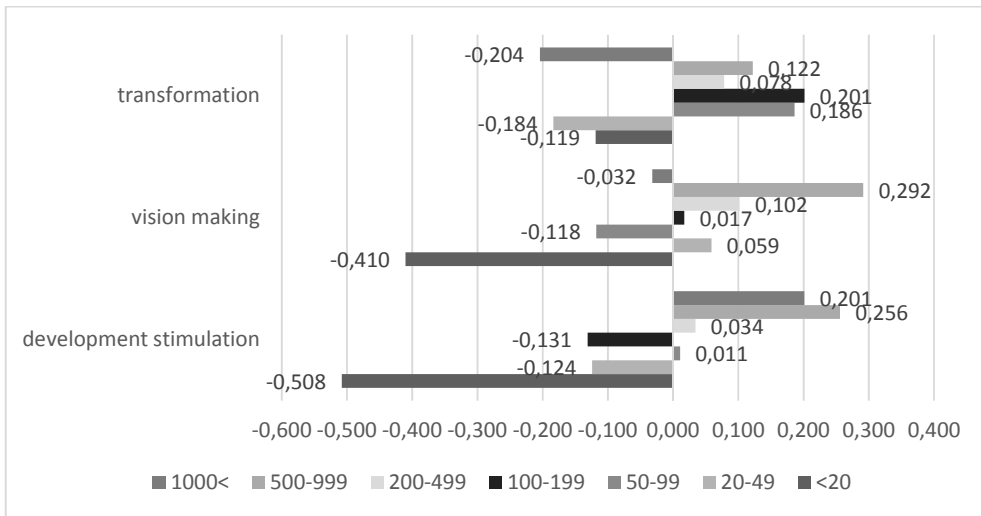


Figure 5 The average values of the factor coordinate of the single transformative scales depending on the number of employees

Source: author's own editing

Regarding self-evaluation, according to the form of ownership (Figure 6) it can be stated that for each of the transformative dimensions, the leaders of the multinational organizations have nominally nominated the higher values of the scale ranges belonging to the items. In the development-stimulation dimension there was a significant difference between the categories. ( $F = 5.316$ ;  $df = 2$ ;  $p < 0.01$ ) From the point of view of the relationship, the difference derives from the Post Hoc analysis, the difference between state-owned and multinational corporations.

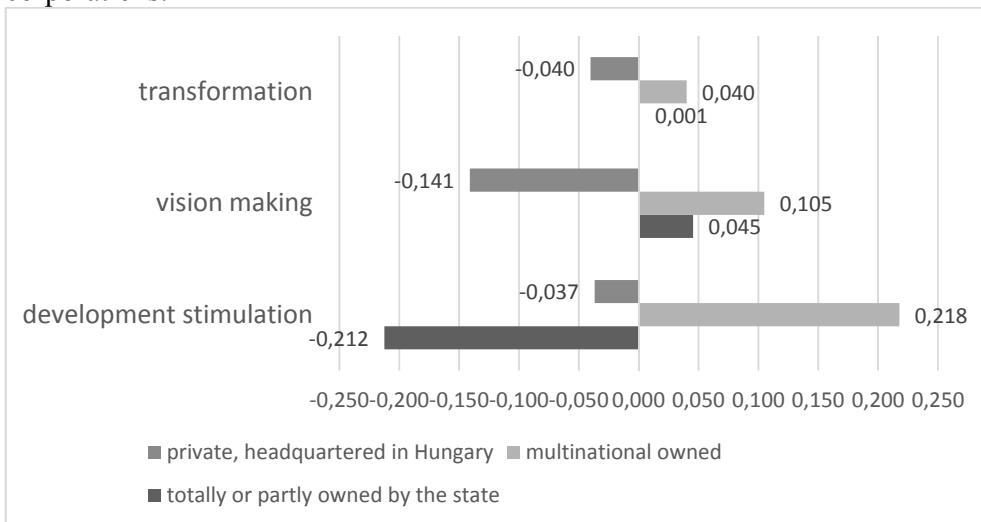


Figure 6 The average values of the factor coordinates of the single transformative scales depending on ownership

Source: author's own editing

### 3.3 New and novel scientific results

**R<sub>1</sub>:** The scientific examination of leadership and leader behavior requires the concept to be measurable. In my dissertation I studied the possibilities of adapting the Leadership Practices Inventory with psychometric and test theory methods. I analyzed the internal reliability of the questionnaire and its validity. For the LPI observer questionnaire, the internal consistency index (alpha) is 0.983 and 0.97 for the LPI self. In the validity tests, analyzing the correlation coefficients together, I showed that the behavior of the leader to develop and encourage staff ( $r = 0.561$ ) and future vision (0.434) is closely related to self-management. All in all, I set up **a series of questions that semantically preserved the original content, the internal consistency of its items is strong and its scale regarding validity is related to already proven constructs, i.e. it meets the criteria for measurement tools.**

**R<sub>2</sub>:** By analyzing Pearson 's correlation coefficients with the previous results, **I demonstrated that the leaders' developing-stimulating and vision - transforming behavior is associated with personal efficiency**, i.e. managers whose job is better characterized by the recognition, support, and paying attention to their employees, seeking challenges and learning from mistakes are more determined, more willing to act, and manage themselves more effectively.

**R<sub>3</sub>:** The results of the questionnaire research partly revealed that transformational leadership can be accessed operatively along the lines of leadership actions on two distinct dimensions. **Consequently, based on the theory of Kouzes and Posner (2010) I built my own transformational leadership model. Using the results of factor analysis and cluster analysis, I identified 4 leader types:**

- **Transformative leaders**
- **Development-centered leaders**
- **Vision-focused leaders**
- **Non-leaders**

**R<sub>4</sub>:** I have examined empirical methods the leaders of the organizations operating in Hungary by means of transformational practices. I have made a comparison of my own pattern with international results. The respondents interviewed, in each of the executive practices, are less in agreement with the statements made compared to international data. **I have found that based on the subordinate perceptions there is a detectable difference between the Hungarian and foreign leaders involved in the study with respect to the transformative characteristics.**

**R<sub>5</sub>:** When examining the gender of the leaders and the individual leadership dimensions, I concluded that gender did not determine the leaders' behavior along the transformational scale but, at the same time, with the help of the two-way variance analysis in the control group **I also highlighted that the gender identity of the evaluators and the evaluated persons ( $F = 6.453$ ;  $df = 1$ ;  $p = 0.011$ ) affect the value judgment. In my research I showed that female subordinates judged male executives, while male subordinates evaluated female leaders more favourably along the transformational scales.**

**R<sub>6</sub>:** Along with the research questions raised about the personal effects of leadership and its organization-related effects, **I have justified the distinctive character of the transformative leadership practices and exercises.** With the image process similar to factor analysis, in the "observer" sample, two management dimensions and in the "self" sample, three factors were identified to retrieve the information content of the 30 leader behavior descriptors. Based on the results we can conclude that the personal influencing mechanism can be present in the case of transformative leadership as well as in the activities that are reported in the organisation or its subsystems. In other words, **during the research, I confirmed the assumption (Fehér 2010a) that the concept of leadership cannot be narrowed down to a personal influencing process, but leadership behavior is also the mechanism of action for the cultural and structural systems of the organization.**

## 4. CONCLUSIONS AND RECOMMENDATIONS

### 4.1. Conclusions and hypotheses tests

*Can the actions of transformative leadership on individuals and organizations be distinguished?*

**H1: Leadership practices and behaviours associated with transformative leadership can be grouped into acts directed at individuals and systems in independent dimensions.**

I assume that the statements of the questionnaire can be paralleled by the leader's personal development, incentive and system-forming actions. Parallel to the logic of the original dimensions of LPI, the first factor included items associated with the "encouragement of hearts" and all other items related to "helping others to acting" practices and the four statements (1.; 11.; 16.; 21.) on showing the way. For the second factor, items "promoting common ideas" and "challenging current solutions" have been added. Two factors belonging to "showing the way" have been included in this factor (6, 26). Regarding the interpretation of the factors, the first factor can be called a development-stimulation factor, and the second is called the vision-transformation dimension. If we continue this train of thought, we can say that the items of factor 1 describe individuals and subordinates, while the parts of factor 2 describe the elements of the organization and its system. On this basis, we can confirm the assumption that transformational leadership can be interpreted beyond the transformational effect on subordinates in a structural relationship. Furthermore, it can be assumed that the actions directed to the system can have some effects on personal development. **The hypothesis is considered justified.**

*What psychological factors can the characteristics of each style dimension be traced back to?*

**H2: There is a significant correlation between transformational leadership and personal efficiency**

During the analysis, I saved the factor coordinates by regression. "Score" means the relative position of the observation units (evaluated leaders) for the two factors.

The correlation coefficients were in each case a 1% error rate. The correlation coefficient between development stimulation and self-management scales is 0.561, indicating parallel orientation and moderate tightness. The relationship between development stimulation and motivation scales is also unidirectional, but the correlation coefficient (0.252) indicates a weak correlation. In summary, we can conclude that the leaders who have been

characterised by the subordinates as recognizing, paying attention to and supporting the work of the staff as well as empowering the subordinates can more efficiently and effectively target personal goals, and are better at prioritizing their tasks.

The vision transformation scale is also in a medium-to-direct relationship with self-management and motivation factor. The tightness of the link is stronger for the motivation factor. Leaders whose job is better characterized by searching for opportunities, changing status quo, experimentation and risk taking are typically more determined, more willing to perform, and more delighted in their tasks, but their subordinates are more in agreement with the statements that are the descriptors of self-management.

In the self-evaluating version of the questionnaire, I compared the one and two-factor structure of the personal efficacy descriptors with the transformational leadership scales. The stimulation dimension is in the same direction and has a strong relationship with the one-factor personal efficiency variable and the two-factor personal efficiency and self-management scale. The relationship between stimulation and motivation is very low. The vision making dimension, each with a personal efficiency variable, has a moderate, parallel relationship. The correlation between the transformational factor and the personal efficiency variables can also be detected, but in this case the linkage is weaker than the average. Based on the correlation coefficients, we can conclude that leaders who believe that their leadership work can be better characterized by focusing on the development of their subordinates, are more efficient in organizing their own work, have the knowledge and experience and do tasks they would like to do, and meet the expectations. The superiors whose leadership work is characterized by the vision of the future, in addition to self-management, think that they are determined, prepared, motivated, cheerful in their duties, and are interested in the problems to be solved. Leaders who are characterized by a higher value on the transformational scale are also more in agreement with personal efficiency statements, but the strength of the scales is much weaker, with a  $p < 0.01$  level of significance. **I accept the hypothesis.**

*Do the objective factors basically determine the characteristics of leadership styles or does each attribute outweigh the variables?*

**H3: Statistically justifiable differences can be observed in the field of transformational managerial practices between female and male leaders.**

Based on the cross-table analysis, it can be statistically demonstrated that male leaders were characterized by transformative signs to a greater extent than women. Regardless of gender, it can be stated that 65.1% of the respondents were grouped in the "transformational leadership" cluster. For men this ratio is

67.8% and for women 61.6%, respectively. 34.9% of the sample was included in the non-leadership cluster. 32.2% of male executives, 38.4% of women were classified into this group. The distributions do not match the  $p < 0.01$  level of signal strength. ( $\text{Chi}^2 = 6.986$ ;  $\text{df} = 1$ ;  $p < 0.01$ ). Concerning the result, I have to add that I have also examined whether the gender of the respondent affects the results. The data suggests that women respondents, female leaders were characterized by lower grades of the 10-grade scale, while male executives were rated at higher scales. In the case of male respondents, it can be observed that they were more critical of the same gender as their own, whereas women superiors were more likely to be judged more favourably. The result can partially be found in Kent et al. (2010). In their research, they could not clearly demonstrate the influence of the leader's gender on transformational leadership behaviour, but their results show that women and men in their sample have more critically assessed each assessment criterion for their own gender leaders. Due to the duality of different background measurements of the evaluated and the evaluating people, **the hypothesis is not considered justified**. It is also supported by the rejection of the assumption that the analysis of the LPI Self database did not statistically demonstrate that the transformational leadership practice of women and men was significantly different.

**H4: Leaders with higher education can be better characterized by transformational marks than those with a lower level of education.**

Considering the leader's assumed qualification, it can be stated that 66.6% of managers with a tertiary qualification were placed in a "transformational" cluster. 33.4% were classified in "non-leadership". 56.3% of leaders with secondary education are "transformational", 43.7% of them are in the "non-leadership" cluster. Leaders with a lower level of qualification were included in low number in the sample. Consequently, we can formulate trends with reservations. Regarding their classification in clusters, 25% of them are "transformational leaders" and 75% of them are in the "non-leadership" group. Based on the data, it can be summed up that managers with a higher-level qualification were better characterized by their subordinates with transformational marks than those with secondary or primary qualification. The distributions do not match the  $p < 0.01$  significance level. ( $\text{Chi}^2 = 8.484$ ;  $\text{df} = 2$ ;  $p < 0.01$ ). The results are partially supported by the self-assessment data of management. On the basis of the statistical tests, in the case of the transformation scale, I could show a significant difference between managers with secondary and higher education. **I consider the hypothesis partially justified**.

**H5: There is a statistically justifiable correlation between the age of the leader and the transformational issues.**



I could not show the influence of the leader's supposed age and experience on transformational leadership. Discrimination analysis pointed out that the age variable has no effect on the discriminant function. This means that regardless of age, the transformational leadership motives can be observed in anybody, so the supposed age of the leader does not determine assessment on the transformational scale. These results are confirmed by the examinations carried out on LPI Self database. Based on the leaders' self-assessments, the correlation coefficients did not show a clear correlation between the age of the manager and his experience. **This hypothesis is not justified.**

*Which leadership levels does transformational leadership approach affect the most, and what roles can it play at other levels?*

#### **H6: Different levels of leadership are characterized by different traits of managerial transformational motives**

Regarding executives at work (bottom level), 60.6% of them are "transformational" and 39.4% of them are grouped in "non-leadership". For middle managers this ratio is 69.3-30.7%. 65.5% of top managers were classified as "transformational" and 34.5% were classified in "non-leadership". It can be inferred that the average number of middle managers characterized by transformational marks by their subordinates is higher. The distribution does not match the  $p < 0.05$  significance level. ( $\chi^2 = 8.468$ ;  $df = 2$ ;  $p < 0.05$ ) If we look at the transformation leadership only by classifying clusters, it can be stated that the middle managers were mostly characterized by transformational signs. Based on the levels of the "development-stimulation" and the "vision-transformation" dimensions, we can conclude that the difference between the category averages is only one to two points. The middle managers scored higher in the development stimulus ( $F = 1.696$ ;  $df = 2$ ;  $p > 0.05$ ), while top executives achieved a higher score in the vision-making scale. ( $F = 5.086$ ;  $df = 2$ ;  $p < 0.01$ )

In the case of the former, there is no significant difference between the category averages, but the latter can be statistically justified by the difference. According to the LPI Self data, depending on the task, it can be stated that the items belonging to the transformation scale were most favoured by the middle management positions. In the case of vision making, the (lower level) managers at the workplace have indicated the lower values of the Likert scale. On the basis of self-evaluation, the top executives agreed the most about items related to the vision. In connection with the development-stimulation scale, it can be mentioned that middle managers are best characterized by leadership practices for the development, encouragement and incentives of staff. The effect of leadership levels could also be demonstrated in the case of vision making. Here, I would point out that the Post Hoc analysis has highlighted that the significant difference between category averages can be interpreted in the manager at work-middle manager as well as the manager at work - senior manager relations. Thus, the statistical test rather points out that the everyday practice of executives at the

lower level of the organizational hierarchy is less characterized by targeting, outlining the vision, explaining future impacts, and does not demonstrate that leadership-related activity in vision would be a top-management privilege. **I consider the hypothesis partially justified.**

*What structural framework is most prevalent in transformational leadership and can structural barriers be discovered to transformational leadership?*

**H7: Regardless of the business activity, ownership, or organizational function, transformational leadership can be present in any organizational segment.**

For LPI Observer data, 60.7% of executives working in state-owned organizations were "transformational", while 39.3% were in the "non-leadership" cluster. In the largest proportion, 74.5% of managers in multinational corporations became "transformational". 25.5% of them belonged to the non-leadership cluster. The leaders of the Hungarian private organizations were also classified in the "transformative" cluster, 62%, and 37.7% in the so-called "non-leadership" group. Summarizing the results, it can be stated that most of the leaders of multinational-owned organizations were characterized by transformational signs. ( $\text{Chi}^2 = 24.930$ ;  $\text{df} = 2$ ;  $p < 0.01$ )

In the case of observer data, on the basis of the analysis of the effect of the organizational segment, in each industry category, the evaluated executives are in greater proportion in the "transformational" cluster, however, in some segments, greater differences can also be determined. It can be observed that the largest proportion of leaders in the field of education, health care and agriculture are in the "non-leadership" cluster. Transformational traits were mostly found in IT / telecommunications and financial sector managers. ( $\text{Chi}^2 = 33.171$ ;  $\text{df} = 10$ ;  $p < 0.01$ ) Some differences suggest that in some segments the transformational nature can be observed more accurately. When looking at factor coordinates in two-dimensional space, the results approximate the ratio of sectors to clusters, but at the same time we can better shape the picture. IT / telecommunications, service and financial sector leaders are here in the transformative field as well. Those in agriculture and healthcare were ranked on the basis of factor coordination in the non-leader category. We can see that factoring scores in a number of industries (public service, state administration, commerce, education, manufacturing, etc.) further break down the grouping possibilities. For example: nearly 80% of executives of organizations with other activities are grouped into a transformational management cluster, while they have been evaluated with a lower score on the vision transformation scale, while in the case of development stimulation they have achieved higher results. The opposite is the case for leaders in the field of education. On the development stimulation scale lower values were measured while in the case of vision transformation it was higher.



















