



Exploring Differences in Leadership Styles in Romanian Software Development Industry

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ABSTRACT

Leadership style is considered an important factor that influences the firm performance. The aim of the present paper is to explore the correlations between the gender and management level of the managers, considered as independent variables, and the managers leadership styles as dependent variables. The study was based on an empirical research undertaken on a representative sample of 80 managers from different hierarchical levels in Romanian software development companies. The research methodology involved a design of two hypotheses, tested by means of Pearson chi-square. The research results emphasize a cultural specific context and some suggestions for future research are provided.

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1. Introduction

Since the 1980s, most research on leadership has focused on the characteristics of the leader and his effects on the organization. The leadership style was linked to the job performance, motivation, organization performance.

Leadership style is defined as the pattern of behaviours that leaders display during their work with and through others (Hersey and Blanchard, 1993). According to Wren (1995), leadership is an effort of influence and the power to induce compliance. Leadership style is the pattern of interactions between leaders and subordinates and includes controlling, directing, all techniques and methods used by leaders to motivate subordinates to follow their instructions (Miller et al., 2002). According to Kavanaugh and Ninemeier (2001), there are three factors that determine the type of leadership style: leaders' characteristics, subordinates' characteristics and the organisation environment.

Based on Goleman's model, the present paper tries to support the body of empirical research for the linkage between leadership styles and management level and managers' gender. The paper is then organised as follows: in the first section, dedicated to literature review, we highlighted the issues referring to the leadership styles; the second section is a description of our research methodology and instrumentation; in the third section, we presented the main findings of the correlation study, using the facilities provided by SPSS software; in the last section, we presented the conclusions, the limitations of our study, its practical implications and the directions in the future research agenda.

2. Literature review

There are two main leadership theories: the emotional intelligence based Goleman's model of leadership (2002) and Bass's transformational-transactional leadership theory.

According to Bass (1990) and Sivanathan et al. (2002), the transformational leadership is characterized by four factors, named the "four I's": (1) idealized influence; (2) inspirational motivation; (3) intellectual stimulation; and (4) individualized consideration. According to Bass (1990), in the transformational leadership, the leader motivates followers by inspiring them, setting challenges and motivating personal development. Transformational leadership encourages the achievement of high collective standards, through a sense of purpose and a common mission and vision. In the transactional leadership style the leader motivates his followers by specific benefits provided that they are capable of accomplishing the tasks assigned to them. The transactional style involves negotiation between the leaders and subordinates. There is also the "laissez faire" leadership style, in which the leader rejects control and allows subordinates to take the decisions.

Goleman connected the emotional competences with leadership effectiveness by categorizing the leadership styles in six types: the visionary, affiliative, democratic, coaching styles (as resonant leadership styles) and the commanding and pace-setting styles (as dissonant leadership styles). According to Goleman et

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al. (2002), the visionary leader mobilizes people toward a vision and has the emotional competencies of self-confidence, empathy, change catalyst, and visionary leadership; the affiliative leader creates harmony and builds emotional bonds and is empathic and competent in conflict management; the democratic leader forges consensus through participation and is a strong communicator and listener, and encourages teamwork and collaboration; the coaching leader develops people for the future and possesses the emotional competences of empathy and emotionally self-aware, and 'developing others'; the pacesetter leader sets high standards for performance and may be highly conscientious, achievement-oriented and highly initiative, but he is generally highly critical and tend to micromanage or take over from subordinates instead of helping them to reach the high standard; and the commanding leader demands immediate compliance and may be strong in achievement drive, initiative, and emotional self-control, but is countered by a lack of empathy (Goleman et al., 2002).

Elliott (2003) outlined that the Goleman's first four styles (the visionary, affiliative, democratic, and coaching styles) are the most complicit with transformational theory and the latest two (the commanding and pace-setting styles) are the most complicit with the transactional theory (focuses on the role of supervision, organization, and group performance).

According to Patel (2013), the attributes women's leadership styles are:

- ◆ Women are perceived as great social risk takers
- ◆ Women are better at recognizing subtle facial expressions
- ◆ Women react to situations with greater emotional intensities than men do
- ◆ Women have less preference for competitive environments (Niederle and Versterlund, 2007).
- ◆ When confronted with uncertainty, women report fear whereas men report anger (Grossman and Wood, 1993).
- ◆ A research of 7280 leaders conducted by Zenger and Folkman (2012) shows that women excel at most leadership competencies.

In order to find out whether there are gender differences in leadership styles, Eagly and Johnson (1990) performed a meta-analysis of 167 studies on gender and leadership styles conducted along 1967-1987. Studies were organised into three types: laboratory experiments, assessment studies and studies conducted in organisations. The main findings of the studies were revealed by the authors: women leaders were more participative or democratic and men leaders were more directive or autocratic. In laboratory and assessment studies, female leaders were concern with the maintenance of interpersonal relationships while male leaders displayed more task-oriented behaviours. Later, van Engen and Willemsen (2000) reviewed the research on gender differences in leadership styles over the decade 1987-1999 and compared with the results of a meta-analysis made by Eagly and Johnson (1990). As was the case in the previous overview, they conclude that the evidence for gender differences in leadership behaviour is still mixed, that these gender differences have not vanished and the gender differences in leadership styles are largely a consequence of the context in which male and female leaders work. Organizational factors like gender-composition of the immediate working context and hierarchical level are important moderators of leadership styles. Another meta-analysis (Eagly, Johannesen-Schmidt, & van Engen, 2003) found some interesting findings: women were more likely to show transformational leadership and to give rewards; men were more likely to exhibit the punishment element of transactional leadership, as well as the laissez-faire style; moreover, women were less hierarchical, more cooperative and collaborative, and more willing to enhance the self-esteem of others.

In a study conducted by Druskat in 1994 on a sample of 6359 subordinates of leaders, where the gender differences in transformational and transactional leadership style were assessed, the female leaders were rated to exhibit significantly more transformational leadership behaviours and significantly fewer transactional leadership behaviours than male leaders.

A research (Spurgeon and Cross, 2006) conducted in a financial services organization, where 356 managers were questioned, revealed some provocative findings: females had strong cognitive competencies but were unable to use them effectively in high interactive situations; although female managers were more capable of transformational leadership, this was not expressed in high interactive situations important for the cross-fertilisation of ideas; female managers have the capability to become transformational leaders and add significant value to organizational performance.

In a study that explores how leadership styles are affected by other-regarding preferences of leaders, Kocher, Pogrebna and Sutter (2009) found that women appear more likely to make *autocratic* than *democratic* decisions compared with men. According to them, female team leaders apply more aggressive strategies than their male counterparts. This phenomenon is often confirmed by the empirical observation that there are few women in top leadership/managerial positions. Male leaders and leaders influenced by group membership tend to employ a democratic leadership style.

According to Solberg's doctoral thesis ("A Gender Perspective on Innovation Management" -2012), there is no difference in the leadership styles of men and women. In groups comprised of both genders, an "androgynous" leadership style was found to be the best for creating a climate for innovation. The study was based on extensive questionnaires answered by 917 top- and mid-level managers in private business in Norway. The questionnaires measured the managers' perceptions of their own gender role identification,

leadership style and innovation climate. According to Solberg, “androgynous” managers have less of a need to put people into boxes, compared to feminine and masculine managers; they have a more coaching style and are empathetic, understanding, democratic and participant oriented; they are concerned about change and are the engine that propels the discussion forward. By contrast, managers who are strictly masculine or feminine create less open groups, resulting in a poorer climate for innovation and more often creates an environment for discrimination.

Several studies have examined the leadership styles and behaviour of managers across hierarchical levels to see whether the leadership styles are similar or differ.

Based on a study with collected data from over 400 managers in the UK organisations, Oshagbemi and Gill (2004) found that generally there were significant differences in the leadership styles between senior and first-level managers, but not between senior and middle-level managers or between middle and first-level managers. Overall, while there was a weak but statistically significant difference between the leadership styles of senior and first-level managers, the differences in their leadership behaviour was statistically strong.

In a study based on data collected from a sample of 360 managers from three levels from automobile industry in and around Delhi and NCR, Ansari and Naeem (2010) found a significant difference between the senior and first-level managers' leadership styles, but not between senior and middle-level managers or middle and first-level managers.

The results of a study on 324 employees of different businesses in India show that transformational and laissez-faire leadership styles of employees differ significantly on job experience, career stage, and hierarchy (Giri and Santra, 2010).

Based an empirical study of the effectiveness of transformational, transactional and *laissez-faire* leadership across hierarchical levels in manufacturing organizations in the UK, Edwards and Gill (2012) have developed a framework of leadership across hierarchical levels that would be useful for leadership development programmes and interventions. At the study managers from 38 companies have participated. The findings of the research showed a distinct pattern of behaviours across different hierarchical levels of organizations: transformational leadership was equally effective across hierarchical levels in organizations, whereas transactional leadership was not effective at the uppermost hierarchical levels in organizations but effective at levels lower down; *laissezfaire* leadership was ineffective at all hierarchical levels.

3. Research methodology

On the basis of prior studies reflecting the issues related to the influence of the managers' gender and hierarchical level on leadership styles, we developed two hypotheses to be tested by means of appropriate statistical methods.

Hypothesis 1: The predominant leadership styles of the managers from the Romanian development software companies are positively related to respondent's gender.

Hypothesis 2: The predominant leadership styles of the managers from the Romanian development software companies are positively related to management level of the respondents.

The target population was represented by managers (top and middle positions) from Romanian software development companies. The main research tool was a questionnaire, structured in two sections. The first section was dedicated to the assessment of the respondents' predominant leadership style, while the second section was conceived in view to determine the respondents' segmentation criteria: sex, managerial position (top or middle), managerial experience and companies' size, reflected by the number of employees. Before the submission of the questionnaire to the target population, it was tested and validated on a small group of five managers from software industry, which were not included in the sample. We sent the questionnaires to a convenience sample formed by 42 software companies, which were filled by 88 managers from different hierarchical levels.

Questionnaires were transferred to the selected participants through electronic mail system and included an introductory letter from the authors, in which the research objectives was presented, accompanied by a commitment of the researchers to respect the confidentiality and anonymity of the answers. Each questionnaire's results were processed by means of an automatic coding scheme in SPSS software, in order to avoid data input errors. Finally, 80 filled questionnaires were stored in a SPSS database, after eliminating the incomplete answers.

The distribution of the population from our research sample according to the segmentation criteria reveal that the majority of respondents are males (71,3%), while the females represent 22,8%; 53,8% from respondents hold middle management positions, while 46,3% are assigned to top management positions; the majority have an experience on managerial positions between 1 and 5 years (33,8%), followed by the interval 5-10 years (30%); in what concerns their dimension, the number of employees of 33 companies (41,3%) is included in the interval (50 - 250), followed by 28 companies (35%), whose number of employees is included in the interval (10 - 50).

The statistical methods that we used in order to test the hypotheses are chi-square, Pearson's R and Spearman coefficients of correlation. Chi-square test is applied in view to determine whether there is a significant difference between the expected frequencies and the observed frequencies in one or more categories. The use of chi-square test involves the design of two hypotheses: the null hypothesis states that there is no significant difference between the expected and observed frequencies, while the alternative hypothesis states they are different. The level of significance (the point at which we can say with 95% confidence that the difference is not due to chance alone) is set at 0,05. The correlation coefficient Pearson's R is a useful descriptor of the degree of linear association between two variables, having two key properties of magnitude and direction. When it is near zero, there is no correlation, but as it approaches -1 or +1 there is a strong negative, respectively positive relationship between the variables. The sign of the Spearman correlation indicates the direction of association between the independent variable and the dependent variable. If the dependent variable tends to increase when the independent variable increases, the Spearman correlation coefficient is positive; otherwise, the Spearman correlation coefficient is negative. A Spearman correlation near zero indicates that there is no tendency for the dependent variable to either increase or decrease when the independent variable increases

4. Findings and discussions

In order to facilitate both descriptive statistics methods and in-depth content analysis of the research results, we designed two contingency tables, reflecting the distribution of the respondents' answers on each correlation between the six leadership styles and the gender and the management level of respondents.

The distribution of research results corresponding to the first hypothesis involves the design of a contingency table with double entry, which allows the classification of the observed frequencies (Table 1).

Table 1. Contingency table associated to the first hypothesis

		Leadership style						Total
		Visionary	Coaching	Affiliative	Democratic	Pacesetting	Commanding	
Gender	Male	10	12	11	8	11	5	57
	Female	2	2	10	2	6	1	23
Total		12	14	21	10	17	6	80

Table generated by SPSS Program

As we can observe from the Table 1, the affiliative style is characteristic to the majority of respondents, followed by the pacesetting style; these results are representative for the software industry, where the goals' achievement involves teamwork and the reinforcement of the links between teams' members. Also, the affiliative style is characteristic to the majority of the female respondents while the coaching style is characteristic to the majority of the male respondents, followed by affiliative, pacesetting and visionary style. The results corresponding to the test of the first hypothesis, after the configuration of the cross-tabulation process using the respondents' answers stored in SPSS database are revealed in Tables 2 and 3.

Table 2. First hypothesis testing by means of chi-square test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7,092 ^a	5	0,214
Likelihood Ratio	7,133	5	0,211
Linear-by-Linear Association	0,434	1	0,510
N of Valid Cases	80		

Table generated by SPSS Program

In this case, the value associated to the Asymptotic significance (0,214) is superior to the level of significance (0,05) and the Pearson Chi-Square value (7,092) is inferior to the Chi-Square value reflected by Chi Square Distribution Table for Degrees of Freedom (11,07), in the context of five freedom degrees, the null hypothesis is accepted, so we can state that there is no association between the gender of the managers from the Romanian software companies and their predominant leadership styles.

Table 3. First hypothesis testing by means of Pearson's R and Spearman correlation

		Value	Asymp. Std. Error ^a	Approx.T ^b	Approx Sig.
Interval by Interval	Pearson's R	0,074	0,103	0,656	0,514 ^c
Ordinal by Ordinal	Spearman Correlation	0,084	0,104	0,746	0,458 ^c
N of Valid Cases		80			

Table generated by SPSS Program

The results of the first hypothesis testing process are also validated by Pearson's R and Spearman correlation coefficients, because their values (0,074, respectively 0,084) are positive, but situated near zero, emphasizing the lack of correlation between the independent variables (managers gender) and dependent variables (leadership styles).

Table 4. Contingency table associated to the second hypothesis

		Leadership style						Total
		Visionary	Coaching	Affiliative	Democratic	Pacesetting	Commanding	
Management level	Top	7	5	7	7	8	3	37
	Middle	5	9	14	3	9	3	43
Total		12	14	21	10	17	6	80

Table generated by SPSS Program

As we can observe from the Table 3, the affiliative style is characteristic to the majority of the respondents who hold middle management position, followed by coaching and pacesetting styles. This not a surprising finding as in the software industry, where the project management is the most used management method, the middle managers meets challenging and exciting goals (the pacesetting style), creates harmony by connecting people by each other (the affiliative style) and connects what a person wants with the organisation's goals (the coaching style). Top management level is characterized by a balanced mixed of almost all leadership styles: pacesetting, visionary, affiliative, democratic and coaching styles.

Table 5. The second hypothesis testing by means of chi-square test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5,047 ^a	5	0,410
Likelihood Ratio	5,127	5	0,401
Linear-by-Linear Association	0,077	1	0,782
N of Valid Cases	80		

Table generated by SPSS Program

In this case, the value associated to the Asymptotic significance (0,410) is superior to the level of significance (0,05) and the Pearson Chi-Square value (5,047) is inferior to the Chi-Square value reflected by Chi Square Distribution Table for Degrees of Freedom (11,07), in the context of five freedom degrees, the null hypothesis is accepted, so we can state that there is no association between the management level associated to the managers from the Romanian software companies and their predominant leadership styles.

Table 6. Second hypothesis testing by means of Pearson's R and Spearman correlation

		Value	Asymp. Std. Error ^a	Approx.T ^b	Approx Sig. ^c
Interval by Interval	Pearson's R	-0,031	0,113	-0,275	0,784 ^c
Ordinal by Ordinal	Spearman Correlation	-0,035	0,113	-0,308	0,759 ^c
N of Valid Cases		80			

Table generated by SPSS Program

The results of the second hypothesis testing process are also validated by Pearson's R and Spearman correlation coefficients, because their values (-0,031, respectively -0,035) are negative, but situated near zero, emphasizing the lack of correlation between the independent variables (management level) and dependent variables (leadership styles).

6. Conclusions

Our paper investigated the correlations between the hierarchical level and gender of the managers from a sample of Romanian software firms and their different leadership styles. Based on our empirical study we can state there is no correlation between the managers' gender and their predominant leadership style and between managers hierarchical level and their predominant leadership style.

Even the hypothesis weren't validated, we still can state that the gender influences more the leadership style than the management level as the value of Asymptotic significance for gender (0,214) is inferior than the value of Asymptotic significance for management level (0,410).

The affiliative style seems to be appropriate to the managers of software development companies. By making sure team members feel connected to each other, this kind of leader is an adept of building teams, in which the talents must be adequately motivated and rewarded, as they represent the most valuable intellectual capital assets of the software companies. Affiliative leaders' positive feedback for task accomplishment gives

subordinates a great sense of having been recognized, which is an excellent motivation for even greater achievements.

Another finding from the in-depth content analysis developed within the contingency tables emphasizes the role of effective leader in software industry: the one who delegates tasks and shares authority with his team, provides technical IT expertise and background for effective leadership.

The main limitations of our research were represented by the fact that we carried out the survey on a convenience sample from a single industry, which limited the number of respondents. Since we have conducted our correlation study in the Romanian software industry context only, we cannot generalize from these findings to other industries.

Future researches in this field might benefit from an extended research sample, by adopting a similar exploratory approach, in which we will be able to test the correlations of leadership styles and hierarchical level and gender of managers in the case of different sectors of Romanian economy.

References

1. Ansari, A.H., Naeem, F. (2010) *Different Leadership Styles across Hierarchical Levels: A Case Study on Indian Automobile Industry*, *Asia-Pacific Journal of Management Research and Innovation* July 2010 vol. 6 no. 3 115-123
2. Bass, B. M. (1990) *Bass & Stogdill's Handbook of Leadership: Theory, Research, and Managerial Applications* (3rd ed.), New York: The Free Press.
3. Durskat, U.V., (1994), *Gender and Leadership Style: Transformational and Transactional leadership in Roman Catholic Church*, *Leadership Quarterly*, 5(2), p. 99-119, <http://gauss.unh.edu/~vdruskat/gender%20and%20leadership%20style.pdf>
4. DeChurch, L.A., Hiller, N.J., Murase, T., Doty, D., Salas, E. (2010) *Leadership across levels: Levels of leaders and their levels of impact* *Leslie The Leadership Quarterly* 21, 1069
5. Eagly, A.H., Johnson, B.T. (1990), *Gender and Leadership style: A meta-analysis*. *Psychological Bulletin*, 108 (2), p. 233-256.
6. Eagly, A. H., M. C. Johannesen-Schmidt, and M. L. van Engen. 2003. *Transformational, transactional, and laissez-faire leadership styles: A meta-analysis comparing women and men*. *Psychological Bulletin* 129:569-91
7. Edwards, G. and Gill, R. (2012) *Transformational leadership across hierarchical levels in UK manufacturing organizations*. *Leadership & Organization Development Journal*, 33 (1), p. 25-50.
8. Elliott, H.G. (2003), *Emotional Intelligence-Based Leadership*, *The Graduate Management Review*, <http://www.business.otago.ac.nz/mgmt/publications/omgr/2003/03elliott.pdf>
9. Giri, V.N., Santra, T. (2010). *Effects of Job Experience, Career Stage, and Hierarchy on Leadership Style*. *Singapore Management Review*, 1st Half, Vol. 32 Issue 1, 85-93, 9.
10. Goleman, Daniel, "Leadership that Gets Results" *Harvard Business Review*. March-April 2000 p. 82-83
11. Goleman, D., Boyatzis, R. and McKee, A., (2002) *Primal Leadership: Learning to Lead with Emotional Intelligence*, Harvard Business School Press.
12. Grossman, M., Wood, W. (1993). *Sex Difference in Intensity of Emotional Experience: A Social Role Interpretation*. *Journal of Personality and Social Psychology*, 65(5), p. 1010-1022.
13. Hersey, P. and Blanchard K.H. (1993). *Management of Organizational Behavior: Utilizing Human Resources*. (6th ed.). New Jersey: Prentice-Hall, Inc.
14. Kaminski, M., Yakura, E.K. (2008) *Women's Union Leadership: Closing the Gender Gap*, *WorkingUSA: The Journal of Labor and Society* · 1089-7011 · Volume 11, p. 459-475
15. Kavanaugh, R.R. and Ninemeier J.D. (2001). *Supervision in the Hospitality Industry*. (3rd ed.). Michigan: The Educational Institute of the American Hotel & Lodging Association
16. Kocher, M. G., Pogrebna, G., Sutter, M., (2009). *Other-Regarding Preferences and Leadership Styles*, *The Institute for the Study of Labor (IZA) in Bonn*, (<http://ftp.iza.org/dp4080.pdf>)
17. Miller, J.E., Walker, J. R. and Drummond K.E. (2002). *Supervision in the Hospitality Industry*. (4th ed.). New Jersey: John Wiley & Sons, Inc.
18. Niederle, M., Versterlund, L. (2007). *Do Women Shy Away from Competition? Do Men Compete too Much?* *Quarterly Journal of Economics*, 122(3), p. 1067-1101.
19. Nithya, S. and Rau, S. (2013), "A Study on Level of Emotional Intelligence of Software Professionals Working in Software Companies", *Proceedings of International Conference on Technology and Business Management*, Dubai, March 18-20, 2013, p. 362-367.
20. Oshagbemi, T., Gill, R., (2004) *Differences in leadership styles and behaviour across hierarchical levels in UK organizations*, Emerald Group Publishing Limited
21. Patel, G., Buiting, S. (2013) *Gender Differences in Leadership Styles and the Impact within Corporate Boards*, *The Commonwealth Secretariat, Social Transformation Programmes Division*, (<http://www.cpahq.org/cpahq/cpadocs/Genderdiffe.pdf>)
22. Pedraha-Rehas, L., Rodríguez-Ponce, E., Delgado-Almonte, M., Rodríguez-Ponce, J. (2006) *Transformational and Transactional Leadership: a Study of their Influence in Small Companies*, *Ingeniare - Revista Chilena de Ingeniería*, vol. 14 N° 2, p. 159-166, <http://www.scielo.cl/pdf/ingeniare/v14n2/art10.pdf>
23. Pescosolido, A. T. (2002) "Emergent Leaders as Managers of Group Emotion", *The Leadership Quarterly*, vol. 13, p. 583-599.
24. Shikha (2012) "Leadership style and emotional intelligence and its Impact on organizational performance", *International Journal of Research in Economics & Social Sciences*, Vol. 2, No. 2, February, <http://www.euroasiapub.org/IJRESS/Feb2012/8.pdf>
25. Sivanathan, N. and Fekken, G. C. (2002), "Emotional Intelligence, Moral Reasoning and Transformational Leadership", *Leadership & Organization Development Journal*, vol. 23, No. 4, p. 198-204
26. Spurgeon, P., Vinette, C. (2006) *Gender Differences in Management Behaviour and Leadership Style: Implications for Organisational Performance* *International Journal of Diversity in Organizations, Communities and Nations*, Volume 5, Issue 6, pp.221-232.
27. van Engen, M.L., Willemsen, T.M. (2000) *Gender and leadership styles: A review of the past decade*, <http://arno.uvt.nl/show.cgi?fid=4218>
28. Zenger, J., Folkman, J. (2012) *A Study in Leadership: Women do it Better than Me*, *Zenger-Folkman Strength-based Leadership development*, <http://www.zfco.com/media/articles/ZFCo.WP.WomenBetterThanMen.033012.pdf>
29. Wren, J. T. (1995). *The leaders companion: Insights on leadership through the ages*. New York: The Free Press. <http://eng.kilden.forskningsradet.no/c52778/nyhet/vis.html?tid=83590>