



Online social networks and leadership

Online social
networks

Implications of a new online working environment for leadership

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Abstract

Purpose – The purpose of this paper is to examine the role of online social networks in experiencing a change in working environment of today's leaders.

Design/methodology/approach – The study's participants were managers, directors and CEOs working in different organizations (including Fortune 500 companies) in the USA, the UK, Germany, France, Russian Federation, Australia and China. The data were collected through structured surveys delivered through LinkedIn to the managers, directors and CEOs. A total of 115 matched questionnaires were returned. Statistical analysis, using STATA software, was conducted to assess the research results.

Findings – The results indicate that the importance of online social networking environment is growing. Furthermore the study shows that online social networks are more useful for participative and consultative leadership style on social networking platforms than for directive leadership style. A higher number of activities on social networks by leaders is positively associated with the higher number of platforms used by leaders for business purposes. It is also correlated with a lower percentage of people from the same organization in the leader's contacts. Finally, the findings also show that the usefulness of online social networks as a tool supporting leadership, depends on the number of activities, number of platforms and size of the company. Surprisingly, age is not a predictor of the usefulness of online social networks.

Practical implications – Leaders that seek ways in which to foster their leadership, need to recognize the importance of online social networking environment and the possibilities of using online relations in various aspects of authentic and situational leadership.

Originality/value – This research provides knowledge regarding the usage of online social networks by many different leaders all over the world and suggests that a new generation of leaders will have to adjust to new working environment.

Keywords Online social networks, e-Leadership, Situational leadership, Authentic leadership, Virtual teams, New generation of leaders, LinkedIn

Paper type Research paper

Social networks and leadership

Many approaches have been used to study online networking. According to the economic sociologists and organizational scholars, networks influence market outcomes in two different ways. The first view, termed by Podolny as “the pipes view,” points out that networks are conduits which transfer credible information about exchange opportunities, goods and resources between interested parties (Burt, 1992; Podolny, 1993). We can find references to this term in the research conducted by

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Granovetter on the role of networks in job search and career management (Granovetter, 1974; Caliendo *et al.*, 2011). Prescriptively, the view of networks as pipes suggests that actors (companies or individuals), occupy structural holes or put themselves in positions of power (Casciaro and Piskorski, 2005). The second view, often called the “prisms view,” states that a network tie between two actors has implications not only for the two actors involved, but also for the third parties not involved in the exchange (Podolny, 1993).

Piskorski proposed the third conception of networks – networks as covers. In this view, interactions with other users of network give actors an excuse to engage in other activities while credibly denying that they are not engaging in such behaviors (Piskorski, 2009).

The importance of social networks in leadership was recognized in the late 1980s. Then management scholars were starting to notice that some managers were superior to other managers when accomplishing objectives through relationships. Kotter (1990) discovered that effective managers spend more than 80 percent of their time interacting with others.

It has been argued that networks are important to accomplish work, gain upward mobility and develop personally and professionally (Ibarra, 1995). The leaders must understand their role within social networks, which influence team performance (Kratzer *et al.*, 2005), in order to strengthen the existing relationships and establish new connections between individuals, groups and other entities (Sidle and Warzynski, 2003).

Online social networking environment (as opposed to real ones) has some different characteristics:

- Different types of relationships: on internet social networking platforms, many relationships do not need any direct interaction. For example following on Twitter, commenting on LinkedIn's groups, and liking on Facebook.
- Various networking platforms: users are registered on different online platforms and, despite having relations in the real world, they do not interact on networking platforms. Some experts argue that too many different communication technologies exist and team members feel overwhelmed (Belanger and Watson-Manheim, 2006).
- Technical skills: some scholars argue that a virtual environment attracts younger generation of workers because of the freedom and independence it provides, as well as its complementary fit with their technical skills (Kaplan-Leiserson, 2005).
- Connection between executives and lower level employees: some experts say that social networking platforms are being used to provide support and input that employees used to get from their managers and to convey information from the executive suite down to lower level employees who often work in different time zones and various locations (Birkinshaw, 2011).
- Virality and speed of information are shared by many individuals from different communities: online networking enable leaders to promote their online brand faster than the real ones because it is possible to reach a broader audience very quickly (Korzynski, 2012).
- Interpersonal interaction: online social networks are good at processing complex information or tasks, but unfortunately they are often poor in supporting interpersonal interaction and relationships (Jarvenpaa and Tanriverdi, 2003).

There are a few conclusions related to the above-mentioned issues. First, new types of relationships, a number of platforms, and more advanced technical skills lead to an argument that online social networking platforms attract more often a younger generation of leaders. Second, online social networking platforms should play a more

important role in large size organizations, where it is more difficult to convey information from executives to lower tiers using traditional channels of communication. Third, leaders' engagement in online networking as indicated by the number of operations on the platform depends on the number of platforms that are used by leaders and the percentage of leaders' connections from inside and outside the organization.

Leadership theories

Several theoretical approaches have been proposed to study leadership. To review the activities leaders use while undertaking human capital management in the organization, we used the theory of situational leadership and the theory of authentic leadership.

Theory of situational leadership

The early situational leadership theories were created between the 1940s and 1960s. Scholars argued that effective leaders can develop and adopt certain styles or behaviors such as consideration (behavior reflecting friendship, warmth, trust), and initiation of structure (behavior defining roles and responsibilities of followers, providing directions, instructions) (Fleishman, 1953; Bowers and Seashore, 1966).

At the end of 1960s, Tannenbaum and Schmitt (1958) analyzed different patterns of leadership behavior and their influence on the type of leadership. They looked at their effects on short- and long-range objectives. The leader selects one of seven behaviors, ranging from democratic to authoritarian. They assumed that successful leaders are aware of the forces that are important for their behavior and behave accordingly with a great deal of flexibility.

At the beginning of 1960s, Blake and Mouton developed existing theories and provided a model grid with two basic dimensions of an effective leader – the concern for results (task, production) and concern for people (Blake and Mouton, 1964). They established five key managerial styles: impoverished, country club, middle of the road, authoritarian and team.

The contingency models of leadership (1960s-1970s) further tried to link leadership style directly to situational variables. The Fiedler contingency model examines the leader's effectiveness in a situational contingency. The theory defined two types of leaders: one who tends to accomplish the task by developing good relationships with the group (relationship-oriented) and one who pays special attention to the carrying out the task itself (task-oriented) (Fiedler, 1967). Both task-oriented and relationship-oriented leaders can be effective if their leadership orientation fits the situation. The situation is considered a "favourable situation" when there is a good leader-member relationship, a highly structured task and high leader position power.

The situational leadership model proposed by Hersey and Blanchard assumed that effective and successful leaders adopt situationally appropriate styles or behaviors. The most successful leaders are able to match their leadership style (telling, selling, delegating and participating) with the level of maturity of their followers. Four levels of maturity relate to the capacity to set high but reasonable goals: the willingness to take responsibility for the task, the ability to take responsibility for the task, relevant education as well as the experience of an individual or a group. Effective leadership depends not only on the person or group that is being influenced, but also on the task, job or function that needs to be accomplished (Hersey and Blanchard, 1969, 1977).

Vroom, in collaboration with Yetton (and later with Jago), developed a theory that describes leadership situations using a normative decision model (Vroom and Yetton, 1973; Vroom and Jago, 1988). Five types of leader decision-making styles (strongly

autocratic, autocratic, consultative, strongly consultative, group based) were identified. According to this theory, the appropriate style is determined by answers to eight diagnostic questions assessing such contingency factors as the importance of decision quality, the structure of the problem, sufficient information necessary for subordinates to make a quality decision and the importance of subordinate commitment to the decision.

House presented the path-goal theory in 1971 and the theory was revised in 1996. The first version of the theory states that a leader's style (directive, supportive, delegating, participating) depends on the task and subordinates' preferences (House, 1971). The revised version, based on the work environment of an organization (unknown technology or conflicts), proposes two additional leadership styles: work facilitation (by responsible planning and coordinating the task) and interaction facilitation (by resolving disputes, emphasizing the importance of the teamwork and encouraging the collaboration). Similar to other models of situational leadership, House's theory argues that leaders analyze the situation before attempting a leadership intervention. Later studies on the situational leadership paid attention to the combination of leadership style and work environment (Thamhain and Wilemon, 1977) and to differences in management style depending on project type (Shenhar, 1998; Kangis and Lee-Kelley, 2000; Turner and Muller, 2006).

All of the above-mentioned theories considered a few types of leaderships, which are related to some extent to the application of participative versus directive leadership style, depending on a situation or environment (Table I).

Due to the development of communication technology, the entire working environment has been changing. Leadership scholars have recently argued that an effective leadership depends on the characteristics of the leader and the situation (Jones and George, 2009).

We could compare this changing working environment to the situation from situational theories. During the past few years, we have witnessed a transformation of many traditional working environments to an IT-enabled "e-workplace" (Arnison and Miller, 2002). However, we have to underline that this is not only technological, but also huge social change (Diemers *et al.*, 2007).

A new generation of leaders will need to learn to use new technology to support their leadership development (Duarte and Snyder, 2001). Therefore, a new term

Approach used in the paper	Hersey and Blanchard (1969)	Fiedler (1967)	Vroom and Yetton (1973), Vroom and Jago (1988)	House (1971)
Directive	Telling	Task oriented	Strongly autocratic	Directive
Consultative	Delegating Selling	Relationship oriented	Autocratic/consultative Strongly consultative	Delegating Supportive
Participative	Participating		Group based	Participating
	Level of maturity	Relations, task, power	Main situational factors (Importance, commitment, access to information)	Task (followers' abilities) and followers' preferences

Table I.
Overview of leadership styles in situational theories

Source: Fiedler (1967), Hersey and Blanchard (1969), House (1971), Vroom and Yetton (1973), Vroom and Jago (1988)

appeared – “e-leaders” – who must perform their leadership roles primarily through online communication (Zaccaro and Bader, 2002).

Concerning the structure, expectations and implementation, e-leaders play an important role in the establishment of efficient communication practices (Zigurs, 2002; Hertel *et al.*, 2005). To communicate online effectively, e-leaders should encourage their team members to exchange information (Cascio and Shurygailo, 2002).

Experts argue that depending on task characteristics, the frequency of communication has a curvilinear relationship with virtual team performance outcomes (Timmerman and Scott, 2006). As a result, e-leaders should pay special attention to the frequency of communication and to the use of a particular technology (Walvoord *et al.*, 2008).

Considering the fact that e-leaders need to encourage their followers to exchange information and communicate frequently, it is very likely that online social networks are more useful for participative and consultative leadership style than for directive one.

Theory of authentic leadership

Various definitions of authentic leadership have been proposed over the years. Henderson and Hoy (1983) suggested one of the earliest conceptions of leadership authenticity and inauthenticity. Other scholars also differentiated leaders as either authentic transformational leaders or pseudo (or personalized) transformational leaders who lacked authenticity (Avolio and Gibbons, 1988; Bass and Steidlmeier, 1999; Howell and Avolio, 1992).

In the 2000s, George (George, 2003; George and Sims, 2007) contributed significantly to the emergence of both practitioner and scholarly interest in authentic leadership. Given his practitioner background, his conception reflects many components of other definitions in the leadership literature. According to George's conception, authentic leadership comprises following dimensions: learning from life story, knowing the authentic self, practicing personal principles, balancing the intrinsic and extrinsic motivations, building support teams, integrating all elements of life (work, family, community and friends) and empowering people to lead.

Luthans and Avolio (2003) began to formalize a theory of authentic leadership and argued that authentic leaders should be self-aware, transparent in their leadership and consistent in their core beliefs and values.

As the theory became popular, scholars presented more and more complex models of authentic leadership, focussing on the relationship of leadership and employee attitudes with behaviors including commitment, performance and well-being (Avolio *et al.*, 2004; Gardner *et al.*, 2005; Ilies *et al.*, 2005; Klenke, 2005). According to these models, four main factors influence authentic leadership: self-awareness, transparency, balanced processing and ethics (Bass and Steidlmeier, 1999; Kouzes and Posner, 2002; May *et al.*, 2003; Sparrowe, 2005; Walumbwa *et al.*, 2008)

In all of the above-mentioned concepts, authentic leaders interact directly with their followers or analyze their own values, passions and emotions. However online networking can serve as a tool supporting authentic leadership. Because that e-leaders should pay special attention to the frequency of communication and to the use of a particular technology (Walvoord *et al.*, 2008), it is very likely that increased online activity (reflected by more online leadership operations and the use of different platforms) will result in greater usefulness of online social networks.

Summary of hypotheses

According to the above, five (explanatory and exploratory) hypotheses were formulated:

- H1. The importance of online social networks as a tool supporting leadership is growing. (The current working environment, as opposed to the past, has led to a higher level of importance for online social networks. The future working environment, as opposed to the current one, will further increase the importance for online social networks).
- H2. Online social networks are more useful for participative leadership style than for consultative one while online social networks are more useful for consultative leadership style than for directive one.
- H3. The usefulness of online social networks as a tool supporting leadership is higher among younger generation of leaders especially in large global companies.
- H4. The number of online operations depends on the number of platforms used for business purposes and the connection percentage from the same organization on the external networking platform.
- H5. The usefulness of online networking for authentic leaders depends on their online activity.

Method

Sample characteristics

The participants were randomly selected managers, directors and CEOs working in different size organizations (including Fortune 500 companies) (Figure 1) in the USA, the UK, Germany, France, Russian Federation, Australia and China (Figure 2). The data were collected through structured surveys delivered through LinkedIn to the managers, directors and CEOs in October and November 2011. The sample consisted of 114 leaders of which 78.95 percent were males. Figure 2 shows the respondent’s age structure.

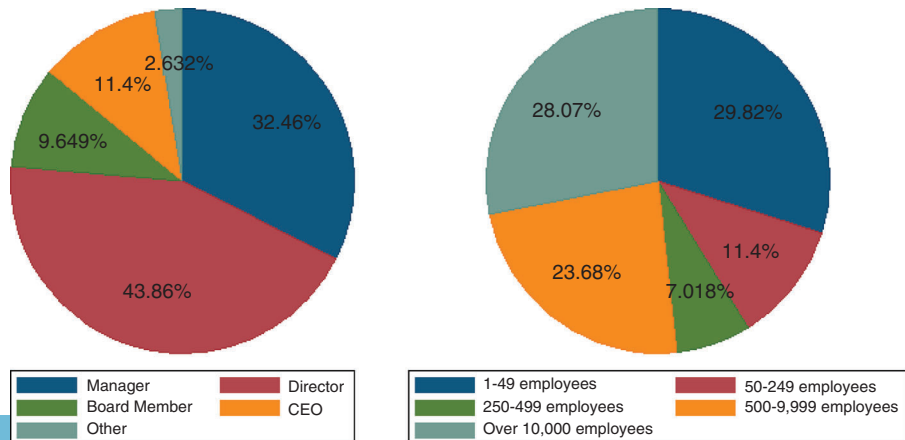


Figure 1.
Respondents by position and company size (number of employees)

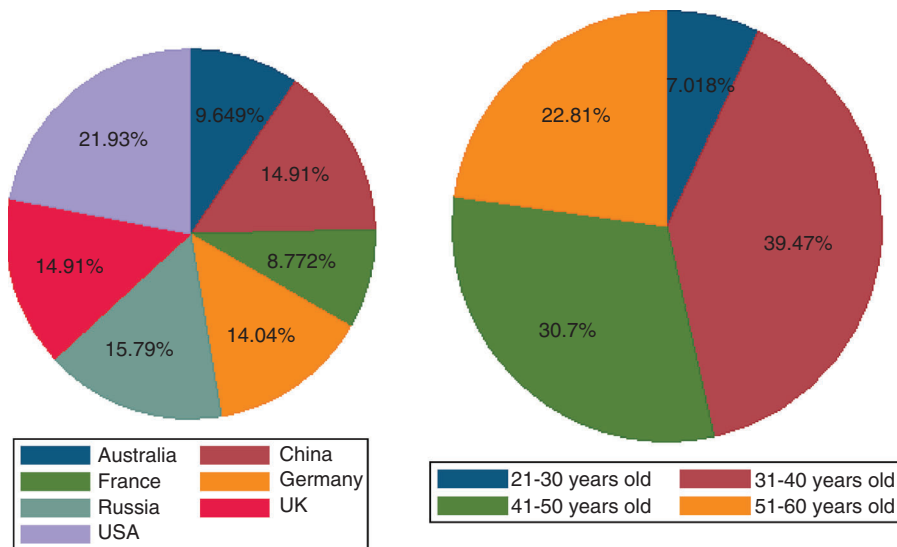


Figure 2.
Respondents by country and gender

Research procedure and measures

The questionnaires consisting of 11 categories of questions were sent to different leaders through LinkedIn.

The following variables were included in the questionnaire:

- The importance of online social networks as a tool supporting leadership. Research participants were asked to consider their working environment three years ago, current working environment and future one (in three years).
- The number of activities on online social networking platforms. Leaders were asked to choose their online activities on the social networking platform: building personal brand and controlling the online identity; reaching a broad audience rapidly; presenting new accomplishments, skills and experiences; showing commitment to a cause and demonstrating a capacity for reflection; connecting with experts who could support tasks; gaining information; receiving job offers from other organizations; stimulating the communication among users; communicating with other employees in their organization, sharing knowledge with other employees in their organization; discussing projects within their organization; encouraging knowledge sharing; finding potential clients; and supporting the brand in their organization.
- The number of barriers they saw to using online social networks: respondents were able to choose from the list of following barriers: privacy issues; lack of time; lack of sufficient knowledge; lack of advantages; lack of appropriate tools; focus on other issues; and other barriers.
- The number of risks: respondents were able to choose from the list of following risks: rumors and gossips; cost increase; knowledge escape; increase in employee's turnover; decrease in employees efficiency; decrease in productivity; IT Security risks; risk of poor employee behavior on the sites; brand damage; and other risk.

- The number of social networking platforms used for business purposes: several networking platforms were listed in the questionnaire and respondents were asked to choose those the ones they used in business. The platforms included LinkedIn; Viadeo; Xing; Facebook; Twitter; Google + ; internal social networking platform; other platform.
- The percentage of connections from the same organization on LinkedIn: Leaders were asked about the approximate percentage of people who were working in the same organization and were listed in their contacts on LinkedIn. Afterwards we generated a variable with the two following values: 0-40 percent connections from the same organization and 41-80 percent connections from the same organization.
- The usefulness of online social networking as a tool for authentic leadership: according to the George's theory of authentic leadership, respondents were asked to evaluate usefulness in reference to the following authentic leadership elements activities (on scale from 1 to 5, where 1 is not useful, 5 is very useful): learning from life story; practicing and demonstrating personal values and principles; balancing intrinsic (e.g. personal growth) and extrinsic motivations (e.g. financial rewards); building your support team; integrating different part of life (e.g. work, family, community and friends); and empowering people to lead. A sample question from the survey is: "The journey of authentic leadership begins with understanding the story of your life. Your life story provides the context for your experience, and through it, you can find the inspiration to make an impact in the world. How useful would it be for social networking to have the ability to replay events and personal interactions that are important in your life, attempting to make sense of them to find your place in the world?". The Cronbach's α coefficient was 0.8458. The variable was generated as a rounded mean.
- Usefulness of online social networking as a tool for participative, consultative and directive leadership style: respondents were asked to evaluate usefulness of different leadership activities, such as allowing input, encouraging, giving orders, setting expectations, educating and coaching (on scale from 1 to 5, where 1 is not useful, 5 is very useful), which were categorized into three leadership styles: directive, consultative, participative. The Cronbach's α coefficient was 0.8678. The variable was generated as a rounded mean.

Data analysis

The statistical package used in this study was STATA. First, descriptive statistics and correlation analysis were applied to establish the hypothesis. Then, Wilcoxon signed rank sum tests were applied to test the means of the significance of online social networks as a tool supporting leadership (in past, current and future working environments) and to test the usefulness of online social networking as a tool for participative, consultative and directive leadership style. In the next stage, we used Poisson and ordered logistic regression to determine the relative impacts of the study variables on the number of online leadership activities and usefulness of online social networking as a tool for authentic leadership.

Results

Descriptive analysis

Table II presents the means and standard deviation and Table III shows correlation coefficients among the study variables.

<i>Ordinal variables</i>	<i>Median</i>		<i>Minimum</i>	<i>Maximum</i>
1A. Importance of the social networks in current working environment	4		1	5
1B. Importance of the social networks in past working environment (3 years ago)	2		1	5
1C. Importance of the social networks in future working environment (in 3 years)	4		1	5
2. Usefulness of online social networking as a tool for authentic leadership	3		1	5
3. Usefulness of online social networking as a tool for participative leadership style	3		1	5
4. Usefulness of online social networking as a tool for consultative leadership style	2		1	5
5. Usefulness of online social networking as a tool for directive leadership style	2		1	5
<i>Discrete/interval variables</i>	<i>Mean</i>	<i>SD</i>	<i>Minimum</i>	<i>Maximum</i>
6. Number of activities on online social networking platforms	6.89	3.05	0	13
7. Number of barriers for using online social networks	1.40	0.96	0	5
8. Number of risks of using online social networks	2.69	1.73	0	7
9. Number of social networking platforms used for business purposes	2.82	1.29	1	6
10. Age	41.92	9.03	25	55
<i>Nominal variables</i>	<i>Frequencies</i>	<i>%</i>	<i>Minimum</i>	<i>Maximum</i>
11. Company size			0	1
Small and medium companies (1-500 employees)	55	48.25		
Large companies (over 500 employees)	59	51.75		
12. Gender			0	1
Female	24	21.05		
Male	90	78.95		
13. Position			1	5
Manager	37	32.46		
Director	50	43.86		
Board Member	11	9.65		
CEO	13	11.40		
Other	3	2.63		
14. Country			1	7
USA	25	21.93		
China	17	14.91		
Russia	18	15.79		
Australia	11	9.65		
Germany	16	14.04		
UK	17	14.91		
France	10	8.77		
15. Percentage of connections from the same organization on LinkedIn			0	1
0-40%	105	92.92		
40-80%	8	7.08		

Table II.
Descriptive statistics

	1A.	2.	3.	4.	5.	6.	7.
1A.	1.0000						
2.	0.5235*	1.0000					
3.	0.4101*	0.4648*	1.0000				
4.	0.4250*	0.5599*	0.7641*	1.0000			
5.	0.3245*	0.3097*	0.6414*	0.6055*	1.0000		
6.	0.1166	0.1196	0.0492	0.0532	-0.1153	1.0000	
7.	0.2333*	0.2131*	0.2801*	0.2970*	0.1916*	-0.0622	1.0000
8.	-0.0409	-0.0868	-0.0553	-0.0836	-0.0832	0.0888	0.1603
9.	0.0170	0.0221	-0.0667	-0.0021	-0.0911	0.0759	0.1965*
10.	0.2420*	0.2009*	0.2848*	0.2720*	0.2851*	-0.2200*	0.2414*
11.	0.1274	-0.0655	0.0669	0.1046	-0.0158	-0.1012	0.0511
12.	0.0714	0.1188	0.1509	0.1353	0.1493	0.1533	-0.0433
13.	-0.0209	-0.0403	0.0974	0.0468	0.0677	-0.3190*	0.1687
14.	0.0038	-0.1267	-0.0539	0.0154	-0.0425	0.1085	-0.0422
15.	-0.0521	-0.0612	-0.1243	-0.0644	-0.0556	0.1806	-0.2783*
	8.	9.	10.	11.	12.	13.	14.
8.	1.0000						
9.	0.2684	1.0000					
10.	-0.0470	-0.0405	1.0000				
11.	0.0057	-0.0347	0.1511	1.0000			
12.	-0.1948*	0.0007	0.0829	0.0612	1.0000		
13.	-0.0601	0.0263	0.1968*	0.3788*	-0.0337	1.0000	
14.	-0.0814	0.0670	0.0282	-0.1098	-0.0368	-0.1033	1.0000
15.	-0.0531	-0.1492	-0.0937	-0.0187	0.0604	-0.2023*	0.0011

Table III.
Spearman correlation
coefficients

Note: *Correlation is significant at the 0.05 level

The results indicate that the usefulness of online social networking as a tool for authentic leadership is significantly related to the number of activities on online social networking platforms and number of networking platforms ($p < 0.05$). It can be seen that the relationship between age and the usefulness of online social networks is not significant. Figure 3 shows different age groups and the usefulness of the social networks in the current working environment. The analysis indicates a higher percentage of leaders in the age category of 21-30 years old with a high evaluation of the usefulness compared to other groups. However, we should be careful when drawing any strong conclusions because of the small number of leaders in this category. Furthermore, in other age categories, the percentage distribution is similar. In addition, we cannot see any significant relationship between the size of the company and the usefulness of online social networking as a tool for authentic leadership. The results do not reveal any significant relationships between barriers or risks and the number of online activities of the leader. Figures 4 and 5 show the barriers and risks. The most important barriers are privacy issues and the lack of time. The most important risks are: brand damage, increased employee turnover and poor employee behavior on the internet sites.

Comparing the importance of social networks in the current and past working environments and the current and future working environment

For the first Wilcoxon signed rank sum test, two variables, the importance of the online social networks in current working environment and importance of the online social networks in the past (three years ago), were compared. The results suggest that there is a statistically significant difference between the underlying distributions of the

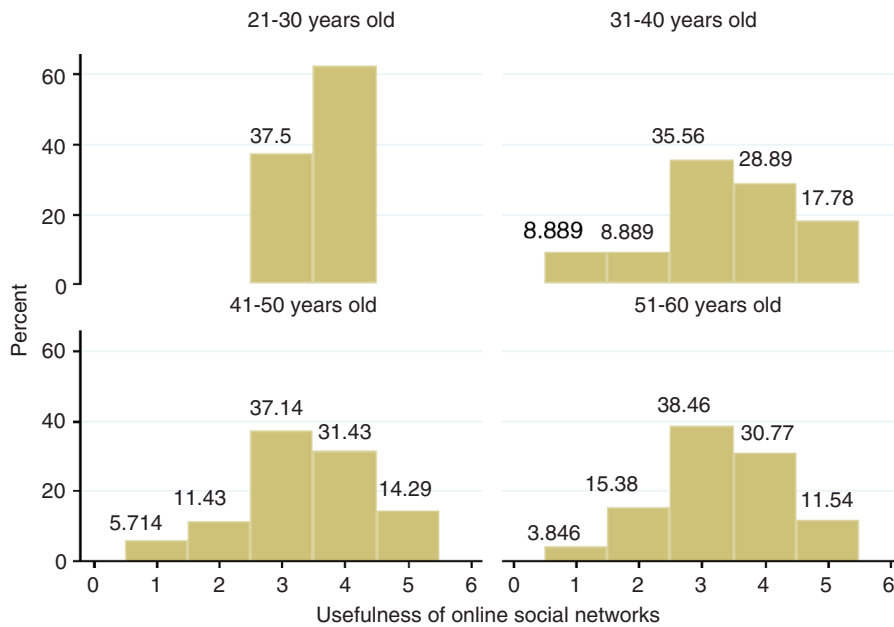


Figure 3. Usefulness of the social networks in current working environment by age

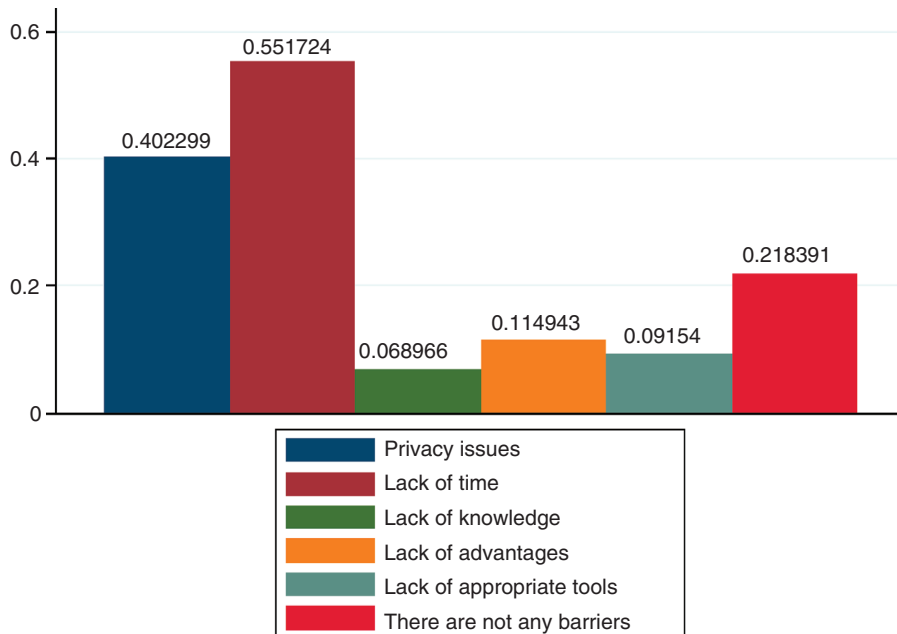


Figure 4. Barriers to using online social networks

importance of the online social networks in the current working environment and the importance of the online social networks in the past (three years ago) ($z = 8.466$, $p = 0.0000$). Furthermore, we can conclude that the importance of the online social networks in the current working environment has a higher rank.

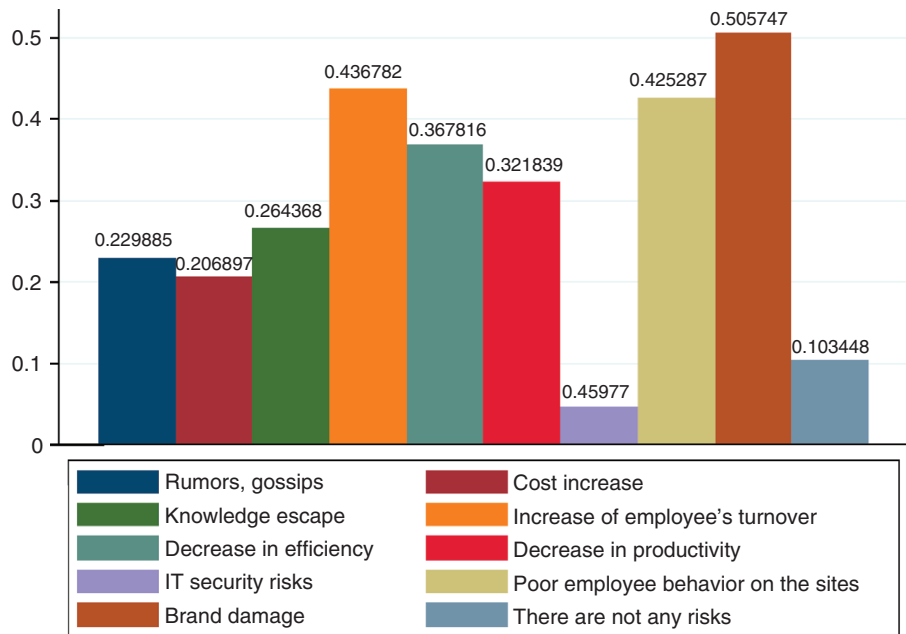


Figure 5.
Risks of using online
social networks

For the second Wilcoxon signed rank sum test, two variables, the importance of the online social networks in future working environment (in three years) and importance of the online social networks in the current one were compared. The results allow us to conclude that there is a statistically significant difference between the underlying distributions of the importance of the online social networks in the future working environment and importance of the online social networks in the current working environment ($z = 6.400$, $p = 0.0000$). Moreover, the importance of the online social networks in future working environment has a higher rank.

Consistent with *H1*, it can be concluded that importance of online social networks as a tool supporting leadership is growing.

Comparing the usefulness of online social networking as a tool for participative and consultative leadership style and the usefulness of online social networking as a tool for consultative and directive leadership style

For another Wilcoxon signed rank sum test, two variables, the usefulness of online social networking as a tool for participative leadership style and the usefulness of online social networking as a tool for consultative leadership style were compared. There is significant difference between two variables ($z = 3.147$, $p = 0.0016$) and the usefulness of online social networking as a tool for participative leadership style is ranked higher.

Finally, we compared the usefulness of online social networking as a tool for consultative leadership style and the usefulness of online social networking as a tool for directive leadership style. The results reveal significant difference between two variables ($z = 3.259$, $p = 0.0011$). The usefulness of online social networking as a tool for consultative leadership style has is ranked higher.

The findings confirm *H2* stating that online social networks are more useful for participative leadership styles than for consultative leadership styles and more useful for consultative leadership styles than for directive leadership styles.

Poisson regression analysis with the number of activities on online social networking platforms as the dependent variable

The results derived from Poisson regressions with the number of leadership activities on online social networking platforms as the dependent variable prove that model is statistically significant ($p = 0.0001$) (Table IV).

The independent variables are: the number of barriers to using online social networks; number of risks associated with using online social networks; number of networking platforms used for business purposes; age; gender contacts; and percentage from the same organization on the social networking platform.

The regression results show that the effect of the number of social networking platforms used for business purposes is significantly related to the number of activities on online social networking platforms ($p = 0.025$).

It means that if a leader was to increase his or her number of social networking platforms used for business purposes by one point, the rate for number of activities would be expected to increase by a factor of 1.125, while holding all other variables in the model constant.

Compared to leaders with lower connection percentage (0-40 percent), leaders with a higher connection percentage (41-80 percent) from the same organization on the external networking platform ($p = 0.015$) are expected to have a 0.65 times lower rate for the number of activities on online social networking platforms when holding the other variables constant in the model.

Other independent variables were not statistically significant. However, we should point out that the number of risks of using online social networks ($p = 0.084$) is close to be statistically significant.

Therefore, we have to confirm hypothesis *H4* stating that the number of activities depends on the number of platforms used for business purposes and the percentage of connections from the same organization on the external networking platform.

Ordered regression analysis with usefulness of online social networking as a tool for authentic leadership as the dependent variable

From ordered logistic regression analysis we can conclude that the model is statistically significant ($p < 0.05$). However, independent variables including gender,

Poisson regression	Number of observations	=	113		
	LR $\chi^2(6)$	=	27.00		
	Prob > χ^2	=	0.0001		
Log likelihood = -271.65435	Pseudo R^2	=	0.0473		
Number of leadership activities on online social networking platforms	IRR	SE	z	p > z	95% confidence interval
Number of barriers for using online social networks	1.07	0.041	1.42	0.157	0.97 1.14
Number of risks of using online social networks	1.04	0.024	1.73	0.084	0.99 1.09
Number of platforms used for business purposes	1.12	0.039	3.36	0.001	1.05 1.20
Age	0.99	0.004	-0.07	0.945	0.99 1.01
Gender	0.98	0.088	-0.21	0.834	0.82 1.17
Percentage of connections from the same organization on external networking platform	0.65	0.11	-2.43	0.015	0.46 0.92

Table IV. Poisson regression analysis with the number of leadership activities on online social networking platforms as the dependent variable

age, country, position, percentage of connections from the same organization on the external networking platform, number of barriers to using online social networks and number of risks are not statistically significant (Table V).

The usefulness of online social networking as a tool for authentic leadership is statistically dependent on the number of leadership activities on online social networking platforms ($p = 0.008$). Thus, for a one unit increase in the number of leadership activities, the odds of a very low usefulness are decreased. The other categories combined (Very high, High, Middle, Low usefulness) are at a 1.201 greater likelihood compared to the very low usefulness, given the other variables are held constant in the model. Thus, a higher rating of usefulness is more likely to be observed with a greater number of activities.

We can also reject the null hypothesis and conclude that the regression coefficients for the number of platforms used for business ($p = 0.005$) and company size ($p = 0.003$) are statistically different from zero in estimating the usefulness of online social networking as a tool for authentic leadership. This means that the higher rating of usefulness is more likely to be observed with a greater number of platforms and in large companies.

Ordered logistic	Regression	Number of observations	=	114		
		LR $\chi^2(18)$	=	30.23		
		Prob > χ^2	=	0.0352		
		Pseudo R^2	=	0.0936		
Log likelihood = -146.4214						
Usefulness of online social networking as a tool for authentic leadership	Odds ratio	SE	z	p > z	95% confidence interval	
Number of leadership activities on online social networking platforms	1.20	0.083	2.65	0.008	1.05	1.37
Number of platforms used for business purposes	1.74	0.34	2.79	0.005	1.18	2.56
Company size	3.76	1.67	2.98	0.003	1.57	8.99
Gender	1.89	0.91	1.32	0.186	0.73	4.86
Age	0.99	0.024	-0.05	0.962	0.95	1.04
Percentage of connections from the same organization on external networking platform	1.02	0.015	1.08	0.281	0.99	1.04
Number of barriers for using online social networks	0.84	0.17	-0.85	0.394	0.55	1.26
Number of risks of using online social networks	0.89	0.19	-0.88	0.377	0.68	1.15
<i>Country</i>						
2	1.57	1.06	0.66	0.508	0.41	5.94
3	1.67	1.07	0.80	0.423	0.48	5.85
4	1.18	0.91	0.21	0.830	0.26	5.34
5	0.31	0.21	-1.76	0.079	0.087	1.14
6	1.47	0.94	0.60	0.550	0.41	5.15
7	0.21	0.15	-2.16	0.031	0.05	0.87
<i>Position</i>						
2	0.96	0.44	-0.08	0.936	0.39	2.36
3	0.51	0.36	-0.95	0.344	0.13	2.03
4	0.70	0.48	-0.52	0.604	0.18	2.68
5	10.08	12.16	1.92	0.055	0.95	107.29

Table V.
Ordered logistic regression analysis with usefulness of online social networking as a tool for authentic leadership as the dependent variable

Thus, we can conclude that the results partially confirm hypothesis *H3* that the usefulness of online social networks as a tool supporting leadership is higher among a younger generation of leaders especially in large companies because our study show that large companies are associated with a higher usefulness of online social networks.

Finally, hypothesis *H5* stating that the usefulness of social networking platform as tool supporting authentic leadership depends on the leaders' online activity (indicated by the number of leadership activities on social networking platforms) and the number of social networking platforms used for business purposes, is also confirmed.

Discussion

The purpose of the study was to examine how the importance of online social networks changes over time, which leadership styles (directive, consultative or participative) are more useful for leaders on the online networking platforms, how barriers and risks influence a leader's online activities and what are the predictors of usefulness of online social networks as a tool supporting authentic leadership.

The findings supported some, but not all, of the study hypotheses.

First, it appears that the importance of online social networking environment is growing. This is not surprising, because the internet and intranet communication enables the virtual leading of people around the globe. Online social networking platforms create new working environment and provide the ability to share knowledge, maintain discussions, present opinions and collect information. It has created new leadership possibilities that can be supportive in today's working environment, although they cannot replace the face-to-face contact. It is believed that, due to the technological change, all managers will work in an online working environment within a few years and the role of manager will evolve from the traditional leader to a leading interweaver who coordinates and facilitates the collaboration in a variety of networks (Miller, 2005).

Second, it turned out that online social networking platforms are more useful for participative and consultative leadership style on than for directive leadership style. As we assumed earlier, the development of a working environment can be compared to the change of situation in the situational leadership theory. Hence, it is important to understand which leadership style is more appropriate for online social networking.

It is worth mentioning that the usefulness of all of the above-mentioned leadership styles in the online networking platforms ranged from low to middle or high levels, although we do not observe a very high level. It can be explained by the fact that the online working environment does not allow one to see other's expressions, gestures and other non-verbal movements which can lead to potential misunderstandings and mistrust (De Pillis and Furumo, 2007). Our study shows that coaching and collaborating online is more useful for building trust, encouraging subordinates to use online social networks, exchanging ideas and engaging in online teamwork, than just for monitoring or telling subordinates what to do.

Third, in accordance to our hypothesis, the study shows that having more people from the same organization in leader's connections is associated with less activity on the platform. It may change in the future if the leaders start to use online social networks more internally. Furthermore, we noticed that a higher number of social networking platforms was associated with a higher number of online operations.

Fourth, our study does not prove that age is a significant predictor of the usefulness of a social network as a tool supporting authentic leadership. Even though many experts have argued that a virtual environment attracts a younger generation of

workers because of the freedom and independence it provides, as well as its complementary fit with their technical skills (Kaplan-Leiserson, 2005).

Furthermore, as expected, the study indicates that online social networks are more useful for leaders working in large companies as a tool to support leadership. Some experts claim that social networking platforms are being used to provide the support and input that employees used to get from their managers and convey information from the executive suite down to the lower level employees who often work in different time zones and various locations (Birkinshaw, 2011). As it is typical for large-sized businesses, the usefulness of social networking platforms should also be higher in large organizations compared to the small ones.

Finally, it turned out that the usefulness of social networks supporting leadership depends on the number of activities and the number of platforms. As Kotter (1990) suggested, effective managers spend most of their time interacting with others, so it is quite obvious that a greater number of activities that a leader undertakes on various networking platforms to interact with others is a key driver of network's usefulness. Through various activities and interactions, effective leaders are able to help foster relationship building and general team building (Kayworth and Leidner, 2001). This seems to be very important in online environments, because of the inability to use non-verbal communication.

In identifying some of the practical implications from the study findings, it would appear that the next generation of leaders should pay increased attention to online social networking platforms to be more effective in the new working environment. To improve the usefulness of online social networks as a tool for leading, it would be beneficial for leaders to use more participative and consultative leadership styles rather than the directive style on the platform. Concerning authentic leadership, leaders should try out a range of networking platforms and undertake a range of activities.

Limitations and future research

First, an important limitation of the study is the number of participants. Because online social networks have not been studied in association with leadership, and this topic is new for many leaders, participation in the study was not high. It is very likely that those executives who agreed to take part in the leadership networking survey show more interest in online networking compared to other executives.

Second, the present study did not examine the influence of the organizational structure and culture on the usefulness of the online social networks. It is very likely that tall organizational structures facilitate more usefulness than the flat structures because flat organizational structures have an easier information flow from the senior management to the bottom. If there is no knowledge-sharing culture and employees are not prepared to use online social networking platforms, the usefulness of online social networks is likely to be lower.

Third, the data on leaders' effectiveness have not been collected. Because online social networking as a tool supporting leadership is often applied only partially in different organizations, it is assumed that it is too difficult to study the influence on leader effectiveness, which should be related to the entire organization.

Finally, there is also an issue of distinction between open and closed networking platforms. It is very likely that open networking platforms (like LinkedIn) should be more beneficial for self-leadership activities because they provide the ability to integrate different communities (friends and co-workers) as well as stay in touch with support teams (which often consists of people from outside leader's organization).

On the other hand, internal networking platforms (like Yammer, Chatter, Jive) are supposed to bring more advantages in managing people, because they are closed for organization members. On these platforms, a leader can easily discuss corporate issues as they are often bundled with corporate intranet systems, allowing more employees to become involved in the communication process automatically through the platform.

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