

Competencies and Leadership Effectiveness: Which Skills Predict Effective Leadership?

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Abstract: This study explores the relationship between leadership effectiveness and generic and stable competencies. Task-related, people-related and self-related competencies were examined as predictors of leadership effectiveness as measured by four different criteria: group performance, leader effectiveness, leadership emergence and leadership self-efficacy. 134 top managers were evaluated by 2,482 subordinates after a four-month management simulation game. Task-related competencies were shown to be the best predictor of leadership effectiveness; they were a very strong predictor of leadership emergence, strong predictor of leadership self-efficacy and perceived leadership effectiveness and moderately strong predictor of group performance. People-related and self-related competencies weakly predicted leadership emergence. The results can be applied when selecting leaders for working groups that have short-term durations and do not require frequent personal contact.

Keywords: leadership, competencies, group performance, perceived leader effectiveness, leadership emergence, leadership self-efficacy

1. Introduction

What a leader knows and is able to do influences the effectiveness of his or her team (Levenson et al. 2006), as well as his or her individual success (Goldstein et al. 2001). Skills and abilities which are generally labelled as competencies are thus a part of the theories that explain leadership effectiveness (Hogan and Kaiser 2005; Seiler and Pfister 2009). According to Seiler and Pfister (2009), the professional, strategic, personal, social and intercultural competencies of a leader are among the factors that influence his or her effectiveness. Similarly, Hogan and Kaiser (2005) argue that intrapersonal, interpersonal, leader, and business competencies are predictors of leader effectiveness. Anderson et al. (2008) consider nine groups of competencies to be predictors of leader effectiveness. These groups of competencies are relational, impartial, technical, creative, directive, tenacious, empowering, influential and strategic. Thus, assessing competencies is used to identify people with a potential to become effective leaders (Brant et al. 2008).

However, many questions remain about which competencies are useful to predict future effective leaders. The reason is that leader effectiveness also depends on factors besides the leader's competencies. Furthermore, there exists a vast number of competencies grouped into different specific competence models which are deemed important for successfully handling particular working positions (e.g. Riggio and Lee 2007; Chong 2008; Patanakul and Milosevic 2008; Harison and Boonstra 2009). The drawback of specific competence models is that they can only be used for specific working positions. Moreover, with many different competence models being created, it is increasingly hard for researchers, HR specialists and others to navigate them.

Our research is based on the assumption that generic competencies – i.e. competencies useful for different positions in different organizations – can be found (Analoui et al. 2000; Hamlin 2004). Our second assumption is that there exist competencies based on personal traits. Such competencies are 'stable' in the sense that they have taken a long time to develop in adult individuals and will likely take a long time to change (Thornton and Rupp 2006, Hoffman et al. 2011). They may have two important advantages for the identification of potential successful leaders. Firstly, generic competencies could be used to select leaders for different positions in different organizations and also for leading different teams. Secondly, it can be expected that 'stable competencies' have higher predictive validity than those which can be quickly changed. Thus, we decided to examine whether generic and stable competencies are associated with leader effectiveness.

Support for the usefulness of generic competency models can be found in several categorisations which incorporate competencies that have similar names or similar content (Arthur et al. 2003; Gibbons et al. 2006; Mumford et al. 2007). Based on their content, most competencies can be grouped into three categories: task-related, people-related, and self-related competencies (Analoui et al. 2000). These categories cover most activities that successful leaders have to handle in their positions. In general, leaders have to deal with various types of tasks, ensure that their subordinates deal with their tasks, and manage themselves.

Task-related competencies are those which enable the leader to effectively manage the work at hand by determining objectives, forecasting, planning and organizing the tasks involved. They refer to what goals and priorities the leader sets, whether and if he or she can understand and analyse information, how much energy and effort he or she invests into problem solving, how he or she can adjust to the demands of different tasks, etc. People-related competencies include the leader's approach to other people, his or her abilities to build relationships with others, cooperate with others, handle conflicts, and develop others. Self-related competencies refer to the relationship that the leader has with his or her self. This group of competencies incorporates his or her self-perception, self-evaluation and self-management, self-knowledge, self-confidence, maturity, personal values, fairness, openness, self-development, integrity, stress management, ability to accept rules, etc.

Another criterion that can be used to classify competencies is their stability, which determines the extent to which competencies are susceptible to influence or change. Stable competencies are those that require a lot of effort and time to be changed or, alternatively, cannot be changed at all. Those competencies are comprised of skills, values and attitudes deeply ingrained in the individual. Because of their great potential to influence behaviour consistently in a wide variety of situations, they can be called potentialities (Thornton and Rupp 2006). As stable competencies do not change with time, they can be considered ideal for formulating predictions of future behaviour (e.g., during recruitment). Competencies can be considered less stable when they comprise skills developed as a result of recent educational experiences and thus are more subject to change than stable competencies.

Further advantage of measuring stable competencies is their resistance to impression management and social desirability. In the recruitment process, the individuals being assessed think about measured characteristics and take into consideration which characteristics might be valued and which not, which influences their behaviour (Mueller-Hanson et al. 2003). In the case of stable competencies, the risk of the assessed individuals conforming to the expectations is significantly reduced.

The competence model used in this study is based on the meta-analysis by Hoffman et al. (2011) and previous conceptualizations of leadership skill requirements (Analoui et al. 2000; Arthur et al. 2003; Gibbons et al. 2006). The model integrates task-like and state-like constructs (Hoffman et al. 2011) and comprises of task-related, people-related and self-related stable competencies which are associated with leader effectiveness (see Appendix 1). In the category of task-related competencies, we included leader's achievement orientation (Sorrentino and Field 1986), problem solving and problem analysis skills (Mumford et al. 2007), and ability to influence others (Foti and Hauenstein 2007). In people-related competencies, we incorporated the leader's ability to build relationships with other people (Anderson 2012). In self-related competencies, we included leader's integrity, fairness, maturity, honesty, and trustworthiness (Ones et al. 1993; Reave 2005).

Leadership effectiveness can be measured using various different criteria. One of these is the performance of the leader's group. Such a criterion is based on the assumption that the leader is effective when his or her team performs well (Kaiser et al. 2008). The advantage of this criterion is found in its objectivity – it is based on the measurable performance of the team or the quality of finished work. Its disadvantage is that group performance can be influenced by many other variables (the characteristics of team members, the current situation on the market, etc.) other than the leader's personality and behaviour (Eagly et al. 1995).

This problem is solved by having others evaluate leader effectiveness. In the case of perceived leader effectiveness, effective leaders are those whom others have evaluated as 'leaders who have contributed to the effectiveness of their team' (Foti and Hauenstein 2007). In case of leadership emergence, effective leaders are those who are perceived as 'good leaders' by others (Riggio et al. 2003). However, in comparison to group performance, perceived leader effectiveness and leadership emergence can be influenced by variables which typically affect the evaluation of people by other people (Brown and Lord 2001). For example, the

relationships between evaluators and the evaluated, implicit theories of personality, different experiences of different evaluators, etc.

Leaders who perceive themselves as effective leaders can be also seen as effective leaders. Leadership self-efficacy represents the confidence that a person has in his or her own ability of being effective in the position of the leader (Ng et al. 2008). The advantage of this criterion is that the leader alone suffices for the evaluation of leader effectiveness. However, this criterion is less reliable as it can be influenced by the lack of self-reflection, inability to evaluate the influence of one's behaviour on people, etc.

As each of the above-mentioned criteria has advantages and disadvantages, we are using multiple criteria in the current study. We focused on whether the level of stable leader competencies can be used to predict a) whether subordinates consider their leader as a suitable or good leader (leadership emergence), b) how subordinates evaluate the contribution of their leader for the effectiveness of the company that he or she manages (perceived leadership effectiveness), c) how leaders evaluate their own effectiveness in a leadership position (leadership self-efficacy), d) the profitability of the company which the leader is managing (group performance).

2. Method

2.1 Participants

Our sample comprised 134 managers, who led teams of about 20 subordinates for four months in the Management Simulation Game. 2,703 subordinates were asked to assess the leadership style and leader effectiveness of their manager before the end of the simulation game. They were informed that the data collection is voluntary and for research purposes. The informed consent was obtained. 2,482 of the subordinates (91.82 % response rate) assessed their leader using an electronically administered questionnaire. Each of the 134 leaders was evaluated by a minimum of 5 and a maximum of 24 subordinates. The average was 18.25 evaluators to one leader ($SD = 2.77$). All leaders and subordinates were students of universities of economics in the Czech Republic, and therefore had a similar age and experience. The age of the leaders ranged from 19 to 39, with an average of 21.59 years ($SD = 2.02$). The leaders were predominantly men (77 %).

2.2 Procedure

The Management Simulation Game is a four-month simulation of the car market, which is a part of university courses at two business schools in the Czech Republic. Teams of students represent the management of automotive companies that sell their products to a computer simulated market. Every company is led by a leader, who is elected from among company members shortly after the start of the game. The leader and his or her subordinates are rewarded with fictitious money during the course of the game, which is partially translated to their course grade at the end of the semester. The leader may delegate his or her powers to the subordinates, though he or she has the final word on decisions, for example, when deciding on corporate strategy, organizational structure, distribution of work, salary and financial bonuses, and during layoffs and recruitment (Smutny et al. 2013).

In the course of the game, players have a number of options through which they can affect the performance of their businesses. The game lasts seven rounds. In each round, players decide on the number of cars produced in each round, optimize production costs, invest in research, determine the basic equipment of the cars, create marketing documentation, create financial statements, make analysis of financial markets, and act on loans with banks.

Given the variety of tasks, it is necessary to involve as many team members as possible into the operation of the business, motivate them and coordinate their work. The management simulation game therefore mimics the environment of the real economy. The management simulation game is suitable for research as it a) allows for a comparison of similar teams and thus having comparable data on their performance, b) allows for a reduction in the impact of external variables affecting research in real businesses (the teams are equally large, have the same history, the same default conditions, the same information available, and the team members have similar levels of experience), c) allows access to data on the performance of individual companies and generates high returns when collecting data using questionnaires (Smutny et al. 2013).

Data for the research were collected over ten semesters between the years 2008 – 2013.

2.3 Measures

The presented competencies questionnaire (see Appendix 2) consists of 14 items with a 5-point response scale. Based on the multilevel confirmatory factor analysis (CFI = 0.93; RMSEA = 0.04), the three-factor model met the criteria recommended by Marsh and Hau (1996). The factor loading of questionnaire items was between .441 and .692. The questionnaire showed a good internal consistency – Task scale Cronbach's $\alpha = .93$, People scale Cronbach's $\alpha = .90$, Self-management scale Cronbach's $\alpha = .86$.

Leader effectiveness was assessed using the following four indicators – group performance, perceived leader effectiveness, leadership emergence and leadership self-efficacy. To assess perceived leader effectiveness, the subordinates answered two questions concerning the impact of the leader on company effectiveness. To assess leadership emergence, five questions which the subordinates responded in order to evaluate the leadership of their leader were used. To assess leadership self-efficacy, the leaders answered five questions concerning their perception of their effectiveness as a leader. Internal consistency of these sets of questions was Cronbach's $\alpha = .87$ (perceived leader effectiveness), Cronbach's $\alpha = .96$ (leadership emergence), Cronbach's $\alpha = .84$ (leadership self-efficacy).

Group performance was measured through the profitability of each company under the leadership of the leader over the entire course of the simulation game. Group performance is determined by the accumulated profits of the business throughout the game divided by the average cumulative gain on the market multiplied by 100. It thus reflects an achieved percentage of the average profits in the market.

3. Results

In Table 1, descriptive statistics of the measured variables and their correlations can be found. All groups of competencies were associated with all indicators of leader effectiveness. Competencies correlated most strongly with leadership emergence and most weakly with leadership self-efficacy. Results showed that all indicators are significantly associated. Nevertheless, it seems to be sensible to combine them as they explain only 10-61% of variance. Similarly, all groups of competencies are significantly correlated. We take these associations into consideration when interpreting the results.

Table 1: Descriptive statistics, number of items in subscales and correlation matrix

	N	M	SD	T	P	S	GP	LE	LM	LS
T: Task-related competencies	134	13.04	3.16	(.93)						
P: People-related competencies	134	10.16	2.46	.74**	(.90)					
S: Self-related competencies	134	17.05	1.87	.50**	.62**	(.86)				
GP: Group performance	134	102.13	62.19	.29**	.22*	.18*				
LE: Leadership effectiveness	134	14.14	4.09	.75**	.55**	.45**	.62**	(.87)		
LM: Leadership emergence	134	13.36	3.61	.95**	.77**	.58**	.32**	.78**	(.96)	
LS: Leadership self-efficacy	131	13.90	5.41	.35**	.19**	.01	.45**	.54**	.36**	(.84)

Note: N: number of evaluated leaders, * $p < .05$, ** $p < .01$, values of Cronbach's alpha are shown in parentheses

To examine which competencies predict leader effectiveness, we used linear regression separately for each criterion of leader effectiveness. Table 2 and 3 show the results of our analysis.

Table 2: Competencies as predictors of group performance and leadership self-efficacy

Predictor	Group performance			Leadership self-efficacy		
	B	SE	β	B	SE	β
Constant	8.00	49.12		13.75	4.13	
Task-related competencies	5.52	2.46	.28*	0.84	0.21	.48**
People-related competencies	-0.38	3.50	-.02	-0.09	0.29	-.04
Self-related competencies	1.53	3.56	.05	-0.58	0.30	-.20

Note: * $p < .05$, ** $p < .01$, Group performance: $R^2 = .09^*$; Leadership self-efficacy: $R^2 = .16^{**}$

Table 3: Competencies as predictors of perceived leadership effectiveness and leadership emergence

Predictor	Perceived leadership effectiveness			Leadership emergence		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Constant	-1.82	2.20		-3.90	0.85	
Task-related competencies	0.97	0.11	.75**	0.94	0.04	.83**
People-related competencies	-0.15	0.16	-.09	0.13	0.06	.09*
Self-related competencies	0.28	0.16	.13	0.21	0.06	.11**

Note: * $p < .05$, ** $p < .01$, Perceived leadership effectiveness: $R^2 = .57^{**}$; Leadership emergence: $R^2 = .92^{**}$

The employed competence model predicted all criteria of leader effectiveness. Leadership emergence was the best predicted (the model explained 92% of variance), while group performance was the worst predicted (the model explained 9% of variance). Task-related competencies were key predictors as they significantly predicted all the criteria of leader effectiveness. The other two groups of competencies were shown to be significant predictors of leadership emergence.

4. Discussion

The aim of this study was to examine whether leader effectiveness can be predicted by stable generic competencies. The results partially supported our hypotheses. The tested competence model predicted all criteria of leader effectiveness, with leader effectiveness being best predicted and group performance being worst predicted. Task-related competencies were the strongest predictor, predicting all the criteria of leader effectiveness when controlling for the influence of other groups of competencies. People-related and self-related competencies only predicted leadership emergence.

Industrious leaders, who are capable of understanding new problems, exerting pressure on their subordinates, anticipating risks, and persuading others are perceived by their subordinates as effective and good leaders and, at the same time, see themselves as effective leaders. Moreover, such qualities are associated with the performance of the leader's group. Even though variables other than skills and abilities can influence group performance more than other criteria of leader effectiveness (Eagly et al. 1995), task-related competencies nevertheless predict group performance. The importance of these competencies is further supported by how subordinates evaluated their leader. Problem analysis, diligence and self-assertion influence whether the leader is considered to be a good leader and whether his or her contribution to group performance is evaluated positively. The same competencies also influence whether the leader considers himself or herself to be an effective leader. These overall results enable us to infer the great importance of task-related competencies for leadership effectiveness.

As task-related competencies predict all measured criteria of leader effectiveness, we consider them important for the selection of future leaders. Task-related competencies are competencies with high stability, consistency and generality. Diligence is related to one's personal values and motivation, the ability to anticipate risks and understand new problems requires a certain level of cognitive abilities and the abilities to exert pressure and persuade others require a certain level of self-confidence. These characteristics are a subject to change only with great difficulties and at the same time influence one's behaviour in many situations. Thus, it can be assumed that competencies based on such personal characteristics have higher predictive validity and are more resistant to impression management and social desirability than competencies that are easy to change.

When controlling for other competencies, people-related and self-related competencies predict leadership emergence. Natural and fair behaviour, willingness to admit one's mistakes and receive advice from subordinates, ability to appreciate, show interest in, offer support and help to others, and making opportunities for others to grow and gain new experience positively influence whether the leader is considered as a good and suitable leader by his or her subordinates.

Other studies showed that personal integrity also belongs to important predictors of leader effectiveness. According to Reave (2005), personal integrity is associated with various indicators of leader effectiveness including group performance and satisfaction of subordinates with their leader. Integrity, honesty, and trustworthiness are among the most important attributes that people consider important for success in a

leadership position (Bennis and Thomas 2002). According to Wang and Hsieh (2013), supervisor's consistency regarding words and actions, as well as their moral perceptions, are positively related to employee engagement and employee trust. In turn, employee trust influences job satisfaction, work performance, turnover, and organizational commitment of subordinates (Dirks and Ferrin 2002). Other authors also support the importance of social sensitivity and leader's ability to build relationships with his or her employees. As Anderson (2012) put succinctly, a leadership is a relationship. According to Reave (2005), showing respect for others, expressing caring and concern, listening responsively, recognizing the contributions of others are all related to criteria of leader effectiveness such as motivation, job satisfaction, work performance, perception of leader, or corporate sustainability.

Although people-related competencies and self-related competencies correlate with the indicators of leader effectiveness, their effect disappears in the regression model when the effect of task-related competencies is controlled for. As the groups of competencies correlate with each other, it is reasonable to consider what the commonalities of these competencies that explain leader effectiveness are. It is possible that leaders who are capable of solving business-like problems and tasks can also use such abilities to solve problems that relate to supervising other people, self-regulation and self-management. A plausible explanation might be the connection between task-related competencies and general mental ability - one of the personality characteristics that influence work performance across different positions (Viswesvaran and Ones 2002). For this reason, we would recommend examining the relationship between general mental ability and task-related competencies.

Another explanation of the correlations among competencies is that the evaluation of leaders is influenced by an overall image that subordinates have about the quality of their leader. The formation of such an image might be influenced by the measurement of the criteria of leader effectiveness itself. An overall opinion about the quality of the leader can influence the measurement when it is measured simultaneously with the criteria of leader effectiveness. Furthermore, the evaluation of the leader can be influenced by interpersonal perception biases. However, this could be avoided by training the people who evaluate the leader (Schleicher et al. 2002). For subsequent research of leader effectiveness, we would recommend a) examining the same competencies using trained assessors, b) examining the same leader's competencies using other people than subordinates of the leader, c) separating the measurement of competencies and leader effectiveness in time using panel design.

When applying the results of our study, the specifics of the context of the managerial simulation game needs to be taken into account. The game lasted for four months; the participants of the game had approximately the same skills and experience and their collaboration did not require face-to-face contact on everyday basis; the contact was limited to voluntary meetings, which took place once a week or more often based on team's need. The relationships between leaders and their subordinates do not have such an importance in similarly defined situations as they might have in other working contexts. It could be expected that people-related competencies and self-related competencies would be more important for managing people in the situations when both parties care more about good relationships, such as when the leader and his or her subordinates are in everyday face-to-face contact, spend a lot of time together or cooperate on a long-term basis. The cooperation in a simulation game is most similar to the cooperation in various types of project teams. Such teams usually function only on a short-term basis, potentially consist of people from different geographic regions, are terminated after their goals are achieved and do not require of team members to cooperate any further. It should be possible to apply the findings of our study on the selection of leaders for such teams. To expand the external validity of our findings, we would recommend conducting research using the same predictors and indicators of leader effectiveness on other types of work teams, for example working teams that function on a long-term basis or working teams in a real work context.

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Appendix 1: Competencies description

Competence	Description
Achievement orientation	An achievement oriented person focuses on task objectives, emphasises the importance of work performance. He/she sets challenging goals for themselves and for their work-groups, exerts additional effort to exceed expectations, is ambitious and initiative, maintains a high level of energy in order to effectively perform in the face of long hours, and is able to get over obstacles.
Problem solving and problem analysis	He/she has good orientation in problems, identifies priorities, his/her decisions are based on facts, thinks logically, exercises sound judgment to resolve organizational issues, sorts relevant from irrelevant information quickly, and identifies causes of successes and failures and learns from them.
Influencing others	He/she exerts influence over the attitudes and behaviours of others, is able to direct group activities and advocate for desired changes to the organizations, communicates clearly and comprehensibly, gives logical and persuasive arguments, negotiates effectively, can press his/her suggestions, and is able to attract attention of others.
Social sensitivity	He/she has close relationships with others, cares for feelings and problems of others, is kind and helping, asks and listens to others, treats them with patience and consideration, acts in favour of others, and is close to others even in troublesome situations.
Integrity	He/she is truthful and nondeceitful, gains by being natural, consistent and predictable, is perceived as trustworthy, is self-confident, and has a good self-knowledge.

Appendix 2: Competencies questionnaire

Task-related competencies

He/She was an example of diligence for others.
 He/She insisted that we finish the work we started.
 He/She was able to anticipate risks.
 If a new problem arose, he/she was able to understand it.
 He/She was able to persuade me about his/her opinion.

People-related competencies

He/She was interested in how I saw things.
 He/She praised me.
 I can imagine that I would share my personal problems with him/her.
 He/She would offer me support or help.
 He/She involved me in the situations which I could gain new experience from.

Self-related competencies

He/She was able to admit his/her mistake.
 I could rely on his/her fair behaviour.
 He/She would let the subordinates to give him/her advice.
 He/She behaved naturally.

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