The Leadership Productivity Model

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Summary

Research questions:	What are the core dimensions of leadership productivity? Which leadership tasks need to be performed to increase the productivity of employees?
Methods:	Four empirical studies across different organizations using the Leadership Productivity Survey as an instrument to measure the impact of the performance of leaders on the productivity of their subordinates.
Results:	Goal Orientation, Support and Time Optimization, if performed by a leader, increase the productivity of their subordinates.
Structure of the article:	1. Essay; 2. Literature Review; 3. Research questions & methods; 4. Detailed empirical results; 5. Conclusions; 6. About the author; 7. References

1. ESSAY

The major concern of this article and the underlying research is the question how good leaders can be developed. "Goodness" is defined as fulfilling the role of a leader, which is to achieve the goals of an organization and at the same time to create a high degree of intrinsic motivation.

Looking at surveys about leadership performance it can be assumed that the current development activities, mostly some kind of group leadership training, have dramatically failed. One reason is the instant learning approach, which wrongly assumes that a one-time-training leads to sustainable behavioral changes. The other reason might be that the leadership concepts that are taught are too high level (What to do?) and do not give clear practical directions for productive leadership performance (How to do it?). One common advice from such trainings is to increase the work motivation of employees in order to increase the overall productivity. Even though this causal relationship is valid, it is still very difficult to implement directly. A major problem is the confusion between job satisfaction and work motivation. Often leaders only target job satisfaction (e.g. by bonus systems), which has only a limited correlation with work performance.

Therefore this article recommends that leaders broaden their focus towards leadership tasks that directly increase the performance of their employees. This is assumed to have a double reciprocal positive effect. It directly increases productivity but at the same time also fulfills fundamental motivational needs of employees, which then leads to an enhanced intrinsic motivation. As intrinsic motivation is causing increased work effort, this effect leads to higher work productivity.

This specific kind of leadership performance is described by the term *Leadership Productivity*. Leadership Productivity means that a leader has the responsibility for the work productivity of his team and causes changes of this productivity by his performance. To increase work productivity leaders need to consider their personal productivity as well as the productivity of their team (*Figure 1*).

Figure 1:
Leadership Productivity

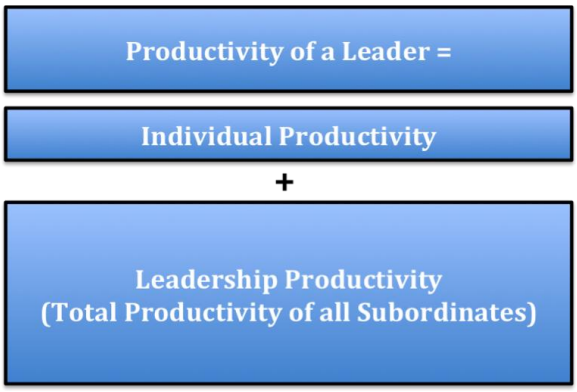
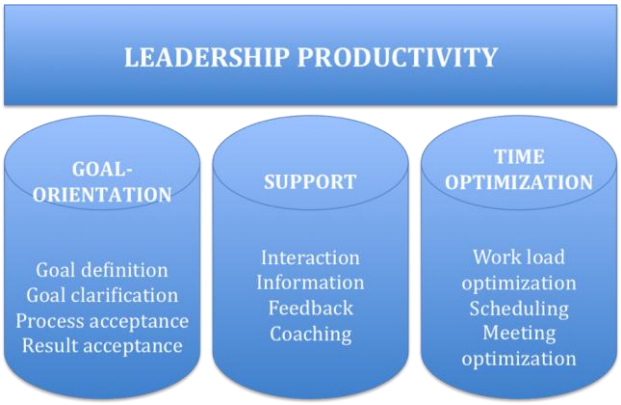


Figure 2:
Leadership Productivity Model



Observing modern leaders we find a contradicting behavior. As a leader is a subject to constant pressure, she/he tries to optimize his own work productivity. This leads to a reduction of interaction time with her/his subordinates as well as certain other types of behavior to reduce her/his personal workload like directly delegating tasks that were ordered by higher ranks and scheduling meetings according to his personal timetable. By this modern leaders sacrifice the work productivity of their subordinates for the sake of their personal work productivity. The overall effect of this behavior on the organizational goals is negative.

The option to develop productive leadership performance is available for every modern leader. It is about relatively simple leadership tasks and not about becoming an omnipotent charismatic leader or a type of transformational guru, which seems to be indicated by the popular management literature.

Instead leaders need to focus on some basic leadership tasks that have been defined in the Leadership Productivity Model (*Figure 2*).

These basic leadership tasks have been categorized in three leadership dimensions, which are defined as *Goal Orientation*, *Support* and *Time Optimization*.

Goal Orientation is a different concept to the common goal definition processes that are conducted in companies. In this all to common process, goals are defined for an entire year and are not continuously adapted which leads to them being neglected during the daily work. Their impact on the importance is therefore low and their purpose is mostly to ensure that a certain expected bonus will be paid to the employee.

In contrast to these formalized processes, *Goal Orientation* is about the continuous leadership performance necessary to implement the strategic and operative goals of an organization. It consists of the leadership tasks *Goal Definition*, *Goal Clarification*, *Process Acceptance* and *Result Acceptance*.

Goal Definition is about defining the characteristics of a goal as described in goal definition concepts like SMART (Specific, Measurable, Attainable, Realistic, Timed). Another aspect is that goals need to be documented as human memories tend to be not reliable, starting with selection of information that is considered to be valuable for further processing.

As operative goals are subject to constant change if the plan is effective, these changes need to be taken into account, leading to goal alterations. The corresponding task is described as Goal Clarification, which includes the information and involvement of the subordinate into the goal changes.

Another productivity barrier for goal-oriented leadership is the fundamental lack of will or ability of many leaders to accept how an employee tries to achieve a goal as well as the final characteristics of a goal that has been achieved by a subordinate. An increasing difficulty with the pace of technological change is the attitude of the leader as a superior subject matter expert. This leads not only to the denial of work results but also to a continuous interference with the goal achievement process of an employee. The work autonomy of a subordinate is reduced, which has a direct negative effect on work productivity as well as on the intrinsic motivation. Such a lack of Process

Acceptance and Result Acceptance leads to a high amount of non-productive re-work.

The clear Goal Orientation of a leader has a direct, substantial impact on the productivity of subordinates. Further more, normal performance-oriented employees will be highly motivated if they are enabled to autonomously achieve their work objectives. This can be enhanced even more by aligning personal development through setting demanding, but realistic goals and by relating goals to individual values, therefore creating purpose.

In most cases, it is no longer sufficient to empower employees by a goal-oriented leadership performance. As motivating goals are defined as being above their current skill level and employees can not fully control their work environment, they need the support of their leaders during the goal achievement process. Therefore the second dimension of the Leadership Productivity Model has been named *Support*. It consists of the leadership tasks *Interaction*, *Information*, *Feedback* and *Coaching*.

In many big international companies leaders personally appear so rarely or infrequently in front of their subordinates that they might be considered being on the red list for threatened species. Reasons for this are the growth of virtual and matrix organizations and the growing work load of leaders in general. Therefore it is not sufficient for leaders to implement an Open Door Policy as they are not found in their office anyway. Instead they need to ensure Interaction by creating regular face-to-face meetings with their direct reports in order to spend at least some quality time with them. Without a regular interaction time a leader is not capable of supporting let alone engaging his subordinates in a substantial manner.

It might be possible to fulfill the fundamental Information needs of employees in a virtual way by e-mail or phone, but a crucial amount of information will be lost compared to a face-to-face situation.

This is especially true for the provision of Feedback. Feedback is not a question of good manners, but a core element of an effective goal achievement process. Without feedback people do not know if and how they have achieved a goal. Therefore positive as well as constructive (negative) feedback is needed to guide current and future work performance. As especially negative feedback can elicit unproductive thoughts and reflections, the parameters of productive feedback need to be known to leaders. Not providing feedback or providing wrong feedback might lead to major productivity losses.

Feedback is also part of the Coaching a leader should provide to his team members. Coaching leads to higher work productivity as clear instructions and relationship support trigger an engaged self-learning process. It is needed if subordinates are working on a new and demanding task or have to operate in complex and changing work environments. As it supports skill and knowledge acquisition processes it leads to higher skill levels of employees and therefore increased and higher quality outputs. Coaching also enhances intrinsic motivation as it triggers various motivational sources within an individual like growth motivation, performance motivation and acknowledgement.

Besides a clear goal orientation and an ideal support of subordinates, a leader can increase productivity by an optimization of their work time. *Time Optimization* means that a leader needs to be considerate about the impact of his performance on the work time allocation of his subordinates. The optimization process starts with the *Workload Optimization***.** Here a leader needs to be clear about the actual time allocation of a team member when assigning a new task. Many leaders tend to drive their priorities at the whim of their superiors which results in the unreflective delegation (dumping) of newly ordered tasks to their subordinates. Subordinates are then forced to interrupt their current tasks and to add a new task to their list. This causes productivity losses due to the work interferences and the rescheduling of tasks as well as the enforced work overload that might occur. The long term results that must be taken into account are the motivational deficits of such delegation schemes.

Scheduling refers to the fact that most leaders do plan meetings based on their availability, not on the availability of their team members. This is done in order to optimize their own work schedule. Doing so they risk the productivity of their subordinates by interfering with their planned work time allocation. This leads to punctual productivity losses but also is the root cause of a general productivity barrier, the low acceptance of part time work contracts. Part time workers, especially mothers, are found to be highly motivated and need to organize their work time in the most efficient way in order to get home in time to take care of their kids. This makes them highly productive employees. Despite this, leaders are not very enthusiastic about employing part timers. A main reason is their limited availability to the

immediate information and delegation needs of superiors. The need to take the time schedule of a part-timer into account is perceived as reducing the individual productivity of a leader. As a consequence part-time contracts are avoided and a huge productivity potential for companies is left untapped.

In contrast to this *Meeting Optimization* is a widely accepted driver for more productivity amongst leaders. Still it is only partly implemented but could add a significant increase to work productivity as a relevant part of the weekly work time is spent in meetings. Leaders need to be trained to increase the effectiveness of a meeting e.g. by setting up a goal-oriented agenda or by using facilitation methods.

Implementing all three leadership dimensions of the Leadership Productivity Model and its different leadership tasks into the daily leadership performance should lead to significant increase of the work productivity of employees. A large study by a consulting company (Proudfoot, 2005) came up with a percentage of 13,5% productivity losses due to the leadership performance. This accounts to almost 30 work days per year that could be used productively.

It is assumed that when measuring the productivity losses using the Leadership Productivity Model, a significant productivity potential can be discovered in many companies due to an inadequate and ineffective leadership performance of a high number of leaders. This assumption has been checked in different studies across various industries as can be seen in chapter 4.

However, the overall productivity potential of leadership task performance is seen as much higher.

The productivity gains of leadership are defined as threefold: (1) *Work Time Usage*. A major effect of productive leadership is the avoidance of idle work time or the performance of unnecessary tasks. The Leadership Productivity Survey that was used in the described surveys is assessing the factors that inhibit effective Work Time Usage and measuring the amount of lost time. Another productivity gain through leadership is achieved by a more efficient (2) *Task Performance*. If employees are supported by feedback & coaching activities and are enabled and empowered to perform their tasks, the required time for performing a task will be reduced or the overall output will be higher and of greater quality. The third productivity potential is (3) *Task Effort*. A higher task effort is triggered by an increased motivation. Motivation will be increased based on the indirect effects of productive leadership performance on the drivers of intrinsic motivation. Interaction, feedback & coaching are perceived as acknowledgement of the individual. The information contained will create sense and the overall Coaching approach elicits feelings of control and personal growth. The definition and clarification of goals are directly increasing performance motivation.

2. LITERATURE REVIEW

The Leadership Productivity Model is a taxonomy of effective leadership tasks, like defined by Fleishman (1991). It's clear purpose is to describe leadership tasks that have a direct impact on the productivity of a leader's subordinates. A clear causal relationship between the different factors and the productivity of the employees is postulated. Also an empirical validation of the model has been undertaken as shown in this article.

Still there are some defining distinctions to the existing leadership models and taxonomies.

First, the concepts of leadership styles are rejected. By defining leadership in terms of styles (Fleishman, 1953; Blake & Mouton, 1964), leadership performance gets the taste of being a subject to fashions or personal preferences. Also the distinction between styles seems to be dysfunctional and leads to a conceptual distinction of the basic leadership tasks, which are seen as functionally inseparable.

Leadership's prime responsibility is to achieve organizational goals (Porter, Lawler & Hackman, 1975; Rauch & Behling, 1984, Yukl, 2010) - therefore there can't be a people focus, which is not considering the tasks that need to be fulfilled. The same is true for the task focus. As leadership is about tasks, which are nothing else as the necessary process steps to achieve organizational goals, it is always task-oriented, so task-oriented leadership is a pleonasm.

Tasks, logically, need to be conducted, mostly by people being led. Consequentially all leadership activities need to be worried about how to get people to perform, means it is basically people-oriented (Mastrangelo, Eddy & Lorenze, 2004).

While the Michigan studies (Katz, Maccoby & Morse, 1950; Katz & Kahn, 1952) did not define task-orientation and people-orientation as complimentary

leadership styles, this differentiation was introduced based on these two factors of the Ohio Studies (Fleishman, 1953) and later on applied and deepened in the contingency models (Hersey and Blanchard, 1984). The same logic was also used in the differentiation between leadership and management or transactional and transformational leadership, where management is seen as a task-oriented role with limited considerations of human issues, while leadership is defined as a relationship-oriented activity (e.g. Bass, 1990; Kotter, 1988; Minzberg 1973).

The Leadership Productivity Model sees these two leadership roles as holistic, which is supported by studies, which could not find a statistical difference between Leadership and Management tasks (Schoorman, Schechter, Moeller & Schneider, 1988). The definition of leadership is that the task of a leader is the achievement of organizational goals by interpersonal interactions. Management is seen as directed towards the organization of data and things (Schoorman et. al, 1988) and can therefore be conducted by people who do not possess a role which includes the responsibility to lead subordinates.

A second distinction to other models is the replacement of the term leadership "behavior" by leadership "performance". Instead leadership is seen as an organizational role with specific tasks that need to be consciously performed. These leadership tasks can be taught. A third differentiation is the replacement of the term leaderhip "effectivity" by the term "leadership productivity". "Leadership effectiveness" like "task-orientation" is again seen as pleonasm. If we speak about leadership we normally talk about leadership performance that is supposed to be effective. Non-effectiveness means that a leadership role has not been performed. The definition of leadership as performance of leadership tasks allows one to differentiate between high performance and low performance.

The idea that leadership should be concerned about the productivity of the people being led (Dubin, 1965; Witte, 1995) has received very limited attention in the scientific leadership literature so far. If addressed, the issue of leadership as facilitator of productiveness compared to other facilitators was discussed (Schoorman et al., 1988). The issue overlooked, was the fact that leaders should obviously act as a facilitator for work productiveness, but instead quite often act as inhibitors to the productivity of their direct reports.

The issue was therefore mostly targeted by Management Consultants, which have to sell their services based on an increase of their client's process efficiency. There are several studies (Proudfoot, 2005; Hay Group 2010) measuring the impact of leadership performance on the productivity of the subordinates. These studies supported the personal observations of the author that were derived from a series of informal, non-documented interviews with subordinates from various industries. The result is the definition of precise leadership tasks that directly influences leadership productivity. Aside from their practical face validity, the impact of these factors on leadership performance can also be theoretically derived from the literature on leadership research.

Leadership Productivity dimension: Goal Orientation

As the definition of leadership is to accomplish organizational goals, the management of this goal achievement, especially on the level of the single employee, has been part of different leadership taxonomies (Bowers & Seashore, 1966; Yukl, 2010).

A definition can be derived from the existing concepts in work psychology (Frese & Zapf, 1994; Locke, 1990). Foremost the scope and the Key Performance Indicators (e.g. the timeline) of the goal need to be precisely defined, if possible in a written *Goal Definition* document. Changes of the goals need to be clarified with all parties involved, which would then be an agreed and accepted *Goal Clarification*.

An important factor of productive goal achievement is the autonomy of the performer, as self-perceived autonomy is a major driver of intrinsic motivation (Deci and Ryan, 1980) and also directly increases work performance, process efficiency and customer satisfaction (Cohen & Ledford, 1993; Desjardins, 2002; Herbst, 2009; Wall & Martin, 1987). Leaders need to accept and develop the autonomy of their subordinates as a prerequisite for productivity. This includes the *Process Acceptance* of how the goal achievement process is handled by the subordinate as well as the *Result Acceptance* of the final specifications of the goal in the framework of the existing KPIs. Limited result acceptance is a major barrier to productivity, as work processes have to be repeated if results are rejected.

Leadership Productivity dimension: Support

A leadership task that is taken as granted in the leadership literature is to spend face-to-face time with one's subordinates. *Interaction* is the fundament of any leadership performance as leadership is communicated through this interaction. However in many international companies the availability of supervisors for their team members is strictly limited. Reasons are high workloads on leadership levels as well as international matrix organizations and virtual teams as work environments. Leaders who do not create regular, detailed and prompt communication in such work environments do create major obstacles for productivity (Kayworth & Leidner, 2002).

Leaders need to transfer the majority of work related information through personal interaction. A lack of information as well as a decline of productivity will occur if these interaction times are too limited or if the leader does not share crucial information or provide data when needed. *Information* is therefore a leadership task that has been added to the majority of leadership taxonomies (Fleishman 1991; Luthans and Lockwood, 1984; Minzberg, 1973). As human action is exclusively focused on the pursuit of goals (Frese & Zapf, 1994), *Feedback* is a crucial mechanism that allows the adaptation of human behavior to an ever changing environment. Without feedback mechanism, humans won't know that they have achieved a task (Galanter & Pribram, 1960). Task-related feedback also increases performance (Kluger & DeNisi, 1996), as it creates clarity in Goal Orientation

Leaders therefore need to provide feedback regarding the achievement of work goals to their subordinates in order to align the work results with the organizational goals. Without the information that a goal has been sufficiently achieved, a performer would miss the information, that no more effort is needed and would put too much effort into a task, e.g. not complying to the pareto principle (Juran, 1994). In the sense of productivity this kind of positive feedback is even more crucial than negative feedback. Negative feedback only prevents false work behavior, but does not steer the behavior towards organizational goals. But negative feedback easily elicits ego-involvement from the receiver, which leads to a diversion of task attention and therefore lower performance levels (Kluger & DeNisi, 1996). This effect can be reduced by offering skill development options or coaching by the supervisor.

That means negative feedback is only necessary in some leadership incidents and should be avoided if possible, while positive feedback is a leadership task that is always mandatory for the productivity of subordinates. If negative feedback has to be provided, it needs to be combined with a statement how improved performance can be achieved and how it can lead to a positive outcome, in order to increase productivity (DeNisi & Sonesh, 2011).

Also continuous positive feedback should be not confused with too much praise, which has been found as having little effect on performance (Meyer; Kay & French, 1965). The definition of positive feedback in the Leadership Productivity Model is the communication of goal process achievement to a subordinate who is performing a task.

Ideally a performer is independent from external feedback and can recognize errors and correct his actions based on task feedback that is elicited from the task itself (Frese & Zapf, 1994), also based on the earlier statement that subordinates are normally the more qualified subject-matter experts than the leader.

This kind of feedback is recognized as self-induced and therefore more easily accepted than external feedback. Self-discovery instead of external feedback also prevents that the cognitive effort for the task is reduced (Kluger & DeNisi, 1996).

A way of triggering self-discovery or self-actualization processes is to use *Coaching* as a leadership tool. It is based on starting an action cycle in which an individual is assisted to set goals, develop plans, start actions, observe and measure the performance and adapt the work behavior to increase performance skill levels in order to achieve organizational goals (Graham et. al., 1994). Coaching has been empirically proven to increase work performance (Agarwal, Angst & Massimo, 2009; Liu & Batt, 2010) or in other words, productivity. It is a leadership tool, that is in high demand of subordinates (Ellinger, Ellinger & Keller, 2003), but that is not used in the daily leadership practice (Proudfoot, 2005), based on a lack of coaching skills or a lack of insight in its need or functionality (Heslin, Vandevalle & Latham, 2006).

Leadership Productivity dimension: Time Optimization.

Workload Optimization is important when assigning goals to subordinates. It is assumed, that leaders should take the actual workload of an employee into

consideration when assigning a new goal to them, but regularly do not do so. Workloads are assigned based on the perceived urgency of a goal, not due to the consideration of the overall productivity of a subordinate. That leads to work overload which is generally frustrating employees (Whingther, Cunningham, Wang & Burnfield, 2008). Too many performance objectives also trigger conflicts between the different goals in setting priorities (Lewis, 1998). One consequence is time pressure that leads to a minimization of cognitive task effort and by this to more errors in problem solving processes (Svensson & Maule, 1993).

Scheduling refers to the scheduling of all kinds of meetings and events (e.g. face-to-face meetings, team meetings, client meetings) by the supervisor. Many scheduling decisions are taken without a consideration of the actual work schedule of an employee. That leads to a task interruption of the current tasks of their subordinates. This is inhibiting work productivity as interrupting complex tasks leads to increased error rates and longer time to complete tasks (Ratwani, Trafton & Myers, 2007). If there is a high goal motivation, interruptions also impact the performance of subsequent tasks (Freeman & Muraven, 2010). Therefore work interruptions should be avoided if possible.

Involving subordinates in the scheduling has an additional productivity impact as the negative effect of a high workload on mental fatigue can be reduced when employees are enabled to execute personal control over the scheduling process (Hockey & Earle, 2006).

Meeting Optimization considers that a leader should be concerned about the efficient usage of work time by his subordinates. As subordinates should conduct most works steps autonomously, this means focusing of the efficient organization of the shared work time, of which the major part is spent in meetings. An average employee spends about six hours a week in scheduled meetings (Rogelberg, Cliff & Kello, 2007). A large part of meeting time is found as adding no value (Garcia, Kunz & Fischer, 2003). Meeting productivity was estimated by leaders across industries to range between 33% - 47% (Romano & Nunamaker, 2001).

Factors causing this effect are e.g. a non-effective agenda that include up to 30% agenda topics that focus on sharing information, which could be also communicated asynchronously (Garcia et al., 2003). Leaders need to set up effective agendas and can also facilitate meetings, which has been identified as another factor for efficient meetings (Lambing, 2008; Romano & Nunamaker, 2001).

3. RESEARCH QUESTIONS & METHODS

In order to validate the theoretical assumptions of the Leadership Productivity Model, a specific survey has been developed. The first version (a second version is being developed) of the Leadership Productivity Survey (LPS) consists of 12 Leadership Productivity performance items that are operationalizing the three productivity dimensions (Goal Orientation, Support, Time Optimization) and ten of the eleven leadership tasks. 12 additional Leadership Productivity Loss items are used to estimate the productivity impact of the corresponding leadership performance. Participants are asked to estimate their personal productivity loss in minutes/hours per week as an outcome of the performance of the relevant leadership task.

The task of the empirical part is to validate the Leadership Productivity Model that has been measured by the LPS. In order to achieve this objective, six hypotheses have been formulated.

Hypothesis 1:

Productive leadership performance is a holistic behavioral factor that consists of different dimensions as has been specified in the Leadership Productivity Model.

Hypothesis 2:

The different dimensions of a productive leadership performance that have been specified in the Leadership Productivity Model are seen by subordinates as relevant for their work productivity.

Hypothesis 3:

The productive leadership performance of actual leaders has a substantial development potential.

Hypothesis 4:

Productive leadership performance is individual as well as situational and differentiates the behavior of leaders.

Hypothesis 5:

Productive leadership performance correlates positively with the work productivity of subordinates.

Four studies with a total of 206 participants have been conducted using the LPS as a bottom-up evaluation tool for leadership performance. The LPS uses a 5-point Likert scale (Scale values: 1=never; 2=seldom; 3=sometimes; 4=more often; 5=regular).

Study 1 (n=64) was done in a machinery company throughout a variety of technical, sales and administrative departments (Meggle, 2008). 6 of the 20 evaluated leaders were engineers or had another technical background. Study 2 (n_1=31; n_2=31) was performed in a production site for technical component and was focusing on the leadership performance of 4 team leaders with a non-academic, technical background (Kozuch, 2009). The third study (n=64) was focusing on a total of 18 leaders from as many companies and various industries, mostly academics, with an engineering, IT or administrative background (Rech 2011). In a fourth study (n=16) that was specifically done for this article, part-time MBA students from different industries and companies were asked to evaluate their supervisors.

In all four studies, the interaction time of leaders has been assessed on a different scale than the other leadership tasks. For reasons of comparisons it was excluded from this data analysis even though a corresponding Leadership Productivity loss item was used. The impact of this is seen as negligible as based on the existing results the additional data should have led to an even stronger support of the hypotheses.

During the four studies, the LPS has been slightly altered. The number of Leadership Productivity Loss items has been increased from 10 to 12 items in the last study. This has been taken into account for the different analytical steps.

4. DETAILED EMPIRICAL RESULTS

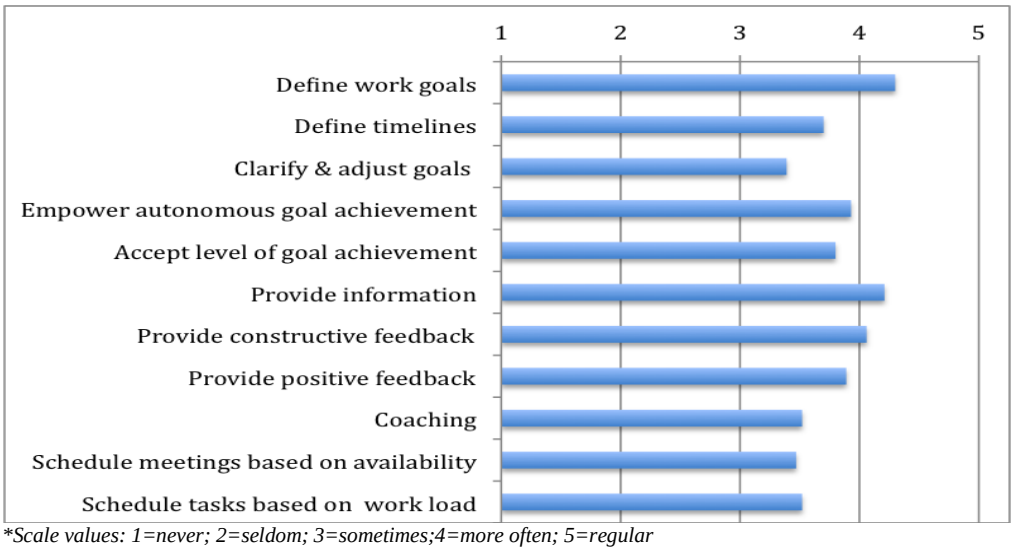
The theoretical conceptualization of the Leadership Productivity Model is that of a one-factor model. Productive leadership performance is seen as a factor that consists of multiple dimensions that impact the overall productivity of a leader (*Hypothesis 1*). This concept was analyzed by a statistical factor analysis (*Table 1*) using a principle component analysis that led to the extraction of three factors. As all measured dimensions load on one single factor, which explains 43,5% of the total variance (factor 2: 10,2%; factor 3: 8,7%), the theoretical concept of a one factor productive leadership performance has been supported.

To check the construct validity of the Leadership Productivity Model, the 64 participants of the first study have been asked if the different leadership tasks are relevant for their work productivity (*Hypothesis 2*). Table 2 shows that on a scale from 1 to 5 (high) all 11 items reflecting the ten leadership tasks of the Leadership Productivity Model are rated with values above 3, which means that all ten were evaluated as having a medium to high impact on the individual work productivity.

Table 1:
Factor loadings and communalities based on a principle components analysis for the 12 Leadership Productivity performance items of the Leadership Productivity Survey (n = 206)

	Components			
	1	2	3	Com.
Define work goals	,712	-,268	,311	,676
Define timelines	,453	-,279	,669	,731
Clarify & adjust goals	,618	-,180	-,096	,424
Empower autonomous goal achievement	,512	,500	-,269	,584
Accept level of goal achievement	,59	,318	-,218	,498
Provide information	,724	-,118	-,098	,547
Provide constructive feedback	,647	-,374	-,426	,740
Provide positive feedback	,720	-,107	-,118	,543
Coaching	,665	-,406	-,241	,665
Schedule meetings based on availability	,727	,247	,105	,601
Schedule task based on work load	,691	,521	,223	,799
Conduct efficient meetings	,774	,154	,21	0,667

Table 2:
Relevance of Leadership Productivity performance items based on the results of Study 1(n=64)



**Scale values: 1=never; 2=seldom; 3=sometimes;4=more often; 5=regular*

The next table (*Table 3*) shows the occurrence of the Leadership Productivity performance items in the different studies, expressed by their means. The assumption was (*Hypothesis 3*), that the leadership performance of leaders has a substantial development potential, which would be shown by means below a scale value of 4. As most means have values between 3 and 4, this Hypothesis can be supported by the data, which can also be seen in Table 4 where the computed means of all four studies are displayed. Only the items *Empower autonomous goal achievement* and *Accept level of goal achievement* have scores that are clearly above a scale value of 4.

Table 3:
Group means of the LPS items (n_1=64; n_2=62; n_3=64; n_5=16)

	Mean n_1	Mean n_2	Mean n_3	Mean n_4
Define work goals	3,77	3,48	4,05	2,93
Define timelines	3,34	3,42	3,55	3,31
Clarify & adjust goals	3,95	3,26	4,20	3,44
Empower autonomous goal achievement	4,59	4,19	4,63	4,20
Accept level of goal achievement	4,44	-	4,36	4,06
Provide information	4,08	3,40	4,20	3,69
Provide constructive feedback	4,06	2,98	3,94	3,19
Provide positive feedback	3,65	1,98	3,75	2,94
Coaching	3,14	2,63	3,14	2,88
Schedule meetings based on availability	3,79	3,06	4,08	3,06
Schedule task based on work load	3,74	-	3,81	3,06
Conduct efficient meetings	4,13	-	4,06	2,81

Scale values: 1 (seldom) – 5 (regular)

Table 4:
Means and Standard Deviations of the Leadership Productivity performance items

	N	Mean	SD
Define work goals	202	3,71	1,01
Define timelines	204	3,43	1,02
Clarify & adjust goals	205	3,78	1,16
Empower autonomous goal achievement	205	4,45	,64
Accept level of goal achievement	142	4,36	,75
Provide information	205	3,88	,97
Provide constructive feedback	204	3,63	1,18
Provide positive feedback	205	3,12	1,3
Coaching	205	2,97	1,2
Schedule meetings based on availability	205	3,60	1,2
Schedule task based on work load	141	3,70	,95
Conduct efficient meetings	143	3,95	1,08

Scale values: 1 (seldom) – 5 (regular)

A methodical question is, if the difference between the group means of the various samples are statistically significant from each other. This needs to be the case as the assumption of the Leadership Productivity Model is, that productive leadership performance is individual as well as situational and differentiates leadership behavior (*Hypothesis 4*).

The large Standard Deviations for the sample across all four studies in Table 4 indicate strong differences between the groups. Further more Table 5 shows an Oneway Anova analysis which implies that the differences between the group means are indeed significant with the exception of two items of the LPS.

Table 5:
Oneway Anova of the four studies of the Leadership Productivity Survey (N=206)

		m of Squares	df	MS	F	Sig.
	Between Groups	19,7	3	6,6		
Define work goals	Within Groups	184,1	198	,9	7,1	,000***
	Total	203,8	201			
	Between Groups	1,6	3	,5		
Define timelines	Within Groups	210,3	200	1,0	,5	,674
	Total	211,9	203			
	Between Groups	32,1	3	10,7		
Clarify & adjust goals	Within Groups	243,0	201	1,2	8,8	,000***
	Total	275,1	204			
	Between Groups	8,3	3	2,8		
Empower autonomous goal achievement	Within Groups	74,5	201	,34	7,5	,000***
	Total	82,8	204			
	Between Groups	1,8	2	,9		
Accept level of goal achievement	Within Groups	76,9	139	,5	1,6	,206
	Total	78,7	141			
	Between Groups	23,9	3	8,0		
Provide information	Within Groups	169,3	201	,8	9,4	,000***
	Total	193,2	204			
	Between Groups	46,8	3	15,6		
Provide constructive feedback	Within Groups	236,9	200	1,2	13,2	,000***
	Total	283,7	203			
	Between Groups	19,7	3	41,2		
Provide positive feedback	Within Groups	184,1	201	1,1	36,6	,000***
	Total	203,8	204			
	Between Groups	1,6	3	3,7		
Coaching	Within Groups	210,3	201	1,2	3,1	,030*
	Total	211,9	204			
	Between Groups	32,1	3	13,1		
Schedule meetings based on availability	Within Groups	243,0	201	1,3	10,4	,000*
	Total	32,1	204			
	Between Groups	32,1	2	3,7		
Schedule task based on work load	Within Groups	32,1	138	,9	4,3	,015*
	Total	82,8	140			
	Between Groups	1,8	2	11,7		
Conduct efficient meetings	Within Groups	78,7	140	1,0	11,6	,000**
	Total	78,7	142			

*p < .0,05 **p < 0,01 ***p < 0,001

When interpreting the means from Table 3 it needs to be taken into account that the participants of the studies 1 and 4 are a positively self-selected group. The leaders that have been evaluated volunteered to participate in the studies and selected and informed their employees about it. Therefore it can be assumed, that the sample consists of leaders which have an above average leadership performance on the dimensions of the Leadership Productivity Model. That means that a non-voluntary group of leaders should show significantly lower values than a voluntary one. This was supported by a t-test between the means of study 1 (voluntary group) and study 2 (non-voluntary) (*Table 6*) as well as between study 2 and study 3 (voluntary) (*Table 7*).

Study 4 (non-voluntary) was excluded from the analysis based on its small sample size. The comparison of means in Table 6 partially shows large significant differences for the different items, especially for Provide constructive feedback (M1 = 4.06, M2 = 2,98, p < .001) and Provide positive feedback (M1 = 4.06, M2 = 2,98, p < .001). With the exclusion of the first two items, all means of the non-voluntary group are below the means of the voluntary group. Same is true for the comparison of means between study 2 and study 3 (*Table 7*). Provide constructive feedback (M2 = 2,98, M3 = 3,94, p < .001) and Provide positive

Table 6:
Comparison of means (t-test for independent samples) of the LPS items between groups 1 and 2

	Mean Study 1 (voluntary)	Mean Study 2 (non-voluntary)	t	Sig. (2-tailed)
Define work goals	3,77	3,48	1,59	,11
Define timelines	3,34	3,42	-,46	,647
Clarify & adjust goals	3,95	3,26	3,20	,002**
Empower autonomous goal achievement	4,59	4,19	3,50	,001**
Accept level of goal achievement	NA			
Provide information	4,08	3,40	4,0	,000***
Provide constructive feedback	4,06	2,98	5,64	,000***
Provide positive feedback	3,65	1,98	8,46	,010*
Coaching	3,14	2,63	2,62	,001**
Schedule meetings based on availability	3,79	3,06	3,51	,000***
Schedule task based on work load	NA			
Conduct efficient meetings	NA			

*p < .0,05 **p < 0,01 ***p < 0,001. NA (Not Applicable) means that the items have not been evaluated in the second study.

feedback (M_2 = 2,98, M_3 = 3.75, p < .001) expose a large difference between the performance of the different leaders. Here, also the first item *Define work goals* (M_2 = 3,48, M_3 = 4,05, p < .01) shows a significant difference between study 2 and study 3. Overall the executed t-tests show that supervisors can be differentiated based on their leadership productivity performance and that leaders with an openness for leadership issues, indicated by a voluntary participation in a bottom-up evaluation of their leadership performance, are more productive leaders than leaders without such an awareness, therefore supporting *Hypothesis 4* as well as *Hypothesis 3*.

Finally, the predictive validity of the Leadership Productivity Model needs to be tested. The assumption is that a leader that scores high on the items of the LPS, will cause a higher productivity of his subordinates. The LPS measures productivity in terms of work time lost due to the leader's performance. Therefore a low loss should correlate with high LPS values. The LPS measures the productivity loss that is caused by the different leadership dimensions. A certain percentage of reported work time loss would indicate that there is a link between the leadership performance and the productivity loss. Indicated in the literature is a number of about 14 % as lost work time due to leader's performance (Proudfoot, 2005). Based on the figures in Table 8, the mean for all four studies is 26% (624,45 minutes productivity loss per week divided per 40 work hrs per week) Deducting the items *Conduct efficient meetings and Schedule task based on work load*, which have been only estimated in the fourth study, the figure is 17%. It needs to be seen if the reported productivity loss for future studies will generally increase based on the estimation of two more items like in study 4. At the moment it can be stated, that the reported productivity loss based on 10 items are above or are consistent with the expected value of 14%.

Table 7:
Comparison of means (t-test for independent samples) of the LPS items between groups 2 and 3

	Mean Study 2 (non-voluntary)	Mean Study 3 (voluntary)	t	Sig. (2-tailed)
Define work goals	3,48	4,05	-3,41	,001**
Define timelines	3,42	3,55	-,65	,515
Clarify & adjust goals	3,26	4,20	-4,88	,000***
Empower autonomous goal achievement	4,19	4,63	-4,03	,000***
Accept level of goal achievement	NA			
Provide information	3,40	4,20	-4,92	,000***
Provide constructive feedback	2,98	3,94	-4,95	,000***
Provide positive feedback	1,98	3,75	10,03	,000***
Coaching	2,63	3,14	-2,74	,007**
Schedule meetings based on availability	3,06	4,08	-5,23	,000***
Schedule task based on work load	NA			
Conduct efficient meetings	NA			

*p < .0,05 **p < 0,01. ***p < 0,001. NA (Not Applicable) means that the items have not been evaluated in study 2.

Table 8:
Means and Standard Deviations of the productivity loss items of the LPS

Items	N	Min	Max	Mean	SD
Availability of leaders	200	0	240	46,90	65,59
Define work goals	199	0	360	46,70	68,20
Define timelines	80	0	240,0	25,75	51,18
Clarify & adjust goals	80	0	480,0	34,63	69,5
Empower autonomous goal achievement	132	0	360,0	40,76	73,2
Accept level of goal achievement	80	0	480	37,38	68,78
Provide information	200	0	360	49,80	71,71
Provide constructive and positive feedback	200	0	360	47,60	76,6
Coaching	143	0	480,0	39,58	72,3
Schedule meetings based on availability	200	0	360	42,84	64,52
Schedule task based on work load	16	0	180,0	75,63	52,78
Conduct efficient meetings	16	30,0	480,0	136,88	122,46
Overall sum $I_1 - I_{10}$				411,94	
Overall sum $I_1 - I_{12}$				624,45	

Table 9:
Group means of the LPS productivity loss items (n_1=64; n_2=62; n_3=64; n_5=15)

	Mean n_1	Mean n_2	Mean n_3	Mean n4
Availability of leaders	73,97	46,13	20,63	56,88
Define work goals	76,91	36,13	18,44	93,13
Define timelines	-	-	14,06	72,5
Clarify & adjust goals	-	-	24,84	73,75
Empower autonomous goal achievement	67,5	-	14,06	60,63
Accept level of goal achievement	-	-	29,22	70,00
Provide information	82,4	34,84	17,81	117,50
Provide constructive and positive feedback	82,6	35,16	20,0	79,38
Coaching	120,0	41,61	16,56	118,75
Schedule meetings based on availability	61,38	28,2	25,0	103,75
Schedule task based on work load	-	-	-	75,63
Conduct efficient meetings	-	-	-	136,88
Overall sum I_1 _ I_{10}	911,1	361,9	278,0	1.265,7
Overall sum I_1 _ I_{12}				1.690,7

The means for the different groups (*Table 9*) show large differences, which are tested to be statistically significant in a Oneway Anova (*Table 10*). The data also supports *Hypothesis 5* as it shows, that different leadership performance leads to different productivity levels of subordinates. Still it needs to be shown, if the LPS leadership items correlate with the LPS productivity loss items. The statistical correlation should be negative as higher leadership scores should lead to lower productivity loss values.

In order to calculate the correlations, an overall mean for all leadership items was calculated. This is due to the insight, that the LPS leadership items all load on one factor (Table 2). As it can be seen in the factor analysis displayed in Table 11, the same is true for the Leadership Productivity loss items. All but one of the dimensions (*Clarify and adjust goals*) load on one single factor, which explains 52,7% of the total variance (factor 2: 15,6%; factor 3: 10,2%).

Table 10:
Oneway Anova of the Leadership Productivity loss items of the four studies of the Leadership Productivity Survey (N = 205)

		m of Squares	df	MS	F	Sig.
Availability of leaders	Between Groups	88300,4	3	29433,5	7,5	,000***
	Within Groups	767977,6	196	3918,2		
	Total	856278	199			
Define work goals	Between Groups	144562,5	3	48187,5	12,1	,000***
	Within Groups	776371	195	3981,4		
	Total	920933,6	198			
Define timelines	Between Groups	43711,3	1	43711,3	20,89	,000***
	Within Groups	163243,8	78	2092,9		
	Total	206955	79			
Clarify & adjust goals	Between Groups	30615,3	1	30615,3	6,8	,010*
	Within Groups	350973,4	78	4499,7		
	Total	381588,750	79			
Empower autonomous goal achievement	Between Groups	89111,742	2	44555,9	9,38	,000***
	Within Groups	612812,500	129	4750,5		
	Total	701924,242	131			
Accept level of goal achievement	Between Groups	21287,813	1	21287,8	4,71	,030*
	Within Groups	352460,938	78	4518,7		
	Total	373748,750	79			
Provide information	Between Groups	214387,794	3	71462,6	17,31	,000***
	Within Groups	809004,206	196	4127,6		
	Total	1023392	199			
Provide constructive & positive feedback	Between Groups	145493,8	3	48497	9,3	,000***
	Within Groups	1022154,2	196	5215,1		
	Total	1167648	199			
Coaching	Between Groups	140917,4	3	46972,4	10,86	,000***
	Within Groups	601257,5	139	4325,6		
	Total	742174,9	142			
Schedule meetings based on availability	Between Groups	112964,6	3	37654,8	10,32	,000***
	Within Groups	715374,3	196	3649,9		
	Total	828338,9	199			

*p < .0,05 **p < 0,01 ***p < 0,001

Table 11:
Factor loadings and communalities based on a principle components analysis for the 12 Productivity Loss items of the Leadership Productivity Survey (n = 205)

	Components			
	1	2	3	Com.
Availability of leaders	,811	-,159	,153	,707
Define work goals	,708	,385	,280	,728
Define timelines	,856	-,235	,03	,789
Clarify & adjust goals	0,07	,481	,820	,910
Empower autonomous goal achievement	,659	,584	-,344	,894
Accept level of goal achievement	,679	,404	-,480	,856
Provide information	,777	,383	-,146	,772
Provide constructive and positive feedback	,924	-,09	,06	,864
Coaching	,606	-,491	,06	,612
Schedule meetings based on availability	,895	-,172	-,03	,831
Schedule tassk based on work load	,674	,09	,273	,537
Conduct efficient meetings	,669	-,687	,02	,920

The overall mean of Leadership Productivity Performance items is therefore correlated with the overall mean for all Leadership productivity loss items of the LPS. In Table 12 the results for all four studies are shown. Two of the studies show no significant correlations, while the two other studies show the expected negative correlation, which is also in both cases statistically highly significant. Therefore the assumption, that productive leadership performance leads to a higher employee productivity (*Hypothesis 5*) is generally supported by the data. Why the first study shows no correlation (the fourth study only contains a small sample size), remains unclear. It might be assumed, that the impact of leadership performance on the subordinates productivity depends on the actual work environment and situation, e.g. the actual task. Therefore, in certain situations, a better leadership performance might not increase the productivity or a bad performance has only a slight impact.

Table 12:
Correlations between Leadership Productivity performance items and Leadership Productivity loss (n = 205)

	Leadership Productivity loss n_1	Leadership Productivity loss n_2	Leadership Productivity loss n_3	Leadership Productivity loss n_4
Leadership Productivity Performance n_1	-,102			
Leadership Productivity Performance n_2		-,337**		
Leadership Productivity Performance n_3			-0,352**	
Leadership Productivity Performance n_4				0,008

*p < .0,05 **p < 0,01

5. CONCLUSIONS

The article presented a theoretical model that defined leadership productivity as criteria for evaluating the performance of leaders. An important aspect of the Leadership Productivity Model is to broaden the focus of leadership research from the behavior of a leader towards the impact of a leader's performance on the goal achievement success of his subordinates.

Based on the existing literature it can be stated that the leadership performance dimensions and the leadership tasks that have been defined in the Leadership Productivity Model have a clear impact on the work productivity of a leader's subordinates.

What is still missing as part of a complete leadership productivity model is the description of the different motivational factors that lead to a higher task performance and task effort from an employee.

Summarizing the empirical findings, it can be stated that the underlying assumptions of the Leadership Productivity Model are supported based on the existing data. The Leadership Productivity Model needs to be enhanced by leadership tasks that are increasing the intrinsic motivation of employees. Also a measurement of the task performance and task effort should take place in further research. The correlation between leadership productivity tasks and productivity losses needs to be confirmed in more studies with non-voluntary participants. The same is true for the measurement of the overall productivity losses. Here the causal factors for the variances between groups need to be identified.

6. ABOUT THE AUTHOR

Dr. Christoph Desjardins is professor for Human Resources Management at the University of Applied Sciences in Kempten, Germany since 2003.

After studying Economics at the University of Constance (Grundstudium), he graduated with a Master in Work & Organizational Psychology (Diplom-Psychologe) from the University of Münster.

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From 1994 to 2003, Christoph worked as a HRM and Change Management consultant and manager for the consulting company Accenture. During this time he also obtained his Ph.D. degree from the Johann-Wolfgang Goethe University Frankfurt.

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