

# Emails From the Boss—Curse or Blessing? Relations Between Communication Channels, Leader Evaluation, and Employees' Attitudes

International Journal of  
Business Communication  
2019, Vol. 56(1) 50–81  
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DOI: 10.1177/2329488415597516  
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## Abstract

The present research investigates if and how a more digitally centered communication between supervisors and employees satisfies employees' needs regarding the communication with their supervisors and influences employees' attitudes toward the supervisor and the job. In a cross-sectional online study, 261 employees rated their supervisors' actual and ideal use of different communication channels (i.e., telephone, face-to-face, email) regarding quality and quantity. Employees' job satisfaction and their perceptions of their supervisors' effectiveness and team identification were measured as dependent variables. Employees perceived face-to-face communication to be of higher quality than telephone and email communication, and they indicated a preference for more face-to-face communication with their supervisors than they actually had. Moreover, the perceived quality of communication, especially via face-to-face, was strongly and positively related to the dependent variables. These results provide insights into potential problems of increasing e-leadership in organizations. We conclude with recommendations to reduce these problems.

## Keywords

e-leadership, leadership, communication, face-to-face, email

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## Introduction

Leaders' communication behavior is essential for the success of organizations. As communication is a key component in coordinating and leading team members toward a common goal, leaders use roughly 80% of their working time for interactions with coworkers and employees (Neuberger, 2002; Riggio, Riggio, Salinas, & Cole, 2003). Leaders use communication to convey visions, assign tasks, establish relationships with employees, and to explain how tasks can be accomplished (Awamleh & Gardner, 1999; Den Hartog & Verburg, 1997; Riggio et al., 2003). One crucial aspect of such communication is the transfer and reception of all relevant information. To achieve this, leaders can utilize a variety of communication channels.

In this respect, the classic channels of communication are face-to-face interactions or telephone conversations. However, as developments in communication technology progress, a plethora of possibilities to communicate becomes available to leaders and employees, such as video- and instant-messaging or the simultaneous editing of online documents. Therefore, today's leaders can choose between a variety of different communication channels and tools that come with certain advantages and disadvantages. Probably, most indicative of this development is that email communication has been firmly integrated into our daily (work) life (D'Urso & Pierce, 2009; Jackson, Dawson, & Wilson, 2003; Markus, 1994a; Turnage & Goodboy, 2016).

This ongoing development toward electronic communication also changes the face of leadership in modern organizations. Indeed, a wide range of scholars agree that "e-leadership" will be the regular state instead of the exception in the future (Avolio, Sosik, Kahai, & Baker, 2014; Zaccaro & Baider, 2003). One reason for this trend could be that leadership proves to be especially important in virtual work contexts. For example, Purvanova and Bono (2009) compared the impact of transformational leadership between face-to-face and virtual teams. They found that transformational leadership had a stronger positive effect on team performance in virtual teams than in face-to-face settings. A possible reason for this need for leadership in virtual teams could be that the effects of various detrimental group processes are enhanced in such settings. For example, perceived social loafing of fellow team members is shown to affect team cohesion and work satisfaction more negatively in virtual settings than in face-to-face interactions (Monzani, Ripoll, Peiró, & van Dick, 2014). Effective e-leadership could counterbalance these heightened risks of virtual teamwork. Therefore, as computer-mediated communication and advanced communication technologies will likely gain in importance, e-leadership will gain in importance as well.

Much of the research on the use of communication channels in leadership investigates hindrances associated with different channels, focusing on efficient and effective transmission of information. For example, Walvoord, Redden, Elliott, and Coovert (2008) developed an extensive set of guiding principles on how information can be transmitted most effectively from leader to employees using advanced technologies. Other research in this field focused on very specific questions regarding the use of electronic media at the workplace, such as the effects of channel choice and message

structure on the receivers perception of bad-news messages (Jansen & Janssen, 2013) or expressions of organizational dissent in emails (Hastings & Payne, 2013).

What is still missing in this body of research thus far is how employees perceive this change in the culture of communication with their leaders in a general sense. While it has been shown that there are situations, when communicating with a leader via email or other electronic tools is convenient and economical (e.g., Kupritz & Cowell, 2010), we aim to explore communication channel use taking a wider perspective. Therefore, we want to uncover how employees perceive the change to a more digitalized communication environment at work and whether the increasing use of electronically transmitted communication matches their needs and preferences altogether.

We seek to address these questions from two different angles. First, we focus on employees' attitudes toward the quantity of different communication channels (i.e., face-to-face, telephone, electronic mail) at their workplace and how this is related to employees' work satisfaction and perception of their supervisor. Second, we examine whether the different communication channels vary in perceived quality and whether these differences would affect employees' job satisfaction and perception of their supervisor.

## **Theories of Communication Channel Quality**

It has already been shown that the appropriate use of channels in communication at work is related to managerial effectiveness (Alexander, Penley, & Jernigan, 1991; Daft, Lengel, & Trevino, 1987). While face-to-face communication usually represents the most preferred communication channel, this preference varies strongly depending on the type of task (Reder & Conklin, 1987). Considering the trend toward more computer-mediated communication at work in general, it is important to examine whether the trend to more computer-mediated leadership reflects employees' needs.

As comparisons of face-to-face communication, we chose the two considerably most common electronic communication channels used at work, that is, telephone and email. Vor dem Esche and Hennig-Thurau (2013), for instance, have shown that in 2012, over 75% of communication in the work context, besides face-to-face communication, was transmitted via email or telephone.

Face-to-face communication refers to the personal execution of leadership with both leader and employee being physically present in a given situation and the leader conveying information to the employee in a verbal manner. Email communication represents the process of using electronically typed content and sending written messages to exert leadership. Finally, telephone communication includes leading employees by communicating with them via verbal means over the telephone. Certainly, these communication channels are not necessarily exclusive when it comes to leadership communication at the workplace; rather, they can be seen to complement each other.

Building on two major theories, which cover the quality of different communication channels, we propose that for effective leadership, face-to-face communication is superior to other communication channels in a variety of ways.

**Table 1.** Comparison of Face-to-Face, Electronic Mail, and Telephone Communication Regarding Aspects of Channel Richness and Channel Synchronicity.

	Face-to-face communication	Email communication	Telephone communication
Utilization of information cues	High	Low	Low
Extent of personalization	High	Medium	Medium
Capacity of feedback	High	Medium	High
Degree of language variety	High	Medium	High
<i>Overall channel richness</i>	<i>High</i>	<i>Medium-low</i>	<i>Medium</i>
Transmission velocity	High	Low-medium	High
Parallelism	Medium	High	Low
Symbol sets	Few-many	Few-medium	Few
Rehearsability	Low	High	Low
Reprocessability	Low	High	Low
Information transmission	Fast	Slow	Fast
Information processing	Low	Medium	Low
<i>Overall synchronicity</i>	<i>High</i>	<i>Low</i>	<i>Medium</i>

According to media richness theory (MRT) by Daft and Lengel (1984), the different communication channels can be distinguished in terms of “media richness,” which is defined as the ability to deliver a clear understanding within a time interval and to reduce ambiguity of a message by promoting shared interpretation (Daft & Lengel, 1986). Media richness of certain communication channels is based on four characteristics (Daft & Lengel, 1984; Lengel & Daft, 1989): (a) the ability to utilize numerous information cues, (b) the extent of personalization or personal focus provided, (c) the capacity for immediate feedback, and (d) the degree of language variety. According to MRT, the richness of the channels examined in the present study can be ranked in the order of (a) face-to-face; (b) telephone; and (c) addressed written messages, including e-mail (Daft et al., 1987). Table 1 shows a summary of each communication channel’s characteristics regarding the four aspects of channel richness. MRT was criticized for its weak empirical support predicting the choice of communication channel (e.g., Dennis & Kinney, 1998; El-Shinnawy & Markus, 1997). Nevertheless, we believe that MRT is a useful heuristic framework for our research questions, because we are interested in the preference for a certain communication channel regarding the communication with a leader in a wide array of different situations and not so much in the media choice within a specific situation.

The more recent theory about characteristics of communication channels, which has also found better empirical foundation than MRT (e.g., DeLuca & Valacich, 2005; Dennis, Valacich, Speier, & Morris, 1998) is media synchronicity theory (MST; Dennis & Valacich, 1999). MST makes similar assumptions as the MRT regarding the characteristics of a channel. However, it specifies the relevant communication processes and media capabilities especially for the newer electronic channels, which makes it easier and clearer to identify which channel may work best for which task.

According to MST, communication channels differ in their capability to allow individuals to achieve synchronicity (see Table 1), which means they “exhibit a shared pattern of coordinated synchronous behavior with a common focus” (Dennis, Fuller, & Valacich, 2008, p. 581). The five characteristics (or in terms of the theory: “capabilities”) are (a) transmission velocity (the immediacy of feedback and the interactivity of the communication), (b) parallelism (the possibility of communication by multiple individuals at the same time), (c) symbol sets (the number of possible communication encoding options), (d) rehearsability (the extent to how much rehearsing and fine tuning of the message is possible), and (e) reprocessability (the extent to which a message can be reexamined or reprocessed).

MST also states that it depends on the requirements of the communication task which medium is better suited. For situations where a lot of new information has to be processed (conveyance processes,) low-synchronicity channels are better suited. Whereas in situations where individuals have to reach a mutual understanding and agreement of a topic (convergence processes), high-synchronicity channels work better.

Leadership is a process in which mutual understanding and agreement is crucial. This is visible in basic theories about the relation of leaders and employees like leader-member exchange theory (e.g., Dansereau, Cashman, & Graen, 1973) or management by objectives (e.g., Drucker, 1954 or McGregor, 1957). Leader-member exchange theory states that mutual trust and support is a characteristic of higher quality working relationships (Liden & Graen, 1980), as well as loyalty and bidirectional influence (Dienesch & Liden, 1986). Management by objectives characterizes participative decision making and periodic performance feedback as two of the key aspects of leadership (Robbins & DeCenzo, 2005). Additionally, only on the basis of mutual exchange can the ingredients of effective leadership such as respectfulness, appreciation, motivation, and inspiration be conveyed (e.g., Lowe, Kroeck, & Sivasubramaniam, 1996; Mayfield & Mayfield, 2002).

Hence, most of the time, the communication between leaders and employees should be a convergence process, rich of information and of high synchronicity to sustain a good leader-employee relationship and to enable effective leadership. Of course, in situations in which a leader simply wants to provide new information to the employees, a channel low on synchronicity is appropriate. However, although these pure information-processing processes are part of the leader-employee communication, leadership surpasses providing information: Leadership is “the process of influencing others to understand and agree about what needs to be done and how to do it” (Yukl, 2006, p. 8). Both MRT and MST would suggest that face-to-face would be the best communication channel to achieve such convergence and, thus, enable effective leadership. Given that employees have a need for effective leadership, they should prefer leadership communication to be face-to-face most of the time.

**Hypothesis 1:** Employees prefer most of their communication with their leaders to be face-to-face.

This preference for personal communication coincides inauspiciously with the current trend toward an increased usage of alternative communication channels in leadership. Considering that a lot of personal interaction has been replaced by email communication, the preferred amount of face-to-face leadership should exceed the actual quantity found at work, resulting in a difference between ideal (in the sense of being preferred by employees) and actual ratings by participants. At the same time, the increased usage of alternative, less rich and synchronous channels like email or telephone should lead to lower preferred amounts of usage of these channels than actually take place at the workplace. Therefore, we propose:

**Hypothesis 2:** Employees perceive a discrepancy between the actual and the ideal amount of (a) face-to-face, (b) email communication, and (c) telephone communication. Employees desire (a) more face-to-face communication, (b) less email communication, and (c) less telephone communication with their leader than they actually have.

## Effects of Communication Channel Choice

Employees' interactions and experiences with their leaders provide the basis for employees' impressions of their leader as well as their affective and cognitive reception and processing of information about her or him (Hall & Lord, 1995). While email communication is limited to a relatively narrow range of information that can be effectively and reliably conveyed, face-to-face communication represents a much more elaborate way to exchange different impressions and characteristics. Therefore, due to higher synchronicity, the richer pool of information available in face-to-face interaction should make it easier for leaders to convey a more positive image of their competencies, to highlight outcomes achieved under their leadership, and to enhance employees' job satisfaction (e.g., de Vries, Bakker-Pieper, & Oostenveld, 2010). The same arguments lead to the assumption that frequent personal appearance associated with face-to-face communication might foster the perception of leaders' effectiveness and leaders' identification with the team. Therefore, we propose:

**Hypothesis 3:** The amount of face-to-face communication between leader and employee relates more positively to (a) job satisfaction and (b) the perceived effectiveness and team identification of the leader compared with the amount of the other communication channels (telephone and email).

Apart from these effects, the quality of the messages transmitted through the various channels should differ markedly. In choosing what constitutes communication quality in a leadership setting, we were inspired by various prominent leadership theories—for example, the full-range model of leadership (Avolio, 2004; Felfe, 2006).

One basic aspect of leadership is the clarification of goals, tasks, roles, and other information relevant to the work at hand. This aspect of communication *clarity* is included in the full-range model of leadership under the term “transactional

leadership,” and has been proven effective repeatedly (Judge & Piccolo, 2004). It is also prominent in elder theories dealing with task-related leadership behavior, which have also accumulated considerable empirical support (Judge, Piccolo, & Ilies, 2004).

In our study, clarity is defined as the ability of the leader to be clear and understandable, so that the employee understands the message the leader wants to communicate—the richer and more synchronous a channel is, the better leaders and followers can ensure that they are on the same informational level (e.g., via questions and feedback).

The second aspect is *leadership behavior*. According to the full-range model of leadership, the most effective leadership goes beyond mere presence and the clarification of goals and other relevant aspects of work. Most often discussed under the term transformational leadership, the most effective leaders are expected to motivate their followers through a compelling vision, charisma, intellectual stimulation, and individual consideration (Felfe, 2006). Such transformational leadership has been shown to be effective over and above other leadership behaviors (Judge et al., 2004).

We propose that such engaging and intrinsically motivating leadership might come across to the employees differently, depending on communication channel choice and should be transmitted more easily when more encoding options are available (e.g., motivation can be transmitted through body language and the pitch of the voice). Hence, we propose that the quality of communication will be better via richer/more synchronous channels, like face-to-face.

The third aspect of communication quality in the leadership process is *reliability*. According to the full-range model of leadership and many other leadership theories, one of the most fundamental preconditions for effective leadership is that the leader has to be available to the employees when needed. In fact, not being available and not executing any leadership functions—although they might be needed—is generally called *laissez-faire* leadership. Little surprising, *laissez-faire* leadership has been proven again and again to be ineffective (Judge & Piccolo, 2004). Thus, we assume that leadership communication should be qualitatively better, the more it serves to establish a reliable link between leader and employee. We define reliable here as the possibility of the employee to contact the leader with important information, questions, or problems and getting a quick response. Not all communication channels equally guarantee high communication reliability. Emails with important and urgent matters, for example, are not necessarily read and answered shortly after they were sent. A problematic delay can be the consequence.

For these reasons, we propose that face-to-face communication is best suited to deliver higher quality messages with regard to the above three aspects of communication quality in the leadership context:

**Hypothesis 4:** Employee perceptions of (Hypothesis 4a) clarity, (Hypothesis 4b) leadership behavior, and (Hypothesis 4c) reliability in face-to-face communication will be more positive than in telephone and email communication.

Additionally, we propose that employees will prefer higher quality and that they are aware of the quality differences between the messages conveyed through the different communication channels. Hence, perceived differences between actual and ideal communication quality should be significantly lower in face-to-face communication than in the other two channels.

**Hypothesis 5:** The perceived differences between actual and ideal (a) clarity (e.g., understandable and precise; (b), leadership behavior (e.g., friendly and respectful), and (c) reliability (e.g., timely feedback) in face-to-face communication are higher than in telephone or email communication.

Finally, communication quality should have considerable effects on employees' job satisfaction and their perception of their leader's effectiveness. Successful leadership is only possible when communication with a leader is clear, reliable, and when it meets the basic requirements for effective leadership. We thus propose:

**Hypothesis 6:** The quality of a communication channel is positively related to (a) employee job satisfaction and employees' perceptions of their leaders' (b) effectiveness and team identification (c).

## Method

### *Sample and Procedure*

Altogether, 328 participants took part in an online survey. As in previous research, participants were recruited by distributing the link to the online questionnaire through various mailing lists and social networks (see Escartin, Ullrich, Zapf, Schlüter, & van Dick, 2013). As an incentive for participation, two Amazon vouchers with a value of 50 Euros each were randomly raffled among the participants. After excluding participants with missing values on the core variables, the final sample consisted of 265 participants. Of them, 61.1% were female. The mean age was 25.98 years ( $SD = 4.81$ ; Min = 19, Max = 53). Most participants worked part-time ( $n = 176$ ), 85 participants worked full-time, and 4 participants did not provide any information. Participants work in a wide range of occupations like service jobs, data processing, health care, administration, organizational, consultancy, teaching and research, and they come from diverse industries such as food industries, health care, automobile industry, mechanical engineering, IT, university, and public service. Most participants ( $n = 244$ ) have the highest educational degree available in the German school system ("Abitur," which is equivalent to high school degree or A levels).

### *Measures*

The questionnaire was administered in German and consisted of 129 items and measured seven distinct subareas of information. If not mentioned otherwise, all items



were answered on a 6-point Likert-type scale with endpoints 1 (*do not agree at all*) and 6 (*completely agree*). After a brief introduction, participants provided demographic data and information about the nature of their work.

**Use of Different Communication Channels.** Participants were then asked about the actual and ideal amounts of the different channels (email, telephone, face-to-face, and other) employed by their supervisors (eight items; assessed in percentages of total communication with their supervisors). The participants were instructed that the total amount of communication across all channels had to add up to 100%.

**Communication Quality.** Next, participants' needs regarding communication quality for each channel conveyed by their supervisors and the actual communication quality were assessed. This scale was newly developed for the study because, by the time the questionnaire was composed, there was no established construct for communication quality regarding clarity, leadership, and reliability available.<sup>1</sup>

The items for the quality needs all started with the phrase "When I communicate with my supervisor via email (via telephone, face-to-face, respectively) it is important to me, that . . .". The items for the actual quality all started with the phrase "When I communicate with my leader via email (via telephone, face-to-face, respectively), it is true that . . .". Needs and the actual quality were each measured by 10 items for every communication channel. These 10 items constituted three subscales (see Table 2, for the complete communication quality scales): communication clarity (3 items, e.g., ". . . task instructions are precise"), displayed transformational leadership in the communication (5 items, e.g., ". . . he provided recognition"), and communication reliability (2 items, e.g., ". . . task instructions and important information reach me in time"). Cronbach's alpha coefficients for these scales were all acceptable to excellent (.61 to .90, see Table 3). In addition to these closed questions, the participants were asked in open questions which positive and negative features they would ascribe to each channel.

The final sections of the survey contained the three dependent variables: perceived leaders' effectiveness, perceived identification of the leader with the team, and employees' job satisfaction.

**Perceived Leader Effectiveness.** To assess (perceived) leader effectiveness, we developed a scale consisting of six items which cover a variety of successful leadership behaviors: The perception of the leader as an effective supervisor who is able to motivate employees ("My supervisor leads our team in a way that motivates us"), to evoke positive emotions in employees ("I like working with my supervisor"), to achieve successful outcomes ("The work of my supervisor has been very successful so far," "The work of my supervisor will be very successful in the future"), and to present an overall image of effective leadership ("My supervisor is a good supervisor," "My supervisor leads our team very effectively"). The scale showed good reliability (Cronbach's  $\alpha = .95$ ).

**Table 2.** Scales for Communication Quality.

Channel	Category	Item
Email	Item-prefix real communication	When I communicate with my direct superior via email, it applies that . . .
		When I communicate with my direct superior via email, it's important for me that . . .
	Item-prefix ideal communication	. . . the emails of my superior contain precise working instructions.
		. . . the emails of my superior contain understandable working instructions.
	Clarity	. . . the emails of my superior are formulated accurately.
		. . . the emails of my superior are formulated friendly.
		. . . my superior appreciates my work.
		. . . my superior treats me respectfully.
		. . . I'm getting motivated.
		. . . my superior inspires me with visions for our team or our organization.
Reliability	. . . requests are answered quickly.	
	. . . instructions or important information reach me in time.	
Phone	Item-prefix real communication	When I communicate with my direct superior via phone, it applies that . . .
		When I communicate with my direct superior via phone, it's important for me that . . .
	Item-prefix ideal communication	. . . the working instructions are precise.
		. . . the working instructions are understandable.
	Clarity	. . . the working instructions are comprehensible.
		. . . my superior is friendly.
		. . . my superior appreciates my work.
		. . . my superior treats me respectfully.
		. . . I'm getting motivated.
		. . . my superior inspires me with visions for our team or our organization.
Reliability	. . . requests (e.g., for call-backs) are answered quickly.	
	. . . instructions or important information reach me in time.	

(continued)

**Table 2. (continued)**

Channel	Category	Item
Face-to-face	Item-prefix real communication	When I communicate with my direct superior via face-to-face, it applies that . . .
	Item-prefix ideal communication	When I communicate with my direct superior via face-to-face, it's important for me that . . .
	Clarity	. . . the working instructions are precise. . . . the working instructions are understandable. . . . the working instructions are comprehensible. . . . my superior is friendly.
	Leadership	. . . my superior appreciates my work. . . . my superior treats me respectfully. . . . I'm getting motivated.
	Reliability	. . . my superior inspires me with visions for our team or our organization. . . . my requests (e.g., for meetings) are answered quickly. . . . instructions or important information reach me in time.

**Table 3.** Means, Standard Deviations, Zero-Order Correlations, and Reliabilities.

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Percentage email communication	30.8	26.3	—														
2. Percentage telephone communication	14	13.8	-.24**	—													
3. Percentage face-to-face communication	52.8	26.7	-.83**	-.26**	—												
4. Email clarity <sup>a</sup>	4.56	1.1	.16*	-.17*	0	.61											
5. Email leadership <sup>a</sup>	4.17	0.93	.08	-.14*	.05	.68**	.80										
6. Email reliability <sup>a</sup>	4.61	1.12	.05	-.29**	.18**	.57**	.54**	.72									
7. Telephone clarity <sup>a</sup>	4.74	0.87	.03	-.07	.04	.64**	.46**	.39**	.86								
8. Telephone leadership <sup>a</sup>	4.34	0.87	.01	-.04	.04	.55**	.79**	.4**	.54**	.78							
9. Telephone reliability <sup>a</sup>	4.71	1.0	-.14*	-.09	.21**	.42**	.39**	.6**	.47**	.48**	.73						
10. Face-to-face clarity <sup>a</sup>	4.93	0.95	0	.02	.02	.51**	.38**	.33**	.68**	.41**	.38**	.90					
11. Face-to-face leadership <sup>a</sup>	4.56	0.87	.02	-.04	.04	.5**	.73**	.38**	.45**	.86**	.45**	.47**	.73				
12. Face-to-face reliability <sup>a</sup>	4.89	0.92	0	-.08	.08	.49**	.53**	.62**	.5**	.54**	.72**	.53**	.57**	.84			
13. Perception of leader effectiveness	4.53	1.1	.02	-.19**	.13*	.5**	.56**	.5**	.47**	.63**	.51**	.5**	.66**	.57**	.95		
14. Perception of leader team identification	4.64	1.25	-.17**	-.9	.22**	.13	.22*	.15*	.24**	.37**	.27**	.29**	.38**	.26**	.47**	—	
15. Job satisfaction	4.7	0.89	.03	-.10	.06	.31**	.45**	.28**	.34**	.51**	.38**	.31**	.53**	.39**	.61**	.25**	.65

Note. N = 191-261.

<sup>a</sup>Refers to the actual internal consistency estimates (Cronbach's alphas) are displayed on the diagonal. If the alpha was not reported, a single item was used.

\*p < .05. \*\*p < .01.

**Perceived Leader Team Identification.** Perceived leader identification with the team was measured using one item of the German translation (van Dick, Wagner, Stellmacher, & Christ, 2004) of Mael and Ashforth's (1992) scale: "When my direct supervisor talks about this team, he usually says 'we' instead of 'they.'"

**Employees' Job Satisfaction.** In line with previous research (e.g., van Dick, Schnitger, Schwartzmann-Buchelt, & Wagner, 2001), we used three items from the German version of the Job Diagnostic Survey (Schmidt & Kleinbeck, 1999) to measure job satisfaction. The items were "Generally speaking, I am very satisfied with this job," "I feel a great sense of personal satisfaction when I do this job well," "I frequently think of quitting this job" (reverse coded). The reliability of this three-item scale was acceptable ( $\alpha = .66$ ).

**Differences Between Actual and Ideal Communication.** Difference scores regarding both communication quantity and quality were calculated by subtracting the scores for ideal communication quantity/quality from the scores for actual communication quantity/quality. Negative scores therefore represent lack of quality or quantity in this channel, while positive scores indicate that the channel was used too much (quantity) or that the quality was more than sufficient, as perceived by the employee.

## **Results**

Table 3 displays the means, standard deviations, and intercorrelations of the relevant variables.

### ***Preference for Different Communication Channels and Comparison of Actual and Ideal Channel Amounts***

In line with Hypothesis 1, participants showed a clear preference for face-to-face communication. They reported that they wished to have almost two thirds (60%) of the communication with their leader to be face-to-face, followed by 26% of communication by email and only 13% to be communication by phone (see Table 4). Furthermore, the results of a paired *t* test showed that participants reported significant differences between the actual and ideal amount of communication channel use (see Table 4). These results confirmed Hypothesis 2: Participants reported that they ideally wanted more face-to-face communication than they actually have and less phone and email communication than they actually have. Additionally, repeated measurement analyses of covariance (ANCOVAs) with part- versus full-time working as control and the actual and ideal amount of each channel use revealed similar results.

### ***Relations Between Quantity of Channel and Leaders' Effectiveness, Identification With the Team, and Employees' Job Satisfaction***

We conducted partial correlations in which we used part- versus full-time working and the amount of communication channel use in the other communication channels as

**Table 4.** Perceived Real and Ideal Percentage of the Communication Channels and Their Discrepancies.

	Face-to-face communication (%)	Email communication (%)	Telephone communication (%)
Actual	53	31	14
Ideal	60	26	13
<i>t</i> ( <i>df</i> = 260) <sup>a</sup>	-6.58***	5.05***	2.29*
<i>F</i> ( <i>df</i> = 259) <sup>b</sup>	27.93***	16.72***	3.83 <sup>+</sup>

Note. *N* = 261.

<sup>a</sup>Results of paired *t* test without controls. <sup>b</sup>Results of repeated measurement analysis of covariance with part-time versus full-time working controlled.

<sup>+</sup>*p* < .10. \**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

controls. For example, for examining the relation between the amount of face-to-face communication and the dependent variables, besides part- versus full-time working, the amount of both mail and telephone communication were included as controls. The amount of email communication showed a marginally significant relation to employees' job satisfaction ( $r = .11, p < .10$ ), a significant relation to perceived leaders' effectiveness ( $r = .16, p = .01$ ), and no significant relation to perceived leaders' team identification. The amount of telephone communication showed no significant relations to employees' job satisfaction, perceived leaders' effectiveness, and perceived leaders' team identification. The amount of face-to-face communication showed a marginally significant relation to employees' job satisfaction ( $r = .12, p < .10$ ), a significant relation to perceived leaders' effectiveness ( $r = .19, p < .01$ ), and no significant relation to perceived leaders' team identification. Thus, partial correlations confirmed that the amount of face-to-face communication related more positively to employees' job satisfaction and perceived leaders' effectiveness than telephone communication.

This partial support for Hypothesis 3 was corroborated by multiple regression analyses (see Table 5).<sup>2</sup> In line with Hypothesis 3, face-to-face communication showed a positive and significant relation to job satisfaction ( $\beta = .40, p < .05$ ) and perceived leader's effectiveness ( $\beta = .60, p < .01$ ). The more face-to-face communication employees had with their leader, the more satisfied they were with their job and the more effective they perceived their leader to be. In comparison, the amount of phone communication was neither related to job satisfaction nor perceived leader effectiveness. The amount of email communication showed a positive, marginal significant relation to employees' job satisfaction ( $\beta = .37, p < .10$ ) and a positive and significant relation with perceived leader's effectiveness ( $\beta = .52, p < .01$ ). Including face-to-face communication into the model explained additional variance in employees' job satisfaction (2%) and perceived leader's effectiveness (3%). The full model explained 5% of variance in employees' job satisfaction and 8% of variance in perceived leader's effectiveness. However, none of the communication channels showed significant relations to perceived leader's team identification (see Table 5).

**Table 5.** Regression Analyses Testing Hypothesis 3.

	Employee's job satisfaction		Perceived leader's effectiveness		Perceived leader's team identification	
	$\beta$	<i>t</i>	$\beta$	<i>t</i>	$\beta$	<i>t</i>
Status <sup>a</sup>	-.15*	-2.36	-.09 <sup>+</sup>	-1.52	-.06	-0.91
Email <sup>b</sup>	.37 <sup>+</sup>	1.82	.52*	2.62	-.10	-0.51
Telephone <sup>b</sup>	.09	0.73	.09	0.79	-.06	-0.51
Face-to-face <sup>b</sup>	.40*	2.00	.60**	3.01	.12	0.59
R <sup>2</sup> (due to face-to-face)	.05* (.02*)		.08** (.03**)		.05* (.05)	

Note. N = 261.

<sup>a</sup>0 = working part-time, 1 = working full-time. <sup>b</sup>Refers to the actual amount of communication.

\* $p < .10$ . \*\* $p < .05$ . \*\*\* $p < .01$ . \*\*\*\* $p < .001$ .

### Ratings of Communication Quality Aspects of the Different Communication Channels (Hypothesis 4 and Hypothesis 5)

To test Hypotheses 4 and 5, we conducted repeated measurement analyses of covariance for each aspect of communication quality with part- versus full-time working as control (see Table 6). As assumed in Hypothesis 4, the discrepancies between actual and ideal communication quality aspects were smallest in face-to-face communication and largest in email communication (see Table 6).

Communication clarity was significantly higher in face-to-face communication than in both email communication and telephone communication,  $F(1.88, 356.90) = 7.06, p < .01$ .<sup>3</sup> Paired post hoc tests showed that communication clarity in face-to-face communication differed significantly from both clarity in telephone and email communication, whereas there were only marginally significant differences between communication clarity in telephone and email communication. The communication quality aspect leadership was significantly higher in face-to-face communication than in email communication or telephone communication,  $F(1.93, 361.67) = 5.30, p < .01$ . Paired post hoc tests showed that leadership in face-to-face communication differed significantly from email communication, but was not different from telephone communication. Furthermore, reliability in telephone communication was significantly different from email communication.

Face-to-face communication was rated significantly higher in reliability than email communication and telephone communication (analysis of covariance with Huynh-Feldt correction:  $F[1.90, 353.03] = 11.68, p < .001$ ). Paired post hoc tests revealed that reliability in face-to-face communication differed significantly from both reliability in telephone and email communication, whereas there were no differences between reliability in telephone and email communication. Thus, the results mainly support Hypothesis 4 and Hypothesis 5.

**Table 6.** Perceived Real and Ideal Quality of the Communication Channels and Post Hoc Analysis of Differences in the Discrepancies.

	Clarity			Leadership			Reliability		
	Face-to-face	Email	Phone	Face-to-face	Email	Phone	Face-to-face	Email	Phone
Actual	4.93	4.55	4.74	4.56	4.17	4.34	4.89	4.65	4.71
Ideal	5.28	5.26	5.26	4.86	4.61	4.64	5.26	5.34	5.34
	Face-to-face/email	Face-to-face/phone	Email/phone	Face-to-face/email	Face-to-face/phone	Email/phone	Face-to-face/email	Face-to-face/phone	Email/phone
Post hoc comparison of differences <sup>a,b</sup>	-.37***	-.22***	.15 <sup>+</sup>	-.14*	.00	.13*	-.36***	-.26***	.10

Note. N > 188 < 260.

<sup>a</sup>Results of the post hoc comparisons of the analyses of variance. <sup>b</sup>Positive values mean that there are larger discrepancies in the first channel, negative values mean that there are larger differences in the second channel.

\*p < .10. \*\*p < .05. \*\*\*p < .01. \*\*\*\*p < .001.



Furthermore, we systematically analyzed participants' answers to the open questions about communication quality, to assess which specific features of the three channels they valued positive and negative. These analyses showed that many of the answers were referring to the three quality aspects—clarity, leadership, and reliability, as well as additional aspects. Table 7 provides a structured overview of the qualitative answers.

Regarding email communication, the participants among other things appreciated the reprocessability (“Instructions are recorded and retrievable”), the rehearsability (“You have time to think about what to write”), and its convenience (“short, narrow, efficient,” “the possibility to add data,” “local flexibility”). Negative aspects of email communication were among other things the lack of clarity (“imprecise work instructions, which cause time-consuming rechecking”), lack of reliability due to time delays (“Important information often reaches me too late”), or no answers at all (“answers only in 1 of 10 cases”), and email being “impersonal.”

Telephone communication was valued positively among other things for the fact that you get “clear answers for your questions” (clarity) and for the “immediate clarification of work-relevant information” (reliability). However, participants also mentioned negative aspects like impersonality (a personal counterpart is missing) and the lacking rehearsability (“You don’t have always the perfect answer ready”) and reprocessability (“Often too short and too much information—you can read an email repeatedly if necessary”).

Face-to-face communication was valued positively among other things regarding clarity for the possibility of immediate questions, answers, and feedback (“Direct questions are possible”). Furthermore, participants experienced that face-to-face communication facilitates affective aspects like motivating (“Here, the aspect of motivation appears stronger”), showing appreciation (“He’s taking a lot of time for me”) and the possibility of creating a positive atmosphere (“the laid-back atmosphere”). Nevertheless, participants also reported negative aspects of face-to-face communication, like the possibility that mood and emotion can disturb the communication process (“very mood depending”), the interruption of the workflow (“You can’t avoid the interruptions”), and the lack of rehearsability (“You don’t always have the right diction ready”).

### ***Relations Between Quality Aspects and Leaders’ Effectiveness, Identification With the Team, and Employees’ Job Satisfaction***

According to Hypothesis 6, the quality of communication achieved should be positively associated with job satisfaction, leadership effectiveness, and leader team identification. We conducted regression analyses<sup>4</sup> with the three communication quality aspects as independent variables, part- versus full-time working as control and leadership effectiveness, job satisfaction, and team identification as respective dependent variables for each communication channel (see Table 8).

***Perceived Leadership Effectiveness.*** The quality of email communication explained 38% of variance in perceived leadership effectiveness. Thereby, the communication quality

**Table 7.** Selected Qualitative Statements Regarding Communication Quality of the Different Channels.

Channel	Categories of communication quality		Exemplary quotations
		Subcategories <sup>a</sup>	
Email	Clarity (positive)	1. Directness/simplicity 2. Preciseness	“No unnecessary chitchat” “Precise, plain instructions”
	Clarity (negative)	1. Emails can be imprecise	1. “Imprecise work instructions, which cause time-consuming rechecking”
		2. Misunderstandings and misinterpretations are possible	2. “Misunderstandings and misinterpretations can occur”
		3. Direct questions or reactions are not possible	3. “Direct questions are not possible”
	Leadership (positive)	Friendliness	“Nice and friendly wording”
	Leadership (negative)	Impersonality	“Impersonal”
	Reliability (positive)	1. Reprocessability	1. “Instructions are recorded and retrievable”
		2. Promptness	2. “It is fast”
	Reliability (negative)	1. Time delay	1. “Important information often reaches me too late”
		2. The possibility of no answer <sup>b</sup>	2. “He/she answers only in 1 of 10 cases”
Additional (positive)	1. Rehearsability	1. “You have time to think about what to write”	
	2. Easy and efficient	2. “Short, narrow, efficient”	
	3. Possibility for appendixes	3. “The possibility to add data”	
	4. Accessibility from home or other places	4. “Local flexibility”	

(continued)

Table 7. (continued)

Channel	Categories of communication quality	Subcategories <sup>a</sup>	Exemplary quotations
Phone	Additional (negative)	Misspelling	"Misspelling"
	Clarity (positive)	1. Possibility of immediate questions, answers and feedback	"Clear answers for your questions"
	Clarity (negative)	Low understandability	"Not always directly understandable"
	Leadership (positive)	Friendliness	"Always very friendly"
	Leadership (negative)	Impersonality	"A personal counterpart is missing"
	Reliability (positive)	1. No delay	"Immediate clarification of work relevant information"
		2. Good availability	"Always available"
	Reliability (negative)	Lacking availability	"Leaders are rarely available"
	Additional (positive)	Accessibility from home or other places	"Communication is possible everywhere (mobile phone)"
	Additional (negative)	1. Missing rehearsability	1. "You don't have always the perfect answer ready"
	2. Missing reprocessability	2. "Often to short and too much information—you can read an email repeatedly if necessary"	
	3. Possibility of disturbance in the private life	3. "You get ordered to work, even when you are on your leisure time"	
Face-to-face	Clarity (positive)	1. Possibility of immediate questions, answers and feedback	1. "Direct questions are possible"
	Clarity (negative)	2. Symbol sets Impreciseness	2. "Facial expression and gesture" "Often imprecise"

(continued)

**Table 7. (continued)**

Channel	Categories of communication quality	Subcategories <sup>a</sup>	Exemplary quotations
	Leadership (positive)	<ol style="list-style-type: none"> <li>1. Appreciation</li> <li>2. Motivation and respect</li> <li>3. Friendliness</li> <li>4. Positive atmosphere (e.g., humor)</li> </ol>	<ol style="list-style-type: none"> <li>1. "There is more time for appreciation and motivation in personal contact"</li> <li>2. "Here the aspect of motivation appears stronger"</li> <li>3. "Friendly contact with each other"</li> <li>4. "The laid-back atmosphere"</li> </ol>
	Leadership (negative)	Moods and emotions can interfere	"Very mood depending"
	Reliability (positive)	Immediacy	"Immediacy"
	Reliability (negative)	—	—
	Additional (positive)	Personal contact	"Personal contact"
	Additional (negative)	<ol style="list-style-type: none"> <li>1. Interruption of workflow</li> <li>2. Time consuming</li> <li>3. No time to think about answers/reactions</li> </ol>	<ol style="list-style-type: none"> <li>1. "You can't avoid the interruptions"</li> <li>2. "Often time consuming"</li> <li>3. "You don't have always the right diction ready"</li> </ol>

<sup>a</sup>Only subcategories with five or more entries were included.

**Table 8.** Communication Quality Aspects Predicting the Dependent Variables for Each Communication Channel Separately.

		Employees' job satisfaction		Perceived leader's effectiveness		Perceived leader's team identification	
		$\beta$	<i>t</i>	$\beta$	<i>t</i>	$\beta$	<i>t</i>
Email	Status <sup>a</sup>	-.18**	-3.02	-.08	-1.45	.03	0.39
	Clarity	-.01	-0.10	.14 <sup>+</sup>	1.78	-.11	-1.15
	Leadership	.43***	5.05	.33***	4.41	.16 <sup>+</sup>	1.71
	Reliability	.06	0.81	.25***	3.66	.10	1.13
<i>R</i> <sup>2</sup>		.24***		.38***		.03	
Telephone	Status <sup>a</sup>	-.09	-1.56	-.01	-0.19	-.00	-0.05
	Clarity	.04	0.48	.10 <sup>+</sup>	1.66	-.03	-0.37
	Leadership	.40***	5.56	.45***	7.26	.13	1.57
	Reliability	.17*	2.50	.25***	4.13	.22**	2.85
<i>R</i> <sup>2</sup>		.29***		.46***		.08***	
Face-to-face	Status <sup>a</sup>	-.12*	-2.25	-.05	-1.18	-.01	-0.17
	Clarity	.04	0.55	.17**	3.05	.12	1.60
	Leadership	.45***	6.69	.45***	8.02	.20**	2.63
	Reliability	.11	1.56	.23***	4.04	.02	0.29
<i>R</i> <sup>2</sup>		.31***		.51***		.09***	

Note. *N* = 219-250.

<sup>a</sup>0 = working part-time, 1 = working full-time.

\**p* < .10. \*\**p* < .05. \*\*\**p* < .01. \*\*\*\**p* < .001.

aspects of leadership ( $\beta = .33, p < .001$ ) and reliability ( $\beta = .25, p < .001$ ) were significant, whereas communication clarity ( $\beta = .14, p < .10$ ) was only marginally significant. The quality of telephone communication explained 46% of variance in perceived leadership effectiveness. Thereby, the communication quality aspects of leadership ( $\beta = .45, p < .001$ ) and reliability ( $\beta = .25, p < .001$ ) were significant, whereas communication clarity was only marginally significant ( $\beta = .10, p < .10$ ). The quality of face-to-face communication explained 51% of variance in perceived leadership effectiveness. Thereby, all three components of communication quality (clarity:  $\beta = .17, p < .05$ ; leadership:  $\beta = .45, p < .001$ ; reliability:  $\beta = .23, p < .001$ ) significantly predicted leadership effectiveness.

**Employees' Job Satisfaction.** The quality of email communication explained 24% of variance in employees' job satisfaction. Thereby, the communication quality aspect leadership ( $\beta = .43, p < .001$ ) was significant, whereas both reliability and communication clarity were not significant. The quality of telephone communication explained 29% of variance in employees' job satisfaction. Thereby, the communication quality aspects leadership ( $\beta = .40, p < .001$ ) and reliability ( $\beta = .17, p < .05$ ) were significant, whereas communication clarity was not significant. The quality of face-to-face

communication explained 31% of variance in employees' job satisfaction. Thereby, only the communication quality aspect leadership was significant ( $\beta = .45, p < .001$ ), whereas both reliability and clarity were not significant.

*Perceived Leader's Team Identification.* The quality of email communication explained only 3% of variance in perceived leader's team identification. Thereby, only the communication quality aspect leadership ( $\beta = .16, p < .10$ ) was a marginal significant predictor, whereas both reliability and communication clarity were not significant. The quality of telephone communication explained 8% of variance in perceived leader's team identification. Thereby, only the communication quality aspect reliability ( $\beta = .22, p < .01$ ) was a significant predictor, whereas both communication clarity and reliability were not significant. The quality of face-to-face communication explained 9% of variance in perceived leader's team identification. Thereby, only the communication quality aspect leadership was significant ( $\beta = .20, p < .001$ ), whereas both reliability and clarity were not significant.

Thus, the results largely support Hypothesis 6. The different communication quality aspects showed mostly significant and positive relations to employees' job satisfaction and perceived leader's effectiveness. However, communication quality did explain only small amounts of leader's perceived team identification.

As these dependent variables are likely to be affected by communication through all channels simultaneously, we additionally calculated a linear regression for each of these dependent variables, using all three quality aspects (i.e., clarity, reliability, leadership) of all three channels (i.e., email, phone, face-to-face) as predictors. Throughout all analyses, we controlled for whether the employees were working full- or part-time (see Table 9).

The full model explained 37% in employees' job satisfaction, whereby the quality of face-to-face explained 4% of variance. Leadership in face-to-face communication ( $\beta = .36, p < .01$ ) showed a significant and positive relation to employees' job satisfaction. Additionally, the reliability in telephone communication ( $\beta = .16, p < .10$ ) was a marginally significant predictor of employees' job satisfaction.

The full model explained 59% in perceived leader's effectiveness, whereby the quality of face-to-face communication explained 6% of variance. The leadership in face-to-face communication ( $\beta = .29, p < .01$ ) showed a significant and positive relation to perceived leader's effectiveness. Furthermore, both reliability of email communication ( $\beta = .15, p < .10$ ) and clarity in face-to-face communication ( $\beta = .15, p < .10$ ) were marginally significant predictors of perceived leader's effectiveness.

The full model explained 16% in perceived leader's team identification, whereby the quality of face-to-face communication explained 6% of variance. The leadership in face-to-face communication ( $\beta = .34, p < .05$ ) showed a significant and positive relation to perceived leader's team identification. Furthermore, both reliability of telephone communication ( $\beta = .18, p < .10$ ) and clarity in face-to-face communication ( $\beta = .20, p < .10$ ) were marginally significant predictors of perceived leader's team identification.

**Table 9.** Communication Quality Aspects of Each Communication Channel Simultaneously Predicting the Dependent Variables.

	Employees' job satisfaction		Perceived leader's effectiveness		Perceived leader's team identification	
	$\beta$	<i>t</i>	$\beta$	<i>t</i>	$\beta$	<i>t</i>
Status <sup>a</sup>	-.17**	-2.72	-.06	-1.18	.02	0.25
Email clarity	-.07	-0.62	.10	1.20	-.18	-1.51
Email leadership	.14	1.03	-.02	-0.18	-.09	-0.56
Email reliability	.00	0.04	.15 <sup>+</sup>	1.90	.05	0.49
Telephone clarity	.02	0.20	-.04	-0.46	-.08	-0.66
Telephone leadership	.01	0.04	.15	1.36	.02	0.11
Telephone reliability	.16 <sup>+</sup>	1.66	.11	1.41	.18 <sup>+</sup>	1.66
Face-to-face clarity	.04	0.44	.15 <sup>+</sup>	1.88	.20 <sup>+</sup>	1.84
Face-to-face leadership	.36**	2.74	.29**	2.79	.34*	2.26
Face-to-face reliability	.02	0.22	.08	0.97	-.08	-0.65
<i>R</i> <sup>2</sup> (increase due to face-to-face communication)	.37*** (.04*)		.53*** (.06***)		.16*** (.06***)	

Note. *N* = 188.

<sup>a</sup>0 = working part-time, 1 = working full-time.

\**p* < .10. \*\**p* < .05. \*\*\**p* < .01. \*\*\*\**p* < .001.

Overall, the results of the additional analysis are in line with Hypothesis 6. In accordance with MRT, the quality of face-to-face communication explained variance in the outcome variables above and beyond telephone and email communication. Surprisingly, the leadership aspect of communication quality was the most predictive across all outcome variables.

## Discussion

The results of our study regarding the quantity of communication channel use show that employees want to communicate mostly via face-to-face with their leaders, and even though leaders use face-to-face communication most often, employees still express a desire for an even more frequent use of this channel. The opposite patterns emerged for email communication and telephone communication. Although email only constitutes one-third and telephone around 14% in the actual communication, employees indicated the desire to communicate even less through these channels. Therefore, the general trend of greater electronic communication was not perceived positively as the communication of choice between leader and employee.

This is an important finding since we also find that the quantity of which the communication channels are used is related to employees' perceptions of the leader. The more face-to-face communication a leader uses, the more employees perceive him or her to be effective and identified. On the other hand, the more email communication is

used, the less the leader appears identified to employees, and the more telephone communication is used, the less effective the leader seems to his or her employees.

Drawing on MRT and MST, the low desire for email interaction at work could be indicative for the fact that a lot of tasks at the workplace are actually handled below their level of complexity. According to both theories, highly equivocal tasks with the need of mutual exchange of information and opinions require the use of richer/more synchronous communication channels to resolve them. Facing these tasks with less rich/less synchronous ways of communication represents a poor fit and will lead to poorer task solutions (Dennis et al., 2008). Therefore, the call for more face-to-face leadership can be attributed to the fact that participants actually experience this phenomenon of lacking richness/synchronicity and fit in their organizations, possibly due to an overemphasis on cost effectiveness (i.e., email and telephone, see, e.g., Kupritz & Cowell, 2010). This might not provide enough resources for effective information exchange in a wide variety of tasks at work and should be looked into more closely by further research, as well as the organizations themselves.

The other factor besides the quantity of the communication channels, namely their quality, is also favoring face-to-face communication. Our data show that the quality level as well as the fit between the actual and the ideal quality is best for face-to-face communication.

The quality of the communication in turn proved to have an important influence on employee job satisfaction and employees' perceptions of their leaders' effectiveness and team identification. This means employees perceive the communication of their leaders most positively when they communicate most often via face-to-face and the better the communication is perceived, the better the leader is perceived overall and the higher the job satisfaction of the employee.

Considering the full regression model, especially the transmission of transformational leadership aspects via face-to-face showed significant and positive relationships with the outcome variables. This is evidence for the importance for leaders to have frequent and positive face-to-face communication with their employees, because only via this direct communication channel, these transformational leadership aspects seem to unfold their full positive potential.

One likely reason for this is the possibility of using several different communication cues simultaneously in face-to-face communication. For example, body language and tone of voice are believed to contribute a great deal to the perceptions of others' supposed attributes (Mehrabian & Ferris, 1967; Mehrabian & Wiener, 1967) and might be especially valuable in light of transformational leadership, which aims at going beyond a mere give-and-take approach toward conveying a vision and nourishing motivation to the employees. The participants expressed this also in the qualitative data, where they ascribed positive leadership behavior like appreciation, motivation, respect, and creating a positive atmosphere only to face-to-face communication.

Furthermore, the choice of face-to-face as the communication channel signals positive attitudes of the leader, like interest for the employee. Overall, employees evaluate face-to-face communication very positively, because they perceive it as more personal than email or telephone communication, which was reported very often in the qualitative data.



In contrast, electronic communication is likely to produce a lack of social information and therefore feels “impersonal” as the qualitative data show (see also Kiesler, Siegel, & McGuire, 1984; Sproull & Kiesler, 1986). Thus, the excessive use of email conversation could lead to an emerging impression of the leader as not being interested in spending time with her or his employees (comparable to the effect of email as evidence that a communicator wants to avoid personal contact shown by Markus, 1994b). This might result in a low perceived identification of the leader with the team or the organization. In this respect, out of the three communication channels in our study, face-to-face communication allows the strongest focus on social aspects. Because this focus on social aspects addresses the social side of employees’ work life better than telephone conversations and much better than email communication, participants might show greater liking for face-to-face contact.

According to our results and in line with the above reasoning, employees prefer indeed to communicate more through face-to-face interaction and telephone but wish for less email communication. Compared with other channels, there is a relative loss of information in email interaction.

Of course, in certain situations, email still seems to be the right choice of communication channel with employees, even when face-to-face communication is possible. MST suggests that in conveyance processes where new information has to be processed, asynchronous channels like email are superior because their reprocessability helps assimilate this new information. The qualitative data of this study support this assumption. It also indicates that face-to-face communication is sometimes seen as an interruption in the workflow, while email can be retrieved after the current task is completed. Also, some employees value the rehearsability of email communication in a way that they have time to think about how to respond to complicated or delicate problems and questions and which exact words they should use in these situations. It sometimes can also help that emotions are not visible in an email communication. For instance, in communication situations which might cause stress or intense emotions or where one has to react to a critical situation, sometimes the impersonal character of email communication can also be perceived as an asset (El-Shinnawy & Markus, 1992). Furthermore, email is perceived as convenient (Kupritz & Cowell, 2010), because according to the qualitative data, it is perceived as quick and easy, data files can be attached and it is overall the least time-consuming way to communicate.

### ***Practical Implications***

Probably the most straightforward implication of the present research is that leaders should reflect on the communication channels they use and the quality of their communication. They should consider using more face-to-face and less electronic communication with their employees and they should account for the fit between communication situation and channel. Even when face-to-face communication is favored by employees in most cases—sometimes email is superior, for instance, when rehearsability or reprocessability of a message is important or when the receiver of the message might prefer to be alone when he or she gets it, because of a possible

unpleasant situation triggered by emotional arousal or difficulties in responding directly with eloquence.

In cases where direct face-to-face communication would be preferable, but is not possible, for example, because leader and employee work in different locations, tools like video conferences or video chat could compensate at least for some of the shortcomings of email or telephone regarding the relationship of leader and employee, because they allow cues like facial expression, body language, and tone of voice. First positive results regarding the use of video chat in romantic long-distance relationships (Neustaedter & Greenberg, 2012) support this idea. Hence researching this in a work environment could be promising.

Also and maybe even more important, leaders should critically examine whether the quality of their communication, especially via electronic channels, is high enough to fulfill the needs of their employees regarding leadership, clarity, and reliability. When communicating via email, leaders should always try to be clear and precise and try to take the perspective of the person addressed: Is there room for misinterpreting the instructions or the intentions included in the message? Which questions could arise on the side of the recipient? What might be still unclear or is not expressed precisely enough? Being more aware about the way of writing and communicating electronically might counterbalance the inherent lack of information and prevent misunderstandings.

Additionally, leaders should communicate, ideally via face-to-face, with their employees and ask them how they perceive the leader-employee communication and what they would like to change or improve.

Choosing the best communication channel in everyday business places high demands on the communication skills of leaders. It might be a sensible step for organizations to provide their leaders with guidelines for the use of communication channels in their organization (e.g., “Don’t email your team, meet your team”) and to offer training on how to improve the quality of their communication in every channel.

### *Limitations and Future Research*

First, the data of this study are based on self-reports of employees and their subjective perceptions. While they typically have a good grasp of the amounts of different communication channels they experience, this is not equal to an exact and objective measure of channel amounts, such as the amount of minutes of channel used per day. Future research should include not only subjective but also objective measures of channels usage. Also, the order of items in the questionnaire could have played a role, as has been shown in previous studies (see Strack, 1992). It might therefore be practical for future research to disentangle this by, for instance, providing different versions of the survey with random presentations of items or by separating the survey into two waves, with communication channel items asked first and dependent variables 2 weeks or so later.

Additionally, the results presented in this study are entirely cross-sectional and, therefore, cannot depict causal relations between variables. Future research might

investigate possible causes and consequences concerning the use of communication channels at work. For example, does the amount of certain communication channels result in a change in leader perception or does a particular view of one's supervisor lead to a different distribution in communication channels used? Along similar lines, one could think of more complex mediation models, such as the communication channel influencing clarity and reliability which influences perceived leader effectiveness, which in turn determines employee satisfaction. The cross-sectional nature of our design would make tests of such mediation models arbitrary but future research may test the relations using longitudinal designs.

Another interesting perspective for subsequent research might be the integration of leader perceptions as complimentary measures. Do leaders perceive the same distribution of communication channels as their employees? Do they show the same desire for more face-to-face interaction? Which aspects influence their choice of a channel? Do they have certain beliefs about the relation between the use of different channels and how they and their work are perceived? Answers to these questions have the potential to complement the present results of this study to form a more holistic picture of the effects of channel use.

A further promising research domain in the field of communication channels might be the differences of the channels regarding interruptions of the workflow and the private life and how time-consuming they are. The participants in this study reported these problems primarily relating to face-to-face (time-consuming and interruption of the workflow) and telephone (disturbance of the private life) communication. It should be investigated whether this still is the case or whether the trend of increasing email amounts and the pressure to read and answer work related emails as fast as possible ("workplace telepressure," see Barber & Santuzzi, 2015) from almost anywhere and anytime (see Mazmanian, Orlikowski, & Yates, 2013) eliminates this asset.

## **Conclusions**

The present study provides four important insights into employees' perceptions of the trend toward e-leadership and of how the use of different communication channels shape the impression they have of their leader. First, employees generally want to have more face-to-face communication with their leaders than they actually have—only in specific situations where email is better suited to the communication requirements than face-to-face, it is favored as communication channel. Second, out of the three communication channels, the frequency of face-to-face communication shows the strongest positive relationships with employee job satisfaction, and employees' perceptions of their leaders' effectiveness and team identification. Third, employees perceive face-to-face communication to be of better quality than communication via other channels. Fourth, the perceived communication quality of communication, especially via face-to-face, has a particular positive relationship with outcome variables like job satisfaction and is an important factor in the leader-employee interaction. In summary, our study provides evidence for employees' need for more personal interaction with their leader via face-to-face communication and less communication via telephone or

email. We established that both the frequency of certain communication channels usage and the quality of communication are important for employees' evaluation of their leader and their own job satisfaction.

### **Acknowledgments**

We are grateful to Tina Hamilton for her assistance on language and style.

### **Authors' Note**

This article is original and is not under consideration or published elsewhere.

### **Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### **Funding**

The author(s) received no financial support for the research, authorship, and/or publication of this article.

### **Notes**

1. In order to check the validity of our newly developed measures, we conducted a preliminary study ( $N = 75$ ). We included established measures for Clarity (Liu, Chua, & Stahl, 2010), transformational leadership subscales, (Multifactor Leadership Questionnaire [MLQ]–Form 5 x Short) by Bass and Avolio (1995; German translation by Felfe, 2006), and laissez-faire leadership (subscale of the MLQ) alongside the scales developed for the purpose of the present study. Although these are not exactly measuring the same underlying constructs, we interpret medium to large relationships as indication of the content validity of our developed measures. As expected, the clarity scale of Liu was correlated with clarity ( $r = .081$ ;  $p < .01$ ); subscales of the MLQ with leadership ( $r = .72-.85$ ;  $p < .01$ ), and laissez-faire leadership with reliability ( $r = -.79$ ;  $p < .05$ ). Additionally, we conducted confirmatory factor analyses for each pair of scales. In all cases, the model fit for a two-factor model was superior to that of a one-factor model. However, the correlations between the latent factors in all two-factor models were significant and substantial. Together, this indicates that, albeit the developed scales measure a theoretically distinct construct, they do indeed measure what they were intended to. Further information on this preliminary study can be obtained from the first author.
2. Except for the indicators of multicollinearity that were slightly above the usually stated cutoff values, all premises of regression analyses were fulfilled (Kutner, Nachtsheim, & Neter, 2004).
3. As the Mauchly's test indicated that the assumption of sphericity has been violated, the degrees of freedom were corrected using the Huynh-Feldt (1976) estimates. This applies also to the following analyses of covariance.
4. The premises to conduct regression analysis were fulfilled. For example, the data were normally distributed, variance inflation factor and tolerance indicated no problem of multicollinearity, the residuals indicated homoscedasticity.

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