“Communication tools as drivers of employees’ knowledge sharing: evidence from the Czech Republic”

AUTHORS	Jana Matošková https://orcid.org/0000-0001-6944-2892 http://www.researcherid.com/rid/H-6537-2012

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Jana Matošková (Czech Republic)

COMMUNICATION TOOLS AS DRIVERS OF EMPLOYEES' KNOWLEDGE SHARING: EVIDENCE FROM THE CZECH REPUBLIC

Abstract

For many organizations, knowledge sharing is essential to keep their competitive ability. As characteristics of available communication media might influence knowledge flows in the organization, this study examines if the frequency of some communication media usage and their perceived usefulness relate to the extent of knowledge sharing. The study applied a quantitative research design and used opinion-based questionnaires. In total, 178 participants from the Czech Republic were involved, mainly from manufacturing industry. Significant positive correlations between "how often employees use the defined instruments for gathering and communicating information in work" and "how useful employees find the defined instruments for gathering and communicating information in work" to "the extent of knowledge sharing in the organization" were identified. Additionally, the frequency of the use of communication media predicted the extent of knowledge sharing in the organization. Specifically, the frequency of the use of meetings significantly predicted the extent of knowledge sharing ($\beta = .54$, $p < .001$). Moreover, perceived usefulness of communication media projected the frequency of the use of communication media. The findings confirm that if employees see the offered communication tools as being useful, they are willing to use them more often, and it has a positive effect on the extent of knowledge sharing. Therefore, the design of communication tools should take into account the needs and requirements of the workforce who will use it. Additionally, organizations should organize effective meetings if they want to enhance knowledge sharing in the organization.

Keywords knowledge management, information sharing, knowledge sharing, instruments, communication media, user-friendliness

JEL Classification M10, M12

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Jana Matošková, Ph.D., Assistant Professor, Department of Management and Marketing, Faculty of Management and Economics, Tomas Bata University in Zlín, Czech Republic.

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INTRODUCTION

Knowledge sharing (KS) among employees is crucial for maintaining organizational competitiveness. Fast-evolving technology, changes in customer and staff lifestyles, diminishing natural resources, globalization, the increasing complexity of work and the speed at which changes take place – these are all elements requiring organizations to use their human capital better, learn more and at a faster rate, and not reinvent the wheel. If employees share knowledge, the organization saves time and resources (Pasher & Ronen, 2011; Wang & Noe, 2010). Additionally, KS is essential for organizational innovativeness (Camelo-Ordaz, García-Cruz, Sousa-Ginel, & Valle-Cabrera, 2011; Chiang, Han, & Chuang, 2011), which is a basic way how to deal with changes in the environment. Finally, most organizational processes require the involvement of several people, each of them adding their expertise (Kock & Davison, 2003). This is why a key question for many organizations is: How to enhance KS in the organization?

One of the factors that influence KS in the organization seems to be the media used for KS and their characteristics. Dalkir (2011) men-

tions that the appropriate mix of tools should be considered to optimize KS in the organization, as communication media significantly affect the distribution of knowledge over space and over time (Welch, 2012). It is supposed that media choice is related to effectiveness and can have an effect on communication patterns, organizational structure, and organizational decision-making processes (El-Shinnawy & Markus, 1997). Additionally, the selection of media offered to employees for KS influences the organizational costs.

The growing task complexity, along with the availability of various tools, creates a need, according to Yuan, Zhao, Liao, and Chi (2013), for more research on the issue of how multiple media can be employed in combination to support KS needs, and how the instruments compete with or complement each other in assisting people's needs. Although numerous studies are dealing with the relationship between information and communication technologies (ICTs) and the frequency of KS, or describing how to effectively use particular tools such as mentoring, storytelling, and communities of practice, only a small number of studies examine media used for KS in a complex way.

One of the main factors, which influence a knowledge provider's motivation for KS, is the perceived usefulness of the tool used (Amidi et al., 2017). This raises a question about which media are useful for KS, according to employees. Such research could be helpful for the design and development of instruments used to enhance KS activities within the organization.

This study examines the use and the usefulness of communication media and asks if they matter in terms of the extent of KS in the organization. In this way, the study contributes to a better understanding of the phenomenon of KS among people in the organizations. The structure of the paper is as follows: section 1 describes the theoretical background. Then the methodology utilized is introduced in section 2. After that, the results and their discussion are presented in section 3. Last section concludes.

1. THEORETICAL BACKGROUND AND HYPOTHESES

KS can be described as giving task information and know-how to help others and to cooperate with them, to resolve problems, cultivate ideas, or introduce policies or procedures (Wang & Noe, 2010). KS shows the exchange of work-related information, thoughts, advice, and experience among workers (Assegaff, Hendri, Sunoto, Yani, & Kisbiyanti, 2017). According to Yuan, Zhao, Liao, and Chi (2013), KS contains two sub-processes: knowledge search (locating needed knowledge, i.e., where or in whom it resides) and knowledge learning (acquiring and absorbing knowledge).

Ipe (2003) states that the opportunities for knowledge sharing in organizations can be both formal and informal. Between these two poles, there are various semi-formal opportunities, and sometimes it can be difficult to distinguish the level of formality. Formal opportunities include, for example, training programs. Informal opportunities are, for instance, conversations at the water cooler or in the company cafeteria, unscheduled meetings, and informal seminars. Informal tools may enhance socialization but have a limit range of knowledge dissemination (Alavi & Leidner, 2001). On the other hand, formal channels may ensure a bigger distribution of knowledge but may limit creativity (Alavi & Leidner, 2001).

A question is how many media should be offered to employees for KS. Dennis, Fuller, and Valacich (2006) argue that the use of a single medium is not ideal, and it is better to use multiple media. Similarly, Welch (2012) claims that providing alternative tools is required to enable staff to decide for media they find most acceptable, appropriate, and usable. Haythornthwaite and Wellman (1998) state that the more the employees convey and exchange information, the more media are employed. On the other hand, the use of many media simultaneously may result in cognitive overload, leading to reduced information processing and poor communication performance

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(Dennis, Fuller, & Valacich, 2006). Additionally, O'Donovan (1998) mentions that communication occurs between people and not channels; therefore, an increase in the number of channels does not necessarily result in employees being better informed. Furthermore, to use many media might be cost demanding and time demanding. To decide about an appropriate mix of media for KS, it is recommended to understand the nature of the staff and the context in which they work (Dennis, Fuller, & Valacich, 2006). However, it can be supposed that the more frequently media are used by employees, the more intensive the KS could be. Thus,

H1: The frequency of communication media usage forecasts the level of KS in the organization.

Another question is "how the tools compete with or complement each other", and it was discussed, for example, by Yuan, Zhao, Liao, and Chi (2013). They explain that four most common communication media (telephone, e-mail, instant messages, and video conferences) match each other by offering diverse ways of communication: formal and informal, synchronous and asynchronous. Moreover, long-standing knowledge management instruments (databases, team digital archives) and communication media match each other in facilitating the exchange of formal vs. informal and explicit vs. tacit knowledge. On the other hand, significant redundancies were between long-standing knowledge management tools and social media (for instance, forums, wikis, blogs, and social networking websites). Thus, as some tools could complement each other, media could be divided into several categories, and not all of them must be vital for KS.

Many theories try to explain what influences one's preferences in some media. Suh (1999) clarifies that from the social information processing perspective, the choice of media is influenced by attitudes, statements, and behaviors of co-workers and supervisors. In social presence theory, media are supposed to differ in their capability to convey such information as gestures, vocal tones, facial countenance; therefore, face-to-face and telephonic communication are preferred to written media (El-Shinnawy & Markus, 1998). Channel expansion theory argues that user's perceptions of media depend on their characteristics and experiences and perhaps on the task and the organizational context in which the use occurs (Dennis, Fuller, & Valacich, 2006). Regarding the media richness theory, different communication tools can be located along a lean-rich scale, depending on their capability to facilitate communication in ambiguous tasks and treat rich information, as Kock and Davison (2003) or Daft and Lengel (1986) explain. Dennis and Valacich (1999) rethink media richness theory and believe that at least five media features can influence communication and the choice of the instrument, namely immediacy of feedback, symbol variety, parallelism, rehearsal ability, and reprocessing ability. In the media features theory, the choice of instrument is mainly influenced by usability, functionality, and ease of use (El-Shinnawy & Markus, 1998).

In some studies, user-friendliness seems to be an essential factor that decides if employees use the tool or not. Generally, it is supposed that user-friendliness is affected by three key variables: perceived ease of use, perceived enjoyment, and perceived usefulness (Amidi, Jabar, Jusoh, & Abdullah, 2017). Perceived ease of use is the level to which an individual feels the use of a certain system as effortless, physically and intellectually (Amidi et al., 2017; Liu, Liao, & Pratt, 2009). Perceived enjoyment is the level to which the usage is considered to be enjoyable (Amidi et al., 2017). Perceived usefulness is the degree to which a person finds the use of a certain instrument to be useful for increasing job performance (Amidi et al., 2017) and better than alternative ways of doing the same task (Liu, Liao, & Pratt, 2009). It is probable that employees perceive accessible media differently. Thus, several categories of media, according to their perceived usefulness, can be distinguished. Just perceived usefulness might be the factor that drives user-friendliness and has a direct effect on the behavioral intentions to utilize the instrument. Hence,

H2: Perceived usefulness of communication media predicts the frequency of communication media usage.

Figure 1 depicts a theoretical model.

Source: Author.

Figure 1. Theoretical model

2. METHODS

2.1. Procedure and sample

The study applied quantitative research design and used opinion-based questionnaires. Filling in the questionnaires was completely in the participant's charge, and participation in the survey was voluntary. Organizations were announced about the research and asked for the distribution of the questionnaires between employees. Printed and online questionnaires were used.

Table 1 overviews the survey's participants. All participants were from the Czech Republic. In total, 178 participants were involved. For the correlation analysis, only those responses were selected where it could be assured that the same participants completed all parts. Considering the frequency of the use of communication media, this was only in the case of 100 participants. In the case of the perceived usefulness of communication media, it was 94 participants.

2.2. Measures

This study measured three variables – the extent of KS in the organization, the frequency of the use of communication media, and perceived usefulness of communication media. All the constructs

Table 1. Profile of companies and respondents

Source: Author.

Measure	Items	The frequency of use of communication media		Perceived usefulness of communication media		Data used for the correlation analysis	
		# of Response	%	# of Response	%	# of Response	%
Industry type	Manufacturing	118	66.3	113	66.5	37	37
	Construction	40	22.5	38	22.4	43	43
	Education	20	11.2	19	11.2	20	20
	Others						
	Missing						
	Total	178	100	170	100	100	100
Gender	Male	52	29.2	50	29.4	55	55
	Female	45	25.3	43	25.3	45	45
	Missing	81	45.5	77	45.3	0	0
Age	Less than 25	4	2.3	4	2.4	4	4
	25-40	49	27.5	48	28.2	50	50
	41-60	41	23	38	22.4	43	43
	More than 60	3	1.7	3	1.8	3	3
	Missing	81	45.5	77	45.3	0	0
Work position	Manager	30	16.9	29	17.1	22	22
	HR employee	21	11.8	21	12.3	6	6
	Others	92	51.7	86	50.6	71	71
	Missing	35	19.7	34	20	1	1
Education	University education	45	25.3	44	25.9	45	45
	Secondary education	31	17.4	30	17.6	31	31
	Apprentice school	21	11.8	19	11.2	24	24
	Missing	81	45.5	77	45.3	0	0
Number of years working for the current organization	Less than 2	23	12.9	22	12.9	25	25
	2-5	22	12.4	22	12.9	23	23
	6-10	18	10.1	17	10	18	18
	More than 10	34	19.1	32	18.8	34	34
	Missing	81	45.5	77	45.3	0	0

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were measured using multiple items. The inventories used for evaluating the communication media were defined based on a literature review. In total, 31 items were identified.

2.2.1. The extent of KS in the organization

The inventory for KS described by Matošková (2019) was used. The inventory consists of 15 items, e.g., 'Employees are informed of the turnover, revenue, economic and strategic issues in the company." or 'During decisions, e.g., about investment into company, the proposals of employees are taken into consideration". Participants assessed the items according to their agreement with the particular statement, on a scale from one to five (1 = strongly disagree and 5 = strongly agree). The scale of KS used had great reliability, Cronbach's α = .86.

2.2.2. The frequency of the use of communication media

This questionnaire finds out how often employees use the defined medium for gathering and communicating work-related information. It is based on employees' evaluations. Participants assessed the items on a scale from zero to five (0 = not at all; 5 = very often).

2.2.3. Perceived usefulness of communication media

This questionnaire finds out how useful employees find the defined medium for gathering and communicating work-related information. The instruments were the same as in the case of the frequency of the use of communication media. A scale from 0 to 5 (0 = not at all; 5 = very useful) was used for evaluating the statements.

2.3. Data analysis

IBM® SPSS® statistics software was employed for data analysis. Mean and standard deviations related to the frequency of the media usage in the study and their perceived usefulness were calculated. Then principal axis factor analyses with oblique rotation (direct oblimin) were done on inventories for the frequency of the use and perceived usefulness of communication media to find out similar groups of media and decrease the data set to a more practicable size while keeping as much of the original information as possible. Based on the initial analysis of the inventory, some questions were dismissed, and only 13 items were left for the final exploratory factor analysis related to the frequency of communication media usage and 19 questions in the case of perceived usefulness of communication media. The points on the Likert scale were converted into number scores. The indexes for each identified factor were counted as quotients from the sum of points gained in items related to the factor to the maximum points that could be gained in these items.

Then Pearson's correlation coefficient method, simple linear regressions, and multiple regressions were used to examine the relationship between the variables employed. Additionally, a path analysis in AMOS was used to determine the pathways by which perceived usefulness of communication media influences the extent of KS in the organization.

3. RESULTS

Table 2 presents the basic statistical data related to the KS tools employed in the survey. The most often used media were telephones, e-mails, internet, and informal communication. On the contrary, the least often used media were e-learning, model situations, chats, and social networks. Regarding the usefulness, participants consider internet, telephones, consultations with experts, and meetings (briefings, team meetings, meetings with people solving similar problems) to be the most useful tools for KS. However, social networks, e-learning, and chats were evaluated as only slightly useful for KS.

Regarding the frequency of the use of communication media, the Kaiser-Meyer-Olkin measure confirmed the sampling sufficiency for the analysis, KMO = .86, 'meritorious", according to Hutcheson and Sofroniou (1999), and all KMO values for individual items were higher than .75, which is above the standard limit of .5 (Field, 2013). Three factors had eigenvalues over Kaiser's criterion of one and in combination explained 64% of the variance. Table 3 displays the factor loading after rotation. The items that group on the same factor propose that factor 1 represents meetings, factor 2 symbol-

Table 2. Overview of communication media

Source: Author.

Medium	How often used			Usefulness		
	N	M	SD	N	M	SD
Briefing	165	2.79	1.50	155	3.81	1.26
Membership in the community	158	2.19	1.48	145	3.17	1.42
E-learning courses	146	1.08	1.10	127	2.09	1.34
E-mail	160	3.56	1.75	143	3.72	1.48
Excursions and internships in other organizations	158	1.57	1.31	141	3.33	1.41
Company knowledge database	157	2.13	1.57	141	3.36	1.39
Company library	156	1.54	1.47	136	2.61	1.52
Company newsletter, company magazines, internal company television, company bulletins	158	1.92	1.51	139	2.65	1.39
Groupware	153	2.20	1.77	131	3.35	1.46
Chat, on-line forums	151	1.25	1.26	130	2.27	1.41
Internet	159	3.48	1.59	146	3.99	1.30
Intranet	154	2.51	1.73	139	3.51	1.42
Conference and video conference	158	1.47	1.33	130	2.65	1.39
Consulting with experts or working with an external coach	163	2.57	1.32	149	3.88	1.23
Model situations, simulations, case studies and role playing	152	1.22	1.16	133	2.59	1.54
Informal communication with co-workers	167	3.23	1.45	150	3.77	1.36
Organized, less formal, meetings of employees with the top management	159	1.72	1.28	140	3.05	1.46
Written information for successors for the position	151	1.91	1.38	143	3.50	1.36
Procedures and directives described	155	3.01	1.35	152	3.78	1.12
Team meetings	159	2.99	1.42	147	3.88	1.20
Job rotation	155	1.72	1.51	137	2.84	1.34
Seminars and workshops	155	2.05	1.30	135	3.27	1.32
Meetings after termination of the project for assessment and minutes from these meetings	150	1.81	1.31	139	3.42	1.31
Meetings with people/groups resolving similar problems	158	2.41	1.49	146	3.69	1.29
Meetings with employees from other departments	159	2.34	1.33	143	3.44	1.30
Meetings with clients and vendors	155	1.99	1.45	138	3.45	1.44
Social networks or employee's blogs	159	1.43	1.34	140	1.84	1.30
Cooperation with more experienced employees (apprenticeships, assistance, supervision, mentoring)	154	2.09	1.50	142	3.58	1.35
Telephone or mobile	168	3.68	1.46	158	3.99	1.24
Videos with procedures	155	1.64	1.32	140	3.12	1.39
Web-pages with employee data, or company yellow pages	155	2.12	1.54	141	2.99	1.47

izes common information and communications tools, and factor 3 is developmental and training tools. All subscales of the organizational culture had suitable reliabilities (see Table 3) and the total scale has a great reliability too, Cronbach's α = .87.

Next, the inventory of the perceived usefulness of communication media was examined. The Kaiser-Meyer-Olkin measure confirmed the sampling sufficiency for the analysis, KMO = .87, and all KMO values for specific items were higher than .78. Five factors retained eigenvalues over Kaiser's criterion of one and together explained 69% of the variance. Table 4 depicts the factor loading after rotation. The items that group on the same factor propose that factor 1 characterizes evaluation and consulting meetings, factor 2 epitomizes classical sources of information, factor 3 exemplifies common information and communication tools, factor 4 stands for socialization tools, and factor 5 is developmental and inspirational tools. All subscales of perceived usefulness of communication media (see Table 4) and the total scale have great reliability too, Cronbach's α = .92.

Table 5 presents statistical characteristics of the examined variables and Pearson's correlation coefficients among variables employed. Generally, the mean of the frequency of the use of common information and communications tools signifies that these tools are really quite common. Additionally, the means of perceived usefulness of classical sources of information and common information and communication tools indicate that these tools might be so common because they are useful. Perceived usefulness of communication media was significantly correlated with the extent of KS in the organization, but this correlation was only weak, r = .217 [.014, .408].

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Table 3. Summary of exploratory factor analysis for the questionnaire of the frequency of communication media usage

Source: Author.

Item	N	Rotated factor loadings		
		Meetings	Common information and communications tools	Developmental and training tools
Briefing	169	**.710**	–.015	.223
Membership in the community	162	**.551**	.024	–.077
E-mail	164	.028	**–.824**	–.130
Excursions and internships in other organizations	161	.013	–.090	**–.688**
Internet	163	–.123	**–.825**	–.069
Conference and video conference	162	.035	–.127	**–.631**
Model situations, simulations, case studies, and role playing	155	.047	.115	**–.723**
Team meetings	163	**.489**	–.188	–.237
Seminars and workshops	159	.030	–.252	**–.547**
Meetings after termination of the project for assessment and minutes from these meetings	154	**.544**	.119	–.379
Meetings with people/groups resolving similar problems	162	**.631**	–.079	–.267
Meetings with employees from other departments	163	**.560**	–.153	–.250
Telephone or mobile	171	.356	**–.567**	.137
Eigenvalues		5.32	1.54	1.49
% of variance		40.90	11.87	11.47
α		.84	.81	.78

Note: Factor loadings over .40 appear in bold.

Table 4. Summary of exploratory factor analysis for the questionnaire of the communication media perceived usefulness

Source: Author.

Item	N	Rotated factor loadings				
		Evaluation and consulting meetings	Classical sources of information	Common information and communication tools	Socialization tools	Developmental and inspirational tools
Briefing	159	.022	**–.644**	–.058	.026	–.141
E-learning courses	131	–.013	.034	–.106	–.045	**.775**
E-mail	147	.047	–.035	**–.859**	–.026	–.012
Company knowledge database	145	–.231	**–.555**	–.167	.204	.317
Company library	140	–.079	.088	–.111	.241	**.527**
Groupware	135	.036	–.286	**–.480**	–.006	.214
Chat, on-line forums	134	.203	.075	–.326	–.160	**.410**
Internet	150	–.007	–.075	**–.712**	.125	.115
Model situations, simulations, case studies, and role playing	136	.264	–.091	.254	.161	**.544**
Informal communication with co-workers	154	.011	–.035	–.001	**.786**	–.023
Organized, less formal meetings of employees with the top management	144	.289	.052	–.104	**.609**	.105
Procedures and directives described	156	.120	**–.646**	.049	–.122	.058
Team meetings	151	.158	**–.690**	–.061	.130	–.075
Meetings after termination of the project for assessment and minutes from these meetings	142	**.530**	–.221	.027	.092	.102
Meetings with people/groups resolving similar problems	150	**.564**	–.162	–.086	–.002	.230
Meetings with employees from other departments	147	**.598**	–.211	–.214	.084	–.037
Meetings with clients and vendors	142	**.668**	.013	–.180	.157	–.032
Telephone or mobile	162	.078	.015	**–.678**	.045	–.056
Videos with procedures	144	.194	–.198	–.052	.015	**.491**
Eigenvalues		7.39	1.82	1.58	1.19	1.10
% of variance		38.90	9.55	8.32	6.26	5.79
α		.86	.77	.85	.75	.77

Note: Factor loadings over .40 appear in bold.

Table 5. Statistical characteristics of the variables and Pearson's correlation coefficients

Source: Author.

Variable	N	M	SD	1	2	3	4	5	6	7	8	9	10	11
Extent of KS in the organization	315	.63	.14	1	.501***	.154	.156	.382***	.194	.298**	.165	.134	.073	.217*
					[.329, .652]	[–.052, .376]	[–.036, .337]	[.215, .544]	[–.046, .407]	[.135, .471]	[–.093, .390]	[–.100, .350]	[–.138, .271]	[.014, .408]
Frequency of the use of meetings	180	.50	.22	96	1	.428***	.486***	.859***	.420***	.372***	.412***	.348***	.173*	.442***
						[.295, .555]	[.357, .602]	[.807, .904]	[.232, .578]	[.191, .518]	[.281, .542]	[.148, .536]	[.000, .347]	[.281, .584]
Frequency of the use of common information and communications tools	174	.71	.28	96	169	1	.422***	.742***	.486***	.300***	.816***	.325***	.311***	.595***
							[.319, .510]	[.673, .799]	[.293, .654]	[.081, .483]	[.724, .887]	[.142, .490]	[.103, .493]	[.434, .727]
Frequency of the use of developmental and training tools	172	.31	.21	96	169	169	1	.753***	.212*	.182*	.295***	.217**	.219**	.307***
								[.688, .809]	[.005, .373]	[.014, .338]	[.148, .425]	[.035, .405]	[.064, .363]	[.144, .448]
Frequency of the use of communication media	182	.50	.19	96	169	169	169	1	.464***	.366***	.609***	.374***	.271**	.551***
									[.239, .634]	[.167, .535]	[.493, .702]	[.168, .565]	[.083, .451]	[.382, .690]
Perceived usefulness of evaluation and consulting meetings	156	.69	.23	92	146	146	146	146	1	.555***	.520***	.482***	.504***	.822***
										[.369, .702]	[.330, .668]	[.309, .621]	[.319, .645]	[.742, .884]
Perceived usefulness of classical sources of information	168	.74	.20	92	146	146	146	146	146	1	.451***	.354***	.360***	.730***
											[.247, .611]	[.140, .525]	[.171, .510]	[.594, .820]
Perceived usefulness of common information and communication tools	164	.75	.23	92	146	146	146	146	146	146	1	.308***	.469***	.743***
												[.098, .488]	[.271, .626]	[.587, .835]
Perceived usefulness of socialization tools	157	.68	.25	92	146	146	146	146	146	146	146	1	.420***	.607***
													[.274, .545]	[.450, .722]
Perceived usefulness of developmental and inspirational tools	158	.53	.23	92	146	146	146	146	146	146	146	146	1	.759***
														[.663, .832]
Perceived usefulness of communication media	174	.68	.18	92	146	146	146	146	146	146	146	146	146	1

Notes: * $p < .05$, ** $p < .01$, *** $p < .001$. Bias corrected and accelerated bootstrap 95% CIs are reported in square brackets.

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Two hypotheses were tested with the following results:

H1: The frequency of communication media usage forecasts the level of KS in the organization.

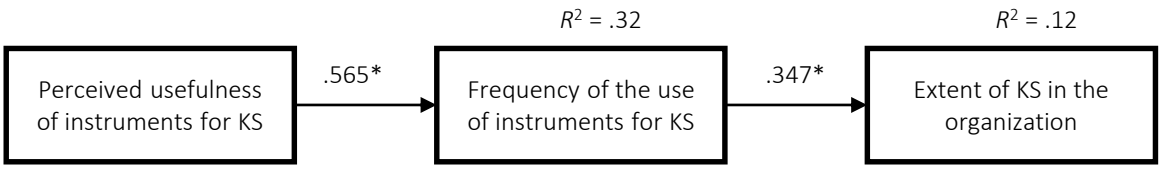
The frequency of communication media usage was significantly related to the extent of KS in the organization, $r = .382$ [.215, .544]. A simple linear regression was calculated to predict the extent of KS in the organization based on the frequency of the use of communication media. A significant regression equation was found ($F(1, 99) = 13.5$, $p < .001$), with R^2 of .12. The extent of KS in the organization is equal to .537 + .218 x the frequency of the use of communication media. Additionally, the frequency of the use of meetings might be the main factor related to the extent of KS in the organization, $r = .501$ [.329, .652]. The results of a multiple regression indicated that three dimensions of the frequency of the use of communication media explained 22.7% of the variance in the extent of KS ($F(3, 94) = 9.22$, $p < .001$). It was found that the frequency of the use of meetings significantly predicted the extent of KS ($\beta = .54$, $p < .001$). The rest of predictors was insignificant (the frequency of the use of common information and communications tools: $\beta = –.008$, $p = .94$; the frequency of the use of developmental and training tools: $\beta = –.146$, $p = .18$).

H2: Perceived usefulness of communication media predicts the frequency of the use of communication media.

There was a strong significant relationship between the perceived usefulness of communication media and the frequency of the use of communication media, $r = .551$ [.382, .690]. Additionally, a simple linear regression was done to predict the frequency of communication media usage based on perceived usefulness of communication media. A significant regression equation was identified ($F(1, 95) = 44.36$, $p < .001$), with R^2 of .32. The frequency of the use of communication media is equal to .122 + .565 x perceived usefulness of communication media. The results of a multiple regression indicated that five dimensions of perceived usefulness of communication media explained 46.4% of the variance in the extent of the use of communication media ($F(5, 88) = 15.23$, $p < .001$). It was found that perceived usefulness of common information and communication tools (i.e., e-mail, groupware, internet) significantly predicted the frequency of communication media usage ($\beta = .44$, $p < .001$). Similarly, perceived usefulness of socialization tools (informal communication with co-workers, less formal meetings of employees with the top management) predicted the frequency of communication media usage ($\beta = .35$, $p = .001$). The rest of predictors of perceived usefulness was insignificant. Moreover, a simple linear regression was calculated to predict the extent of KS in the organization based on perceived usefulness of communication media, and no significant regression equation was found ($F(1, 95) = 3.27$, $p = .074$). Similarly, the results of a multiple regression indicated that all five dimensions of perceived usefulness of communication media were insignificant predictors of the extent of KS in the organization.

Figure 2 presents the results of the path analysis with the standardized regression coefficients. This model had a good fit with a Chi-square = .087 (df = 1, $P = .768$), $RMSEA < 0.001$, $NFI = 0.998$, $TLI = 1.125$ and a $CFI = 1$. Causal relationships between variables were significant. Standardized indirect effect of perceived usefulness of communication media on the extent of KS in the organization was significant, .196.

Source: Author.



Note: * $p < .001$.

Figure 2. Path analysis

4. DISCUSSION

Due to environmental uncertainties and the increase of the pace of change, scholars have claimed that KS has become critical to organizational performance and effectiveness (Son, Cho, & Kang, 2017). However, little research has concentrated on finding out employee's preferences for KS tools and if there is a significant relationship between media (or sets of media) available for KS and the extent of KS. This study questioned if the frequency of the use and perceived usefulness of communication media matter in relation to the extent of KS in the organization. It gives an insight into employee preferences for KS tools.

The structure of most commonly used communication media supports the idea that different media serve people for different purposes; therefore, some kinds of media complement each other, according to Yuan, Zhao, Liao, and Chi (2013) and Haythornthwaite and Wellman (1998). The weak perceived usefulness for KS of social networks, chats, and e-learning also supports the findings of Men (2014) that new social media has not been well integrated into the internal communication system of companies yet.

The frequency of communication media usage predicted the extent of KS in the organization. As the frequency of meetings usage predicted the extent of KS in the organization, meetings can be the essential media that relate to KS. This indicates that employees might prefer direct formal synchronous rich ways of KS. Kock (2005) brings a possible explanation: face-to-face communication is natural for humans and other tools of communication generally run to an intensification of cognitive effort (the amount of mental activity) in communication interaction, a greater proportion of misinterpretations of communicative cues, and makes communication interactions less exciting and less pleasant. Additionally, meetings offer interaction and instant feedback, and help to gain the perceptions of information adequacy and consciousness of community (White, Vanc, & Stafford, 2010). Their strength is the ability to overcome differences and to build understanding and agreement (Daft & Lengel, 1986). Moreover, effective meetings support building trust, mutual understanding, communication, cooperation, and facilitate molding of common language, which are essential factors for KS (see, for example, E. Cabrera & A. Cabrera, 2005; Collins & Smith, 2006; Pastor et al., 2010). It implies that organizations should facilitate such face-to-face meetings among employees if they want to enhance KS in the organization. The findings are in accordance with the study by White, Vanc, and Stafford (2010) who found out that meetings, regardless of being recognized as time-consuming, were valuated.

Considering perceived usefulness of communication media, a significant positive correlation between "how useful employees find the defined instruments for gathering and communicating information in work" and "the extent of KS in the organization" was identified. However, the correlation was only weak. Nevertheless, perceived usefulness of communication media predicted the frequency of communication media usage. The finding supports the statements of Amidi et al. (2017) and Huysman and Volker (2004) that supposed that usefulness of media is important. Employees should consider the media offered to be acceptable and appropriate. That is usually not possible without employees' participation in the choice of media, the media design, and further development of the media, e.g., without inquiring about the staff's satisfaction and responding to the received feedback in the media design. Specifically, perceived usefulness of common information and communication tools and socialization tools might be essential.

Regarding common information and communication tools, perceived usefulness is affected by perceived ease-of-use, and perceived ease-of-use could be enhanced by user's computer self-efficacy and computer playfulness (Yuan, Tsai, Dai, H.-M. Chen, W.-F. Chen et al., 2017), it might be useful to provide education and training in ICT use and design ICT media for KS on intuitive and interesting principles. Besides, as Razmerita, Kirchner, and Nielsen (2016) mention, it is necessary to keep in mind that managers play a critical role in KS. They should clearly state their support for KS, use the ICT media by themselves, and so serve as an example for their subordinates.

As for socialization tools, the results support the idea that it is useful to organize social events that support meeting people and their cooperation, for example, anniversary celebrations, collective trips,

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or sports events, collective lunches, welcoming parties for newcomers, celebrations of the end of the year. Such events, in fact, increase the number of interactions and lead to more frequent communication (E. Cabrera & A. Cabrera, 2005), building mutual trust (Hislop, 2013), and the identification with the company (Gottschalg & Zollo, 2007).

Regarding the results, it seems that space for improvement is in meetings. They are probably used often for KS in the organizations, but they are probably not as useful as they could be. Complaints about meetings are quite common, and even the most engaged employees often have negative experiences related to meetings (Molaro, 2019; Romney, Smith, & Okhuysen, 2019). Therefore, Molaro (2019) discusses seven strategies to improve meeting effectiveness, namely determine if a meeting is the needed tool, know the meeting objective, determine the needed meeting type, establish who needs to be in attendance, build a powerful agenda, focus the meeting on action items, establish some ground rules and boundaries. To further increase the value of meetings, Romney, Smith, and Okhuysen (2019) recommend to

1) find key learning outcomes that partakers will acquire from their participation in a meeting;
2) connect previous and future meeting incidents to the present meeting that employees are attending;
3) help individuals connect their work tasks to the general strategic aims and intentions of their organization.

CONCLUSION

This study concludes that the usage of communication media offered for KS is important. A persisting question is which characteristics a medium should have to be considered as being useful for KS by different categories of employees. Therefore, a qualitative study dealing with this question might be beneficial. Future research could also examine other aspects of the media user-friendliness, which are described by Amidi et al. (2017) – perceived ease of use and perceived enjoyment, and find out the relation of these variables to the extent of KS in the organization.

This study has several important limitations. Mostly employees from the manufacturing, construction, and educational sectors partook in the survey. It is possible that employees from other sectors would prefer other KS media. Additionally, the mixture of sectors and categories of participants (manual workers, administrative staff, and managers) might influence the results of the perceived usefulness of media, because the use of media for KS could be diversely important for different work positions. Thus, similar studies to this one aim at a specific category of work position or at a specific business sector to compare the results with this study. Another limitation of this study is that participation was voluntary. This could affect the adequacy of the sample. Besides, the data were self-reported, and such data are predisposed to errors of memory and response bias due to social desirability. However, bootstrapping was used to get 95% confidence intervals, and they give a more fitting idea of the probable significance of the identified correlation coefficients in the whole populace. Still, the findings should not be over-generalized, and using a longitudinal design and a mixed design of self-report and observed data could be beneficial for future research.

AUTHOR CONTRIBUTIONS

Conceptualization: Jana Matošková.
Data curation: Jana Matošková.
Formal analysis: Jana Matošková.
Funding acquisition: Jana Matošková.
Investigation: Jana Matošková.
Methodology: Jana Matošková.

Project administration: Jana Matošková.
Resources: Jana Matošková.
Software: Jana Matošková.
Supervision: Jana Matošková.
Validation: Jana Matošková.
Visualization: Jana Matošková.
Writing – original draft: Jana Matošková.
Writing – review & editing: Jana Matošková.

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