Task and Social Information Seeking: Whom Do We Prefer and Whom Do We Approach?

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ABSTRACT: Employee information-seeking behavior shapes the formation of organizational communication networks and affects performance. However, it is not easy to facilitate, particularly through information technology, and its motivations are not well understood. Recognizing two broad categories of information—that is, task and social information—this study investigates and compares the antecedents of task and social information seeking. Deriving from the relational communication perspective, informational and relational motivations are modeled as the two main antecedents of source preference and sourcing frequency in dyadic information seeking. Through a survey of employee dyads, our findings indicate that perceived information relevance is a significant antecedent of source preference for both task and social information seeking, whereas perceived relational benefit is significant in the context of task information. The results also show that perceived relational benefit has a stronger effect on source preference in task information seeking than in social information seeking. Furthermore, preference for a source is a significant antecedent of the frequency of sourcing in both contexts. This study provides an explanation of the formation of organizational communication networks. It suggests that organizational information and communication technologies not only need to support information delivery but must also facilitate relationship management for the seeker.

KEY WORDS AND PHRASES: perceived information relevance, perceived relational benefit, preference for source, social information seeking, sourcing frequency, task information seeking.

INFORMATION SEEKING, PARTICULARLY INTERPERSONAL INFORMATION SEEKING, is a key activity in organizations. An Accenture [41] survey of more than 1,000 middle managers found that they spend up to two hours a day searching for information. However, more than 50 percent of the time, respondents found it difficult to obtain information of value. To ease the process of information seeking, information technology (IT) tools are often proposed as a solution, including computer-mediated communication (CMC) tools such as e-mail and knowledge management system (KMS) programs [4, 33].

Unfortunately, the adoption of ITs does not always lead to effective information seeking. For example, research on CMC and virtual teams indicates that use of CMC often fails to establish a collaborative team relationship, which could boost performance [46, 60]. Rather, CMC may enhance rigid hierarchical organizational structures instead of cultivating multilateral and collaborative communications [69]. Similarly, research on KMSs has observed that usage of knowledge repositories often remains low [27], with seekers not relying on the documents in the KMS but using the KMS as a means to locate experts for offline interaction [30]. Moreover, even when an expertise directory is available in a KMS, seekers still fret over "bothering the experts" [1].

Why has IT often failed to effectively support interpersonal information seeking? A plausible reason seems to be its failure to support employees' need to manage interpersonal relationships in information seeking. Zack and McKenney [69] suggested technology in use is constrained by the existing social context. Related to information seeking, employees' social context is their network of people who provide them with

relevant information. If social context is an important factor in shaping employees' use of IT for information seeking, researchers must first understand employees' social and relational needs in information seeking.

Therefore, the first research question of this study is to understand the motivations, particularly relational need, in interpersonal information seeking. Study of interpersonal information seeking is vital not only because personal information sources (e.g., colleagues) are considered more important than impersonal sources such as documents and the Internet in organizations [17, 70] but also because it reveals the social context that constrains the use of IT for communication and knowledge sharing.

Employees seek not only task information but also social information. While the ability to obtain technical knowledge to solve task problems is a key determinant of employees' problem-solving performance, the ability to obtain social information is a salient determinant of their social integration, which in turn affects their job performance. Social information has been found to be critical to (1) employees' integration into the corporate community [42], (2) employees' perception of fit with the organization [13], (3) individual and team performance [21], and (4) employees' job satisfaction and commitment to the organization [36]. Therefore, it is imperative for management to understand how employees seek social information. It is also known that the importance of an information source is not the same for different content [50], and the resultant choices of source could be different [56]. However, there is a dearth of research that recognizes the difference between task and social information seeking [52]. Therefore, the second research question of this study is to compare the effect of different motivations in employees' task and social information seeking.

The salient issue in interpersonal information seeking is to understand whom people contact for information and how often [47]. In a dyad of a seeker and a source, key measures of information seeking are the seeker's preference for a source—that is, how much does the seeker consider the source as preferable—and sourcing frequency—that is, the frequency with which the seeker approaches the source for information [28, 38]. Sourcing frequency is an important measure because (1) it reflects the social influence process and information flow [52], (2) it often implies the reception of useful knowledge that affects personal performance [17, 27], (3) it is a key component of tie strength in dyadic communication [29], and (4) it implies the formation of social networks [47]. It is important to note that preference for a source does not always translate into sourcing frequency. Employees may prefer a source but not always seek frequently from it due to reasons such as lack of proximity [34]. Therefore, this study adopts both source preference and frequency as key dependent variables. The unit of analysis of this study is an information-seeking dyad.

In summary, given the need to understand employee motivations in information seeking in order to facilitate it through IT, the purpose of this study is to investigate and compare the factors affecting preference for a source and sourcing frequency in dyadic task and social information seeking. We apply the relational communication perspective [59, 61] to model information-seeking behavior. Based on this perspective, we identify two major motivations for a seeker to prefer a source—that is, informational and relational motivations. Whereas the former refers to the motivation

of obtaining desired information, the latter's objective is to improve the interpersonal relationship. We postulate that the two motivations exert different influences on task and social information seeking. Our model was validated through a survey of 425 employees in a single organization such that organizational factors would be stable across the sample. By providing a better understanding of the formation of employees' information networks, this study can provide practical implications on the design and management of IT to support information seeking.

Theoretical Perspectives on Information Seeking

How do employees choose information sources? A common view employed to study information seeking is a cost–benefit approach. Here, some studies emphasize the importance of a source's information quality (seeking benefit) and others focus on source accessibility (seeking cost). While it is natural to expect the information quality of a source, that is, the main benefit of information seeking, to be a dominant determinant of sourcing frequency [42, 44], empirical studies have often found that sourcing frequency is driven by cost factors such as convenience and source accessibility rather than source quality [34, 48]. Within the cost–benefit framework, the relatively weak or sometimes nonsignificant effect of a source's information quality remains a perplexing question [68].

To better explain individuals' motivation in seeking behavior, recent research has incorporated relational attributes such as the seeker–source past relationship, the social risk embedded in information seeking, and the obligation to reciprocate for the help sought [10]. However, social risk has repeatedly shown no effect [10, 57] and obligation to reciprocate has provided mixed results [10, 27] with respect to information seeking. Therefore, there are gaps in our understanding of how informational, relational, and cost factors work in conjunction to influence seeking behavior.

A Communication Perspective

With the recognition of the strengths and limitations of the cost–benefit approach, we believe the relational communication theory [11, 59] may offer an appropriate theoretical perspective to complement the cost–benefit framework in explaining employees' motivations in information seeking. The main strength of relational communication theory is its recognition of both the informational and relational motivations in human communication of which information seeking can be regarded as a type. People communicate to obtain and deliver information as well as to modify a social relationship, and the two motivations work simultaneously in all communications [64].

More recent extensions of this theory have distinguished 12 dimensions of the relationship developed through communication, with the salient ones being dominance-submission, affection-hostility, and inclusion-exclusion [11]. The dominance-submission dimension refers to the control relationship implicitly negotiated in a communication. Affection-hostility is the expression of love or hate. The inclusion-exclusion dimension expresses the desire to interact and to be associated with others so

that one would be accepted as a member of the group and others would be accessible. Communication modifies dyadic relationships along these dimensions. Relational communication occurs in both offline and online settings [59, 61]. Therefore, if relational communication theory can explain offline information-seeking behavior, it may also be able to shed light on the design and use of IT for information seeking.

The major implication of the theory is that people not only factor in their past relationship in communication but also *actively* manage their social relationship by communication. The relationship implication of a communication is often considered as more fundamental than information exchange [24, 59]. In fact, organizational research has long been interested in relational communication [42] where dominance-submission is typically conceptualized in the form of power while affection-hostility and inclusion-exclusion are often conceptualized as trust and group identification. For example, relational themes such as power, trust, and identification have been considered as important antecedents of organizational conflict [32], cooperation [35], innovation [45], problem solving [17], and knowledge transfer [29, 38]. However, past studies on information seeking have paid more attention to information sources in terms of their openness, warmth, acceptance, and attentiveness when they are approached [42, 51] rather than information seekers' relational motivation in approaching the source.

Although it has been rarely used [62], we propose that this perspective is relevant to information systems (IS) research in organizations such as those in this study for several reasons. First, relational communication theory can complement existing task-related explanations of communication and information seeking in IS research. Second, this perspective may set new criteria to design and manage technologies such as CMC and KMS for information seeking. Extant theories such as the media richness theory [18] have been criticized for focusing solely on instrumental goals at the expense of relational objectives of communication [53], which can be explained through this perspective.

Thus, based on the relational communication perspective, information seeking serves two goals—that is, to obtain relevant information and to modify the social relationship. Leaving out the less frequent scenario where a seeker wants to damage a relationship, active relationship building could be a major motivation in the evaluation and choice of an information source. The extant literature, however, has focused on how seekers avoid degenerating the relationship by not disturbing the current social balance [17, 44]. Nevertheless, there is anecdotal evidence showing that employees take the opportunity of information seeking to strengthen social relationships [17]. Therefore, there is a need to include and validate the role of the relationship-building motivation in information seeking. We posit that preference for a source is driven by both informational and relational motivations.

Task and Social Information

The relational communication theory explains the motivations of information seeking, but it does not address the difference between the seeking of different types of information, particularly task and social information. Various types of organizational

information have been identified in the past literature, including technical skills for performance proficiency, performance feedback, expectations of role behavior, group norms, language, organizational goals and values, history, people knowledge, social feedback, and politics [14, 43]. Shah [52] combined these information types into two broad categories—that is, job-relevant information related to the task and organizational information related to the cultural and social aspects. Following Shah [52], we classify employee information seeking into task information seeking and social information seeking. The former refers to the technical information needed in conducting assigned tasks; the latter consists of formal or informal political, relational, and cultural information in the organization. Organizational social information in this study differs from private and personal information. Examples of private and personal information include employee's family and financial information, whereas organizational social information refers to information such as the relationship between two colleagues, the personality of a colleague, and the character of a supervisor. Using this classification, we are interested in investigating and comparing the antecedents of task and social information seeking.

   Little prior research has investigated the difference between task and social information seeking. As an exception, Shah [52] compared the different sources employees choose for task and social information seeking. For the former, employees were hypothesized to prefer other employees holding a similar rank in the organizational social network. For the latter, it was proposed that strong relational ties such as friends are preferred. However, mixed results were found for different job categories (e.g., security brokers versus operation staff), and the observed social network relationship among employees could not clearly explain employees' task and social information seeking. Thus, the differences between the two types of information seeking require further investigation.

Research Model and Hypotheses

THE PREVIOUS DISCUSSION INDICATES THAT SEEKERS would have both informational and relational motivations in information seeking. There is also a need to compare task information–seeking and social information–seeking behavior—that is, identify what is common and what is different. As we discuss below, task and social information differ in their specificity of seeker's information need and reward, which suggests that there may be certain differences in the motivations for the two types of information. With the recognition of the different information types and combining the two motivations in information seeking, Figure 1 summarizes the research model for which the hypotheses are described in the following paragraphs.

Informational Motivation

It appears that informational value is salient for employees when evaluating sources and forming their preference. To test this, we also need to understand how to conceptualize informational value. The concept of *information relevance* [55] has been proposed to
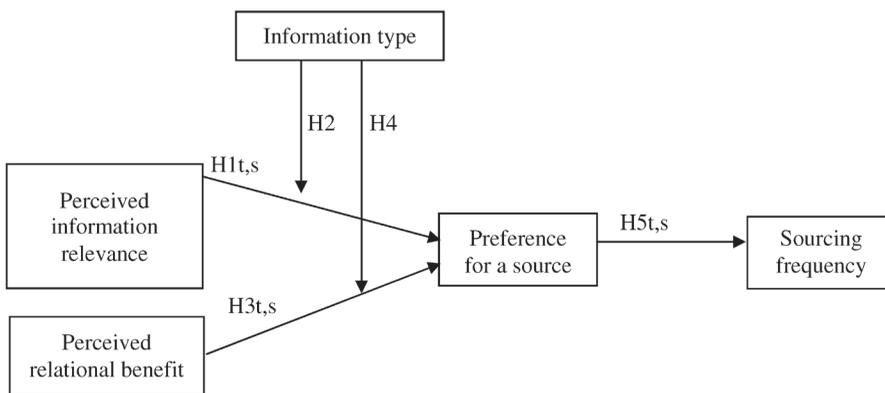
Figure 1. Research Model

explain the value of a source's information to a seeker [54]. A piece of information is relevant to a seeker if (1) it can lead to new and nontrivial implications when conjoined with other assumptions accessible in that context, (2) it can lead to the abandonment of an existing assumption by contradicting it, or (3) it can strengthen an existing assumption by providing evidence for it [55]. This cognitive view indicates that the notion of information relevance includes not merely the receiving of information but also the value to create new information that can potentially change a seeker's behavior. In other words, relevant information has both cognitive impact and pragmatic (utility) value to a seeker's problem at hand [67]. In the employee socialization literature, the notions of source expertise and source value have been used [10, 44], which are both encapsulated in the notion of information relevance. In the context of our study, we define *perceived information relevance* as the seeker's perception of the extent that the information provided by a source is related to and helpful to solve the seeker's problem at hand [44, 67]. Because perceived information relevance is considered the basic requirement to satisfy a seeker's information need [54, 55], it is expected to apply to both task and social information seeking. Thus, we hypothesize:

> *Hypothesis 1t,s: Perceived information relevance is positively related to seeker's preference for the source in task and social information seeking. (The suffix t or s indicates task and social information seeking, respectively.)*

However, does perceived information relevance play different roles in task information–seeking and social information–seeking situations? It is likely because there are differences between the two situations. First, information needs in task performance are likely to be more specific than the information needs in socialization. This is because organizations are typically structured with the principle of hierarchical decomposition [66] to optimize efficiency. Modularity requires each organizational unit (e.g., an employee) to possess specific expertise. Even in the light of the recent knowledge-based view of firms, it is suggested that knowledge integration between organization units extends only to the degree it is relevant [26]. Therefore, informational relevance is an important premise in task performance. Social information is often collected as

background information to understand one's social environment and is less likely to be specific to a particular need at hand.

Second, although social information about another employee could be relevant to a seeker, it may not be easily applied to produce the desired relationship with the individual. The seeker still needs a history of personal interactions with the individual to form relational embeddedness [25]. Transference of task knowledge is often sufficient to effect the transference of productivity, whereas transference of social knowledge does not imply the transference of social bonds and social capital [45]. The lack of specificity and the need for additional effort to build relationships make the relevance of social information a weaker antecedent of preference for a source:

> *Hypothesis 2: The effect of perceived information relevance on preference for the source will be stronger in task than in social information seeking.*

Relational Motivation

Information seeking as a type of communication not only serves to resolve a seeker's information need but also simultaneously modifies the relationship between the seeker and the source. Until now, mainly the negative relational implications (e.g., social risk, obligations) of information seeking have been considered, and the findings have not been conclusive [10, 27, 57].

In addition to the economic exchange of goods and money, people exchange services, information, love, respect, and status in their social interactions [22]. Communication is the process through which various types of resources are exchanged. From the source's perspective, sharing one's information could bring one respect and status when such information is indicative of one's expertise [22]. Sharing information also indicates the source's care and trust that the seeker will reciprocate in some way. From the seeker's perspective, seeking information indicates the seeker's recognition of a source's expert status and also obligates the seeker to reciprocate in the future. Therefore, while seeking information exposes the seeker to potential social risks, it signals the seeker's trust in the source's goodwill and respect of the source at the same time. It signals "I need you," "I see you as an expert," and "I know you care about me." From the relational communication perspective, information-seeking signals a submissive relationship, seeker's affection to the source, as well as the intention to be affiliated with the source in the future, and hence bears on the three relational dimensions of communication [11]. In addition, if the source is also a stakeholder of the problem, such as a supervisor, seeking information from the source serves to signal the seeker's concern for performance or to inform the source of progress in order to discharge future surprise [43]. Therefore, information seeking can serve to improve the seeker–source relationship.

We define *perceived relational benefit* as the perceived closer work and personal relationships expected with a source through information seeking, and consider it as an important motivation in forming preference for the source. The motivation to realize the relational benefit gives the seeker the drive to put aside social risks and to

approach the source as suggested by relational communication theory [59], which is expected to apply to both task and social information seeking. Therefore,

> *Hypothesis 3t,s: Perceived relational benefit is positively related to the seeker's preference for the source in task and social information seeking.*

However, as in the case of informational motivation, we expect a difference in the roles played by the relational benefit in task information–seeking and social information–seeking situations. This is because employee's rewards (i.e., salary, promotion) are mainly driven by task performance. Social information might help a seeker to manage his or her impression and interpersonal liking with a supervisor, but liking does not always lead to higher performance appraisal [37]. Rather, liking could be a function of task performance [39] and the seeker's organizational citizenship behavior [5]. Regarding impression management, it was found that self-promotion may have no effect, or even a negative effect, on performance appraisal [65]. Therefore, social information seeking, while signaling trust in the source, may bring about less personal benefit and run the risk of being interpreted as social maneuvering. Therefore, relational benefit may play less of a role in social information seeking than in task information seeking. Thus, we hypothesize:

> *Hypothesis 4: The effect of perceived relational benefit on preference for the source will be stronger in task than in social information seeking.*

Preference for Source and Sourcing Frequency

Psychological theories such as the theory of planned behavior [2] suggest attitude as a strong predictor of actual behavior. The preference for a source measures the degree that a seeker considers the source as better aligned with his or her seeking needs, and hence preferable compared to other sources. It is a general attitudinal perception of a source's desirability, hence it should be predictive of the actual sourcing behavior for both task and social information seeking. However, Ajzen and Fishbein [3] warned that attitude predicts behavior well only when attitudes and behavior have correspondence on action, target, context, and time. Otherwise, situational variables may affect behavior beyond the prediction based on attitude. Therefore, the relationship between preference for a source and sourcing behavior needs further verification. Thus, we hypothesize:

> *Hypothesis 5t,s: The preference for a source is positively related to sourcing frequency in task and social information seeking.*

Research Methodology

Survey methodology was used to validate our research model. We conducted a survey of employees on their dyadic seeking behavior for task or social information seeking. The data collection was performed in a large IT organization where both social and task information seeking were studied while controlling for organizational

factors such as structure and culture. The organization had more than 5,800 employees and provided a full range of business and IT consulting services to client companies from various industries worldwide. The services provided included IT solution development and implementation. Most employees in this organization worked on a project basis—that is, after finishing the current project, they would be assigned to a new project. The average duration of a project was six months. Each project team consisted of an average of 20 members from either the same department or different departments. Task information was important for all employees (IT and administrative). In addition, for the IT professionals (the majority), constant learning was required to keep up with continuous advancements in technology. From the social information perspective, because employees worked within and across departments in such a large organization, the social relationships were fairly complex. In addition, because employees would periodically be assigned to new project teams, they needed to acquire new social information. These characteristics made this organization an appropriate context for our study.

Instrument Development

For the instrument, all constructs with multiple items used a seven-point scale except for preference for a source, which used an 11-point scale to preserve statistical power in the presence of a moderator (i.e., the two different types of information). To better avoid common method variance, some items used a Likert scale with "strongly disagree," "neutral," and "strongly agree" as anchors, while others used semantic differential scales (e.g., preference for a source). The details of all items are reported in the Appendix.

The dependent variable *sourcing frequency* was measured by an item that asks an information seeker the average sourcing frequency for a type of information per month from a particular source [17, 38]. The measure for *preference for a source* was self-developed and assessed by three items that evaluated the preference for that source, importance of the source, and likelihood of approaching the source as the first choice in comparison with other sources. For the independent variable *perceived information relevance,* three items were developed that measured the source's understanding of the seeker's situation and the relevance and helpfulness of information obtained from the source in the past [48]. For *perceived relational benefit,* we developed four new items measuring relationship improvement, relationship maintenance, informing of progress, and indication of mutual dependence.

There are a number of other factors suggested in previous studies that might affect information seeking in a dyad. We included them as control variables in our study. First, based on the cost–benefit framework, *physical proximity* is an important cost factor. We measured it with one item that ranged from the next desk to a different country [38]. Second, the interdependence between the two parties due to formal organization structure and the seeker–source past relationship [10, 17] have also been suggested to affect information seeking. To model these potential influences, we included *project team membership* as a control that measured whether the seeker and the source had

worked or were working in the same project (same project team = 0, otherwise = 1) with one item.

Third, while project team membership and previous interdependence between the two parties captured the horizontal relationship, we also included the vertical difference between the seeker and the source in the formal structure of the organization as a control [10, 17], that is, the number of hierarchical levels the source was above the seeker. This variable was termed *relative source rank* and was measured with one item that ranged in value from –2 (the source is 2 levels below the seeker) to +2 (the source is 2 levels above the seeker). The relative source rank suggests the power of the source that might motivate a seeker to approach the source for information or relationship building. Fourth, previous information seeking and employee socialization literature [10] has suggested social risk as a relational concern, though no substantive evidence has been found so far. For *social risk,* four items were used that measured embarrassment, image risk, feeling of nervousness, and being afraid of appearing incompetent [67].

Fifth, the homophily argument in organizational communication suggests that people of the same gender, age group, and rank tend to have a stronger affinity [58]. Thus, we included *gender homophily* (same gender = 1, different = 0), *age difference,* and *rank difference* as controls. Seekers estimated the age of the source, and age difference was measured as the absolute value of the source's age minus the seeker's age. Rank difference was the absolute value of relative source rank. Finally, we included the seeker's *job tenure* in the organization and the seeker's *age* and *gender* as controls.

Data Collection

We developed two main versions of the survey questionnaire, one for task information seeking and the other for social information seeking. Respondents either filled out the task information or the social information questionnaire. For *task information seeking,* we defined the term in the questionnaire as seeking for technical problem-solving information in various tasks. For *social information seeking,* we defined the term as seeking for information regarding the social environment and interpersonal relationships in the organization. We also gave examples of social information in that questionnaire, such as a supervisor's perception of other employees, the relationship between two employees, and the personality of other employees. Postsurvey interviews with 12 respondents covering all ranks of respondents except director indicated that they interpreted the task information–seeking and social information–seeking scenarios correctly. Items for all constructs were phrased in the same way in the two versions except for a few words in each item that indicated the content orientation of the survey (i.e., either task or social information).

Further, in order to randomize the sample, respondents had to list six contacts (three from within and three from outside their department) on the first page of the questionnaire. We considered six contacts as adequate because earlier studies have found that subjects usually list about that many contacts [17]. Then, respondents were randomly assigned to complete the questionnaire with respect to one of these contacts

as source—that is, randomly on a position from 1 to 6 on their list. In other words, on the second page of the questionnaire it was randomly specified which one out of the six contacts the subject should focus on as source for the rest of the survey. This randomization mechanism led to a roughly equal number of seekers evaluating sources listed in positions 1 to 6 for both task and social information seeking.

With the help of a human resource management staff member of the company, 800 employees were randomly selected across different departments and ranks. The reason for sending out the survey to 800 employees was to try to obtain at least 200 respondents for each type of questionnaire (task and social information), assuming a typical response rate of 50 percent [7] in order to obtain adequate statistical power. The human resource management staff member then sent 400 questionnaires of each type (task and social information) to the sample. Follow-up telephone calls were made and e-mails were sent to increase the survey response rate. We also announced a $10 incentive per survey to encourage participation. The data were collected over a period of two weeks. A total of 425 complete responses (215 for task and 210 for social information seeking) were collected across 14 departments and 6 rank levels from frontline employee to director, indicating a response rate of 53.1 percent.

For the task information–seeking questionnaire, respondents had assumed different tasks such as marketing, research and development, consulting, system analysis and design, system development, accounting, finance, and administration according to their functional role in the organization. Table 1 shows the demographics of respondents. *t*-tests revealed no significant differences between task information respondents and social information respondents in terms of age and job tenure at the company. Mann–Whitney tests showed that the gender ratio did not differ significantly between the two groups and neither did the rank distribution. Therefore, the subsamples were comparable in terms of basic demographics and job characteristics. Nonresponse bias was assessed by comparing the sample with the database of employees of the company. *t*-tests showed that the sample and the entire population of employees did not differ significantly in terms of age and job tenure at the organization. Mann–Whitney tests also revealed no significant differences in gender ratio and rank distribution between the sample and the whole population.

Data Analysis and Results

Instrument Validation

THE MEASUREMENT MODEL WAS FIRST ANALYZED to ensure instrument validity. Confirmatory factor analysis (CFA) was used to test the discriminant and convergent validity of items. Three criteria were imposed for *convergent validity:* (1) the standardized loading being significant, (2) the average variance extracted (AVE) for a construct being greater than 0.5, and (3) the factor composite reliability (FCR) and Cronbach's α being greater than 0.7 [23]. Table 2 indicates adequate fit for the measurement model and adequate convergent validity for the multi-item constructs using LISREL version 8.7.

To ensure *discriminant validity,* Fornell and Larcker [23] proposed that the square root of the AVE should be larger than the interconstruct correlations for each con-

Table 1. Demographics of Respondents

	Task	Social	Combined
Gender			
Male	167	159	326
(percent)	(77.7)	(75.7)	(76.7)
Female	48	51	99
(percent)	(22.3)	(24.3)	(23.3)
Age (years)			
Mean	36	36	36
(minimum; maximum)	(26; 50)	(26; 54)	(26; 54)
Standard deviation	4.75	5.04	4.89
Job tenure (years)			
Mean	4.53	4.58	4.58
(minimum; maximum)	(1; 9)	(1; 8)	(1; 9)
Standard deviation	2.14	2.26	2.20
Rank level			
Frontline employee	21	22	43
Assistant section manager	81	77	158
Section manager	71	73	144
Assistant department manager	30	26	56
Department manager	12	11	23
Director	0	1	1
Total responses	215	210	425
(percent)	(50.6)	(49.4)	(100.0)

struct. Table 3 reports the means, standard deviations, and correlations of multi-item constructs and other model variables. The discriminant validity of all constructs was supported.

In order to test the moderating effect of information type—that is, for Hypotheses 2 and 4—the *invariance of the instrument interpretation* for the two subsamples of subjects needed to be verified first. Statistically, the factor loadings for all the items in the two groups (i.e., task and social information subsamples) are required to be equivalent for moderator testing [12, 31]. Following the recommendation in Byrne [12], we first fitted an unconstrained model that estimated the factor loadings for the two groups simultaneously. The global goodness of fit for this model was satisfactory ($\chi^2 = 325$, $p < 0.00$, degrees of freedom [df] = 162, root mean square error of approximation [RMSEA] = 0.069, standardized root mean square residual [SRMR] = 0.053, normed fit index [NFI] = 0.96, goodness-of-fit index [GFI] = 0.92, comparative fit index [CFI] = 0.98, incremental fit index [IFI] = 0.98, relative fit index [RFI] = 0.94).[1] We then fitted a constrained model that constrained the factor loadings of the two groups to be identical. The goodness of fit for the constrained model was also satisfactory ($\chi^2 = 340$, $p < 0.00$, df = 172, RMSEA = 0.068, SRMR = 0.054, NFI = 0.95, GFI = 0.92, CFI = 0.98, IFI = 0.98, RFI = 0.94). The χ^2 difference between the two models ($\Delta\chi^2 = 15$, Δdf = 10, $p = 0.13$) was insignificant. Therefore, we concluded that the interpretations of factors were not significantly different across the groups, hence the moderator tests could be performed.

Table 2. Convergent Validity Results

Item[b]	Task information seeking[a]					Social information seeking				
	Standard loading	t-value	Average variance extracted	Factor composite reliability	Alpha	Standard loading	t-value	Average variance extracted	Factor composite reliability	Alpha
PF1	0.89	16.30	0.79	0.92	0.91	0.79	13.14	0.68	0.87	0.85
PF2	0.97	19.06				0.94	17.04			
PF3	0.80	13.98				0.74	12.09			
RV1	0.79	13.65	0.74	0.89	0.89	0.79	13.44	0.75	0.90	0.90
RV2	0.81	14.12				0.86	15.31			
RV3	0.96	18.36				0.95	17.78			
SR1	0.69	11.21	0.70	0.90	0.89	0.80	13.42	0.66	0.89	0.89
SR2	0.91	16.78				0.81	13.62			
SR3	0.89	16.21				0.83	14.14			
SR4	0.85	14.99				0.80	13.35			
RB1	0.88	16.24	0.80	0.94	0.94	0.87	15.60	0.72	0.91	0.91
RB2	0.89	16.60				0.91	16.78			
RB3	0.89	16.45				0.81	13.90			
RB4	0.91	17.01				0.79	13.37			

Notes: [a] For task information seeking, $\chi^2 = 123$, df = 71, $p < 0.001$, RMSEA = 0.06, SRMR = 0.056, NFI = 0.97, CFI = 0.99, IFI = 0.99, RFI = 0.96, GFI = 0.92. For social information seeking, $\chi^2 = 176$, df = 71, $p < 0.001$, RMSEA = 0.08, SRMR = 0.051, NFI = 0.95, CFI = 0.97, IFI = 0.97, RFI = 0.93, GFI = 0.89. [b] PF = preference for source; RV = perceived information relevance; SR = social risk; RB = perceived relational benefit.

Table 3. Correlation Table for Task Information–Seeking and Social Information–Seeking Subsamples

Task information	Mean	Standard deviation	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Physical proximity	3.13	1.52	1.00												
2. Project team member	53[a]	47[a]	−0.01	1.00											
3. Relative source rank	3.42	1.10	0.05	0.03	1.00										
4. Job tenure	5.75	4.22	0.06	0.00	−0.24**	1.00									
5. Seeker gender	78[b]	22[b]	0.07	0.04	0.10	−0.06	1.00								
6. Seeker age	33.53	4.81	0.04	−0.07	−0.30**	0.59**	−0.41**	1.00							
7. Gender homophily	66[c]	34[c]	−0.13	−0.02	0.02	0.04	−0.49**	0.21**	1.00						
8. Age difference	4.21	3.78	−0.00	0.15*	0.39**	−0.12	0.19**	−0.30**	−0.09	1.00					
9. Rank difference	0.89	0.76	0.01	0.05	0.41**	−0.05	0.00	−0.07	0.12	0.63**	1.00				
10. Perceived information relevance	5.02	1.20	0.15*	−0.28**	0.03	0.25**	−0.01	0.17*	0.02	−0.08	0.04	0.86			
11. Perceived relational benefit	2.48	1.22	0.13	−0.03	0.01	0.17*	−0.20**	0.17*	0.05	−0.05	0.04	0.43**	0.89		
12. Social risk	5.05	1.13	−0.04	0.21**	0.22**	−0.12	0.12	−0.12	0.01	0.12	0.18**	−0.10	−0.15*	0.84	
13. Preference for a source	7.16	2.24	0.16*	−0.22**	0.07	0.20**	−0.05	0.14*	0.04	−0.13	0.04	0.67**	0.52**	−0.17*	0.89
14. Sourcing frequency	0.51	0.31	0.31**	−0.03	−0.06	0.11	0.01	0.06	−0.08	−0.12	0.02	0.44**	0.33**	−0.03	0.49**

(continues)

Table 3. Continued

Social information	Mean	Standard deviation	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Physical proximity	3.13	1.51	1.00												
2. Project team member	60[a]	40[a]	0.02	1.00											
3. Relative source rank	3.40	1.08	−0.05	0.03	1.00										
4. Job tenure	5.58	3.74	−0.03	0.12	−0.23**	1.00									
5. Seeker gender	76[b]	24[b]	−0.03	0.08	0.13	−0.08	1.00								
6. Seeker age	33.00	4.81	0.04	−0.10	−0.35**	0.50**	−0.44**	1.00							
7. Gender homophily	70[c]	30[c]	0.08	−0.12	−0.11	0.09	−0.44**	0.26**	1.00						
8. Age difference	4.47	4.59	0.04	0.10	0.49**	−0.21**	0.19**	−0.38**	−0.27**	1.00					
9. Rank difference	0.88	0.73	0.02	0.03	0.44**	−0.06	0.05	−0.18**	−0.12	0.59**	1.00				
10. Perceived information relevance	5.12	1.11	0.04	−0.15*	0.19**	−0.03	0.04	0.06	0.05	−0.06	−0.04	0.87			
11. Perceived relational benefit	2.47	1.08	−0.07	−0.03	0.00	0.05	−0.07	0.08	0.06	−0.12	−0.07	0.55**	0.85		
12. Social risk	5.18	0.93	0.18**	0.08	0.06	−0.14*	0.12	−0.09	−0.12	0.26**	0.17*	−0.13	−0.28**	0.81	
13. Preference for a source	7.10	1.99	−0.08	−0.06	0.12	0.10	−0.03	0.14*	0.03	−0.17*	−0.03	0.66**	0.44**	−0.19**	0.82
14. Sourcing frequency	0.57	0.30	0.34**	0.01	0.05	−0.18*	−0.06	−0.03	0.19**	−0.05	−0.06	0.40**	0.22**	−0.09	0.33**

Notes: For multi-item constructs, diagonal cells are the square roots of AVEs. Frequency is log-transformed. This correlation matrix is based on original data before the adjustment for common method bias. [a] The mean column is the percentage of seekers and sources who worked in the same project team; the standard deviation column is the opposite. [b] The mean column is the percentage of male seekers; the standard deviation column is the percentage of female seekers. [c] The mean column is the percentage of seekers and sources who were of the same gender; the standard deviation column is the opposite. * $p < 0.05$; ** $p < 0.01$.

Common Method Bias Adjustment

Because the survey data were collected in the same time frame using a single method, common method bias could be a concern. Lindell and Whitney's [40] marker variable method was adopted to test for this bias. Following their recommended steps, we first picked social risk, which had the smallest correlation with sourcing frequency as an ad hoc marker variable. Social risk was an appropriate marker variable because (1) it had insignificant effect on sourcing frequency in past studies, and therefore it contains less substantive correlation than other variables with sourcing frequency, and (2) it was likely to be subject to the same social desirability bias as other variables, and hence using it as a marker variable helps control for the social desirability effect.

In the second step, the correlation matrix of constructs was adjusted based on the correlation between the marker variable and sourcing frequency.[2] The adjustment of correlation was made only between subjective constructs (i.e., perceived information relevance, perceived relational benefit, social risk, preference for a source, and sourcing frequency), and not between objective items such as gender, rank, and team membership or between a subjective construct and an objective item. After that, hypothesis testing was conducted based on the adjusted correlation matrix.

Hypothesis Testing

In addition to sourcing frequency, there were a number of variables in our model that were not normal (e.g., seeker's gender, gender homophily, and project team membership are binary). Moreover, some control variables, such as job tenure and age difference, had high skewness and kurtosis. Methodologically, the use of maximum likelihood estimation in structural equation modeling was likely to produce biased estimates with our nonnormal data set [9]. Therefore, we used regression for hypotheses testing instead with factor scores based on the average of items.[3] Sourcing frequency was log-transformed to reduce nonlinearity in the models.

The hypothesis testing was conducted in two steps. First, we tested hypotheses for main effects with the task information–seeking and social information–seeking sub-samples separately. For each data set, we used preference for a source (i.e., model 1 for the task information subsample and model 3 for the social information subsample in Table 4) and sourcing frequency (i.e., model 2 for the task information subsample and model 4 for the social information subsample in Table 4) as dependent variables and regressed them on the independent variables and control variables. Table 4 summarizes the results of main effects testing. Second, for testing interaction effects Hypotheses 2 and 4, we combined the two groups because the two groups interpreted the instrument in the same way. We created a group dummy variable (0 for task information and 1 for social information) and tested its interaction with the corresponding independent variables. The significance of the interaction as indicated by an *F*-test was used for interaction hypothesis testing.

In task information seeking, perceived information relevance significantly affected preference for a source, which supports Hypothesis 1t. Perceived relational benefit was also significantly related to preference for a source, which supported Hypothesis 3t.

Table 4. Regression Results for Main Effects

Independent/control variable	Task		Social	
	Model 1	Model 2	Model 3	Model 4
	Preference	Frequency	Preference	Frequency
Project team membership	−0.04	0.09	0.03	0.10
Relative source rank	0.08	−0.14**	0.12*	−0.04
Job tenure	0.04	−0.01	0.10	−0.21***
Seeker's age	0.03	−0.03	−0.06	0.00
Seeker's gender	−0.03	−0.08	0.02	−0.04
Gender homophily	0.02	−0.09	−0.06	0.18**
Age difference	−0.15**	−0.13	−0.26***	0.03
Rank difference	0.08	0.12	0.07	−0.03
Social risk (method bias)	−0.08	0.07	−0.17***	0.12*
Physical proximity	0.04	0.23***	0.11**	0.35***
Perceived information relevance	0.50*** (H1t)	0.20**	0.59*** (H1s)	0.20**
Perceived relational benefit	0.27*** (H3t)	0.05	0.01 (H3s)	0.02
Preference for a source		0.30*** (H5t)		0.20** (H5s)
R^2	0.52	0.33	0.47	0.33
Adjusted R^2	0.49	0.29	0.43	0.28

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

When sourcing frequency was the dependent variable, controlling for perceived information relevance and relational benefit, preference for a source was significant to sourcing frequency, which supported Hypothesis 5t. Similarly, in social information seeking, perceived information relevance significantly affected preference for a source, which supported Hypothesis 1s. However, perceived relational benefit was not significantly related to preference for a source, which did not support Hypothesis 3s. When sourcing frequency was the dependent variable, controlling for perceived information relevance and relational benefit, preference for a source was significant to sourcing frequency, which supported Hypothesis 5s.

As mentioned above, in order to test the moderating effect of information type, a dummy variable for task versus social information was introduced. We tested its interaction with the corresponding independent variables. With preference for a source as the dependent variable, the test of interaction effect was conducted for perceived information relevance and perceived relational benefit, respectively. For perceived information relevance, the result indicated there was no significant difference ($F(1,400) = 0.41, p = 0.52$). Therefore, Hypothesis 2 was not supported. However, for perceived relational benefit, the difference was significant ($F(1,400) = 6.24, p = 0.01$), in support of Hypothesis 4.

Table 5. Summary of Differences

Factors	Task	Social
Perceived information relevance	Significant to preference for a source (H1t supported)	Significant to preference for a source (H1s supported)
	Insignificant difference in the effect on preference for a source (H2 not supported)	
Perceived relational benefit	Significant to preference for a source (H3t supported)	Insignificant to preference for a source (H3s not supported)
	Stronger effect on preference for a source in task than in social information seeking (H4 supported)	
Preference for a source	Significant to sourcing frequency (H5t supported)	Significant to sourcing frequency (H5s supported)
Physical proximity	Significant to sourcing frequency	Significant to sourcing frequency
	Insignificant difference in the effect on sourcing frequency	
Job tenure (post hoc analysis)	Insignificant to sourcing frequency	Significant to sourcing frequency
	Significant difference in the effect on sourcing frequency	
Gender homophily (post hoc analysis)	Insignificant to sourcing frequency	Significant to sourcing frequency
	Significant difference in the effect on sourcing frequency	
Relative source rank (post hoc analysis)	Significant to sourcing frequency	Insignificant to sourcing frequency
	Insignificant difference in the effect on sourcing frequency	

As a robustness check, we tested all the hypotheses based on the original correlation matrices before adjusting for the common method bias. The significance of all the hypotheses and control variables remained the same except for physical proximity, which became insignificant to preference for a source in social information seeking ($b = 0.07$, $p = 0.16$). Table 5 summarizes the differences between task and social information seeking.

Discussion and Implications

Discussion of Findings

THIS STUDY TESTED THE EFFECT OF INFORMATIONAL and relational motivations on a seeker's preference for a source and sourcing frequency in task and social information seeking. In task information seeking, we found that both perceived information relevance and perceived relational benefit are significant motivations in preference for a source. We also found that preference for a source was positively related to sourcing frequency.

In social information seeking, perceived information relevance was still significantly related to preference for a source. Moreover, preference for a source was significantly related to actual sourcing frequency as observed in task information seeking. The interaction between information type and perceived relational benefit was significant as hypothesized, indicating that relational motivation was stronger in task information seeking than in social information seeking.

However, task and social information seeking manifest some unexpected differences. First, in social information seeking, perceived relational benefit was insignificant to preference for a source (H3s). A plausible explanation is that relationship building through social information seeking is regarded as less effective. To some degree, seeking social information might imply higher social risk, such as being viewed as gossiping, poking one's nose into other's affairs, or trying to get ahead not through performance but through social manipulation. The relatively stronger negative correlation between perceived relational benefit and social risk in social information seeking ($r = -0.28$) than in task information seeking ($r = -0.15$) seemed to be consistent with this interpretation.

Second, the interaction effect between information type and perceived information relevance contradicted our hypothesis (H2). Perceived information relevance maintained similar importance in task and social information seeking. This finding suggests that no matter which type of information one is seeking, relevance is a significant factor in source evaluation and use. However, the relational motivation was found significant in task information seeking but not in social information seeking (H4). This difference suggests that informational motivation is the main and dominating factor for preference for a source, whereas relational motivation is activated only in task information seeking.

The control variables reveal some interesting findings (see Table 5). First, physical proximity was significantly related to sourcing frequency for both types of information as expected by the cost–benefit framework. However, it was not significantly related to preference for a source in task information seeking. In social information seeking, its effect on preference for a source was small. The significance disappeared if we did not adjust for common method bias. This finding throws light on the seeming conflict between the least effort principle [34] and relevance theory [54, 55]. While employees prefer the best sources, when it comes to action (actual seeking behavior), situational constraints become salient and employees adjust their choice according to the constraints of physical proximity. As suggested by behavioral decision-making theories, "From a psychological viewpoint, it may be more accurate to say that while judgment is generally an aid to choice, it is neither necessary nor sufficient for choice . . . taking action engenders its own sources of conflict" [20, p. 73]. Therefore, relevance seeking and the least effort principle can be regarded as objective functions employed in two different stages of the information-seeking process: information relevance is more important in the first stage to form preference, while physical proximity gains importance in the second stage to take action.

Second, because social risk was used to approximate common method bias, its effect on preference for a source and sourcing frequency should be interpreted as method

bias rather than the effect of social risk per se. When our research model was tested with the original matrices, social risk was found insignificant to both preference for a source and sourcing frequency, as observed in previous research [10, 57].

Third, job tenure had a stronger effect on sourcing frequency in social information ($b = -0.21$, $p < 0.01$, model 4) than in task information seeking ($b = -0.01$, $p = 0.91$, model 2). Ashford [6] found job tenure to be insignificant to the amount of information seeking. Our study suggests that the effect of job tenure could depend on the type of information being sought. Post hoc analysis of the interaction effect between information type and job tenure indicated it was significant ($F(1,400) = 6.28$, $p = 0.01$). Therefore, old-timers seek social information less frequently than task information. This is likely because they may know the social environment better, while they still need to catch up with the fast-changing task skill demands, especially in the IT industry [19].

Last, a homophily factor, gender homophily, also manifested a stronger effect on sourcing frequency in social information seeking than in task information seeking. In post hoc analysis, the interaction effect of gender homophily and information type was significant ($F(1,400) = 6.73$, $p < 0.01$) as observed in prior studies [58]. Same gender greatly facilitates the seeking of social information, but not task information. Another factor that seemed to have differential effects in the two groups, source rank, revealed insignificant difference in the test of interaction effect ($F(1,400) = 1.96$, $p = 0.16$). All other control variables had no significant interaction effect with information type on sourcing frequency. While our exploration of the control variables was post hoc, it does support the idea that there are differences in information-seeking behavior for different types of information. Further research is needed to better explain these differences.

Limitations and Future Research

The results of this study need to be interpreted in light of the limitations. First, our model compared and tested the differences between task information–seeking and social information–seeking behaviors. While task and social information are often sought separately, there may be situations where a seeker wants to obtain both types of information from a single source. Future research could investigate such joint seeking situations by modeling how the motivations would work in the combined case and test the model with an appropriate questionnaire. Second, our model did not take into consideration factors such as the organizational culture or team structure, for reasons of parsimony. While culture is assumed to be controlled for in a single organization setting such as ours, future research could investigate such factors. Third, this study was conducted in a single company. Although this company worked with clients from a wide range of industries worldwide, generalization of the findings may be confined within the IT consulting and solution provision industry. Further generalization to other companies and contexts needs to be done with caution. Fourth, while we set out to contrast task and social information seeking, we were unable to consider other types of information as suggested by Chao et al. [14], which would add complexity to the model but can present opportunities for further exploration. Finally, while this

study identifies factors that affect social information–seeking, the impact of social information-seeking behavior on the dyadic relationship, follow-up task information seeking, and employee job performance are not addressed. Future research in these directions can enrich our understanding of employee information seeking.

Theoretical Contributions

This study provides a basic framework to understand information-seeking behavior. First, it extends the relational view of information seeking by suggesting that seekers actively manage their relationship with a source through information seeking. Seekers not only exploit their past relationships and awareness of relevant sources but also take the opportunity of information seeking to maintain better personal relationships with the sources. From the social capital perspective [16], seekers have the desire to maintain a cordial relationship with sources they deem relevant to their work. From the power and dependency view [22], because information, particularly task information, is an important type of resource, relevant sources have the power that the seeker depends on. This motivates seekers to enhance or maintain their relationship [29], so that when they have future needs, they would have an easier access to those sources. The inclusion of relational motivation also provides a more comprehensive explanation of the formation of tie strength in a communication network. While earlier literature has used tie strength mainly as an independent variable to explain employee behavior such as problem delegation, turnover, and new technology adoption [8, 56], our investigation aims to explain the antecedents of its major component—that is, sourcing frequency. In this regard, this study suggests informational motivation and relational motivation as two key factors in the planning of tie building.

Second, this study suggests that different forms of motivations are activated in different types of information seeking. While informational motivation is a significant factor in both task and social information seeking, relational motivation is only significant in the former. This finding confirms the importance of task information seeking in both learning and work relationship development. Our finding offers a view different from Shah's [52] hypotheses that employees prefer structural equivalents for task information and prefer friends for social information. What our study suggests is that when employees look for task information, they also try to establish a personal relationship, making structural equivalents friends. That might explain why employees seek both job and social information from structural equivalents in Shah's study.

The implications of our study on active relationship management, formation of tie strength in social and advice networks, and the difference between task and social information seeking not only shed light on information-seeking behavior in general but also enhance the understanding of employees' use of IT tools for information seeking—that is, various ineffective cases of IT use could potentially be better explained with our findings.

For example, why can't CMC technology turn rigid hierarchical communications into more desirable multilateral communications [69]? This is because with a hierarchical organizational structure, the information dependency and relational needs are shaped by the hierarchical job design. Employees are more likely to have informational and

relational needs with only the direct supervisor and colleagues who are immediately upstream or downstream in the business process. Expanding one's information and relation network beyond job requirements is not deemed necessary. Also, why do employees use KMS to locate experts for offline communication [30]? In addition to the demand for a richer communication medium, our study suggests employees want to maintain and develop desired relationships. The face-to-face offline communication provides not only a better medium for tacit knowledge sharing, but also a better medium to establish a personal relationship beyond problem solving. On the other hand, when seekers choose not to bother experts even when it is easy to access them through KMS [1], this is likely because of the relational motivation not being strong enough to overcome the barrier.

In summary, although IT theoretically connects everyone, IT *usage* echoes individuals' offline informational and relational constraints and needs. In this sense, our findings are consistent with the adaptive structuration theory, which posits that technology use is appropriated by a group to reinforce, reproduce, or adapt the current social interactions rather than transforming to an "ideal" structure that the technology can afford [49]. However, our study goes further by identifying two driving forces that underlie the structure adaption—that is, the informational and relational needs. If the two basic motivations are not modified, technology would be used to reinforce rather than improve the current social interactions.

Further, whereas the media richness theory [18] and its extensions explain the choice of communication medium for individual messages, our findings help explain the collective use of technology. Relational communication theory suggests that relational communication occurs both offline and online [59, 61]; therefore, informational and relational motivations apply to both online and offline communication. Extrapolating from this tenet, we would expect that employees would use IT tools to actively manage their relationships, albeit constrained by the offline social context. This would imply that the electronic communication network reflects the tie strength of employee's social network, which can be tested in future research.

Practical Implications

As Zack and McKenney [69] suggested, to successfully design and deploy IT, requirement analyses should focus on social and interactional requirements as well as technical flows of information. Our findings extend this idea and bear important practical implications for the design and management of CMC and KMS tools.

First, managers need to be aware of how CMC and KMS tools are used. Being adopted and used does not guarantee that CMC or a KMS is used effectively. As Zack and McKenney [69] pointed out, individuals' effective use of technologies does not imply the effective use at a collective level. Technologies could be used to enhance an ineffective collective practice. Therefore, effective informational and relational dependencies need to be designed into business processes to ensure that task and social information flow efficiently to meet the organizational objectives. The potential of technologies is only realized when the social system is itself effectively designed. Inversely, the usage data of CMC and KMS provide a digital social map that is diag-

nostic of the information flow in the organization, based on which managers could check for the points where information flow is suboptimal.

Second, our findings suggest that KMSs should not just be content repositories, but also relational systems. Almost all KMSs are designed to support task information sharing. However, they should support relationship building as well. KMSs with relationship support could be called *relational knowledge management systems*. Organizations often regard KMSs as technical systems for information retrieval [15]. While an expert directory or community of practice could be used to lend a KMS a relational touch, the utilization of experts is not automatic [1, 30]. Even when experts are approached, they are not necessarily willing to share knowledge [33]. Our findings suggest that KMSs are better designed as social systems. Potential system features to support relationship building can be learned from online social networking Web sites, such as allowing the building of friendship networks and virtual gift exchange. These features help to make impersonal KMSs personal. As suggested by Watts [63], a possible strategy for building organizations that are capable of solving complex problems is to train individuals to react to ambiguity by searching through their social networks rather than forcing them to build and contribute to centrally designed problem-solving tools and databases. In relational KMSs, seekers' need to build personal relationships that can be fulfilled, at least partially, online. These relationships would help facilitate their problem solving through social networks.

Third, "social" experts could be identified online to help employees to better integrate with colleagues in building their personal networks and social capital, which ultimately boost team performance [21]. It is important to align the view of the social experts with the organizational objectives so that constructive social influence and social relationships can be developed.

In conclusion, this study provides an integrated framework to understand informational and relational motivations in organizational information seeking. We found perceived information relevance to be a significant motivator of preference for a source and sourcing frequency in both task and social information seeking. However, perceived relational motivation is significant to preference for a source only in task information seeking. Preference for a source has a direct effect on sourcing frequency for both types of information. Our results offer a potential explanation of how employees seek task and social information in organizations, and how their information and social networks are developed. Design of CMC and KMS tools should factor in both the informational and the relational need of seekers.

NOTES

1. The satisfactory thresholds are $\chi^2/df < 3$, RMSEA < 0.08, SRMR < 0.08, NFI > 0.9, GFI > 0.9, CFI > 0.9, IFI > 0.9, RFI > 0.9.
2. The adjusting formula is $r_{Yi.M} = (r_{Yi} - r_s)/(1 - r_s)$, where M stands for the method factor, $r_{Yi.M}$ is the adjusted correlation between dependent variable Y and independent variable i, r_{Yi} is

the original correlation between Y and i, and r_s is common method bias estimated based on the correlation between the marker variable and the dependent variable [40]. Lindell and Whitney [40] suggested that the testing of hypotheses should be based on the adjusted correlation matrix instead of raw data.

3. Because some of the independent/control variables had relative high correlations (see Table 3), e.g., between rank difference and age difference ($r = 0.63$, $p < 0.01$) and between seeker age and job tenure ($r = 0.59$, $p < 0.01$), multicollinearity was tested based on the variance inflation factor. The largest variance inflation factor was 2.34 for age difference in the social information–seeking subsample. Perceived information relevance, perceived relational benefit, social risk, and preference for a source had variance inflation factors less than 2.

REFERENCES

1. Ackerman, M.S. Augmenting organizational memory: A field study of answer garden. *ACM Transactions on Information Systems, 16,* 3 (July 1998), 203–224.

2. Ajzen, I. The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50,* 2 (December 1991), 179–211.

3. Ajzen, I., and Fishbein, M. Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin, 84,* 5 (September 1977), 888–918.

4. Alavi, M., and Leidner, D.E. Knowledge management and knowledge management systems: Conceptual foundations and research issues. *MIS Quarterly, 25,* 1 (March 2001), 107–136.

5. Allen, T.D., and Rush, M.C. The effects of organizational citizenship behavior on performance judgments: A field study and a laboratory experiment. *Journal of Applied Psychology, 83,* 2 (April 1998), 247–260.

6. Ashford, S.J. Feedback-seeking in individual adaptation: A resource perspective. *Academy of Management Journal, 29,* 3 (September 1986), 465–487.

7. Baruch, Y. Response rate in academic studies—A comparative analysis. *Human Relations, 52,* 4 (April 1999), 421–438.

8. Bass, L.A., and Stein, C.H. Comparing the structure and stability of network ties using the social support questionnaire and the social network list. *Journal of Social and Personal Relationships, 14,* 1 (February 1997), 123–132.

9. Bollen, K.A. *Structural Equations with Latent Variables.* New York: Wiley, 1989.

10. Borgatti, S.P., and Cross, R. A relational view of information seeking and learning in social network. *Management Science, 49,* 4 (April 2003), 423–445.

11. Burgoon, J., and Hale J. Validation and measurement of the fundamental themes of relational communication. *Communication Monographs, 54,* 1 (March 1987), 19–41.

12. Byrne, B.M. *Structural Equation Modeling with LISREL, PRELIS, and SIMPLIS: Basic Concepts, Applications, and Programming.* Mahwah, NJ: Lawrence Erlbaum, 1998.

13. Cable, D.M., and Parsons, C.K. Socialization tactics and person–organization fit. *Personnel Psychology, 54,* 1 (March 2001), 1–23.

14. Chao, G.T.; O'Leary-Kelly, A.M.; Wolf, S.; Klein, H.; and Gardner, P.D. Organizational socialization: Its content and consequences. *Journal of Applied Psychology, 79,* 5 (October 1994), 730–743.

15. Chung, W.; Chen, H.; and Nunamaker, J.F. A visual framework for knowledge discovery on the Web: An empirical study of business intelligence exploration. *Journal of Management Information Systems, 21,* 4 (Spring 2005), 57–84.

16. Coleman, J.S. Social capital in the creation of human capital. *American Journal of Sociology, 94,* S1 (Supplement 1988), S95–S120.

17. Cross, R., and Sproull, L. More than an answer: Information relationships for actionable knowledge. *Organization Science, 15,* 4 (July–August 2004), 446–462.

18. Daft, R.L.; Lengel, R.H.; and Trevino, L.K. Message equivocality, media selection, and manager performance: Implications for information systems. *MIS Quarterly, 11,* 3 (September 1987), 355–366.

19. Daveri, F., and Maliranta, M. Age, seniority and labour costs: Lessons from the Finnish IT revolution. *Economic Policy, 22,* 49 (January 2007), 117–175.

20. Einhorm, H.J., and Hogarth, R.M. Behavioral decision theory: Processes of judgment and choice. *Annual Review of Psychology, 32* (January 1981), 53–88.

21. Ferris, G.R.; Witt, L.A.; and Hochwarter, W.A. Interaction of social skill and general mental ability on job performance and salary. *Journal of Applied Psychology, 86,* 6 (December 2001), 1075–1086.

22. Foa, U.G., and Foa, E.B. Resource theory of social exchange. In J.W. Thibaut, J.T. Spence, and R.C. Carson (eds.), *Contemporary Topics in Social Psychology.* Morristown, NJ: General Learning Press, 1976, pp. 99–131.

23. Fornell, C., and Larcker, D.F. Structure equation models: LISREL and PLS applied to customer exist-voice theory. *Journal of Marketing Research, 18,* 2 (May 1981), 39–50.

24. Graham, J.; Argyle, M.; and Furnhan, A. The goal structure of situations. *European Journal of Social Psychology, 10,* 4 (December 1980), 345–366.

25. Granovetter, M.S. The strength of weak ties. *American Journal of Sociology, 78,* 5 (March 1973), 1360–1380.

26. Grant, R.M. Prospering in dynamically-competitive environments: Organizational capability as knowledge integration. *Organization Science, 7,* 4 (July–August 1996), 375–387.

27. Gray, P.H., and Durcikova, A. The role of knowledge repositories in technical support environments: Speed versus learning in user performance. *Journal of Management Information Systems, 22,* 3 (Winter 2005–6), 159–190.

28. Gray, P.H., and Meister, D.B. Knowledge sourcing effectiveness. *Management Science, 50,* 6 (June 2004), 821–834.

29. Hansen, M.T. The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative Science Quarterly, 44,* 1 (March 1999), 82–112.

30. Hertzum, M., and Pejtersen, M.M. The information-seeking practices of engineers: Searching for documents as well as for people. *Information Processing and Management, 36,* 5 (September 2000), 761–778.

31. Jöreskog, K., and Sörbom, D. *LISREL 8: Structural Equation Modeling with the SIMPLIS Command Language.* Lincolnwood, IL: SSI, 1993.

32. Kabanoff, B. Equity, equality, power and conflict. *Academy of Management Review, 16,* 2 (April 1991), 416–441.

33. Kankanhalli, A.; Tan, B.; and Wei, K.K. Understanding seeking from electronic knowledge repositories: An empirical study. *Journal of the American Society for Information Science and Technology, 56,* 11 (September 2005), 1156–1166.

34. Kwasitsu, L. Information-seeking behavior of design, process, and manufacturing engineers. *Library and Information Science Research, 25,* 4 (Winter 2003), 459–476.

35. Lam, S.S.K.; Hui, C.; and Law, K.S. Organizational citizenship behavior: Comparing perspectives of supervisors and subordinates across four international samples. *Journal of Applied Psychology, 84,* 4 (October 1999), 594–601.

36. Lankau, M.J., and Scandura, T.A. An investigation of personal learning in mentoring relationships: Content, antecedents, and consequence. *Academy of Management Journal, 45,* 4 (August 2002), 779–790.

37. Lefkowitz, J.; Howard, K.; Lawrence, J.; and Nicolopoulos, V. Congruence in supervisor–subordinate relationships: Beyond relational demography. Paper presented at Opening the Black Box of Organizational Demography: Current Research Advances, Academy of Management National Meeting, San Diego, CA, August 7–12, 1998.

38. Levin, D.Z., and Cross, R. The strength of weak ties you can trust: The mediating role of trust in effective knowledge transfer. *Management Science, 50,* 11 (December 2004), 1477–1490.

39. Levy, P.E., and Williams, J.R. The social context of performance appraisal: A review and framework for the future. *Journal of Management, 30,* 6 (December 2004), 881–905.

40. Lindell, M.K., and Whitney, D.J. Accounting for common method variance in cross-sectional designs. *Journal of Applied Psychology, 86,* 1 (February 2001), 114–121.

41. Managers say the majority of information obtained for their work is useless, Accenture survey finds. Accenture, New York, 2007 (available at http://newsroom.accenture.com/article_display.cfm?article_id=4484/).

42. Miller, V.D., and Jablin, F.M. Information seeking during organizational entry: Influences, tactics, and a model of the process. *Academy of Management Review, 16,* 1 (January 1991), 92–120.

43. Morrison, E.W. Newcomer information seeking: Exploring types, modes, sources, and outcome. *Academy of Management Journal, 36,* 3 (June 1993), 557–589.

44. Morrison, E.W., and Vancouver, J.B. Within-person analysis of information seeking: The effects of perceived costs and benefits. *Journal of Management, 26,* 1 (February 2000), 119–137.

45. Nahapiet, J., and Ghoshal, S. Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review, 23,* 2 (April 1999), 242–266.

46. Nardi, B., and Whittaker, S. The place of face-to-face communication in distributed work. In P.J. Hinds and S. Kiesler (eds.), *Distributed Work: New Research on Working Across Distance Using Technology.* Cambridge, MA: MIT Press, 2002, pp. 83–110.

47. Nebus, J. Building collegial information networks: A theory of advice network generation. *Academy of Management Review, 31,* 3 (July 2006), 615–637.

48. O'Reilly, C.A. Variations in decision makers' use of information sources: The impact of quality and accessibility of information. *Academy of Management Journal, 25,* 4 (December 1982), 756–771.

49. Poole, M., and DeSanctis, G. Understanding the use of group decision support systems: The theory of adaptive structuration. In J. Fulk and C. Steinfeld (eds.), *Organizations and Communication Technology.* Newbury Park, CA: Sage, 1990, pp. 175–195.

50. Rice, R.E. Using network concepts to clarify sources and mechanisms of social influence. In G. Barnett and W. Richards Jr. (eds.), *Advances in Communication Network Analysis.* Norwood, NJ: Ablex, 1993, pp. 43–52.

51. Settoon, R.P., and Mossholder, K.W. Relationship quality and relationship context as antecedents of person- and task-focused interpersonal citizenship behavior. *Journal of Applied Psychology, 87,* 2 (April 2002), 255–267.

52. Shah, P.R. Who are employees' social referents? Using a network perspective to determine referent others. *Academy of Management Journal, 41,* 3 (June 1998), 249–268.

53. Sheer, V.C., and Chen, L. Improving media richness theory: A study of interaction goals, message valence, and task complexity in manager–subordinate communication, *Management Communication Quarterly, 18,* 1 (August 2004), 76–93.

54. Shulz, M. Pathways of relevance: Exploring inflows of knowledge into subunits of multinational corporations. *Organization Science, 14,* 4 (July–August 2003), 440–459.

55. Sperber, D., and Wilson, D. *Relevance: Communication and Cognition.* Cambridge: Harvard University Press, 1986.

56. Stevenson, W.B., and Gilly, M.C. Information processing and problem solving: The migration of problems through formal positions and networks of ties. *Academy of Management Journal, 34,* 4 (December 1991), 918–928.

57. Tan, H.H., and Zhao, B. Individual- and perceived contextual-level antecedents of individual technical information inquiry in organizations. *Journal of Psychology, 137,* 6 (November 2003), 597–621.

58. Tsui, A.E.; Egan, T.D.; and O'Reilly, C.A. Being different: Relational demography and organizational attachment. *Administrative Science Quarterly, 37,* 4 (December 1992), 549–579.

59. Walther, J.B. Relational aspects of computer-mediated communication: Experimental observations over time. *Organization Science, 6,* 2 (March–April 1995), 186–203.

60. Walther, J.B., and Bunz, U. The rules of virtual groups: Trust, liking, and performance in computer-mediated communication. *Journal of Communication, 55,* 4 (December 2005), 828–846.

61. Walther, J.B., and Burgoon, J. Relational communication in computer-mediated interaction. *Human Communication Research, 19,* 1 (September 1992), 50–88.

62. Walther, J.B., and Tidwell, L.C. Nonverbal cues in computer-mediated communication, and the effect of chronemics on relational communication. *Journal of Organizational Computing, 5,* 4 (December 1995), 355–378.

63. Watts, D. *Six Degrees: The Science of a Connected Age.* New York: W.W. Norton, 2003.

64. Watzlawick, P.; Beavin, J.H.; and Jackson, D.D. *Pragmatics of Human Communication: A Study of Interactional Patterns, Pathologies, and Paradoxes.* New York: W.W. Norton, 1967.

65. Wayne, S.J., and Liden, R.C. Effects of impression management on performance ratings: A longitudinal study. *Academy of Management Journal, 38,* 1 (February 1995), 232–260.

66. Williamson, O.E. The modern corporation: Origins, evolution, attributes. *Journal of Economic Literature, 19,* 4 (December 1981), 1537–1568.

67. Xu, Y., and Chen, Z. Relevance judgment: What do information consumers consider beyond topicality? *Journal of the American Society for Information Science and Technology, 57,* 7 (May 2006), 961–973.

68. Xu, Y.; Tan, B.; and Yang, L. Who will you ask? An empirical study of interpersonal task information seeking. *Journal of the American Society for Information Science and Technology, 57,* 12 (October 2006), 1666–1677.

69. Zack, M., and McKenney, J. Social context and interaction in ongoing computer-supported management groups. *Organization Science, 6,* 4 (July–August 1995), 394–422.

70. Zimmer, J.C.; Henry, R.M.; and Butler, B. Determinations of the use of relational and nonrelational information sources. *Journal of Management Information Systems, 24,* 3 (Winter 2007–8), 297–331.

Appendix: Measurement Instrument

Construct	Label	Item and scale
Physical proximity	PX	Where is the information source located? (1) next desk, (2) same office room, (3) same floor, different office room, (4) same building, different floor, (5) same area, different building, (6) different area, (7) different country
Project team membership	TEA	Have you worked (or are working) with the source in the same project team? (1) yes (2) no
Relative source rank	RK	The information source holds a rank that is ___. (1) two or more levels below, (2) one level below, (3) equal, (4) one level above, (5) two or more levels above
Social risk	SR1	It can be embarrassing to ask him or her for technical (social) information. (strongly disagree/strongly agree)
	SR2	I think he or she would think worse of me if I ask him or her for technical (social) information. (strongly disagree/strongly agree)
	SR3	When I need technical (social) information, I would be nervous to ask him or her for it. (strongly disagree/strongly agree)
	SR4	He or she might think I am incompetent if I ask him or her for technical (social) information. (strongly disagree/strongly agree)

(continues)

Appendix. Continued.

Construct	Label	Item and scale
Perceived relational benefit	RB1	Asking him or her for technical (social) information can help improve our relationship and bring us closer. (strongly disagree/strongly agree)
	RB2	Asking him or her for technical (social) information is one way to maintain our relationship. (strongly disagree/strongly agree)
	RB3	I consider asking him or her for technical (social) information as one way of acquainting myself to him or her, so that he or she may have a better idea of how I am doing. (strongly disagree/strongly agree)
	RB4	Asking him or her for technical (social) information is one way to show that we need each other. (strongly disagree/strongly agree)
Perceived information relevance	RV1	He or she has ____ technical (social) information related to my job. (almost no/a lot of)
	RV2	He or she understands ____ the technical (social) aspects of my job. (very little/very well)
	RV3	The technical (social) information that I have got from him or her is ____ to my job. (unhelpful/helpful)
Preference for a source	PF1	When you need technical (social) information in your job, how much would you prefer asking him or her, compared to other people? (strongly not prefer/strongly prefer)
	PF2	How important is he or she as a source for technical (social) information compared to other people? (not important/very important)
	PF3	When you need technical (social) information, how likely would you be to approach him or her as the first source, compared to other people? (very unlikely/very likely)
Sourcing frequency	FR	How many times do you ask him or her for task (social) information on average per month? ____ times.