THE MEDIATE EFFECT OF TRUST ON ORGANIZATIONAL ONLINE KNOWLEDGE SHARING: AN EMPIRICAL STUDY

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This study proposes a conceptual structural equation model to investigate the relationships among knowledge management system quality, employee computer attitude, trust at workplace and online knowledge sharing. We demonstrate the direct and indirect effect of trust on online knowledge sharing from the perspectives of system quality and computer attitude. An empirical study is conducted in three technological companies (n = 451) in Taiwan and the collected survey data are used to test the relationships among the four dimensions expressed in the proposed structural equation model. The results show that trust at workplace has a mediating effect on online knowledge sharing within organizations. It is also discovered that there is significant correlation between IT quality, employees’ computer attitude and online trust at workplace. The conceptual model provides useful information for managers to enhance knowledge sharing through the promotion of trust at workplaces.

Keywords: Trust; knowledge sharing; system quality; computer attitude.
1. Introduction

The recent advances in information technology (IT) has open a new era, in which the success of organizations are vitally dependent on the adaptation and application of new and existing knowledge assets on key business processes. As Ho points out, traditional organizational management is no longer considered an appropriate strategy in this highly competitive global market, especially in developing countries. Businesses must compete for their survival through continuous improvement and innovation to maintain or gain market advantage. Thus, resistance to such innovative adjustment is likely to result in uncompetitive enterprises. Knowledge, as a form of intangible asset, is evidently becoming the key factor in competitive differentiation in many sectors within today’s rapid expansion of the goods market. Teece claims the competitiveness of modern enterprises is dependent on the effective acquisition and utilization of knowledge. Consequently, knowledge workers have become the most vital asset in knowledge-based societies.

Knowledge is considered the most important resource in organizations. Jantunen states that knowledge is posited in an organization as a strategic asset which helps the firm sustain its competitive ability in a complex global market. The characteristics and problems of knowledge vary due to the differences in the nature of businesses and geographic locations. Dieng et al. describe knowledge management as a form of corporate memory design representing the resources and know-how of an enterprise. They further suggest that corporate memory can be differentiated into (a) professional memory, which comprises of references, documents, tools and methods used in a given profession and (b) individual memory, which consists of competencies and know-how of a given member in the enterprise. The purpose of knowledge management is to facilitate organizations that are able to access and reuse existing knowledge to enhance organizational processes. Thus, knowledge management supports people to innovate, to collaborate, and to make correct decisions efficiently; in short, it helps getting people to act by focusing on high-quality knowledge.

Furthermore, with the continuous improvement and availability of IT, organizations have implemented and integrated such technologies into business functions as a method of facilitating efficient internal flow of knowledge. The results of an effective knowledge management system indicate that the employees within an organization are able to access and apply knowledge to improve their business operations. However, in spite of extensive investment in computerized information infrastructures to improve the organization and sharing of knowledge, many organizations have not received correlated results. Feng et al. argue that increasing IT investment alone does not ensure better business performance or distribution of information among employees. The distribution, sharing and application of knowledge are a complex system within the social network of an organization.

Past studies have examined the management and distributions of knowledge within organizations in various settings. For instance, Peng et al. have
evaluated and presented the longitudinal changes of data mining and knowledge discovery research. Among many factors that may affect the effect of knowledge management, Renzl highlights the importance of interpersonal trust in general and trust in management on knowledge sharing. Renzl argues trust in management increases knowledge sharing through reducing fear of losing one’s unique value and at the same time, improving the individual’s willingness to document knowledge. Cook and Wall propose that trust, in general, between individuals and groups within an organization is extremely imperative in the long-term stability of the organization and the well-being of its members. Even so, Yang and Farn reveal an interesting phenomenon that tacit knowledge sharing intention does not necessarily lead to tacit knowledge sharing behavior unless moderate external control is taken into account. In the same line of argument, some researchers such as Lin et al. and Bhatt propose that successful implementation of knowledge management involves the coordination of people, technology and process within an organization.

It is evident that there are a number of causal links which must be considered in understanding how an organization can implement effective knowledge management. The combination of IT and personal drive to obtain knowledge within an organization influences the method and effectiveness of knowledge acquisition. This study attempts to look at factors which result in improved knowledge sharing through the proposal and empirical validation of a theoretical model. The model incorporates four major dimensions, namely (1) the IT quality for knowledge management systems, (2) employee computer attitude for using knowledge management systems within organizations, (3) trust at workplace to elicit online knowledge sharing intention and behavior, and (4) the employees’ perception of knowledge sharing within organizations. The following section constructs the theoretical background upon which the proposed model is created.

2. Theoretical Development

In this section reviews literature to identify the relationship between knowledge management system quality, computer attitude, trust at workplace, and knowledge sharing.

2.1. IT quality and knowledge sharing

Hansen et al. have proposed that knowledge intensive organizations often adopt two different types of knowledge strategy for knowledge management: codification versus personalization. While a codification strategy refers to the capturing and storing of knowledge in explicit forms so that it can be distributed and used by others, a personalization strategy refers to the facilitating and encouraging of interpersonal sharing of tacit knowledge. IT in the former scenario is used to support the storage of knowledge and its retrieval by people across the organization, and in the latter scenarios is used to extend people’s interpersonal networks and enhance their ability to communicate with one another. Consequently, an extensive amount of
researches in knowledge management have focused on the design, development, implementation and evaluation of IT in support of managing intangible assets in organizations. Thus, it can be concluded that the concept of knowledge management has centered on the implementation of IT in support of managing knowledge assets in an enterprise. According to Gottschalk, IT is an effective means to support the storage, organization and distribution of knowledge among workers.

Hence, IT plays a critical role in knowledge management by allowing for efficient distribution and access of knowledge through a combination of communication, collaborative, artificial intelligence and business intelligence technologies. As Harrison and Daly mention, effective use of IT ensures timely access and exchange of knowledge to aid decision making. However, while IT is not a substitute for knowledge, it is an indispensable tool which supports discovery of useful knowledge through data mining and database knowledge discovery. In stressing the role of IT in knowledge management, Sher and Lee contend that “no matter how effective and efficient is the knowledge creation process of a firm, knowledge management is useless for competitive ends unless communication and application systems are well developed to permeate every aspect of business operations (p. 935)”.

Based on previous research findings, hereby we present the following hypothesis:

**Hypothesis 1.** A higher level of knowledge management system quality within the organization will facilitate higher levels of knowledge sharing activities.

### 2.2. Computer attitude and knowledge sharing

Fishbein and Ajzen propose the theory of reasoned action, which speculates that beliefs about an object lead to an attitude about it and this attitude leads to behavioral intentions regarding the object. It has been hypothesized that computer attitudes affect users’ behavioral intentions, which affect users’ actual usage of computers. Throughout the body of the related researches, a number of researchers have focused on the study of different dimensions of attitudes toward computers, such as affinity, perceived usefulness, perceived ease of use and so on. In particular, Lua et al. discover that users’ perceived usefulness and perceived enjoyment significantly influence their attitude towards using computers, which in turn impacts their behavioral intention. Therefore, it is evident that users’ technology perceptions have fundamental relevance to online behaviors.

Moreover, Lin et al. state that technology readiness and acceptance have significant effect on users’ adoption of technological innovations. Similar correlations between computer attitudes and online behaviors can also be found in educational settings. For example, van der Rhee et al. suggest that learners who are more technology-ready are more likely to participate in a variety of online courses. As a result, it can be concluded that users’ technological capabilities can influence their motivations to source knowledge. Based on above reviewed studies, the following
hypothesis is presented:

**Hypothesis 2.** A higher level of employee computer attitude will facilitate higher levels of knowledge sharing activities.

### 2.3. Trust at workplace and knowledge sharing

The significant of trust within organization has been articulated by both researchers and practitioners. However, existing literate lacks a single definition of trust since trust is a complex construct that is not fully understood. Cook and Wall define trust as an element acting “between individuals and groups within organizations are a highly important ingredient in the long term stability of the organization and the well being of its members (p. 39)”. They further conclude that there are three main approaches in the empirical investigation that can be used to distinguished trust. The first approach refers to infer trust indirectly from other forms of behaviors. The second approach is to create a situation where the development of trust is essential to prescribed task performance. Thus the level the performance becomes an indicator of the degree to which trust has developed. The third approach is measuring trust as a direct experience using self-report scales. The latter approach is the most widely recognized and applied means to measure trust in recent literature.

As IT becomes increasingly popular as a knowledge-sharing tool in contemporary organizations, encouraging employees to seek knowledge from IT remains an important issue for researchers and practitioners. Yang and Farn suggest that intention to share tacit knowledge sharing intention can be induced by affect-based trust. Renz discloses that trust in management increases knowledge sharing through reducing fear of losing one’s unique value and improving willingness to document knowledge. And even it has not been adequately addressed in related literature; He et al. argue that trust has been widely recognized in many studies as an important enabling factor for seeking knowledge. In accordance with these observations, the following hypothesis is proposed:

**Hypothesis 3.** A higher level of trust at workplace will facilitate higher levels of knowledge sharing activities.

### 2.4. IT quality and trust at workplace

In today’s fast innovative workplace, IT faces many new challenges to conquer the requirements of multiple and flexible ways of working in all industries. Thus, it is critical to have flexible and efficient ways of working through technology initiatives. However, establishing such effective IT functions involves a number of parties, such as CEOs, clients, IT managers, project managers, end-users and consultants, work collaboratively to solve problems and take advantages of new opportunities. Davenport et al. suggest adequate investment in knowledge-oriented technology can support the management of knowledge. Thus, quality IT
functions play an important role in knowledge management by assisting workers with feasible solutions to particular performance problems. Money and Turner have presented the importance of perceived usefulness and ease of use to encourage IT usage.

Past studies present supporting evidence for the correlation between trust and IT adoption. He et al. further examine and identify the relationships between the knowledge seekers’ trust in the community of knowledge management system users, their perceptions toward the system (perceived usefulness and perceived seeking efforts), and the intention to continually use the knowledge system. In addition, Chen suggests that the existence of a quality knowledge management system can in turn improve employees’ willingness and confidence to acquire knowledge. In the field of electronic commerce, studies have identified playfulness, trust, information richness, system quality, perceived usefulness and ease of use of IT to be highly correlated. It implies that information richness and system quality have significant impact on user acceptance, adoption and application of online activities. Based on previous research findings, a further hypothesis is presented:

**Hypothesis 4.** A higher level of knowledge management system quality will result in higher levels of trust at workplace.

2.5. Computer attitude and trust at workplace

The utilization of knowledge management systems has meant that there is a need for knowledge workers who are willing to actively acquire, share and apply the knowledge in solving problems within the work environment. In their study, Ong et al. proposed a new construct, perceived credibility, to examine the applicability of the technology acceptance model (TAM) in explaining engineers’ decisions to accept the integration of IT in workplaces. Their study implies a correlation between the technology adoption and trust in information systems within organizations. In addition, Wild et al. state that the implementation of various information systems to support knowledge sharing is influenced by the culture in an organization. Facione et al. argue the effective use of knowledge sharing needs a supportive environment, in which employees are willing and confident to share.

Ranaweera et al. contend that despite the importance of individual perception of trust disposition, risk aversion, and technology readiness, they have received limited attention. They further explore and conclude that there is strong correlation between risk aversion, trust disposition, and technology readiness in an online collaborative environment. Taylor et al. discover that satisfaction, trust and value perceived from using the online system may be as important as technology readiness in terms of explaining the variance associated with behavioral intentions to use the online systems for information management. In this study, Yousafzai examines the role of trust in internet banking and uncover that trust and perceived risk are direct antecedents of intention, which indicative uncertainty reduction as a key element in users’ acceptance of internet banking. Furthermore, Yousafzai identifies trust as
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Fig. 1. The proposed model of mediating effect of trust on the relationship between IT quality, computer attitude and knowledge sharing.

a multidimensional construct, which implies that perceived trustworthiness, perceived security, perceived privacy of online systems are antecedents of trust. Based on above studies, we propose the following hypothesis:

**Hypothesis 5.** A higher level of employee computer attitude will result in higher level of trust at workplace.

Based on the above reviewed literature, the research structure for the present study is shown in Fig. 1.

3. Study

The following section presents details of the study on the proposed model of the mediating effect of trust at workplace on the relationship between knowledge management system quality, computer attitude, and knowledge sharing tested through covariance structure analysis using LISREL.

3.1. Measures

The questionnaire is composed of five parts including: IT quality, computer attitudes, trust at workplace, knowledge sharing, and personal background (i.e. gender, age, and length of work experience at the present organization). The questions were answered using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). All constructs were measured using existing and tested scales. The wording of the items was adapted to the context of the companies. Detailed definitions of the dimensions are described in the following sections.

**IT quality**

This study adopts the three-factor model of IT quality dimension proposed by Medina and Chaparro. The model includes the three most studied elements in the
modern world:

(1) The information quality: Refers to the appropriateness, update-ness, usefulness, accuracy, completeness, and relevance of the knowledge management system content.
(2) The system quality: Refers to the friendliness, flawlessness, efficiency, and adaptability of the knowledge management system content.
(3) The service quality: Refers to the tangible aspect of the system, which refers to staff reliability, responsibility, and empathy as well as the learners’ confidence in online staff.

Computer attitude
The study adapted and modified the computer attitude model proposed by Loyd and Gressard. The measure contains four core dimensions, which are defined as follows:

(1) Computer affinity: Refers to the extent to which an individual likes or enjoys working with computers.
(2) Computer confidence: Refers to the extent to which an individual’s confidence in his/her ability to use or learn about computer.
(3) Computer usefulness: Refers to the extent to which an individual perceives the advantages or benefits of using or learning about computers.
(4) Computer anxiety: Refers to the extent to which an individual feels discomfort and unfamiliarity towards computers.

Trust at workplace
Trust at workplace was measured using Cook and Wall’s scale on trust at workplace, which refers to mutually dependent work groups within an organization. Trust may be placed along two different dimensions: (1) faith in trustworthy intentions of others sharing information online and (2) confidence in the ability of others sharing information online, yielding ascriptions of capability and reliability. Each of these dimensions can further refer to either peer or management within organizations.

Knowledge sharing
Knowledge sharing was measured using Cumming’s scale on knowledge sharing. The scale presents two types of knowledge sharing (1) within work groups and (2) among work groups. The two types of knowledge sharing are concerned with information on general overviews, specific requirement, analytical techniques, progress reports, and project results.

Table 1 shows the description statistics for the dimensions.

3.2. Sample
The data used in this research consists of questionnaire responses from participants in three technological companies which are located in the Hsin–Chu Science Park.
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Table 1. Survey structure and description statistics for dimension.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Number of Items</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Order</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT quality</td>
<td>15</td>
<td>3.4300</td>
<td>0.4992</td>
<td>3</td>
<td>0.9370</td>
</tr>
<tr>
<td>Computer attitude</td>
<td>15</td>
<td>3.3081</td>
<td>0.3845</td>
<td>4</td>
<td>0.8098</td>
</tr>
<tr>
<td>Trust</td>
<td>6</td>
<td>3.5155</td>
<td>0.3664</td>
<td>2</td>
<td>0.8778</td>
</tr>
<tr>
<td>Knowledge sharing</td>
<td>10</td>
<td>3.5805</td>
<td>0.3434</td>
<td>1</td>
<td>0.8970</td>
</tr>
</tbody>
</table>

in Taiwan. The surveys target the technological companies that have several years of experience implementing KM and have the IT infrastructure in place to support the storing, sharing and utilization of knowledge among employees. Each company has at least 400 full time employees. A total of 1200 survey questionnaires were distributed among the three companies. Among these, 467 surveys were returned and 451 were valid for analysis (valid return rate is 37.58%). The duration of data collection is between April 1st and May 30th 2009. Table 2 presents the demographics of the sample. Non-response analysis is conducted to ensure the absence of non-response biases. The results show that there is no difference between respondents and non-respondents.

3.3. Reliability and validity

Cronbach $\alpha$ reliability estimates were used to measure the internal consistency of these multivariate scales. In this study, the Cronbach $\alpha$ of each constructs was greater than 0.8098, which indicates a strong reliability for our survey instrument. Since the item-to-total correlations of each measures was at least 0.4621, the criterion validity of each scale in this study is considered to be satisfactory.

Both exploratory and confirmatory factor analyses were used to ensure that the instrument has reasonable construct validity. The result of the exploratory factor analysis and internal consistency analysis are showed in Table 3. The confirmative

Table 2. Sample characteristics.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Classification</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>272</td>
<td>60.3</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>179</td>
<td>39.7</td>
</tr>
<tr>
<td>Age</td>
<td>&lt; 30</td>
<td>66</td>
<td>14.6</td>
</tr>
<tr>
<td></td>
<td>31–40</td>
<td>125</td>
<td>27.7</td>
</tr>
<tr>
<td></td>
<td>41–50</td>
<td>213</td>
<td>47.2</td>
</tr>
<tr>
<td></td>
<td>&gt; 50</td>
<td>47</td>
<td>10.4</td>
</tr>
<tr>
<td>Length of work experience at the present organization</td>
<td>&lt; 5</td>
<td>64</td>
<td>14.2</td>
</tr>
<tr>
<td></td>
<td>5–10</td>
<td>147</td>
<td>32.6</td>
</tr>
<tr>
<td></td>
<td>10–15</td>
<td>110</td>
<td>24.4</td>
</tr>
<tr>
<td></td>
<td>&gt; 15</td>
<td>130</td>
<td>28.8</td>
</tr>
</tbody>
</table>
factor analysis which consists of the convergent and discriminant validity was analyzed following Campbell and Fiske’s criteria. Discriminant validity was examined by counting the number of times an item correlates higher with items from other factors than with items from its own factor. Campbell and Fiske suggest that this number should be less than 50 percent. Results also show adequate discriminant validity. Jointly, the constructs in this study exhibit both convergent and discriminant validity.

4. Data Analysis and Results

The structural equation modeling approach is a multivariate statistical technique for testing structural theory that incorporates both observed and latent variables. The analysis for the present study was conducted using LISREL 8.52 and utilizing the maximum likelihood method. In the proposed model (Fig. 1), IT quality and computer attitude are considered exogenous variables, and knowledge sharing is considered an endogenous one, while trust at workplace (i.e. mediate factor) serves as both an endogenous (to IT quality and computer attitude) and an exogenous variable (to knowledge sharing).

The individual questionnaire items were aggregated into specific factor groups. The following four rules were utilized for the statistical examination of the proposed model illustrated in Fig. 1: (1) Each observed variable has a nonzero loading on the latent factor within the structure, but has a loading of zero towards other latent factors, (2) there are no relationships among measurement errors for observed variables, (3) there are no relationships among the residuals of latent factors, and (4) there are no relationships among residuals and measurement errors. The results of fit of the internal structure of model are given in Table 4.

Table 5 presents the results of the fit test of the overall model. The absolute fit measures (GFI = 0.98, AGFI = 0.97, and RMSEA = 0.027) indicate that the...
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Table 4. Fit of the internal structure of model.

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Factors</th>
<th>Individual Item Reliability</th>
<th>Composite Reliability</th>
<th>Average Variance Extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT quality</td>
<td>System quality</td>
<td>0.52</td>
<td>0.81</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>Information quality</td>
<td>0.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Service quality</td>
<td>0.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer attitude</td>
<td>Computer affinity</td>
<td>0.62</td>
<td>0.85</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>Computer confidence</td>
<td>0.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Computer usefulness</td>
<td>0.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Computer anxiety</td>
<td>0.55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>Faith</td>
<td>0.59</td>
<td>0.73</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>Confidence</td>
<td>0.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge sharing</td>
<td>Intra-groups</td>
<td>0.62</td>
<td>0.77</td>
<td>0.62</td>
</tr>
<tr>
<td></td>
<td>Inter-groups</td>
<td>0.62</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5. Fit of the overall model.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute Fit Measures</td>
<td>Chi-Square with 31.72 Degrees of Freedom = 24 (P = 0.01)</td>
</tr>
<tr>
<td></td>
<td>Goodness of Fit Index (GFI) = 0.98</td>
</tr>
<tr>
<td></td>
<td>Root Mean Square Error of Approximation (RMSEA) = 0.027</td>
</tr>
<tr>
<td></td>
<td>P-Value for Test of Close Fit (RMSEA &lt; 0.05) = 0.95</td>
</tr>
<tr>
<td></td>
<td>Expected Cross-Validation Index (ECVI) = 0.16</td>
</tr>
<tr>
<td></td>
<td>90 Percent Confidence Interval for ECVI = (0.15; 0.21)</td>
</tr>
<tr>
<td></td>
<td>ECVI for Saturated Model = 0.20</td>
</tr>
<tr>
<td></td>
<td>ECVI for Independence Model = 6.27</td>
</tr>
<tr>
<td></td>
<td>Adjusted Goodness of Fit Index (AGFI) = 0.97</td>
</tr>
<tr>
<td>Incremental Fit Measures</td>
<td>Normed Fit Index (NFI) = 0.99</td>
</tr>
<tr>
<td></td>
<td>Non-Normed Fit Index (NNFI) = 1.00</td>
</tr>
<tr>
<td></td>
<td>Comparative Fit Index (CFI) = 1.00</td>
</tr>
<tr>
<td></td>
<td>Incremental Fit Index (IFI) = 1.00</td>
</tr>
<tr>
<td></td>
<td>Relative Fit Index (RFI) = 0.98</td>
</tr>
<tr>
<td>Parsimonious Fit Measures</td>
<td>Parsimony Normed Fit Index (PNFI) = 0.66</td>
</tr>
<tr>
<td></td>
<td>Parsimony Goodness of Fit Index (PGFI) = 0.53</td>
</tr>
<tr>
<td></td>
<td>Critical N (CN) = 595.65</td>
</tr>
<tr>
<td></td>
<td>Normed chi-square 31.72/24 = 1.32</td>
</tr>
</tbody>
</table>

The structural model either meets or exceeds the recommended levels, and thus represents a satisfactory fit for the sample data collected. The Chi-square statistic divided by the degrees of freedom also indicates a reasonable fit at 1.32. It can thus be concluded that the proposed model maintains good construct validity.

Additionally, Fig. 2 reports the values of factor loading and observed residual for the exogenous and endogenous variables, as well as the values of parameter estimate and their significance levels. The analytical results of the LISREL model reveal a satisfactory fit for our sample data with the final results shown in Fig. 2.
Figure 2 indicates that IT quality and computer attitude significantly influence the mediators, trust at workplace: IT quality affects trust at workplace ($\gamma = 0.45, p < 0.001$) and computer attitude affects trust at work ($\gamma = 0.41, p < 0.001$). The mediator, trust, has a significant impact on knowledge sharing ($\beta = 0.84, p < 0.001$). Thus, three out of the five hypothesized relationships (i.e. Hypothesis 3, Hypothesis 4, and Hypothesis 5) were significantly supported by the sample data.

However, to further test the mediating effect that trust at workplace has on the relationship between IT quality, computer attitude and knowledge sharing within and between teams, Baron and Kenny’s logic was applied. This states that a variable functions as a mediator when it meets the following three conditions: (1) the independent variables significantly influence the mediating variable (path a), (2) the mediating variable significantly influences the dependent variable (path b), and (3) when paths a and b are controlled, a previously significant relation between the independent variable and the dependent variable is no longer significant. Following Baron and Kenny’s logic, the direct effect of IT quality and computer attitude on knowledge sharing was tested as a first step. Here the paths were significant (see Fig. 3). After introducing the mediator variable (i.e. trust), these path became insignificant (see Fig. 2), indicating that trust at workplace has a fully mediating effect on knowledge sharing.
To summarize, all conditions were met for demonstrating that trust at workplace mediates the link between IT quality, computer attitude and knowledge sharing. First, IT quality and computer attitude have a positive impact on knowledge sharing when trust at workplace was not included in the testing model (see Fig. 3). However, the significance effect of both IT quality and computer attitude on the outcome variable (i.e. knowledge sharing) disappeared after the mediating variable of trust at workplace was included (see Fig. 2). In addition, as the trust is the mediating position in the testing model, IT quality and computer attitude demonstrate a positive and significant impact on the mediator trust at workplace, and the mediator has a significant influence on knowledge sharing. Therefore, we conclude that trust at workplace mediate the relationship between IT quality, computer attitude, and knowledge sharing.

5. Conclusion and Implication

This study contributes empirical data to the predominantly theoretical literature on knowledge management in general, and trust and knowledge. The findings of
this study clearly extend prior research, showing that trust at a work cyberspace has an impact on online knowledge sharing among individuals and work teams. The concept of trust is complex and it is not clear from prior research how it affects the effect of quality knowledge management systems and individual acceptance toward knowledge management systems on knowledge sharing. This study clarifies that relationship by providing evidence that trust at workplace plays a mediating role between system quality, employee computer attitude and knowledge sharing. Thus, the study contributes to the field by providing a more detailed understanding of the mediate effect of trust at workplace for the purpose of knowledge management. These findings have important implications both at a practical managerial and theoretical level.

This study shows that knowledge management is not just a matter of system quality and employee ability, i.e. how to articulate knowledge, but also, and to an even greater extent, a matter of the willingness of the parties involved. In a trusting atmosphere individuals are more willing to share or contribute knowledge. Second, the mediating effect of trust at workplace on the relationship between system quality and computer attitude and knowledge sharing demonstrates another psychosocial aspect of the way in which trust affects individuals’ online cooperative behaviors. For instance, trust may decrease the fear of losing one’s distinctive value in the knowledge sharing process.25

For managers, this paper emphasizes the need to consider motivational factors while promoting knowledge management as indicated in recent studies,74–79 Acknowledging individuals’ central role in the knowledge sharing process is vital. It is evident that the social environment may promote or hamper successful knowledge sharing,80 which is in line with our finding that trust at workplace is of significant importance in influencing the way employees interact with each other and whether they are willing to share knowledge with each other in cyberspace. Thus, in order to help employees to overcome their unwillingness to share knowledge online, appropriate incentive or education systems and organizational policies have to be developed and planned accordingly81,82 which may foster a knowledge-friendly culture,79 thus establish an atmosphere of openness for knowledge sharing.80 The results of the present study suggest that managers may find it beneficial to support trusting relationships in order to improve the flow of knowledge sharing in organizations.

On the theoretical level, this study provides empirical evidence showing trust is an important aspect on knowledge sharing in two ways: enhancing the usefulness of online knowledge management systems as well as employees’ acceptance of the online knowledge systems. The present study emphasizes once more the importance of psychosocial variables in understanding the dynamics of knowledge sharing, as previously highlighted in the knowledge management literature.83 For instance, Zárraga and Bonache84 provide evidence that given a favorable atmosphere, in which mutual trust, active empathy, lenience in judgment, courage, and access to help are nurtured, individuals can be encouraged to share knowledge within
organizations. However, it was necessary to provide further theoretical conceptualizations as well as detailed empirical evidence for the psychosocial phenomena that enable knowledge sharing in organizations.

To summarize, this study contributes empirical data to the predominantly theoretical literature on knowledge management in general and trust and knowledge sharing in particular. It is, to a certain extent, common sense that trust has a positive impact on knowledge sharing. However, this paper takes an important step forward by detailing how trust at workplace influences the knowledge sharing process via enhancing the effect of quality knowledge management system and the effect of employees’ computer attitude.

6. Limitations and Future Studies

While the empirical data collected have largely supported the proposed model, it is necessary to point out the limitations of this research. One limitation involves the potential for measurement error in the self-reported survey. Even though the responding individuals consisted of well-informed and active knowledge management system users of the participating technological companies, the existence of possible biases or personal differences for knowledge management systems and work environments cannot be discounted (e.g. the level of computer literacy, the speed of learning to use the systems, the preference of communication and collaboration and so on).

Furthermore, it is evident that the infrastructure, content, and hardware equipment used can differ among these companies in different areas (e.g. suburban areas), countries, or even those in the same urban area universities offering dissimilar knowledge management systems. Therefore, the current data collected from the particular organizations in Taiwan may not be fully representative of other scenarios. Thus, future research might provide a more comprehensive population sample or a more complete inventory of variables and extent the study in these areas. Future research should also consider other measurements and possibly also metrics for knowledge sharing, such as figures for actual documents shared and other details of communication.

This study provides empirical evidence showing trust is an important aspect in knowledge sharing. Future research might include these aspects or could extend these aspects to examine other phenomena that influence online knowledge sharing. The above shortcomings may stimulate others to conduct further empirical research in this area and encourage management initiatives to promote knowledge sharing in organizations.

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