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The Influence of User Active Adaptive Strategies on IT Adoption: An Empirical Investigation

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ABSTRACT

Information systems (IS) researchers are increasingly concerned by the paucity of research on how user adaptive strategies to information technology (IT) influence IT adoption and success. Drawing on the Information Systems Success Model (ISM) and following a mixed qualitative and quantitative approach, this study examines how individual adaptation to IT impacts the adoption of a *Cloud Computing* application that has been deployed to almost 4500 workers in a company. The results show that system characteristics and satisfaction significantly influence IT beliefs and usage. They also show that an active adaptive strategy to the IT implementation significantly moderates the impacts of satisfaction on IT beliefs.

Keywords (Required)

IS Success Model, User Adaptation, Adoption, IS characteristics, IT usage.

INTRODUCTION

The rates of failure of information systems (IS) implementations are still very high (Nelson 2007). This reinforces the interest of researchers and practitioners in examining what determines the success and benefits of a newly implemented IT. Interestingly, factors of IT failure can be found mainly in organizational and human aspects of IS implementation (Nelson 2007). In fact, the realization of IT benefits depends not only on the implementation process itself but also on how the final user adapts to it and infuses it into his/her work practices. Obviously, user adaptation processes plays a key role in that process (Barki Titah and Boffo 2007; Beaudry and Pinsonneault 2005, 2010). However, these processes have been largely neglected in adoption research (Benbasat and Barki 2007). In answering to this research gap, this article examines the impacts of an active adaptive strategy on IT adoption and use.

Traditional IT adoption models (Davis 1989; Venkatesh Morris Davis and Davis 2003) and the IS success model (DeLone and McLean 1992; DeLone and McLean 2003) very often underlie non-problematic IT usage. In particular, these models do not take into account individual adaptive efforts to IT disruptions. These adaptive efforts can strongly influence IT outcomes (Beaudry et al. 2005, 2010). It is thus necessary to take into account these adaptive strategies for understanding the success and adoption of IT by individual users. Adoption models converge in assuming that perceptions of IT by individuals significantly determine its adoption. In particular, the perceptions of IT quality and IT benefits can have considerable effects on their adoption and effective contribution to productivity and work units performance (DeLone et al. 2003). In order to better understand the influence of system characteristics and user adaptive efforts on IT usage, this study answers two research questions:

1. Do perceived IT characteristics and IT satisfaction influence IT usage?
2. To what extent do individual adaptive efforts moderate the beneficial effects of satisfaction on system adoption?

In order to answer these research questions, a study has been conducted with 1263 workers in a service company that had implemented a collaborative *Cloud Computing* application.

The article is organized as follows. In the first section, we review the literature on IS success and individual adaptation to IT. Then we present the research model and hypotheses. Follow the design, methods, and results of the research. Finally the results are discussed and contributions for research and practice highlighted before the conclusion.

IS SUCCESS

The IS success model (DeLone et al. 2003) suggests an articulation of information, system, and service quality that together influence satisfaction, adoption, and the overall IT benefits within organizations. Prior research has tested (Rai Lang and Welker 2002; Seddon 1997) and extended (Wixom and Todd 2005) this model. Wixom and Todd (2005) for example suggested an integration of the literature on adoption and, of that, on satisfaction to propose an enhanced model of IS adoption and success. Neither the IS success model, nor further refinements (Wixom et al. 2005), however, allow explaining agency phenomenon and individual adaptive strategies in the course of user interaction with IT. We suggest that an enhanced model would include the moderating effects of user adaptive strategies.

INDIVIDUAL ADAPTATION TO INFORMATION TECHNOLOGY

Traditional adoption models ignore individual adaptation behaviors (Benbasat et al. 2007). It is therefore possible that contradictory results linked with IT implementations may not be explained or even identified by extent adoption models. The coping model of user adaptation (CMUA) (Beaudry et al. 2005) highlights the dynamics of individual adaptation in response to 1) IT threats and opportunities, and to 2) the mastery of the user over the IT and its environment. Active adaptive strategies, oriented toward the exploitation of the benefits (opportunity contexts) of the IT or toward the resolution of the problems (threat contexts) associated with the IT are the most efficient ones for the user to reach his/her goal with respect to the IT (Barki et al. 2007; Beaudry et al. 2005, 2010). In our research model hereafter detailed, we focus on an active adaptive strategy explored in Barki et al. (2007), which is posited a moderator of the link between IT satisfaction and IT adoption.

RESEARCH MODEL AND HYPOTHESES

The research model is shown in Figure 1 below. Drawing on the IS Success Model (DeLone et al. 2003), we examine the influence of system quality (flexibility, integration and reliability) on system satisfaction. System satisfaction is then posited as a direct antecedent of perceived ease of use and perceived usefulness, which are both predictors of system usage. The model also posits that active adaptation moderates the impacts of system satisfaction on perceived usefulness and perceived ease of use. We provide hereafter the rationale for the nine model-hypotheses.

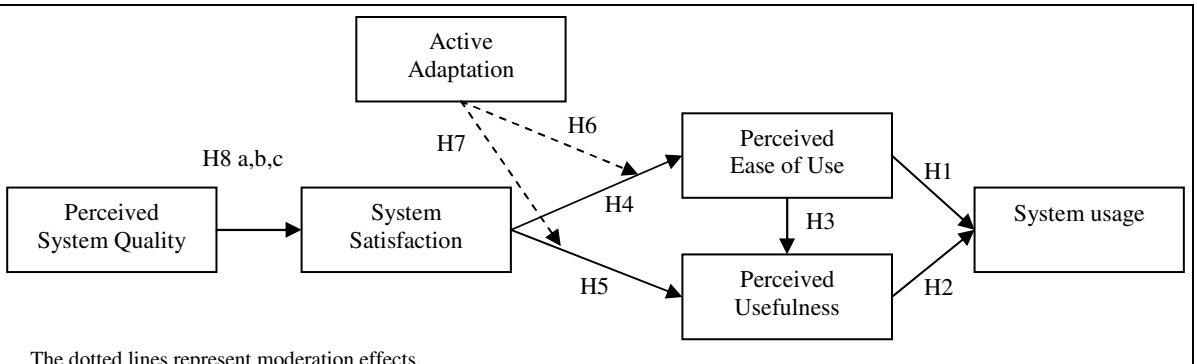

Figure 1. Research Model

System Usage

System usage was defined as a "user's employment of a system to perform a task" (Burton-Jones and Gallivan 2007, p. 659). This is a key construct that has been included as the outcome variable in a number of IS research frameworks (e.g.DeLone et al. 2003; Goodhue and Thompson 1995; Sun and Zhang 2006). The *IT usage* construct can be studied from different perspectives. Some researchers have suggested that IT usage should be assessed through measures such as frequency and length of use (Hartwick and Barki 1994; Igbaria Parasuraman and Baroudi 1996; Van der Heijden 2003; Venkatesh et al. 2003). More recently Burton Jones and Straub (2006) highlighted that IT usage has been overall poorly conceptualized. For that, the researchers suggested the development of deeper measures of IS usage. Burton-Jones and Straub (2006) offer a rich

view of IT usage that they conceptualized as the sum of three components that are user, system, and task related. Similarly, Barki et al. (2007) rely on this triptych (called in their research task-technology-individual) to reconceptualize IT usage. These three elements were also identified in other research as being the fundamentals of any interaction between users and IT.

Prior research suggests that perceived ease of use and perceived usefulness are two key determinants of IT usage (Davis 1989; Davis Bagozzi and Warshaw 1989, 1992). Perceived ease of use is defined as "the degree of which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320), while perceived usefulness represents "the degree to which a person believes that using a particular technology will enhance his performance" (Davis, 1989, p. 320). Multiple studies have replicated the Technology Acceptance Model (TAM) and validated these hypotheses with diverse IT and in diverse environments (Gefen and Straub 2003; Mathieson E. Peacock and Chin 2001; Venkatesh 2000). Therefore, we posit the following:

H1: Perceived ease of use is positively related with system usage.

H2: Perceived usefulness is positively related with system usage.

Perceived ease of use and usefulness are not only determinants of system usage as they also share a relationship. Indeed, IS studies have shown that ease of use is a significant predictor of usefulness (e.g., Gefen Karahanna and Straub 2003; Sanchez-Franco and Roldan 2005; Sun and Zhang 2008). This means that a user friendly system will generally be perceived as having more value than a system which requires a lot of effort to be used. Thus we posit:

H3: Perceived ease of use is positively related with perceived usefulness.

Satisfaction

Satisfaction can be defined as "a person's feelings or attitudes toward a variety of factors affecting that situation." (Wixom et al. 2005, p. 86). IS research indicates that user satisfaction is a subjective measure of IS success, which could be a surrogate for objective measures of system usage (Doll and Torkzadeh 1991; Galleta and Lederer 1989; Ives Olson and Baroudi 1983; Wixom et al. 2005). Furthermore, Wixom and Todd (2005) point out that satisfaction positively influence PEOU and PU. Indeed, a user who is satisfied with the system will be more likely to perceive this system as being useful and easy to use (Wixom et al. 2005). Therefore, we hypothesize the following:

H4: Satisfaction is positively related with perceived ease of use.

H5: Satisfaction is positively related with perceived usefulness.

Active Individual Adaptation

Individual adaptation corresponds to the efforts made by an individual to respond to the constraints of her/his environment. According to the Beaudry and Pinsonneault's coping model of user adaptation (CMUA) (2005), when individuals face an unexpected event, they will make coping effort in order to respond to the situation. These strategies can be active when individuals try to solve the problem directly or when they look for ways to optimize the benefits of the new situation, perceived as an opportunity. By taking on an active role, satisfied users are more likely to perceive the technology as being easy to use and to employ the technology at its full extent. Further, an active posture will allow users to reduce their negative perceptions such as losing time or investing too much effort for adapting to the new IT. An active adaptive strategy is also likely increase the benefits and potential advantages of the system for the user (Barki et al. 2007). Hence, active users will have more positive attitudes towards the IT, they will hence better acknowledge the usefulness and ease of use of the IT when satisfied about it. Therefore, we posit:

H6: Active individual adaptation positively influences the link between system satisfaction and perceived ease of use.

H7: Active individual adaptation positively influences the link between system satisfaction and perceived usefulness.

Perceived system quality

System quality corresponds to "the desirable characteristics of an information system" (Petter DeLone and McLean 2008, p. 248). This multidimensional construct includes system quality, service quality, and information quality (DeLone et al. 1992; DeLone et al. 2003). In our model, we retained reliability, flexibility and integration, which are key dimensions of system quality, especially in the context of collaborative web platforms. Indeed, system reliability is a major concern in organizations. Reliability is also important to evaluate in the context of collaborative tools/groupware because these systems

include several modules. Then, also because the IT that will be considered includes several applications, we also deemed important to assess whether this platform could integrate content and company's resources or not.

Many studies have shown that system quality is related to satisfaction. Indeed, according to a meta-analysis conducted by Petter et al. (2008), it seems that in all of the studies that included a link between system quality and satisfaction, this link was strongly significant (twenty one in total). For instance, Iivari (2005) examined the implementation of a new system in a Finnish municipality and his results indicate that system quality does indeed predict satisfaction. Therefore, we hypothesize:

H8a. Perceived reliability of the system is positively related to satisfaction.

H8b. Perceived flexibility of the system is positively related to satisfaction.

H8c. Perceived integration of the system is positively related to satisfaction.

DESIGN AND METHODS

Field Setting

A field survey (Pinsonneault and Kraemer 1993) has been conducted in France with users of a portfolio of cloud computing applications *SmartApps*[1], deployed in a large Insurance Company, *SmartServices*. The research has been conducted in two steps with a sequential mixed methods design (Creswell 2009). *SmartApps* includes tools for communication (such as emails, videoconference, instant messaging), collaboration features (such as shared office applications, group workspaces, shared agenda), and other advanced features (personalization capabilities, compatibility with mobile terminals etc.).

SmartServices has a staff of around 6,500 people. So far, *SmartServices* is considered as a *traditional* company in a *traditional* sector. One of the key challenges for this company was to successfully manage the integration of the new application in work practices. This change is critical because the application is used every day by the vast majority of the staff of SmartServices. Another important challenge for SmartServices executives was to influence work and managerial schemes so that people would work effectively in a more collaborative manner. While SmartApps were perceived as an innovative platform in many respects, SmartServices managers were uncertain about how workers would perceive it in practice and how they would subsequently interact with it.

Procedures and Sampling

The study has been conducted in two steps. In the first step, about thirty preliminary interviews have been conducted from june 2010 to September 2010 with different categories of workers in *SmartServices*, including the Chief Information Officer, the sponsor of the project. These interviews aimed at better acknowledging the organizational, technological and social context within *SmartServices* prior the implementation of *SmartApps*. The interviews also aimed at identifying the representations workers and managers formed about *SmartApps* as compared with legacy applications; the extent to which they perceived *SmartApps* conveyed threats / opportunities; and the extent to which the users felt they had control or not on SmartApps. For this, a content analysis has been conducted. These interviews allowed identifying the most salient needs of *SmartApps* users, but also their fears, expectations, and apprehensions. For example, the interviews showed that some users were concerned with their own capability to integrate *SmartApps* into their work practices, and with the quality and effectiveness of the application. According to a user:

> *"SmartApps is probably a good communication tool, allowing to share documents, etc. But I cannot dedicate much time to learning all of its features and functionalities. I have thus a resigned approach and I just use that tool far below its capabilities. For that, for me it is far less comfortable as compared with Microsoft Outlook".*

Many felt concerned with the transition to *SmartApps*. Specifically, they feared having to change their work habits overly with the new features available in *SmartApps*. Further, managers were expecting workers to learn working in more collaborative ways.

> *"The use of SmartApps made necessary a great rigor from the very beginning, because this application is very different from those to which we are accustomed to in our professional activity…"*
>
> *"I have some difficulties in using SmartApps, I often ask to my colleagues how to use it".*
>
> *"Learning to use SmartApps comes at a moment that is already full of trainings, which integration is more urgent, which impeded to go more in-depth into the use of SmartApps".*

Other users were more enthusiastic regarding *SmartApps* and had important expectations about this application.

[1] SmartApps is based on Google Apps from Google Inc.

"It is just amazing to use the email client on an Iphone… and to switch with one click to Gmail is really exciting and contributes to a greater productivity and freedom, even if we become addicted. All this is cheaper than one year of Omega [2]card for a major return on investment: you take back the mobile phones given to sales people as well as the Omega cards, and you replace them by SmartApps on Iphone".

"What I like most with Smartapps is its storage capability, and hence it is less constraining for preserving electronic documents".

In the second step, based on the qualitative inquiry, we developed a questionnaire for collecting quantitative data from *SmartApps* users. The questionnaire was diffused in October 2010 to the 4317 workers that were using Smartapps at the time of the survey. 1263 questionnaires were completed, which represents a reasonable response rate of 29.3% of participation in the survey. The sample comprises 29% of men and 71% of women. 27% are between 26 and 35 years old, 30% between 36 and 45 years old, 29% between 46 and 55 years old, and 12% between 56 and 65 years old. 3% are top executives, 37% are managers, 24% are professionals, and 36% are employees. With respect to education, 33% have no college degrees, 28% spent two years in college, 9% three years, 10% four years (bachelor degree), 14% five years (master degree), and 6% six years and more. Finally, 64% of the participants worked in Paris and 36% in other French regions. These sampling characteristics are consistent with the overall population of *SmartService*, which ensures a good external validity of the sample.

Measures

The measures have been selected from prior research when available, based on the theoretical rationale depicted through the research model and the preliminary results from the interviews. Table 1 below shows the variables that have been selected.

Variable	Definition	Nature of the construct	NB Items	Authors
Integration	"Refers to the way the system allows data to be integrated from various sources" (Wixom and Todd, 2005, p. 90).	Reflective	2	Wixom and Todd (2005)
Reliability	"Refers to the dependability of system operation, (Wixom and Todd, 2005, p. 90).	Reflective	2	Wixom and Todd (2005)
Flexibility	"Refers to the way the system adapts to changing demands of the user" (Wixom and Todd, 2005, p. 90).	Reflective	3	Wixom and Todd (2005)
Active Adaptation	"Modifications that individuals make to themselves in order to adapt to the IT" (Barki et al. 2007, p. 176).	Formative	5	Barki and al. (2007)
Usefulness	"The degree to which a person believes that using a particular system would enhance his or her job performance" (in Venkatesh et al. 2003, p. 448).	Reflective	3	Venkatesh and al. (2003)
Perceived Ease of Use	"The degree to which a person believes that using a system would be free of effort" (in Venkatesh et al. 2003, p. 451).	Reflective	3	Wixom and Todd (2005)
Satisfaction	"System satisfaction represents a degree of favorableness with respect to the system and the mechanics of interaction"(Wixom and Todd, 2005, p. 91).	Reflective	2	Wixom and Todd (2005)
Usage	Frequency of the usage of the various features and functionalities of SmartApps, from the most rudimentary to the most advanced ones (email = 8 items, agenda = 5 items, community/sites = 3 items, documents = 4 items, chat = 2 items).	Formative	22	Variable developed for the study.

Table 1. Definition of Constructs

PRELIMINARY ANALYSES AND RESULTS

Analyses have been conducted with SmartPLS (Ringle Wende and Will 2005). We first examined the measurement properties of the reflective constructs. The model shows appropriate convergent and discriminant validity (Boudreau Gefen and Straub 2001). Further, the items are associated to their reference construct with value of at least .50. Of all cross loadings (the table has not been reproduced for brevity), no item has a difference that is lower than .10 with items from constructs

[2] This is a Third-generation card for mobile internet on computers. Such cards were delivered only to selected workers with great managerial responsibilities.

other than the reference construct (Wixom et al. 2005). From this we conclude that our instrument has appropriate measurement properties.

The measures for reliability are as well very good with Cronbach Alphas of at least .8268 and composite reliability (Fornell and Larcker 1981) of at least .9052 for the reflective constructs. The Table 2 below shows the average variance extracted table and the values for reliability.

Construct	CA	CR	1	2	3	4	5	6
(1) Ease of Use	.8362	.9387	**.914**					
(2) Flexibility	.8819	.9572	.761	**.939**				
(3) Integration	.8268	.9052	.755	.772	**.909**			
(4) Reliability	.8861	.9396	.631	.643	.615	**.941**		
(5) Satisfaction	.9682	.9838	.823	.785	.783	.627	**.984**	
(6) Usefulness	.9343	.9771	.595	.673	.634	.499	.710	**.967**

CR = Composite Reliability, CA = Cronbach's Alpha

* Items on the diagonal are the square root of Average Variance Extracted (AVE).

Table 2. Reliability and Average Variance Extracted Table

We then examined the hypotheses. In order to do so, we implemented a Bootstrap procedure with 200 resampling (Chin Marcolin and Newsted 2003) directly with *SmartPLS*. Missing values (only a few) were replaced directly by SmartPLS via the selection of the "casewise deletion" option in the software. Age, education, hierarchical level, gender, and experience with IT were included in the model as control variables (with impacts on system usage). In order to test the moderation effect of Active adaptation on the links *satisfaction → usefulness* and *satisfaction → ease of use*, we created a moderation term following the procedure explained in Chin et al. (2003). As the active adaptation construct is formative, the items have been mean-centered before for the computation of the moderation terms. Table 3 below report the results of the analyses.

Link	Hypothesis Validation	OS	SM	SD	SE	T
Active Adaptation -> Ease of Use	-	0,065	0,066	0,023	0,023	2,778*
Active Adaptation -> Usefulness	-	-0,079	-0,078	0,026	0,026	3,098**
Age -> Usage	-	0,037	0,039	0,020	0,020	1,903
Education -> Usage	-	0,059	0,060	0,027	0,027	2,229*
Gender -> Usage	-	0,014	0,021	0,015	0,015	0,887
Hierarchial Level -> Usage	-	0,373	0,375	0,028	0,028	13,282***
IT Experience -> Usage	-	0,246	0,246	0,025	0,025	10,056***
Ease of Use -> Usage	H1 (yes)	0,197	0,197	0,027	0,027	7,380***
Usefulness -> Usage	H2 (yes)	0,215	0,217	0,027	0,027	8,099***
Ease of Use -> Usefulness	H3 (no)	0,047	0,052	0,032	0,032	1,469
Satisfaction -> Ease of Use	H4 (yes)	0,899	0,901	0,036	0,036	24,997***
Satisfaction -> Usefulness	H5 (yes)	0,425	0,422	0,070	0,070	6,070***
Flexibility -> Satisfaction	H8a (yes)	0,380	0,377	0,029	0,029	13,215***
Integration -> Satisfaction	H8b (yes)	0,406	0,408	0,030	0,030	13,516***
Reliability -> Satisfaction	H8c (yes)	0,132	0,134	0,024	0,024	5,589***
Satisfaction * Active Adaptation -> Ease of Use	H6 (yes)	-0,115	-0,118	0,040	0,040	2,864**
Satisfaction *Active Adaptation -> Usefulness	H7 (yes)	0,287	0,288	0,063	0,063	4,560***

Significance: *p < .05. **p < .01. ***p < .000

O.S. = Original Sample, S.M. = Sample Mean, S.D. = Standard Deviation, S.E. = Standard Error, T.S. = T-Statistic.

Table 3. Results and Hypotheses Validation

The overall variance explained in the model is R^2=.485 for system usage, R^2=.673 for perceived ease of use (PEOU), R^2=.499 for perceived usefulness (PU), and R^2=.694 for satisfaction. Of the control variables, we found a weak effect of education (β=.059, sig. <.05), while we found strong effects of hierarchical level (β=.373, sig.<.000) and of IT experience (β=.246, sig.<.000) on *SmartApps* usage.

Then, the results show that the influence of PEOU on usage is significant (β=.197, sig.<.000), like that of PU on usage (β=.215, sig.<.000), which validates H1 and H2. In contrast the link between PEOU and PU is not significant (β=.047, NS), and H3 is not validated. Then, the link between satisfaction and EOU (β=.899, sig. <.000), as well as that with PU (β=.422, sig.<.000) were significant, which validates H4 and H5.

With respect to the influence of system quality on satisfaction, we found that flexibility (β=.308, sig.<.000), integration (β=.406, sig.<.000), reliability (β=.132, sig.<.000), were significant predictors of satisfaction, which validates H8a, H8b, and H8c.

Finally, the moderating effects were significant as well. The impact of active adaptation on the link *Satisfaction → PEOU* is significant (β= -.115, sig. <.001), but with a directionality contrary to expected. The more active the adaptation, the less the user perceives the system to be easy to use. Hence, H6 is not validated. Then, the impact of active adaptation on the link satisfaction → PU is positive, as expected. This suggests that the more the user adopts active adaptation, the greater the perception of usefulness of the IT by the user. H7 is thus validated. Chin et al. (2003) further suggest the calculation of an effect size for the moderation term. We obtain an f^2=.004 for the moderation on the relation *Active* A*daptation → Perceived Ease of Use*, and f^2=.021 for the relation *Active Adaptation → Perceived Usefulness*. Based on these analyses, the effect size of the moderation is low.

Carte and Russel (2003) suggest to perform different analyses for assessing the extent to which the moderator is significant. They suggest the calculation of an F value, which should be significantly different from 0 in order to assess the existence of a moderation effect. In the current study, F= 4.62 and F= 27.66 respectively, which proves that the moderation effect does exist.

Like all research using perceptual measures, there is a risk of common method variance in this study. We computed a principal component analysis with the variables included in the model. More than one factor emerged and there is not one single factor accounting for the majority of the variance. We conclude that common method bias is not a serious concern in this study.

IMPLICATIONS AND CONTRIBUTIONS

This research makes contribution in several ways to the IS literature. First, the study enhances the IS Success Model with the posited influence of an active strategy of adaptation to IT implementation in order to further assess IT adoption. The results show that an active adaptive strategy significantly moderates the influence of system satisfaction on IT beliefs (i.e., perceived usefulness and ease of use). Specifically, encouraging active adaptation will positively influence the effect of satisfaction on perceived usefulness. In contrast, it will also negatively influence the effect of satisfaction on perceived ease of use. This suggests that while managers should encourage active adaptation, they should also increase the capability of users to gain mastery about the IT. Doing so, they will reduce the negative perceptions about ease of use invoked by an active adaptation. As individual adaptation to IT usage has often been left out of research models dealing with IT adoption (Beaudry et al. 2005; Benbasat et al. 2007), these results are an important contribution for research dealing with IT adoption and user adaptation.

Second, based on a prior qualitative study, we examined a rich measure of IT usage by relying on the frequency of utilization of twenty functionalities that were identified as being the most salient ones for the users of the online collaborative platform. This contribution is all the more important as IS studies have mainly evaluated IT usage with lean measures (Burton-Jones et al. 2006; Straub Limayem and Karahanna-Evaristo 1995; Straub and Burton-Jones 2007). The rich, contextualized measure of IT usage in this research is an improvement as compared with the aforementioned lean measures.

Third, the field setting that was selected to conduct the empirical investigation also offers especially rich insights. Specifically, a rich mixed method, sequential design (Creswell 2009) has been adopted. Additionally, we conducted our investigations into a single entity, which reduces the risks of bias that can appear when investigations are made using data from several organizations from different sectors (e.g., differences in terms of corporate culture and of other environmental factors could bias the results). By surveying workers in a real company setting, the present research contributes to the study of information systems in their context of use. Specifically, in the study, we measured workers' own perceptions towards actual IT use. Many research assessing user reactions towards IT have relied on laboratory experiments, which simulated user environments. These studies, which also measure intentions rather than actual behaviors, rely on the most rigorous designs possible, but unfortunately with limited external validity. The empirical approach adopted in this research hence contributes to IS research by offering an investigation of IT adoption in a real world setting.

Finally, this research contributes to practice by indicating key levers that IS managers can manipulate to facilitate IT implementation and integration into work practices. Individual adaptation, system quality, satisfaction, ease of use and usefulness are key variables that predict system usage.

LIMITATIONS AND FUTURE RESEARCH

This study has some limitations that offer interesting avenues for future research. First, our approach of strategies of adaptation is limited because we only take into account the role of one active strategy of adaptation. In contrast, Beaudry and Pinsonneault (2005) have identified four strategies of adaptation that could all be included into future research frameworks. These four strategies can enrich the IS Success Model and improve our understanding of IT adoption.

Second, our methodology also presents some limitations. Indeed, the data reported have been collected in a single point in time and measures are only perceptual. This could be considered as less rigorous than experimental designs. Nonetheless, we tested for methodological bias (Podsakoff MacKenzie Lee and Podsakoff 2003) and the results of these tests indicate that our methodology did not really influenced our findings. Future research should try to take into account the temporal dimension by adopting a longitudinal design for instance. Examining the evolution of adaptation strategies as well as that of the impact of these strategies on IS success would provide interesting avenues. In addition to frequency of usage, it would be interesting to take into account objective indicators of IT usage. For instance, the number of Websites created by users, the time spent on the platform, statistics regarding the number of documents created and shared, etc. could be measured in future research.

By focusing on a single entity, we also reduce the external validity of our findings. Investigating other organizations that have implemented the Google Apps services would allow us replicating the study and identify whether its implementation and use follow the same patterns in a different organization.

CONCLUSION

We presented a research framework - based on the IS Success Model - that includes an active adaptive strategy to the implementation of an IT. Our results indicate that these strategies influence the impact of satisfaction on IT beliefs. This research contributes to the IS literature by improving our understanding of IT adoption and it offers practical implications to managers by identifying the role played by user adaptation in the success of IT implementations.

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