THE IMPACT OF INDIVIDUAL AND SOCIAL ATTITUDE IN BUSINESS INFORMATION TECHNOLOGY KNOWLEDGE SHARING: A GENDER PERSPECTIVE

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Abstract

This exploratory study attempts to analyze the way women and men perceive talking about information and communication technology, and its impact in knowledge sharing. Based in 14 focus groups we have defined a conceptual model to interpret this impact in ICT knowledge sharing. Our research findings show that there are differences between men and women, thus gender is a critical factor in ICT knowledge sharing. Also, social, cultural and educational factors have a strong negative impact in their behaviour. Furthermore, we posit that the attitude predisposes a favourable (men) and unfavourable (women) reaction to talk about ICT and this affects ICT knowledge sharing.

Keywords

ICT, Attitude, Knowledge barriers, Knowledge sharing, gender, focus groups.

INTRODUCTION

Information and communication technology (I CT) acceptance and use is a prolific research stream in the infor mation systems (IS) field. Knowledge and inform ation are essential in taking advantage of the opportuni ties presented by ICT, and have becom e commodities of value in their own r ight in the n etworked economy. In the past, gen der bias has been an inadverten t feature of som e enterprise sup port programs, where ICT have been introduced in ways that have be nefited male executives. Gen der stereotypes have created some assumptions. For instance one assumption about women is that they all like the colour pink.   Thus, m any producers have produced "p inked up" gadgets. However, research by Saatchi & Saatchi (ladyg eek.org.uk) has sown that only nine per cent of women like these pink or, alternativel y, crystal-encrusted m obile phones, game consoles or laptop s. The research estimated that UK con sumer electronic p roducers alone miss out on £600 million a year by not targeting women consumers appropriately. Different   studies have shown that the   digital   divide is a reality : women   are underrepresented in their use and ownership of computers (Wilson et al. 2003, Pinkard 2005), women take fewer technology classes in high school (Pinkard 2005), in college women are far less likely to graduate with   degrees in ICT fields and, enjoy interacting with computers less than men do (Mitra et al. 2001).

The gender bias is especially critical in terms of ICT education and the developm ent of ICT skills and ICT knowledge s haring. Many training/educational programs do not take into account the different way wo   men and m en share ICT knowledge and how individual perspectives m ay impact IT knowledge sharing. Training program s and guidelines for organizations and project staff to improve the success of ICT transfer are lacking. This is critic al since it is intrin sically linked with resea rch into techno logy-related issues affecting both m en and women. Some studies suggest that women have a more strategic vision of the ICT, harnessing its use to obtain benefits at education level, to reduce efforts and le arning, while the man associates it to com petition, status, and innovation. Simon (2006) inve stigated the views of wome n on technological change within a so ciety driven by access to inform ation. The sample includ ed women from different backgrounds, of differ ing employment status, and w ith a variety of job roles (although almost half the sam ple had a back ground in library or inform ation work). Simon's investigation discovered that their attitude towards ICT largely expressed itself in both positive terms - born of practical experience - and in those of either ambivalence or outright negativity. The less positiv e reactions were f or the m ost part gene rated by their recognition of the pervasive nature of ITC in socie ty in jux taposition with their own feeling of 'being left out', based either on personal experience or their identification with others subjected to such exclusion.

A confirmed tendency by the empirical works is the smaller disposition of the female gender to course technical   classes in the school or un   iversity which has direct implications in the nature of its futu re work (Gaskell 1992, Cohoon 2001, Joshi and Khun 2001). Many governm ents and com panies are putting effort into im proving the technical provision of ICT for   different uses, especially to decrease social digital exclusion and decrease the gender gap. A f actor that is som etimes neglected in this effort but has a significant im pact on the pe rformance of ICT is the hum an factor (Holt 1998). Gelderman (1998) in a study among Dutch managers found a high correlation (r = 0.42) between user satisfaction and perform ance of ICT. Satisf action is an a spect of the affective component of attitude.

1

The purpose of this explorat ory study is to analyze the impact of in dividual and social attitudes in ICT knowledge sharing. Prior research has shown that individual differences in users' cognitive style and gender can have a signif icant effect on their usage and perceived usefulness of ICT (Taylor 2004).

This paper is structured as follows. First, we review the literature on attitude theories and ICT attitude. Next, we describe the re search methodology. Then, we describe the findings and we propose a conceptual m odel. Finally, we draw som e conclusions and further work.

THEORETICAL BACKGROUND

Attitude overview

Taking into consideration cu rrent attitude research, Breckler and W iggins (1992) define attitudes as "m ental and neural representations, organized through experience, exerting a directive or dynamic influence on behaviour" (p. 409). Allport (1966) defines attitude as "individual m ental processes which determ ine both the actual and potential responses of each person in th e social worl d." (p 19). "Mental processes" inf ers thoughts and feelings towards an object such as infor mation and comm unication technology. Allport's definition also indicates that attitude could determine "responses" or reaction to occurrences around the indiv idual. Such a reaction can be positive or negative.

Attitudes are part of the bra in's associative networks, the spide r-like structures residing in long term memory (Higgins 1996) that consist of affective and cognitive nodes linked through associative pathways (Anderson 1983, Fazio 1990). These nodes contain affective, cognitive, and behavi oural components (Eagly and Chaiken 1995). Many research studies have defined attitude as a significant personal attribute that tends to predict behaviour. Ajzen and Fishbein (1980) concluded in their study that provided attitudes are appropriately measured, they are suf ficient to p redict intentions (behaviour). Moghaddam (1998) presents both sides of research and argum ents as to whether attitude predicts behaviour. He tends to conclude that we can use attitud e to measure behaviour provided (a) w e are relati vely specific in our m easure; and (b) we measure all the com ponents to provide a better chance of capturing all the facets of the attribute.

There is co nsiderable research on "im plicit" attitudes, which are unco nscious but have effects (identified thr ough sophisticated methods using people's response times to stimuli). Implicit and "explicit" attitudes seem to affect people' s behaviour, though in different ways. They tend not to b e strongly associated with each o ther, although in some cases they are. The relationship betw een them is poorly understood. Emotion is a common component in persuasion, social in fluence, and attitude change. Much of attitude research em phasized the im portance of affec tive or em otion components (Breckler and Wiggins 1992). Emotion works hand-in-hand with the cog nitive process, or the way we think, about an issue or situation. Emotional appeals are commonly found in advertising, health ca mpaigns and political messages. Recent exam ples include no-smoking health campaigns and political cam paign advertising em phasizing the fear of terrorism.

It is widely agreed by attitude theorists that the concept of attitude can be broken into cognitive, affective and behavioural components (Krech et al. 1962). Leone et al (1991) are examples of modern research ers who based their w ork on the prem ise of the cognitive component of attitude. Edward s (1990) research findings underscored the theoretical as well as the pr actical importance of disti nguishing between affect- and cognitive-based attitudes. The same conclusion was reached by Millar, M and Millar K (1990) though their conclusion as to how each of the two components can be influenced differs from that of Edwards (1990). Kay (1990) is an example of a researcher whose researched focused on behavi our as a distinct aspect of attitude. However, the predictive power of the behaviour com ponent of attitude is under dispute and therefore some researchers prefer to leave it out of the attitude scale (cf Moghaddam 1998). Empirical data confirms that a ttitude toward behaviours is a better prediction of intention than attitude toward ob jects (ICT); attitude toward objects has pos itive influence on attitude toward behaviour s (Zhang and Aikm an 2008). For instance, attitudes toward a previous ve rsion of the softw are and its use have significant impacts on the current attitudes. However, little is known about the im pact and effects of individual and social atti tudes in ICT knowledge sharin g and if gender plays an important role in this knowledge sharing. Thus, this explorator y study attem pts to analyze how wom en and m en perceive thei r attitude (both individual and social attitudes) to ICT and how it may impact their ICT knowledge improvement.

ICT attitude

Research has indicated the ex istence of a gender gap in computer use (e.g. Broos 2005). An overview of research published in th e last 20 years draws to the conclusion that females are at a disadvantage relative to men when learning about com puters or learning other material with the aid of computer-assisted software (Cooper 2006). Men and women, regardless of their age, background, or com petence with ICT, know t hat general public believes that m en and boys are more interested in, and are m ore competent at, the use of com puters (Cooper 2006). W hile gender differences in ICT related attitudes and cognitions disappeared at scale level, they seem to persist at factor level (McIlroy et al., 2 001). In ad dition, female and m ale students are likely to be different in terms of the types of computer use rather than in all areas of ICT application (Colley, 2003; Mitra et al., 2001).

A study conducted by Broos (2005) shows that in general, female had more negative attitudes towards computers and th e Internet than did m en. Results ind icate a pos itive relationship between ICT experience and ICT attitudes. Males were found to have less computer anxiety than fe males; respondents who have used com puters for a longer period of tim e and respondents with a higher self-perception of experience also show less computer anxiety. Do women suffer more from technophobia than men? According to McIlroy et al. (2001), technophobia is an "anxiety about present or future interactions with computers or com puter-related technology; negative gl obal attitudes about computers, their operation or their societal impact; and/or specific negative cognitions or self-critical inte rnal dialogues during actual co mputer interaction or when contemplating future computer interaction". Besides individual attitudes to ICT, gender stereotypes have created som e misconceptions. There is good reason to believe that gender-based stereotypes can have can have the power of the self-fulfilling prophecy, creating further evidence for the stereotype (Cooper 2006). Furtherm ore, Word et al. (1974) showed that stereotypes about groups of people can also impact peoples' performance. Research on stereo type threat has shown that the m ere knowledge of a

negative stereotype applying to a person's group can cause that person to perform poorly at a particular task (e.g. Steele and Aronson 1995, Spencer et al. 1999).

RESEARCH METHODOLOGY

The research technique to collect da ta was focus group technique. F ocus group methodology has em erged as an important research tool employed by m any academic disciplines, including marketing, public pol icy, strategic planning, and comm unication (Fern 2001, Goldenkoff 2004, Hartm an 2004). Focus group research is based on facilitating an organized discussion with a group of individuals, selected because they were believed to be representative of so   me class (ex., th e class of consum er of a product, the class of voters). Discussion is used to bring out insights and understandings in ways which simple questionnaire items may not be able to discover. The sam ple was random, with women and m en who voluntarily decided to participate in it, after knowing about the existence of our project.   In the discussion group, we conducted 14 focus groups (8 focus groups of wom   en executives and 6 focus groups of men executives with a total of 58 women and 47   men). Their ages ranged from   30 to 50. Before we started the focus groups discussion, we explained the research objectives, we also requested them to tape the discussion an   d we provided them   a conf identiality agreement. We defined the following initial questions to start the discussion:

1.   What reasons may cause resistance to the adoption and use of ICT?
2.   Do you think that talking about ICT among peers and fri ends helps to improve your ICT knowledge?
3.   Do you think there is a technological gap between men and women?

We purposely questioned the gende r gap of ICT at the end in order to avoid that the discussion would focus in typical "gender" battle issues and comparisons.

FINDINGS

Overall, the findings suggest that nega   tive attitudes to ICT are more usually associated with awar eness of the difficulties they have to o vercome in order to be able to use ICT effectively. They are not questioning the potential value of ICT to any great extent. The m ajority of participan ts admitted that if they have m ore knowledge ab out ICT they feel more confident in us ing it and also they are more sa tisfied with the ICT usage because they can obtain m ore benefits from it. Also, as their ICT knowledge improves they are more willing to use it and apply it in their jobs and even in their daily life. Men executives have described that by ta lking about ICT topics, they have learned about new ICT or im prove its usage by discus sing each other. W omen on the contrary, think that ICT topics are "boring" and they onl y talk about these topics if they have an activity to p erform and they need to solve any ICT issue. There are so me exceptions, like talking about m obile phones but even with this topic, they usually don't talk about the functionality of the device. Both men and women executives admitted that they have improved their ICT knowledge because of so me friends sharing their ICT knowledge with them, especially in discovering   and learning about ne w ICT products or functionality. Both agreed that they f eel more confident to ask a friend rather than their

ICT department. The main reason is to avoid catalogued as ICT "illiterate" within their company. Most of women participants complained that the problem was not in ICT knowledge sharing but in their lack of time to do so and to learn ICT since it requires a lot of hands-on activities and time. However, they admitted that usually they don't talk about ICT in other contexts external to their work environment.

Some participants have mentioned phrases like "women tend to like people and men tend to like things". Also, most of men and women participants admitted that doesn't mean that women don't like ICT, but that probably the society stills thinking that ICT is a men world. Despite the fact that most of the participants were interested in developing their ICT skills and knowledge, some participants think that some of their colleagues are caught up in a kind of "technophobia" and a resistance to learning about computers because they perceive it to be too difficult. Our research findings suggest that this negative attitude towards ICT discussion by female executives may be related with some cultural and educational factors. Surprisingly, some female executives said that sometimes they would like to talk with other female friends about some ICT issues, but they were worried that the others would judge them in a negative way. On the contrary, men think that talking about ICT is a typical conversation topic, and some of them admitted that sometimes talking about the "latest gadget", it is a way to impress the others. Most of the participants, female and male, agreed that the both female and male could learning in the same way the ICT skills required to perform their jobs. However, and again, what they think it is different is the attitude to develop these ICT skills and the attitude to use ICT.

All the participants agreed that the nature of ICT has a strong impact in ICT learning and knowledge creation. Thus, participants think that motivating people to use and understand ICT topics is a key issue, they way ICT is taught making it more attractive and useful improves the tendency to use it in the future. Female executives have mentioned that they want to see a practical usage of ICT and how it really helps them to improve their work, and performance. Finally, we have detected that social attitude to ICT knowledge sharing may help the adoption of new ICT, thus improving ICT innovations. However, this seems more evident in men executives at least in a short-term perspective. Men that have talked with other peers and friends about a new ICT, are tempted to acquired this ICT in a short-term, while women didn't show a so short-term impact in ICT acquisition.

Figure 1- tries to conceptualize the different factors that have emerged from the focus groups data analysis.

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Insert Figure 1 Here

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In this exploratory conceptual model, we posit that ICT attitude is affected by gender stereotypes (which are created by educational and social factors) and previous ICT experiences. Then, ICT attitude affects ICT dialogue and communication which will affect ICT knowledge sharing. Other theoretical studies have already confirmed the relationship between gender stereotypes and ICT attitude and this one with knowledge sharing. However, there is a lack of research in the reasons to ICT attitude impact in

knowledge sharing. In this study, we hypothe sized that ICT predisposes a favourable (men) or unfavourable (wom en) reaction to talk about ICT and this affects ICT knowledge sharing.

ICT attitude change

Some participants explained that their previous experience with an ICT has a strong impact in their willingness to share it with the other peers an d friends. If the experience was positive, usually, both m en and wom en like to shar e it with others but if the experience was negative then they may have two attitudes. Some participants expressed that if they felt that the fa ilure to use an ICT was becau se of their lack of knowledge, they prefer to not share it with oth er peers, but if they th ink that the reas on is because the ICT its elf, then th ey like to say it. Fro m a gender perspe ctive, most women participants mentioned that sometimes they were afraid of failing in ICT use because of their lack of ICT knowledge while most of the men participants blam ed against ICT itself.

Participants mention that it is important to create campaigns to develop close environments where wom en and m en, but especially women, perceive ICT like something daily and closer to themselves. However, we would like to mention that give access to ICT is not enough for women to adopt ICT. All the women in this focus group have Internet broadband access in their hom es and work, and m ost of them have a laptop. Although, ICT access is an issue maybe it is not the main barrier and would not solve the whole prob lem. Stereotypes are s ocial constructions and , therefore, are flexible; they can be changed by giving them a different meaning (Kelan 2008). There is the need to work in parallel in a change of m entality, trying that women recognize the need to im prove these technol ogical capabilities so needed in this m odern and digital world. However, as Kelan (2008) states, we ha ve to be careful not to repeat and reverse stereotypes, the goal is to make them irrelevant in the long run.

Furthermore, the participants agree that governments, education institutions and companies should change this view of IC T by providing and enforcing the im portance of talk about ICT topics within social netw orks or groups to i mprove the way we adopt and use ICT. Infor mal social networks are important instrum ents to i mprove ICT education and adoption. Based on the findings , we proposed a new theoretical m odel to understand the barriers of ICT knowledge sharing taking into account gender differences. We expect that the resu lts of th is study provide a very useful reference f or scholars and m anagers to identify and inve stigate the importance of including gender social attitudes to ICT knowledge sharing.

CONCLUSION

Based on an extensive literature review and 14 f ocus groups, this study attempts to analyze the impact of individu al and soci al attitude in ICT knowledge sharing. Our research findings suggest that attitude m ay have a great impact due to the negative perception of talking about ICT issues, especially by female, in ICT knowledge sharing. This attitude seems more related with cultural and social factors associated with many preconceptions of gender stereotypes and be haviour. Thus, it is im portant that ICT

education takes into account this gap and changes and educates young people t   o eliminate these aspects.

The next stage of this research s tudy will be the validation w ith more focus groups this exploratory conceptual model and also deepening in   the impact of the ICT in women work and life.

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Figure 1- An exploratory model of a gender attitude effects in ICT knowledge sharing.