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 (ICT) acceptance and use is a prolific research stream in the information systems (IS) field. Knowledge and information are essential in taking advantage of the opportunities presented by ICT, and have become commodities of value in their own right in the networked economy. In the past, gender bias has been an inadvertent feature of some enterprise support programs, where ICT have been introduced in ways that have benefited male executives. Gender stereotypes have created some assumptions. For instance, one assumption about women is that they all like the colour pink. Thus, many producers have produced “pinked up” gadgets. However, research by Saatchi & Saatchi (ladygeek.org.uk) has shown that only nine percent of women like these pink or, alternatively, crystal-encrusted mobile phones, game consoles or laptops. The research estimated that UK consumer electronic producers 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 development of ICT skills and ICT knowledge sharing. Many training/educational programs do not take into account the different way women and men share ICT knowledge and how individual perspectives may impact IT knowledge sharing. Training programs and guidelines for organizations and project staff to improve the success of ICT transfer are lacking. This is critical since it is intrinsically linked with research into technology-related issues affecting both men 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 learning, while the man associates it to competition, status, and innovation. Simon (2006) investigated the views of women on technological change within a society driven by access to information. The sample included women from different backgrounds, of differing employment status, and with a variety of job roles (although almost half the sample had a background in library or information 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 positive reactions were for the most part generated by their recognition of the pervasive nature of ITC in society in juxtaposition 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 university which has direct implications in the nature of its future work (Gaskell 1992, Cohoon 2001, Joshi and Khun 2001). Many governments and companies are putting effort into improving the technical provision of ICT for different uses, especially to decrease social digital exclusion and decrease the gender gap. A factor that is sometimes neglected in this effort but has a significant impact on the performance of ICT is the human factor (Holt 1998). Gelderman (1998) in a study among Dutch managers found a high correlation ($r = 0.42$) between user satisfaction and performance of ICT. Satisfaction is an aspect of the affective component of attitude.
The purpose of this exploratory study is to analyze the impact of individual and social attitudes in ICT knowledge sharing. Prior research has shown that individual differences in users' cognitive style and gender can have a significant 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 research methodology. Then, we describe the findings and we propose a conceptual model. Finally, we draw some conclusions and further work.

THEORETICAL BACKGROUND

Attitude overview

Taking into consideration current attitude research, Breckler and Wiggins (1992) define attitudes as “mental and neural representations, organized through experience, exerting a directive or dynamic influence on behaviour” (p. 409). Allport (1966) defines attitude as “individual mental processes which determine both the actual and potential responses of each person in the social world.” (p 19). “Mental processes” infers thoughts and feelings towards an object such as information and communication technology. Allport’s definition also indicates that attitude could determine “responses” or reaction to occurrences around the individual. Such a reaction can be positive or negative.

Attitudes are part of the brain’s associative networks, the spider-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 behavioral 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 sufficient to predict intentions (behaviour). Moghaddam (1998) presents both sides of research and arguments as to whether attitude predicts behaviour. He tends to conclude that we can use attitude to measure behaviour provided (a) we are relatively specific in our measure; and (b) we measure all the components to provide a better chance of capturing all the facets of the attribute.

There is considerable research on "implicit" attitudes, which are unconscious but have effects (identified through 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 be strongly associated with each other, although in some cases they are. The relationship between them is poorly understood. Emotion is a common component in persuasion, social influence, and attitude change. Much of attitude research emphasized the importance of affective or emotional components (Breckler and Wiggins 1992). Emotion works hand-in-hand with the cognitive process, or the way we think, about an issue or situation. Emotional appeals are commonly found in advertising, health campaigns and political messages. Recent examples include no-smoking health campaigns and political campaign advertising emphasizing 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 researchers who based their work on the premise of the cognitive component of attitude. Edward s (1990) research findings underscored the theoretical as well as the practical importance of distinguishing 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 research focused on behaviour as a distinct aspect of attitude. However, the predictive power of the behaviour component 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 an attitude toward behaviours is a better prediction of intention than attitude toward objects (ICT); attitude toward objects has positive influence on attitude toward behaviours (Zhang and Aikman 2008). For instance, attitudes toward a previous version of the software and its use have significant impacts on the current attitudes. However, little is known about the impact and effects of individual and social attitudes in ICT knowledge sharing and if gender plays an important role in this knowledge sharing. Thus, this exploratory study attempts to analyze how women and men perceive their attitude (both individual and social attitudes) to ICT and how it may impact their ICT knowledge improvement.

ICT attitude

Research has indicated the existence of a gender gap in computer use (e.g. Broos 2005). An overview of research published in the last 20 years draws to the conclusion that females are at a disadvantage relative to men when learning about computers or learning other material with the aid of computer-assisted software (Cooper 2006). Men and women, regardless of their age, background, or competence with ICT, know that general public believes that men and boys are more interested in, and are more competent at, the use of computers (Cooper 2006). While gender differences in ICT related attitudes and cognitions disappeared at scale level, they seem to persist at factor level (McIlroy et al., 2001). In addition, female and male 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 the Internet than did men. Results indicate a positive relationship between ICT experience and ICT attitudes. Males were found to have less computer anxiety than female; respondents who have used computers for a longer period of time 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 computer-related technology; negative global attitudes about computers, their operation or their societal impact; and/or specific negative cognitions or self-critical internal dialogues during actual computer interaction or when contemplating future computer interaction”. Besides individual attitudes to ICT, gender stereotypes have created some misconceptions. There is good reason to believe that gender-based stereotypes can have the power of the self-fulfilling prophecy, creating further evidence for the stereotype (Cooper 2006). Furthermore, Word et al. (1974) showed that stereotypes about groups of people can also impact peoples’ performance. Research on stereotype threat has shown that the mere 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 data was focus group technique. Focus group methodology has emerged as an important research tool employed by many academic disciplines, including marketing, public policy, strategic planning, and communication (Fern 2001, Goldenkoff 2004, Hartman 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 some class (ex., the class of consumer 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 sample was random, with women and men 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 women 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 group discussion, we explained the research objectives, we also requested them to tape the discussion and we provided them a confidentiality 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 friends helps to improve your ICT knowledge?
3. Do you think there is a technological gap between men and women?

We purposely questioned the gender 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 negative attitudes to ICT are more usually associated with awareness of the difficulties they have to overcome in order to be able to use ICT effectively. They are not questioning the potential value of ICT to any great extent. The majority of participants admitted that if they have more knowledge about ICT they feel more confident in using it and also they are more satisfied with the ICT usage because they can obtain more 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 talking about ICT topics, they have learned about new ICT or improve its usage by discussing each other. Women on the contrary, think that ICT topics are “boring” and they only talk about these topics if they have an activity to perform and they need to solve any ICT issue. There are some exceptions, like talking about mobile 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 some friends sharing their ICT knowledge with them, especially in discovering and learning about new ICT products or functionality. Both agreed that they feel 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 perform ance. 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 acquire 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.

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 hypothesized that ICT predisposes a favourable (men) or unfavourable (women) 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 and friends. If the experience was positive, usually, both men and women like to share it with others but if the experience was negative then they may have two attitudes. Some participants expressed that if they felt that the failure to use an ICT was because of their lack of knowledge, they prefer to not share it with other peers, but if they think that the reason is because the ICT itself, then they like to say it. From a gender perspective, 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 blamed against ICT itself.

Participants mention that it is important to create campaigns to develop close environments where women and men, 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 homes and work, and most of them have a laptop. Although, ICT access is an issue maybe it is not the main barrier and would not solve the whole problem. Stereotypes are social 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 mentality, trying that women recognize the need to improve these technological capabilities so needed in this modern and digital world. However, as Kelan (2008) states, we have 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 ICT by providing and enforcing the importance of talk about ICT topics within social networks or groups to improve the way we adopt and use ICT. Informal social networks are important instruments to improve ICT education and adoption. Based on the findings, we proposed a new theoretical model to understand the barriers of ICT knowledge sharing taking into account gender differences. We expect that the results of this study provide a very useful reference for scholars and managers to identify and investigate the importance of including gender social attitudes to ICT knowledge sharing.

CONCLUSION

Based on an extensive literature review and 14 focus groups, this study attempts to analyze the impact of individual and social attitude in ICT knowledge sharing. Our research findings suggest that attitude may 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 behaviour. Thus, it is important that ICT
education takes into account this gap and changes and educates young people to eliminate these aspects.

The next stage of this research study will be the validation with 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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REFERENCES


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