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## Article

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## **Teleworking in United Arab Emirates (UAE): An empirical study of influencing factors, facilitators, and inhibitors**

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### ***Abstract***

This research constitutes an empirical study of influencing factors, facilitators, and inhibitors to the choice of teleworking mode in the UAE context. The research reveals that gender, marital status, nationality, residence location, and work profession are relevant, whereas educational level, Internet use, number of children, age, and years of experience are irrelevant influencing factors for the choice of teleworking mode. Furthermore, the research identifies six distinct facilitators and seven distinct inhibitors. The perceived importance of most identified facilitators and inhibitors to the choice of teleworking mode in the UAE context are found almost similar among the respondents. An exception, however, is made to the association between choice of teleworking mode and individual freedom, travel overload, cost reduction, and union resistance. The study outlines the limitations of the present research and suggests some practical implications and recommendations for managers.

**Keywords:** teleworking, information technology, facilitators, inhibitors, UAE

## 1 INTRODUCTION

Teleworking has recently received a considerable amount of attention both at the academia and professional world, as one of the remarkable changes in business practices (Morgan, 2004). The last few years have witnessed an increasing interest in the concept of teleworking, particularly in Europe and USA. Current predictions suggest that teleworking may become a common mode of working in future, as Knight (2004) points out that 20 million people in Europe will be teleworking by 2007, taking the enterprise boundary with them.

The concept of using information technology to work at a distance from the regular work site, referred to initially as *telecommuting* working and later as *teleworking*. The term first came to wider public attention in the USA in the early 1970s, when it was initially coined by Nilles in 1973 (Nilles, 1994), and it has been described as a growing trend and the future way of organizing work. In some publications, telecommuting and teleworking are often used interchangeably, but telework is generally used in a broader sense, covering a wider array of distributed work. In general, the motives of telecommuting are mainly aimed at achieving travel-time savings, while teleworkers (which may include telecommuters) attempt to work in alternative workplaces.

## 2 LITERATURE REVIEW

Various authors (e.g. Mann, 2000) have pointed out the diverse meanings assigned to the term "teleworking". Accordingly, several researchers have tried to establish their own definition. For example Nilles (1994) states that teleworking is "...the partial or total substitution of telecommunications technologies, possibly with the aid of computers, for the commute to work". In the same vein, Mokhtarian (1991) contends that the term refers to "...working at home or at an alternate location and communicating with the usual place of work using electronic or other means, instead of physically traveling to a more distant work site". Due to such an inconsistency shaping the definition of the term, one could argue that the definitions applied to telework can be grouped in two main blocks; on the one hand those that emphasize the location of the teleworker and on the other hand, those that stress the use of information communication technologies (ICT).

The empirical literature on teleworking has grown significantly over the last decade and most studies are western-based. Researching teleworking in developing world is unsurprisingly new, an Arab world being no exception. According to Cooper and Schindler (2003), literature can be descriptive, conceptual, empirical, or case study in nature. This section reviews the mainstream empirical teleworking literature.

On empirical side of teleworking research, researchers present results from surveying and analyzing large number of teleworkers, prospected teleworkers, or companies. Golden (2006), for example, use a sample of 393 professional-level teleworkers in one organization to investigate the intervening role of work exhaustion in determining commitment and turnover intentions. Similarly, Neufeld and Fang (2005) conduct two-phased research study to point out that teleworker beliefs and attitudes, and the quality of their social interactions with managers and family members, were strongly associated with productivity. In the similar thought, Thériault *et al.*, (2005) assess differences between home-based working and teleworking behavior among genders and professions considering age groups, household status, car access location within the city and travel distances. They conclude that gender, professional status, and age are influencing factors to the choice to teleworking. For example, older workers are more likely to telework than younger ones, with the exception of lone parents which are seeking for more flexibility. Furthermore, Carnicer *et al.* (2003) analyze the results of a survey about labor mobility of a sample of 1,182 Spanish employees. Their study indicates that women have lower mobility than men, and that the mobility of men and women is explained by different factors such as employee's perceptions about job satisfaction, pay fairness, and employment stability. In a study of emotional impact of teleworking, Mann (2000) found that respondents of two service industries in the UK perceive teleworking advantages as follows: less travel (57%); more freedom/flexibility (57%); better working environment (50%); fewer distractions (43%); cheaper (29%); freedom to choose comfortable clothes (14%); freedom from office politics (7%); and easier to complete domestic chores (7%). On the other hand, Mann (2000) found the perceived disadvantages of teleworking include isolation (57%); longer hours (50%); lack of support (28%); less sick leave (21%); career progression (14%); and cost (7%). Similarly, Mannering and Mokhtarian (1995) explored the individual's choice of teleworking frequency as a function of demographic, travel, work, and attitudinal factors. They show that the most important variables in explaining the choice of frequency of teleworking from home were the presence of small children in the household, the number of people in the household, gender of

respondent, number of vehicles in the household, whether respondent recently changed departure time for personal reasons, degree of control over scheduling of different job tasks, supervisory status of respondent, the ability to borrow a computer from work if necessary, and a family orientation. In addition, Yap and Tng (1990) conducted a survey of the attitudes of female computer professionals in Singapore towards teleworking. The study reveals that 73% of the 459 respondents were in favor of teleworking. Most would prefer to work at home 1 to 3 days a week and at the office on the other days, rather than working at home full time. They would telework only in times of need (e.g. when they have young children) and were concerned with work and interaction-related problems which might arise from teleworking. Furthermore, Yap and Tng (1990) suggest that teleworking will be of particular interest to employees who are married, those with a high proportion of work that can be done at home, those who find their journey to work frustrating, and those with supervisors and coworkers who are supportive of teleworking.

### **3 RESEARCH OBJECTIVES**

The objective of this research is twofold:

1. To examine the influence of specific demographic and individual variables on the choice for teleworking mode.
2. To examine the differences in employees' perception of importance of the facilitators and inhibitors based on their choice of the teleworking mode.

### **4 RESEARCH RATIONALE**

The rationale behind the study was driven by the fact that most of the teleworking literature has generally taken their roots in the developed countries, most notably North America and Western Europe (Kowalski and Swanson (2005). This point indicates that there is a gap worth filling in the literature resulting from the lack of studies in developing contexts. Considering the uniqueness of the UAE economical, political and socio-cultural contexts, this study would contribute to filling that identified gap.

Though the benefits of teleworking are widely accepted within the literature, there is very scarce empirical research about how demographic and individual variables influence teleworking choice (full-time, part-time, not to telework) in non-western contexts. Examining such relationships between teleworking choice for both actual and prospective teleworker and various demographic and individual variables as well as facilitators and inhibitors in an Arab context, namely UAE will add to the body of knowledge in this regard.

Finally, the outcome of the present study will provide employees, managers and practitioners with important insights that help them make better decisions concerning teleworking programs aiming at improving organizational processes and fostering strategic goals.

### **5 DEVELOPMENT OF RESEARCH HYPOTHESES**

#### **5.1 The role of demographic and individual variables**

The extant literature has shown that there are numerous demographic and individual variables influence the choice of teleworking mode, including gender, age, marital status, profession, educational level, internet use, nationality, residence, number of children, and years of experience. The subsequent paragraphs review some of the relevant literature on this regards.

Peters *et al.* (2004) indicate that socio-demographic variables, such as gender and age, are found to influence teleworking adoption and its preference. Similarly, Thériault *et al.*, (2005) suggest that gender and professional status influence teleworking choice, and older workers are more likely to telework than younger ones. Moreover, Yeraguntla and Bhat (2005) show that women households with children are likely to be part-time teleworkers, reinforcing the notion that women are the primary caregivers of children. All in all, they consider age as one of the important individual socio-demographic variable that turned out to be significant predictor of teleworking. The age effect indicates that young adults (less than 25 years) are more likely to prefer part-time employment than older adults. These results are also consistent with the findings of Bagley and Mokhtarian (1997). Moreover, they reveal that race, job type, and length of service are also important influential factors for the choice of teleworking mode. Caucasians and Hispanics, For instance, are more likely to telework than other races (African-Americans, Asians and other). As for job type, their study indicates that employees working

for an educational institution are more likely to be part-time teleworkers than employees in other kinds of organizations. For the length of service, Yeraguntla and Bhat's (2005) study reveals that employees who have worked less than a year in the firm are more likely to be part-time teleworkers than those who have been working for longer periods of time.

A survey conducted by Mokhtarian and Salomon (1996) for the employees of the city of San Diego about teleworking, revealed that only 3% of the sample report that they face no constraints to telework but do not have a preference for it and do not currently do it. Based on such a survey they conclude that people who have longer commutes are more likely to report that they want to telework, especially if they are women and younger people. Having children, however, seems to have no effect on the desire to telework.

In the same vein, Mannering and Mokhtarian (1995) use survey data collected from employees of three government agencies in California to model the frequency of teleworking. The results show that being a mother of small children had a positive influence on teleworking, as did the number of vehicles per capita in the household.

Similarly, Wells *et al.* (2001) conduct surveys of employees at a public agency and a private firm in Minnesota. They find that 43% of the surveyed employees engaged in teleworking. Furthermore, they report that Public agency workers teleworked, on an average, three days a week, while private firm workers teleworked, on an average, 1.92 days a week. The authors find that teleworkers are more likely to be women, married, and have children.

It is worth noting that, Popuri and Bhat (2003) use data from a national survey of 14,441 households conducted by the New York Metropolitan Transportation Council to show factors that increase the likelihood that an individual telework. Such factors include women with children, college education, a driver's license, being married, working part-time, household income, working for a private company (rather than government), and having to pay parking fees at work. Also, it has been found that the longer an individual has worked at her current place of employment, the greater the probability she teleworks.

In their analysis of the telework Survey conducted by the Southern California Association of Governments (SCAG), Safirova and Walls (2004) confirm that having high educational level, more professional experience in general, and a longer tenure with one's current company and one's current supervisor will boost the probability of teleworking. Such a study has also revealed a very surprising finding that teleworkers are more likely to be male and have smaller households than non-teleworkers, which is inconsistent with other studies' findings that have shown women, and especially women with children, to be likely teleworkers.

In the view of the aforementioned discussion, the following hypothesis seems to be relevant for studying the teleworking in the UAE.

*Hypothesis 1: There is no difference among employees in their choice for teleworking based on their:*

*H1a: Gender*

*H1b: Marital status*

*H1c: Educational level*

*H1d: Internet use*

*H1e: Nationality*

*H1f: Residence*

*H1g: No of children*

*H1h: Age*

*H1i: Years of experience*

*H1j: Profession*

## **5.2 Facilitators of Teleworking**

Teleworking was originally seen as part of a solution to an energy crisis involving the reduction of commuting (Gray *et al.*, 1993). In this regard, Kurland and Cooper (2002) show that employees choose teleworking to reduce lengthy commutes, to decrease work-related stress, to balance work and family responsibilities, to work longer hours but in more comfortable environments, and to provide uninterrupted time to focus on their work. Organization-wise, teleworking improve employee morale and productivity (Kurland and Bailey, 1999). Interestingly, Gray *et al.* (1993) find that teleworkers are more productive than office-bound staffs that have to travel to work and tend to suffer a higher level of stress. In addition, Productivity will increase through teleworking if employees are well motivated and satisfied when they are able to manage their own time and assume greater responsibility for their own

work. And also because teleworking contributes to the reduction of costs of absenteeism, stress related to traffic congestions, train delays and continuous office interruptions (Lim et al., 2003).

Lupton and Haynes (2000) identify four significant driving forces for teleworking: (1) a change in management attitudes; (2) savings in office costs; (3) demand from staff; and (4) improvements in technology. Other facilitators include improved productivity, improved staff retention, improved morale/motivation, and improved staff recruitment opportunities. These forces are confirmed by Mann (2000) who also points to less travel, more freedom/flexibility, better working environment, fewer distractions, freedom to choose comfortable clothes, freedom from office politics, and easiness to complete domestic chores.

Another classification of teleworking facilitators can be found in the literature is adopted by Mills *et al* (2001) and Tung and Turban (1996) who distinguish among three categories of facilitators include organizational, individual, and societal facilitators.

According to Mills *et al* (2001) and Tung and Turban (1996) organizational facilitators for teleworking adoption may include securing skilled employees, saving office space, reducing turnover and absenteeism, computer literacy and usage, productivity gains, overcoming limitations of distance and time, providing service from home terminals, and reducing operating cost. Individual facilitators for teleworking, on the other hand, include initiating personal freedom, autonomy, and flexibility (Feldman and Gaine (1997), support no conflicting working environment (Pulido and Lopez, 2005), increasing personal productivity, avoiding a commute, working with fewer interruptions, working in more pleasant surroundings, wearing informal casual clothes, saving the costs of meals, clothes, and commuting, greater time flexibility, greater job satisfaction, and bridging the career gap by avoiding a long career break staying at home (Mills *et al.*, 2001; Tung and Turban, 1996). Community or societal related teleworking facilitators may include reduction of air pollution and dependence on fuel, enable disabled people to work from home, conserve energy and reduce traffic during rush hours and demand on transportation, and solving the problem of rural depopulation (Mills *et al.*, 2001; Tung and Turban, 1996).

Although all these facilitators can support the trend of teleworking implementation, there is still a literature gap about the role of teleworking choice (full-time, part-time, not to telework) in influencing perceived importance of teleworking facilitators. In conjunction with this line of reasoning, the following hypothesis is developed:

*Hypothesis 2: There is no difference among employees in the perceived importance of teleworking facilitators based on their choice for teleworking.*

### **5.3 Inhibitors of teleworking**

Despite the potential facilitators, teleworking raises two important inhibitors: supervisors' resistance to manage employees that they cannot physically observe (managerial control), and employees' concerns about professional and social isolation (Kurland and Cooper, 2002). Studies, which have addressed these issues, are largely surveys (e.g., Mokhtarian *et al.*, 1995). One exceptional is made to the study conducted by Baruch and Nicholson (1997). They gathered interview data from 62 teleworkers representing five different companies. However, they only noted that isolation and managerial reluctance were factors that could hinder teleworking. In line with this, Reid (1993) cites loss of status and professional isolation as potential dangers for workers moving into teleworking. The likely outcome of isolation is the lack of interaction with colleagues, which stands as a serious inhibitor.

As far as management control is concerned, Kurland and Cooper (2002) has demonstrated that managers may lose control over employees' behavior as employees gain autonomy by teleworking. Teleworking can diminish a manager's perceived control as it physically removes the employee from the conventional work environment. At the same time the employees believe that the isolation may result in lack of promotional opportunities.

Other inhibitors may include cost of implementation and resistance of management to change, longer hours, lack of support, less sick leave, career progression (Lupton and Haynes, 2000; Mann, 2000).

Another classification of teleworking inhibitors is adopted by Mills *et al* (2001) and Tung and Turban (1996) who distinguish among three categories of inhibitors include organizational, individual, and societal inhibitors. According to Mills *et al* (2001) and Tung and Turban (1996) organizational inhibitors of teleworking adoption may include technology cost inefficiencies, managing out-of-sight employees, need for collaboration with other employees, security risks, problems of supervision, performance control difficulty, work coordination difficulty, legal liability, maintenance of equipment. From the individual point of view, inhibitors may include isolation, doubts and lack of knowledge of

the state of a task, unavailability of necessary supplies or equipment, family interruptions and household distractions, no separation of work and home life, lack of interactions with co-workers, and potential lack of loyalty to company, not having a regular routine, workaholics, impedes career opportunities, and missing “what’s going on”, problem of 'guilt', and increase in cost of equipment and utilities at home (Mills *et al.*, 2001; Tung and Turban, 1996; Pulido and Lopez, 2005). From the community perspective, teleworking may be inhibited as a result of promoting dispersion of housing, increasing commuting distances, slowing down of real estate market, and declining clothing industry (Mills *et al.*, 2001; Tung and Turban, 1996).

Although all these inhibitors can hinder teleworking implementation, there is a notoriously unfilled literature gap about the role of teleworking choice (full-time, part-time, not to telework) in influencing perceived importance of teleworking inhibitors. Based on the above discussion, the following hypothesis is suggested:

*Hypothesis 3: There is no difference among employees in the perceived importance of teleworking inhibitors based on their choice for teleworking.*

## **6 RESEARCH METHODOLOGY**

This research follows the underlying principles of quantitative research methodology. It entails the collection of numerical data as exhibiting a few of the relationships between theory and research as deductive, and as having an objectivist conception of social reality (Bryman, 2008). A survey research method was applied to obtain insight about the issues explored in the study. Primary research data are collected through structured questionnaire on a voluntary basis. To ensure the right level of teleworking awareness, several studies recommend sampling employees from organizations involved in information technology profession, when studying teleworking (Teo and Lim, 1998; Tung and Turban 1996). The researchers, therefore, consider an employee in an organization within information technology sphere as the unit of analysis in this research. Organizations in Dubai Media City (DMC) and Dubai Internet City (DIC) are selected as target. Both cities include more than 500 organizations in the field of networking, software development, programming, consultancy, broadcasting, publishing, advertising, public relations, research and development, music and creative services. A total of 350 questionnaires are distributed; of these, 148 were returned. 12 questionnaires are ignored due to ignoring complete section(s) or missing data in certain sections, leaving a balance of 136 useful questionnaires for this study, with a valid response rate of 39%. Respondents represent eleven ICT and media organizations specialized in media organization and dissemination, software development, wireless technology, communication tools and equipment, media production, and consultancy services. All organizations are small to medium in size varying from 20 to 300 employees. Questionnaire data were aggregated, and no analysis was conducted linking individual responses to a specific organization.

### **6.1 Measurement development, reliability, and validity**

The survey instrument included several statements designed to measure the research constructs. First, choice for teleworking is presented in a nominal scale with three options: (1) not to telework; (2) part-time teleworking; and (3) full-time teleworking. Second, the perceived importance of each of teleworking facilitators and inhibitors is measured based on a four-point Likert scale from “strongly disagree” to “strongly agree”. The survey also gathers demographic information on the respondents’ gender, marital status, educational level, internet use, nationality, residence location, number of children, age, years of experience, and work profession. A nominal scale is developed for each of these constructs.

Content validity is assessed by examining the process that is used in generating scale items, and its translation into other languages (i.e., Arabic in this study). The determination of content validity is judgmental and can be approached through careful definition of the topic of the concern, the scaled items, and used scales (Cooper and Schindler, 2003). Teleworking facilitators and inhibitors are developed based on extensive review of teleworking literature, and then reduced using a varimax rotated principal component factor analysis. Furthermore, Cooper and Schindler (2003) suggest another way to determine content validity through panel of persons to judge how well the instrument meets the standards. Thus, the researchers conducted independent interviews with two professors of human resources and one professor of information technology applications to evaluate whether research covers relevant constructs. They suggested that the procedure and Arabic translation of the questionnaire were generally appropriate, with some modifications in the translated version of the questionnaire.

## 6.2 Data Presentation and Analysis

Responses from the surveys were coded and entered into SPSS spreadsheets for data analysis. For a descriptive analysis, means, SD, cross tabulation, factor analysis, and Kruskal-Wallis test were applied to the sample.

## 6.3 Profile of research demographics

The survey's demographic descriptive statistics are presented in Table 1. Of the 136 respondents, 54.4% select part-time teleworking option, 33.1% decide not to telework, and 12.5% choose full-time teleworking option. 50.7 % of the respondents are male and 49.3 % are female. 67.6% are single and 32.4% are married. 31.7% of married respondents have one child, 26.8% have two children, 22.0% have three children, and 19.5% have four or more children. The research respondents are relatively young; the majority of survey respondents age is between 20 and 29 years (44.9 %), while 25.7% are between 30 – 39 years, 18.4% are less than 20, and only 11% are above 40 years old. The education level reported by respondents showed that 75.7% had university degree or equivalent. Respondents were mainly non-UAE national (66.2%), national Respondents are only represent 33.8%. 40.4% of research respondents live in the emirate of Sharjah 40.4%, Ajman 25.7%, Dubai 22.1%, Abu Dhabi 6.6%, and UmQuin 5.1%. The description shows that 39% of the respondents are internet users for 1-3 times a week, 34.6% use the internet 7 or more times a week, 19.8% use the internet 4-6 times a week, and 6.6% are not using the Internet. According to years of experience, most of the respondents (72.8%) had less than 7 years, and approximately 27.2% had more than 7 years of experience. Respondents in ICT professions are 18.4%, while 27.2% of respondents are in media professions, 27.2% are in management and marketing professions, and 27.2% are in accounting professions.

In conclusion, majority of respondents in this study prefer part-time teleworking, graduate male, single, between 20 – 29 years of age, care for one child if married, with non UAE nationality, live in Sharjah, use the internet 1-3 times a week, working in different ICT and media professions, with less than 7 years of experience.

**Table 1: Profile of research respondents (N=136)**

| %    | N  |                              | %    | N   |                            |
|------|----|------------------------------|------|-----|----------------------------|
|      |    | <b>Marital status</b>        |      |     | <b>Teleworking choice</b>  |
| 67.6 | 92 | Single                       | 12.5 | 17  | Full-time                  |
| 32.4 | 44 | Married                      | 54.4 | 74  | Part-time                  |
|      |    |                              | 33.1 | 45  | No choice                  |
|      |    | <b>Nationality</b>           |      |     | <b>Gender</b>              |
| 33.8 | 46 | UAE                          | 49.3 | 67  | Female                     |
| 66.2 | 90 | Non UAE                      | 50.7 | 69  | Male                       |
|      |    |                              |      |     |                            |
|      |    | <b>Freq. of internet use</b> |      |     | <b>Educational level</b>   |
| 34.6 | 47 | 7 or more times /week        | 7.4  | 10  | Postgraduate               |
| 19.8 | 27 | 4-6 times /week              | 75.7 | 103 | Graduate                   |
| 39.0 | 53 | 1-3 times /week              | 16.9 | 23  | Undergraduate              |
| 6.6  | 9  | No use /week                 |      |     |                            |
|      |    |                              |      |     | <b>Children</b>            |
|      |    | <b>Residence</b>             | 31.7 | 13  | 1                          |
| 6.6  | 9  | Abu Dhabi                    | 26.8 | 11  | 2                          |
| 22.1 | 30 | Dubai                        | 22.0 | 9   | 3                          |
| 40.4 | 55 | Sharjah                      | 19.5 | 8   | 4 or more                  |
| 25.7 | 35 | Ajman                        |      |     |                            |
| 5.1  | 7  | UMQ                          |      |     | <b>Years of experience</b> |
|      |    |                              | 36.8 | 50  | 0-3                        |
|      |    | <b>Age</b>                   | 36   | 49  | 4-6                        |
| 18.4 | 25 | Less than 20                 | 17.6 | 24  | 7-9                        |
| 44.9 | 61 | 20 – 29                      | 9.6  | 13  | 9 or more                  |
| 25.7 | 35 | 30 – 39                      |      |     |                            |
| 11   | 15 | 40 or more                   |      |     | <b>Profession</b>          |
|      |    |                              | 18.4 | 25  | IT                         |
|      |    |                              | 27.2 | 37  | Media                      |
|      |    |                              | 27.2 | 37  | Mgt. & Marketing           |
|      |    |                              | 27.2 | 37  | Account. & Finance         |



#### 6.4 Testing the first hypothesis

A cross tabulation analysis is conducted to assess whether there is no difference among employees in their choice for teleworking based on specific demographic variables. Tables 2 presents frequencies, percentages, and associations of teleworking choice (i.e., full-time, part-time, and not to telework) with a number of selected demographic and individual variables including gender, marital status, educational level, internet use, nationality, residence, number of children, years of experience, and occupation.

Table 2 indicates that there is a significant difference among employees in their teleworking choice based on their gender ( $\chi^2 = 12.06$ ,  $p < 0.01$ ). It is clear from the cross tabulation presented in Table 2 that females constitute the majority of employees who select full-time teleworking option (88.2%), while males are the majority who select part-time teleworking (58.1%) as well as not to telework (53.3%). It also shows the association between marital status and teleworking. In that sense, employees' marital status does significantly influence teleworking choice ( $\chi^2 = 6.69$ ,  $p < 0.05$ ). The table demonstrates that single employees are over represented among non teleworkers (80%). On the other side, married employees are over represented among full-time teleworkers (52.9%). Educational levels and their distribution cross teleworking choices are illustrated in also reflected in the Table. The analysis suggests no significant difference among employees in their teleworking choice based on their educational level ( $\chi^2 = 1.451$ , n.s.). The analysis shows that graduate employees with a university degree or equivalent are over represented in each of teleworking groups; full-time (76.5%), part-time (75.7%), and no teleworking group (75.6%). Similarly, the table suggests no significant difference among employees in their teleworking choice based on their level of Internet use ( $\chi^2 = 11.19$ , n.s.). Employees who use the internet 1-3 times weekly form the majority of two contradictory teleworking groups; full-time teleworking (70.6%) and no teleworking (42.2%). While the majority of employees who prefer part-time teleworking are using the Internet for 7 or more times per week (39.2%). Further, the table indicates that there is a significant difference among employees in their teleworking choice based on their nationality ( $\chi^2 = 6.33$ ,  $p < 0.05$ ). It is clear from the cross tabulation presented in Table 2 that employees with UAE nationality are over represented among full-time teleworkers (58.8%), while employees with non UAE nationality (e.g., Egyptians, Indians, etc.) are over represented among part-time teleworkers (73.0%) as well as non teleworkers (64.4%). Surprisingly, difference among employees in their teleworking choice based on their city of residence is significant ( $\chi^2 = 33.99$ ,  $p > 0.001$ ). Moreover, the table illustrates that part-time teleworking is the main choice of employees living in emirates of Dubai, Sharjah, and Ajman, while the main teleworking choice of employees living in UmQuin emirate is full time. However, employees who are living in Abu Dhabi tend to prefer not to telework. Distribution of number of children cross teleworking choices is also illustrated in the table suggesting that there is no significant difference among employees in their teleworking choice based on their number of children ( $\chi^2 = 5.65$ , n.s.). Employees who select full-time teleworking are equally distributed among those who have two (28.6%), three (28.6%), and four or more (28.6%) children, while part-time teleworking choice is dominated by employees who have one child only (38.5%). Similarly, the table suggests no significant difference among employees in their teleworking choice based on their age ( $\chi^2 = 3.78$ , n.s.). Employees between 20-29 years dominate the majority in every teleworking group; full-time teleworking (47.1%), part-time teleworking (43.2%), and not to telework (46.7%). Moreover, the relationship between employees' teleworking choice and their years of experience is not significant ( $\chi^2 = 11.11$ , n.s.) as demonstrated by the table which indicates that employees who have 4-6 years of experience represent the majority of employees who choose two contradictory options; to telework full-time (56.8%) and not to telework (44.4%), while part-time teleworking choice is dominated by employees who have less than four years of working experience (45.9%). Finally the table illustrates the relationship between teleworking choice and profession. It shows that employees' profession does significantly influence teleworking choice ( $\chi^2 = 21.95$ ,  $p < 0.01$ ). The table demonstrates that 46.7% of employees who prefer not to telework are in accounting and finance profession, 28.4% of employees who prefer part-time teleworking are in management and marketing profession, while employees in media profession are over represented among full-time teleworkers (52.9%).

**Table 2: Cross tabulation results**

|                     | Teleworking Choice |                |                | Total           | $\chi^2$ | P value |
|---------------------|--------------------|----------------|----------------|-----------------|----------|---------|
|                     | Full-time          | Part-time      | No             |                 |          |         |
| Gender              |                    |                |                |                 | 12.06**  | 0.002   |
| Male                | 2 (11.8)           | 43 (58.1)      | 24 (53.3)      | 69 (50.7)       |          |         |
| Female              | 15 (88.2)          | 31 (41.9)      | 21 (46.7)      | 67 (49.3)       |          |         |
| Marital status      |                    |                |                |                 | 6.69*    | 0.03    |
| Single              | 8 (47.1)           | 48 (64.9)      | 36 (80)        | 92 (67.6)       |          |         |
| Married             | 9 (52.9)           | 26 (35.1)      | 9 (20)         | 44 (32.4)       |          |         |
| Educational level   |                    |                |                |                 | 1.45     | 0.83    |
| Undergrad.          | 3 (17.6)           | 11 (14.9)      | 9 (20)         | 23 (16.9)       |          |         |
| Graduate            | 13 (76.5)          | 56 (75.7)      | 34 (75.6)      | 103 (75.7)      |          |         |
| Postgrad.           | 1 (5.9)            | 7 (9.5)        | 2 (4.4)        | 10 (7.4)        |          |         |
| Internet Use        |                    |                |                |                 | 11.19    | 0.08    |
| No use              | 0 (0)              | 5 (6.8)        | 4 (8.9)        | 9 (6.6)         |          |         |
| 1-3 times           | 12 (70.6)          | 22 (29.7)      | 19 (42.2)      | 53 (39)         |          |         |
| 4-6 times           | 2 (11.8)           | 18 (24.3)      | 7 (15.6)       | 27 (19.9)       |          |         |
| 7 or more           | 3 (17.6)           | 29 (39.2)      | 15 (33.3)      | 47 (34.6)       |          |         |
| Nationality         |                    |                |                |                 | 6.33*    | 0.04    |
| UAE                 | 10 (58.8)          | 20 (27)        | 16 (35.6)      | 46 (33.8)       |          |         |
| Non UAE             | 7 (41.2)           | 54 (73)        | 29 (64.4)      | 90 (66.2)       |          |         |
| Residence location  |                    |                |                |                 | 33.99**  | 0.00    |
| Abu Dhabi           | 0 (0)              | 2 (2.7)        | 7 (15.6)       | 9 (6.6)         |          |         |
| Dubai               | 2 (11.8)           | 16 (21.6)      | 12 (26.7)      | 30 (22.1)       |          |         |
| Sharjah             | 5 (29.4)           | 34 (45.9)      | 16 (35.6)      | 55 (40.4)       |          |         |
| Ajman               | 5 (29.4)           | 21 (28.4)      | 9 (20)         | 35 (25.7)       |          |         |
| UMQ                 | 5 (29.4)           | 1 (1.4)        | 1 (2.2)        | 7 (5.1)         |          |         |
| No. of Children     |                    |                |                |                 | 4.65     | 0.58    |
| One                 | 1 (14.2)           | 10 (38.5)      | 2 (25)         | 13 (31.7)       |          |         |
| Two                 | 2 (28.6)           | 8 (30.8)       | 1 (12.5)       | 11 (26.8)       |          |         |
| Three               | 2 (28.6)           | 5 (19.2)       | 2 (25)         | 9 (22)          |          |         |
| Four or more        | 2 (28.6)           | 3 (11.15)      | 3 (37.5)       | 8 (19.5)        |          |         |
| Age                 |                    |                |                |                 | 3.78     | 0.706   |
| > 20                | 1 (5.9)            | 15 (20.3)      | 9 (20)         | 25 (18.4)       |          |         |
| 20 - 29             | 8 (47.1)           | 32 (43.2)      | 21 (46.7)      | 61 (44.9)       |          |         |
| 30 - 39             | 6 (35.3)           | 17 (23)        | 12 (26.7)      | 35 (25.7)       |          |         |
| 40 ≤                | 2 (11.8)           | 10 (13.5)      | 3 (6.7)        | 15 (11)         |          |         |
| Years of experience |                    |                |                |                 | 11.11    | 0.085   |
| 0-3                 | 2 (11.8)           | 34 (45.9)      | 14 (31.1)      | 50 (36.8)       |          |         |
| 4-6                 | 10 (56.8)          | 19 (25.7)      | 20 (44.4)      | 49 (36)         |          |         |
| 7-9                 | 3 (17.6)           | 13 (17.6)      | 8 (17.8)       | 24 (17.6)       |          |         |
| 9 or more           | 2 (11.8)           | 8 (10.8)       | 3 (6.7)        | 13 (9.6)        |          |         |
| Profession          |                    |                |                |                 | 21.95**  | 0.001   |
| IT                  | 4 (23.5)           | 18 (24.3)      | 3 (6.7)        | 25 (18.4)       |          |         |
| Media               | 9 (52.9)           | 19 (25.7)      | 9 (20)         | 37 (27.2)       |          |         |
| Mgt. & Market.      | 4 (23.5)           | 21 (28.4)      | 12 (26.7)      | 37 (27.2)       |          |         |
| Account. & Finance  | 0 (0)              | 16 (21.6)      | 21 (46.7)      | 37 (27.2)       |          |         |
| Total               | 17<br>(100.0%)     | 74<br>(100.0%) | 45<br>(100.0%) | 136<br>(100.0%) |          |         |

In conclusion, results from ensuing presentation show significant association between teleworking choice and gender, marital status, nationality, residence, and profession. On the other hand, there is no significant association between teleworking choice and educational level, Internet use, number of children, age, and years of experience. Accordingly, hypothesis H1 is partially supported.

### 6.5 Testing the Second and Third hypotheses

The data collected concerning employees' perception of teleworking facilitators and inhibitors are reduced using a varimax rotated principal component factor analysis. Tables 3 and 4 display the various facilitators and inhibitors used in this study and show the factor loadings for each of the items. The loadings indicate a significant relationship between items in each of the factors since all but three are greater than .50, the critical value for significant loadings (Hair *et al.*, 1992).

**Table 3: Factors analysis of teleworking facilitators \***

| 7   | 6      | 5      | 4      | 3      | 2      | 1     |   |            |
|---|--------|--------|--------|--------|--------|-------|---|------------|
| <b>Community concerns (<math>\alpha = 0.85</math>)</b>                          |        |        |        |        |        |       |   |            |
| 0.093   | -0.046 | 0.202  | 0.046  | 0.122  | 0.097  | 0.753 | Environmental pollution                       | <b>F20</b> |
| -0.125  | 0.235  | 0.087  | -0.055 | 0.193  | 0.257  | 0.749 | Working opport. for disabled                  | <b>F21</b> |
| 0.005   | 0.169  | 0.094  | 0.220  | 0.008  | 0.174  | 0.724 | Traffic Jams                                  | <b>F22</b> |
| 0.038   | 0.088  | 0.232  | 0.305  | 0.141  | 0.238  | 0.676 | Increasing oil prices                         | <b>F19</b> |
| 0.169   | 0.067  | -0.059 | 0.379  | -0.020 | -0.072 | 0.647 | Severe weather conditions                     | <b>F24</b> |
| 0.281   | -0.082 | 0.069  | 0.103  | 0.320  | 0.072  | 0.629 | Family care                                   | <b>F23</b> |
| <b>Individual freedom (<math>\alpha = 0.78</math>)</b>                          |        |        |        |        |        |       |   |            |
| -0.076  | -0.066 | 0.125  | 0.089  | 0.143  | 0.782  | 0.122 | Flexible working time and location            | <b>F11</b> |
| 0.246   | 0.214  | 0.109  | 0.075  | 0.190  | 0.749  | 0.120 | Personal freedom                              | <b>F9</b>  |
| 0.255   | -0.041 | 0.064  | 0.036  | 0.146  | 0.745  | 0.178 | Avoid work stress                             | <b>F10</b> |
| 0.178   | 0.108  | -0.039 | 0.368  | 0.267  | 0.427  | 0.152 | No absenteeism                                | <b>F14</b> |
| <b>Productivity improvement (<math>\alpha = 0.78</math>)</b>                    |        |        |        |        |        |       |   |            |
| -0.107  | 0.167  | 0.073  | 0.046  | 0.785  | 0.158  | 0.130 | Developing ICT usage                          | <b>F17</b> |
| 0.109   | -0.165 | 0.221  | 0.077  | 0.727  | 0.007  | 0.056 | Better utilization of working time            | <b>F8</b>  |
| -0.018  | 0.093  | 0.174  | -0.024 | 0.603  | 0.439  | 0.203 | Improving output quality and quantity         | <b>F13</b> |
| -0.170  | 0.284  | -0.034 | -0.081 | 0.593  | 0.419  | 0.152 | Increasing employees loyalty                  | <b>F16</b> |
| 0.417   | 0.180  | 0.176  | 0.015  | 0.481  | 0.237  | 0.101 | Paperless work                                | <b>F18</b> |
| <b>Travel load (<math>\alpha = 0.71</math>)</b>                                 |        |        |        |        |        |       |   |            |
| 0.076   | 0.180  | -0.047 | 0.797  | -0.035 | -0.126 | 0.146 | Travel preparation                            | <b>F6</b>  |
| 0.036   | -0.178 | 0.132  | 0.724  | 0.153  | 0.247  | 0.219 | Travel time                                   | <b>F5</b>  |
| -0.087  | 0.049  | 0.368  | 0.624  | 0.007  | 0.298  | 0.298 | Travel effort and cost                        | <b>F3</b>  |
| <b>Cost reduction (<math>\alpha = 0.66</math>)</b>                              |        |        |        |        |        |       |   |            |
| -0.025  | 0.017  | 0.821  | 0.022  | 0.180  | 0.193  | 0.137 | Saving org. space and equipments              | <b>F2</b>  |
| 0.279   | -0.100 | 0.671  | 0.136  | 0.134  | -0.003 | 0.365 | Increasing cost of real states                | <b>F1</b>  |
| -0.158  | 0.469  | 0.518  | 0.460  | 0.017  | 0.102  | 0.121 | Increasing cost of clothes and accessories    | <b>F4</b>  |
| <b>Empowering people (<math>\alpha = 0.51</math>)</b>                           |        |        |        |        |        |       |   |            |
| 0.226   | 0.801  | 0.033  | 0.0091 | 0.103  | 0.096  | 0.102 | Minimizing supervisory functions              | <b>F15</b> |
| 0.012   | 0.471  | -0.282 | 0.313  | 0.355  | -0.158 | 0.217 | Task focus                                    | <b>F7</b>  |
| 0.831   | 0.158  | 0.023  | 0.042  | -0.076 | 0.209  | 0.161 | Doing other more things                       | <b>F12</b> |
| 1.382   | 1.529  | 1.893  | 2.346  | 2.743  | 2.826  | 3.512 | Eigenvalue                                    |            |
| 5.76  | 6.37   | 7.89   | 9.77   | 11.43  | 11.78  | 14.63 | Percentage of variance explained              |            |
| 67.63   | 61.87  | 55.50  | 47.61  | 37.84  | 26.41  | 14.63 | Cumulative percentage of total var. explained |            |
| 0.993   | 0.710  | 0.716  | 0.743  | 0.589  | 0.665  | 0.645 | Standard deviation                            |            |
| Correlation Matrix Determinant = 0.0000179                                      |        |        |        |        |        |       |   |            |
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.814                         |        |        |        |        |        |       |   |            |
| Bartlett's Test of Sphericity ( $\chi^2 = 1378.98$ , $df = 276$ , $p < 0.001$ ) |        |        |        |        |        |       |   |            |

\* Principal components analysis; varimax rotation with Kaiser Normalization

**Table 4: Factors analysis of teleworking inhibitors \***

| 7   | 6      | 5      | 4      | 3      | 2      | 1      |  |            |
|---|--------|--------|--------|--------|--------|--------|--|------------|
| <b>Management concerns (<math>\alpha = 0.77</math>)</b>                         |        |        |        |        |        |        |  |            |
| -0.132  | 0.164  | 0.055  | 0.013  | -0.201 | 0.161  | 0.727  | Org. vision and mission are misplaced                | <b>B15</b> |
| 0.102   | 0.060  | 0.199  | 0.029  | 0.224  | 0.028  | 0.714  | Safety criteria are not guaranteed                   | <b>B16</b> |
| 0.156   | 0.147  | 0.012  | 0.228  | 0.045  | 0.192  | 0.683  | Inapplicable work rules and regulations              | <b>B13</b> |
| 0.039   | 0.261  | 0.032  | 0.447  | 0.088  | 0.098  | 0.569  | Access difficulty to decision info.                  | <b>B17</b> |
| 0.265   | -0.029 | -0.056 | 0.154  | -0.054 | 0.392  | 0.559  | Hard to control and evaluate performance             | <b>B14</b> |
| <b>Isolation (<math>\alpha = 0.79</math>)</b>                                   |        |        |        |        |        |        |  |            |
| 0.169   | -0.015 | -0.020 | 0.124  | 0.111  | 0.766  | 0.089  | Misguidance regarding use of org. resources          | <b>B11</b> |
| 0.077   | 0.009  | 0.257  | 0.295  | 0.330  | 0.672  | 0.149  | Need to interact with work colleagues                | <b>B8</b>  |
| -0.167  | 0.433  | 0.063  | 0.199  | 0.014  | 0.596  | 0.265  | Lack of teleworking experience                       | <b>B10</b> |
| 0.205   | 0.135  | 0.120  | 0.062  | 0.187  | 0.528  | 0.385  | Feeling guilty toward the organization               | <b>B7</b>  |
| 0.048   | 0.293  | -0.037 | 0.480  | 0.124  | 0.509  | 0.194  | Missing promotional opportunities at work            | <b>B9</b>  |
| <b>Union resistance (<math>\alpha = 0.77</math>)</b>                            |        |        |        |        |        |        |  |            |
| -0.207  | -0.097 | 0.139  | -0.016 | 0.800  | 0.115  | -0.045 | Union resistance                                     | <b>B23</b> |
| 0.148   | 0.017  | 0.027  | 0.073  | 0.793  | 0.104  | 0.026  | Clothing and makeup industry loss                    | <b>B22</b> |
| -0.008  | 0.194  | 0.036  | 0.170  | 0.705  | 0.196  | -0.066 | Negative impact on real state sector                 | <b>B21</b> |
| -0.010  | 0.144  | -0.020 | 0.218  | 0.672  | -0.157 | 0.227  | Unclear insurance                                    | <b>B24</b> |
| <b>Home inadequacy (<math>\alpha = 0.71</math>)</b>                             |        |        |        |        |        |        |  |            |
| 0.017   | 0.112  | 0.192  | 0.664  | 0.266  | 0.053  | -0.068 | Increased home noise                                 | <b>B20</b> |
| 0.017   | -0.091 | 0.142  | 0.631  | 0.150  | 0.261  | 0.213  | Data insecurity                                      | <b>B19</b> |
| 0.236   | -0.148 | 0.106  | 0.568  | -0.021 | 0.336  | 0.438  | Coordination difficulty                              | <b>B12</b> |
| 0.276   | 0.318  | -0.150 | 0.531  | 0.020  | 0.239  | 0.317  | Inapplicable team working                            | <b>B18</b> |
| <b>ICT cost (<math>\alpha = 0.86</math>)</b>                                    |        |        |        |        |        |        |  |            |
| 0.134   | 0.073  | 0.900  | 0.017  | 0.017  | 0.117  | 0.130  | ICT acquisition cost                                 | <b>B1</b>  |
| 0.036   | 0.145  | 0.871  | 0.219  | 0.125  | 0.074  | 0.062  | ICT maintenance and upgrading cost                   | <b>B2</b>  |
| <b>Time mismanagement (<math>\alpha = 0.51</math>)</b>                          |        |        |        |        |        |        |  |            |
| 0.208   | .802   | 0.068  | -0.046 | 0.021  | 0.199  | 0.169  | Home time mismanaged                                 | <b>B6</b>  |
| 0.094   | .594   | 0.323  | 0.152  | 0.289  | -0.109 | 0.091  | Org. time expansion                                  | <b>B3</b>  |
| <b>Family intervention (<math>\alpha = 0.62</math>)</b>                         |        |        |        |        |        |        |  |            |
| 0.835   | 0.106  | 0.105  | 0.217  | -0.087 | 0.111  | 0.046  | Family rights  | <b>B4</b>  |
| 0.612   | 0.303  | 0.187  | -0.117 | 0.095  | 0.266  | 0.350  | Family – work intervention                           | <b>B5</b>  |
| 1.570   | 1.747  | 1.969  | 2.307  | 2.595  | 2.639  | 3.010  | <i>Eigenvalue</i>                                    |            |
| 6.54  | 7.28   | 8.20   | 9.61   | 10.81  | 10.99  | 12.54  | <i>Percentage of variance explained</i>              |            |
| 65.97   | 59.43  | 52.15  | 43.95  | 34.34  | 23.53  | 12.54  | <i>Cumulative percentage of total var. explained</i> |            |
| 0.710   | 0.694  | 0.745  | 0.661  | 0.688  | 0.611  | 0.579  | <i>Standard deviation</i>                            |            |
| Correlation Matrix Determinant = 0.00002334                                     |        |        |        |        |        |        |  |            |
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy = 0.794                         |        |        |        |        |        |        |  |            |
| Bartlett's Test of Sphericity ( $\chi^2 = 1345.59$ , $df = 276$ , $p < 0.001$ ) |        |        |        |        |        |        |  |            |

\* Principal components analysis; varimax rotation with Kaiser Normalization

Cumulative percentage of total variance explained for factor analysis of perceived teleworking facilitators is 67.63% with Kaiser-Meyer-Olkin measure of sampling adequacy = 0.814, while cumulative percentage of total variance explained for factor analysis of perceived teleworking inhibitors is 65.97% with Kaiser-Meyer-Olkin measure of sampling adequacy = 0.794. The Cronbach alpha coefficient is used to assess reliability of the generated facilitators and inhibitors. As shown in Tables 3 and 4, the alpha reliabilities range from a low of 0.51 to a high of 0.86. All the reliability figures, except two variables, were higher than 0.6, the lowest acceptable limit for Cronbach's alpha suggested by Hair *et al.* (1992), variables with reliabilities lower than 0.6 deserve a further refinement in future research.

### 6.6 Study-based generated facilitators

The ensuing factor analysis generates six distinct perceived facilitators for teleworking, including community concerns, individual freedom, productivity improvement, travel load, cost reduction, and empowering people (see Table 3).

(1) Community concerns: this factor includes a number of community concerns such as reducing environmental pollution; provision of working opportunities for disabled; reducing traffic jams; continuous increasing of oil prices; severe weather conditions all over the year; and family care issues. No doubt, these concerns make adoption and implementation of teleworking programs in UAE is an appealing option, particularly in case when distance from home to the workplace is far or when traffic congestion is a problem.

(2) Individual freedom: Items in this factor reflect the notion that teleworking is forced by the need to reduce stress level and increase job commitment and quality of work life. One likely reason is that the flexibility in working schedule of teleworkers offers opportunities for them to engage in non-work activities to a much larger extent than otherwise possible. Such scheduling freedom may allow time for personal interests.

(3) Productivity improvement: Items in this factor suggest that improving productivity is perceived as a driving force for teleworking adoption since individuals can avoid interruptions at the office and get work done in an effective and efficient manner. In addition, teleworking also allows the individual's autonomy by enabling individuals to work during hours where they are most productive (Teo and Lim, 1998).

(4) Travel load: Items in this factor suggest that the adoption of teleworking will reduce travel burden, including travel preparation time and effort, time of travel, effort consumed in the travel, and cost of travel preparation and expenses.

(5) Cost reduction: Items in this factor reflect the notion that teleworking is a cheap work mode, since it contributes to saving office space and equipments, cost of real states, and cost of clothing and accessories (Mills *et al.*, 2001; Tung and Turban, 1996).

(6) Empowering people: Items in this factor show that teleworking is perceived as a method to empower employees through minimizing supervisory functions and giving the employee opportunity to focus on task at hand.

### 6.7 Study-based generated inhibitors

The ensuing factor analysis generates seven distinct perceived inhibitors for teleworking, including management concerns, isolation, union resistance, home inadequacy, ICT cost, time mismanagement, and family intervention (see Table 4).

(1) Management concerns: Items in this factor propose that managers may find placing organizational vision and mission, control, supervision, and designing an equitable compensation scheme for teleworker and appraising their performance are difficult (Teo and Lim, 1998).

(2) Isolation: Items in this factor illustrate the concept of professional and physical isolation which is reflected in misguidance regarding use of organizational resources, need to interact with work colleagues, lack of teleworking experience, feeling guilty toward the organization, and missing promotional opportunities at work. This isolation is found to be one of the key inhibitors of teleworking implementation (Kurland and Cooper, 2002; Rognes, 2002).

(3) Union resistance: This factor reflects the power of union resistance supported by clothing and makeup industry loss, negative impact on real state sector, and unclear insurance. This inhibitor may hinder the implementation of teleworking.

(4) Home inadequacy: Items of this factor shows that home is inadequate place to telework, when teleworkers face increasing home noise, data insecurity at home, work coordination difficulty, and missing the chance of team working.

(5) ICT cost: Items in this factor suggest that accountability for repairs / maintenance of equipment placed at employees' homes may be a problem. Furthermore, the initial investment in equipment to enable employees to telework may be substantial.

(6) Time mismanagement: Items in this factor suggest teleworking time is mismanaged and expanded since it intervenes with organization's working time and follows flexible working mode.

(7) Family intervention: This factor proposes that teleworking may be hindered by the introduction of family rights and family – work intervention process.

Kruskal-Wallis nonparametric test is applied to assess the relationship between employees' perceived teleworking facilitators and inhibitors as ordinal variables and teleworking mode choices as a nominal variable. Results are illustrated in Tables 5 and 6. Table 5 shows Kruskal-Wallis test result of

the relationship between perceived teleworking facilitators and teleworking choice. With regard to teleworking facilitators, the analysis demonstrates that there is significant difference among employees in their perceived importance of individual freedom ( $\chi^2 = 17.11$ ,  $p < 0.01$ ), travel load ( $\chi^2 = 6.76$ ,  $p < 0.05$ ), and cost reduction ( $\chi^2 = 10.67$ ,  $p < 0.01$ ) based on their teleworking choice.

On the other hand, there is no significant difference among employees in their perceived importance of community concerns ( $\chi^2 = 5.62$ , n.s.), productivity improvement ( $\chi^2 = 4.98$ , n.s.), and empowering people ( $\chi^2 = 4.13$ , n.s.) based on their teleworking choice. Consequently, hypothesis H2 is partially supported for teleworking facilitators related to individual freedom, travel load, and cost reduction.

Kruskal-Wallis test result of the relationship between perceived teleworking inhibitors and teleworking choice is presented in Table 6. The analysis shows that there is significant difference among employees in their perceived importance of teleworking inhibitors related to union resistance ( $\chi^2 = 6.65$ ,  $p < 0.01$ ). However, there is no significant difference among employees in their perceived importance of teleworking inhibitors related to all other categories. Accordingly, hypothesis H2 is only supported for teleworking inhibitors related to union resistance.

**Table 5: Kruskal-Wallis test result of the relationship between perceived teleworking facilitators and teleworking choice**

| $\chi^2$       | Perceived teleworking facilitators         |            |
|----------------|--|------------|
| <b>5.62</b>    | <b>Community concerns</b>                  |            |
| 5.54           | Environmental pollution                    | <b>F20</b> |
| 0.52           | Working opportunity for disabled           | <b>F21</b> |
| 13.28**        | Traffic Jams                               | <b>F22</b> |
| 9.87**         | Increasing oil prices                      | <b>F19</b> |
| 3.45           | Severe weather conditions                  | <b>F24</b> |
| 0.63           | Family care                                | <b>F23</b> |
| <b>17.11**</b> | <b>Individual freedom</b>                  |            |
| 10.77**        | Flexible working time and location         | <b>F11</b> |
| 9.63**         | Personal freedom                           | <b>F9</b>  |
| 13.17**        | Avoid work stress                          | <b>F10</b> |
| 6.34*          | No absenteeism                             | <b>F14</b> |
| <b>4.98</b>    | <b>Productivity improvement</b>            |            |
| 1.41           | Developing ICT usage                       | <b>F17</b> |
| 0.87           | Better utilization of working time         | <b>F8</b>  |
| 10.15**        | Improving output quality and quantity      | <b>F13</b> |
| 0.81           | Increasing employees loyalty               | <b>F16</b> |
| 9.36**         | Paperless work                             | <b>F18</b> |
| <b>6.76*</b>   | <b>Travel load</b>                         |            |
| 2.54           | Travel preparation                         | <b>F6</b>  |
| 10.33**        | Travel time                                | <b>F5</b>  |
| 5.88           | Travel effort and cost                     | <b>F3</b>  |
| <b>10.67**</b> | <b>Cost reduction</b>                      |            |
| 15.65**        | Saving org. space and equipments           | <b>F2</b>  |
| 2.85           | Increasing cost of real states             | <b>F1</b>  |
| 3.21           | Increasing cost of clothes and accessories | <b>F4</b>  |
| <b>4.13</b>    | <b>Empowering people</b>                   |            |
| 5.26           | Minimizing supervisory functions           | <b>F15</b> |
| 0.34           | Task focus                                 | <b>F7</b>  |

\*  $p < 0.05$ , \*\*  $p < 0.01$

**Table 6: Kruskal-Wallis test result of the relationship between perceived teleworking facilitators and teleworking choice**

| $\chi^2$     | Perceived teleworking inhibitors            |            |
|--------------|---|------------|
| <b>0.84</b>  | <b>Management concerns</b>                  |            |
| 1.40         | Org. vision and mission are misplaced       | <b>B15</b> |
| 0.67         | Safety criteria are not guaranteed          | <b>B16</b> |
| 2.13         | Inapplicable work rules and regulations     | <b>B13</b> |
| 1.25         | Access difficulty to decision info.         | <b>B17</b> |
| 2.55         | Hard to control and evaluate performance    | <b>B14</b> |
| <b>2.93</b>  | <b>Isolation</b>                            |            |
| 3.91         | Misguidance regarding use of org. resources | <b>B11</b> |
| 1.76         | Need to interact with work colleagues       | <b>B8</b>  |
| 4.28         | Lack of teleworking experience              | <b>B10</b> |
| 1.27         | Feeling guilty toward the organization      | <b>B7</b>  |
| 0.31         | Missing promotional opportunities at work   | <b>B9</b>  |
| <b>6.65*</b> | <b>Union resistance</b>                     |            |
| 6.78*        | Union resistance                            | <b>B23</b> |
| 1.78         | Clothing and makeup industry loss           | <b>B22</b> |
| 0.99         | Negative impact on real state sector        | <b>B21</b> |
| 9.38**       | Unclear insurance                           | <b>B24</b> |
| <b>0.40</b>  | <b>Home inadequacy</b>                      |            |
| 2.82         | Increased home noise                        | <b>B20</b> |
| 1.80         | Data insecurity                             | <b>B19</b> |
| 1.73         | Coordination difficulty                     | <b>B12</b> |
| 3.79         | Inapplicable team working                   | <b>B18</b> |
| <b>0.74</b>  | <b>ICT cost</b>                             |            |
| 2.57         | ICT acquisition cost                        | <b>B1</b>  |
| 1.16         | ICT maintenance and upgrading cost          | <b>B2</b>  |
| <b>0.67</b>  | <b>Time mismanagement</b>                   |            |
| 1.83         | Home time mismanaged                        | <b>B6</b>  |
| 0.71         | Org. time expansion                         | <b>B3</b>  |
| <b>1.17</b>  | <b>Family intervention</b>                  |            |
| 0.11         | Family rights                               | <b>B4</b>  |
| 4.16         | Family – work intervention                  | <b>B5</b>  |

\*  $p < 0.05$ , \*\*  $p < 0.01$ 

## 7 DISCUSSION AND REFLECTION

### 7.1 Demographic variables

The results have manifested the important role of selected demographic variables in influencing teleworking choice, namely, the role of gender. Accordingly, results of the test have shown that females in the UAE tend to prefer full-time teleworking. Women are found to be motivated by some considerations such as work flexibility, convenience and increased personal freedom (O'Connor, 2001). UAE females have perceived telework as promising avenue to change their traditional work orientation and prove their personal freedom in handling work responsibilities. This is in harmony with Popuri and Bhat (2003), Yap and Tng (1990), and Wells *et al.* (2001) who suggest that teleworking will be of particular interest to women employees. However, in contradiction to the result generated by this research, some studies show that women employees are not interested in teleworking because they perceived work, not home, as the less stressful and more emotionally rich environment (Hochschild, 1983). In the same thought, Teo and Lim's (1998) study shows that males tend to perceive teleworking as enabling improvement in the quality of life and improvement in productivity/reduction of overheads to a greater extent than females. In line with this argument, Peters *et al.* (2004) suggest that three out of four teleworkers were male in EU member states, and that this stands in sharp contrast to the widespread opinion that telework was predominantly female. Moreover, research confirms the association between marital status and teleworking choice found in previous research. This is in

harmony with Popuri and Bhat (2003), Yap and Tng (1990), and Wells *et al.* (2001) who suggest that teleworking will be of particular interest to employees who are married. Furthermore, with regard to the educational level, the study indicates no association between educational level and teleworking choice. This result challenges Peters *et al.*, (2004) when mention that well-educated employees were found to be more likely to practice teleworking. Consequently, this research finding is inconsistent with the notion that well-educated individuals are able to telework as they exercise more control over their work schedule than are their co-workers (Yeraguntla and Bhat, 2005).

The present research proves that there is an insignificant association between frequency of Internet use and teleworking choice. Such a finding falsifies the widely held claim that employees master certain level of IT skills including Internet skills are typically suited for teleworking. This research results are inconsistent with the result obtained from the Euro survey 2000, which alleged that telework was most widespread among employees, who used IT frequently in their job (Peters *et al.*, 2004).

Nationality is also found to be significantly associated with teleworking choice. Non-UAE national employees prefer part time and no teleworking compared to UAE national employees who prefer fulltime teleworking. Such findings could be attributed to the fact that Non-UAE national employees attempt to be present at the traditional workplace and establish good work records in order to renew their working contracts, rather than asking for teleworking scheme, though they may prefer. UAE national, on the other hand, are not subject to the stress of being present at the traditional workplace as non UAE employees. This result is in agreement with Yeraguntla and Bhat (2005) who indicate that resident Hispanics are more likely to telework than other races such as immigrants African and Asian who need to demonstrate their working skills, and support their legibility to work and follow work regulations. Similarly, the study shows that residence is associated with teleworking choice. Employees living in Sharjah, Ajman and Umquain are over presented among part-time and full-time teleworkers. This may be interpreted as employees living in these northern emirates always face severe traffic jams in their way to work in Dubai, so that teleworking is perceived as the magic solution for them. This result is consistent with Yen and Mahmassani (1997) when they suggest that the greater the distance from home to workplace, the more likely the employee is to prefer teleworking. Also, Mokhtarian and Salomon (1996) show that people who have longer commutes are more likely to report that they want to telework. This contrasts with Drucker and Khattak (2000) who find that distance to work is negatively correlated with working at home—that is, the farther the individual lives from his job, the less likely he/she to work from home.

Number of children is found to be not associated with teleworking choice. This result confirms Mokhtarian and Salomon (1996) when propose no effect of having children on the desire to telework. Nevertheless, this is in disagreement with Popuri and Bhat (2003), Yap and Tng (1990), Wells *et al.* (2001) who suggest that teleworking will be of particular interest to employees who have children. Although, working parents may highly value the time-savings of teleworking due to the elimination of commuting time and allow a parent to stay at home with a sick child (Peters *et al.*, 2004), albeit, this is not the case of UAE. In UAE culture, parents (working and not working) depend entirely on foreign maids to take care of their children regardless how many children they may have. Similarly, age is found to be not associated with teleworking choice. In consistent with that, Belanger (1999) does not reveal significant age differences between those practicing telework and those not doing so in her study of a high technology organization in USA. Nevertheless, many studies have revealed contradictory results with regard to the relationship between age and teleworking. Mokhtarian and Salomon (1996), and Bagley and Mokhtarian (1997) show that younger people are more likely to report that they want to telework. Yeraguntla and Bhat (2005) indicate that young adults (less than 25 years) are more likely to be in part-time employment than older adults. This is perhaps a reflection of the fact that many young adults are studying and working part-time at the same time. Inconsistently, the EU member states survey data indicated that the age group 30–49 was over represented among teleworkers (Peters *et al.*, 2004).

Research result related to years of experience tends to be not in agreement with Yeraguntla and Bhat (2005) who suggest that employees who have worked less than a year in the firm are more likely to be part-time teleworkers than those who have been working for longer periods of time. In UAE context, the situation may be different since employees with less working experience try to prove their skills, establish good impression, and get supervisor's support through being presenting at the traditional workplace. After long years of experience, employees may consider teleworking as an alternative work scheme that facilitate managing other concerns such as managing own small business.

The results of the present research prove the existence of an association between employees' profession and teleworking choice. While employees with accounting and finance professions tend to avoid telework, employees with IT, media and management profession tend to telework either on part-time or full-time basis. This result is consistent with Gray *et al.* (1993) who suggest that computer



programmers, systems analysts, catalogue shopping telephone order agents, and data entry clerks fit full-time telework category.

## 7.2 Facilitator and inhibitors

This research confirms the importance of individual freedom, community concerns, and productivity as key teleworking facilitators perceived by employees. This is in agreement with the mainstream literature that support the perceived importance of personal freedom and autonomy as an immediate symbolic result of employees' interaction with teleworking adoption (Feldman and Gainey (1997; Pulido and Lopez, 2005). In addition, teleworking impact on the society as expressed by employees is clear and tangible on the short run. Mills *et al.* (2001) and Tung and Turban (1996) consider community and societal related teleworking facilitators such as reduction of air pollution and dependence on fuel, conserve energy housebound and disabled people can work from home, and reduced traffic during rush hours and transportation demand as important determinants of teleworking success in the short run. Moreover, increasing productivity gains is also considered as key drivers for organizations to adopt teleworking (Kurland and Bailey, 1999; Lim *et al.*, 2003; Mills *et al.*, 2001; Tung and Turban, 1996). However, a recent study analyzed the findings of over 80 previous studies, indicating that "little clear evidence exists that telework increases job satisfaction and productivity, as it is often asserted to do" (Bailey and Kurland, 2002: p. 383).

As far as teleworking inhibitors are concerned, the present research confirms the importance of isolation as a key inhibitor of teleworking. Recent research indicates that isolation is perceived as one of the key factors that may hinder the implementation of teleworking (Kurland and Cooper, 2002; Rognes, 2002). Isolation is a factor that may result in lack of interaction with colleagues and lack of commitment (Hobbs and Armstrong, 1998). Besides isolation, this research also points to the perceived importance of home inadequacy as a place of working. Although teleworking is treated as working from home, home is perceived by employees as inadequate place for work. Many reasons contribute to this claim involve lack of needed collaboration with other employees, security risks, difficulty of performance control and work coordination (Mills *et al.*, 2001; Tung and Turban, 1996).

Based on the analysis of test results related to hypotheses two and three, most of teleworking facilitators and inhibitors are not associated with teleworking choice. This means that employees with different teleworking modes (i.e., full-time, part-time, not to telework) do not differently perceive the importance of teleworking facilitators and inhibitors. In other words, teleworking facilitators and inhibitors are visible for all employees regardless of their teleworking preference mode. However, teleworking choice is found to be associated with the perception of specific teleworking facilitators and inhibitors. This implies that employees who prefer not to telework tend to perceive less importance for such teleworking facilitator or inhibitor, while employees who prefer to telework part-time or full-time tend to perceive higher importance. Such teleworking facilitators which are associated with teleworking choice include individual freedom, travel overload, and cost reduction. . Union resistance is the only teleworking inhibitor that is associated with teleworking choice. This is consistent with other teleworking studies such as Feldman and Gainey (1997) and Pulido and Lopez (2005) who suggest that individual freedom is highly perceived among part-time teleworkers. In addition, teleworkers are more likely to report longer commutes to workplace (Yen and Mahmassani, 1997; Mokhtarian and Salomon, 1996). Finally, perception of cost saving is also over presented among part-time and full time teleworkers in other context (Kurland and Bailey, 1999; Reid, 1993)

## 8 RESEARCH LIMITATIONS

There are several limitations of the present study that may restrict its generalizability. First, sample size is relatively small compared to other studies that have nation-wide samples. Second, the descriptive and exploratory nature of the topic does not allow the researchers to go into the depth of predicting the discovered relationships. Despite that, this study is the first of its kinds to examine teleworking choice and related facilitators and inhibitors in UAE, and in the Arab context. Third, eight out of eleven organizations do not allow the researchers to collect organization's related data such as income of employees, managerial level, degree of computer use in the organization, level of autonomy, decentralization, etc. Consequently, such organization's related variables are eliminated from the original questionnaire in order to maintain access to the respondents. Fourth, as the study focuses on prospective teleworkers in ICT context, results cannot be generalized to other non-ICT contexts.

## **9 PRACTICAL IMPLICATIONS AND RECOMMENDATIONS**

The following are some practical implications and recommendations that have emerged from the study of teleworking choice in the UAE:

- Firms employ relatively large percentages of married, female, IT profession, individuals living in remote areas are recommended to adopt flexible work practices such as teleworking.
- Managers are advised to adopt part-time or full-time teleworking scheme in order to integrate and maintain two contradictory strategies; individual freedom and productivity improvement.
- Successful implementation of teleworking requires managers to effectively manage professional and physical isolation of teleworkers through regular office visits and meetings with colleagues. Other practical strategies could include regular e-mail intranet systems, news bulletins and social events. They should also take measures to allow social comparisons to be made, perhaps through use of newsletters, as well as helping teleworkers maintain visibility (perhaps with on-line discussions). Given that these measures are implemented the part-time teleworking is highly recommended compared with full-time teleworking.
- If home is inadequate place for teleworking, managers can rely on telecenters as a substitute. In telecenters, collaboration with other employees can be conducted, and performance control can be facilitated.
- Managers should ensure that any teleworking initiatives are backed up with the appropriate technical support in such way that technicians are available and able to respond quickly to technical problems and equipment failure.
- When initiating teleworking schemes, managers should devise a teleworking policy document that would cover issues such as expectations regarding working when sick, hours to be worked, salary, meetings and visits, deadlines, continuing training, opportunities for career development, management by distance, responsibility for hidden costs (such as electricity) and no hidden costs (such as postage), etc. The aim of such a document is to let workers feel that they have “permission” to call when they are sick or to switch off the computer at the end of the working day, as well as helping managers manage by outlining to distant workers what is expected of them.
- The importance of data security, privacy, and confidentiality cannot be overlooked when work is performed at home. An organization should invest in the appropriate security measures needed to ensure the confidentiality of data.
- It is necessary to provide training both to the teleworkers and their managers or supervisors. Training areas may include information technologies and networking procedures as well as psychological preparation to work in a new environment.

## **10 CONCLUSION**

This study examines the concept of teleworking choice as it applies to UAE context. The relationship between demographic and individual variables, and teleworking choice is investigated. The research reveals that there is no difference among employees in their teleworking choice based on their educational level, Internet use, number of children, age, and years of experience. On the other hand, there is a difference among employees in their teleworking choice based on their gender, marital status, nationality, residence location, and work profession. In addition, the research identifies six distinct teleworking facilitators and seven distinct teleworking inhibitors in the UAE context. Generated facilitators are community concerns, individual freedom, productivity improvement, travel load, cost reduction, and empowering people, while generated inhibitors are management concerns, isolation, union resistance, home inadequacy, information and communication technology (ICT) cost, time mismanagement, and family intervention. Perceived mean importance of these facilitators and inhibitors is computed and ordered. Individual freedom, community concerns, and productivity are perceived by employees as the most important facilitators, while isolation and home inadequacy are perceived as the most important inhibitors. A further statistical test has revealed that there is no difference among employees in the perceived importance of most teleworking facilitators and inhibitors based on their teleworking choice. An exception is the association between teleworking choice and individual freedom, travel overload, cost reduction, and union resistance. The study points out the

limitations of the present research and suggests some practical implications and recommendations for managers.

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