

THE PERCEPTION OF EMPLOYEES IN TERMS
OF PRODUCTIVITY WHEN TELEWORKING IN
BANGKOK

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by

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ABSTRACT

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The Perception of Employees in Terms of Productivity when Teleworking in Bangkok

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The purpose of this study was to determine what employees think of teleworking when it comes to productivity. The researcher used a survey with questions relating the topic in hand, in order to carry out the research. The researcher surveyed 420 employees from several companies in the IT industry in Thailand. This survey was used to gather information about the employee attitudes and their feelings about the results of working from home. Once the researcher attained the 420 responses, the researcher analyzed the data in order to attain results and determined whether the proposed hypotheses were to be accepted or rejected. In summary, the results conclude that although most employees perceive teleworking should be implemented they also perceive working at the office to be more productive rather than working from home.

Approved: _____

Signature of Advisor

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TABLE OF CONTENTS

ABSTRACT	IV
ACKNOWLEDGEMENTS	V
LIST OF TABLES AND FIGURES	X
CHAPTER 1	12
1.1 INTRODUCTION.....	12
1.2 PROBLEM STATEMENT.....	13
1.3 BACKGROUND	15
<i>1.3.1 Study Location</i>	15
<i>1.3.2 Employee Demographics</i>	15
1.4 OBJECTIVE OF THE STUDY	16
1.5 IMPORTANCE OF THE STUDY.....	17
<i>1.5.1 Significance to the Researcher</i>	17
<i>1.5.2 Significance to the Stakeholders/Organization</i>	18
1.6 RESEARCH QUESTION.....	18
1.7 DEFINITION OF TERMS.....	22
CHAPTER 2	24
2.1 LITERATURE REVIEW	24
2.2 ADVANTAGES OF TELEWORKING.....	27
<i>2.2.1 Improves Employee Satisfaction</i>	28
<i>2.2.2 Reduce Attrition</i>	28

2.2.3 Reduce Unscheduled Absences.....	29
2.2.4 Increases Productivity.....	29
2.2.5 Saves Employers Money.....	30
2.2.6 Equalizes Personalities & Reduces Potential for Discrimination.....	30
2.2.7 Cuts Down on Wasted Meetings.....	30
2.2.8 Increases Employee Empowerment.....	31
2.2.9 Increases Collaboration.....	31
2.2.10 Provides New Employment Opportunities for the Un and Under-employed .	31
2.2.11 Expands the Talent Pool.....	31
2.2.12 Reduces Staffing Redundancies and Offers Quick Scale-up and Scale-down Options	32
2.2.13 Environmental Friendly Policies are Good for Companies.....	32
2.2.14 Reduces Traffic Jams.....	32
2.2.15 Prevents Traffic Accidents.....	33
2.1.16 Takes the Pressure off our Crumbling Transportation Infrastructure.....	33
2.2.17 Insures Continuity of Operations in the Event of a Disaster.....	33
2.2.18 Improves Performance Measurement Systems.....	34
2.3 DISADVANTAGES OF TELEWORKING.....	34
2.3.1 Management Mistrust.....	34
2.3.2 It's not for everyone, for some, social needs must be addressed.....	34
2.3.3 Career Fears from 'Out Of Sight Out Of Mind' Mentality	35
2.3.4 Co-worker Jealousy.....	35

2.3.5 Security Issues	35
2.3.6 IT Infrastructure Changes May Be Necessary	36
2.3.7 Collaboration Concerns	36
2.4 RECENT OCCURRENCES	36
2.5 RESEARCH FRAMEWORK	40
2.4.1 Teleworking vs Office Working	46
2.4.2 Age	46
2.4.3 Gender	47
2.4.5 Training/Education	49
2.4.6 Suitable Task	50
2.4.7 Resources Available	51
2.4.8 Compensation	52
2.4.9 Nationality	52
2.4.10 Work Time Flexibility	53
2.4.11 Work Environment	54
2.4.12 Intrinsic Motivational Factors	55
CHAPTER 3	57
3.1 RESEARCH QUESTION	57
3.2 RESEARCH METHODOLOGY	60
3.2.1 Sample	60
3.2.2 Materials	61
3.2.3 Instruments	61

3.2.4 Procedure	63
3.2.5 Calendar Plan.....	63
3.2.6 Data Collections and Analysis	63
CHAPTER 4.....	65
4.1 RESULTS.....	65
4.2 OTHER FINDINGS	84
4.3 EXTRANEOUS INFLUENCE.....	92
CHAPTER 5.....	94
5.1 IMPLICATIONS FOR ORGANIZATION AND RESEARCH	94
5.2 DISCUSSION	94
5.3 CONCLUSION	98
5.3.1 Limitations of the Study.....	100
5.3.2 Recommendations of the Study.....	100
REFERENCES.....	101
APPENDIX.....	108
BIOGRAPHY	113

LIST OF TABLES AND FIGURES

Figure 1 – Research framework, perception	40
Figure 2 – Research framework, existing work characteristics	41
Figure 3 – Research framework, job characteristics in terms of teleworking.....	41
Figure 4 – Pie chart showing employees perception of productivity based on location.	66
Figure 5 – Pie chart showing employees perception on the feasibility of teleworking relating to age.....	67
Table 1 – Existing work characteristics in comparison to gender.....	69
Table 2 – Job characteristics in terms of adaptability to teleworking in comparison to gender.....	71
Figure 7 – Pie chart showing employees perception on the feasibility of teleworking relating to the availability of training.....	72
Table 3 – Existing work characteristics in comparison to employees education level ...	74
Table 4 - Job characteristics in terms of the adaptability to teleworking in comparison to employees education level.	75
Figure 8 – Bar graph showing the perception of employees on the suitability of their current job for teleworking and whether teleworking should be implemented or not.....	77
Figure 9 – Pie chart showing employees perception on the feasibility of teleworking relating to the availability of resources.....	78
Figure 10 – Pie chart showing employees perception on the feasibility of teleworking relating to having a good pay/compensation system in the company.....	79

Figure 11 – Pie chart showing employees perception on the feasibility of teleworking relating to an employees nationality.	80
Figure 12 – Pie chart showing employees perception on the feasibility of teleworking relating to work time flexibility.	82
Figure 13 – Pie chart showing employees perception on the feasibility of teleworking relating to a healthy working environment.	83
Figure 14 – Pie chart showing employees perception on the feasibility of teleworking relating to motivational factors.	84
Figure 15 – Line graph showing the average time employees take to finish a given task of average size.....	85
Figure 16 – Bar graph showing the average number of hours employees work in a day.	86
Figure 17 – Bar graph showing the number of days employees work in a week.	87
Figure 18 – Bar graph showing how far employees live from their work place.....	88
Figure 19 – Bar graph showing how often employees would like to be able to telework.	89
Figure 20 – Bar graph showing what tasks employees expect to do while they are teleworking.	90
Figure 21 – Pie chart showing what criteria’s are used to evaluate their work.	91
Figure 22 – Bar graph showing an average of employees needs regarding their ability to work.	92

CHAPTER 1

1.1 Introduction

‘Teleworking’ may not be a very well known term among some people. However, among others it is a term that is used on a daily basis. To clarify, teleworking in this paper refers to the use information technology (IT) and telecommunications to replace work-related travel. Teleworking allows employees to work at home or at a local telework center one or more days per week using communication tools, such as such as phone, fax, modem, Internet teleconferencing, e-mail or IM, to perform work duties from a remote location(“What is teleworking (telework?),”). Amazon and Google are some of the most obvious examples that have employees who are teleworkers. Note that from here on out the terms ‘home-worker’, ‘teleworkers’, and ‘telecommuter’ will be used interchangeably. On the other hand, productivity in this paper refers to the measurement or calculation between inputs and outputs. Inputs are the amount of time and effort spent working, while outputs are the results. If the outputs are equivalent to the inputs, the worker is considered productive. Productivity directly affects a company’s profit. When employees are productive they accomplish more in a given amount of time. In turn, their efficiency saves their company money in terms of time and labor. When employees are unproductive, they take longer to complete projects, which cost employers more money due to the lost time. Productivity is linked to employee morale. When employees are happy at work they have more motivation, which increases productivity. Poor morale causes employees to be disengaged. A study done by the Corporate Executive Board says that because employee engagement is down there has been a 5% decrease in productivity (Kyra, 2013).

1.2 Problem Statement

One of the issues that employees face today is having to get from one place to another, this is because everyday there are more and more people in this world. This means there are more and more cars, and convenient modes of transportations are always packed at peak hours. Most of the time people have to travel at least one hour to get to wherever it is that they have to be. In reality, this is an ultimate waste of time.

Furthermore, by the time employees get to where they have to be they are typically tired because they have had to deal with other people that either think they are taking a walk in the park, or don't understand English, or are simply ignorant.

In addition to having to deal with other people while commuting, employees have to deal with the unbearable heat and humidity. Ultimately they get to the office, they are upset, drenched in sweat, and in no mood to work. Then they have all these other distractions of people passing by their office, people talking, making noise, etc. How are employees meant to be productive in such a state of mind?

This issue can be avoided the moment organizations allow its employees to work from home. This study will show if employees are more productive while they work from home or while they work from the office.

The practice of employees working from the office is sometimes ineffective in ensuring that the productivity of the employees is at its pick. For those that support this idea, they urge that when employees work from home, they tend to be more comfortable hence increasing their productivity. This is because there are some employees that would find it uncomfortable to work around fellow employees, especially around their superiors.

Reduction in the production of employees can have major implications on the development of a business or company. For this, reduces employee production because of working from the office has become a major concern and problem to some of the companies. However, it does not mean that all the employees of a company should work from home. For the companies that believed in teleworking, they ended up ensuring that they set up a teleworking system for the employees that can work from home. The system was to ensure that employees work from where they found it most comfortable while maintaining effective communication with the other employees and customers.

Of course, some employees and departments cannot effectively increase on their production by working from home. However, other employees would perceive that working from the office would help increase the productivity of the employees that working from home. The point of the study was to determine if working from home (teleworking) could help increase the productivity of employees or not. It aimed at finding out which of the options (working from home or from the office) do the employees perceive would increase the productivity of employees.

The problem is related to the hypothesis of the study because the main hypotheses talk about the two sides of the problem. The first hypothesis implies that employees perceive working from home increases productivity while the other hypothesis implies that working from the office increases productivity. This is a very fundamental relationship between the hypothesis and the problem because teleworking has both its benefits and drawback, which forms the basis of the problem statement of this study.

The theoretical implication of this study is that the productivity of the employees to a company depends on the place where the employees work. Some employees would prefer working from home while other would prefer working from the office. The truth of this implication was proven through conductive the research on employees. The previous works conducted showed that the productivity of the employees increases if they work from the office. This is as long as the working environment is comfortable and conductive.

This study related to the previous works because it also aims at finding out if employees perceive working from home or from the office would increase productivity. The derivation of the theoretical propositions is that the productivity of employees is independent of the place where they conduct their work duties.

1.3Background

1.3.1 Study Location

This study took place in Bangkok, Thailand. This research focuses on employees of companies in the information technology (IT) industry.

1.3.2 Employee Demographics

The employees at the IT companies used for the sample had broad demographics. The sample consisted of 420 employees, out of which 155 (37%) were foreigners from all around the world and the other 265 (63%) employees were of Thai nationality. Their ages also varied greatly, from the sample the ages ranged from 18 to 62, with a average age of 32 years. All of the employees had at least a bachelor's

place among the employees that were not part of the top management in their workplace.

1.4 Objective of the Study

The objective of this study is to see whether employees in the IT industry in Bangkok perceive teleworking as a possible way to increase productivity. As mentioned earlier teleworking may not be a very common term among people, especially in the Eastern world. This study is aimed at finding out the perception of employees in terms of productivity when teleworking.

Teleworking does not necessarily have to be done from home. Flexibility is the main thing behind the concept of teleworking. It can be done from a teleworking center, a remote office or location or any other location agreed upon by the employer. This paper aims to study how such an arrangement in the IT industry in Bangkok can help to increase the productivity of employees and if employees feel that teleworking can actually increase their productivity.

Productivity is an important factor for every organization. It is critical for the long-term competitiveness and profitability of organizations. Every organization be it a manufacturing one or service providing one, strives to be as productive as possible. Organizations don't just stop at being productive but also try and increase it as frequently as possible. According to Mark Rogers, the concept of 'productivity' is easy to define. It is the ratio of output to input for a specific production situation. Productivity is closely linked with efficiency. Rising efficiency implies rising productivity and vice versa. The close association of productivity with efficiency

makes productivity even more important for organization to focus on, because every organization wants to be efficient in its operations (Rogers, 1998).

The study limited and focused its research on the employees that are located in Bangkok. It explored on the benefits that both the employees of a company and the company can benefit from establishing and implementing a teleworking system in terms of productivity. Since the introduction of teleworking, a number of companies and businesses have adopted the system. From their experience, some have found it to help increase the productivity of the employees while other have found it to be ineffective. The researcher's goal was to see whether employees in the IT industry, here in Bangkok, perceived teleworking as a possible way to increase productivity.

1.5 Importance of the Study

1.5.1 Significance to the Researcher

This study is important to the researcher because she loves absolutely anything that has to do with technology. In addition to loving technology, she is a highly productive person. Therefore, she thought what better way to do her thesis than on topics she loves; so she combined the two, technology and productivity. The researcher also wishes to be an entrepreneur in the IT industry in the future. The findings of this study would give her a clearer and better understanding about teleworking and if she could implement it in her future company.

Ever since the 1990s a new company culture arose. There has been an increase in Internet start-ups cultivating an atmosphere closer in spirit to college dorms than professional workplaces, encouraging employees to dress casually and stocking the

office with fun diversions. Many of the young managers who ran these companies believed that an entertained employee was more likely to enjoy their work than a miserable one and would therefore be more productive.

1.5.2 Significance to the Stakeholders/Organization

This study is important to the organization for several reasons. One reason may be that if the study shows evidence that employees are actually perceive to be more productive while they work from home then the organizations may take action by allowing its employees to work from home more often. This however requires that the organization trust their employees to do what they are supposed to do. In addition, it will also increase the productivity of the employees leading to more work being done, which in turn means more profits for the company. In the long run, if the company is a public company, investors will be able to see this increase in profitability, which will motivate them to invest in the company as their shares increase. Moreover, being part of a well known and successful organization may lead to greater job satisfaction, which would in turn lead to a better working environment with harder working people. People that work harder and love to do what they do bring profit to the organization; it is an ongoing cycle. Also, if employees end up work from home then that means that companies don't have to spend so much on real-estate costs, there also would be less absenteeism. Hence, yet another reason for why this study is important to the organizations involved.

1.6 Research Question

This research study is designed to answer the following questions:

1. How do IT industry employees perceive the level of productivity, as measured by a survey, when they work from home as opposed to working at the office?

The researcher hypothesized that there will be no difference between the perception of the level of productivity of those employees that work from home versus those that work from the office.

2. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when companies have younger aged employees as opposed to older aged employees?

The researcher hypothesized that employees will perceive a greater feasibility of teleworking in companies with younger aged employees.

3. How do different genders of employees affect their perception towards teleworking?

The researcher hypothesized that female employees will have a more favorable attitude towards teleworking than men.

4. Do different genders have an effect on existing work characteristics of employees?

The researcher hypothesized that different genders will not have an effect on existing work characteristics of employees.

5. Do different genders have an effect on job characteristics in terms of the adaptability of teleworking?

The researcher hypothesized that different genders will not have an effect on job characteristics in terms of the adaptability of teleworking.

6. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when companies provide “on-the-job” training?

The researcher hypothesized that that employees will perceive a greater teleworking feasibility if they receive “on-the-job” training.

7. Do different employees education level have an effect on existing work characteristics or their job characteristics in terms of adaptability to teleworking

The researcher hypothesized that different employees’ education level will not have an effect on existing work characteristics or their job characteristics in terms of adaptability to teleworking.

8. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when their job tasks are suitable to work away from the office?

The researcher hypothesized that employees’ who perceive their jobs to be suitable for teleworking will perceive a greater feasibility of teleworking.

9. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when the necessary resources (information and communication technologies) are available?

The researcher hypothesized that employees' who have access to the necessary information and communication technology resources will perceive a greater feasibility of teleworking.

10. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when they have a compensation system place in the company?

The researcher hypothesized that employees' who work with a compensation system will perceive a greater feasibility of teleworking.

11. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when the majority of the employees in the company are of a Western background rather than from an Eastern background?

The researcher hypothesized that employees' who work in companies with a large number of Westerners will perceive a greater feasibility of teleworking.

12. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when they are allowed to have work-time flexibility?

The researcher hypothesized that employees' who are allowed to have work-time flexibility will perceive a greater feasibility of teleworking.

13. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when they are provided with a healthy work environment?

The researcher hypothesized that employees' who work in a healthy environment will perceive a greater feasibility of teleworking.

14. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when they are given intrinsic motivation?

The researcher hypothesized that employees' who are intrinsically motivated will perceive a greater feasibility of teleworking.

In order to measure productivity we measure the time we had available in each day and then measure the time we were productive, the time when we were working on the projects that led us closer to our goals. We can then divide our productive time by the total time available to calculate our productivity in percentage form. For example, today the researcher started working at 9:00 pm and the researcher is finishing this thesis at around 9:30. For this system to work, the employees need to be brutally honest. If the researcher is, then in her 30 minutes of available work, the researcher spent about 5 minutes doing some research that was related to her work. In addition to those 5 minutes the researcher spent another 3 minutes on a phone call that was irrelevant to her work. The researcher's productivity was then $22 \text{ minutes of work} / 30 \text{ minutes of available time} = 73\%$.

1.7 Definition of Terms

Teleworking is defined as the practice of working from home, making use of the Internet, email and the telephone. Telecommuter is defined as the person working from home. Perception is defined as the way in which something is regarded, understood, or interpreted. Productivity is defined as the state or quality of being able

to produce large amount of goods or results.

CHAPTER 2

2.1 Literature Review

Working from home has become increasingly more common in the past few years. Pérez et al. (2004) said “teleworking is a way of flexible working that enables workers to get access to their labor activities from different locations by the use of Information and Communication Technologies” (p. 656). Various terms for teleworking have been used in the literature, such as teleworking, telecommuting, remote working, home working, each with a slightly different emphasis on how the work is carried out. Organizations have tried to adopt some, but not all, of these concepts to varying degrees, depending on ease of accessibility to the Internet, affordability and connectivity. Collectively, these phrases describe teleworking as a way of flexible working that enables workers to get access to their labor activities from different and remote locations by the use of information and communication technologies

Three main types of teleworking are usually found in operation: home-based teleworking, satellite offices, and mobile-based working. Home-based teleworking refers to employees who work at home on a regular basis, though not necessarily (and, in fact, rarely) every day; home-based workers who are self-employed or who otherwise have no connection to a central workplace are not considered as teleworkers. In satellite offices, employees work both outside the home and away from the conventional workplace in a location convenient to the employees and/or customers to reduce commute time. It is in some sense a branch office whose purpose is to alleviate employees' commute. The satellite office is equipped with office

available there. Finally, in contrast to teleworkers who work from one designated location outside the main office, mobile workers are frequently on the move, using communications technology to work from home, from a car, from a plane, or from a hotel-communicating with the office as necessary from each location; marketing managers, sales-persons or investment bankers are examples of mobile teleworkers (Pérez, Carnicer & Martínez, 2002).

Ever since teleworking became popular there have been mixed views about the advantages of working from home. Some argue that it is a mere employee benefit and that there are no advantages for the organization itself. While others argue that working in a flexible environment brings many benefits to the organization including overall profits.

Teleworking has been proposed as a cure for a variety of organizational and social ills: help companies reduce real-estate costs, respond to employees' needs for work-family balance (Madsen, 2003), offer employment opportunities to people with disabilities (Matthes, 1992) and reduce traffic congestion and air pollution (Handy and Mokhtarian, 1996 *et al.* 1991). The number of teleworkers has increased in many countries since the mid-1990s (Empirica, 2000; International Telework Association 2001; European Commission, 2002). This is true especially in Western developed countries (Felstead et al., 2005; Moos and Skaburskis, 2008; Nilles, 2007). In the Los Angeles Times, Jessica Guynn said "still only a small percentage — about 2.5% — of American workers primarily work from home despite congested roadways, long commutes and the demands of caring for young children or elderly parents. But that number is growing at a rapid clip: up 66% from 2005 to 2010, according to Telework

According to Pérez et al. (2004), teleworking helps organizations decrease real-estate costs and increase employees' productivity. For organizations, cost savings in facilities is the main force behind employee teleworking from home (Felstead et al., 2005). For employees, too often-claimed benefits are better work-family balance and a comfortable work environment at home (Kurland and Bailey, 1999).

Home-based teleworkers tend to be professionals in technologically advanced organizations (Garrett and Danziger, 2007) that use information and communication technologies (Sullivan, 2003). Teleworkers have reported having a more comfortable work environment at home (Hill et al., 1998), specifically better air quality, more silence, and control over the temperature than the open office at their corporate office (Montreuil and Lippel, 2003). In addition, the employees get to spend less money on clothes, daily lunches, and gasoline to drive to work.

Some of the teleworking advantages may suggest that teleworking is a source of better employment opportunities to female employees. Women would be motivated to telework because it encourages them to meet childcare commitments while remaining within the labour market. However, surveys in the USA (ITAC, 2000) indicate that while many women adopt home-working for childcare reasons, a large percentage do not. Women were found to be motivated by other considerations such as work flexibility, convenience and increased personal freedom. It seems that the relationship between gender and teleworking is not void of misconceptions.

On the other hand, qualifications and attitude should favor women for teleworking employment. More than 70 per cent of teleworkers had an university degree (European Commission, 2001) which means that teleworkers have averagely

men in university degrees and have more communication and organization abilities. But the statistics indicate that women are not largely involved in teleworking.

A report from the European Union indicates that only 25 per cent of teleworkers are women (European Commission, 2001). In the USA, the statistics indicate that males are predominant among home-based teleworkers (65 per cent as contrasted to the 40 per cent of the non-teleworkers in the group surveyed) although there were proportionally more females (20 per cent) than males (15 per cent) who were new home teleworkers in the preceding year.

One reason that might explain the lower share of women in teleworking is their lesser access to new technologies, like the information and communication technologies. However many of the teleworking jobs are in traditional areas of women occupations such as administrative or sales.

According to Telework Research Network, a public-private partnership focused on demonstrating the tangible value of telework and serving the emerging educational and communication requirements of the Federal teleworker community, telecommuting can make employees more productive, not less—despite what many managers fear. It points to heavy hitters like Best Buy, Dow Chemical, and American Express as just a few companies that have found teleworkers are more productive by 35% to 40%.

2.2 Advantages of Teleworking

In the previous paragraphs, there some advantages to teleworking have been

Telecommuting brings a lot of advantages for the companies (“Costs and Benefits”, 2013).

2.2.1 Improves Employee Satisfaction

The Telework Research Network says (a) people are sick of the rat race, eager to take control of their lives, and desperate to find a balance between work and life. (b) Two thirds of people want to work from home. (c) 36% would choose it over a pay raise. (d) A poll of 1,500 technology professionals revealed that thirty-seven percent would take a pay cut of 10% if they could work from home. (e) Gen Y’ers are more difficult to recruit (as reported by 56% of hiring managers) and to retain (as reported by 64% of hiring managers) but they are particularly attracted to flexible work arrangements. (f) 80% of employees consider telework a job perk (“Costs and Benefits”, 2013).

2.2.2 Reduce Attrition

In other words (a) losing a valued employee can cost an employer \$10,000 to \$30,000. (b) Recruiting and training a new hire costs thousands. (c) 14% of Americans have changed jobs to shorten the commute. (d) 46% of companies that allow telework say it has reduced attrition. (e) 95% of employers say telework has a high impact on employee retention. (f) Almost half of employees feel their commute is getting worse; 70% of them feel their employers should take the lead in helping them solve the problem. (g) 92% of employees are concerned with the high cost of fuel and 80% of them specifically cite the cost of commuting to work. 73% feel their employers should take the lead in helping them reduce their commuting costs. (h)

Two-thirds of employees would take another job to ease the commute (“Costs and Benefits”, 2013).

2.2.3 Reduce Unscheduled Absences

According to the Telework Research Network (a) 78% of employees who call in sick, really aren't. They do so because of family issues, personal needs, and stress. (b) Unscheduled absences cost employers \$1,800/employee per year; that adds up to \$300 billion/year for U.S. companies. (c) American Management Association, organizations that implemented a telework program realized a 63% reduction in unscheduled absences. (d) Teleworkers typically continue to work when they're sick (without infecting others). (e) Teleworkers return to work more quickly following surgery or medical issues. (f) Flexible hours allow teleworkers to run errands or schedule appointments without losing a full day (“Costs and Benefits”, 2013).

2.2.4 Increases Productivity

The Telework Research Networks says (a) Best Buy, British Telecom, Dow Chemical and many others show that teleworkers are 35-40% more productive. (b) Businesses lose \$600 billion a year in workplace distractions. (c) Over two-thirds of employers report increased productivity among their telecommuters. (d) Sun Microsystems' experience suggests that employees spend 60% of the commuting time they save performing work for the company. (e) AT&T workers work 5 more hours at home than their office workers. (f) JDEdwards teleworkers are 20-25% more productive than their office counterparts (g) American Express workers produced 43% more than their office-based counterparts. (h) Compaq increased productivity 15% – 45% (“Costs and Benefits”, 2013).

2.2.5 Saves Employers Money

According to the Telework Research Network (a) Nearly six out of ten employers identify cost savings as a significant benefit to telecommuting. (b) Alpine Access Remote Agents closed 30% more sales than traditional agents the year before. Customer complaints decreased by 90% and turnover decreased by 88%. (c) IBM slashed real estate costs by \$50 million. (d) McKesson saves \$2 million a year. (e) Nortel estimates that they save \$100,000 per employee they don't have to relocate. (f) Average real estate savings with full-time telework is \$10,000 per employee per year. (g) Partial telework can offer real estate savings by instituting an office hoteling program. (h) Dow Chemical and Nortel save over 30% on non-real estate costs. (i) Sun Microsystems saves \$68 million a year in real estate costs. (j) Offers inexpensive compliance with ADA for disabled workers. (k) Saves brick and mortar costs in industries where regulations or needs require local workers (e.g. healthcare, e-tail) ("Costs and Benefits", 2013).

2.2.6 Equalizes Personalities & Reduces Potential for Discrimination

The Telework Research Network says (a) hiring sight unseen, as some all-virtual employers do, greatly reduces the potential for discrimination. (b) It ensures that people are judged by what they do versus what they look like. (c) Communications via focus groups, instant messaging, and the like equalizes personalities. No longer is the loudest voice the one that's heard ("Costs and Benefits", 2013).

2.2.7 Cuts Down on Wasted Meetings

According to the Telework Research Network (a) asynchronous communications allow people to communicate more efficiently. (b) Web-based

meetings are better planned and more apt to stay on message (“Costs and Benefits”, 2013).

2.2.8 Increases Employee Empowerment

In other words remote work forces people to be more independent and self-directed.

2.2.9 Increases Collaboration

Once telework technologies are in place, employees and contractors can work together without regard to logistics. This substantially increases collaboration options (“Costs and Benefits”, 2013).

2.2.10 Provides New Employment Opportunities for the Un and Under-employed

The Telework Research Network says (a) 18 million Americans with some college education aren’t working. (b) More than twelve percent of the working age population that’s disabled (16 million). A full three quarters of unemployed workers with disabilities cite discrimination in the workplace and lack of transportation as major factors that prevent them from working. (c) 24 million Americans work part time. (d) Only seventy-five percent of women, still the traditional primary caregivers, age twenty-five to fifty-four participate in the labor force (compared to ninety percent of men). Almost a quarter of women work part-time (16.5 million), compared to ten percent of men (“Costs and Benefits”, 2013).

2.2.11 Expands the Talent Pool

According to the Telework Research Network (a) over 40% of employers are feeling the labor pinch; that will worsen as Boomers retire. (b) Reduces geographic boundaries. (c) Provides access to disabled workers. (d) Offers alternative that would have otherwise kept parents and senior caregivers out of the workforce. (e) Offers

geographic, socioeconomic, and cultural diversity that would not otherwise be possible. (f) Over 70% employees report says the ability to telecommute will be somewhat extremely important in choosing their next job (“Costs and Benefits”, 2013).

2.2.12 Reduces Staffing Redundancies and Offers Quick Scale-up and Scale-down Options

The Telework Research Network says (a) having access to a flexible at-home workforce allows call centers, airlines, and other to add and reduce staff quickly as needed. (b) The need to overstaff, just in case, is greatly reduced. (c) 24/7 worldwide coverage is easier to staff with home-based help (“Costs and Benefits”, 2013).

2.2.13 Environmental Friendly Policies are Good for Companies

According to the Telework Research Network (a) Sun Microsystems reported that its 24,000 U.S. employees participating in the Open Work Program avoided producing 32,000 metric tons of CO₂ last year by driving less often to and from work. (b) Office equipment energy consumption rate is twice that of home office equipment energy consumption. (c) 70% of employees report they would see their companies in a more favorable light if they helped them reduce their carbon emissions. (d) 24% of employees say they’d take a pay cut of up to 10% to help the environment (“Costs and Benefits”, 2013).

2.2.14 Reduces Traffic Jams

The Telework Research Network says (a) if traffic continues to grow at the current pace, over the next couple of decades, drivers in Atlanta, Baltimore, Chicago, Denver, Las Vegas, Miami, Minneapolis/St. Paul, Portland, San Francisco-Oakland, Seattle-Tacoma, and Washington, D.C. will be sitting in daily traffic jams worse than

the infamous traffic jams that plague Los Angeles eight hours a day. (b) As a result, commutes will take almost twice as long, and you'll have to leave even earlier to allow for traffic jams if you have to arrive someplace at a specific time, producing a further reduction to our national productivity. (c) Traffic jams rob the U.S. economy of \$78 billion/year in productivity. (d) Traffic jams idle away almost 3 billion gallons of gas and accounts for 26 million extra tons of greenhouse gases. (e) Every 1% reduction in vehicles yields a three fold decrease in congestion (“Costs and Benefits”, 2013).

2.2.15 Prevents Traffic Accidents

According to the Telework Research Network say half time telework, for the portion of the population that holds telework-compatible jobs and wants to work from home, would save more than 1,600 lives, prevent almost 99,000 injuries, and save over \$12 billion a year in direct and indirect costs associated with traffic accidents (“Costs and Benefits”, 2013).

2.1.16 Takes the Pressure off our Crumbling Transportation Infrastructure

The Telework Research Network says new roads are being built to meet needs of 10-20 years ago. Less than 6% of our city roads have kept pace with demand over the past decade. By 2025 we'll need another 104 thousand additional lane miles – that will cost 530 billion (“Costs and Benefits”, 2013).

2.2.17 Insures Continuity of Operations in the Event of a Disaster

According to the Telework Research Network (a) federal workers are required to telework to the maximum extent possible for this reason. (b) Bird flu, terrorism, roadway problems, and weather-related disasters are all drivers. (c) Three quarters of

teleworkers say they could continue to work in the event of a disaster compared with just 28% on non-teleworkers (“Costs and Benefits”, 2013).

2.2.18 Improves Performance Measurement Systems

Drucker, Six Sigma, and management experts agree that goal setting and performance measurement is key to successful management. For teleworking to work, employees must be measured by what they do, not where or how they do it.

2.3 Disadvantages of Teleworking

There are always two sides to a coin, and just like how working from home has its advantages; there are also some obstacles (“Costs and Benefits”, 2013).

2.3.1 Management Mistrust

According to the Telework Research Network (a) 75% of managers say they trust their employee, but a third say they’d like to be able to see them, just to be sure. (b) Company culture must embrace the concept at all levels, sweatshop and typing pool mentality has to be abandoned. (c) From Peter Drucker’s introduction of Management-By-Objectives in the mid-1950’s, to Six Sigma which was popularized by General Electric’s Jack Welch in the 1990’s, setting and measuring goals has long been held as the key to good management (“Costs and Benefits”, 2013).

2.3.2 It’s not for everyone, for some, social needs must be addressed.

Telephone, email, instant messaging are a solution for some. Innovative solutions such as virtual outings, online games, and even Second Life have proven successful as well. Occasional telework is also a solution. (b) Telecommuters must be self-directed. (c) They should be comfortable with technology or arrangements should be made for remote tech support. (d) They should have an defined home office space.

(e) Home-based employees need to understand that telecommuting is not a suitable replacement for daycare unless they can schedule work hours around their children's needs.

2.3.3 Career Fears from 'Out Of Sight Out Of Mind' Mentality

Some employees cite career fears as a reason not to telecommute. Successful teleworking programs overcome the 'out of sight, out of mind' issue with performance-based measurement systems, productivity versus presenteeism attitudes. Teleworkers who maintain regular communications (telephone, email, instant chat, even the occasional face-to-face meeting) with traditional co-workers and managers find career impact is not an issue.

2.3.4 Co-worker Jealousy

In other words (a) employees need to understand why they were or were not chosen for telework. (b) Employees should see telework as a benefit that is earned, not given. (c) Standards of selection should be uniform.

2.3.5 Security Issues

According to the Telework Research Network (a) almost 93% of managers involved in IRS pilot telework program believe there is no problem with data security. (b) Security issues are easy to solve, but must be addressed. (c) 90% of those charged with security in large organizations feel that home-based workers are not a security concern. In fact, they are more concerned with the occasional work that is taken out of the office by traditional employees who lack the training, tools, and technologies that teleworkers receive. (d) Security training should be provided for all employees ("Costs and Benefits", 2013).

2.3.6 IT Infrastructure Changes May Be Necessary

In other words (a) teleworkers need access to company systems, software, and data. (b) Infrastructure changes that support telework improve efficiency for office and traveling employees as well. (c) Companies need to address remote technical support issues. Off the shelf solutions exist.

2.3.7 Collaboration Concerns

Some managers feel that distance inhibits collaboration. They need the “energy in the room” when a crisis occurs.

2.4 Recent Occurrences

A recent experiment by a Chinese company called Ctrip showed that home working led to a 13% performance increase, of which about 9% was from working more minutes per shift (fewer breaks and sick-days) and 4% from more calls per minute (attributed to a quieter working environment) (Bloom, Liang, Roberts & Ying, 2013).

Recently in the end of February 2013, the new CEO of Yahoo Marissa Mayer has banned working from home. The decision seems to be based on a desire for increased productivity and a more connected company culture. Mayer decided on the ban after spending months frustrated at how empty Yahoo parking lots were and consulting Yahoo’s VPN (Virtual Private Network) logs to see if the employees working remotely were checking in enough (Carlson, 2013). The workers have been asked to report back to work at the beginning of June. If they can’t or don’t want to, it’s their job on the line. Even occasional flexibility is being discouraged. Unsurprisingly, the announcement rankled quite a few Yahoo employees, as well as

supporters of workplace flexibility. Flexible work arrangements, from telecommuting to flexible schedules and condensed workweeks, are viewed by many as the way of the future. Flexibility has become an important tool for time-crunched workers, particularly parents, to better juggle work and family responsibilities (Goudreau).

Mayer has so far taken a number of steps to turn the company around—revamping the homepage, renovating Yahoo Mail, releasing a new Flickr app and conducting a string of mobile acquisitions. Presumably she believes having all employees report for duty onsite will lead to increased performance (Goudreau). “A variety of studies show that telecommuting and working from home is associated with *higher* productivity,” said David Lewin, management professor at the University of California, Los Angeles.

Additionally, working from home—whether occasionally or full time—typically cuts out an hour or more of wasted commuting time every day, said Lewin. Not to mention, employees are so grateful for the flexibility that they’re often more loyal to the company than the 9-to-5ers.

Certainly some face-time will always be necessary and no one’s arguing that it disappear entirely (Goudreau). David Fagiano, COO of corporate training and consulting company Dale Carnegie Training, agrees with Mayer that some of the best ideas are fostered through casual conversations. However, he also notes that these conversations don’t have to take place in the same room. “With the internet being such a great tool in business today, it’s easy to hold a virtual meeting via Skype or to pick up the phone.”

Ironically, a week after Marisa Mayer's announcement about banning teleworking at Yahoo, Best Buy announced the end of its work-at-home program known as ROWE (results-only-work-environment). Best Buy's ROWE program was founded in 2005, allowing corporate employees to work flexible hours from outside the office. However, the end of this program doesn't mean that there will no longer be any sort of teleworking at Best Buy; managers will still be able to allow some people to work from home (Stuart, 2013).

The common tie between Yahoo and Best Buy ending their remote/work-at-home options is that top management is struggling to find the best practices to turnaround results in an age of mobile, online, internetworked competition from every corner of the earth. But thousands of other companies use telework as an essential part of their portfolio of management practices to engage, motivate, and reward employees while, at the same time, boosting the bottom-line. Remote work programs may not be "working" right now for Yahoo and Best Buy, but there are other forms of flexible working arrangements that could fit: implementing more flexible hours for workers in-office, allowing a babies-at-work program, or letting parents create non-standard career tracks (Fondas, 2013).

The idea behind adding limitations on the telecommuting policy for both Yahoo and Best Buy was that bringing workers back to the office would lead to greater collaboration and innovation. This is despite numerous studies showing that telecommuting workers are more productive than those working on-site.

Yet a work force culture based on long hours at the office with little regard for family or community does not inevitably lead to strong productivity *or* innovation. Two outdated ideas seem to underlie the Yahoo decision: first, that tech companies

can still operate like the small groups of 20-something engineers that founded them; and second, the most old-fashioned of all, that companies get the most out of their employees by limiting their autonomy (Glass, 2013).

According to an article published in the International Business Times of Australia, A Google executive does not believe that working at home or doing "telework" is a best environment for ideas to flourish."The surprising question we get is: How many people telecommute at Google? And our answer is: As few as possible," The Sydney Morning Herald quoted Google Chief Finance Officer Patrick Pichette. "It's somewhat counterintuitive. People think, 'Well, because you're at Google you can work from anywhere.' Yes you can work from anywhere, but many just commute to offices ... Working from office is really important," he added.His stand goes against global trends as more companies accept telecommuting, remote work, or telework, an arrangement in which employees can work at home, coffee shops, or other locations aside from the physical office to perform their duties and tasks assigned by their employers.Mr. Pichette believes that working away from the office makes employees isolated from other staff and spending time together allows individuals to brainstorm more ideas than being alone. Even so, teleworking is now a trend to many countries worldwide influenced by the effective distribution of information using the Internet and good level of communication through mobile phones, email, and video conferencing. The new trend of work also cuts the costs for operation, having large offices and allows recruitment from other countries for lower labor costs (Hernandez, 2013).

In a global survey by Reuters, 65% of respondents from around the world think telecommuters are productive due to the greater control over work life enabled

by a more flexible work arrangement (Reany, 2012). In a Cisco survey of 2,000 of its own employees, 69% of the employees surveyed said they were more productive when working remotely, and 67% said their overall work quality improved when telecommuting (Mora & Irwin, 2009).

2.5 Research Framework

The following shows the research framework:

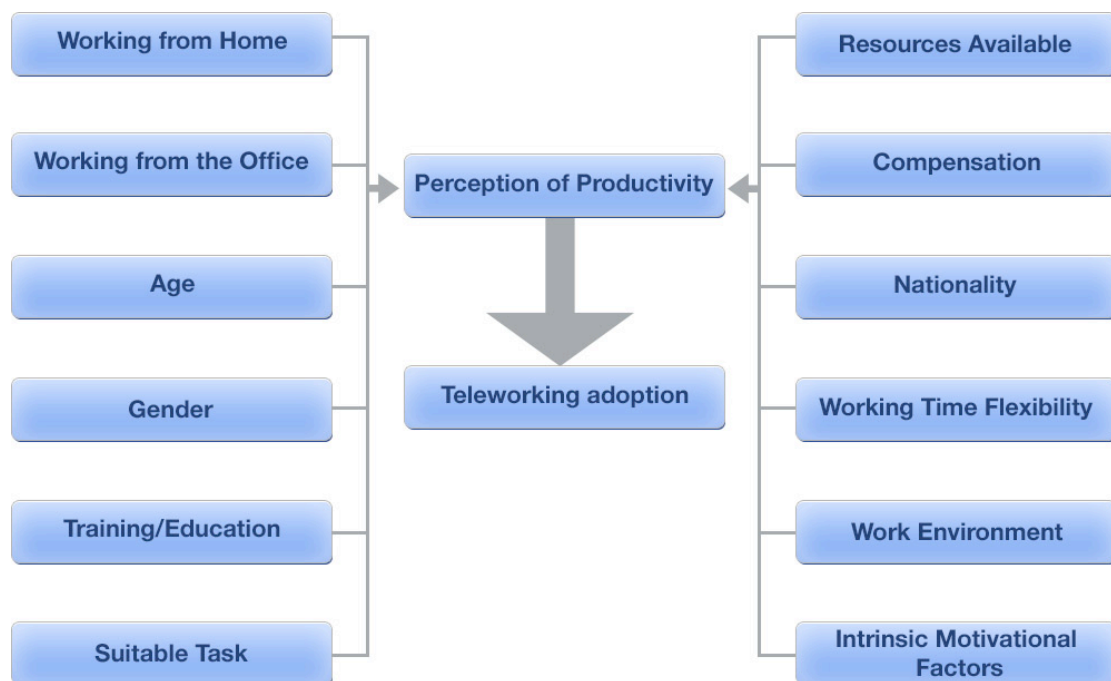


Figure 1–Research framework, perception

The figure above shows the research framework of the study. The perception about the productiveness of teleworking and the feasibility of its adoption is influenced by different organizational drivers.

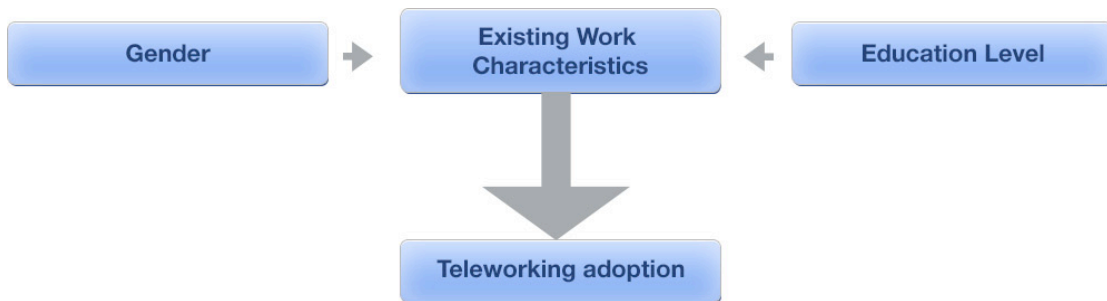


Figure 2 – Research framework, existing work characteristics

The figure above shows the research framework of the study in terms of gender and the education level and its effect on existing work characteristics and how feasible teleworking may be.

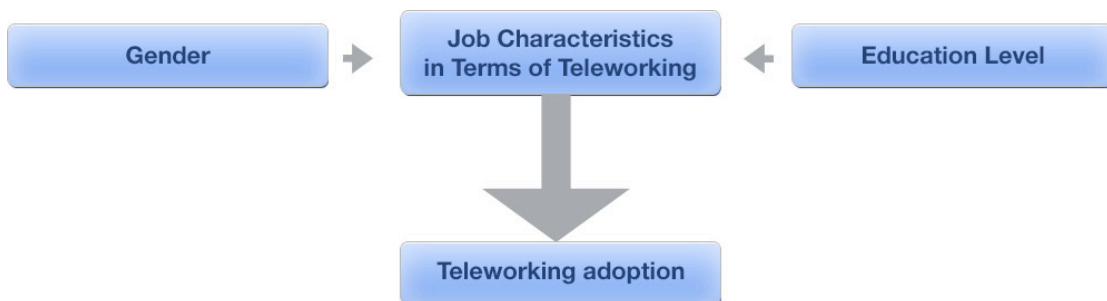


Figure 3 –Research framework, job characteristics in terms of teleworking

The figure above shows the research framework of the study in terms of gender and the education level and its effect on job characteristics in terms of teleworking and how feasible teleworking may be.

The theoretical support of these drivers are based on organizational theories. Three main theories are the background for the hypotheses proposed within this

research framework: the resource-based view of the firm, the institutional theory, and the agency theory. These organizational theories have several implications for the company and, as a consequence, they may influence different drivers related to teleworking adoption and implementation. The next paragraphs outline each one of these theories and their relevance to employees and teleworking, before developing a set of testable hypotheses.

First, the resource-based view which is developed around the internal competencies of the firm (Wernerfelt, 1984; Prahalad and Hamel, 1990). According to this view, competitive advantage is based on the internal resources of the firm, and in particular the human capital (Pfeffer, 1994, 1996; Russo and Foults, 1997). Resources can be defined as “those assets that are tied semi-permanently to the firm” (Barney, 1991, p. 173). Resources which are rare, valuable, inimitable, and non-substitutable can provide sources of sustainable competitive advantages (Barney, 1991). Within this framework, resources such as the employees tacit knowledge or the information and communication technologies, which are needed to implement teleworking in any case, may explain the company’s adoption of teleworking and competitiveness.

The resource-based view has become by far, the theory most often used within companies, both in the development of theory and the rationale for empirical research (Wright et al., 2001). Huselid (1995) argued at a general level that HR practices could help create a source of competitive advantage, particularly if they are aligned with the firm’s competitive strategy. His study revealed a relationship between high performance work systems and employee turnover, and gross rate of return on assets.

between HR planning, recruitment, and staffing practices and labour productivity. They found that firms that develop effective routines for acquiring human assets, develop a stock of talent that cannot be easily imitated. In another example, Richard (2001) used resource-based logic to examine the impact of racial diversity on firm performance, and found that diversity was positively related to productivity, return on equity, and market performance. With its emphasis on internal firm resources as sources of competitive advantage, the resource-based view seems very appropriate to study teleworking, owing to the focus of teleworking on organizational issues. Managers may use teleworking as a work organization to recruit and retain their most valued employees who are in need of time and space flexibility.

Second, the institutional theory is concerned with the spread of organizational practices within the social framework of norms, values, and taken-for-granted assumptions. Central to institutional theory is the concept that organizational actors seek to get legitimacy for their organizations by adopting those strategies, structures and processes that are socially approved by stakeholders external to organizational decision making processes (Meyer and Rowan, 1977). Legitimacy confers greater ability to obtain resources or overcome barriers within the organizational field (DiMaggio and Powell, 1983). Institutional theory has been used successfully to predict the incidence of management practices in general (Gooderham et al., 1999), and more specifically in the related field of family-friendly management (Wood, 1999).

The institutional perspective is useful to explain the influence of managers on teleworking adoption because teleworking is a management innovation which is then

practices (Tregaskis, 2000; Daniels et al., 2001). Huws et al. (1990) suggest that teleworking may be a comparative rarity because of management resistance and the strength of organizational culture. Deep-rooted shared assumptions and attitudes about the relations among individuals and social units (i.e. managers, labour unions, etc.) constitute task and institutional pressures operating within each organizational field, the apprehension of which is necessary to understanding teleworking adoption (Daniels et al., 2001). For example, working long hours at the office may be considered part of the company's culture for career advancement. But home-based teleworking constitute a deviation from the institutional rule and a loss of legitimacy that may provoke a negative perception towards its adoption by the employees and managers (out of sight, out of mind).

Thus, cultural factors may trigger some differences in behavior towards teleworking. The workers in southern European countries like Spain resist dispensing with personal contact, and managers prefer to control their employees' work directly. An American guru, Gil E. Gordon, says that "if we make it easier for both fathers and mothers to be in the home a few more hours each day, their children will have better lives". "No", says Lucio Toninelli, HR Manager of IBM Italy, "our teleworkers are clamouring to come back to the office. They find that teleworking interferes with family life, and they miss the companionship of their fellows. . ." (Europublic, 2001). Teleworkers do not get away from organizational politics. Most corporate leaders still value "face time" and tend to reward those who directly interact with them. For example, face-time is an important cultural issue in several Asian countries, which explains why teleworking has been more difficult to implement in this side of the world. Less than 1 percent of companies in Singapore allow employees to telework

and most of those are US firms. IBM successfully launched teleworking in Singapore by taking drastic actions. It got rid of personal desks so employees have less space at the office. IBM also trained managers to think about employee performance in terms of output, not visibility (Prystay, 1999). Other cultural barriers have lost influence owing to the globalization of business. For example, only about 10 percent of Spanish employees take a siesta (nap) nowadays because Spanish employees in large cities have to commute to work and have to communicate throughout the day with business people in neighboring countries. Thus, this cultural factor may be less important than it used to be to explain work organization in Spain (Boudreaux, 2000).

Third, agency theory emphasizes the need for measurability of performance and for performance criteria that employees can influence (Eisenhardt, 1988). Agency theory (Jensen and Meckling, 1976; Fama and Jensen, 1983) is directed at a particular type of organizing problem, the so-called agency problem. The focus is on determining the optimal contract that governs the relationship between a principal (employer or supervisor) and an agent (employee). The objective of both parties, agent and principal, is to maximize utility (Jensen and Meckling, 1976; Eisenhardt, 1989). When the principal knows what an agent has done, a contract based on behavior is most efficient since the principal is buying the agent's behavior. But if the principal does not know what the agent has done, the principal has two options: to discover the agent's behavior by investing in information, or to contract, at least partially, on the basis of the outcomes of the agent's behavior. Outcome-based contracts may be more useful to teleworking because there is no direct supervision of the agent and the teleworker has full autonomy to program and control their work.

Each of these three organizational theories has the capacity to explain the manager's ability to influence the company's adoption of teleworking. The decision to adopt teleworking is mostly associated with senior managers (Daniels et al., 2001; Karnowski and White, 2002). The extent that these decision-makers have political and technical capabilities will influence the company's adoption of teleworking. Within organizations, we might expect to find resistance to the introduction of teleworking where managers may perceive that teleworking may change traditional managerial roles and practices, where teleworking is thought to bring more individual costs than benefits, or where there is lack of suitable technological and HR for teleworking. The next paragraphs develop the research model depicted in Figure 1 by proposing research hypotheses to explain the perceptions on the feasibility of teleworking adoption.

2.4.1 Teleworking vs Office Working

The first hypothesis and second hypothesis deal with the main focus of the study, which is working from home and working from the office.

H1: Employees perceive greater productivity while working in the office.

H2: Employees perceive greater productivity while working from home.

2.4.2 Age

Aging may affect productivity levels for various reasons. On the one hand, older workers are thought to be more reliable and to have better skills than average workers. On the other hand, older workers have higher healthcare costs, lower flexibility in accepting new assignments and then may be less suitable for training (Barth et al., 1993). Age alone is found to be a poor predictor of individual

performance. There are wide variations although older workers are generally considered to be more consistent, cautious, and conscientious. Furthermore, older workers have fewer accidents and they are less likely to quit, thus reducing hiring costs (Garibaldi et al., 2010). It is difficult to establish how age itself affects labor productivity not only because productivity is highly individual and sector-specific but also because of convolution of age, cohort and selection effects.

According to Johnson (1993), most employers and probably most employees seem to believe in a rule of thumb that average labor productivity declines after some age between 40 and 50. On the basis of a literature survey, Skirbekk (2003) concludes that job performance decreases after age 50, in particular for jobs where problem solving, learning and speed are important and less so for jobs where experience and verbal abilities are important. The net effect of the age-specific productivity determinants depend on how individual skills are used in the work process, how the work is organized and how the individual interacts with other workers and firm level factors such as technology (van Ours & Stoeldraijer, 2010). Therefore, the researcher hypothesizes the following:

H3: Employees perceive the feasibility of teleworking in companies with young aged employees.

2.4.3 Gender

The under-utilization of women workers is usually the result of two main constraints. The first constraint is that women often have to assume major responsibilities for their family and career. Such responsibilities will greatly restrict their mobility and participation in the labour market. The second constraint is that

training and career advancement opportunities provided to women are usually limited due to their family involvement (Lim, 2000). Furthermore, the separation of home from the workplace and the conventional working hours constitute additional drawbacks which preclude prolonged female participation in the labour market (Abdul Azeez and Supian, 1996).

Several researchers found that the preference to telework was in fact related to gender, with a greater proportion of women favouring this work alternative compared to their male counterparts (e.g. DeSanctis, 1984; Mokhtarian et al., 1998; Belanger, 1999). A number of reasons were suggested for these findings. First, many women adopted teleworking for reasons related to domestic responsibilities. Second, extant research suggested that women were also motivated by other considerations such as work flexibility, convenience, increased freedom and autonomy as well as by the stimulus and a sense of achievement which teleworking has provided them (Di Martino and Wirth, 1990; Chapman et al., 1995).

Some studies indicate that “family-friendly” policies are mainly adopted in organizations with large percentages of female employees (Goodstein, 1994; Ingram and Simons, 1995; Osterman, 1995; Frone and Yardley, 1996) although organizational values supporting work-family balance have important work and personal consequences for men as well (Burke, 2000). Other studies found that while there may be no general relationship between the gender composition of the workforce and family-friendly management, the relationship is mediated by whether or not management perceives family problems as relevant, that is whether they are conscious of these as potential factors to which they have to respond (Wood, 1999).

employees would highly appreciate flexibility to combine their work and household responsibilities. Because one of the main characteristics of teleworking is that it allows a smoother adaptation to business needs as well as personal or family needs, Spanish HR managers may perceive that this work form may be preferred by female workforces.

In line with the above reasoning, women are likely to have a more favorable attitude towards teleworking because they could now work without leaving the home physically. They can work during the hours when they are most productive. More importantly, they have the autonomy in allocating time between work and family activities. Thus, it is hypothesized that:

H4: Female employees will have a more favorable attitude towards teleworking than men.

H5: Different genders will not have an effect on existing work characteristics of employees.

H6: Different genders will not have an effect on job characteristics in terms of the adaptability of teleworking.

2.4.5 Training/Education

Competitive advantage is based on the internal resources of the firm, and in particular the human capital (Russo and Foults, 1997). To recruit and retain the most valued employees, companies offer several incentives like “on-the-job” training. Investment in human capital leads to increases in worker productivity which are, in turn, rewarded in the form of increased earnings to the worker (Becker, 1975; Bartel, 1995; Farber and Gibbons, 1996). The adoption of technical and organizational

innovations may initially decrease productivity. Training is often necessary to overcome cultural resistance to adopt innovations. Spanish HR managers might perceive greater teleworking feasibility if their employees are more trained to use new technologies and face other teleworking requirements. Therefore, the researcher hypothesizes the following:

H7: Employees perceive a greater teleworking feasibility if the employees receive “on-the-job” training.

The researcher was interested in finding out whether employees’ education level would have an effect on the way that they perceived their current job characteristics and their ability to adapt to teleworking. Therefore the researcher hypothesized the following.

H8: Different employee’s education level will not have an effect on existing work characteristics of employees or the job characteristics in terms of adaptability to teleworking.

2.4.6 Suitable Task

The fifth hypothesis deals with one of the most important inhibitors of teleworking, that is the lack of suitable tasks for teleworking (Daniels et al., 2001). Teleworking is rarely found among manufacturing jobs but it is more frequent in service industries and in jobs that contain information-based tasks than can be dispersed geographically and performed asynchronously (Huwset al., 1990; European Commision, 2000; McGrath and Houlihan, 1998). Managers have a responsibility to identify jobs having such characteristics. Similarly, managers are better able to identify which teleworking jobs may be difficult to manage and hence decrease

performance. Middle managers may even oppose the introduction of teleworking if they perceive that teleworking threaten their identity (Weisenfeld et al., 1999). Given that managers in southern Europe prefer to control their employees' work directly, Spanish managers may be less willing to adopt teleworking when there are unsuitable tasks owing to the managers low unwillingness to control employees' work remotely (Empirica, 2000). Therefore, the researcher proposes the following hypothesis:

H9: Employees who perceive jobs to be suitable for teleworking, perceive greater teleworking feasibility in their companies.

2.4.7 Resources Available

Technological resources are also a source of competitive advantage. But information technologies alone do not produce sustainable performance advantages, unless they leverage complementary human and business resources (Powell and Dent-Micallef, 1997). From an agency perspective, the principal can use information and communication technologies to control the agent's behavior. The introduction of teleworking is easier if the company is already using these technologies because the employees will have more technical knowledge to use and support their performance. For example, e-mail usage is widespread in Spain, regardless of whether or not a company takes part in teleworking, but it is those companies that use teleworking where email is predominant (Empirica, 2000). Therefore, the researcher hypothesizes the following:

H10: Employees perceive greater teleworking feasibility, the greater the use of information and communication technologies in the company.

2.4.8 Compensation

HR managers are also responsible for the employees' compensation system. From an agency perspective, the choice between fixed or variable compensation depends on whether the employee's behavior can be readily evaluated (Eisenhardt, 1988). Given that people are hired to perform behaviors, if behaviors can be evaluated, it makes sense for companies to pay directly for those behaviors via salaries (fixed compensation). On the other hand, if behaviors cannot be readily evaluated, variable compensation is attractive because they align the goals of employees with those of the company in which they work, even though their actual behaviors are not well evaluated by managers. Since employers are not able to observe teleworkers directly, teleworking might be more prevalent among jobs where performance can be measured easily (Van Ommeren, 2000) or where performance is aligned with the company's goals via compensation. Thus, Spanish HR managers might perceive that the application of variable compensation facilitates the introduction of teleworking because job performance can be evaluated independently of the type of job, and the employee's behavior is not in need of manager's control. Thus:

H11: Employees perceive a greater feasibility of teleworking in companies with large variable compensation system to employees.

2.4.9 Nationality

Based on the institutional theory mentioned earlier at the beginning of the research framework, which suggests that cultural factors may trigger some differences in behavior toward teleworking. The researcher hypothesizes the following:

H12: Employees perceive a greater feasibility of teleworking in when employees are of a Western background rather than of an Easter background.

2.4.10 Work Time Flexibility

Working time flexibility is an important subset of “workplace flexibility”. The latter is typically considered to be “the ability of workers to make choices influencing when, where, and for how long they engage in work-related tasks” (Hill et al., 2008).

Flexi-time arrangements and compressed workweeks have positive effects on productivity, employee job satisfaction and satisfaction with work schedules; in addition, flexi-time has a strong positive impact on absenteeism as well. In fact, better work–life balance practices, such as providing workers with flexibility regarding their work schedules, are generally associated with significantly higher productivity (Golden, 2012). There is also substantial evidence that employers who offer work schedule flexibility to their employees are likely to improve the recruitment of new staff and the retention of existing staff, resulting in cost savings to the enterprise. In theory, workers who do not get their preferred hours or timing of work are receiving a positive wage premium - a compensating wage differential – whereas those with the hours and schedules they prefer to have a negative pay premium - they may forego a raise, bonus or alternative benefit (Baughman et al., 2003; Wax, 2004; McCrate, 2005; Holzer, 2005; Heywood, et al., 2005). Employers may realize savings in compensation costs as some employees may be willing to trade wages or other non-wage benefits for more leisure time (Kossek and Michel, 2010). Companies using flex-time seem to operate more productively, as well as more efficiently, and employers appear to be sharing the marginal returns of flexible working time

arrangements with at least some of their employees (Shepard et al, 1996; Wolf and Beblo, 2004). Therefore the researcher hypothesizes the following:

H13: Employees perceive flexible working hours to be an important deciding factor in the implementation of teleworking.

2.4.11 Work Environment

Work environment is the sum of the interrelationship that exists within the employees and between the employees and the environment in which the employees work (Kohun, 1992). There is a strong relationship between healthy and good employee work environment and productivity or organizational performance. It is also observed that employees tend to be more productive in a well-facilitated work environment. Therefore, the quality of comfort derivable from work environment determines the level of satisfaction and productivity of workers. Workers productivity cannot be optimal, if the conditions of work environment are not favorable. Improved work environment will enhance employee productivity (Taiwo, 2010). Conducive work environment ensures the well being of employees which invariably will enable them exert themselves to their roles with all vigor that may translate to higher productivity (Akinyele, 2007). Brenner (2004) argued that work environment designed to suit employee's satisfaction and free flow of exchange of ideas is a better medium of motivating employees towards higher productivity. According to Yesufu (1984), the nature of the physical condition under which employees work is important to output.

The simple premise behind the movement towards better working environments is that comfortable people are more productive. It is the quality of the

employee's workplace environment that most impacts on the level of employee's motivation and subsequent performance. How well they engage with the organization, especially with their immediate environment, influences to a great extent their error rate, level of innovation and collaboration with other employees, absenteeism and, ultimately, how long they stay in the job. Comfortable and ergonomic office design motivates the employees and increases their performance substantially. Better outcomes and increased productivity is assumed to be the result of better workplace environment. Better physical environment of office will boost the employees and ultimately improve their productivity (Sehgal, 2012). Therefore the researcher hypothesizes:

H14: Employees perceive a greater feasibility of teleworking in companies that provide a healthy working environment for its employees.

2.4.12 Intrinsic Motivational Factors

A motivated and qualified workforce is crucial to increase productivity and the quality of the organizational services in order to achieve organizational objectives (Stella, 2008). Motivation is significant because even people with the required knowledge, skills, and abilities will perform poorly if they are not motivated to devote their time and effort to work (Milapo, 2001). Intrinsic motivators are sources of need satisfaction, that derive from the individual's relation to the job itself and it involves job factors which reward the needs of the individual to reach his aspirations and an example are achievement, recognition, responsibility, advancement (Maund, 2001).

According to (Ryan and Deci, 2000), "intrinsic motivation is defined as the doing of an activity for its inherent satisfaction rather than for some separable

consequence. When intrinsically motivated, a person is moved to act for the fun or challenge entailed rather than because of external products, pressures or reward” (p 56) (Oudeyer & Kaplan, 2008).

Grabner and Speckbacher (2009) indicated that intrinsic motivation not only will increase effort, but it will also have great influence on other aspects of employee behavior (Choong & Wong, 2011).

Intrinsic motivations are described as attitudes or drivers of human behavior that go beyond the satisfaction of mere physiological and security needs which require a monetary or, in any event, material remuneration (Becchetti, Castriota & Tortia, 2009). Intrinsic motivations include the interest in the activity performed, good relationships with other colleagues and with superiors, and involvement and autonomy in decision making at the operational and strategic level. These aspects are conclusively linked to work as defined by Locke (1969). The intrinsic nature is specific to the task and directed to the flow of activity, to goals that are self-defined, and the obligation of personal and social norms—benevolence, identity, fairness—for their own sake (Frey, 1997).

H15: Employees perceive a greater feasibility of teleworking in companies that intrinsically motivate its employees.

CHAPTER 3

3.1 Research Question

This research study is designed to answer the following questions:

1. How do IT industry employees perceive the level of productivity, as measured by a survey, when they work from home as opposed to working at the office?

The researcher hypothesized that there will be no difference between the perception of the level of productivity of those employees that work from home versus those that work from the office.

2. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when companies have younger aged employees as opposed to older aged employees?

The researcher hypothesized that employees will perceive a greater feasibility of teleworking in companies with younger aged employees.

3. How do different genders of employees affect their perception towards teleworking?

The researcher hypothesized that female employees will have a more favorable attitude towards teleworking than men.

4. Do different genders have an effect on existing work characteristics of employees?

The researcher hypothesized that different genders will not have an effect on existing work characteristics of employees.

5. Do different genders have an effect on job characteristics in terms of the adaptability of teleworking?

The researcher hypothesized that different genders will not have an effect on job characteristics in terms of the adaptability of teleworking.

6. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when companies provide “on-the-job” training?

The researcher hypothesized that that employees will perceive a greater teleworking feasibility if they receive “on-the-job” training.

7. Do different employees education level have an effect on existing work characteristics or their job characteristics in terms of adaptability to teleworking

The researcher hypothesized that different employees’ education level will not have an effect on existing work characteristics or their job characteristics in terms of adaptability to teleworking.

8. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when their job tasks are suitable to work away from the office?

The researcher hypothesized that employees’ who perceive their jobs to be suitable for teleworking will perceive a greater feasibility of teleworking.

9. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when the necessary resources (information and communication technologies) are available?

The researcher hypothesized that employees' who have access to the necessary information and communication technology resources will perceive a greater feasibility of teleworking.

10. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when they have a compensation system place in the company?

The researcher hypothesized that employees' who work with a compensation system will perceive a greater feasibility of teleworking.

11. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when the majority of the employees in the company are of a Western background rather than from an Eastern background?

The researcher hypothesized that employees' who work in companies with a large number of Westerners will perceive a greater feasibility of teleworking.

12. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when they are allowed to have work-time flexibility?

The researcher hypothesized that employees' who are allowed to have work-time flexibility will perceive a greater feasibility of teleworking.

13. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when they are provided with a healthy work environment?

The researcher hypothesized that employees' who work in a healthy environment will perceive a greater feasibility of teleworking.

14. How do IT industry employees perceive the feasibility of teleworking, as measured by a survey, when they are given intrinsic motivation?

The researcher hypothesized that employees' who are intrinsically motivated will perceive a greater feasibility of teleworking.

3.2 Research Methodology

The researcher used a quantitative approach in order to carry out her research. The researcher contacted approximately a 1000 people and companies in the IT industry; out of which only 420 responded and successfully completed the survey. The survey was used mainly to gather information about the employee attitudes and their feelings about the results of working from home. The questions in the survey used for the research were either formulated by the researcher herself or they were modified from a website called iCommute. To see a sample of the survey used please see Appendix A.

3.2.1 Sample

The sample consisted of 420 employees randomly selected employees from the various IT companies in Bangkok, Thailand. The researcher used Taro Yamane's sampling procedure formula to calculate the ideal sample size. According to the

National Statistical Office of Thailand the number of employed people in Thailand is approximately 39.35 million people. Using Taro Yamane's formula below;

$$n = \frac{N}{1 + Ne^2}$$

Equation 1: Taro Yamane's sampling procedure

Where:

n = *sample size*

N = *population size*

e = *level of precision*

When this formula is applied to the appropriate sample we get:

$$n = \frac{39,350,000}{1 + 39,350,000(0.05)^2}$$

$$n = 400$$

The usage of a sampling procedure allows researchers to gather large amounts of data in a short period of time. For this reason the researcher chose this method.

3.2.2 Materials

The exact materials needed to carry out the study included a computer with Internet connection in order to post the survey online and so that respondents could fill out the survey as well.

3.2.3 Instruments

The researcher used a survey in order to measure the perception of employees on the level of productivity of employees in the IT industry while they work from home and while they work in the office. The questions in the survey used for the

research were either formulated by the researcher herself or they were modified from a website called iCommute. To see a sample of the survey used please see Appendix A. The survey was posted online in a website called SurveyPlanet in order to make it easier for employees to fill out the survey.

SurveyPlanet is an online survey tool that allows researcher to conduct their survey regardless of the number of survey questions. The reasons for using this tool are because it is free; there are no trial periods, strings, or any other kind of gimmicks. In addition, it enables the researchers to post as many questions as they want.

The reason as to why the survey instrument made use of SurveyPlanet is for the fact that it is user friendly even for those researchers that are novice with online-based survey. In addition, the website supports a number of online surveys and is more convenient for survey editing. Testing of the efficiency of the survey instrument was done in two stages. The first stage was to test it on the SurveyPlanet website in order to identify possible errors or changes that needed to be made on the survey. This stage of testing the instrument was done by the researcher and in case of any errors or changes, it is done immediately within the website. This is fundamental because it ensures that the survey is error free before it is made live for the respondents to complete.

The next test is done use the SurveyPlanet website as well. This is where the real functionality of the online survey is done. A number of people, who are not the real respondents, are selected in order to have a try on the survey. They will then give their suggestions on how they feel about the survey. If they find the survey to be effective, the researcher then makes it available online for the respondents to complete.

3.2.4 Procedure

The study used an approach in which employees of various companies were given a survey to fill out. The researcher contacted various IT companies in Bangkok, approximately 1000, where the company culture has adopted teleworking. In those companies, she randomly selected employees to whom she gave the survey, for them to fill out. Out of the 1000 people contacted, 420 responded. Once the surveys had been completed, the researcher collected them and analyzed them appropriately.

3.2.5 Calendar Plan

Due to the term break, the study took place between July and September 2013. In the beginning of June the survey was given to the employees. In the end of June the tests were collected from the employees at the various organizations. In August the data was analyzed thoroughly and conclusions were drawn. In September the final thesis was submitted and presented to the board.

3.2.6 Data Collections and Analysis

The researcher collected the data and for each of the groups of data, then she applied relevant statistical calculations necessary in order to draw conclusions. The main statistical functions include the measures of central tendency, in other words the mean, median, and mode. The mean tells us the average of each of the sets of data. If there are any outliers the result may be affected hence the median is calculated, which shows the middle value of the data set. The researcher also calculated the mode, which shows the most repeated value for each data set. After having calculated the mean, median and mode the researcher calculated the standard deviation to see how spread out the scores were from the mean. In order to see whether there is a significant difference between the two scores for each group the researcher conducted

an independent sample 2-tail t-test.

In order to get a bigger picture of the research data, it was fundamental to calculate the frequency distribution. The main aim of conducting the frequency distribution was in order to see how frequent some values are observed and the same variable's percentage. In the study, frequency distribution was used in order to figure out the number of employees that perceive teleworking to increase productivity.

In addition, the range and variance were also calculated. The main aim of the range was to find the difference between the maximum and minimum values of the variables used in the study. On the other hand, the calculation of the variance was to show how much variation exists in the variable values from mean.

Based on the results the researcher then concluded whether the hypotheses should be accepted or rejected. If the p-value was less than 0.05 then the null hypothesis was rejected showing that there is a significant difference between the two variables. Otherwise, the null hypothesis was accepted, showing that there is no significant difference between the two variables. Furthermore, the researcher also conducted F-tests in order to see if there was a significant difference between groups of data.

CHAPTER 4

4.1 Results

In order to clearly show what the data analysis reveals, this section has been broken down into several parts to match each hypothesis mentioned in the research framework.

For the main focus of the study, two hypotheses were drawn one relating to teleworking and the other to working from home, they were the following:

H1: Employees perceive greater productivity while working in the office.

H2: Employees perceive greater productivity while working from home.

When employees were asked to pick which statement best described their feelings between ‘working in the office results in greater productivity’ and ‘working from home under a controllable environment results in higher productivity’, 260 employees said that working from the office results in greater productivity while 170 said otherwise. This result shows that most of the workers would prefer working from the office. Of course, there were a number of reasons as to why they would prefer working from the office. According to them, among the reasons as to why working from the office would increase productivity was the fact that one is able to concentrate more while in the office. However, for those that agreed that working from home increases productivity argued that it would be more efficient for the female employees. The pie chart below gives us a clear sense of the data has to show.

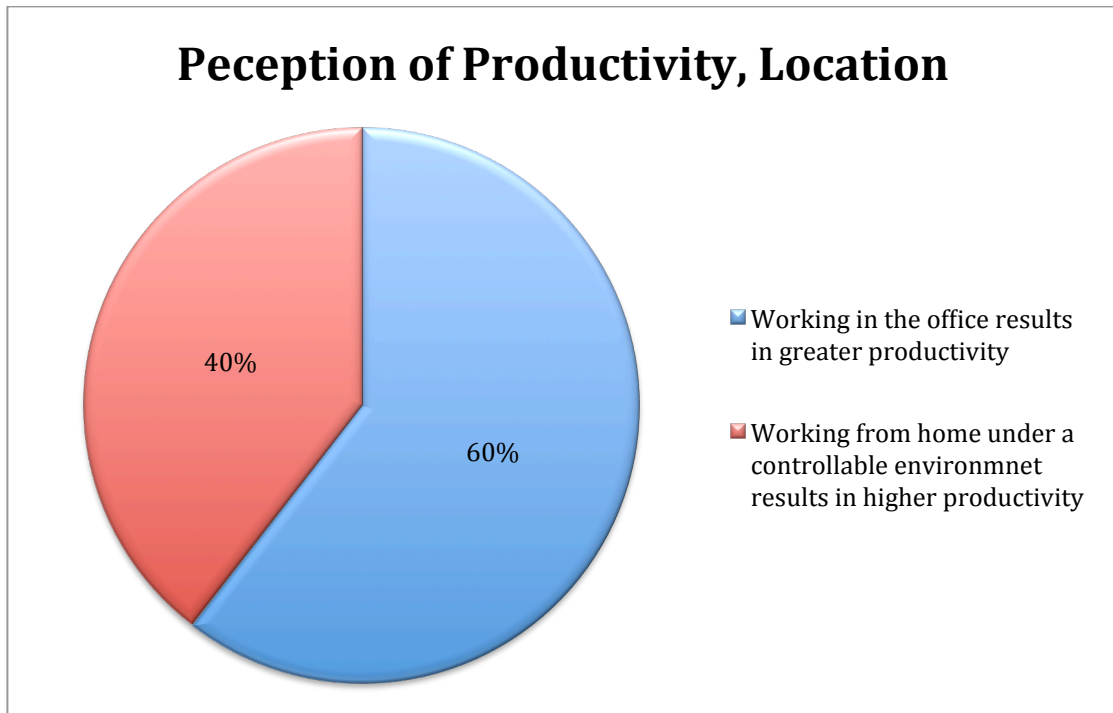


Figure 4 – Pie chart showing employees perception of productivity based on location.

After analyzing the data, the above results show that the first hypothesis (H1) should be accepted, while on the other hand, the second hypothesis (H2) should be rejected. In other words, employees perceive greater productivity while working in the office.

For the age factor, the researcher hypothesized the following:

H3: Employees perceive greater feasibility of teleworking in companies with young aged employees.

When employees were asked whether they thought it would be easier to implement teleworking among young aged employees rather than among older ones,

out of 420 respondents 270 said yes while the others said no. The pie chart below gives us a clear sense of the data has to show.

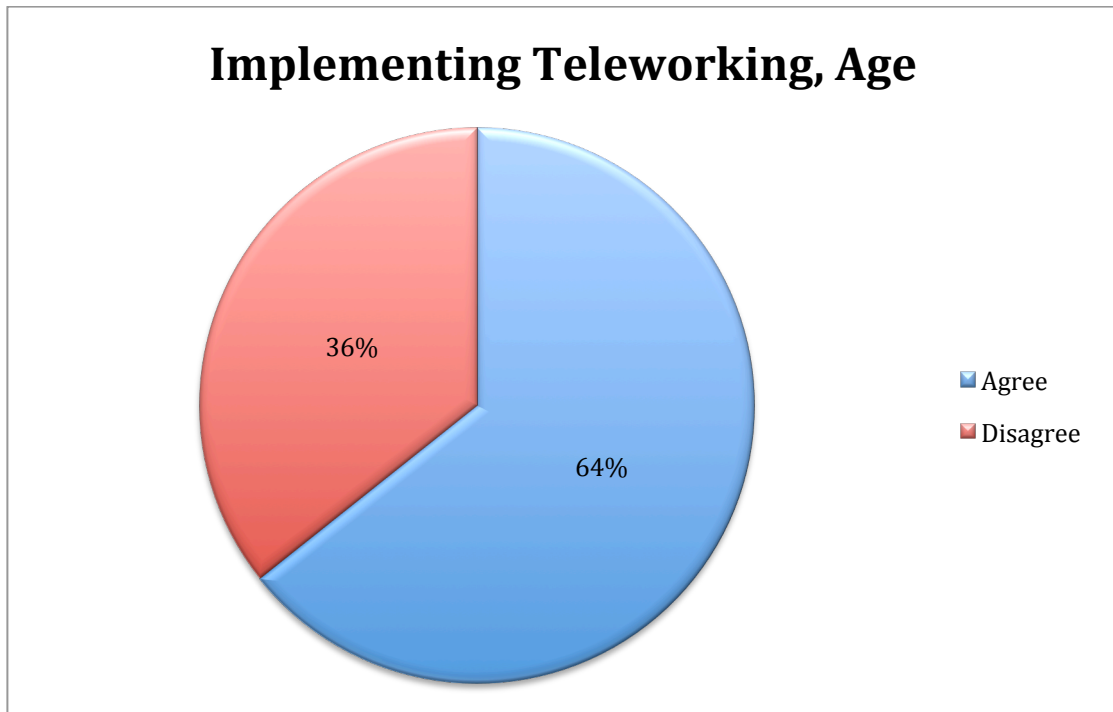


Figure 5 – Pie chart showing employees perception on the feasibility of teleworking relating to age.

After analyzing the data, the above results show that the hypothesis (H3) should be accepted. In other words, employees perceive the feasibility of teleworking in companies with young aged employees.

For the gender factor, the researcher hypothesized the following:

H4: Female employees will have a more favorable attitude towards teleworking than men.

H5: Different genders will not have an effect on existing work characteristics of employees.

H6: Different genders will not have an effect on job characteristics in terms of the adaptability of teleworking.

When employees were asked to pick which statement best described their feelings between ‘teleworking is an absolute waste of time’ and ‘teleworking is not a waste of time’, 89.4% of the female employees that answered the survey said that teleworking is not a waste of time, while 86.1% of the male employees that answered the survey said that teleworking is not a waste of time. The bar graph below gives us a clear sense of the data has to show.

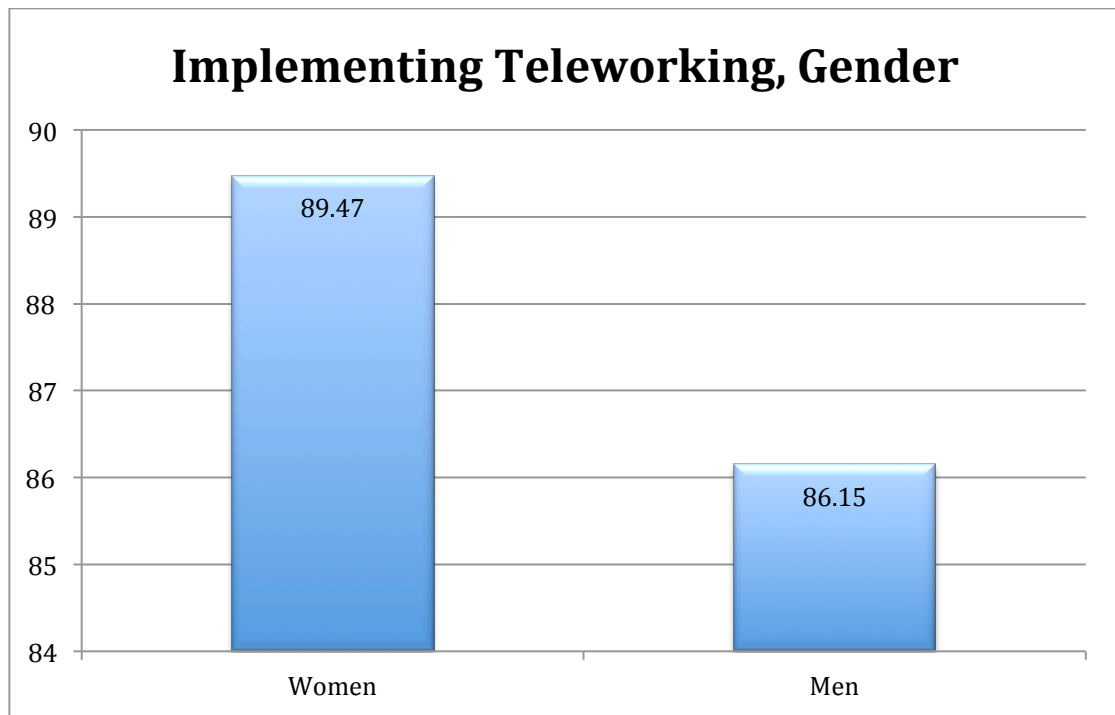


Figure 6 – Bar graph showing the difference between male and female employees perception on the feasibility and productivity of teleworking.

After analyzing the data, the above results show that the hypothesis (H4) should be accepted. In other words, female employees have a more favorable attitude towards teleworking than men.

When employees were asked to rate the following characteristics: (1) amount of face-to-face contact required, (2) degree of telephone communications required, (3) autonomy of operation, (4) ability to control and schedule work flow, and (5) amount of in-office reference material required according to their existing job requirements and characteristics employees gave the most important to the ability to control and schedule work flow. The following table gives us a clearer picture of what the data has to show.

Existing Work Characteristics	Gender	\bar{x}	S.D.	Sig.
Amount of face-to-face contact required	Male	3.6269	.99252	.086
	Female	3.8235	.71007	
Degree of telephone communications required	Male	3.2985	1.28341	.977
	Female	3.2941	1.18345	
Autonomy of operation	Male	3.7910	.87441	.000
	Female	3.3529	.84100	
Ability to control and schedule workflow	Male	4.3433	.78443	.004
	Female	4.0588	.94306	
Amount of in-office reference material required	Male	3.3134	1.23823	.486
	Female	3.4118	.77604	

Table 1 – Existing work characteristics in comparison to gender.

The table above shows the different existing work characteristics in comparison to employee gender along with the mean, standard deviation and significance.

After analyzing the data, the above results show that in terms of the amount of face-to-face time required, p-value = 0.086, since p-value $> \alpha_{0.05}$ the hypothesis (H5)

the particular characteristic In terms of the degree of telephone communications required, p-value = 0.977, since p-value $>\alpha_{0.05}$ the hypothesis (H5) is accepted. In other words, there isn't a significant difference between genders and the particular characteristic. In terms of autonomy of operation, p-value = 0.000, since p-value $<\alpha_{0.05}$ the hypothesis (H5) is rejected. In other words, there is a significant difference between genders and the particular characteristic. In terms of the ability to control and schedule workflow, p-value = 0.004, since p-value $<\alpha_{0.05}$ the hypothesis (H5) is rejected. In other words, there is a significant difference between genders and the particular characteristic. In terms of the amount of in-office reference material required, p-value = 0.486, since p-value $>\alpha_{0.05}$ the hypothesis (H5) is accepted. In other words, there isn't a significant difference between genders and the particular characteristic.

When employees were asked to rate the following characteristics: (1) amount of face-to-face contact required, (2) degree of telephone communications required, (3) autonomy of operation, (4) ability to control and schedule work flow, and (5) amount of in-office reference material required according to their job characteristics in terms of adaptability to teleworking employees gave the most important to the ability to control and schedule work flow. The following table gives us a clearer picture of what the data has to show.

Job Characteristics in Terms of Gender		\bar{x}	S.D.	Sig.
Adaptability to Teleworking				
Amount of face-to-face contact required	Male	3.2687	1.29001	.083
	Female	3.5294	.98305	
Degree of telephone communications required	Male	3.4925	1.15262	.133
	Female	3.2941	.75314	

Autonomy of operation	Male	3.7463	.92120	.050
	Female	3.5294	.85340	
Ability to control and schedule work flow	Male	3.8806	.97149	.324
	Female	3.7647	.94676	
Amount of in-office reference material required	Male	2.9701	1.23533	.070
	Female	3.2353	1.06511	

Table 2 – Job characteristics in terms of adaptability to teleworking in comparison to gender

The table above shows the different job characteristics in terms of the adaptability to teleworking in comparison to employee gender along with the mean, standard deviation and significance.

After analyzing the data, the above results show that in terms of the amount of face-to-face time required, $p\text{-value} = 0.083$, since $p\text{-value} > \alpha_{0.05}$ the hypothesis (H6) is accepted. In other words, there isn't a significant difference between genders and the particular characteristic. In terms of the degree of telephone communications required, $p\text{-value} = 0.133$, since $p\text{-value} > \alpha_{0.05}$ the hypothesis (H6) is accepted. In other words, there isn't a significant difference between genders and the particular characteristic. In terms of autonomy of operation, $p\text{-value} = 0.050$, since $p\text{-value} \leq \alpha_{0.05}$ the hypothesis (H6) is rejected. In other words, there is a significant difference between genders and the particular characteristic. In terms of the ability to control and schedule workflow, $p\text{-value} = 0.324$, since $p\text{-value} > \alpha_{0.05}$ the hypothesis (H6) is accepted. In other words, there isn't a significant difference between genders and the particular characteristic. In terms of the amount of in-office reference material required, $p\text{-value} = 0.070$, since $p\text{-value} > \alpha_{0.05}$ the hypothesis (H6) is

accepted. In other words, there isn't a significant difference between genders and the particular characteristic.

For the training factor, the researcher hypothesized the following:

H7: Employees perceive a greater teleworking feasibility if the employees receive "on-the-job" training.

When employees were asked whether they thought training was necessary for the implementation of teleworking, out of 420 respondents 305 said yes while the others said no. The pie chart below gives us a clear sense of the data has to show.

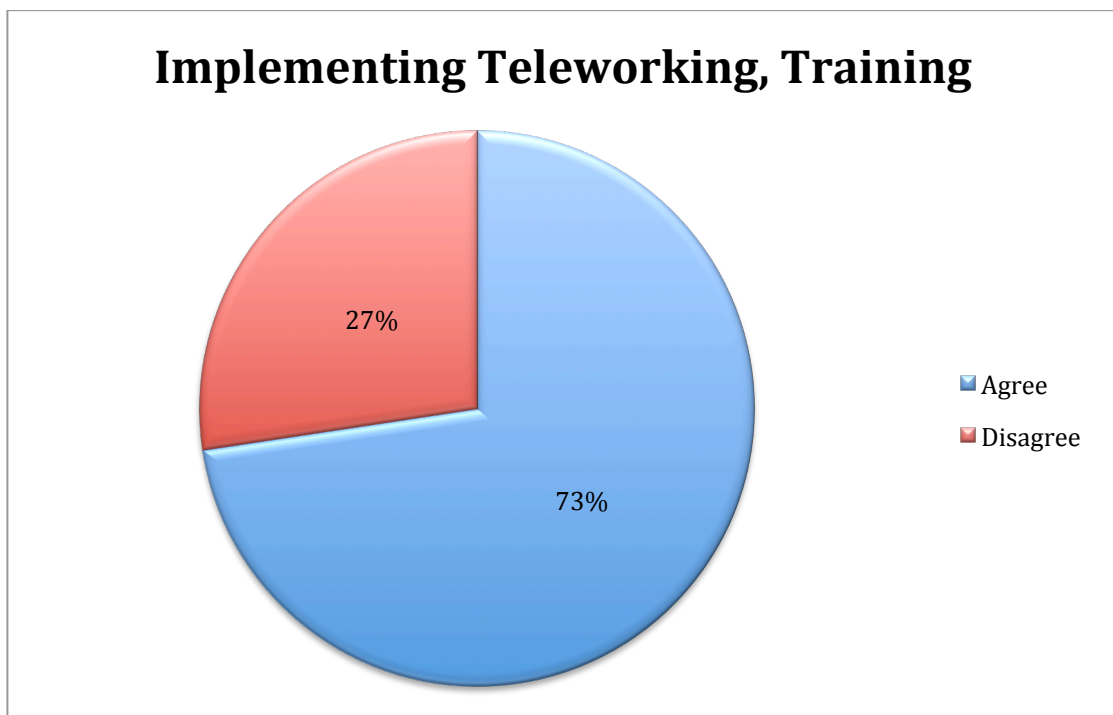


Figure 7 – Pie chart showing employees perception on the feasibility of teleworking relating to the availability of training.

After analyzing the data, the above results show that the hypothesis (H7) should be accepted. In other words, employees perceive a greater teleworking feasibility if the employees receive “on-the-job” training.

For the educational level factors, the researcher hypothesized the following:

H8: Different employees education level will not have an effect on existing work characteristics of employees or the job characteristics in terms of adaptability to teleworking.

When employees were asked to rate the following characteristics: (1) amount of face-to-face contact required, (2) degree of telephone communications required, (3) autonomy of operation, (4) ability to control and schedule work flow, and (5) amount of in-office reference material required according to their existing job requirements and characteristics employees gave the most significance to the ability to control and schedule work flow. The following table gives us a clearer picture of what the data has to show.

Existing Work Characteristics	Education Level	F	Sig.
Amount of face-to-face contact required	High School	4.640	.010
	Bachelors		
	Masters		
	PhD		
Degree of telephone communications required	High School	7.845	.000
	Bachelors		
	Masters		
	PhD		
Autonomy of operation	High School	16.598	.000
	Bachelors		
	Masters		
	PhD		
Ability to control and schedule workflow	High School	.962	.383
	Bachelors		
	Masters		

Amount of in-office reference material required	High School	6.074	.003
	Bachelors		
	Masters		
	PhD		

Table 3 – Existing work characteristics in comparison to employees education level

The table above shows the different existing work characteristics in comparison to employee's education level along with the F-Test and the significance results.

After analyzing the data, the above results show that in terms of the amount of face-to-face time required, $p\text{-value} = .010$, since $p\text{-value} \leq \alpha_{0.05}$ the hypothesis (H8) is rejected. In other words, there is a significant difference between the education level and the particular characteristic. In terms of the degree of telephone communications required, $p\text{-value} = 0.000$, since $p\text{-value} \leq \alpha_{0.05}$ the hypothesis (H8) is rejected. In other words, there is a significant difference between the education level and the particular characteristic. In terms of autonomy of operation, $p\text{-value} = 0.000$, since $p\text{-value} \leq \alpha_{0.05}$ the hypothesis (H8) is rejected. In other words, there is a significant difference between the education level and the particular characteristic. In terms of the ability to control and schedule workflow, $p\text{-value} = 0.383$, since $p\text{-value} > \alpha_{0.05}$ the hypothesis (H8) is accepted. In other words, there isn't a significant difference between the education level and the particular characteristic. In terms of the amount of in-office reference material required, $p\text{-value} = 0.003$, since $p\text{-value} \leq \alpha_{0.05}$ the hypothesis (H8) is rejected. In other words, there is a significant difference between the education level and the particular characteristic.

When employees were asked to rate the following characteristics: (1) amount of face-to-face contact required, (2) degree of telephone communications required, (3) autonomy of operation, (4) ability to control and schedule work flow, and (5) amount of in-office reference material required according to their job characteristics in terms of adaptability to teleworking employees gave the most significance to the degree of telephone communication required. The following table gives us a clearer picture of what the data has to show.

Job Characteristics in Terms of Adaptability to Teleworking	Education Level	F	Sig.
Amount of face-to-face contact required	High School	1.788	.169
	Bachelors		
	Masters		
	PhD		
Degree of telephone communications required	High School	.311	.733
	Bachelors		
	Masters		
	PhD		
Autonomy of operation	High School	1.308	.271
	Bachelors		
	Masters		
	PhD		
Ability to control and schedule work flow	High School	.912	.403
	Bachelors		
	Masters		
	PhD		
Amount of in-office reference material required	High School	6.902	.001
	Bachelors		
	Masters		
	PhD		

Table 4 – Job characteristics in terms of the adaptability to teleworking in comparison to employees education level.

The table above shows the different work characteristics in terms of the adaptability to teleworking in comparison to employee' education level along with the F-Test and the significance results.

After analyzing the data, the above results show that in terms of the amount of face-to-face time required, $p\text{-value} = .169$, since $p\text{-value} > \alpha_{0.05}$ the hypothesis (H8) is accepted. In other words, there isn't a significant difference between the education level and the particular characteristic. In terms of the degree of telephone communications required, $p\text{-value} = 0.733$, since $p\text{-value} > \alpha_{0.05}$ the hypothesis (H8) is accepted. In other words, there isn't a significant difference between the education level and the particular characteristic. In terms of autonomy of operation, $p\text{-value} = 0.271$, since $p\text{-value} > \alpha_{0.05}$ the hypothesis (H8) is accepted. In other words, there isn't a significant difference between the education level and the particular characteristic. In terms of the ability to control and schedule workflow, $p\text{-value} = 0.403$, since $p\text{-value} > \alpha_{0.05}$ the hypothesis (H8) is accepted. In other words, there isn't a significant difference between the education level and the particular characteristic. In terms of the amount of in-office reference material required, $p\text{-value} = 0.01$, since $p\text{-value} \leq \alpha_{0.05}$ the hypothesis (H8) is rejected. In other words, there is a significant difference between the education level and the particular characteristic.

For the suitable tasks factor, the researcher hypothesized the following:

H9: Employees who perceive jobs to be suitable for teleworking, perceive greater teleworking feasibility in their companies.

When employees were asked whether their job was suitable for teleworking, 320 said that it was suitable. When employees were asked to pick which statement best described their feelings between 'teleworking should be implemented' and 'teleworking should not be implemented', 360 of the employees that answered the survey said that teleworking should be implemented, while 60 of the employees that

employees that said that teleworking should be implemented 295 said that their current job was suitable for teleworking, the remaining 65 employees said otherwise. Furthermore, out of the 60 employees that said that teleworking shouldn't be implemented, 25 said that their current job was suitable for teleworking and 35 said otherwise. The bar graph below gives us a clear sense of the data has to show.

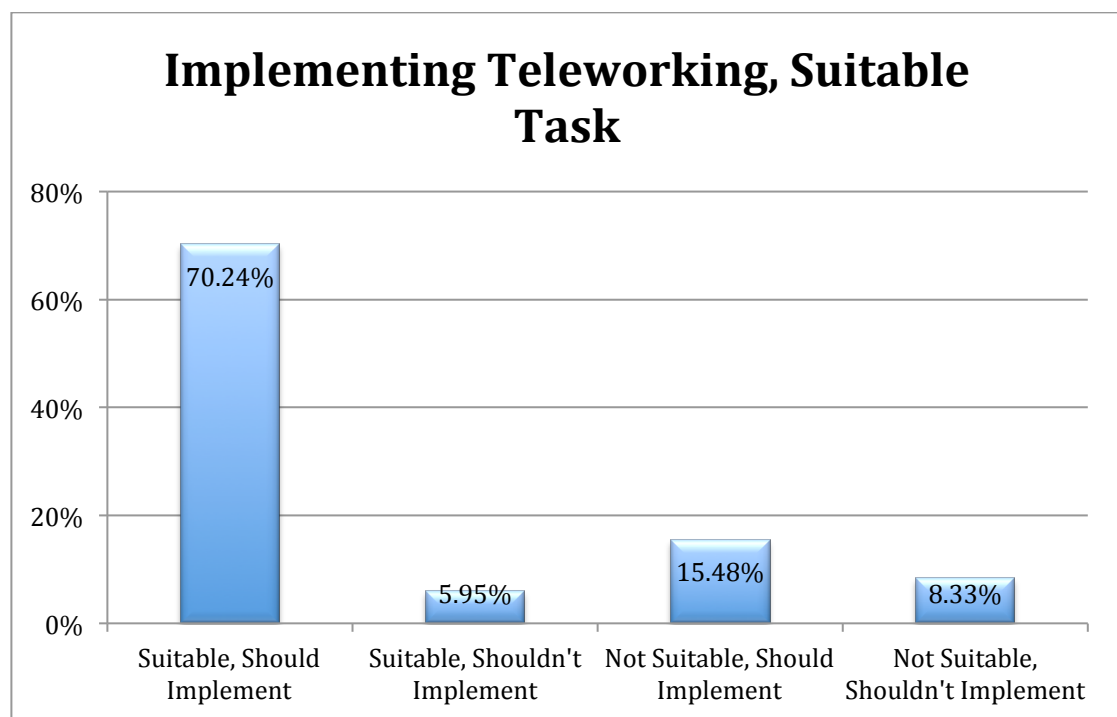


Figure 8 – Bar graph showing the perception of employees on the suitability of their current job for teleworking and whether teleworking should be implemented or not.

After analyzing the data, the above results show that the hypothesis (H9) should be accepted. In other words, employees who perceive jobs to be suitable for teleworking perceive greater teleworking feasibility in their companies.

H10: Employees perceive greater teleworking feasibility, the greater the use of information and communication technologies in the company.

When employees were asked whether they thought the availability of the right amount of information and communication technologies was important for the implementation of teleworking, out of 420 respondents 415 said yes while the others said no. The pie chart below gives us a clear sense of the data has to show.

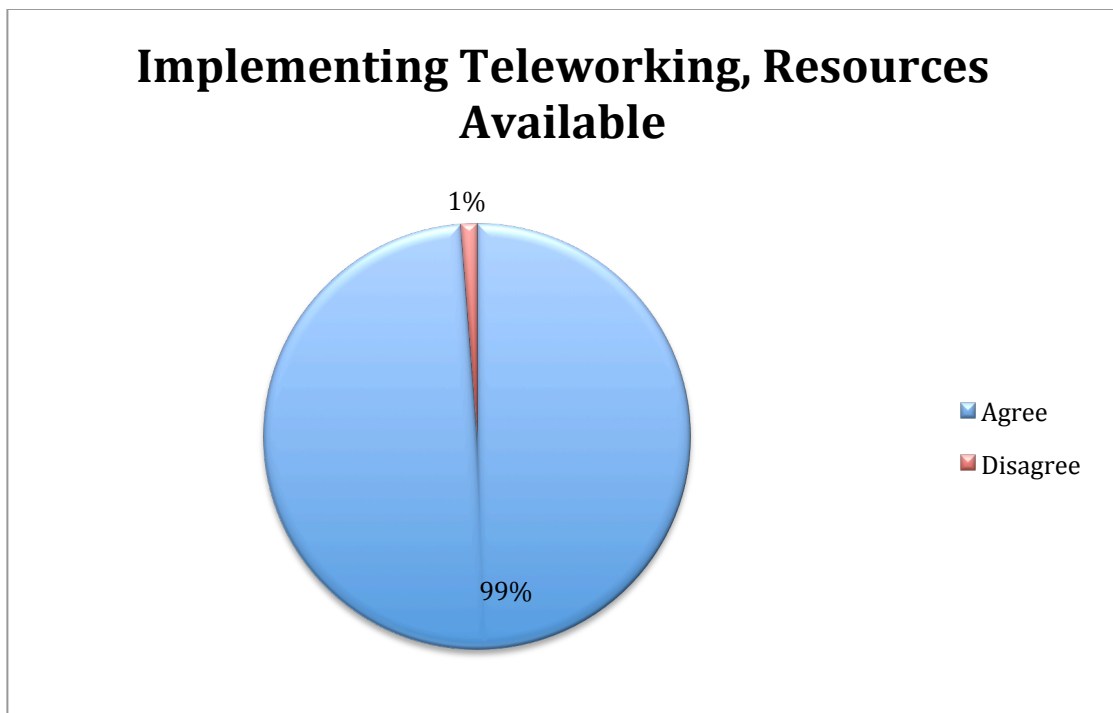


Figure 9 – Pie chart showing employees perception on the feasibility of teleworking relating to the availability of resources.

After analyzing the data, the above results show that the hypothesis (H10) should be accepted. In other words, employees perceive greater teleworking feasibility, the greater the use of information and communication technologies in the

For the compensation factor, the researcher hypothesized the following:

H11: Employees perceive a greater feasibility of teleworking in companies with large variable compensation system to employees.

When employees were asked whether they thought a good pay/compensation system was necessary for a successful implementation of teleworking, out of 420 respondents 295 said yes while the others said no. The pie chart below gives us a clear sense of the data has to show.

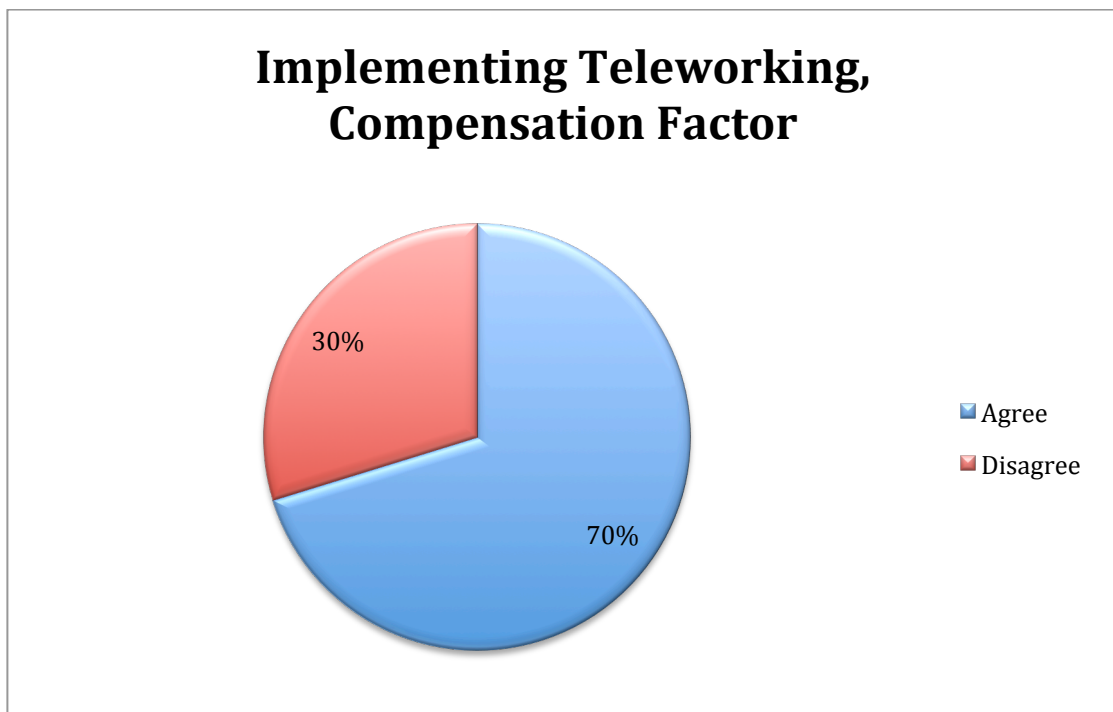


Figure 10 – Pie chart showing employees perception on the feasibility of teleworking relating to having a good pay/compensation system in the company.

After analyzing the data, the above results show that the hypothesis (H11) should be accepted. In other words, employees perceive a greater feasibility of teleworking in companies with large variable compensation system to employees.

For the nationality factor, the researcher hypothesized the following:

H12: Employees perceive a greater feasibility of teleworking in when employees are of a Western background rather than of an Eastern background.

When employees were asked whether they thought it would be easier to implement teleworking among employees of a Western background than among employees of an Eastern, out of 420 respondents, 245 agreed with the statement while the others disagreed. The pie chart below gives us a clear sense of the data has to show.

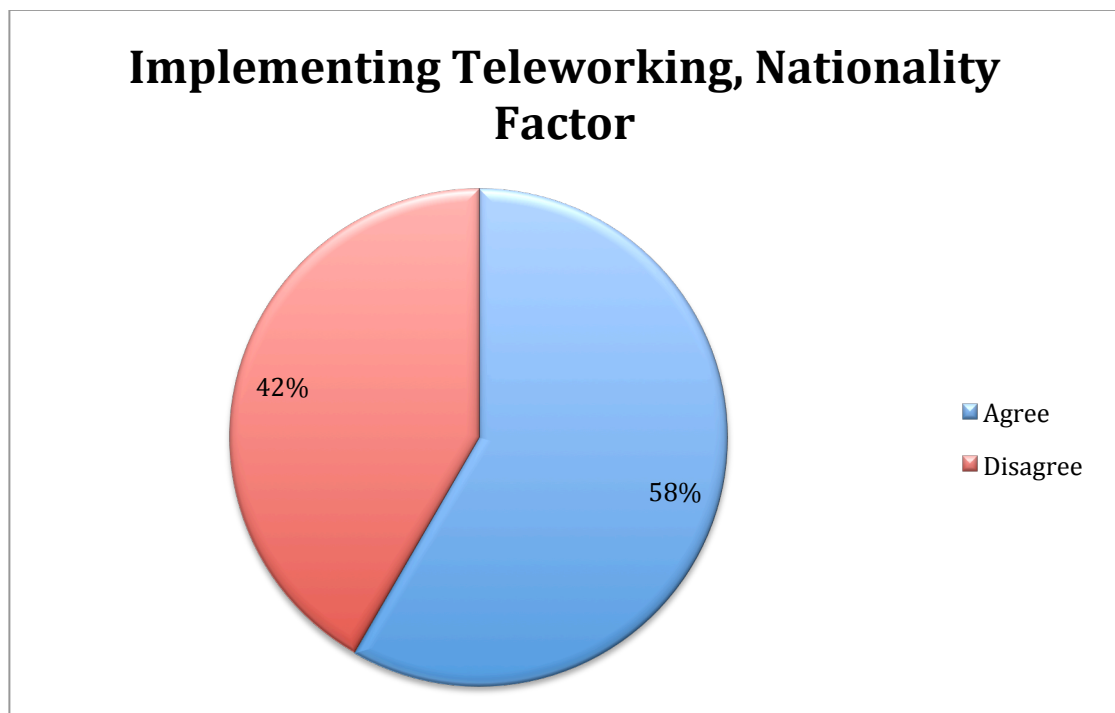


Figure 11 – Pie chart showing employees perception on the feasibility of

After analyzing the data, the above results show that the hypothesis (H12) should be accepted. In other words, employees perceive a greater feasibility of teleworking in when employees are of a Western background rather than of an Easter background.

For the work time flexibility, the researcher hypothesized the following:

H13: Employees perceive flexible working hours to be an important deciding factor in the implementation of teleworking.

When employees were asked whether they thought the provision of flexible working hours was an important factor for the implementation of teleworking out of 420 respondents, 340 agreed with the statement while the others disagreed. The pie chart below gives us a clear sense of the data has to show.

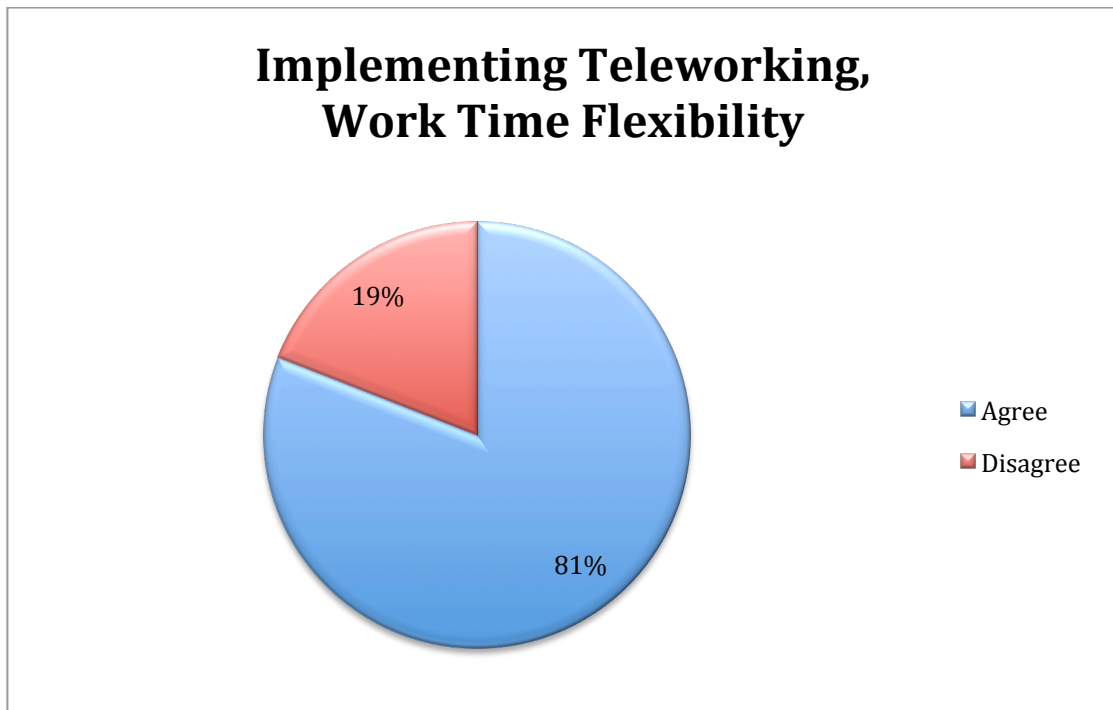


Figure 12 – Pie chart showing employees perception on the feasibility of teleworking relating to work time flexibility.

After analyzing the data, the above results show that the hypothesis (H13) should be accepted. In other words, employees perceive flexible working hours to be an important deciding factor in the implementation of teleworking.

For the work environment factor, the researcher hypothesized the following:

H14: Employees perceive a greater feasibility of teleworking in companies that provide a healthy working environment for its employees.

When employees were asked whether they thought a healthy work environment was important for the implementation of teleworking, out of the 420 respondents, 375 agreed with the statement while the others disagreed. The pie chart below gives us a clear sense of the data has to show.

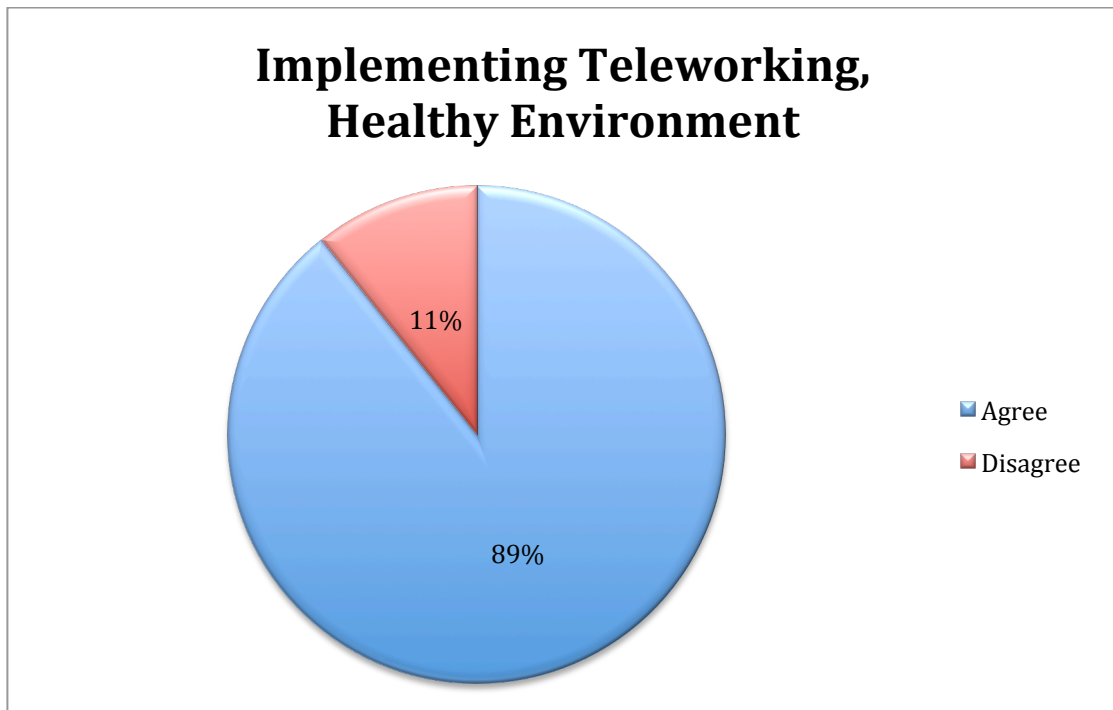


Figure 13 – Pie chart showing employees perception on the feasibility of teleworking relating to a healthy working environment.

After analyzing the data, the above results show that the hypothesis (H14) should be accepted. In other words, employees perceive a greater feasibility of teleworking in companies that provide a healthy working environment for its employees.

For the intrinsic motivational factors, the researcher hypothesized the following:

H15: Employees perceive a greater feasibility of teleworking in companies that intrinsically motivate its employees.

When employees were asked whether they thought intrinsic motivators were important for a successful implementation of teleworking, out of the 420 respondents, 350 agreed with the statement while the others disagreed. The pie chart below gives us a clear sense of the data has to show.

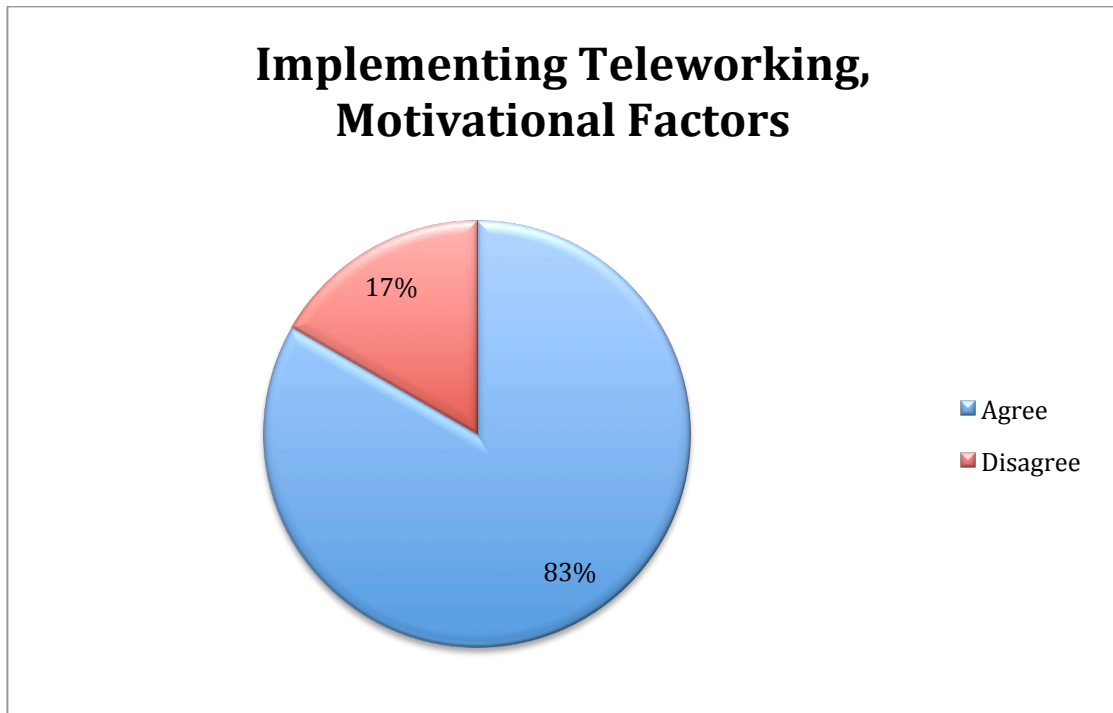


Figure 14 – Pie chart showing employees perception on the feasibility of teleworking relating to motivational factors.

After analyzing the data, the above results show that the hypothesis (H15) should be accepted. In other words, employees perceive a greater feasibility of teleworking in companies that intrinsically motivate its employees.

4.2 Other Findings

While analyzing the data the researcher found some interesting factors that will be mentioned below.

Most employees take an average of 3 – 5 hours to finish a task of average size, with a total of 125 employees taking 3 – 5 hours, 115 employees taking an average 1

average of three days, 25 employees taking an average of one month, 25 employees taking an average of two days, 15 employees taking an average of 30 minutes, and 5 employees taking an average of 6 – 10 hours. The line graph below gives a clear understanding of the data gathered.

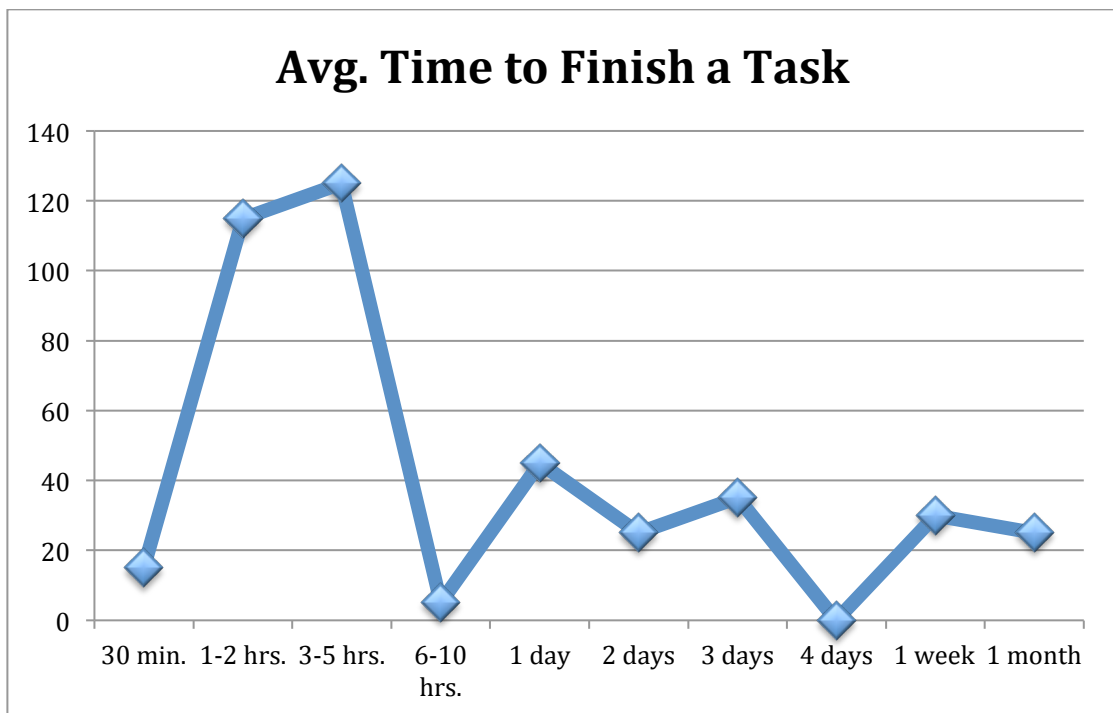


Figure 15 – Line graph showing the average time employees take to finish a given task of average size.

Most employees work 8-9 hours a day, with a total of 240 employees working 8-9 hours a day, 85 employees working 9-10 hours a day, 45 employees working more than 10 hours a day, 30 employees working 6-7 hours a day, 10 employees working 5-6 hours a day and 10 employees working 3-4 hours a day. The bar graph below gives a clear understanding of the data gathered.

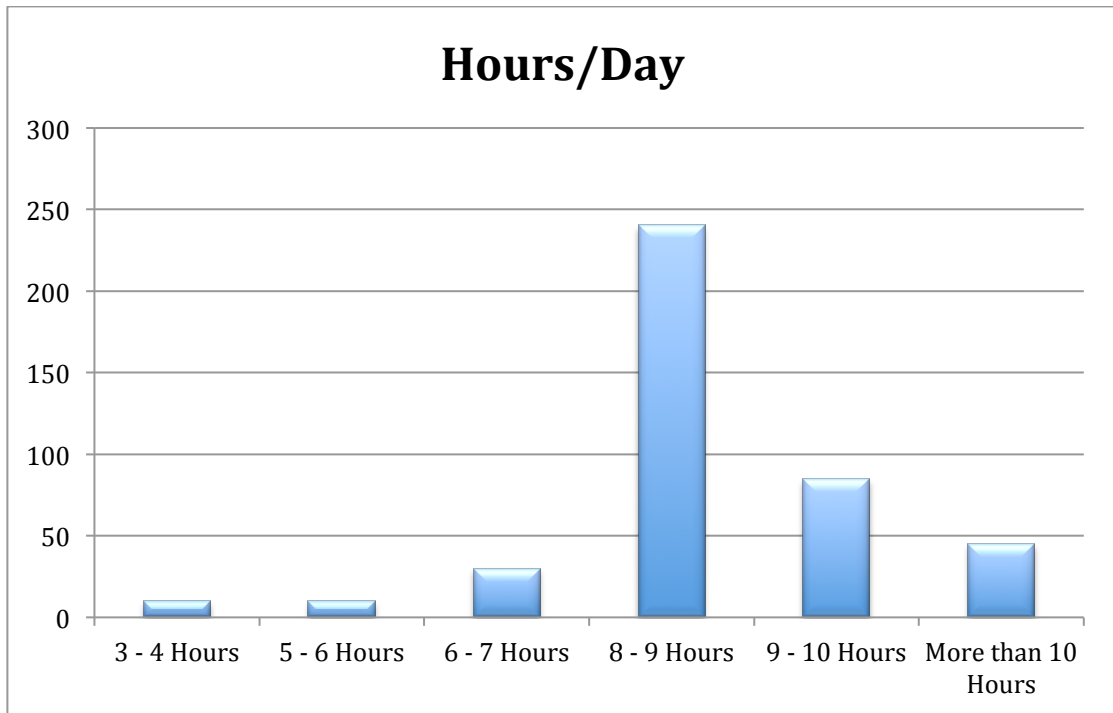


Figure 16 – Bar graph showing the average number of hours employees work in a day.

Most employees work 4-5 days a week, with a total of 315 employees working 4-5 days, 90 employees working 6-7 days a week, and 15 employees working 2-3 days a week. The bar graph below gives a clear understanding of the data gathered.

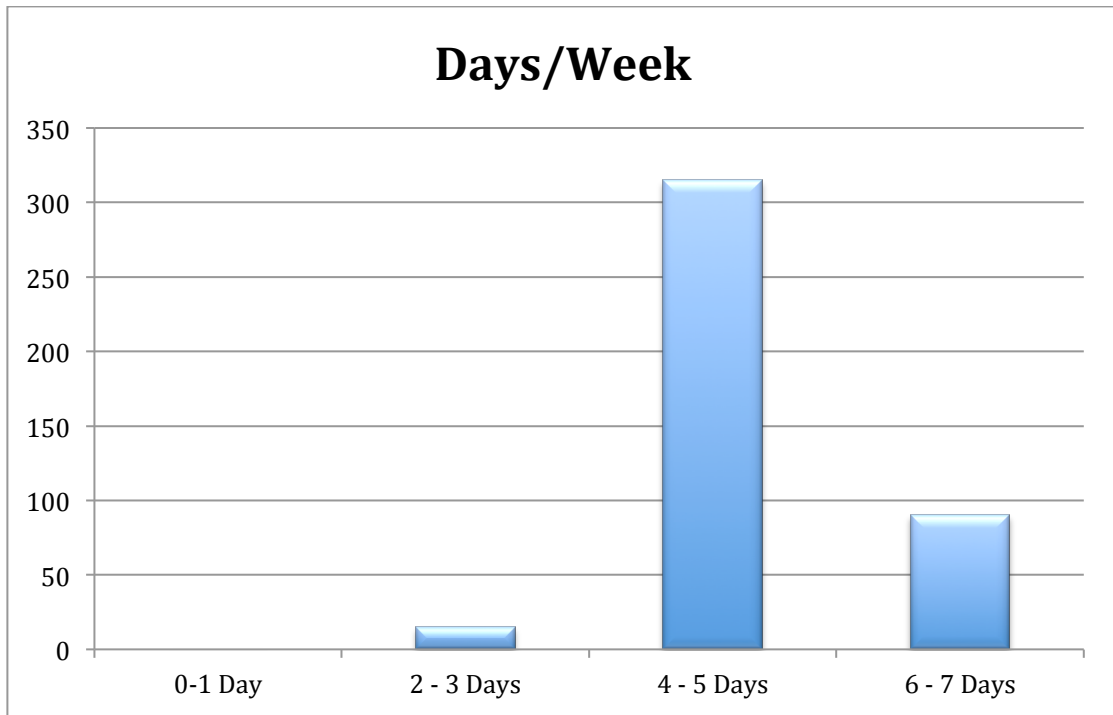


Figure 17 – Bar graph showing the number of days employees work in a week.

Most employees live 10 – 20 Km. from their workplace, with a total of 110 employees living 10 – 20 Km away from the office, 90 employees living 1 – 5 Km. away from the office, 75 employees living more than 20 Km. from the office, 75 employees living 5 – 10 Km. away from the office, 40 employees living 0 – 500 meters away from the office, and 25 employees living 500 meters – 1 kilometer away from the office. The bar graph below gives a clear understanding of the data gathered.

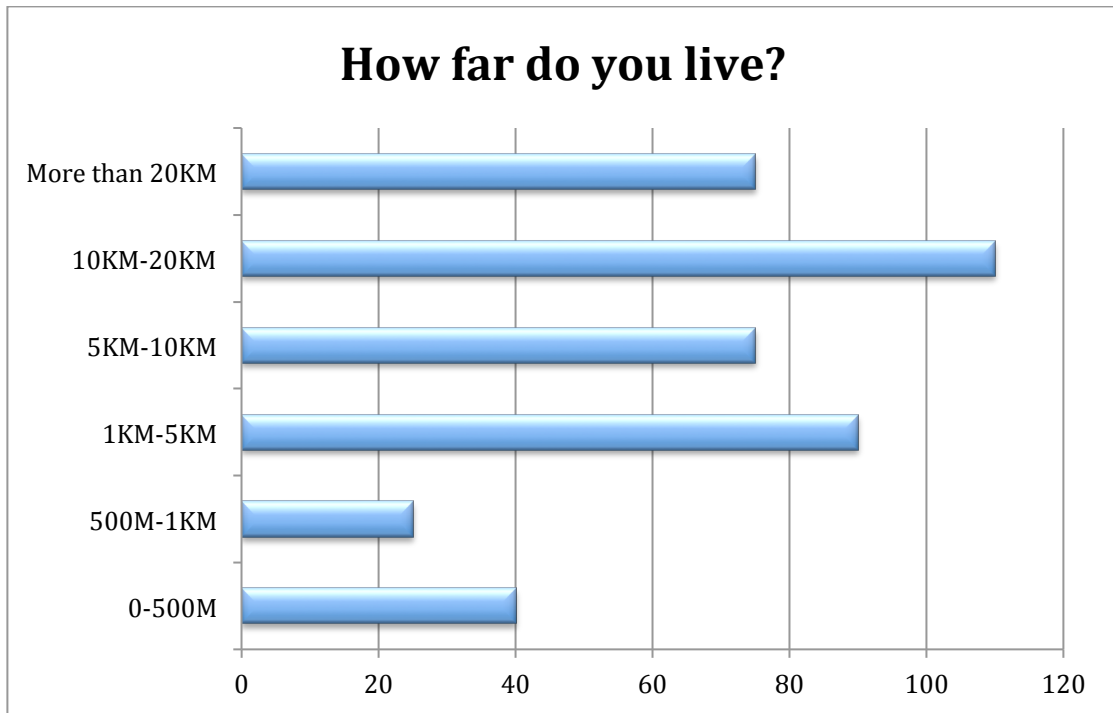


Figure 18 – Bar graph showing how far employees live from their work place.

There was a close call between how much employees actually want to telework, 120 employees said occasionally for a special project, 105 employees said two days a week, 100 employees said three days a week, 75 employees said about once a week, and 20 employees said about once a month. The bar graph below gives a clear understanding of the data gathered.

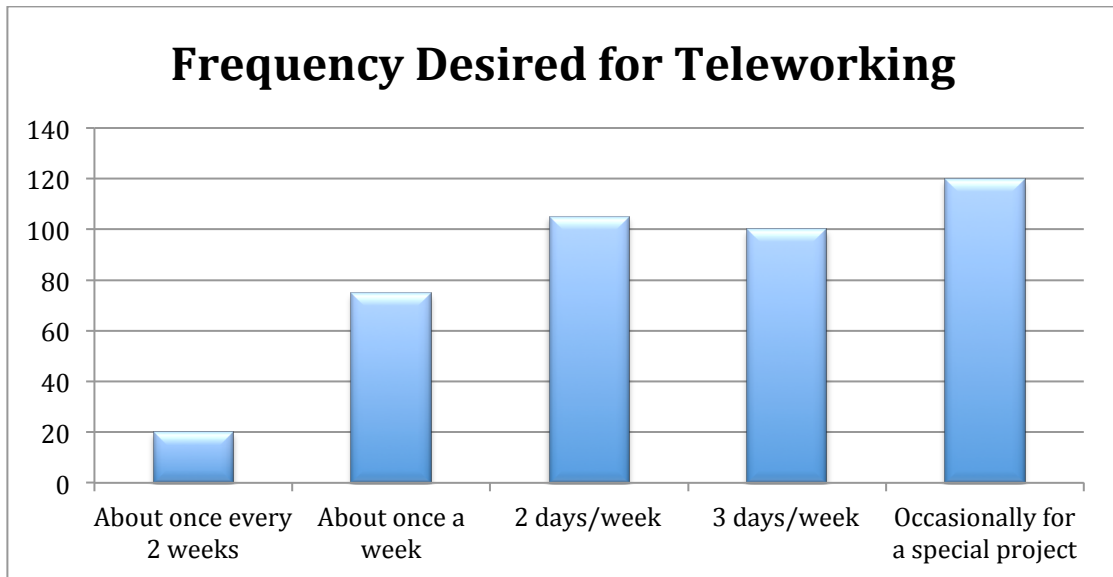


Figure 19 – Bar graph showing how often employees would like to be able to telework.

There was a close call between what tasks employees were expected to do while teleworking, 260 employees said writing/typing, 260 employees said planning, 255 employees said thinking, 250 employees said e-mails, 240 employees said research, 205 employees said word processing, 205 employees said data management/computer programming, 175 employees said reading, 165 employees said talking on the phone, 110 employees said administrative tasks, and 60 employees said field visits. The bar graph below gives a clear understanding of the data gathered.

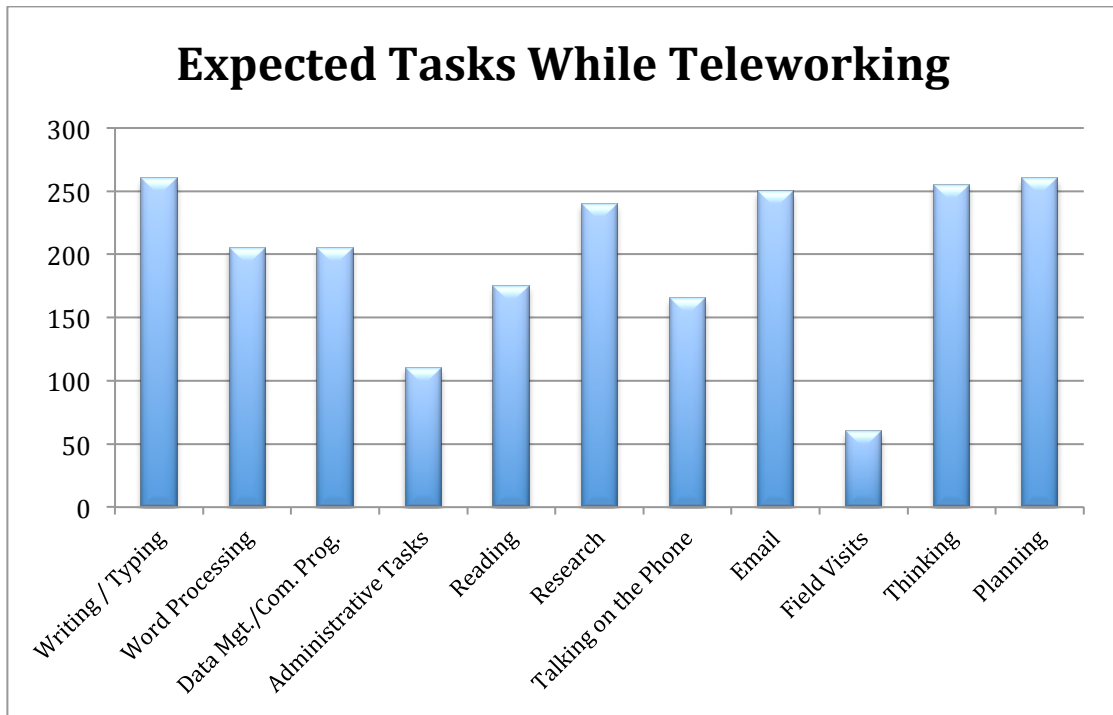


Figure 20 – Bar graph showing what tasks employees expect to do while they are teleworking.

Most employees' works are evaluated based on the quality of work and the timeliness. With 330 employees saying quality of work, 205 employees saying timeliness, 55 employees said quantity of work/effectives, 40 employees said meeting deadlines, 35 employees said satisfaction/error free/problem solving, 25 employees said acquiring new customers/sales, 10 employees said responsibility, increase in knowledge and communication, and 5 employees said meeting company standards and innovation. The pie chart below gives a clear understanding of the data gathered.

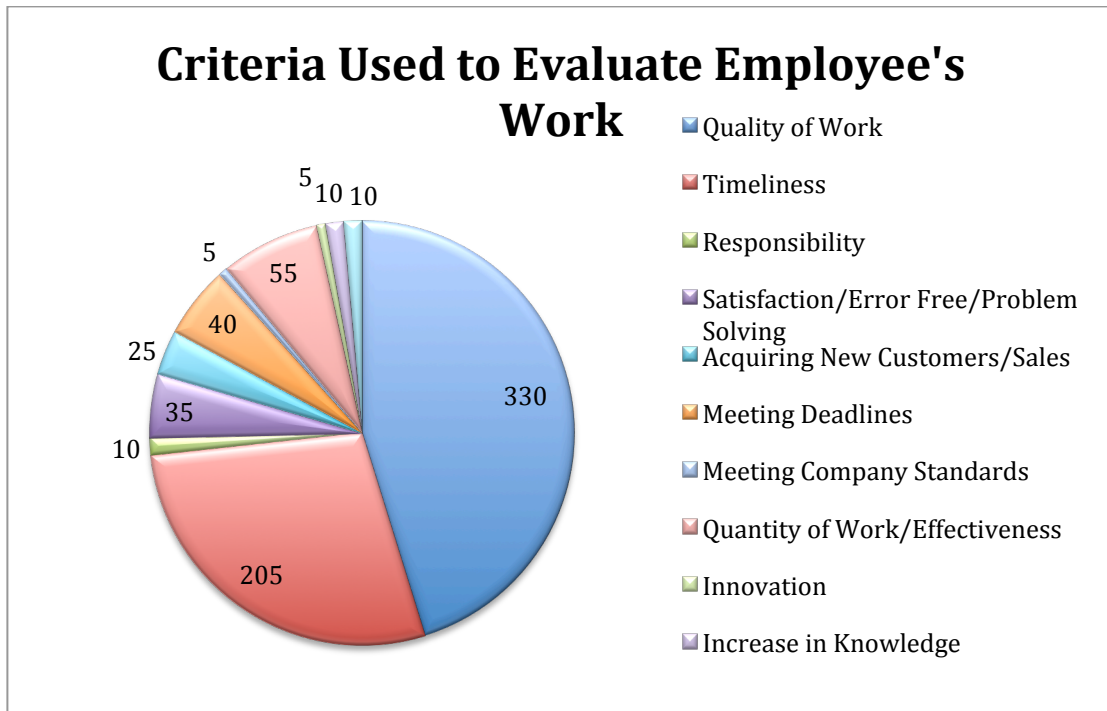


Figure 21 – Pie chart showing what criteria's are used to evaluate their work.

Most employees' needs regarding their ability to work relies around quality of work, most employees chose that as a factor with a mean of 6.07. The next highest need was level of job knowledge with a mean of 5.79, followed by their discipline regarding work, importance of co-workers' input work function, need for supervision/frequent feedback, potential friction at home if teleworking and desire/need to be around people with a mean of 5.55, 5.06, 4.42, 4.36, and 4.40 respectively.

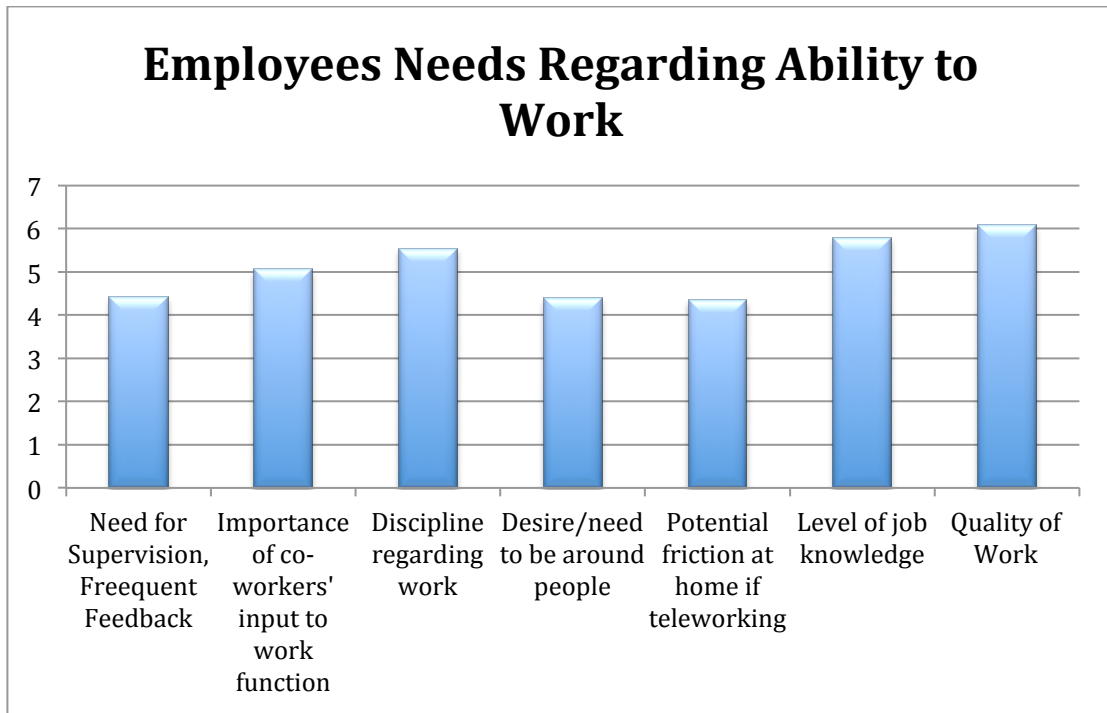


Figure 22 – Bar graph showing an average of employees needs regarding their ability to work.

4.3 Extraneous Influence

Some extraneous influences may include the fact that some of the employees in the randomly selected sample may be biased to the research topic, which will definitely influence the study or at least affect the results by showing us a few outliers. Another extraneous influence could be the language barrier; being in Bangkok, and knowing how most companies here avoid hiring foreigners means that most of the participant might be Thai. When English is not the first language, communication becomes difficult, especially if the English skills are not up to par. In addition, if the employees used for the sample are not strong in English it may be difficult for them to understand the questions on the test. This will make it difficult

for them to answer the questions. If the employees can't answer due to not understanding the English rather than not knowing the answers, then the test scores become insignificant.

CHAPTER 5

5.1 Implications for Organization and Research

As the study shows that employees perceive greater productivity while working from home; but 86% of the employees think teleworking should still be implemented. Organizations may consider taking action by allowing its employees to work from home more often. In addition, it will also increase the productivity of the employees leading to more work being done, which in turn means more profits for the company. In the long run, if the company is a public company, investors will be able to see this increase in profitability, which will motivate them to invest in the company as their shares increase. Moreover, being part of a well known and successful organization may lead to greater job satisfaction, which would in turn lead to a better working environment with harder working people. People that work harder and love to do what they do bring profit to the organization; it is an ongoing cycle. Also, if employees work from home then that means that companies don't have to spend so much on real-estate costs, there also would be less absenteeism. Hence, yet another reason for why this study is important to the organizations involved.

5.2 Discussion

The study had two main hypotheses, which are H1 and H2. These were the most relevant hypotheses that directly related to the topic of the study. However, after conducting the study, a number of other hypotheses were discovered. This was as the result of the comments and suggestions given by the respondents during the survey. As a result, thirteen hypotheses were of much relevance to the topic of study. Hypotheses H3, H4, H7, H8, H11 and H15 had equal importance to the study just like

H1 and H2. On the other hand, H5, H6, H10, H12 and H14 were of very little significance to the study because they do not directly relate to the study topic.

Despite the fact that they were of less importance their results greatly relate on the other existing work. These existing works are those that relate to on how gender, culture and education background will influence the productivities of the employees of a company. In addition, these results are highly supported by most of these previous findings. It applies to the other hypotheses, which relate to the previous work conducted on the importance of teleworking in a company.

In companies that contain young aged employees, it can be seen that teleworking can lead to increased productivity for a number of reasons. First, most of the young people would love to work in an environment where they can be able to multitask. By this, it means that when they do their work from home, it will be very easy for them to multitask because they can do their other personal things at the same time doing office work. In addition, most of the young employees tend to have some problems when they work under the same environment with their seniors. In most cases, they are normally afraid of their seniors and therefore will not conduct their duties comfortably with the fear that their boss may think they are doing the wrong thing.

For this, they will be very comfortable and productive when they work from home. Moreover, it is obvious that the young like working while at the same time entertaining themselves with things like music. Most of the young employees have agreed that they concentrate more when they work while having some form of entertainment. The concentration helps increase their productivity. On the contrary,

when working from the office, they cannot be allowed to do such a thing because most of the employees normally view entertainment as a form of distraction from work and hence they think it will reduce the productivity of the employees.

As H4 states, the female employees will increase their productivity when they work from home more than the male. This is very true because the female love to work in an environment where there is enough privacy. It is not only because of the privacy issues but it is obvious that when the female employees are at the office, especially those with young kids, they tend to worry more about the safety of their kids at home. It will be seen that they spend more time making phone calls just to be sure that their kids are doing ok at home. For this reason, they will not be able to concentrate on their work and consequently their productivity will reduce. If they work from home, they will have the chance to be around and monitor their kids. They will not have to worry about anything and this will make them concentrate more on their work. As a result, their productivity will increase. In addition to the fact that they will worry less, they will also have the opportunity to finish the housework early enough and hence offer ample time to office work.

It should be noted that not every employee could be able work effectively from home using the system involved without any training. In order for it to be effective, teleworking involves a number of complex systems that are used for effective communication. The employees may not be familiar with these systems and hence they will have some difficulties in using them. Having difficulties in using the systems will mean that they will not be able to use the system and this will result in reduced productivity. In order to eliminate such problems and effectively use the

system, any company that intends to use teleworking should ensure that it offers adequate training for its employees. This will make the employees to be familiar and comfortable when using the system. It should be remembered that the training should be both theoretical and practical. This is because it will be irrelevant to offer theoretical training on how to use the system without giving the employees the opportunity to have some hands on the system practically. With this, teleworking will perceive increased productivity of the employees.

The manner in which teleworking increases the productivity of the employees is independent of their level of education. Provided that the employees are given adequate and equal training on how to use a teleworking system, each of them have the capability to increase their productivity regardless of their education levels. This means that for no reason should a company select those that can work from home based on their level of education. Actually, the companies should select the employees that can telework based on their understanding on how to use the system effectively. In addition, in companies where the compensation given to employees varies, teleworking will be effective because it will reduce on the things that result in the company having to compensate the employees.

In any organization, the productivity of the employees will be greatly influenced by how the organization appreciates the good work of the employees. It is always a good practice to give some motivation to the employees for their good work. The same applies to those that work from home. The fact that they work from home should not mean that a company should not motivate them for a good work done. The motivation will not only make them feel to be part of the other employees working

from the office but will also encourage them to work harder in increasing their productivity.

As per the previous researches, the result showed that teleworking would only influence the productivity of employees depending on how a company develops and implements the teleworking system. Most of the research urged that teleworking would be more effective and reliable only if all the necessary tools are put in place and the employees undergo effective training on teleworking. In addition, previous researches have shown that the use of teleworking will only be effective in some specific departments. One example of a department is sales and marketing department where the employees do not necessarily need to work from the office.

5.3 Conclusion

This research used a quantitative study to explore the perception of employees' productivity while working from home and while working from the office. The study was designed to meet the objectives of the study, which included investigating the perception of employees on in terms of various variables.

A quantitative survey was used to answer the research objectives. The questionnaire was distributed to a large sample (n = 420) of employees in working for the IT industry in Thailand. Demographic analysis showed that the sample was generally older (average age of 32) and all of the employees had at least a bachelors degree or above.

After doing some thorough research the researcher has concluded the following: (1) employees perceive greater productivity while working in the office, (2) employees perceive greater feasibility of teleworking in companies with young aged employees, (3) female employees have a more favorable attitude towards teleworking than men, (4) gender only has an effect on existing work characteristics in terms of autonomy of operations and the ability to control work schedule, (5) gender only has an effect on job characteristics of employees in terms of the adaptability to teleworking in terms of the autonomy of operations, (6) employees perceive a greater teleworking feasibility if the employees receive 'on-the-job', (7) the education level of employees only has an effect on their existing job characteristics in terms of the amount of face to face time required, the degree of telephone communications required, the autonomy of operations, and the amount of in-office reference materials required; the education level of employees only has an effect on their job characteristics in terms of the adaptability to teleworking in terms of the amount of in-office reference material required. (8) Employees who perceive jobs to be suitable for teleworking, perceive a greater teleworking feasibility in their companies, (9) employees perceive greater teleworking feasibility, when the use of information and communication technology is not short-handed, (10) employees perceive a greater feasibility of teleworking in companies with large variable compensation systems to employees, (11) employees perceive a greater feasibility of teleworking when employees are of a Western background rather than of an Eastern background, (12) employees perceive flexible working hours to be an important deciding factor in the implementation of teleworking, (13) employees perceive a greater feasibility of teleworking in companies that provide healthy working

environments for its employees, and (14) employees perceive a greater feasibility of teleworking in companies that intrinsically motivate its employees.

This has an impact on organizations and they should take into account this research in order to provide its employees with the necessary resources in order for them to become more successful and in turn improve the image of the organization itself.

5.3.1 Limitations of the Study

There are several limitations to this study, some of them are: (1) the sample is focused just on employees in Bangkok, Thailand and (2) the employees are all from the IT industry. All of the aforementioned reasons lead to the sample not matching the demographics of the world. This makes it hard to generalize this study. In addition measuring productivity is not an easy task. By using a questionnaire or a survey people might say that they are productive even if they are not just because they like working from home.

5.3.2 Recommendations of the Study

This study could be further improved if the sample was not just from employees in Bangkok of companies in the IT industry. In addition, also measuring productivity by giving two groups employees a common task and analyzing which group performed better, the one that worked from home or the one that worked at the office, this way we would be able to see more clearly if what they claim to be their perception matches reality.

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2. Please describe the kind of work that you do :
-
-
-
-
3. Have you experienced teleworking before?
- Yes
 - No (Skip to Question #7)
4. If yes, how many years? _____
5. Did you find it convenient to work from home?
- Yes
 - No
6. Did you find that you were more productive while working from home?
- Yes
 - No
7. Which statement best describes your feelings
- Teleworking is an absolute waste of time
 - Teleworking is NOT a waste of time
8. Which statement best describes your feelings
- Teleworking should not be implemented
 - Teleworking should be implemented
9. Which statement best describes your feelings
- Working at the office results in higher productivity.
 - Working from home under a controllable environment results in higher productivity.
10. Which statement best describes your feelings
- Working at the office benefits everybody
 - Working from home benefits both, my employer and myself
11. Would you say you live far from your workplace?
- Yes
 - No
12. How far exactly do you live?
- 0M -500M
 - 500M - 1KM
 - 1KM – 5KM
 - 5KM – 10KM
 - 10KM – 20KM
 - > 20 KM

13. **Based on the distance that you have to travel from home to work and back, would you say that teleworking would be a better option and that you would rather telework?**
 - a. Yes
 - b. No

14. **Do you think training is necessary for the implementation of teleworking?**
 - a. Yes
 - b. No

15. **Do you think the availability of the right amount of information and communication technologies is important for the implementation of teleworking?**
 - a. Yes
 - b. No

16. **Do you think it is easier to implement teleworking among employees of a Western background than among employees of a Eastern background?**
 - a. Yes
 - b. No

17. **Do you think it is easier to implement teleworking among young aged employees rather than among the older ones?**
 - a. Yes
 - b. No

18. **Do you think intrinsic motivators (recognition, appreciation etc) are important for the successful implementation of teleworking?**
 - a. Yes
 - b. No

19. **Do you think a good pay/compensation system is necessary for the successful implementation of teleworking in a company?**
 - a. Yes
 - b. No

20. **Do you think the provision of flexible working hours is an important factor for the implementation of teleworking?**
 - a. Yes
 - b. No

Please rate each characteristic with numbers 1-5, 1 being the lowest and 5 being the highest by placing the appropriate number in each blank.

Existing Work Characteristics

Please rate the following according to your existing job requirements and characteristics.

- ___ Amount of face-to-face contact required
- ___ Degree of telephone communications required
- ___ Autonomy of operation
- ___ Ability to control and schedule work flow
- ___ Amount of in-office reference material required

Future Work as a Teleworker

Please rate the following job characteristics for yourself in terms of adaptability to teleworking.

- ___ Amount of face-to-face contact required
- ___ Degree of telephone communications required
- ___ Autonomy of operation
- ___ Ability to control and schedule work flow
- ___ Amount of in-office reference material required

Employee Characteristics

Please rate the following according to your characteristics (1 through 7, one being the lowest rank (least important) and 7 being the highest rank (most important)).

- ___ Need for supervision, frequent feedback
- ___ Importance of co-workers' input to work function
- ___ Discipline regarding work
- ___ Desire/need to be around people

____ Potential friction at home if teleworking (e.g. interruptions due to caring for sick child or spouse)

____ Level of job knowledge

____ Quality of work

21. **What criteria are used to evaluate your work?** (For example: quality of work, quantity of work, timeliness, etc. Please be specific.)

22. **Considering the nature of your jobs, how much would you want to telework? (Circle one only)**

- a. About once every 2 weeks
- b. About once a week
- c. Two days a week
- d. Three days a week
- e. Occasionally for a special project

23. **What kinds of work would expect to do while teleworking? (Circle as many as apply.)**

- a. Writing/typing
- b. Word processing
- c. Data management/computer programming
- d. Administrative
- e. Reading
- f. Research
- g. Talking on the phone
- h. Email
- i. Field visits
- j. Thinking/planning
- k. Other (please specify) _____

24. **Other comments:**

BIOGRAPHY

The researcher, Sasha Smaili, was born in Caracas, Venezuela on May 25th 1992. As she has lived in Thailand the majority of her life, since 2002, she has achieved all of her academic pursuits in Thailand. She is currently a student at Stamford International University; where she is pursuing her Masters Degree (MBA-IT). Prior to joining Stamford International University she studied at Assumption University (ABAC) where she got a Bachelors of Science in Information Technology (Bs.I.T.). The researcher's main area of interest is practically anything that has to do with technology. Hence, she did her bachelor's in IT. With an IT background and a strong love for technology, she thought it was reasonable to do research in that area. Prior to this research topic she came across many ideas to research, however the environment she was in was not suitable for her to carry out the research.