

APPLICABILITY OF WORKING FROM HOME CONCEPT
TO IT ORGANIZATIONS IN SRI LANKA

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March 2016

Declaration

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Abstract

The main objective of this thesis is to investigate the applicability of the working from home concept to IT organizations in Sri Lanka. Telework is a revolutionary working concept that has emerged with evolving technology. Working from home is the extreme end of telework.

In this thesis the author has selected main variables which are interrelated with the working from home concept. Those are Individual, Home, Organizational, Functional and Technological. A Carefully formulated online questionnaire was distributed among the sample population to do the quantitative analysis. A hypothesis was formed for each variable.

Individual and home variables ensure the applicability of working from home concept to IT organizations in Sri Lanka but contribution from other variables are not significant to analytics.

Keywords: telework and working from home.

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1 Introduction

People like to work in a comfortable environment. Workplace is the 2nd home of any worker. If we analyze the average office worker's daily routine, they spend 8 to 9 hours at office. American Time Use Survey (2013) which was done by Bureau of Labor Statistics also proved that an average American works 8.8 hours every day. It may be 7:30 AM to 4:30 PM or 9 AM to 6 PM. In order to arrive on time they need to get up and get ready early in the morning. According to Draft Urban Transport Master Plan (2013) by Ministry of Transport Sri Lanka, if workers live in the suburbs of Colombo they need to spend a few more hours of time for travelling due to traffic congestion. If organizations allow their workers to work from home, workers could cut down unnecessary time wastage. Not every organization in Sri Lanka can try out this concept but, I believe that most of the IT organizations can try it out.

1.1 Background

Sri Lanka is an emerging software and IT operation offshoring hub for many countries around the world. In last fiscal year Sri Lanka was ranked 16th in A.T. Kearney's Global Services Location Index (GSLI, 2014). Compared to 2011 report, Sri Lanka has climbed 5 positions from 21st to 16th. According to Sri Lanka Association of Software and Services Companies (SLASSCOM) Sri Lanka has more than 300 IT and BPO companies with a workforce of more than 60,000 who earn more than 400 million US \$ annually.

Software and IT operation offshore industry has been spreading in Sri Lanka during the past one and half decades. Some of the software offshoring companies need to work according to their customer working hours, but most of them do not need to work according to customer working hours all the time. Workers can work to flexible time frames and their official operational hours are aligned to the Sri Lanka's private sector operational hours 8 to 5 or 9 to 6 time slots.

In a software offshoring company there are two groups according to organizational functional structure. First group is the offshoring group who perform day to day interactions with offshoring customer. They do developments, implementations, consultations, etc. First group includes Software Engineers, Quality Assurance

Engineers, Project Managers, and System/Application Engineers. Second group is the organizational operational group whose normal interactions are with offshoring group, local authorities, and service providers/suppliers and sometimes with the offshoring customer. Their duties include organizational infrastructure, service maintenance and implementations as well as HR and finance related processes. Second group consists of HR Managers, HR Administrative Officers, Finance Controllers, Accountants, Operations Managers and System/Network Engineers. Collaborative work of these two groups are necessary to fulfill the offshore customer needs. By considering their job roles and stakeholders, we can clearly see that daily presence of operational group at office premises is a must, but offshoring group's daily physical presence at office is not required if they are provided with remote access facilities to required resources.

Telecommuting is not a new concept to IT world. It is more common among freelancers. In some situations software offshoring also comes under telecommuting category, where customer resides elsewhere and workers do remote implementation, developments and troubleshooting. Telecommuting has multiple variations including satellite offices, working from home and mobile workers. Working from home is the extreme end of telecommuting.

Most of the Sri Lankan software offshoring companies are located in the city of Colombo. Their workers travel in and out of the city every day using the congested road network. If their customer resides elsewhere in the world, is worker's daily physical presence at the office premises really needed? Can't they allow their workers to come to office only 2 to 3 days a week? Workers can attend necessary group discussions within the office and go back home to do the rest of the work.

1.2 Motivation

Working from home or flexi work is not a new concept to IT organizations in Sri Lanka. In some companies they occasionally allow some of the workers to do their task while residing at home. In this study we do not expect IT organizations to follow the working from home concept on all working days. They can allow their workers to work from home if they do not have any team meetings or progress reviews.

This concept may improve the work life balance as well as the productivity of the work force. This concept may be especially beneficial for women workers who are pregnant or looking after infants. From a company point of view they can reduce the employee turnover and improve the productivity with knowledge management.

1.3 Research Problem

The main problem this research tries to address is whether working from home is applicable for IT organizations in Sri Lanka. Will this will improve the work life balance of workers? Will this will improve the productivity of the organization? Working from home will definitely minimize the need of daily travelling towards a congested city. Employee turnover may reduce due to flexibility. Workers may refrain from putting unnecessary leave due to family commitments. This research will analyze suitability of the working from home concept to Sri Lankan IT organizations and their workers.

1.4 Research Objectives

- To find out whether the organization and their technologies are capable enough to follow the working from home concept.
- To find out whether the functional structure of the company support working from home concept.
- Evaluate the supportiveness of home environment for employee to work from home.
- Assess the employee capabilities to work from home.

1.5 Scope of the Research

This research about teleworking was carried out during 2015 and 2016 and it is focused on IT organizations and their workers. It is also important to mention the author's definition of an IT organization and what type of telework the author is focusing on. According to National ICT workforce survey carried out by ICTA of Sri Lanka on 2013, there are three types of IT companies functioning in Sri Lanka,

- Suppliers of ICT products and services (ICT companies)
- Suppliers of IT-enabled services (ITeS; BPO companies)

- ICT training organizations.

In this research the author has considered the first category, which is ICT companies as IT organizations. ICT companies are the organizations which carry out software development and IT services. Out of different categories of teleworking, the author focused only on the working from home concept. The sample was picked from salaried employees in the IT organizations and job categories like freelance workers and short-term consultants were not considered.

1.6 Research Design

This research is based on quantitative analysis. Author suggests a few hypotheses and uses several analyses to build relationships between variables. Author distributed a carefully formulated questionnaire among the target population in order to collect survey responses. Literature survey and industry experts helped author to create and refine the questionnaire. Author used statistical data collected in the survey to discuss the nature of each variable and finally to build a conclusion based on the findings.

2 Literature Review

2.1 Evolution of Teleworking

The Concept of teleworking has different synonyms telecommuting, remote work, distance work, etc. In the study “Telework: A new way of working and living” Martino and Wirth (1990), identify telework as a work done online or offline using the telephone and computer. It can be individual or collective work. In their research they mentioned that teleworking started way back in 80s. Their research is a thorough study of telecommuting. They addressed each and every aspect of it from teleworking variations, benefits to legal aspects.

In the study of manager-employee relationship of teleworkers, Dambrin (2004) found that Teleworking started in the mid-1970s after the first oil crisis. At that time the main idea was to cut down fuel consumption by reducing the travel. Teleworking developed together with information technology. The so called “Internet boom” has contributed strongly to populate the telework concept.

2.2 Types of Teleworking

When defining teleworking, Garrett and Danziger (2007) used four dimensional approaches. This helped to identify teleworking types. At least one of the dimensions below (Table 2.1) can be used to distinguish between telework types. Those are,

Table 2.1 - Dimensions to distinct telework

Dimension	Description
Work location	Teleworking is work performed somewhere away From the centralized organizational office.
Information and Communication Technologies (ICTs)	This is a must in teleworking nowadays.
Locational time distribution	In early stages of teleworking, workers used to work fulltime from remote locations but now the trend is towards partial telework. Here worker performs a considerable amount of work from remote locations and rest of the work at central office.
Contractual relationship between employer and employee	Legal bond of appointment is considered. For example regular teleworker, self-employed or contract worker.

By carefully analyzing above dimensions Garrett and Danziger (2007) categorized teleworkers in to three groups (Table 2.2).

Table 2.2 - Garret and Danziger's teleworker categories.

Category	Description
Fixed site	Those who do work from satellite office or home. It can be at least one full day of work without travelling to the central office. It can be a few hours per day after office hours or before office hours.
Mobile	Those who work from field. They do not have permanent location to work.
Flexi	Those who work from field as well as from home.

In this research “Applicability of working from home concept to IT organizations in Sri Lanka” most appropriate category out of above list is fixed site.

Haddon and Brynin(2005) found out that telework is not a homogeneous entity but can be categorized according to technology and location. They carried out their

research on data derived from six different countries. They measure location, the technology utilized and timing. Their categorization is as follows (Table 2.3).

Table 2.3 - Haddon and Brynin's teleworker types

#	Telework Type	Description
1	Net Homeworkers	People who do some work at home and use the Internet to do so.
2	PC Homeworkers	People who do some work at home and use a PC to do so.
3	Mobile Users	People who say that their mobile phone is important for their work but are not Internet or PC homeworkers.
4	Day Homeworkers	People who do some work at home during normal work hours but who do not use a PC or the Internet and do not view the mobile phone as important for work.
5	Overtime Workers	Work characteristics like day homeworkers but undertaken in the evenings or at weekends.
6	Workplace or Standard Workers	People who work at one or more workplaces excluding the home.

They further found out that, within the above categories also there can be gender, educational, occupational and pay differences.

2.3 Advantages and Disadvantages of Teleworking

Telecommuting brings many benefits to the employer as well as employee. In their research Hill et al. (2001) found that personal benefits are insufficient to promote telecommuting practice within the organization. Companies need to have a business benefits oriented justification to move into telecommuting. Telecommuting research work carried out so far can be categorized in to two groups, supply oriented and demand oriented. Demand oriented analysis represents the employer perceptions whereas supply oriented analysis represents the employee perceptions. Hill et al. (2001) further found that there were few researches carried out to analyze the

management side or supply side of telecommuting. Management or decision makers' perception is the most important, since at the end of the day they are the people who allow or disallow telecommuting within their organization.

In the study of "Telework: The advantages and challenges of working here, there, anywhere, and anytime" by Kurland and Bailey (1999) thoroughly explore advantages and challenges of different teleworking categories such as home-based, satellite office, Neighborhood work center and mobile. Following are brief descriptions of advantages and challenges of working from home (Table 2.4).

Table 2.4 - Advantages and challenges of teleworking.

	Advantages	Challenges
Organizational	<ul style="list-style-type: none"> • Greater productivity • Lower absenteeism • Better morale • Greater openness • Fewer interruptions at office • Reduced overhead • Wider talent pool • Lower turnover • Regulation compliance 	<ul style="list-style-type: none"> • Performance monitoring • Performance measurement • Managerial control • Mentoring • Jealous colleagues • Synergy • Informal interaction • Organizational culture • Virtual culture • Organizational loyalty • Interpersonal skills • Schedule maintenance • Work coordination • Internal customers • Communication • Guidelines (e.g. - Expenses) • Technology

	Advantages	Challenges
Individual	<ul style="list-style-type: none"> • Less time commuting • Cost savings • Less stress • No need for relocation • More autonomy • Schedule flexibility • Comfortable work environment • Fewer distractions • Absence of office politics • Work family balance • Work place fairness • More job satisfaction 	<ul style="list-style-type: none"> • Social isolation • Professional isolation • Organizational culture • Reduced office influence. • Work family balance • Informal interaction • Focusing on work • Longer hours • Technical savvy • Access to resources
Societal	<ul style="list-style-type: none"> • Less traffic congestion • Less pollution 	<ul style="list-style-type: none"> • Telework culture • Less of ability to interact with others

In their research on findings, new directions, and lessons for the study of modern work, by Bailey and Kurland (2002) divide workforce in to two categories, Professional and clerical. According to their findings professional workers are more suitable for teleworking. Professional workers accept it as job enrichment, and also their level of autonomy increases. Managers of professional teleworkers have higher trust and control than managers of clerical teleworkers. Further they found out that frequency of telework is a moderating factor. Average frequency will improve the applicability of telecommuting by balancing advantages and challenges.

In the research discussion of Hill et al. (2001) raise few valid points to motivate telecommuting.

“Flexitime also may contribute to quality time, both at work and at home. The highest quality work hours are not always between the hours of 8 and 5. It may be that the best strategic ideas come to one at 5 a.m. or at 11 p.m. Perhaps an important report can be better written between 9 p.m. and midnight than during

normal work hours when interruptions occur frequently. Likewise, the highest quality personal and family hours may not always be outside the regular workday. A child's play may be at 2 p.m., or the best time to hear about children's school experiences may be right after they come home from school. Putting one's time to its best use, regardless of the time, may translate into better work-family balance” Hill et al. (2001)

Research work carried out by Pyöriä (2003) about knowledge work in distributed environments: issues and illusions, found out that effective use of ICT is one of the main factors of successful teleworking. He mentioned that sharing tacit knowledge among team members is the main challenge in teleworking. It is believed that we can directly express only limited amount of the knowledge we possess and some of the critical knowledge that is hidden inside us is expressed unintentionally and only when we are applying them. Pyöriä (2003) suggested to have clear legal rights and standard working conditions for teleworkers. This is often lacking in many companies and countries.

Cullen et al. (2014) did research on personal characteristics and values of generation Y's (birth years on early 1980s to around 2000) attitudes towards teleworking. They found that generation Y people are ready to accept teleworking job opportunities.

Weinert et al. (2014) identified IT persons' telework-enabled stresses. Those are work overload, work-home conflict, information underload and social isolation. In order to have effective telecommuting organizations need to mitigate above stresses.

Noonan and Glass (2012) analyzed National Longitudinal Survey of Youth (NLSY) and U.S Census Current Population Survey (CPS) to publish their research paper.

They found that,

- Usage of telecommuting was flat between mid-1990 to mid-2000.
- Managers and professional workers are more likely to perform telecommuting.

2.4 Challenges of Teleworking

Challenges are common for any person and in any activity but there should be a reason for that challenge to occur. If we find that reason we can find the best way to mitigate any challenge. Teleworking has two main challenges. First one is organizational management and employee relationship incompatibilities. Second one is employee isolation. There are two types of isolations; professional and social.

2.4.1 Teleworking and organizational management-employee relationship

Good relationships are the key to success. It is true for the teleworkers and company management as well. In the study of how telework influences the manager-employee relationship, Dambrin (2004) found out that four dimensions involved with manager-employee relationship. Those are (Table 2.5),

Table 2.5 - Dimensions involved with manager-employee relationship

Dimension	Explanation
Coordination	Collective actions to achieve organizational goals is coordination. Communication and teamwork will improve the effectiveness of this dimension.
Division of Labor	Distribution of official duties among work force is division of labor. Autonomy, responsibility and authority are factors of this dimension. If a company management permits their workers to try out their own ideas on the job, this will improve the level of autonomy. Assigning sub tasks of a project to one or more people is the responsibility. Official permission granted to carry on tasks and take decisions is the authority.
Evaluation	Benchmark to measure the performance of worker. Appropriate evaluation criteria is essential to improve this dimension.

Dimension	Explanation
Adjustment	It is the way in which an individual worker adapts to the environment and hierarchy he is working for.

Dambrin (2004) further described the skills and abilities necessary to improve the manager-employee relationship (Table 2.6).

Table 2.6 - Skills and abilities necessary to improve employee manager relationship

Dimensions	Skills and abilities
Coordination	Maintaining vertical communication: Update subordinates regularly. Top to bottom status update. Maintain horizontal communication: Keep peers updated regularly within the project. This will share the knowledge among workers
Division of Labor	Develop job descriptions Define clear responsibilities Adapt to planning
Evaluation	Measurable objectives Evaluation based on results rather than on methods or behaviors
Adjustment	Ability to manage conflict. Management style based on trust participation and supportiveness.

Research of Dambrin (2004) is more important to author's work; she focused on home based teleworkers because it is actually considered as the most virtual form of teleworking. She carried out this survey on sales people (sales engineers and managers). In her literature survey, she found out that most of the middle managers were opposed to teleworking because they feel it is a threat to their professional identity.

In the research carried out by Egan and Kurland (1999) about “Telecommuting: Justice and control in the virtual organization”, they used three organizational justice mechanisms.

Distributive justice: - Perceptions about the fairness of the outcomes by themselves; whether they are rewarded fairly compared to the on-site employees. One teleworker can think of teleworking as a reward. Another one may think he will miss being assigned to important projects, rewards and promotions

Procedural justice: - Perceptions related to structural characteristics of the formal and informal organizational systems, standards, policies and procedures. This will check whether telecommuters are having equal rights as in-office workers and a fair mechanism to measure their work.

Interactional justice: - Perception of teleworker about being treated with respect, consideration and trust from their supervisors and coworkers in organization.

They found out that, teleworkers having fair procedural justice and supervisors and co-workers in the organization treated them fairly with respect but teleworkers think that they are not rewarded fairly compared to the on-site employees.

Grant et al. (2013) found that regular communication between managers and remote workers will improve the effectiveness of telecommuting. That communication should not be limited to work matters but also to psychological issues such as overwork, home boundaries and their stress levels.

Singh et al. (2013) did research based on option, choice and frequency of teleworking. According to their study option to telecommute is the most important factor to measure when analyzing the readiness of telecommuting. Choice and frequency of teleworking is applicable only when option to telework is available.

2.4.2 Professional and social isolation

Nobody likes to get isolated like Robinson Crusoe. Humans like to interact with others. That is why professional and social isolation is a main concern when it comes to teleworking. In the study of telecommuting, professional isolation, and employee development in public and private organizations, Cooper and Kurland (2002) identified three employee development activities linked with professional isolation.

Interpersonal networking: Relationships that help workers to gain access to information that can advance their professional careers. It can exist with different forms, including office gossip and work-related, spontaneous discussions.

Informal learning: Working being in close proximity to each other, and observing co-workers. They can learn from each other.

Mentoring: A mentor is an experienced, productive manager who relates well to a less-experienced employee and facilitates his or her personal development for the benefit of the individual as well as that of the organization. They act as role models.

They carried out this research with two tech savvy organizations and two public organizations in USA using telecommuters, non-telecommuters and their managers. They found that telecommuting frequency and professional isolation has some connection, telecommuting once a week is an ideal solution. Public sector telecommuters use more formal learning resources, due to uninterrupted background they had more time to read written documents but private sector telecommuters prefer informal learning. Private sector managers said they were unable to do mentoring, but public sector managers said they can do mentoring.

2.5 Work Life Balance of Working from Home

What actually is work life balance? In his study of perspectives on work life balance by Guest (2002) did a thorough analysis and clearly defined the meaning of work life balance. He narrowly defined it as, sufficient time to meet commitments at both home and work.

Work family balance may be defined as the degree to which an individual is able to simultaneously balance the temporal, emotional, and behavioral demands of both paid work and family responsibilities (Hill et al., 2001).

The ultimate goal of any worker is to have good work life balance. From a worker's perspective telework will improve their work life balance. In their study comparing telework location and traditional work arrangements, Morganson et al. (2010) found out that main office and home-based workers had similar high levels of work life balance support and job satisfaction. This finding opposes our research concept. In research discussion they rationalize the finding as follows.

“Contrary to expectations, home-based workers reported similar WLB support as main office-based workers. The finding that home-based employees did not report greater WLB support may be because home-based work has benefits and drawbacks, which may counteract one another.” Morganson et al. (2010)

They measured the following benchmarks

- Primary work location
- Work life balance support
- Job satisfaction
- Workplace inclusion
- Demographic questions

In the research on finding an extra day a week: the positive influence of perceived job flexibility on work and family balance, Hill et al. (2001) found that flexi time and flexi place are the two characteristics repeatedly used to achieve work life balance. In their literature review they found out that offering of above two characteristics by companies is increasing day by day. In the early days, work life balance was considered as woman oriented consideration, but nowadays it is a concern to both sexes, because during recent year’s participation of men at housework has increased significantly.

Hill et al. (2001) analyzed over 6000 responses of IBM employees to derive their findings. They found that flexi time and flexi place increases both personal, family and business perspectives.

Way back in 1990 Martino and Wirth found that diving work between the office and the home will be the future trend. In their research on “Telework: A new way of working and living” they mention as follows:

“Many teleworkers do a full-time job, part of which is done at home and part at the office. This offers a number of advantages and helps to avoid the isolation, stress and demotivation that can be associated with full-time telework. Such arrangements seem likely to be the dominant form of telework in the future” (Martino and Wirth, 1990).

In the study of making the link between work-life balance practices and organizational performance, Beauregard and Henry (2009) found that facilitation of

work-life balance to the employees will influence the performance of organization. In their literature survey they found several points which is relevant to our discussion

- Working from home is one method out of many to achieve work life balance.
- They narrow down behavioral outcomes of both work-to-life and life-to-work conflicts which include reduced work effort, reduced performance, increased absenteeism and finally employee turnover.
- Employees who have more family responsibilities may have problems with creating boundaries between work and home.
- Telework was associated with increased job satisfaction and reduced intentions to turnover.
- Provision of work life balance initiations have potential to improve the attitudinal and behavioral outcomes of employee. It will improve the commitment to the organization.
- Most of employees often remain unaware of work life balance offerings they already have.
- Some management and colleges consider time spent within the workplace as indicator of employee positive contribution, commitment and loyalty to the organization.
- Employee willingness to do telework will result higher productivity than supervisor or management enforcing it

Mennino et al. (2005) analyze work life balance from different point of view in their study of home-to-job and job-to-home spillover. Spillover conceptually represent the process whereby moods, stress, behaviors and emotions from one domain of social life affect those in another or vice versa. Positive spillover is good, whereas negative spillover will imbalance the work and life. They build their hypothesis based on following categories.

- Gender of the individual.
- Family-friendly company policies
- Work environment
- Family characteristics

The researchers conclude that women experience greater negative spillover than men. It's mainly from job-to-home, and also employee based family friendly company policies reduce the negative spillover.

Sullivan and Lewis (2001) in their research of home-based telework, gender and the synchronization of work and family, they found out that females are the gender which benefit more from working from home. Working from home creates flexibility to work around family demands, which is more important for child care and elder care. According to their finding working from home is the most efficient family friendly employment policy.

In the study of work-life balance and working from home, Crosbie and Moore (2004), mentioned that it is important to have separate area to do work within the home environment. Some home workers tend to work long hours because they get paid for the hours they work which will result work-life imbalance.

Guest (2002) revealed following important information during his research.

Work life imbalance was found more with,

- Those who work longer hours.
- Those who work in managerial positions and receive a higher income.
- Women who are having dependent children.
- Those who doing multiple jobs.
- In organizations where family friendly policies are there but it is not properly implemented.

He revealed that work life balance is found more with,

- Those who work in an organization which is having a friendly climate, where more human resource best practices are in place.
- Those who work in an organization which has more scope for direct participation and autonomy.

Mumin et al. (2014) did their research on Malaysia in the field of alternative work arrangements. They evaluated the use of telecommuting, flexi working hours and alternate work arrangements to improve the work life balance of employee.

2.6 Research Framework Formation.

The author found previous researches which measure the virtuality in different contexts by using somewhat similar variables. In the study of “how virtual are we?” Chudoba et al. (2005) try to measure the virtuality of a global organization (Intel). They identified six discontinuities (Table 2.7).

Table 2.7 - Discontinuities to measure virtuality

Discontinuity	Explanation and Evaluation
Geography	Work can be conducted by virtual teaming of workers from different locations. For example one can be at an airport or coffee shop, another one can be at home and another one can be on a remote customer site.
Temporal	Telework can be carried out across time zones. Then teleworkers need to work extend hours or days to align with remote team members.
Cultural	Telework can be carried out with workers who represent different cultures or speak different languages. They may have different cultural backgrounds.
Work practice	When people are brought together in to team, it's common for them to have different views on how work should be done. They may use different collaboration tools and techniques. They may use different methods to track the progress of their work.
Organization	Inter-organizational and intra-organizational business and functional differences. Collaborate with people in the organization but not in the working team. Collaborate with people in the team but not in the own organization(customer)
Technology	Telework cannot be possible without ICT. Usage of the Internet, conferencing technologies and collaboration tools.

They found that effective use of ICT tools will help to improve the team performance, collaboration and also reduce the issues caused by each and every discontinuity.

The author found similar research work carried out in a different country. This was an evaluation of Malaysian ICT sector's readiness for telecommuting by Ibrahim, Lara and Subrahmanyam (2008). Since this research was carried out in an Asian region country (Malaysia) and in a similar industry, so the framework and method it used may be suitable for the Sri Lankan context as well. In their literature survey they have found that success or failure of telework depends on technology, employee suitability and employer trust. Following are the findings of their research.

- The practicality of a telecommuting program is dependent on the size of the company.
- The productivity levels of telecommuters are higher than those of non-telecommuters.
- The stress levels of telecommuters are lower than those of non-telecommuters.

In their research they used framework suggested by Belanger and Collins (1998).

2.6.1 Distributed work arrangements: a research framework.

In the study “Distributed work arrangements: A research framework” by Belanger and Collins (1998), the authors found a framework to assess and predict whether an individual is ready for distributed work arrangements. They did this thorough analysis of previous work on telecommuting and organizational science. Table 2.8 contains the framework and explanation.

Table 2.8 - A Research Framework to assess distributed work arrangements

Characteristics	Explanation
Organizational	Organizational characteristics or variables which need to be considered when implementing distributed work arrangements.
	Their desired Objectives:- <ol style="list-style-type: none"> 1. Cost savings 2. Increased productivity 3. Employment incentives and employee demands.
	Organizational culture:- <ol style="list-style-type: none"> 1. Formal and informal norms 2. Procedures 3. Structures 4. Espoused values 5. Stories 6. Practices 7. Rituals
	Organizational control mechanisms:- <ol style="list-style-type: none"> 1. Outcome controls. (Task performer is rewarded for what is produced) 2. Behavioral controls. (Task performer is rewarded for doing specified behaviors.) 3. Social or Clan control. (Task performer belongs to a social group that defines appropriate behaviors and outcomes.) 4. Personal control. (Task performer guides his or her own actions.)

Characteristics	Explanation
Individual	Organizations need to identify which individuals are suitable for telecommuting and in which type of setting.
	<ol style="list-style-type: none"> 1. Individual Objectives <ul style="list-style-type: none"> • Cost savings: commute cost and time, clothing cost. • Control of working schedule: Elder and child care, fewer interruptions 2. Individual Skills <ul style="list-style-type: none"> • Computer Knowledge • Self-Sufficiency <ul style="list-style-type: none"> ○ Work and resolve problems independently ○ Ability to concentrate in a non-work setting ○ Good planning capabilities ○ Good time management skills. • Reliability <ul style="list-style-type: none"> ○ Minimum supervision. ○ Self-motivation ○ Self-discipline • Communication skills <ul style="list-style-type: none"> ○ Effective contacts with customers and colleagues.

Characteristics	Explanation
Work	<p>The Organization needs to identify whether their tasks are appropriate for the distributed work arrangement. Organizations need to analyze whether their tasks are interdependent with the tasks of other individuals, work units or departments.</p>
	<ol style="list-style-type: none"> 1. Pooled interdependence : Few information flows between individuals. Each task performer contributes to the end result. E.g.: -Software development backlog. Individuals pick tasks available on backlog and perform. 2. Sequential interdependence: One way work flow between task performers. E.g.: - Task move from UAT (User Acceptance Test) environment to production environment. 3. Reciprocal interdependence: Information flows both to and from the individuals who must cooperate in order to perform the task. E.g.: - Task move from development environment to QA (Quality Assurance) testing environment. Where product owners, Developers and QA Engineers work together. 4. Team interdependence: More similar to reciprocal interdependence but information flows among team rapidly. E.g.: - UAT and production release where all team members and product owners work together.

Characteristics	Explanation
Technology	Technological requirement to distribute work among teleworkers. <ol style="list-style-type: none"> 1. Accessibility. 2. Information Security. 3. Technical support.

In the study of an assessment model to analyze organizational readiness to implement telework arrangements Setil and Barcia (2001) derived a framework (Table 2.9) using previous literature. Their framework is almost identical to Belanger and Collins (1998) except for minor changes. In their framework Setil and Barcia (2001) consider Home Context as fourth context whereas Belanger and Collins (1998) consider Technology as their fourth characteristic.

2.6.2 An assessment model to analyze organizational readiness to telework

Table 2.9 - An assessment model to analyze telework arrangements

Context	Aspects to be analyzed and explanation
Organizational	<p>Structural Characteristics: plans and coordination in between members to accomplish organizational goals.</p> <ul style="list-style-type: none"> • Centralization: Degree of concentration of authority at the top of hierarchy. • Formalization: Identification of the way that organizations standardize their tasks. <p>Standardization has following steps</p> <ul style="list-style-type: none"> ✓ Written rules for task-understanding ✓ Decision making rules. ✓ Creating and reinforcing rules of procedure.
	<p>Organizational culture</p> <ul style="list-style-type: none"> • Identify the basic elements of organizational culture (values and beliefs). • Identify the gaps between existing values and telework favorable values. • Plan for the new development of new values.
	<p>Psychological contracts Bonds between employees and also between employer and employees.</p>

Context	Aspects to be analyzed and explanation
Functions	<p>Degree of efficiency in which tasks can be accomplished at home</p> <ul style="list-style-type: none"> • If function requires certain periods or certain days of communication, part time telework is preferred. • If full time contact and communication is needed, teleworking is not suitable. <p>They also consider the four interdependence topologies mentioned above. They further mentioned that group interdependence or pooled interdependence is the starting point for a company going to adapt teleworking.</p>
Individual	<p>Adequate profile for telework. Not all employees are suitable for teleworking.</p> <p>Knowledge Basics of computer technology Deeper knowledge of function. Seniority or experience.</p> <p>Attitudes Organizational commitments. Belief and acceptance of the values and goals of the organization.(feeling of loyalty) The wish to maintain ties with the organization.(permanence) The intention to invest efforts on behalf of the organization.</p> <p>Skills Optimizing time management Facing challenges Resisting concentration dispersion Communicating effectively Building up motivation Work life balance.</p>
Home	<p>Adequate site for accomplishing work and rearranging domestic routines</p>

3 Methodology

3.1 Overview

In this chapter, the methodology used to conduct the research is explained in detail. Details of type of investigation, population and sample selection, approaches taken to gather data are discussed. The factors identified in literature will be used as a basis for developing the research methodology (Figure 3-1). Also this chapter will illustrate the theoretical framework identifying both independent and dependent variables. The formation of hypotheses and discussion on design of questionnaire is discussed further in this section.

3.2 Research Methodology

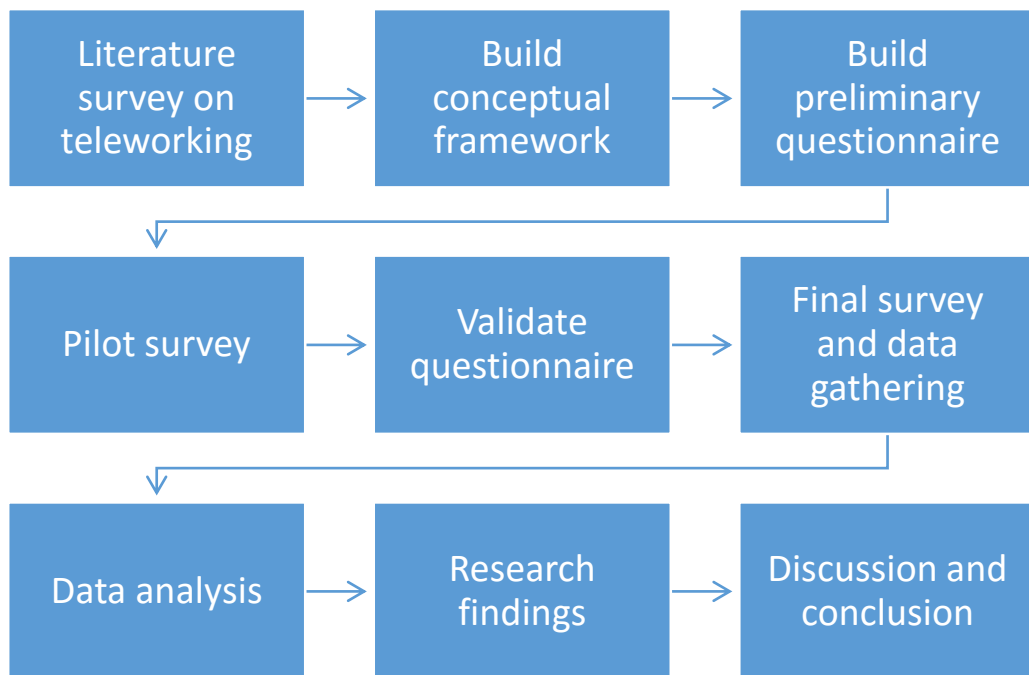


Figure 3-1 - Research Methodology

3.3 Conceptual Framework

As for this research the author would make use of a theoretical framework as a model for gathering facts during the data collection process. The author derived factors from literature review and interviews conducted with industry professionals, and these were materialized as a starting point to verify the applicability of research objectives. In the following section, author describes a set of variables that were identified as independent/dependent variables from the literature survey and the developed conceptual framework.

3.3.1 Analysis method.

In the process of selecting the analysis method, author decided to use quantitative analysis by considering research area and population. Author decided to gather responses from a large number of people within a limited time frame.

3.3.2 Variable Identification.

In variable identification, author considered previous work carried out in different countries in a similar context and frameworks designed to evaluate the readiness of the telework or working from home concept. Table 3.1 included the independent/dependent variables and their dimensions and measurements.

Table 3.1 - Variable description

	Dimensions and measurements									
	Organizational		Individual			Functional	Technological	Home	Dependent Variable	
Author	Organizational culture and Structural Characteristics	Organizational control mechanisms	Self-sufficiency	Reliability	Communication skills	Interdependency of tasks	Accessibility and task related information availability	Home environment	Work life balance	Advantages and disadvantages, Applicability
Dambrin (2004)	•	•	•	•		•				
Cooper and Kurland (2002)	•	•			•					
Pyöriä (2003)	•	•				•	•			
Egan and Kurland (1999)	•	•								
Chudoba et al. (2005)	•						•			
Garrett and Danziger (2007)	•						•	•		
Mennino et al. (2005)	•							•		
Beauregard and Henry (2009)	•								•	•
Morganson et al. (2010)			•		•				•	
Tremblay (2002)			•	•						•
Wicks (2002)			•	•						
Bailey and Kurland (2002)					•	•				
Haddon and Brynin (2005)							•			

	Dimensions and measurements									
	Organizational		Individual			Functional	Technological	Home	Dependent Variable	
Author	Organizational culture and Structural Characteristics	Organizational control mechanisms	Self-sufficiency	Reliability	Communication skills	Interdependency of tasks	Accessibility and task related information availability	Home environment	Work life balance	Advantages and disadvantages, Applicability
Crosbie and Moore (2004)								•	•	
Sullivan and Lewis (2001)								•	•	
Hill et al. (2001)									•	•
Kurland and Bailey (1999)										•
Mumin et al. (2014)									•	•
Sinha (2012)	•	•			•					
Grant et al. (2013)					•				•	
Bélanger et al. (2013)	•	•					•			

3.3.3 Description of Variables

Independent variable: - Individual

Individual characteristics are the most important when applying the working from home concept to any IT organization. By analyzing the above mentioned previous work, the author came to a conclusion that every employee is not suitable for working from home. Employee need special qualities to succeed in working from home. Authors use three dimensions to measure the suitability of working from home concept to employees of IT organizations. First dimension is Self-sufficiency. Home teleworker needs to work and resolve problems independently. Nobody is there to

help him. Teleworker needs to rely on his own knowledge and experience. In addition, home worker needs to have good time management skills.

Second dimension is reliability. Homeworker is physically separated from the organization so he has to do his task with minimum supervision but he needs to update stakeholders in reliable manner. The third dimension author used to measure the individual characteristics are communication skills. This is more important when it comes to home teleworking. Home worker resides away from the organization, only available medium to interact with other people in the organization is effective communication. Author verifies whether employee is ready to update stakeholders and other team members of the project with relevant project information.

Independent variable: - Home

In this research home characteristics play a major role. Author used two dimensions to measure the home and its surroundings. First dimension is home environment; the author evaluated employees' freedom to carry out assigned tasks with peace of mind and dedication to use home facilities in emergency situations. Second dimension is work life balance, author evaluates the dedication of employee for family obligations.

Independent variable: - Organizational

Using this variable author measures two dimensions of organization. First one is organizational culture and structural characteristics. Here author verifies whether the organization follows any standards, written rules or procedures to accomplish organizational goals, its best practices and also the importance of mentoring to keep the momentum of knowledge culture within the organization. The second one is organizational control mechanisms. Author verified whether the organization considers time attendance as an important factor in the process of employee reviews and also rewards and appreciates the tasks performer within the organization.

Independent variable: - Functional

Functional characteristics are there to evaluate the suitability of a task for working from home. According to literature survey every task is not suitable to do be done away from the organization. In this section author thoroughly analyzes the task management of organization and its employees.

Independent variable: - Technological

According to literature survey technology is the important and most favorable reason to follow working from home concept. Author verified whether the organization facilitates the remote accessibility to work related information and the organizational friendliness to the new technology in this digital era.

Dependent variable: - Advantages, suitability and applicability to IT organizations in Sri Lanka

Author measures following areas,

- Whether employee is working from home occasionally
- Whether employee is accepting that he is taking unnecessary leave
- Whether organization and management listen to the employee problems
- Whether organization provides working from home in exceptional situations
- Employee’s feelings about working away from office

Following figure (Figure 3-2) contains the conceptual framework derived from independent and dependent variables.

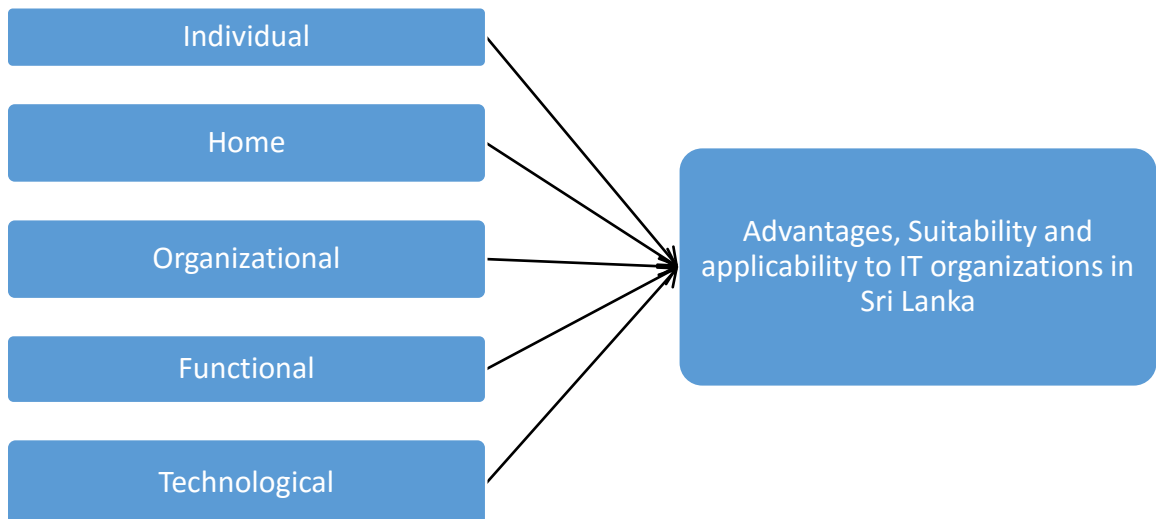


Figure 3-2 - Conceptual Framework

3.4 Formation of Hypotheses

3.4.1 Individual variable hypothesis

Using the individual variable author derived the following hypothesis which evaluates the correlation between individual factors of employee and applicability of working from home concept to IT organizations in Sri Lanka.

H0A – Individual factors have no correlation with applicability of working from home to IT organizations.

H1A – Individual factors have a strong positively correlation with applicability of working from home to IT organizations.

3.4.2 Home variable hypothesis

Using the home variable author derived following hypothesis which evaluates the correlation between the home environment and work life balance factors of employee and the applicability of working from home concept to IT organizations in Sri Lanka.

H0B – Home factors have no correlation with applicability of working from home to IT organizations in Sri Lanka.

H1B – Home factors have a strongly positive correlation with applicability of working from home to IT organizations in Sri Lanka.

3.4.3 Organizational variable hypothesis

Using the organizational variable author derived following hypothesis which evaluates the correlation between organizational factors of employee and applicability of working from home concept to IT organizations in Sri Lanka.

H0C – Organizational factors have no correlation with applicability of working from home to IT organizations in Sri Lanka.

H1C – Organizational factors have a strongly positive correlation with applicability of working from home to IT organizations in Sri Lanka.

3.4.4 Functional variable hypothesis

Using the functional variable author derived the following hypothesis which evaluates the correlation between organization's functional factors and applicability of working from home concept to IT organizations in Sri Lanka.

H0D – Functional factors have no correlation with applicability of working from home to IT organizations in Sri Lanka.

H1D – Functional factors have a strongly positive correlation with applicability of working from home to IT organizations in Sri Lanka.

3.4.5 Technological variable hypothesis

Using the technological variable author derived the following hypothesis which evaluates the correlation between technological factors of organization and applicability of working from home concept to IT organizations in Sri Lanka.

H0E – Technological factors have no correlation with applicability of working from home to IT organizations in Sri Lanka.

H1E – Technological factors have a strong positive correlation with applicability of working from home to IT organizations in Sri Lanka.

3.5 Questionnaire

The Questionnaire, which was designed to evaluate each and every variable can be found in the appendix section. Following table 3.2 contains the relevant dimension category of each question.

Table 3.2–Questions and dimensions

Variable Name	Measurement and Dimensions	Number of Questions	Questions
Individual	Self-sufficiency	7	Q1.1,Q1.3,Q1.4,Q1.5,Q3.5, Q6.5,Q6.6
	Reliability	4	Q1.1,Q1.2,Q1.3,Q6.1
	Communication skills	3	Q1.2,Q1.5,Q1.6
Home	Home environment	3	Q2.1, Q2.2, Q2.3
	Work life balance	4	Q2.4, Q2.5, Q2.6, Q6.2
Organizational	Organizational culture and Structural characteristics	5	Q3.1,Q3.3,Q3.4, Q3.5, Q6.3
	Organizational control mechanisms	5	Q3.2, Q3.6,Q3.7,Q3.8, Q6.4
Functional	Interdependency of tasks.	6	Q4.1,Q4.2,Q4.3,Q4.4,Q1.3, Q3.1
Technological	Accessibility and task related information availability	6	Q5.1,Q5.2,Q5.3,Q5.4, Q4.3,Q4.4
Applicability of working from home	Advantages and suitability	7	Q6.1,Q6.2,Q6.3,Q6.4,Q6.5, Q6.6,Q6.7

3.6 Data Collection

3.6.1 Population and sampling

Research sample population was calculated based on a National ICT workforce survey carried out by ICTA of Sri Lanka on year 2013. Their projected population for ICT workforce for year 2014 was 82,854. That was the most recent result available. Author calculated the sample size using free online software (Raosoft). Author obtained a sample size of 383 with the following parameters.

Margin of error	5%
Confidence level	95%

3.6.2 Method of data collection

Data was collected using a structured questionnaire designed on Google form platform. In order to refine the questionnaire author carried out three pilot surveys using 10-20 responses.

Author used Cronbach's alpha to measure the reliability or internal consistency of questions. Author carried out three pilot surveys to refine the questionnaire. In those pilot surveys author collected data by maintaining sample size of 10 to 20. Just before the main survey the following results (table 3.3) were obtained for the reliability test for 16 responses.

Table 3.3 - Cronbach's with sample data

Variable	Cronbach's alpha
Individual	0.722
Home	0.702
Organizational	0.795
Functional	0.692
Technological	0.753
Applicability of working from home	0.847

Acceptable Cronbach's ratio is in between 1.0 and 0.7. After observing above results, the author decided to send out the questionnaire to target sample population.

4 Data Analysis and Discussion

4.1 Reliability Analysis to Test the Goodness of Data

The author received 114 responses and calculated the Cronbach's alpha again to check the reliability of the collected data set for each and every variable. SPSS (Statistical Package for the Social Science) tool was used for the statistical analysis.

Independent Variable: - Individual

Table 4.1 - Individual Cronbach's Alpha

Reliability Statistics	
Cronbach's Alpha	N of Items
0.532	8

Author removed question 1.1 and 1.6 to reach Cronbach's Alpha value of 0.532.

Independent Variable: - Home

Table 4.2 - Home Cronbach's Alpha

Reliability Statistics	
Cronbach's Alpha	N of Items
0.573	6

Author removed question 2.3 to reach value of 0.573 for Cronbach's alpha for the independent variable home.

Independent Variable: - Organizational

Table 4.3 - Organizational Cronbach's Alpha

Reliability Statistics	
Cronbach's Alpha	N of Items
0.658	7

Author removed 3.2, 3.4 and 3.5 to reach value of 0.658 for Cronbach's alpha for independent variable organizational.

Independent Variable: - Functional

Table 4.4 - Functional Cronbach's Alpha

Reliability Statistics	
Cronbach's Alpha	N of Items
0.569	5

Author removed question 4.1 to reach value of 0.569 value for Cronbach's alpha for the independent variable functional.

Independent variable: - Technological

Table 4.5 - Technological Cronbach's Alpha

Reliability Statistics	
Cronbach's Alpha	N of Items
0.736	6

Author obtained perfect Cronbach's alpha for independent variable technological.

Dependent variable: - Applicability of working from home concept.

Table 4.6 - Dependent variable Cronbach's Alpha

Reliability Statistics	
Cronbach's Alpha	N of Items
0.789	3

Dependent variable is the most important variable. Author removed questions 6.1, 6.2, 6.3 and 6.4 to reach value of 0.789 for Cronbach's Alpha.

Following table 4.7 contains summary of Cronbach's alpha values for each variable.

Table 4.7 - Final Cronbach's table

Variable	No of items	Cronbach's alpha
Individual	8	0.532
Home	6	0.573
Organizational	7	0.658
Functional	5	0.569
Technological	6	0.736
Applicability of working from home	3	0.789

Acceptable Cronbach's ratio is in between 1.0 and 0.7. George and Mallery (2003) provided a commonly accepted rule of thumb for Cronbach's alpha ratio,

- $\alpha \geq 0.9$ – Excellent
- $0.9 > \alpha \geq 0.8$ – Good
- $0.8 > \alpha \geq 0.7$ – Acceptable
- $0.7 > \alpha \geq 0.6$ – Questionable
- $0.6 > \alpha \geq 0.5$ – Poor
- $0.5 > \alpha$ - Unacceptable

Except for two variables, all others are below the acceptable level but according to rule of thumb by George and Mallery (2003), all are above the unacceptable level.

Following table 4.8 contains the remaining questions that author used for correlation analysis.

Table 4.8 - Final question list for analysis

Variable Name	Measurement and Dimensions	Number of Questions	Questions
Individual	Self-sufficiency	6	Q1.3,Q1.4,Q1.5,Q3.5, Q6.5,Q6.6
	Reliability	3	Q1.2,Q1.3,Q6.1
	Communication skills	2	Q1.2,Q1.5
Home	Home environment	2	Q2.1, Q2.2
	Work life balance	4	Q2.4, Q2.5, Q2.6, Q6.2
Organizational	Organizational culture and Structural Characteristics	3	Q3.1,Q3.3, Q6.3
	Organizational control mechanisms	4	Q3.6,Q3.7,Q3.8, Q6.4
Functional	Interdependency of tasks.	5	Q4.2,Q4.3,Q4.4,Q1.3, Q3.1
Technological	Accessibility and task related information availability.	6	Q5.1,Q5.2,Q5.3,Q5.4, Q4.3,Q4.4
Applicability of working from home	Advantages and suitability	3	Q6.5,Q6.6,Q6.7

According to the above table only six questions are not included for correlation calculations but author used them for other statistical analysis.

4.2 Hypothesis Analysis.

Author used Pearson correlation to evaluate the relationship between independent variables and dependent variable. Pearson correlation is a technique used to investigate the relationship between two quantitative variables.

Individual vs Applicability of working from home.

H0A – Individual factors have no correlation with applicability of working from home in IT organizations.

H1A – Individual factors have a strongly positive correlation with applicability of working from home in IT organizations.

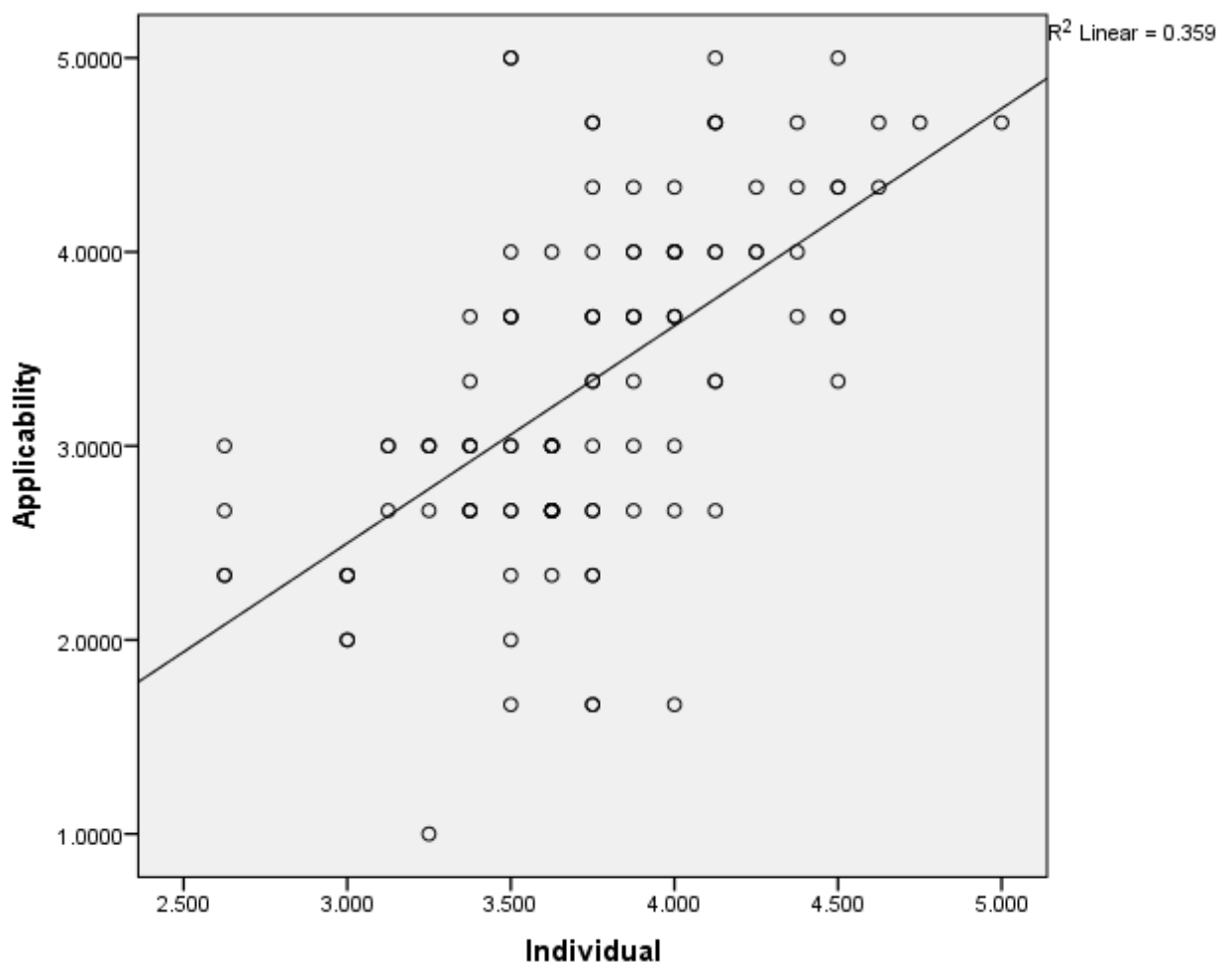


Figure 4-1 - Variable Individual vs Applicability

According to the above graph (Figure 4-1) individual factors have a linear relationship to applicability of working from home.

According to the table below (table 4.9) individual factors and applicability of working from home concept have a statistically significant, strongly positive linear correlation with value 0.599 but this is significant at the level of 0.01. There is only 1% chance that the relationship does not truly exist. The P-value is probability of incorrectly rejecting null hypothesis.

P-value = 0.000

P-value < 0.01

Author accepted H1A by rejecting null hypothesis H0A.

R-value = 0.599

R-value > 0.5

Since Pearson correlation is higher than 0.5, author concluded that individual factors have a strong positive correlation with applicability of working from home concept to IT organizations in Sri Lanka.

Table 4.9 - Individual and working from home correlation

Correlations			
		Individual	Applicability
Individual	Pearson Correlation	1	0.599**
	Sig. (2-tailed)		0.000
	N	114	114
Applicability	Pearson Correlation	0.599**	1
	Sig. (2-tailed)	0.000	
	N	114	114

** . Correlation is significant at the 0.01 level (2-tailed).

Author carried out linear regression analysis to build an equation for the correlation function. Below tables (4.10 and 4.11) are generated for linear regression analysis.

Table 4.10 - Individual linear regression

Model Summary				
Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	0.599 ^a	0.359	0.353	0.6974029

a. Predictors: (Constant), Individual

Table 4.11 - Individual linear regression equation formation

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	-0.862	0.533		0.109
	Individual	1.120	0.141	0.599	0.000

a. Dependent Variable: Applicability

Regression equation for individual factors and applicability of working from home will be as follows.

$$y=1.120x-0.862$$

In above equation applicability of working from home to IT organizations is represented by (y) and individual factors represented by (x).

Home vs Applicability of working from home.

H0B – Home factors have no correlation with applicability of working from home to IT organizations in Sri Lanka.

H1B – Home factors have a strongly positive correlation with applicability of working from home to IT organizations in Sri Lanka.

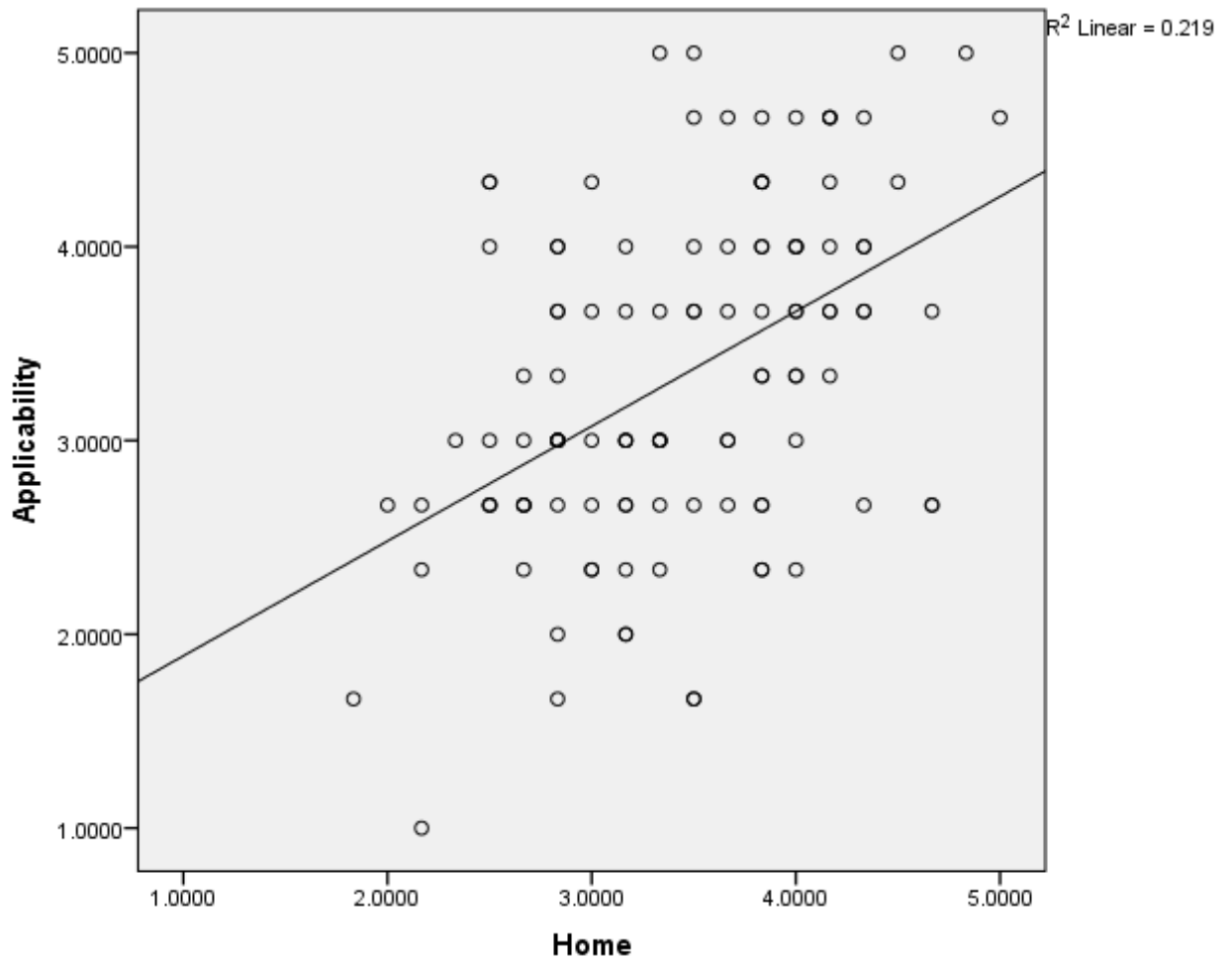


Figure 4-2 - Variable home vs Applicability

According to above graph (Figure 4-2) home factors have a linear relationship with applicability of working from home.

According to table 4.12 below, home factors and applicability of working from home concept have a statistically significant linear correlation with value 0.468 which is significant at the level of 0.01. There is only a 1% chance that the relationship does not truly exist. The P-value is probability of incorrectly rejecting null hypothesis.

P-value = 0.000

P-value < 0.01

Author accepted H1B by rejecting null hypothesis H0B.

R-value = 0.468

R-value < 0.5

Since Pearson correlation is below 0.5, author concluded that home factors have a medium positive correlation with applicability of working from home concept to IT organizations in Sri Lanka.

Table 4.12 - Home Correlation to working from home

Correlations			
		Applicability	Home
Applicability	Pearson Correlation	1	0.468**
	Sig. (2-tailed)		0.000
	N	114	114
Home	Pearson Correlation	0.468**	1
	Sig. (2-tailed)	0.000	
	N	114	114

** . Correlation is significant at the 0.01 level (2-tailed).

Author carried out linear regression analysis to build an equation for the correlation function. Tables (4.13 and 4.14) below are generated for linear regression analysis.

Table 4.13 - Home linear regression

Model Summary				
Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	0.468 ^a	0.219	0.212	0.7700345

a. Predictors: (Constant), Home

Table 4.14 - Home liner regression equation formation

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	1.296	0.370		0.001
	Home	0.593	0.106	0.468	0.000

a. Dependent Variable: Applicability

Regression equation for home factors and applicability of working from home will be as follows.

$$y=0.593x+1.296$$

In above equation applicability of working from home to IT organizations is represented by (y) and home factors represented by (x).

Organizational factors vs Applicability of working from home.

H0C – Organizational factors have no correlation with applicability of working from home to IT organizations in Sri Lanka.

H1C – Organizational factors have a strongly positive correlation with applicability of working from home to IT organizations in Sri Lanka.

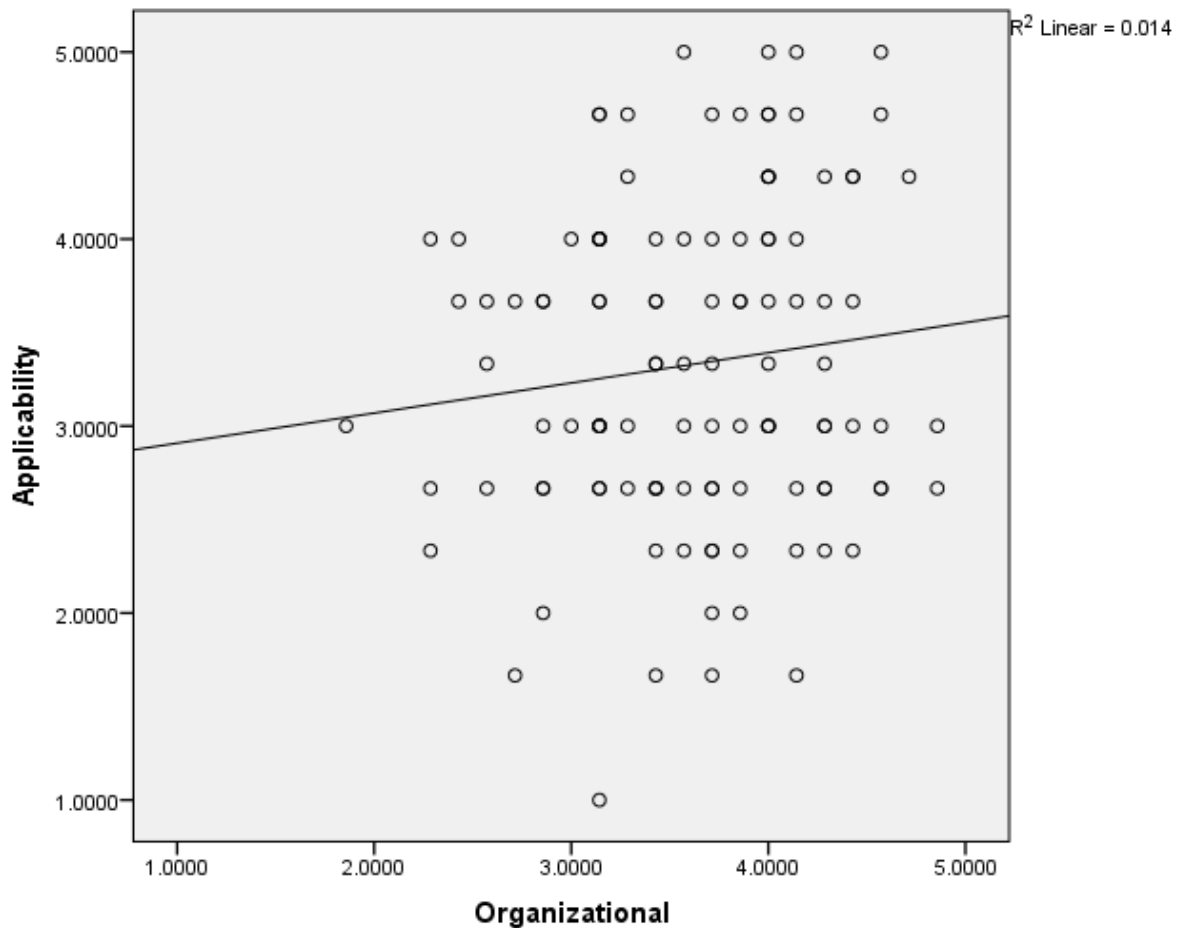


Figure 4-3 - Variable organizational vs Applicability

According to above graph (Figure 4-3) organizational factors have a linear relationship to applicability of working from home.

According to Table 4.15 below, Organizational factors and applicability of working from home concept is having a statistically slightly significant linear correlation, with value 0.117. The P-value is probability of incorrectly rejecting null hypothesis.

P-value = 0.215

P-value > 0.05

Author has no evidence to accept H1C by rejecting null hypothesis H0C.

R-value = 0.117

R-value < 0.5

Author did not find strong evidence to prove that organizational factors have any strong or weakly correlation with applicability of working from home concept to IT organizations in Sri Lanka.

Table 4.15 - Organizational correlation to working from home

Correlations			
		Applicability	Organizational
Applicability	Pearson Correlation	1	0.117
	Sig. (2-tailed)		0.215
	N	114	114
Organizational	Pearson Correlation	0.117	1
	Sig. (2-tailed)	0.215	
	N	114	114

Author carried out linear regression analysis to build an equation for the correlation function. Tables (4.16 and 4.17) below are generated for linear regression analysis.

Table 4.16 - Organizational linear regression

Model Summary				
Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	0.117 ^a	0.014	0.005	0.8651828

a. Predictors: (Constant), Organizational

Table 4.17 - Organizational linear regression equation formation

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	2.747	0.475		0.000
	Organizational	0.161	0.129	0.117	0.215

a. Dependent Variable: Applicability

Regression equation for organizational factors and applicability of working from home will be as follows.

$$y=0.161x+2.747$$

In above equation applicability of working from home to IT organizations is represented by (y) and organizational factors represented by (x).

Functional vs Applicability of working from home.

H0D – Functional factors have no correlation with applicability of working from home to IT organizations in Sri Lanka.

H1D – Functional factors have a strongly positive correlation with applicability of working from home to IT organizations in Sri Lanka.

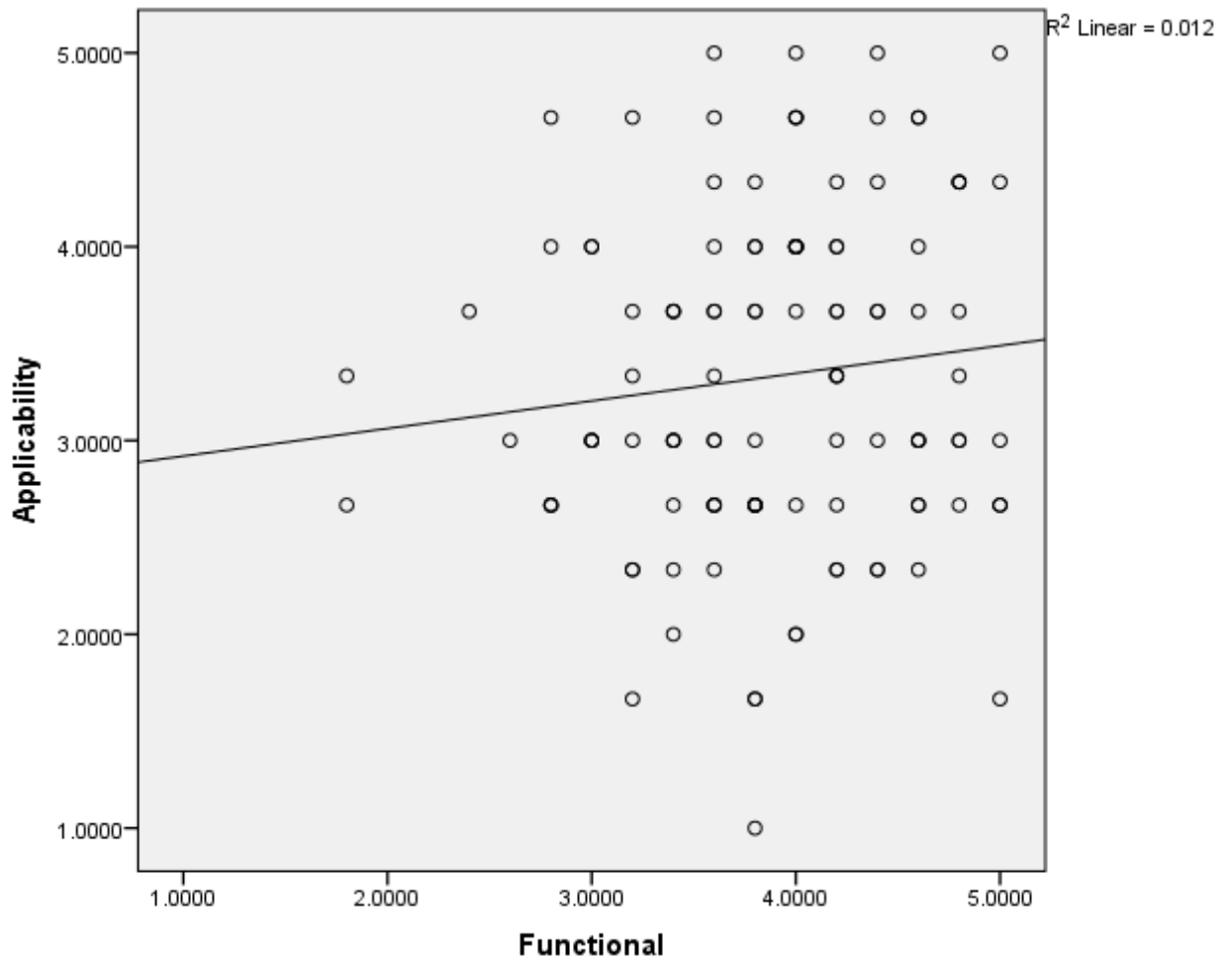


Figure 4-4 – Variable Functional vs Applicability

According to above graph (Figure 4-4) functional factors have a linear relationship to applicability of working from home.

According to below table 4.18 functional factors and applicability of working from home concept has only a statistically slightly significant linear correlation with value 0.111.

P-value = 0.239

P-value > 0.05

Author has no evidence to reject null hypothesis H0D.

R-value = 0.111

R-value < 0.5

Author did not find evidence to prove that functional factors have a strong or weak correlation with applicability of working from home concept to IT organizations in Sri Lanka.

Table 4.18 - Functional correlation to working from home

Correlations			
		Applicability	Functional
Applicability	Pearson Correlation	1	0.111
	Sig. (2-tailed)		0.239
	N	114	114
Functional	Pearson Correlation	0.111	1
	Sig. (2-tailed)	0.239	
	N	114	114

Author carried out linear regression analysis to build an equation for the correlation function. Tables below (4.19 and 4.20) are generated for linear regression analysis.

Table 4.19 - Functional linear regression

Model Summary				
Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	0.111 ^a	0.012	0.004	0.8657692

a. Predictors: (Constant), Functional

Table 4.20 - Functional linear regression equation formation

Coefficients^a					
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.
		B	Std. Error	Beta	
1	(Constant)	2.777	0.475		0.000
	Functional	0.142	0.120	0.111	0.239

a. Dependent Variable: Applicability

Regression equation for functional factors and applicability of working from home will be as follows.

$$y=0.142x+2.777$$

In above equation applicability of working from home to IT organizations is represented by (y) and functional factors represented by (x).

Technological factors vs Applicability of working from home.

HOE – Technological factors have no correlation with applicability of working from home to IT organizations in Sri Lanka.

H1E – Technological factors have a strongly positive correlation with applicability of working from home to IT organizations in Sri Lanka.

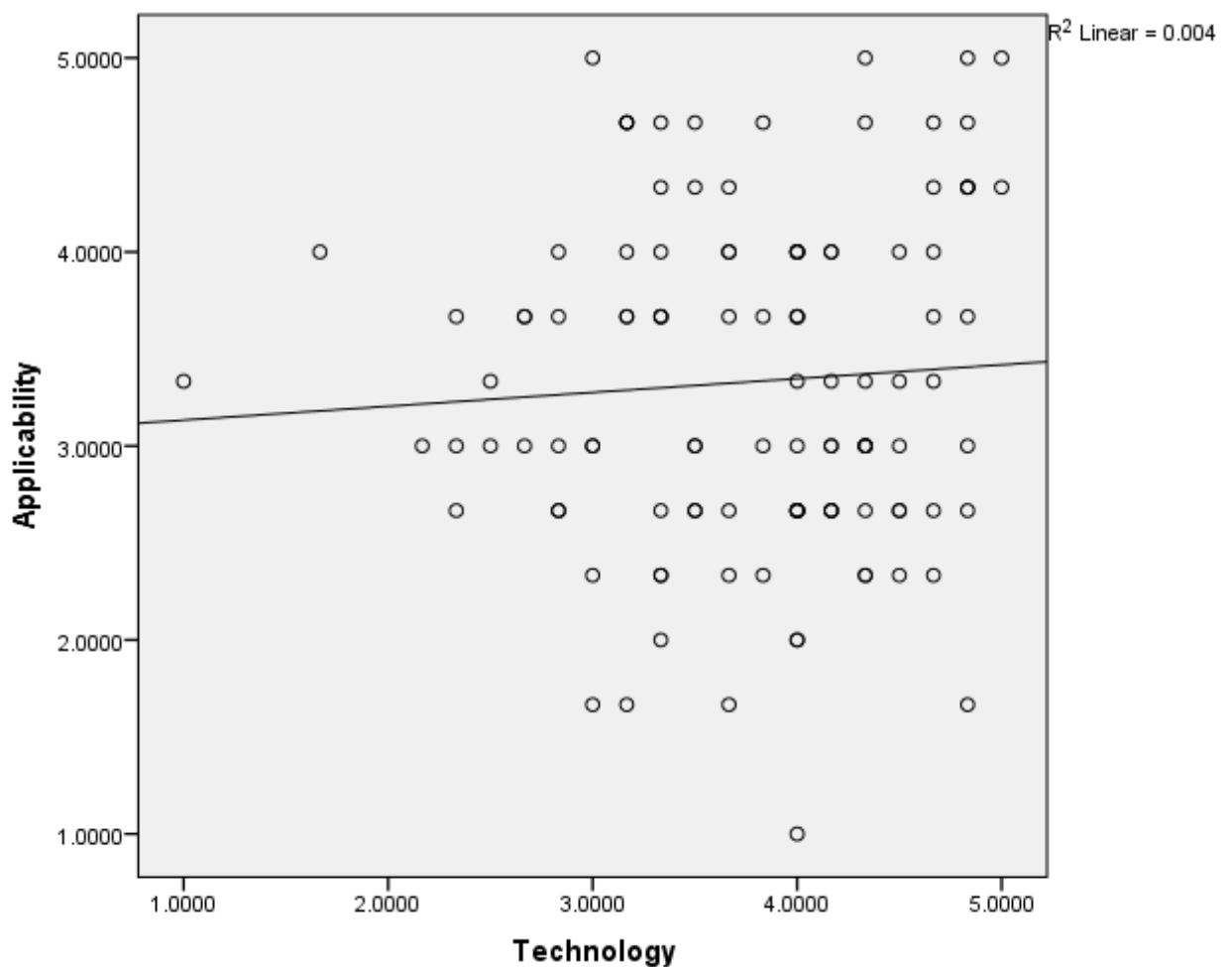


Figure 4-5 - Variable technology vs Applicability

According to above graph (Figure 4-5) technological factors have a linear relationship to applicability of working from home.

According to table 4.21 Technological factors and applicability of working from home concept has only a statistically slightly significant linear correlation with value 0.064.

P-value = 0.502

P-value > 0.05

Author has no evidence to reject null hypothesis H0E.

R-value = 0.064

R-value < 0.5

Author did not find strong evidence to prove that technological factors have any correlation with applicability of working from home concept to IT organizations in Sri Lanka.

Table 4.21 - Technology correlation to working from home

Correlations			
		Applicability	Technology
Applicability	Pearson Correlation	1	0.064
	Sig. (2-tailed)		0.502
	N	114	114
Technology	Pearson Correlation	0.064	1
	Sig. (2-tailed)	0.502	
	N	114	114

Author performed a linear regression analysis to build an equation for the correlation function. Tables (4.22 and 4.23) below are generated for linear regression analysis.

Table 4.22 - Technology linear regression

Model Summary				
Model	R	R ²	Adjusted R ²	Std. Error of the Estimate
1	0.064 ^a	0.004	-0.005	0.8693993

a. Predictors: (Constant), Technology

Table 4.23 - Technology linear regression equation formation

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.062	0.407		7.523	0.000
	Technology	0.071	0.106	0.064	0.674	0.502

a. Dependent Variable: Applicability

Regression equation for technological factors and applicability of working from home will be as follows.

$$y=0.071x+3.062$$

In the above equation applicability of working from home to IT organizations represented by (y) and technological factors represented by (x).

Individual and Home correlation to dependent variable.

Table 4.24 - Individual and home correlation

Tests of Between-Subjects Effects

Dependent Variable: Applicability

Source	Type III Sum of Squares	Mean Square	Sig.
Corrected Model	72.943 ^a	0.868	0.014
Intercept	676.548	676.548	0.000
Individual	19.959	1.331	0.004
Home	12.602	0.700	0.103
Individual * Home	21.905	0.438	0.449
Error	12.056	0.416	
Total	1349.444		
Corrected Total	84.999		

a. R Squared = 0.858 (Adjusted R Squared = 0.447)

P-value of Individual and home factors to dependent variable,

P-value = 0.449

P-value > 0.05

Individual and Home together have no correlation with dependent variable but the individual variable is having a higher correlation with the dependent variable than home variable.

Individual and organizational correlation to dependent variable.

Table 4.25 - Individual and organizational correlation

Tests of Between-Subjects Effects

Dependent Variable: Applicability

Source	Type III Sum of Squares	Mean Square	Sig.
Corrected Model	77.555 ^a	0.852	0.008
Intercept	721.843	721.843	0.000
Individual	28.327	1.770	0.000
Organizational	6.833	0.360	0.442
Individual * Organizational	33.201	0.593	0.074
Error	7.444	0.338	
Total	1349.444		
Corrected Total	84.999		

a. R Squared = 0.912 (Adjusted R Squared = 0.550)

P-value of Individual and organizational factors to dependent variable,

P-value = 0.074

P-value > 0.05

Individual and Organizational variables together have no correlation with the dependent variable but individual variable is having a higher correlation with the dependent variable than organizational variable.

Individual and functional correlation to dependent variable.

Table 4.26 - Individual and functional correlation

Tests of Between-Subjects Effects

Dependent Variable: Applicability

Source	Type III Sum of Squares	Mean Square	Sig.
Corrected Model	61.879 ^a	0.804	0.231
Intercept	723.303	723.303	0.000
Individual	31.300	1.956	0.003
Functional	4.991	0.356	0.881
Individual * Functional	19.849	0.422	0.912
Error	23.120	0.642	
Total	1349.444		
Corrected Total	84.999		

a. R Squared = 0.728 (Adjusted R Squared = 0.146)

P-value of Individual and functional factors to dependent variable,

P-value = 0.912

P-value > 0.05

Individual and functional variables together have no correlation with dependent variable but individual variable has a higher correlation with the dependent variable than functional variable.

Individual and technological correlation to dependent variable.

Table 4.27 - Individual and technological correlation

Tests of Between-Subjects Effects

Dependent Variable: Applicability

Source	Type III Sum of Squares	Mean Square	Sig.
Corrected Model	70.953 ^a	0.816	0.117
Intercept	734.442	734.442	0.000
Individual	33.030	2.064	0.001
Technology	6.282	0.331	0.863
Individual * Technology	28.115	0.541	0.514
Error	14.046	0.540	
Total	1349.444		
Corrected Total	84.999		

a. R Squared = 0.835 (Adjusted R Squared =0.282)

P-value of Individual and technological factors to dependent variable,

P-value = 0.514

P-value > 0.05

Individual and technological variables together have no correlation with dependent variable but individual variable is having a higher correlation with the dependent variable than technological variable.

Home and Organizational correlation to dependent variable.

Table 4.28 - Home and organizational correlation

Tests of Between-Subjects Effects

Dependent Variable: Applicability

Source	Type III Sum of Squares	Mean Square	Sig.
Corrected Model	73.814a	0.785	0.242
Intercept	647.806	647.806	0.000
Home	29.350	1.545	0.021
Organizational	13.557	0.714	0.340
Home * Organizational	28.723	0.513	0.667
Error	11.185	0.589	
Total	1349.444		
Corrected Total	84.999		

a. R Squared = 0.868 (Adjusted R Squared = 0.217)

P-value of home and organizational factors to dependent variable,

P-value = 0.667

P-value > 0.05

Home and Organizational variables together have no correlation with dependent variable but variable home is has a higher correlation with the dependent variable than variable organizational.

Home and Functional correlation to dependent variable.

Table 4.29 - Home and functional correlation

Tests of Between-Subjects Effects

Dependent Variable: Applicability

Source	Type III Sum of Squares	Mean Square	Sig.
Corrected Model	68.092a	0.783	0.303
Intercept	653.927	653.927	0.000
Home	27.127	1.428	0.032
Functional	5.630	0.402	0.826
Home * Functional	31.113	0.576	0.655
Error	16.907	0.650	
Total	1349.444		
Corrected Total	84.999		

a. R Squared = 0.801 (Adjusted R Squared = 0.135)

P-value of home and organizational factors to dependent variable,

P-value = 0.655

P-value > 0.05

Home and functional variables together have no correlation with dependent variable but variable home has a higher correlation with the dependent variable than functional variable.

Home and Technological correlation to dependent variable.

Table 4.30 - Home and technological correlation

Tests of Between-Subjects Effects

Dependent Variable: Applicability

Source	Type III Sum of Squares	Mean Square	Sig.
Corrected Model	71.684a	0.815	0.114
Intercept	682.062	682.062	0.000
Home	26.715	1.406	0.012
Technology	9.517	0.501	0.548
Home * Technology	31.934	0.639	0.317
Error	13.315	0.533	
Total	1349.444		
Corrected Total	84.999		

a. R Squared = 0.843 (Adjusted R Squared = 0.292)

P-value of home and technological factors to dependent variable,

P-value = 0.317

P-value > 0.05

Home and technological variables together have no correlation with dependent variable but variable home is has a higher correlation to the dependent variable than technological variable.

Organizational and Functional correlation to dependent variable.

Table 4.31 - Organizational and functional correlation

Tests of Between-Subjects Effects

Dependent Variable: Applicability

Source	Type III Sum of Squares	Mean Square	Sig.
Corrected Model	64.301a	0.824	0.139
Intercept	670.564	670.564	0.000
Organizational	11.452	0.636	0.412
Functional	7.947	0.611	0.443
Organizational * Functional	41.215	0.896	0.102
Error	20.698	0.591	
Total	1349.444		
Corrected Total	84.999		

a. R Squared = 0.756 (Adjusted R Squared = 0.214)

P-value of organizational and functional factors to dependent variable,

P-value = 0.102

P-value > 0.05

Organizational and variables together have no correlation with dependent variable but variable organizational is having a higher correlation to the dependent variable than functional variable.

Organizational and Technological correlation to dependent variable.

Table 4.32 - Organizational and technological correlation

Tests of Between-Subjects Effects

Dependent Variable: Applicability

Source	Type III Sum of Squares	Mean Square	Sig.
Corrected Model	65.851a	0.740	0.616
Intercept	732.870	732.870	0.000
Organizational	14.981	0.832	0.454
Technology	14.762	0.820	0.467
Organizational * Technology	37.785	0.727	0.622
Error	19.148	0.798	
Total	1349.444		
Corrected Total	84.999		

a. R Squared = 0.775 (Adjusted R Squared = -0.061)

P-value of Organizational and technological factors to dependent variable,

P-value = 0.622

P-value > 0.05

Organizational and technological variables together have no correlation with dependent variable but variable organizational is having more correlation to the dependent variable than variable technological.

Functional and Technological correlation to dependent variable.

Table 4.33 - Functional and technological correlation

Tests of Between-Subjects Effects

Dependent Variable: Applicability

Source	Type III Sum of Squares	Mean Square	Sig.
Corrected Model	56.318a	0.761	0.463
Intercept	744.803	744.803	0.000
Technology	10.757	0.598	0.675
Functional	12.727	0.979	0.237
Technology * Functional	33.139	0.789	0.414
Error	28.681	0.735	
Total	1349.444		
Corrected Total	84.999		

a. R Squared = 0.663 (Adjusted R Squared = 0.022)

P-value of Functional and technological factors to dependent variable,

P-value = 0.414

P-value > 0.05

Functional and technological variables together have no correlation with dependent variable but variable functional is having a higher correlation to the dependent variable than variable technological.

4.3 Analysis with Demographic Data

Demographic Question 1:- My job category is

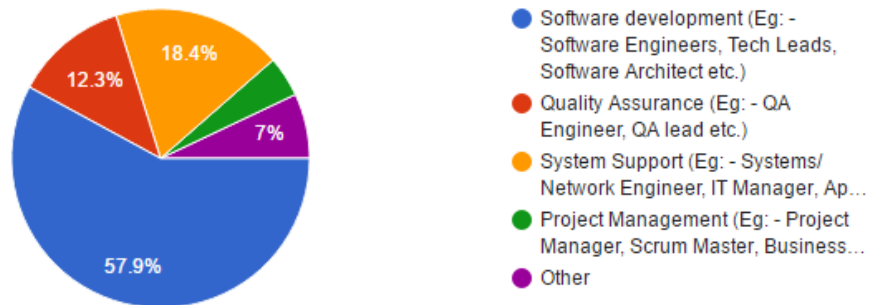


Figure 4-6 - Demographic - job category

In the research responses a 57.9 % majority represent the software development employees. Author carried out a correlation analysis to measure the relationship between each variable and applicability of working from home with all job categories.

4.3.1 Individual factor and job category analysis.

Table 4.34 - Individual and job category analysis

	Software Development	Quality Assurance	System Support	Project management
Pearson Correlation	0.642**	0.495	0.744**	0.433
Sig. (2-tailed)	0.000	0.072	0.000	0.211
N	66	14	21	10

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4.34 illustrates job category wise analysis of individual factors with the applicability of working from home concept to IT organizations in Sri Lanka. Out of four categories, software development and system support employees had strong positive correlation to applicability of working from home concept.

Finding - Individual factors of software development and system support employees have strong positive correlation to applicability of working from home concept to IT organizations in Sri Lanka.

4.3.2 Home factor and job category analysis.

Table 4.35 - Home and job category analysis

	Software Development	Quality Assurance	System Support	Project management
Pearson Correlation	0.472**	0.576*	0.391	-0.097
Sig. (2-tailed)	0.000	0.031	0.079	0.790
N	66	14	21	10

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 4.35 illustrates job category wise analysis of home factor to applicability of working from home concept to IT organizations in Sri Lanka. Out of four categories software development and quality assurance employees had strong positive correlation to applicability of working from home concept.

Finding - Home factors of software development and quality assurance employees have strong positive correlation to applicability of working from home concept to IT organizations in Sri Lanka.

4.3.3 Organizational factor and job category analysis.

Table 4.36 - Organizational and job category analysis

	Software Development	Quality Assurance	System Support	Project management
Pearson Correlation	0.130	-0.072	0.107	0.155
Sig. (2-tailed)	0.298	0.808	0.643	0.669
N	66	14	21	10

4.3.4 Functional factor and job category analysis.

Table 4.37 - Functional and job category analysis

	Software Development	Quality Assurance	System Support	Project management
Pearson Correlation	0.095	-0.010	0.144	0.377
Sig. (2-tailed)	0.448	0.972	0.532	0.283
N	66	14	21	10

4.3.5 Technological factor and job category analysis.

Table 4.38 - Technological and job category analysis

	Software Development	Quality Assurance	System Support	Project management
Pearson Correlation	0.084	-0.142	-0.028	0.406
Sig. (2-tailed)	0.503	0.628	0.905	0.244
N	66	14	21	10

Table 4.36, 4.37 and 4.38 illustrate job category wise analysis of functional, organizational and technological factors to applicability of working from home concept to IT organizations in Sri Lanka. Quality assurance employee's organizational, functional and technological factors have negative correlation for applicability of working from home concept to IT organizations in Sri Lanka.

Finding – Quality assurance employees are not ready to accept working from home concept when they consider the organizational, functional and technological factors affecting their job.

Demographic Question 2:- The average time I spend for travelling is (home to office and office to home)

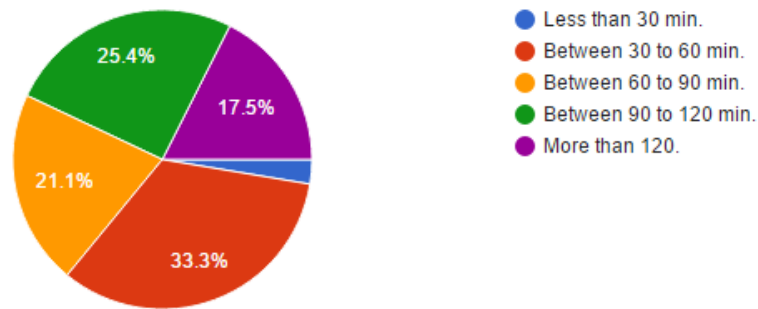


Figure 4-7 - Demographic - travel time

In the research responses a 64 % majority spend more than one hour on the road. Author performed a correlation analysis to measure the relationship between each variable and applicability of working from home with responders travel time.

4.3.6 Individual factor and travel time analysis.

Table 4.39 - Individual and travel time analysis

	0 Min to 60 Min	60 Min to 120 Min	Above 120
Pearson Correlation	0.399**	0.657**	0.742**
Sig. (2-tailed)	0.010	0.000	0.000
N	41	53	20

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4.39 illustrates that employee's individual factors of all time slots have strongly positive correlation to applicability of working from home concept to IT organizations in Sri Lanka.

Finding – Individual factors of employees who spend over 120 minutes on the road have highest correlation to the applicability of working from home concept to IT organizations in Sri Lanka.

4.3.7 Home factor and travel time analysis.

Table 4.40 - Home and travel time analysis

	0 Min to 60 Min	60 Min to 120 Min	Above 120
Pearson Correlation	0.382*	0.380**	0.674**
Sig. (2-tailed)	0.014	0.005	0.001
N	41	53	20

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.39 illustrates that employee's home factors of all time slots have a strong positive correlation to applicability of working from home concept to IT organizations in Sri Lanka.

Finding – Home factors of employees who spend over 120 minutes on the road have the highest correlation to the applicability of working from home concept to IT organizations in Sri Lanka.

4.3.8 Organizational factor and travel time analysis.

Table 4.41 - Organizational and travel time analysis

	0 Min to 60 Min	60 Min to 120 Min	Above 120
Pearson Correlation	-0.179	0.293*	0.203
Sig. (2-tailed)	0.262	0.033	0.391
N	41	53	20

*. Correlation is significant at the 0.05 level (2-tailed).

4.3.9 Functional factor and travel time analysis.

Table 4.42 - Functional and travel time analysis

	0 Min to 60 Min	60 Min to 120 Min	Above 120
Pearson Correlation	-0.160	0.255	0.318
Sig. (2-tailed)	0.316	0.065	0.172
N	41	53	20

4.3.10 Technological factor and travel time analysis.

Table 4.43 - Technological and travel time analysis

	0 Min to 60 Min	60 Min to 120 Min	Above 120
Pearson Correlation	-0.219	0.302*	0.018
Sig. (2-tailed)	0.170	0.028	0.941
N	41	53	20

*. Correlation is significant at the 0.05 level (2-tailed).

4.4 Trend Analysis of Responses

In this section author analyzed the responses using bar charts. In the charts below, each bar will represent the following in order.

1 – Strongly disagree

2 – Disagree

3 – Neither agree nor disagree

4 – Agree

5 – Strongly Agree

Question 1.2, (Figure 4-8) I always update project related knowledge and information on documents/task boards soon after completing the task.

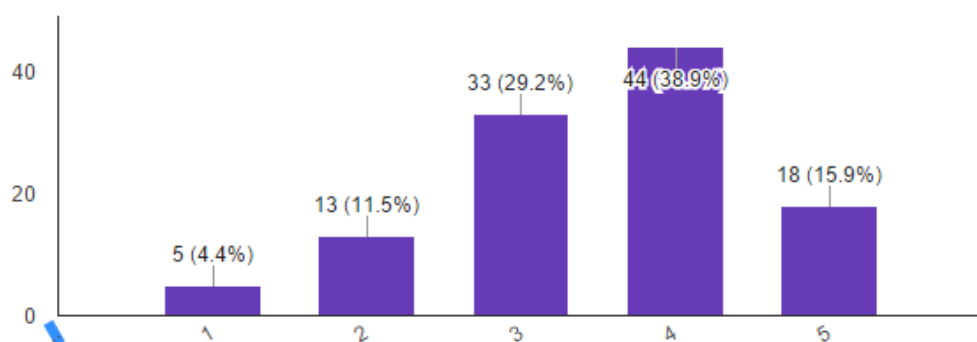


Figure 4-8 - Question 1.2 Analysis

Author uses the above question to measure the reliability and communication skills of individual worker. 54.8% majority agree to this question. Responses proved that Sri Lankan IT workers are reliable when it comes to task handling and communication. This is a positive factor to adopt working from home in IT organizations in Sri Lanka.

Finding – Majority of Sri Lankan IT employees are reliable when it comes to task handling and communication.

Question 1.3, (Figure 4-9) I always proactively pick a task from backlog (pending list) and attend to it.

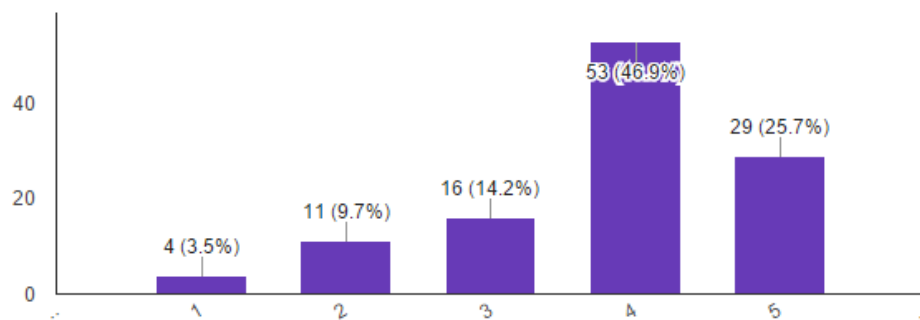


Figure 4-9 - Question 1.3 Analysis

Author used the above question to measure the self-sufficiency, reliability of individual and functional characteristics of tasks. A majority of 72.6% agree to the above condition. By agreeing to this condition they accept that they work with minimum supervision. Organizations use task lists to manage their functions. Above finding shows positive factor to adopt working from home in IT organizations in Sri Lanka.

Finding – Majority of Sri Lankan IT employees are ready to work with minimum supervision.

Question 1.5, (Figure 4-10) I always update relevant stakeholders proactively if I can't meet deadlines.

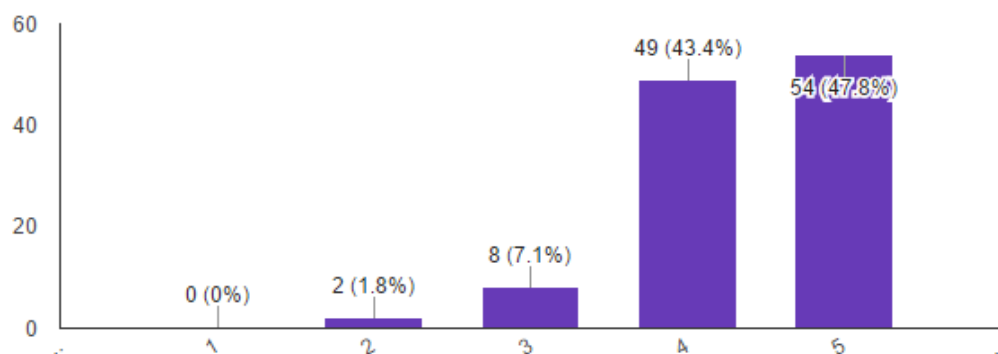


Figure 4-10 - Question 1.5 Analysis

Author used the above question to measure the self-sufficiency and communication skills of employee. A majority of 91.2% agree to the above condition. By agreeing to

this condition they accept that they work with minimum supervision and if there is any issue with project time line employee will not wait till the last moment. Above finding shows a positive factor to adopt working from home in IT organizations in Sri Lanka.

Finding – Majority of Sri Lankan IT employees update their stakeholders proactively.

Question 1.6, (Figure 4-11) I frequently write a blog or wiki if I come across with new technology or technique

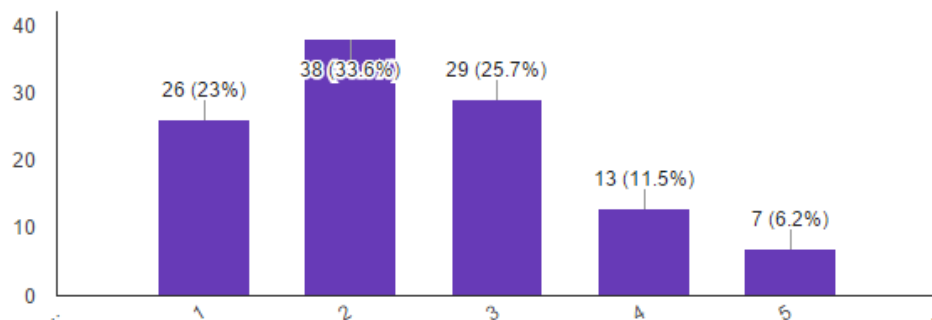


Figure 4-11 - Question 1.6 Analysis

Author used above question to measure the communication skills of employee. Only 17.7% agree to above condition, while a 56.6% majority disagree to it. By disagreeing to this condition they accept that they are not frequently writing blogs or wikis. This issue is common for IT industry in Sri Lanka where most of the people are reluctant to share their personal experience and knowledge by documenting it for future references. Above finding shows negative factor to adopt working from home in IT organizations in Sri Lanka.

Finding – Majority of Sri Lankan IT employees are not writing blogs or wikis frequently to share their knowledge.

Question 2.1, (Figure 4-12) when I'm at home I always like to work in a private area.

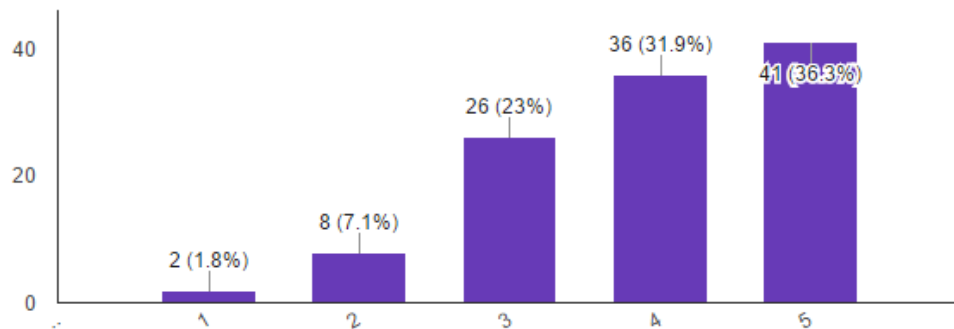


Figure 4-12 - Question 2.1 Analysis

Author used the above question to measure the home environment of employee. A majority of 68.2% agree to the above condition. By agreeing to this condition they accept that they wish to work in an isolated area in home, it will help them to increase the concentration. Above finding shows positive factor to adopt working from home in IT organizations in Sri Lanka.

Question 2.2, (Figure 4-13) I am not disturbed by day to day house activities while working from home.

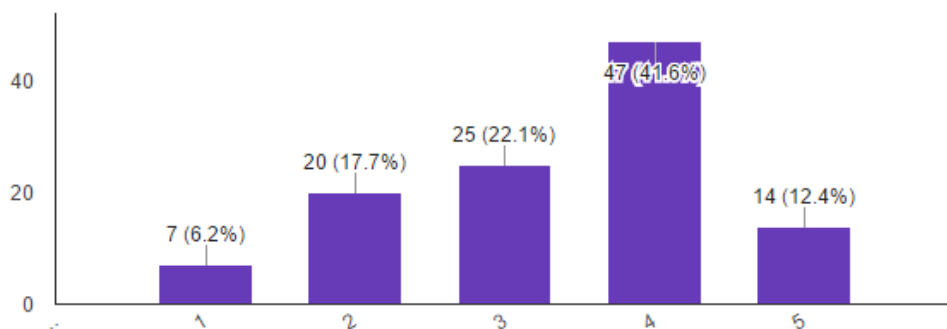


Figure 4-13 - Question 2.2 Analysis

Author used the above question to measure the home environment of employee. A majority of 54% agree to the above condition. By agreeing to this condition they accept that they could be able to maintain the work conditions effectively inside the home. It will help them to increase the concentration for work. Above finding shows positive factor to adopt working from home in IT organizations in Sri Lanka.

Question 2.3, (Figure 4-14) I am not reluctant to use my home Internet connection for urgent office work.

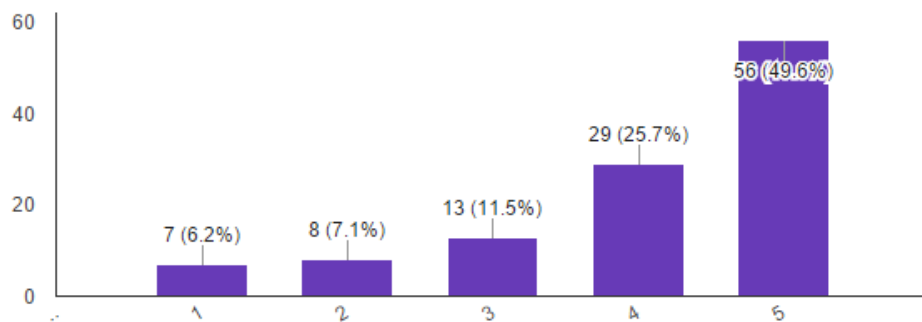


Figure 4-14 - Question 2.3 Analysis

Author used the above question to measure the home environment of employee. A majority of 75.3% agree to the above condition. By agreeing to this condition they accept that they could be able use resources available at home if it is really needed to complete task assigned to them. Above finding shows positive factor to adopt working from home to IT organizations in Sri Lanka.

Question 2.4, (Figure 4-15) during past three months I have missed at least one important family obligation due to office work.

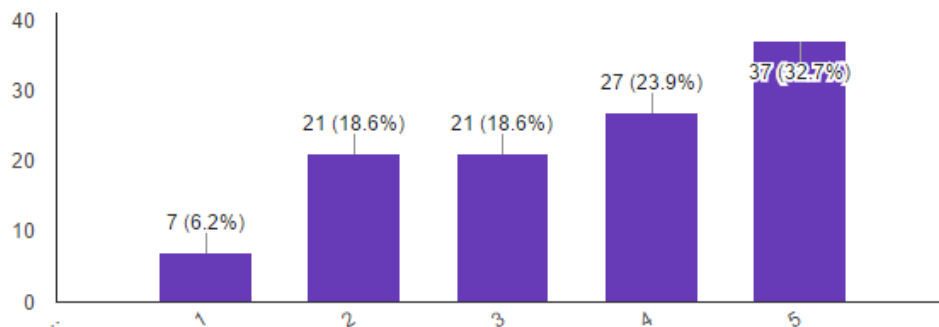


Figure 4-15 - Question 2.4 Analysis

Author used above question to measure the work life balance of employee. A majority of 56.6% agree to above condition. By agreeing to this condition they accept that they had work life imbalance due to important office work. Above finding shows positive factor to adopt working from home in IT organizations in Sri Lanka.

Question 2.5, (Figure 4-16) I don't have energy to do household work just after travelling from office.

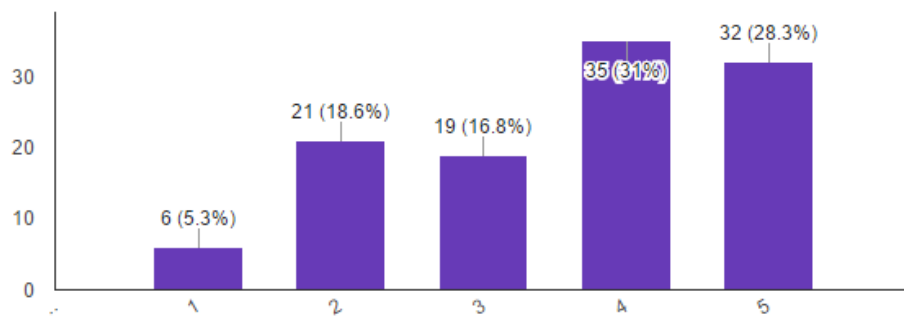


Figure 4-16 - Question 2.5 Analysis

Author used above question to measure the work life balance of employee. A majority of 59.3% agree to above condition. By agreeing to this condition they accept that they had work life imbalance due to travelling tiredness and office stress. Above finding shows a positive factor to adopt working from home in IT organizations in Sri Lanka.

Question 2.6, (Figure 4-17) Most of the time I apply for sick leave due to my family member's illness or other family obligation.

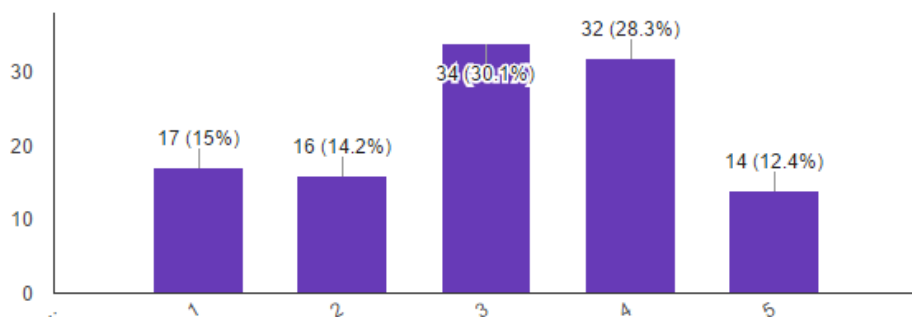


Figure 4-17 - Question 2.6 Analysis

Author used the above question to measure the work life balance of employee. 40.7% majority agree and 30.1% neither agree nor disagree to the above condition. By agreeing to the above question employee accepts that he is putting unnecessary leave to have work life balance. Above finding shows a positive factor to adopt working from home in IT organizations in Sri Lanka.

Finding – Majority of Sri Lankan IT employees accepted that they sometimes utilized their sick leave for family member’s illness.

Question 3.1, (Figure 4-18) my organization follow process standardization techniques such as ISO, CMMI or any other written rules and procedures for project implementation and management.

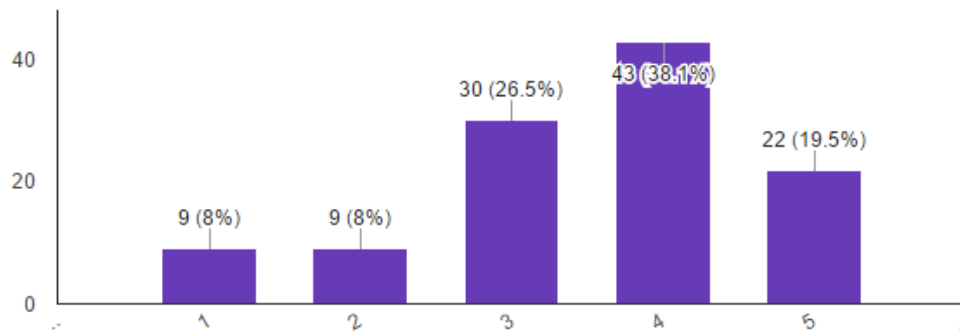


Figure 4-18 - Question 3.1 Analysis

Author used the above question to measure the organizational culture and structural characteristics. A majority of 57.6% to above condition. By agreeing to the above question employee accept that his organization has control mechanism, operational culture and structure. Above finding shows a positive factor to adopt working from home in IT organizations in Sri Lanka.

Question 3.2, (Figure 4-19) my organization never evaluates time attendance of employees during annual salary/reward reviews.

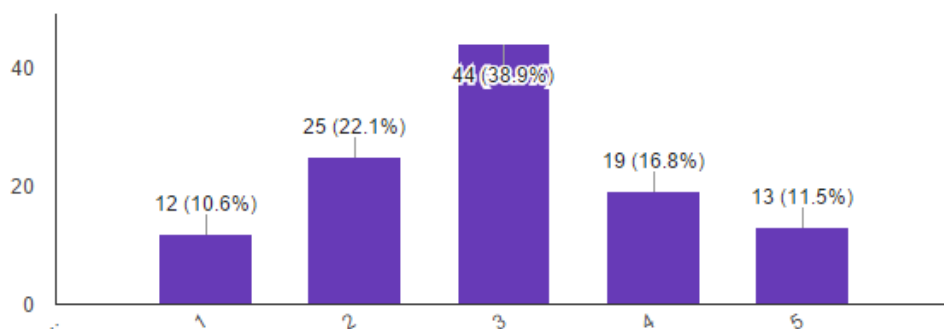


Figure 4-19 - Question 3.2 Analysis

Author used above question to measure the organizational control mechanism. The percentage neither agreeing nor disagreeing to above condition is 38.9%. Employees

are not sure about management policy or they were not properly communicated. Above finding shows a negative factor to adopt working from home to IT organizations in Sri Lanka.

Finding – Majority of Sri Lankan IT employees are not sure whether their employer evaluates time attendance during reward/salary reviews.

Question 3.4, (Figure 4-20) mentoring and learning from peers are not so important in my organization to retain project related knowledge.

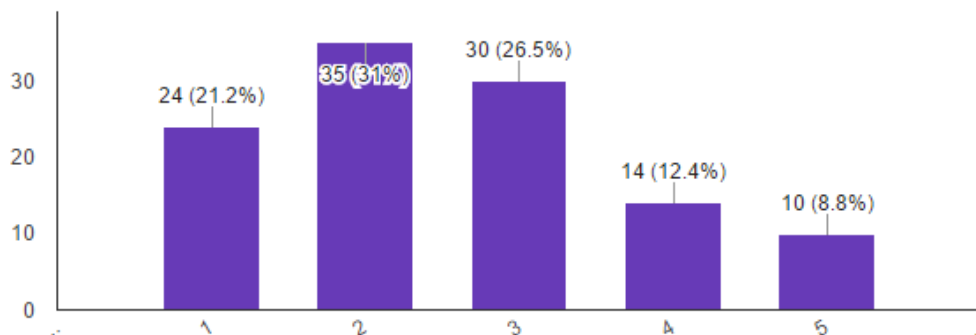


Figure 4-20 - Question 3.4 Analysis

Author used above question to measure the organizational culture and structural characteristics. A majority of 52.2% disagree with the above condition. By disagreeing with the above statement employee accept that mentoring and peer learning is important to retain tacit knowledge. Above finding shows negative factor to adopt working from home to IT organizations in Sri Lanka.

Finding – Mentoring and peer learning is more important to retain tacit knowledge within the organization.

Question 3.5, (Figure 4-21) Most of the time I learn by observing my peer's activities.

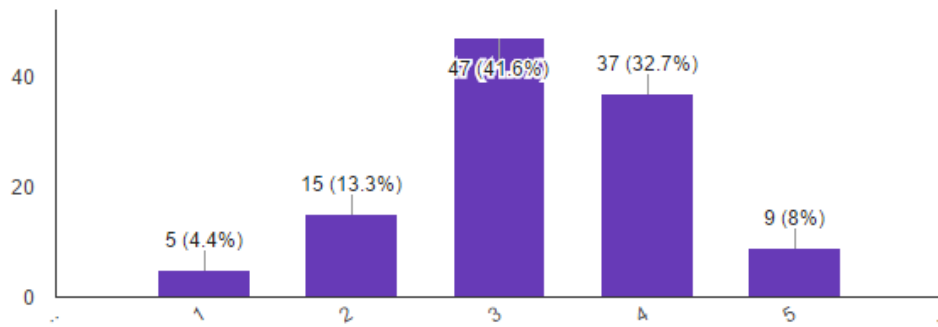


Figure 4-21 - Question 3.5 Analysis

Author used the above question to measure the organizational culture and structural characteristics. While 41.6% neither agree nor disagree, 40.7% agree to the above condition. By agreeing to the above question employee accept that mentoring and peer learning is important to retain tacit knowledge. Above finding shows negative factor to adopt working from home in IT organizations in Sri Lanka.

Question 3.8, (Figure 4-22) my organization has written procedures/guide lines/protocols to follow when working away from office.

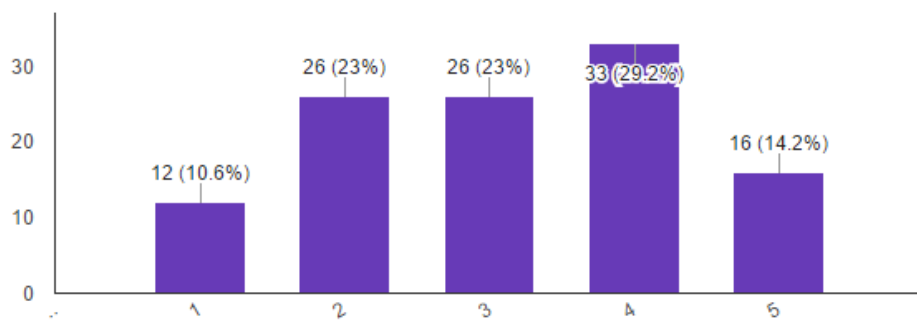


Figure 4-22 - Question 3.8 Analysis

Author used above question to measure the organizational culture and structural characteristics. It is clear that majority of employees have a very limited knowledge about organizational written procedures/guide lines/protocols or the organization does not have such rules and regulations.

Question 4.2, (Figure 4-23) My company allow me to have flexible working hours.

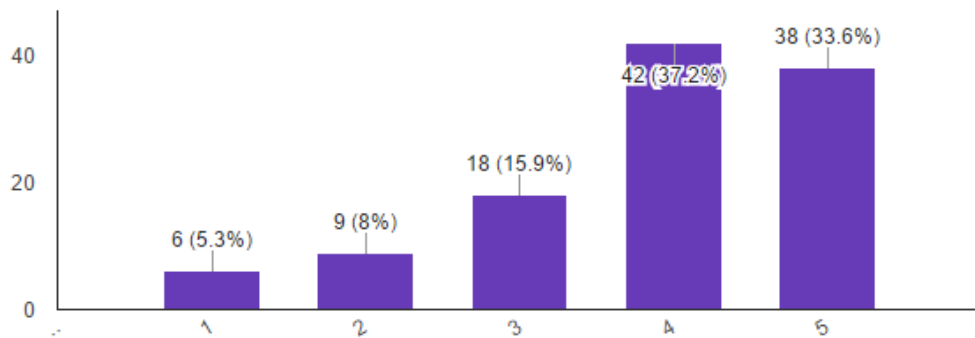


Figure 4-23 - Question 4.2 Analysis

Author used the above question to measure the functional characteristics. It is clear that a majority of 70.8% of employee agree to above condition. The organization allows them to have flexible working hours and follows an efficient task management system. Above finding proved a positive factor to adopt working from home in IT organizations in Sri Lanka.

Finding – Majority of Sri Lankan IT employees are having flexible working hours.

Question 5.3, (Figure 4-24) My company provide awareness sessions to ensure secure work environment occasionally.

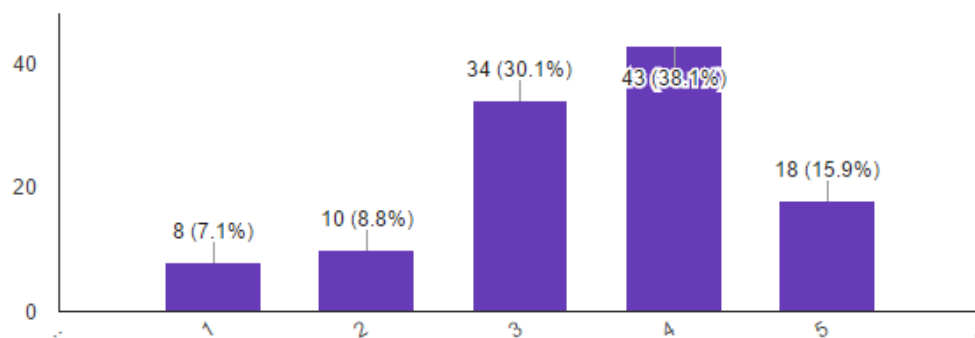


Figure 4-24 - Question 5.3 Analysis

Author used above question to measure the technological characteristics. It is clear that a majority of 54% of employees agree to above condition. Organization has concern about their data protection and it provides necessary awareness sessions to

their employees. Above finding proved a positive factor to adopt working from home in IT organizations in Sri Lanka.

Question 6.1, (Figure 4-25) sometimes I do office work at home after office hours or on holidays to align with project deadlines.

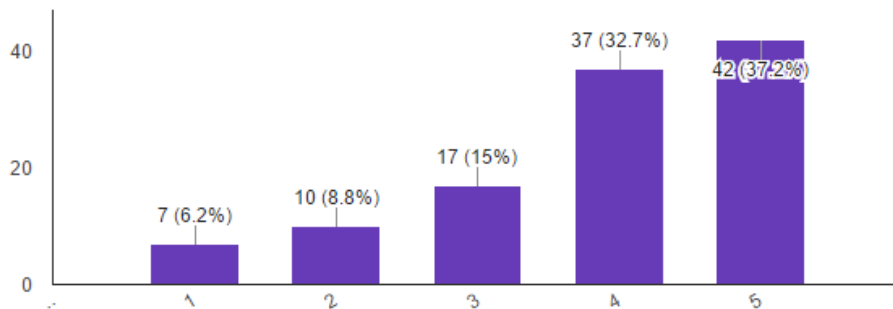


Figure 4-25 - Question 6.1 Analysis

Author used above question to measure the applicability of working from home characteristics. It is clear that 69.9% majority of employees agree to above condition. Employees do working from home at least occasionally. Above finding shows a positive factor to adopt working from home in IT organizations in Sri Lanka.

Finding – Majority of Sri Lankan IT employees do working from home at least occasionally.

5 Conclusion and Recommendations

5.1 Overview

The objective of this chapter is to elaborate on conclusions reached based on the findings of data analysis done on chapter 4. The recommendations provided below are based on the findings and these recommendations can be used as guidelines to enable applicability of working from home concept to IT organizations in Sri Lanka.

5.2 Results

Main findings are set out in the Table 5.1.

Table 5.1 - Hypothesis summary

Variable	Objective	Status
Individual	H0A – Individual factors have no correlation with applicability of working from home to IT organizations.	Rejected.
	H1A – Individual factors have a strong positive correlation with applicability of working from home to IT organizations.	Accepted. Strongly positive correlation
Home	H0B – Home factors have no correlation with applicability of working from home to IT organizations in Sri Lanka.	Rejected
	H1B – Home factors have a strongly positively correlation with applicability of working from home to IT organizations in Sri Lanka.	Accepted Medium positive correlation

Variable	Objective	Status
Organizational	H0C – Organizational factors have no correlation with applicability of working from home to IT organizations in Sri Lanka.	Accepted
	H1C – Organizational factors have a strongly positive correlation with applicability of working from home to IT organizations in Sri Lanka.	Rejected Linear correlation exists but it is not strong enough to reject the null hypothesis.
functional	H0D – Functional factors have no correlation with applicability of working from home to IT organizations in Sri Lanka.	Accepted
	H1D – Functional factors have a strong positive correlation with applicability of working from home to IT organizations in Sri Lanka.	Rejected Linear correlation exists but it is not strong enough to reject the null hypothesis.
Technological	H0E – Technological factors have no correlation with applicability of working from home to IT organizations in Sri Lanka.	Accepted
	H1E – Technological factors have a strongly positive correlation with applicability of working from home to IT organizations in Sri Lanka.	Rejected Linear correlation exists but it is not strong enough to reject the null hypothesis.

According to table 5.1 Individual and home characteristics ensure the applicability of working from home concept to IT organizations in Sri Lanka but contribution from organizational, functional and technological characteristics are not clearly visible from the analytics. This survey questionnaire was designed to capture employees' ideas from top to bottom in the management structure. Above evidence proved that

employees are ready to follow working from home concept but organizations are not capable enough to facilitate it. If organizations already have working from home opportunities, then available working from home capabilities are not communicated properly to their employees.

Table 5.2 - Combined correlation summary

Combined correlation	Correlation value
Individual and Home	0.449
Individual and Organizational	0.074
Individual and Functional	0.912
Individual and Technological	0.514
Home and Organizational	0.667
Home and Functional	0.655
Home and Technological	0.317
Organizational and Functional	0.102
Organizational and Technological	0.622
Functional and Technological	0.414

According to table 5.2 Individual and Organizational variables are having a higher correlation than other combined variables.

Other findings,

- Individual factors of software development and system support employees have a strong positive correlation with applicability of working from home concept to IT organizations in Sri Lanka.
- Home factors of software development and quality assurance employees have a strong positive correlation to applicability of working from home concept to IT organizations in Sri Lanka.
- Quality assurance employees are not ready to accept working from home concept when they consider the organizational, functional and technological factors affecting their job.
- Individual factors of employees who spend over 120 minutes on road have the highest correlation to the applicability of working from home concept to IT organizations in Sri Lanka.

- Home factors of employees who spend over 120 minutes on the road have the highest correlation with the applicability of working from home concept to IT organizations in Sri Lanka.
- Majority of Sri Lankan IT employees are reliable when it comes to task handling and communication.
- Majority of Sri Lankan IT employees are ready to work with minimum supervision.
- Majority of Sri Lankan IT employees update their stakeholders proactively.
- Majority of Sri Lankan IT employees are not writing blogs or wikis frequently to share their knowledge.
- Majority of Sri Lankan IT employees accepted that they sometimes utilized their sick leave for family member's illness.
- Majority of Sri Lankan IT employees are not sure whether their employer evaluates time attendance during reward/salary reviews.
- Mentoring and peer learning is more important to retain tacit knowledge within the organization.
- Majority of Sri Lankan IT employees have flexible working hours.
- Majority of Sri Lankan IT employees do work from home at least occasionally.

5.3 Recommendations.

Objective of this section is to propose recommendations based on the results of this research. Author described recommendations targeting three type of audience.

5.3.1 Employees

According to literature survey employees are the demanding party of working from home. Individual factors and home factors are the variables directly related to employees. Those two variables have positive correlation to applicability of working from home concept to IT organizations in Sri Lanka.

Employees are in a good position to accept the working from home concept. They need to improve the sharing of knowledge capabilities such as Wiki and Blog writing. They are not sure or not aware of the work life balance initiatives available for them by their company.

5.3.2 Employers

According to literature survey employers are the supplying party of working from home. Organizational, functional and technological factors are the variables directly related to employers. None of those three has correlation with applicability of working from home concept to IT organizations in Sri Lanka.

As mentioned in literature survey, retention of tacit knowledge is more important for organizations. If employers are going to follow working from home concept they need to find methods to have mentoring and tacit knowledge transferring among project team members. Employers need to encourage their workers to perform knowledge management in effective manner. Author recommends this research frame work to evaluate applicability of working from home to any Sri Lankan IT organization.

5.3.3 Future researchers

Innovation of technology helps to change the working culture. According to literature survey in the early stages of teleworking, workers did their work offline. Then they used the telephone. As of now, cloud computing revolutionizes working away from office. The concept of working from home will never become obsolete.

In this research author used quantitative analysis to measure the applicability of working from home concept to IT organizations in Sri Lanka. Future researchers can do quantitative analysis or mix (quantitative and qualitative) research. Obtaining required responses from multiple people is the main challenge to complete this analysis. I suggest future researchers to use mix mode analysis where they can use structured short interviews to obtain the top management feedback regarding applicability of working from home concept to IT organizations in Sri Lanka.

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Appendices

Appendix A – Questionnaire

Demographic Questions.

A. My job category is,

Software Development (E.g.: - Software Engineers, Tech Leads, Software Architect etc.)

Quality Assurance (E.g.: - QA Engineer, QA Lead etc.)

System Support (E.g.: - Systems/Network Engineer, IT Manager, Application Engineer etc.)

Project Management (E.g.: - Project Manager, Scrum Master, Business Analyst, Delivery Manger etc.)

B. Average time I spend for travelling is (home to office and office to home)?

Less than 30 min.

Between 30 to 60 min.

Between 60 to 90 min.

Between 90 to 120 min.

More than 120.

Likert Scale Coding Method

1 – Strongly disagree

2 – Disagree

3 – Neither agree nor disagree

4 – Agree

5 – Strongly Agree

Independent variable – Individual Characteristics

1.1 I always get minimum peer support to complete tasks assigned to me regularly.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

1.2 I always update project related knowledge and information on documents/task boards soon after completing the task.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

1.3 I always proactively pick a task from backlog (pending list) and attend to it.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

1.4 I always try my best to complete assigned task as soon as possible

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

1.5 I always update relevant stakeholders proactively if I can't meet deadlines.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

1.6 I frequently write a blog or wiki if I come across with new technology or technique

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

Independent variable – Home Characteristics

2.1 When I'm at home I always like to work in a private area.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

2.2 I am not disturbed by day to day house activities while working from home.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

2.3 I am not reluctant to use my home Internet connection for urgent office work.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

2.4 During past three months I have missed at least one important family obligation due to office work.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

2.5 I don't have energy to do household work just after travelling from office.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

2.6 Most of the time I apply for sick leave due to my family member's illness or other family obligation.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

Independent variable – Organizational Characteristics

3.1 My organization follow process standardization techniques such as ISO,CMMI or any other written rules and procedures for project implementation and management.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

3.2 My organization never evaluate time attendance of employees during annual salary/reward reviews.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

3.3 Sometimes In my project meetings people connect remotely using video or teleconferencing

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

3.4 Mentoring and learning from peers are not so important in my organization to retain project related knowledge.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

3.5 Most of the time I learn by observing my peer's activities.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

3.6 I was rewarded at least with lunch outing when myself or my team reach an important goal in an assigned task.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

3.7 I am appreciated by my stakeholders at least verbally when I have done a great job.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

3.8 My organization has written procedures/guide lines/protocols to follow when working away from office.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

Independent variable – Functional Characteristics

4.1 My physical presence at office is compulsory to complete tasks assigned to me.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

4.2 My company allow me to have flexible working hours.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

4.3 I have a remotely accessible collaboration task board to pick and assign tasks.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

4.4 My team members always collaborate with each other using emails or services like skype, GoToMeeting, WebEx, Google Hangout and etc.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

Independent variable – Technological Characteristics

5.1 My access to work related remote resources is very well facilitated.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

5.2 My project resources are hosted on the cloud.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

5.3 My company provide awareness sessions to ensure secure work environment occasionally.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

5.4 In my company, all documents are stored in an online repository.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

Dependent Variable

6.1 Sometimes I do office work at home after office hours or on holidays to align with project deadlines.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

6.2 Most of the time I apply whole day leave due to a family obligation which actually requires one to two hours' time

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

6.3 My organization allow sick or pregnant employees to work from home if employee wish to do so

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

6.4 My supervisor or management accommodate me when I have a family or personal obligation to take care of – for example, medical appointments, meeting with child's teacher etc.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

6.5 While working from home, I can finish projects earlier.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

6.6 While working from home, I have a great sense of accomplishment.

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

6.7 While working from home, my work life relationships with my work colleges are improved

Strongly Disagree

Disagree

Neither agree nor disagree

Agree

Strongly Agree

Appendix B – Analysis output from SPSS.

Reliability analysis.

```
RELIABILITY
  /VARIABLES=@6_5 @6_6 @6_7
  /SCALE('Dependent') ALL
  /MODEL=ALPHA
  /STATISTICS=DESCRIPTIVE SCALE
  /SUMMARY=TOTAL.
```

Reliability

[DataSet1] D:\Mydata\MBAIT\Analysis\Excel\Final\Final.sav

Scale: Dependent

Case Processing Summary

		N	%
Cases	Valid	114	100.0
	Excluded ^a	0	.0
	Total	114	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.789	3

Item Statistics

	Mean	Std. Deviation	N
6_5	3.55	1.023	114
6_6	3.56	1.005	114
6_7	2.88	1.074	114

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
6_5	6.44	3.186	.695	.643
6_6	6.43	3.115	.746	.588
6_7	7.11	3.677	.471	.882

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
9.99	6.770	2.602	3

```

RELIABILITY
/VARIABLES=@1_2 @1_3 @1_4 @1_5 @3_5 @6_1 @6_5 @6_6
/SCALE('Individual') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE SCALE
/SUMMARY=TOTAL.
    
```

Reliability

[DataSet1] D:\Mydata\MBAIT\Analysis\Excel\Final\Final.sav

Scale: Individual

Case Processing Summary

		N	%
Cases	Valid	114	100.0
	Excluded ^a	0	.0
	Total	114	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.532	8

Item Statistics

	Mean	Std. Deviation	N
1_2	3.50	1.033	114
1_3	3.80	1.049	114
1_4	4.54	.582	114
1_5	4.38	.696	114
3_5	2.74	.941	114
6_1	3.87	1.194	114
6_5	3.55	1.023	114
6_6	3.56	1.005	114

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1_2	26.44	12.231	.066	.567
1_3	26.14	11.148	.218	.512
1_4	25.39	12.666	.186	.520
1_5	25.56	12.142	.237	.506
3_5	27.20	11.773	.173	.525
6_1	26.07	9.694	.357	.453
6_5	26.39	10.416	.350	.460
6_6	26.38	9.936	.447	.421

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
29.94	13.775	3.711	8

```

RELIABILITY
/VARIABLES=@2_1 @2_2 @2_4 @2_5 @2_6 @6_2
/SCALE('Home') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE SCALE
/SUMMARY=TOTAL.
    
```

Reliability

[DataSet1] D:\Mydata\MBAIT\Analysis\Excel\Final\Final.sav

Scale: Home

Case Processing Summary

		N	%
Cases	Valid	114	100.0
	Excluded ^a	0	.0
	Total	114	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.573	6

Item Statistics

	Mean	Std. Deviation	N
2_1	3.95	1.021	114
2_2	3.35	1.105	114
2_4	3.59	1.282	114
2_5	3.59	1.225	114
2_6	3.10	1.234	114
6_2	3.03	1.373	114

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
2_1	16.65	13.893	.253	.551
2_2	17.25	14.152	.179	.579
2_4	17.01	11.903	.375	.497
2_5	17.01	12.345	.350	.510
2_6	17.50	12.677	.303	.531
6_2	17.57	11.291	.400	.483

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
20.60	16.862	4.106	6

```

RELIABILITY
/VARIABLES=@3_1 @3_3 @3_6 @3_7 @3_8 @6_3 @6_4
/SCALE('Organizational') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE SCALE
/SUMMARY=TOTAL.

```

Reliability

[DataSet1] D:\Mydata\MBAIT\Analysis\Excel\Final\Final.sav

Scale: Organizational

Case Processing Summary

		N	%
Cases	Valid	114	100.0
	Excluded ^a	0	.0
	Total	114	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.658	7

Item Statistics

	Mean	Std. Deviation	N
3_1	3.51	1.154	114
3_3	4.18	1.007	114
3_6	3.39	1.133	114
3_7	3.92	.970	114
3_8	3.11	1.239	114
6_3	3.30	1.182	114
6_4	3.91	.974	114

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
3_1	21.81	14.440	.410	.609
3_3	21.14	15.785	.321	.635
3_6	21.93	15.075	.342	.630
3_7	21.39	15.533	.379	.620
3_8	22.20	14.729	.326	.637
6_3	22.02	14.513	.384	.617
6_4	21.40	15.216	.422	.608

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
25.32	19.368	4.401	7

```
RELIABILITY
/VARIABLES=@4_2 @4_3 @4_4 @3_1 @1_3
/SCALE('Functional') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE SCALE
/SUMMARY=TOTAL.
```

Reliability

[DataSet1] D:\Mydata\MBAIT\Analysis\Excel\Final\Final.sav

Scale: Functional

Case Processing Summary

		N	%
Cases	Valid	114	100.0
	Excluded ^a	0	.0
	Total	114	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.569	5

	Mean	Std. Deviation	N
4_2	3.87	1.133	114
4_3	3.87	1.314	114
4_4	4.37	.885	114
3_1	3.51	1.154	114
1_3	3.80	1.049	114

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
4_2	15.54	8.392	.267	.548
4_3	15.54	6.675	.446	.435
4_4	15.04	8.945	.321	.522
3_1	15.90	7.769	.362	.494
1_3	15.61	8.735	.257	.551

Mean	Variance	Std. Deviation	N of Items
19.41	11.430	3.381	5

```

RELIABILITY
/VARIABLES=@4_3 @4_4 @5_1 @5_2 @5_3 @5_4
/SCALE('Technology') ALL
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE SCALE
/SUMMARY=TOTAL.

```

Reliability

[DataSet1] D:\Mydata\MBAIT\Analysis\Excel\Final\Final.sav

Scale: Technology

		N	%
Valid		114	100.0
Cases	Excluded ^a	0	.0
Total		114	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.736	6

Item Statistics

	Mean	Std. Deviation	N
4_3	3.87	1.314	114
4_4	4.37	.885	114
5_1	3.94	1.033	114
5_2	3.50	1.365	114
5_3	3.45	1.106	114
5_4	3.47	1.284	114

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
4_3	18.73	14.996	.468	.701
4_4	18.23	18.036	.354	.728
5_1	18.66	16.351	.486	.696
5_2	19.10	14.353	.509	.688
5_3	19.15	15.455	.552	.677
5_4	19.12	15.047	.480	.697

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
22.60	21.482	4.635	6