

A study on the effects of remote working on quality of services: A SERVQUAL survey on central office of Tehran municipality

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ABSTRACT

During the past few years, there have been tremendous efforts on developing remote working among women in an attempt to help females take care of their family related responsibilities. In this paper, we study the impact of remote working on quality of services in central office of Tehran municipality of Iran. The proposed study designs a standard questionnaire to survey remote working and using an existing standard SERVQUAL questionnaire measure the level of quality of work because of remote working. The survey indicates that women who participated in remote working program were satisfied from this program in terms of personal, social as well as organizational productivity. Remote workers were highly satisfied from financial advantage of this program. Managers were, however, highly satisfied from the results of their female's remote working. In our survey, remote contract workers were more satisfied than remote formal workers were. The surveyed people believed organizational structure was the most important challenge for remote working followed by economical, personal and social issues. The results of SERVQUAL also indicate there were some meaningful relationship between remote working and quality of work.

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1. Introduction

During the past few years, there have been tremendous efforts on developing remote working among women in an attempt to help females take care of their family related responsibilities (Bird, 1986; Dujardin et al., 2012). According to Dowling (2012), remote working and flexible hours for employees may help to keep businesses productive but this should not be at the cost of the firm's information security protection. Hart (2009) remote working is a kind of managing the balancing act between network access and data security. Tromp and Blomme (2012) discussed the effect of effort cost, job control and work-home arrangements on negative work-home interference in the hospitality industry. The study concerned higher educated employees who had been graduated from a business university. They reported working overtime, work-home arrangements and autonomy were

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significantly associated with negative work-home interference giving proof to the Effort-Recovery model. In addition, employees who worked in the hospitality industry stated significantly more working overtime and less being positive about the work-home arrangements while these were the most important predictors of negative work-home interference. The results gave directions to what HRM policies organizations should paid attention to, to minimize negative work-home interference and its negative consequences among their employees.

Perugia et al. (2011) presented a model and an algorithm for the design of a home-to-work bus service in a metropolitan area. They analyzed a home-to-work bus service for a large research center located in Rome, Italy and the case study provided a benchmark for the algorithmic results, and showed the practical relevance of the proposed methodology.

Ghafur (2002) examined the use of space in home-based work in slums in Bangladesh to realize urban poor women's involvement in relation to men. While women's access and implementation of spaces were restricted by social practice, their income generation initiatives were further influenced by settlement specific factors. As a consequence, women's direct and indirect dependence on men emerges. This male–female involvement took place not only to mutually share the activities of home-based work for operational conveniences but also to supplement a given household's effort to pool income for its survival on a daily basis.

In this paper, we study the impact of remote working on quality of services in central office of Tehran municipality of Iran. The organization of this paper first presents details of the proposed study in section 2. Section 3 presents details of our findings and finally concluding remarks are given in the last to summarize the contribution of the paper.

2. The proposed study

In this paper, we investigate the impact of remote working on quality of services in central office of Tehran municipality of Iran. The proposed study designs a standard questionnaire to survey remote working and using an existing standard SERVQUAL questionnaire measure the level of quality of work because of remote working. All questions were designed based in Likert scale from 1 to 5.

The sample size of this survey is determined based on Morgan table as 160. In this survey, we have selected the population into five regions of north, center, south, west and east. The survey detected 170 employed women and 36 managers. Cronbach alpha for the first questionnaire was estimated to 0.85. In addition, Cronbach alpha for SERVQUAL questionnaire are summarized in Table 1 as follows,

Table 1

The summary of SERVQUAL questionnaire (Overall Cronbach=0.85)

	Guarantee	Credit	Tangible	Empathy	Responsive
Perception	0.74	0.81	0.87	0.70	0.80
Expectation	0.77	0.82	0.85	0.72	0.76

3. The results

In this section, we present details of our survey on testing different hypotheses of this survey.

3.1. The first hypothesis

The first hypothesis of this survey investigates whether female workers are satisfied from distance working or not. Table 2 summarizes the results of our survey.

Table 2

The summary of testing the first hypothesis

Satisfaction from	Mean	Std dev.	Min	Max	t-value	df	P-value
Personal and social	2.49	0.52	1.31	4.23	10.63	169	0.001
Economical	4.13	0.52	2.40	5	35.17	169	0.001
Organizational efficiency	2.46	0.43	1.46	3.46	10.63	169	0.001
Remote working	3.36	0.48	1.36	4.69	6.16	169	0.001

According to the results of Table 2, women are satisfied in terms of personal, economical as well as organizational efficiency when the level of significance is one percent.

3.2. The second hypothesis

The second hypothesis of this survey examines whether management team are satisfied from their females' distance working or not. Table 3 shows the results of our survey.

Table 3

The summary of testing the second hypothesis

Component	Mean	Std dev.	Min	Max	t-value	df	P-value
Management satisfaction from their females' remote working	4.31	0.73	1.11	4.75	5.21	35	0.011

Based on the results of Table 3, management team is satisfied from their females' remote working when the level of significance is one percent.

3.3. The third hypothesis: Remote working and employees' personal characteristics

In this section, we present details of our survey on relationship between remote workers' personal characteristics and their satisfactions.

3.3.1. Marital status

We first looks into find out whether there is any difference between the levels of job satisfaction among female remote workers in terms of their marital status. Table 4 summarizes the results of our survey.

Table 4

The summary of testing the third hypothesis

Marital status	Mean	Std dev.	Min	Max	t-value	df	P-value
Single	2.31	0.73	1.11	4.75	5.21	168	0.001
Married	4.13	0.63	1.24	4.14			

According to the results of Table 4, there is a meaningful difference between two groups of singles and married employees when the level of significance is one percent. Our further investigation indicates married women were more satisfied from distance working than single ones.

3.3.2 Employment status

We also try to detect whether there is any difference between the level of job satisfaction among female remote workers in terms of their job status, e.g. contract or permanent employee status. Table 5 summarizes the results of our survey.

Table 5

The summary of testing the effects of employment status

Employment status	Mean	Std dev.	Min	Max	t-value	df	P-value
Permanent	2.31	0.33	1.81	3.56	4.29	168	0.001
Contract	4.13	0.23	2.24	4.29			

Based on the results of Table 5, there is a meaningful difference between two groups of permanent and contract employees when the level of significance is one percent. Our further investigation indicates contract women were more satisfied from distance working than permanent ones.

3.3.3 Educational background status

Finally, we survey to find out whether there is any difference between the levels of job satisfaction among female remote workers in terms of their educational backgrounds. Table 7 summarizes the results of our survey.

Table 7

The summary of ANOVA test on the effects of educational background

Groups	Sum of squares	df	Mean of squares	F	P-value
Between groups	289	4	72.25	10.67	0.001
Inside groups	1123	166	6.77		

Based on the results of Table 7, there is a meaningful difference among women with different educational backgrounds.

3.4. The fourth hypothesis

The other is to find out important factors influencing remote working among women. We have used Chi-Square to examine the effects of four factors including structural organization, economical factors, personal issues and social factors. Table 8 shows details of our survey.

Table 8

The results of Chi-Square test on the effects of various factors

Problem	Organizational factors	Economic factors	Personal factors	Social factors	Chi-Square	P-Value
Freq.	99	50	20	10	13.56	0.001

As we can see from the results of Table 8 P-value is statistically significance and we can reject the null hypothesis leading us to conclude that there is a meaningful difference among five different groups of problems. Our detailed survey indicates that organizational structure is the most important barriers on remote working.

3.5. The fifth hypothesis

The last hypothesis of this survey investigates whether remote working has improved quality of work or not. To examine this hypothesis we use Pearson correlation test and Table 9 summarizes the results of our survey.

The results of Table 9 indicate that all components of SERVQUAL questionnaire are statistically meaningful when the level of significance is one percent. In other words, people who participated in remote working believe they could improve the quality of their work.

Table 9

The summary of Pearson correlation test

Dimension	Pearson correlation	Determinant coefficient	Adjusted Determinant coefficient	P-value
Reliability	0.186	0.034	0.41	0.001
Physical aspects	-0.24	0.0496	0.0401	0.001
Responsibility	0.232	0.0538	0.458	0.001
Empathy	0.156	0.0245	0.018	0.001
Assurance	0.389	0.151	0.123	0.001
Quality of service	0.361	0.131	0.127	0.001

We have also performed regression analysis to see how remote working could contribute on quality of the work. Table 10 demonstrates the results of ANOVA test on regression analysis.

Table 10

The summary of regression analysis

	Sum of Squares	df	Mean of Squares	F	P-Value
Regression	5.123	1	5.123		
Residual	363.96	205	1.78	2.87	0.011
Total	215593.26	206			

The result of ANOVA test indicates that F-value is statistically significance, which indicates there is a linear relationship between independent variable, remote work, and dependent variable, quality of work and Eq. (1) states the results of regression analysis,

$$Y = 1.061 + 2.019X_1 + \varepsilon$$

$$\begin{array}{cc} 1.327 & 2.96 \\ t & (3.12) \quad (2.45) \\ P & 0.023 \quad 0.021 \end{array} \quad (1)$$

According to Eq. (1), an increase of one percent on remote working increases quality of work by 2.019. Both student values are statistically significance with $\alpha=0.05$. Therefore, we can conclude that both coefficients including intercept and slope have meaningful impacts on quality of work.

4. Conclusion

In this paper, we have studied the effect of remote working on quality of services in central office of Tehran municipality of Iran. The proposed study designed a standard questionnaire to survey remote working and using an existing standard SERVQUAL questionnaire measure the level of quality of work because of remote working. The survey indicated that women who participated in remote working program were satisfied from this program in terms of personal, social as well as organizational productivity. Remote workers were highly satisfied from financial advantage of this program. Managers were, however, highly satisfied from the results of their female's remote working. In our survey, remote contract workers were more satisfied than remote formal workers were. The surveyed people believed organizational structure was the most important challenge for remote working followed by economical, personal and social issues.

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