Remote work demands and work-life balance: Moderating effect of perceived leadership behavior

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ABSTRACT

This study investigates the relationship between remote work demands, work stress, and work-life balance among employees in the service sector, specifically those working in Information Technology companies. The COVID-19 pandemic has forced organizations to shift to a new mode of working, which has led to significant changes in work and family roles. Due to the unpredicted changes, remote work causes work stress among employees. A cross-sectional study was chosen, and data were gathered from 242 employees working in the service industry. A purposeful sampling technique is used, and data were collected using a questionnaire. Grounded with Conservation of Resources (COR) stress theory and transformational leadership theory, the result of moderated mediation analyses specifies that the negative influence of remote work demands on the work-life balance of employees is potentially increased by work stress and reversed by the influence of their leader’s behavior style, specifically transformational leadership. Through the dimensions of transformational leadership such as idealized influence, inspirational motivation, individualized consideration, intellectual simulation, the leaders help the individuals working in the team cope with stress and support them in all possible ways to achieve the goal. The outcome also signifies the moderating effect of gender on balancing work and life.

Contribution/ Originality: The study's key contribution lies in examining the impact of the COVID-19-induced shift to remote work on employees in the service sector. Furthermore, the study provides a unique contribution to the leadership and work-family domain literatures, as perspectives on work demand are scarcely researched in service sectors.

1. INTRODUCTION

The COVID-19 pandemic caused a major transformation in the mode of working of all employees, irrespective of the sector. After a slow recovery to the new normal, organizations function in the previous mode, where employees are starting to work in the organization.[¹] Though almost all the sectors are functioning in regular mode, Obi. From the perspective of organizations’, this has become the most cost-effective strategy, specifically for Information Technology (IT) organizations, as productivity and attainment of goals are not affected by remote working. But from the perspectives of employees, remote work has become a challenge as it makes them work more hours than the regular work they do in the organization.[²] The IT employees reported struggles in various aspects, such as loneliness, difficulty unplugging from work after working hours, distractions due to home settings,
and managing teams from home, which in turn causes stress and anxiety among them [11]. This occurs mainly due to the difference in remote work demands than usual. Thus, the relationship between stress and remote work demands will be different, which leads to greater negative personal outcomes such as reduced work stress [8] and improper work-life balance [4]. Thus, in line with this, the current research study aims to examine the relationship between the remote work demands of IT employees and their work stress and their work-life balance through their perception of their leader’s behavior as a transformational leader.

1.1. Remote Work Demands, Work Stress and Work Life Balance

Remote work, also referred to as telework, work from home, or distance working, is where individuals can work from anywhere based on their convenience [5]. Before the pandemic, the literatures on remote working towards stress proved inconsistent results. As little research has concluded that telework reduces the stress of employees [6]. On the contrary, the research study examining the relationship between remote work demands results in an increasing level of stress among employees, but at the same time, few studies describe how remote work leads to increased productivity [5]. Several studies also supported the negative influence of remote work demands on organizational and personal outcomes such as reduced job satisfaction [7], lower employee engagement [3, 8, 9], and personal outcomes such as improper work-life balance [10, 11], thereby reducing life satisfaction. The conservation of resource theory, which is a form of stress theory, states that individuals require various psychological as well as social resources for the effective functioning of their responsibilities in day-to-day life [12]. Any threat or loss to these resources ends up causing negative stress. Thus, specifically, COR theory suggests that the reduction or elimination of negative stress will motivate oneself to protect, retain, and recover these important resources [12].

Thus, based on theoretical and literature reviews, the following hypotheses are proposed:

H₁: Remote work demands are positively associated to work stress.
H₂: Remote work demands are negatively associated to Work-life balance.
H₃: Work stress mediates the negative relationship between remote work demands and work-life balance.

1.2. Transformational Leadership Behavior, Work Stress and Work Life Balance

Several researchers in the field of stress management studies relate leadership behavior to work and life stress [13]. The stress at work tends to lower productivity, lower job satisfaction, and cause potential employees to obtain the intention of quitting and search for other opportunities [1, 14]. Individuals working in stressful environments reflect positive or negative behavior to relieve their stress. Specifically, employees who experience difficulty managing work-life are prone to psychological stress in the form of work stress [15]. Reviews also identified that it is inevitable to oversee the leader’s behavior in addressing the conflicts and stress of employees in the work environment [4]. Among the various leadership styles, transformational leaders are more likely to address the issues of stress in the work environment [16], as the dimensions of transformational leadership exhibit more association with reducing negative outcomes [17]. The characteristics of transformational leadership, such as idealized influence, inspirational motivation, intellectual simulation, and individualized consideration, are more inclined to support the followers in managing stress in conflicting situations caused by various factors, like work stress [18]. For effective stress management in the work-family domain, an appropriate leadership style like transformational leadership is substantial for the critical success of personal and organizational outcomes [17]. Thus, based on transformational theory and previous research studies, the following moderation hypothesis is proposed:

H₄: Transformational leadership moderates the negative effect of work stress on work-life balance among working employees.
1.3. Gender Differences

In the work-family domain literatures, it is obvious to assess the difference based on gender. Over the past two years, the influence of demographics, specifically gender has been addressed in work-life balance research. The results of a few studies in various contexts described a major difference between males and females with respect to their stress levels. Though demographical factors show an impact on work stress and work-life balance, some research studies also reported that there is no significant difference between work-family balance and work stress based on gender [7, 9] age, and marital status [19]. Also, it was claimed that gender does not show any discrimination towards remote work demands [20]. Thus, due to the unconclusive results based on gender, the hypothesis is formulated based on existing empirical evidence.

H: There will be a significant difference between men and women in their relationship between remote work demands, work stress and work life balance with moderating effect of leadership behaviour.

1.4. Research Framework

The research model for the study is grounded in the conservation of resources theory [12]. As per this theory, prolonged stress in the form of work stress caused by remote work demands leads to intense stress-related consequences, which in turn have negative personal outcomes. Based on this notion, the research model is depicted in Figure 1.

2. METHODS AND MEASURES

A descriptive-based approach is chosen for this study. With the purposive sampling method, the employees working in the service sector were chosen as respondents. Specifically, the individuals working in IT companies were considered samples for the study. Based on the top-listed companies [21], five companies were chosen, and data were gathered using a well-structured questionnaire.

2.1. Scale Instruments

Remote Work Demands: To measure the remote work demands, a quantitative workload inventory scale is adapted with 5 items. The sample items include “How often does your job require you to work very fast?” “How often does your job leave you with little time to get things done? The respondents are guided to give answers on a 5-point scale based on their comparison with the previous work done in office settings.
Transformational Leadership: The perception of employees towards their team leaders transformational leadership characteristics are assessed using a multifactor leadership questionnaire with 12 items by Bass [17] under four sub-dimensions: idealized influence, inspirational motivation, intellectual simulation, and individualized consideration, with 3 items in each dimension. The sample items include “I have complete faith in my leader”; “My team leader provides me with new ways of looking at things that used to be a puzzle for me”.

Work Stress: The employees work stress was assessed by an adapted 4-item scale [22]. The sample items include “My job is extremely stressful” and “I feel great deal of stress because of my job.” The respondents’ rate each statement on the scale to the extent it describes them, using the 1-5 point Likert scale, where 1 indicates “strongly disagree” and a score of 5 indicates “strongly agree.”

Work-Life Balance: The employees perceptions of their balancing of work-life were assessed using a 4-item work stress-adapted scale [23]. The scale is adapted as it was exclusively developed to measure the work-life balance of individuals in an Asian context.

Control Variables and Analysis: The demographic variables of employee salary, marital status, experience, and income are controlled in analyses since significant impacts have been reported by previous research in the area of work-family domain literature [24, 25]. Statistical analysis using the [12, 26] conditional process was carried out, and the results of frequency distributions, reliability analyses, correlation, and moderated mediation analyses were measured.

3. RESULTS AND DISCUSSION

3.1. Model Fit – Confirmatory Factor Analysis

Initially, the model fit for the proposed model is established by a series of confirmatory factor analyses using AMOS 22.0. The results from the Table 1 depict the fit index criteria for assessing model fit for the proposed models (A, B, C, and full factor). A bunch of confirmatory factor analyses are done on the proposed model and all the other models that could work using AMOS 21.0 to see how well they fit. The results of all measurement models are shown in Table 1. First, the full factor model (i.e., four factors including remote work demands, work stress, transformational leadership, and work life balance are loaded as unique constructs) was examined, and the results indicated acceptable and good fit ($\chi^2/df = 1.351$, TLI = 0.919, CFI = 0.909, AGFI = 0.850, RMSEA = 0.041, SRMR = 0.052). Next, the other possible models (model A and model B) are evaluated and compared with the full measurement model. The obtained result from Table 1 clearly depicted that the full factor model presented satisfactory and best fit among all other models. Thus, the result indicated preliminary support for the conception that remote work demands, work stress, transformational leadership, and work-life balance are distinct constructs. Thus, from the results, discriminant and convergent validity are established.

<p>| Table 1. Measurement validation. |</p>
<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>Df</th>
<th>$\chi^2/df$</th>
<th>TLI</th>
<th>CFI</th>
<th>AGFI</th>
<th>SRMR</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full factor model</td>
<td>1272</td>
<td>1002</td>
<td>1.35***</td>
<td>0.919</td>
<td>0.909</td>
<td>0.85</td>
<td>0.041</td>
<td>0.052</td>
</tr>
<tr>
<td>Model A</td>
<td>1542</td>
<td>1001</td>
<td>1.23***</td>
<td>0.802</td>
<td>0.811</td>
<td>0.624</td>
<td>0.052</td>
<td>0.051</td>
</tr>
<tr>
<td>Model B</td>
<td>1423</td>
<td>1001</td>
<td>1.31***</td>
<td>0.621</td>
<td>0.511</td>
<td>0.411</td>
<td>0.051</td>
<td>0.042</td>
</tr>
<tr>
<td>Model C</td>
<td>1420</td>
<td>1001</td>
<td>1.20***</td>
<td>0.591</td>
<td>0.61</td>
<td>0.501</td>
<td>0.051</td>
<td>0.032</td>
</tr>
</tbody>
</table>

Note: n=242, *** p<0.001; Model A to model D are compared with full measurement model.

Full factor model: All variables are loaded as unique constructs.
Model A: Remote work demands; work stress, transformational leadership as one factor and work life balance in to other factor.
Model B: Remote work demands; work stress as one factor and transformational leadership, work life balance in to other factor.
Model C: Remote work demands as one factor work stress, transformational leadership and work life balance in to other factor.
Full factor model: Remote work demands; work stress, transformational leadership and work life balance loaded as individual factors.

$\chi^2$ = chi-square; $df$ = Degrees of freedom; TLI = Tucker–Lewis index; CFI = Comparative fit index, AGFI = Adjusted goodness of fit index, RMSEA = Root mean square error of approximation, SRMR = Standardized root mean square residual.
3.2. Descriptive Statistics

The respondent’s demographic includes gender, age, marital status, experience, and working hours. The demographical characteristics of 242 respondents are assessed with percentage analysis. The result of the percentage analysis represents that out of 242, 122 (50.4%) are females and 121 (50.4%) are males. The particulars of respondents on age indicate that most of the respondents fall under the categories of 27-30 years (36%), 31-35 years (20%), subsequent to that, the respondents of the age group between 36-40 years are (14%), and 22-26 years (20%), are recorded. The least number falls into the age group of above 40 (10%). With regard to marital status, out of 242 respondents, most are married (70%) compared to respondents who are unmarried (30%). According to the information provided about experience from the present school of employment, 42% of the respondents have between 2 and 5 years of experience. Finally, with respect to the working hours, the obtained information reveals that the majority of the respondents (54%) work between 9 and 12 hours a day. Next to that, 32% of respondents’ work between 6 and 8 hours a day, and 133 respondents (17%) work more than 12 hours a day.

The results of Table 2 indicate the mean, standard deviation (SD), Cronbach’s alpha (reliability), and bivariate correlation among study variables. The mean transformational leadership (mean=3.50), as perceived by the respondents, is high. And with respect to remote-work demands (mean= 2.20), work stress (mean=3.22), and work-life balance (2.02). Further, remote work demands and work stress showed a negative correlation with work-life balance, while transformational leadership showed a positive relationship with work stress and work-life balance. The obtained results provided preliminary evidence for all the study hypotheses (H1, H2, H3, and H4).

Table 2. Means, SD, reliability and correlation of the study variables.

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. RWD</td>
<td>2.04</td>
<td>1.19</td>
<td>(0.896)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. WS</td>
<td>3.22</td>
<td>0.51</td>
<td>0.413**</td>
<td>(0.834)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. TFL</td>
<td>3.50</td>
<td>0.78</td>
<td>0.494**</td>
<td>0.401**</td>
<td>(0.876)</td>
<td></td>
</tr>
<tr>
<td>3. WLB</td>
<td>2.02</td>
<td>0.78</td>
<td>-0.594***</td>
<td>-0.611**</td>
<td>0.581**</td>
<td>(0.811)</td>
</tr>
</tbody>
</table>

Note: **p<0.01, RWD - Remote work demands, WS- work stress, TFL - Transformational leadership, WLB - Work-life balance.

3.3. Hypotheses Testing Results

Using moderated and mediational analysis, the pathways of the given hypotheses are tested in light of the research model’s established validity and reliability.

Moderate mediation analyses were performed using Model 14 Process with 5000 bootstrapping samples to test whether remote work demands indirectly influence work-life balance through the intervening role of work stress and whether transformational leadership (TFL) moderates the work-life balance relationship.

Table 3. Simple mediation model.

<table>
<thead>
<tr>
<th>Direct effect of RWD (X) on WS (M)</th>
<th>Effect (β)</th>
<th>SE</th>
<th>P-value</th>
<th>T-value</th>
<th>LLCI</th>
<th>ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.58</td>
<td>0.04</td>
<td>0.001***</td>
<td>9.64</td>
<td>1.250</td>
<td>1.08</td>
</tr>
<tr>
<td>Direct effect of RWD (X) on WLB (Y)</td>
<td>Effect</td>
<td>SE</td>
<td>p-value</td>
<td>t-value</td>
<td>LLCI</td>
<td>ULCI</td>
</tr>
<tr>
<td></td>
<td>-0.24</td>
<td>0.03</td>
<td>0.001***</td>
<td>2.97</td>
<td>-0.025</td>
<td>-0.038</td>
</tr>
<tr>
<td>Indirect effect of RWD (X) on WLB (Y)</td>
<td>variable</td>
<td>Effect</td>
<td>Boot SE</td>
<td>Boot LLCI</td>
<td>Boot ULCI</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Work stress</td>
<td>-0.255</td>
<td>0.0207</td>
<td>-0.009</td>
<td>-0.116</td>
<td></td>
</tr>
</tbody>
</table>

Note: ***p<0.001; N=242; R²= 0.332; LLCI- Lower level confidence interval; upper level confidence interval.

First, the simple mediation model (model 4) is assessed to test the mediation effect. The following Table 3 depicts the results of a simple mediation model. With regard to Hypothesis 1, the results showed that the direct effect of Remote-work demands (RWD) on work stress (WS) is significant and positive ($β = 0.58$, $t = 9.64$, $p < 0.01$). Supporting the assumption of Hypothesis 2, the results also showed that work stress is related to work-life
balance in a negative way ($\beta = -0.24$, $t = 2.97$, $p < 0.01$). Further, these results provide support for mediation paths and are consistent with Hypothesis 3. The results showed that work stress mediates the remote work demands and work-life balance relationship. This effect is negative and significant as per the effect ($\beta = -0.25$, $p < 0.05$, LLCI = -0.009, ULCI = -0.116). Furthermore, in line with Hypothesis 4, the results showed that transformational leadership positively moderates the work stress and work-life balance relationship ($\beta = 0.33$, $p < 0.05$, LLCI = -0.221, ULCI = -0.048). Furthermore, the assumption of Hypothesis 4 was also supported, as the results showed that transformational leadership moderates (TFL × WS) the indirect effect of remote work demands on work-life balance is negative and significant via the inclusion of work stress as a mediator ($\beta = -0.04$, LLCI = -0.801, ULCI = -0.020).

Also, the results in Table 4 demonstrated that the negative influence of remote work demands on employee work-life balance through transformational leadership reduces as transformational leadership behaviour increases. Three specific values of transformational leadership showed the conditional indirect impact of remote work demands on voice actions through work stress: −1 SD (2.70 > mean value), the mean (3.70 = mean value), and +1 SD (4.69 < high mean value). The indirect effect was significantly different from zero among low mean values ($\beta = 0.04$, LLCI = 0.000, ULCI = 0.110), mean values ($\beta = 0.00$, LLCI = -0.041, ULCI = 0.400), and high mean values ($\beta = -0.04$, LLCI = -0.108, ULCI = -0.005) for transformational leadership. The Figure 2 illustrates the path coefficient of the tested model.

![Figure 2. Results of path coefficients of the proposed model.](image)

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### Table 4. Moderated mediation model.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Effect</th>
<th>Boot SE</th>
<th>Boot LLCI</th>
<th>Boot ULCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>TFL</td>
<td>0.84**</td>
<td>0.21</td>
<td>0.495</td>
<td>0.615</td>
</tr>
<tr>
<td>WS*TFL</td>
<td>0.12**</td>
<td>0.08</td>
<td>0.231</td>
<td>0.421</td>
</tr>
<tr>
<td>Conditional indirect effect(s) of X on Y at values of the moderator(s)</td>
<td>Effect</td>
<td>Boot SE</td>
<td>Boot LLCI</td>
<td>Boot ULCI</td>
</tr>
<tr>
<td>TFL</td>
<td>2.70**</td>
<td>0.04</td>
<td>0.010</td>
<td>0.015</td>
</tr>
<tr>
<td></td>
<td>3.70**</td>
<td>0.00</td>
<td>0.011</td>
<td>0.021</td>
</tr>
<tr>
<td></td>
<td>4.69**</td>
<td>-0.04</td>
<td>-0.022</td>
<td>-0.032</td>
</tr>
<tr>
<td>Index of moderated mediation</td>
<td>Effect</td>
<td>Boot SE</td>
<td>Boot LLCI</td>
<td>Boot ULCI</td>
</tr>
<tr>
<td>Work stress</td>
<td>-0.14**</td>
<td>0.020</td>
<td>-0.095</td>
<td>-0.015</td>
</tr>
</tbody>
</table>

**Note:** *p<.05, **p<.01, N=242 ; R²= 0.592.
3.4. Gender Differences Results

The result from Table 5 also depicts the difference between male and female employees with respect to the proposed link between remote work demands and work stress and work-life balance via the moderating effect of their leader’s transformational behavior. The findings reveal that, compared to male employees, female employees experienced more work stress, which led them to not effectively manage their work and lives, which in turn reduced when their leaders exhibited transformational leadership characteristics. Thus, Hypothesis H5 is supported.

4. DISCUSSION

As analyzed with the proposed research model grounded in transformational leadership and stress theory, the results supported all the hypotheses in this study. First, the direct negative effect of work demands on work-life balance is supported. This result indicates that work demand is more specific when employees are working from home, which in turn affects the time spent on personal life, which is also consistent with previous studies investigating the relationship between work demands and work-life balance [9]. Second, the mediation or indirect negative effect of work stress in relation to remote work demands and work-life balance is also supported. The result is consistent with the conservation of resource theory, as the theory clearly proves that loss of time or energy is itself a stress, and which further increases the negative personal outcomes of an individual [9, 12]. Further, the same COR theory states that any individual difference variable can be a significant moderator to suppress the negative outcomes caused by prolonged stress. Accordingly, the moderating effect is examined in relation to employees’ perceptions of their leader’s transformational behavior. The result of this moderated mediation supported hypothesis 4, which proves that transformational leaders help employees enhance their work-life balance in a positive manner, even though they experience work stress created by greater remote work demands. The results further clearly prove that through the dimensions of transformational leadership such as “idealized influence,” inspirational motivation, individualized consideration, and “intellectual simulation” [17], the leaders help the individuals working in the team cope with stress and support them in all possible ways to achieve the goal.

Finally, with respect to the gender difference, the result of hypothesis H5 supports the difference between male and female employees in relation to the proposed model. Specifically, female employees show a significant negative influence of remote work demands on their work-life balance, which is greater when it leads to work stress. But this relationship is not significant with respect to the male group. Also, female employees working under leaders with transformational characteristics are coping more with stress, which in turn reverses their negative effect on balancing work and life compared to male employees. This result is also consistent with the transformational leadership theory and previous studies on work-family domain literature [3, 18, 27].

5. CONCLUSION

The present study also has its own limitations. First, a cross-sectional study was employed, and data were gathered at one point in time. Thus, the work stress analyzed in this study measures stress experienced at a particular time, which did not capture the variations in the stress level based on time. A future study can focus on the longitudinal study to assess stress with respect to various situations. Second, since work stress is partially mediated in relation to remote work demands and work-life balance, there are some other variables that can also

<table>
<thead>
<tr>
<th>Path relation</th>
<th>LLCI</th>
<th>ULCI</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RWD→ WS→ WLB</td>
<td>0.01</td>
<td>0.03</td>
<td>0.061</td>
</tr>
<tr>
<td>RWD→ WS→ TFL→ WLB</td>
<td>0.02</td>
<td>0.12</td>
<td>0.050</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RWD→ WS→ WLB</td>
<td>0.10</td>
<td>0.18</td>
<td>0.000</td>
</tr>
<tr>
<td>RWD→ WS→ TFL→ WLB</td>
<td>0.22</td>
<td>0.35</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Table 5. Results of gender differences.
exhibit a mediating effect. Thus, future studies can be carried out by identifying some other organizational or personal variables in the relationship.

The major outcome of the study revealed that the leadership behavior of the leaders is crucial for not only attaining organizational goals but also satisfying personal needs. Effective leadership, such as transformational behavior, leaders with their unique dimensions, such as motivating followers by identifying their individual needs, acting as role models, identifying and simulating their individual skills, and inspiring with their actions, make significant change in their lives, specifically for female employees.

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**Transparency:** The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

**Competing Interests:** The authors declare that they have no competing interests.

**Authors’ Contributions:** Both authors contributed equally to the conception and design of the study. Both authors have read and agreed to the published version of the manuscript.

**REFERENCES**


