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Telecommuting during COVID 19: A Moderated-Mediation Approach Linking Job Resources to Job Satisfaction

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Abstract: The COVID-19 pandemic outbreak has led to sudden and significant changes in the work and family roles of the employees. Due to the unprecedentedness of the situation, academicians and practitioners have limited knowledge of the effect permanently working from home during this crisis can have on employees. Developing the role and work–life balance theories and using the job demands and resources model, the authors study the role of availability of job autonomy and family supportive supervisory behaviors (FSSBs) directly on work–life balance and indirectly on job satisfaction through work–life balance for Industry 4.0 based employees. Using work-to-family positive spillover (WFPS) as a first-level moderator and prior telecommuting experience (PTE) as a second-level moderator, the authors also check for the moderating effect on work–life balance and job satisfaction, respectively. The data were analyzed using CFA and SEM in AMOS v21.0 and model 21 in PROCESS Macro for SPSS. The study found that job autonomy and FSSBs have significant positive direct and indirect effects on work–life balance and job satisfaction, respectively, and these relationships are positively moderated by WFPS and PTE, respectively. The study focuses on the human factor of Industry 4.0, adds empirical insights to the work–family interface literature, and has implications that will help both employees and organizations during such critical times.

Keywords: COVID-19; telecommuting; job resources; work–life balance; job satisfaction



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1. Introduction

In the wake of the COVID-19 outbreak, lockdown measures adopted around the world have disrupted the lives of millions of employees around the globe [1]. With the outbreak of COVID-19, work from home, also known as telecommuting or telework, was introduced by organizations worldwide to curb virus transmission and keep their operations going [2]. The COVID-19 pandemic has been one big experiment in managing remote workers, and proper study of telecommuting during this crisis will pave the way for using this work arrangement more effectively during any such unforeseen emergencies. Due to lockdown measures adopted by governments to control the spread of the virus, telecommuting was rolled out by organizations, and, consequently, like other information and knowledge workers, employees engaged in Industry 4.0 are working from home; among these, many are new to this form of work arrangement [2]. For employees, switching to telecommuting meant blurring the boundary between work and home [3]. The blurring of the boundary between work and home has ramifications in the form of work–family conflict [4] and work–family enrichment [5] that further has a bearing on employee outcomes [6,7].

The present study focuses on the employees that work in Industry 4.0 (the fourth industrial revolution, stimulated by technological, socio-economic, and political changes [8], is also known as Industry 4.0 [9]). Industry 4.0 refers to the digital transformation of existing business processes where physical business operations are substituted by digital computer arrangements [10]. Industry 4.0 has transformed the way work is done; robots are being used to do the work done by humans. Still, it is a human worker who directs these robots.

Past research suggests that combining advanced technology with professional workers increases innovation and productivity [11,12]. Recent Industry 4.0 studies have focused heavily on sustainable organizational performance. These studies reflect how Digital Manufacturing Technologies, Business Process Optimization, Cognitive Decision-Making Algorithms, Smart Devices, Automated Production Systems, Internet of Things Sensing Networks, and Digitized Mass Production may help in achieving sustainable organizational performance [13–16]. However, existing Industry 4.0 literature has failed to address the human factor; extant literature has rarely addressed human–system interactions, and the focus has largely been limited to technology [17]. The failure to address the human factor in Industry 4.0 will have detrimental effects on employees, organizations, and society at large [17].

In the past, these Industry 4.0 employees telecommuted occasionally and voluntarily, but in the current situation, employees are working mandatorily from their homes for a continued time period [18,19]. Thus, it becomes all the more important to study the resources available to employees under such a work arrangement and their role in employee work–life balance and job satisfaction. Given the peculiar nature of the current situation, there is a scarcity of research that studies the boundary-fading phenomenon under mandatory full-time telecommuting, its predictors, and its effect on work–life balance and job satisfaction for employees. Therefore, the present situation necessitates studying factors that aid employees in bettering their work–life balance and job satisfaction during this crisis [1]. Studying these factors is theoretically grounded in the concept that Industry 4.0 is a socio-technical system involving humans [17].

Ever since the COVID-19 outbreak, both academia and the popular press have focused on the work–life balance and job satisfaction aspect of telecommuting during this crisis [20]. These studies and articles have reported multiple benefits of this work arrangement. For instance, in the recent empirical studies of telecommuting during the COVID-19 period, spending more time with the family and nurturing oneself were reported as beneficial outcomes of the COVID-19 induced telecommuting program [21,22]. Similarly, other studies revealed that availability of flexibility and opportunity to balance work and personal life are considered as the important upsides of the telecommuting arrangement during the COVID-19 period [19,23]. As postulated by event systems theory (EST), novel, critical, and disruptive events bring about a change in behavior [24]. Adopting the EST lens, authors in the present study tried to explore how resources available during such novel, critical, and disruptive events of the COVID-19 outbreak impact employee work–life balance and job satisfaction.

In the current scenario, it is important to study work characteristics amplified under mandatory full-time telecommuting and their effect on the work–life balance and job satisfaction of employees. Precisely stating, and as put forward by work design theory as well, it is not the telecommuting arrangement in general. Still, certain aspects of a telecommuter's work play an important role in determining the job performance for telecommuters. Thus, the present study, focusing on the motivational job resources aspect of job demands and resources model [25], assesses the impact of two job characteristics—job autonomy and family supportive supervisory behaviors (FSSBs)—and their effect on job satisfaction through the mediation of work–life balance. These resources are more relevant for studying work–life balance and job satisfaction in the current context when employees are telecommuting mandatorily for such a long time. According to the job demands and resources model [25], job resources have motivation potential and lead to positive outcomes such as better job performance through a motivational process. The existing literature also puts forward that the availability of job resources supports employee well-being, which in turn leads to positive employee outcomes such as increased productivity, performance, organizational commitment, and job satisfaction [19,26].

Moving further, the authors also endeavor to assess the moderating role of perceived work-to-family positive spillover (WFPS) on the relationship between studied job resources and work–life balance. Sociological theorists have put forward that the blurring of the

boundary between office and home makes way for the transfer of benefits of resources acquired in one role to another role [27,28]. This phenomenon of work–family enrichment has been studied as a positive spillover in the past [5,29]. Specifically, WFPS is a phenomenon where resources available at work improve one’s work life and also transfer such benefits to one’s family life [5]. Job autonomy and FSSBs are such resources that will benefit both the work and personal life of employees, and, thus, it is important to assess the moderating role of WFPS. Before the COVID-19 pandemic, part-time or occasional telecommuting existed in some organizations, and few employees may have prior experience of telecommuting; hence, this necessitates assessing the role of such experience in job satisfaction. Therefore, in order to check the conditional indirect effect of job resources on job satisfaction via work–life balance, the authors followed two-level moderated mediation approach by inputting WFPS as a first-level moderator and PTE as a second-level moderator. Based on the above arguments, the following research questions are proposed:

1. What effect do job resources have on work–life balance for telecommuters?
2. How does WFPS moderate the relationship between job resources and work–life balance?
3. What effect does work–life balance have on the job satisfaction of telecommuters?
4. How does PTE moderate the relationship between work–life balance and job satisfaction?
5. How does work–life balance moderate the relationship between job resources and job satisfaction when WFPS and PTE are introduced as first- and second-level moderators, respectively?

The next section of the study provides a brief review of the literature and establishes the research hypothesis on the basis of mentioned research questions. A further section of the study provides the research methodology adopted in the present study. Brief details about research design, sample, sampling technique, adopted measures, control variables, and data screening are provided in the section. The following section shows the results of the measurement model and hypothesis testing wherein direct, indirect, and conditional indirect effects are reported. The penultimate section of the study discusses these results and compares the findings with existing literature. This section also provides probable explanations for the findings observed in the results section. The last section of the studies lays out conclusions. It also provides theoretical and practical implications of the study. Lastly, this section also points out the limitations of the present study and provides directions for future research.

2. Literature Review

2.1. Job Resources and Work–Life Balance

2.1.1. Job Autonomy

Job autonomy refers to the degree to which an employee is in control over the work tasks to be done [30]. Telecommuters, in general, have more flexibility over their tasks due to spatio-temporal flexibility available to them, and they are better able to schedule their tasks as a result of schedule and control flexibility [19,31]. Due to its very nature of increased autonomy, telecommuting has often been propounded as a measure to enable better work–life balance [32–34]. With the emergence of Industry 4.0, organizations are now working with a smaller pool of employees and using remotely working external service providers for covering shortfalls [35]. These workers grew up in the digital age, and this new generation of workers has a higher penchant for maintaining a better work–life balance [35,36]. A survey showed that 92% of generation Y employees prioritize workplace flexibility when looking for a job [37]. As mentioned earlier, telecommuting blurs the boundary between work and home by bringing work to home, and the availability of autonomy helps employees in dealing with both work and non-work demands and thus enabling a better work–life balance [38–40]. Employees working permanently from their homes during this crisis have more autonomy over their work tasks [19]; thus, the following hypothesis is postulated:

Hypothesis 1 (H1). *Job Autonomy is positively related to WLB.*

2.1.2. Family Supportive Supervisory Behaviors

It is crucial to assess the impact of FSSBs during this pandemic since all family members are staying together at home, and employees are faced with increased family demands because of the closure of offices and educational institutions [41]. FSSBs adopted by leaders aid employees in managing their roles in work as well as family domains [41] and thus help employees experiencing reduced work–family conflict or increased work–family enrichment [42,43]. During the ongoing COVID-19 crisis, employees who enjoy FSSBs are better positioned to experience a reduction in work–family conflict and an increase in work–family enrichment [1]. Reduction in work–family conflict or increase in work–family enrichment means improved work–life balance for employees. Based on the above discussion, the authors propose the following hypothesis:

Hypothesis 2 (H2). *FSSBs are positively related to WLB.*

2.2. WFPS as a First-Stage Moderator

Work-to-family positive spillover refers to the transfer of positive effects achieved at work to the non-work life [44]. WFPS has been adopted as a first-stage moderator on the basis of role theory [45]; role theory has long been used to explain work and family relationships [45,46]. Within role theory, the enhancement hypothesis is a positive perspective to describe the work and family linkage [28]. Enhancement hypothesis states that engagement in multiple roles brings about beneficial outcomes since positive energy and effect generated in one role results in positive energy and effect in another role [27,44]. It implies that individuals who experience greater WFPS (compared to others) will experience better work–life balance as a result of the job resources available to them. Employees with greater job autonomy and increased FSSBs are better placed to schedule tasks in work and non-work domains, leading to positive affect spillover. Individuals who have more autonomy over their tasks and workplace are better able to meet both work and family role demands [40,46–48]. Increased job autonomy facilitates interdependence between work and non-work domains, and, thus, employees experience positive spillover [5]. Existing literature reports that telecommuters enjoy positive affect spillover since telecommuting fades the boundary between work and non-work domains, leading to spillover of satisfaction from one domain to another [49,50]. Further, the employees who experience positive spillover are able to achieve work–life balance [48]. The current study focuses only on the moderating role of work-to-family positive spillover and not vice versa because the work-related resources adopted are more likely to have ramifications on the non-work lives of employees. As supported by existing literature, the transfer of skills and values from work-to-family results in greater job and family satisfaction for employees [29,44,51]. Thus, it is hypothesized that:

Hypothesis 3 (H3). *The relationship between job autonomy and work–life balance is more positive for employees who have higher perceived WFPS.*

Hypothesis 4 (H4). *The relationship between FSSBs and work–life balance is more positive for employees who have higher perceived WFPS.*

2.3. WLB and Job Satisfaction

Employees who enjoy a favorable work–life balance are likely to be more satisfied with their jobs [33,39]. Existing literature has reported that positive spillover effects emerging from telecommuting reduce work–family conflict and improve well-being for employees, thus leading to positive outcomes such as increased performance and productivity [52]. A recent empirical study of mandatory full-time telecommuting found that work–life balance mediates the relationship between schedule flexibility and job satisfaction [19]. Based on signaling theory [53], providing work–life balance supporting aspects signals

to the employees that they are valued by the organization, and employees feel included when an organization provides such resources that fulfill the work–life balance needs of employees [6]. Employee’s perception about being valued by the organization leads to positive outcomes [54]. The proposed positive relationship between work–life balance and job satisfaction has its roots in social exchange theory [55]. Social exchange theory proposes that individuals tend to reciprocate favors received by them [56]. In the current context, when employees experience better work–life balance because of favor from organizations available to them in the form of job autonomy and FSSBs, they are likely to return such favors in the form of being more positive and satisfied with their job [6,57–59]. Based on the above outline, it is hypothesized that:

Hypothesis 5 (H5). *WLB is positively related to JS.*

2.4. PTE as a Second-Stage Moderator

PTE has been conceptualized as a second-stage moderator on the premise that individuals who have telecommuted prior to this crisis are well versed with the work–life-balance-related benefits of telecommuting and thus are likely to be more satisfied with their jobs in comparison to those who have never telecommuted before. Adoption of PTE is based on the resource gain spirals principle of conservation of resources (COR) theory [60]. Resource gain spirals principle lays down that existing resources lead to more resources [18]. COR puts forward that individuals who have more resources are more likely to preserve resources available to them in times of crisis [60,61]. While telecommuting during this pandemic, employees who have telecommuted before had more resources in the form of experience and knowledge about how to work effectively from home. Such employees were better positioned to deal with the work and non-work demands that emerge while telecommuting, and, based on the resource gain spiral principle, the advantage of having prior experience would have helped them in making most of the new resources available to them. Eventually, through better use of resources and resource gain spirals, such employees may experience better work–life balance and subsequently higher job satisfaction in comparison to those who have not telecommuted before. Thus, it is hypothesized that:

Hypothesis 6 (H6). *The relationship between work–life balance and job satisfaction is more positive for employees who have PTE.*

2.5. The Mediating Role of WLB

Previous sub-sections have focused on proposing hypotheses regarding resources and moderators adopted for the study. The aforementioned hypotheses are now integrated into a two-stage moderated mediation model to explore how job autonomy and FSSBs are related to job satisfaction (that is, through improved work–life balance), how to support this relationship (that is, by catering FSSBs), and for whom this relationship is most observable (that is, for individuals who have PTE). Reflecting on the mediating role of work–life balance, in light of work–life balance and role theories [62,63], it is proposed that telecommuting results in multiple family and personal well-being benefits since telecommuting helps in reducing role conflict by enabling an individual to perform both work and non-work roles in a flexible manner [64]. For instance, a recent study reported that personal and family well-being, getting more time to exercise and rest, improving work–life balance, and maintaining better relationships with family members were among the beneficial outcomes for employees working from their homes due to COVID-19 induced lockdown [64]. Based on the socio-technical systems perspective, authors propose that job autonomy and FSSBs will help employees in experiencing better work–life balance, and this is likely to result in increased job satisfaction for employees [65]. Existing literature supports the proposed relationships; increased job autonomy and support from supervisors available to telecommuters have been found to result in better work–life balance and thus enable greater job satisfaction for employees [19,32,66–68]. Thus, it is hypothesized that:

Hypothesis 7 (H7). *The indirect positive relationship between job autonomy and job satisfaction via work–life balance is the most positive in employees with higher perceived WFPS and PTE.*

Hypothesis 8 (H8). *The indirect positive relationship between FSSBs and job satisfaction via work–life balance is the most positive in employees with higher perceived WFPS and PTE.*

Figure 1 presented below shows the conceptual framework and represents the relationships studied in the present study.

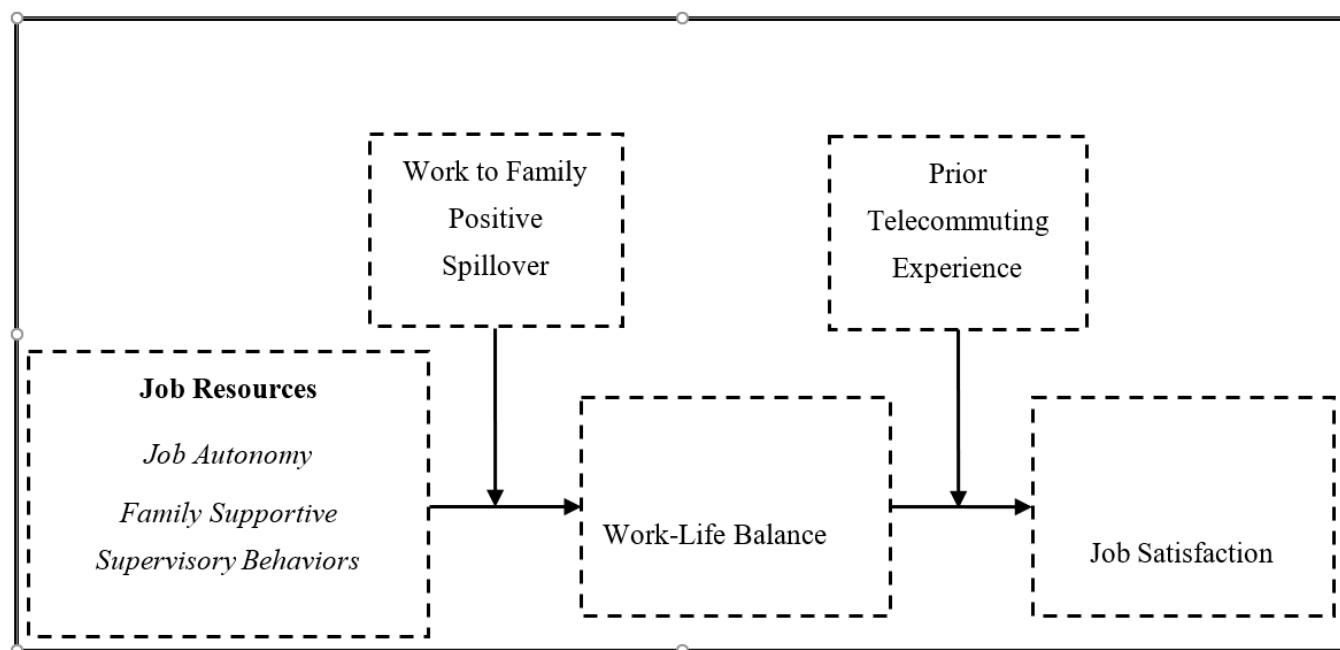


Figure 1. Conceptual framework.

3. Materials and Methods

3.1. Design and Sample

The present study adopts a cross-sectional design to collect data during April 2020 from the employees working in the IT sector in the national capital region (NCR) of India. The data were collected from the employees who were engaged in such processes that provide assistance to Industry 4.0. Authors adopted a network sampling approach [69]; using the network resources of one of the authors, who had previously worked in the industry and telecommuted, 728 employees telecommuting mandatorily were sent the request for filling out the questionnaire through email. Out of 728 contacted employees, 377 responded to the questionnaire. Since the present study deals with work–family interface-related variables, our sample included only those individuals who worked in the presence of family during the lockdown. A dichotomous question, “Are you living with/away from your family while telecommuting during the lockdown period?”, was included in the survey instrument to classify the current living status of respondents. Out of the total of 377 respondents, 49 (13%) reported that they were living away from their family; hence, the study proceeded for data screening with the other 328 responses, who comprised 203 males and 125 females.

3.2. Measures

The study uses five latent variables viz. job autonomy (five items), family-supportive supervisory behaviors (three items), work–family positive spillover (four items), work–life balance (four items), and job satisfaction (five items). A questionnaire (comprising a total of 21 items) was developed borrowing validated and published scales, and the sources

have been duly cited in the reference list. A list of questionnaire items has been attached in an appendix (see Appendix A).

3.3. Control Variables

Authors decided to control for gender (1 = male, 2 = female, and 3 = other), marital status (1 = single, 2 = married, and 3 = other), parental status (1 = dependent children and 2 = no dependent children), and organizational tenure (1 = less than one year, 2 = one to three years, and 3 = more than three years). The basic premise behind controlling for these variables is that certain job resources would have a differentiating effect on individuals with a certain gender, marital status, parental status, or organizational tenure [23]. For instance, women and/or individuals who have dependent child/children may benefit more from FSSBs since they generally have additional family responsibilities [70]. Similarly, individuals who have been in the organization for a long time may experience greater autonomy since they are more familiar with organizational policies, culture, and chain of command.

3.4. Data Screening

Before proceeding with statistical analysis, the data were processed for screening and cleaning. It was found that four respondents were not fully engaged and did not respond properly; hence, they were deleted out of a total sample of 328 responses. The authors also checked for any missing data, but there were no missing data found in the dataset. The authors also checked for outliers using Cook's distance method, and two responses were found showing Cook's statistics above the threshold 1 [71]; thus, they were also removed from the dataset, and the study was left with a final sample of 322 responses.

Among 322 final respondents, 138 (42.86%) reported having PTE, while the other 184 (57.14%) respondents mentioned that they had no PTE. Further, 209 (64.91%) employees reported being single, 106 (32.88%) mentioned that they are married, and only 7 (2.17%) confirmed their marital status as 'other.' In addition to the marital status of employees, employees' parental status was also asked, and 89 (27.64%) employees reported having children, i.e., 83.96% of total married employees.

Furthermore, the authors also checked whether the data are not affected by common method bias (CMB) and used Harman's one-factor test to comply with the norms of CMB [72]. All the items of the questionnaire were forced to load under one single factor using principal component analysis techniques with promax rotation method, and it was made sure that one single factor with all 21 items used in the study does not explain the majority of variance ($\geq 50\%$). Results from Harman's one-factor test revealed that all 21 items under factor explain variance of 34.187%, thus negating any empirical possibility of CMB [72]. The authors also used VIF statistics to ensure that study is not suffering from multicollinearity issues. The authors found that statistics for VIF were ranging between 1.033 to 1.294 for all the variables, hence abiding by the suggested limit of VIF [73].

Later, this study applies confirmatory factor analysis (CFA) to assess the model fitness, convergence, and divergence of the data [74]. Hypothesized direct and indirect relationships were tested using structural equation modeling (SEM) in AMOS v21.0, while for testing conditional indirect effects (moderated-mediation relationships), model 21 in PROCESS macro for SPSS v3.5 was used [75].

4. Results

4.1. Measurement Model

This study has hypothesized a two-level moderated-mediation model cognizing five latent variables. A CFA model was run in AMOS v21.0 to testify whether the model appropriately fits the data and holds enough convergence and divergence. Fit indices for the SEM model were also measured. In Table 1, model fit indices for CFA and SEM models are displayed, evincing that model fit indices for CFA and SEM models fall under the excellent category, thus ensuring that the data fit the model appropriately.

Table 1. CFA and SEM model fit indices.

Model	CMIN/DF	GFI	TLI	CFI	RMSEA
CFA Model	1.438	0.934	0.958	0.967	0.047
SEM Model	1.645	0.912	0.937	0.944	0.057
Recommended Value	Acceptable 1–4 [76]	≥ 0.90 [77]	≥ 0.90 [78]	≥ 0.90 [78]	< 0.07 [79]

Standardized CFA loadings from observed to respective latent variables were found well above the threshold of 0.70 for each observed item, hence confirming that observed variables are converging sufficiently with their respective latent variables [73,80], and, consequently, the value of average variance explained (AVE) for each latent variable was well above the threshold of 0.50 [73,81], thereby affirming that every latent is extracting the majority of variance from its respective observed variables (see Table 2). Further, the study also employs the measures of Cronbach's alpha and composite reliability (CR) to warrant the internal consistency of the constructs. Values for Cronbach's alpha and CR were found in excess of the prescribed limit of 0.70 [73,80]; thus, the study gauges the benchmark.

Table 2. CFA loadings, Cronbach's alpha, CR, and AVE.

Variable Name	No. of Items	Avg CFA Loading	Alpha (α)	CR	AVE
Job Satisfaction	5	0.741	0.825	0.849	0.549
Work–Life Balance	4	0.854	0.902	0.915	0.730
Job Autonomy	5	0.755	0.863	0.883	0.570
Family Supportive Supervisory Behaviors	4	0.831	0.889	0.910	0.691
Work–Family Positive Spillover	3	0.765	0.855	0.875	0.585

Average variance explained (AVE) was calculated to corroborate the convergent validity of each latent construct.

In addition to checking on fit indices and convergence aspects of the data, the authors also checked for discriminant validity among the latent constructs. When the convergence of latent variable (squared root of AVE) with its observed variables is greater than its correlation with other latent variables, discriminant validity criteria are considered to be met [82]. Results from Table 3 corroborate that the value of the squared root of AVE (shown in bold on diagonals) for each latent variable is greater than its correlation with other latent variables. Predictors and outcome variables are also found to be sufficiently correlated and in the desired direction. Table 3 also depicts the descriptive statistics viz. mean and standard deviation for each latent variable.

Table 3. Correlations, divergent validity, and descriptive statistics.

Variable Name	Mean	SD	JS	WLB	JA	FSSBs	WFPS	PTE
Job Satisfaction	4.986	1.449	0.841					
Work–Life Balance	4.953	1.443	0.581 **	0.854				
Job Autonomy	4.796	1.248	0.573 **	0.613 **	0.755			
FSSBs	5.213	1.388	0.639 **	0.476 **	0.447 **	0.831		
WFPS	5.135	1.316	0.545 **	0.486 **	0.403 **	0.523 **	0.765	
PTE (Yes/No)	1.500	0.500	−0.320 **	−0.335 **	−0.263 **	−0.251 **	−0.354 **	1

Note: ** Correlation is significant at the 0.01 level (2-tailed). For discriminant validity, Squared Root of AVE has been shown in bold on diagonals. JS = Job Satisfaction, WLB = Work–Life Balance, JA = Job Autonomy, FSSBs = Family Supportive Supervisory Behaviors, WFPS = Work–Family Positive Spillover, PTE = Prior Telecommuting Experience.

4.2. Hypotheses Testing

The authors tested the hypotheses for direct and indirect (mediation) effects employing an SEM model in AMOS version 21.0. The direct effects of job autonomy (H1) and FSSBs (H2) were measured on work–life balance. Subsequently, the direct effect of work–life

balance on job satisfaction (H5) was also measured. Further, first-level moderation effects of WFPS on the relationships between job autonomy (H3), FSSBs (H4), and work–life balance were also tested, followed by the second-level moderation effect of PTE on the “work–life balance–job satisfaction” relationship (H6). Lastly, this study also checked conditional indirect effects (two-levels moderated mediation) of job autonomy (H7) and FSSBs (H8) on job satisfaction with mediating role of work–life balance and moderating roles of WFPS (first-level moderator) and PTE (second-level moderator). Conditional indirect effects were checked using model 21 in PROCESS Macro for SPSS v3.5 with 5000 bootstraps resamples [75]. The authors also checked the effect of control variables viz. gender, marital status, parental status (children), and organizational tenure on work–life balance and job satisfaction, and none of them showed significant influence on work–life balance and job satisfaction (see Table 4).

Table 4. Standardized direct, indirect, conditional indirect, and interaction (moderation) effects.

Independent Variables	Dependent Variables		Indirect Effect	Conditional Indirect Effects			
	Work–Life Balance	Job Satis- faction	On Job Satisfaction through Work–Life Balance	On-the-Job Satisfaction through Work–Life Balance			
				Low WFPS (−1 SD) with PTE	Low WFPS (−1 SD) with No PTE	High WFPS (+1 SD) with PTE	High WFPS (+1 SD) with No PTE
Gender	0.002	−0.021	–	–	–	–	–
Marital Status	0.061	−0.042	–	–	–	–	–
Children (Yes/No)	0.058	0.066	–	–	–	–	–
Organizational Tenure	0.061	0.059	–	–	–	–	–
Job Autonomy	0.421 ***	0.384 ***	0.131 **	0.091 **	0.024	0.158 **	0.084 **
FSSBs	0.357 ***	0.464 ***	0.098 **	0.048	0.037	0.126 **	0.094 **
Work–Life Balance	–	0.399 ***	–	–	–	–	–
Job Autonomy * WFPS	0.096 **	–	–	–	–	–	–
FSSBs * WFPS	0.119 **	–	–	–	–	–	–
Work–Life Balance *							
PTE	–	−0.085 **	–	–	–	–	–
R ²	0.328	0.413	–	–	–	–	–

Notes: Standardized effects are significant at 5%, i.e., ** $p < 0.05$, and 1%, i.e., *** $p < 0.01$ level. **FSSBs** = Family Supportive Supervisory Behaviors; **PTE** = Prior Telecommuting Experience; **WFPS** = Work–Family Positive Spillover.

4.2.1. Direct Effects

Results projected in Table 4 depict that job autonomy and FSSBs have a direct positive influence on work–life balance with the standardized effects of 0.421 and −0.357, respectively, therefore, supporting hypotheses H1 and H2. Work–life balance also showed a direct positive effect on job satisfaction with standardized coefficients at 0.399, thus extending support to hypothesis H5. Model explanatory power for work–life balance and job satisfaction were found to be 32.80% and 41.30%, respectively.

4.2.2. Interaction Effects (Moderation Analysis)

Hypotheses H3 and H4 were postulated to testify the moderating effect of WFPS (first-level moderator) on the relationships between job autonomy, FSSBs, and work–life balance, respectively. Standardized interaction effects for H3 and H4 were found significant with coefficients of 0.096 and 0.119, respectively, hence extending the support for proposed hypotheses and confirming that the effect of job autonomy and FSSBs on work–life balance is enhanced for the employees with a high level of WFPS at first-level moderation. Subsequently, moderating effect of PTE (second-level moderator) on the “work–life balance–job satisfaction” relationship was also measured (H6), and the results exhibit that this relationship was stronger for the employees with PTE and weaker for employees with no PTE ($B = -0.085$); hence, hypothesis H6 also stands supported.

4.2.3. Conditional Indirect Effects (Two-Level Moderated-Mediation Analysis)

Conditional indirect effects were computed through two-level moderated mediation analysis using model 21 in PROCESS macro for SPSS [75], proposing that mediating effects of work–life balance on the relationships “job autonomy to job satisfaction” (H7) and “FSSBs to job satisfaction” (H8) would be most positive for the employees with the high level of WFPS (vs. low WFPS) and PTE (vs. no PTE), and weakest with the low level of WFPS (vs. high WFPS) and no PTE (vs. PTE). Table 4 exhibits that results conform with the proposed hypotheses, and the indirect effect of job autonomy on job satisfaction via work–life balance is strongest when the high level of WFPS (+1 SD) is coupled with PTE ($B = 0.158$; CIs at 95% = 0.072, 0.288) and weakest when employees receive a low level of WFPS (−1 SD) coupled with no PTE ($B = 0.024$; CIs at 95% = −0.065, 0.092). Further, the indirect effect of FSSBs on job satisfaction via work–life balance is also perceived to be strongest when the high level of WFPS (+1 SD) is coupled with PTE ($B = 0.126$; CIs at 95% = 0.062, 0.235) and weakest when employees receive a low level of WFPS (−1 SD) coupled with no PTE ($B = 0.037$; CIs at 95% = −0.022, 0.283). However, conditional indirect effects of job autonomy ($B = 0.084$; CIs at 95% = 0.009, 0.133) and FSSBs ($B = 0.094$; CIs at 95% = 0.013, 0.192) on job satisfaction via work–life balance were also found significant for employees receiving high level of WFPS (+1 SD) but do not possess PTE.

5. Discussion

The authors found support for all the hypothesized relationships. Availability of increased job autonomy and FSSBs had a significant positive impact on work–life balance, and these relationships were positively moderated by perceived WFPS. Similarly, work–life balance was found to have a significant positive effect on employee job satisfaction, and this relationship was positively moderated by prior telecommuting experience of employees. Authors also found support for the indirect positive relationship between both job resources and job satisfaction through the mediation of work–life balance for employees with higher perceived WFPS and PTE. The findings of the present study are in line with theories of the role and work–family balance that suggest an influence of improved work–family balance on employee well-being and employee job satisfaction.

Findings regarding job autonomy are consistent with the existing literature [57]; providing employees more autonomy has always been considered a primary job resource for telecommuters and has been the basic premise behind work–life balance supporting work arrangements. Job autonomy had a more positive impact on work–life balance in comparison to FSSBs. The research on the role of FSSBs is scanty; our study found that moderating role of WFPS on work–life balance is higher for FSSBs as compared to job autonomy. This finding is rational given the fact that employees are more likely to experience work-to-family positive spillover when employers provide FSSBs. Job autonomy enables employees to experience WFPS by enabling individuals to switch between two roles effectively, and such WFPS will be higher when employees have work–life balance supporting resources such as FSSBs. The authors also checked for the direct effect of job autonomy and FSSBs on job satisfaction, and they were both found to be significant; the direct effect of job autonomy was lower, which further provides strength to our results regarding WFPS moderation.

In conformity with existing telecommuting literature and social exchange perspective [19,65], work–life balance was found to affect job satisfaction positively. When checking for the moderating effect of PTE on work–life balance and job satisfaction relationship, PTE was found to have a moderating effect on job satisfaction. Individuals who had telecommuted before COVID-19 reported better work–life balance and job satisfaction as compared to individuals who had not telecommuted before COVID-19. Plausibly, individuals who have telecommuted before may be experienced in dealing with job resources in a better way. For instance, individuals who have telecommuted before may have been well accustomed to the autonomy that comes with telecommuting and deal with it in a better way; they may have been able to schedule their work in such a way that they can cater to non-work

demands as well and hence experience better work–life balance [19]. Additionally, the authors also checked the indirect effect of job resources on job satisfaction through WLB, and job autonomy was found to have a stronger effect than FSSBs and thus strengthened our findings regarding the direct effect of both resources on work–life balance.

Lastly, when checking for conditional indirect effects, it was found that both job autonomy and FSSBs had a significant positive impact on job satisfaction through the work–life balance mediation. Employees who had telecommuted before and enjoyed high WFPS reported the highest job satisfaction through work–life balance mediation, and effect size was stronger for job autonomy. These findings are in line with our hypothesized relationships. Effects of both resources were insignificant for employees who experienced low WFPS and had no PTE; although the effect sizes were insignificant, the effect of FSSBs was still stronger than job autonomy. This implies that for employees who have low WFPS and have not telecommuted before, the availability of FSSBs will have more effect than job autonomy. Such employees enjoy FSSBs more than the job autonomy in these critical times.

Job autonomy had a significant effect on job satisfaction through the mediation of work–life balance for employees who experienced low WFPS and had telecommuted prior to this crisis, but the effect of FSSBs was insignificant for such employees. The basic rationale behind these findings is that employees who have telecommuted before may have been well versed in dealing with autonomy that comes with telecommuting [19]. They must have enjoyed autonomy even when WFPS was low. Lastly, the effects of both job resources were also significant for employees who experienced high WFPS but had no PTE, and FSSBs had a higher effect for such employees. This finding supports our previous assumptions and findings regarding job resources and work–life balance relationship; employees who were new to this work arrangement and had high WFPS valued FSSBs more than the job autonomy during these times. FSSBs offered to them may have helped them in dealing with work and family demands in a better way leading to job satisfaction, and hence the conditional indirect effect was higher for such employees. These findings are in contrast with the recent research where organizational support did not have any effect on employee job satisfaction [83].

Apart from the proposed resources, a boost in work–life balance and subsequent increase in job satisfaction could also be a result of other resources such as the ability to work independently, good time-management skills, and the absence of hectic commute [19,64]. Past research has also attributed better work–life balance to an increase in time spent telecommuting; employees who telecommute for a long extent have been found to achieve better work–life balance [19,84,85]. During the lockdown, employees are working from their homes for a continued period, and thus, better work–life balance may be a result of increased telecommuting extent. As suggested by previous studies, it could also be postulated that availability of job autonomy and FSSBs, when clubbed with the absence of hectic commute, may have allowed employees to spend more time with the family and engage in other non-work activities and thus help them in achieving better work–life balance, which, in turn, may have made them more satisfied with their jobs [6,85–88]. Lastly, and more relevantly for telecommuting during these critical times, just having the option of telecommuting could also be a result of increased job satisfaction. Many employees working in sectors where jobs cannot be telecommuted were put on unpaid leave or lost their jobs because of the closing of operations [19]. At the same time, there were also other employees who worked in critical sectors and thus had to commute to the office amid fear of getting infected. So, the employees who had the option to keep working from the safety of their homes during this pandemic must have been more satisfied with their job.

6. Conclusions, Implications, Limitations, and Future Research

6.1. Conclusions

The existing literature has reported widely about the benefits of increased autonomy and organizational support on work–life balance and job satisfaction individually, but

little is known about the role of perceived WFPS and the mediating role of work–life balance in job resources and job satisfaction relationships. Similarly, many employees telecommuted for the first during this crisis, and little is known about the effects of availability or unavailability of prior experience on the job satisfaction of employees. To shed more light on this subject, the authors used the positive motivational process of job demands and a resources model for assessing how the availability of job resources impacts work–life balance, which, in turn, has a bearing on job satisfaction. Practical implications offered by the present research will help organizations craft telecommuting policies that ensure work–life balance and job satisfaction for employees during the current crisis or other such emergencies in the future. The study suggests that providing more autonomy and family supportive supervisory behaviors should be the central idea in telecommuting policies and that employees who enjoy positive work-to-family spillover and have telecommuted in the past are more likely to experience better work–life balance and job satisfaction. The fourth industrial revolution has resulted in a transformation in the human role in operations systems. Undoubtedly, the use of automation and assistance technologies in production and logistics is widespread now. Still, one has to agree that the human workforce will always be an integral element of operations systems, and a focus on this human factor of Industry 4.0 will help in achieving the goal of sustainable organizational performance.

6.2. Implications

The present study focuses on the human factor of Industry 4.0 in the current times and adds to the scanty work–family interface and job satisfaction under continued telecommuting literature. Building upon role theory and by using perceived WFPS as a first-stage moderator and PTE as a second-stage moderator, this study adds new insights to the growing body of telecommuting-during-COVID-19 literature. The authors shed light on the role of job resources (job autonomy and FSSBs) and individual factors (WFPS and PTE) on practical employee outcomes (WLB and job satisfaction). The present study recommends that achieving a better work–life balance will make employees more satisfied with their jobs, and satisfied employees are likely to perform effectively, be more committed to their organization, and have a greater intention to stay with the current organization [89]. Managers must support employees during these challenging times and devise such telecommuting policies that will help employees in achieving a balance between work and non-work domains because increased employee performance and organizational commitment will eventually lead to overall organizational effectiveness. Recent telecommuting studies have also suggested that employee-centric work policies lead to employee well-being [90,91]. Being unsupportive to employees in this hour of crisis may strain the employer–employee relationship, which may leave a long-lasting effect on both employee and organizational outcomes.

The present study contributes towards understanding the change in the role of humans in Industry 4.0 environments and will help in successful digital transformation where any detrimental effects of ignoring attention to human factors are minimized. Working from home for such long periods blurs the psychological boundary that exists between work and non-work life, and offering autonomy and FSSBs will help employees to experience a better work–life balance [1,19,22]. Realizing the positive organizational and employee outcomes of this work arrangement during the current crisis, many organizations have announced that some of their employees will be permanently telecommuting even after this crisis [92]. Additionally, telecommuting has often been used by organizations as a talent-attraction-and-retention strategy because of its work–life balance supportive aspect [93]. A better understanding of resources and other employee factors that boost work–life balance and job satisfaction while working permanently from home will help in making policies for effective telecommuting and aid such organizations that are planning to adopt or continue this work arrangement after the crisis as well as during other emergencies. Lastly, along with other initiatives on the part of organizations [94], such a telecommuting

arrangement could be adopted for environmental protection because of its congestion-, energy-consumption-, and emissions-reducing effects [95].

6.3. Limitations and Future Research

The present study is based on an established model and has a strong theoretical base, but it still has some limitations because of the theme of the study. While studying work-life balance, authors focused only on work-to-family positive spillover and not on the family-to-work positive spillover. WFPS has more relevance when studying work-related variables such as job satisfaction [6]. However, additionally studying family-to-work positive spillover in the present scenario when families are locked down together will help shed light on the effects of family presence. Other limitations of the study relate to the data collection challenges due to lockdown, and the population studied. Due to the lockdown, it was not possible to collect data physically through a survey instrument or face-to-face interviews, and data were collected using an online questionnaire. Another limitation of this study is its cross-sectional design, inferring that the data for predictor and outcome variables were collected concurrently and hence may not lead to the causality of predictors on outcome variables, and respondent's perceived levels may vary over time, thereby leaving the scope for a longitudinal study.

The lockdown has been in place for quite some time now, and the employees may have gotten more used to this work arrangement. Employees may have learned to use resources in a better way and positive benefits may have increased, although it is likely positive benefits may have started to fade away due to reasons such as the prolonged absence of face-to-face interactions with colleagues. Thus, studying the effects longitudinally will help in reflecting perceptual differences over time. For the purpose of this study, only individuals who were working in the presence of families were considered; thus, the findings may not represent the individuals who stayed alone during the lockdown.

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Institutional Review Board Statement: Data was anonymized, even no personal information like contact numbers or/and email addresses were solicited, so this study was exempted for ethical approval by our departmental ethics review committee.

Informed Consent Statement: Informed consent was obtained from all individual participants included in the study. Respondents were informed in advance about the theme for the questionnaire and a set of sample questions was provided to them before sending the full survey instrument.

Data Availability Statement: The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflicts of Interest: On behalf of all authors, the corresponding author states that there is no conflict of interest.

Appendix A. Items of the Questionnaire with Their Source of Adoption

Construct Name with Items of Measurement	
Job Autonomy [30,96]	
1.	I have authority in determining tasks to be performed.
2.	I have authority in determining rules and procedures for my own work.
3.	The job allows me to make my own decisions about how to schedule my work.
4.	The job allows me to decide on the order in which things are done on the job.
5.	The job allows me to plan how I do my work.
Family Supportive Supervisory Behaviors [97]	
1.	My supervisor understands my family demands
2.	My supervisor listens when I talk about my family
3.	My supervisor acknowledges that I have obligations as a family member.
Work-to-Family Positive Spillover [29]	
1.	Being in a positive mood with work helps me to be in a positive mood with family.
2.	Being happy with work improves my spirits with family.
3.	Values developed at work make me a better family member.
4.	I apply the principles my organization values in family situations.
Work-Life Balance [98]	
1.	My job makes it easy to maintain the kind of personal life I would like.
2.	I rarely neglect my personal needs because of the demands of my work.
3.	My personal life does not suffer because of my work.
4.	I do not have to miss out on important personal activities due to the amount of time I spend doing work.
Job Satisfaction [99]	
1.	I am satisfied with the amount of work I am doing.
2.	I am satisfied with surety about my pay.
3.	I am satisfied that my job provides for steady employment.
4.	I am satisfied with the chance to work alone on the job.
5.	I am satisfied with the feeling of accomplishment I am getting from the job.

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