

**Comparison among factors - Autonomy, Attitude, and managerial support for
job satisfaction in IT organization teleworking environment during COVID 19 –
Research in India**

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Abstract

Teleworking offers a range of benefits to organizations and personnel. For one, it helps to reduce administrative and/or operational costs and improve work-life balance for employees. However, in the face of COVID-19 pandemic, the major challenge is continuity of business with teleworking environment. As organizations close their physical office space to curtail the spread of the viral infection. These disruptive tendencies placed huge demand on the management and employees in various organizations as some were not even used to teleworking environment beforehand.

Beyond the technological inputs that make teleworking possible, there are other ends to ensuring its workability as the teleworking environment is even composed of both the social and technical subsystem. It is against this backdrop that this study was put forth to evaluate the drivers of job satisfaction of employees while utilizing teleworking support systems to carry out their work functions – which would have normally been done within the walls of a physical (traditional) office environment. Attitude, autonomy, and managerial support are three variables that can significantly impact the job satisfaction level of employees in a new/unfamiliar work terrain as presented by teleworking environment hence it is crucial to compare these three variables to examine the one that has the greater impact.

A quantitative research method, involving 154 teleworkers from Indian organizations, was adopted in this study as the researcher aims to evaluate the impact of independent variables [such as autonomy, attitude, task allocation, managerial support, and perceived usefulness] on job satisfaction, the dependent variable. The mediating and moderating effects of certain variables on the relationship between specific independent variables and job satisfaction was also analysed. The SmartPLS 3.0 software was used in running partial least squares structural equation modelling analyses. From the findings, it was observed that attitude and autonomy of employee in teleworking support system had significant positive relationship with job satisfaction. The significance of combining a socio-technical model with a technology acceptance model is brought to light.

KEYWORDS: Job satisfaction, Teleworking, IT, COVID-19, coronavirus, Technology, Remote work, Socio-Technical Theory, Technology Acceptance Model.

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Chapter 1: Introduction

1.1 COVID-19 and the Workspace: The COVID-19 pandemic brought a lot of disruption to the activities of many organizations across globe. The impact was so significant that activities were completely grounded in most instances as people had to adhere to certain safety standards that were put forth to check the alarming spread of the virus. The effects were simply unprecedented and as a result, several business organizations had to come up with measures or ways to beat the initial shock as they aim to ensure business sustainability. One of the ways through which majority of them did this was adopting telecommuting intervention whereby organizational operations were run remotely from the home or somewhere outside of walls of the company's operational environment. It must stress that while telecommuting has been generating waves prior to the prevalence of COVID-19, the pandemic incidence did increase the awareness and significance of the intervention. To this end, a host of organizations' management teams are now even considering incorporating teleworking into their operational routine.

The International Labour Organization (2017), defined telework as “the use of information and communications technologies (ICTs), such as smartphones, tablets, laptops, and/or desktop computers, for work that is performed outside the employer's premises. As per the present study, it is important to stress that telework is often used interchangeably with such terms as remote working and telecommuting. Jalali (2011), viewed telework as one of notable changes [in the way work is done] that has coincided with communication technology development. The decentralization of organizational tasks in telecommuting impacts a difference on how work is organized and executed. Parada (2018), emphasized that there are essential elements that define telecommuting; these include:

1. Locative of geographical element which borders on the fact that work activities are executed from a distance, away from the physical or conventional office space.
2. Technological or qualitative element that concerns the need to intensively utilize technological innovations to carry out business tasks outside the wall of the traditional operational centre.
3. Organizational element that has to do with the permission to carry out organizational tasks from a remote location, adopting the telecommunications and information technology measures (Parada, 2018).

From this, it can be understood that beyond an organization's desire to embrace the prospect of telecommuting, it is important that the necessary resources be provided to ensure efficiency.

Telecommuting offers a range of benefits to organizations and personnel. For one, it helps to reduce administrative and/or operational costs and also improve work-life balance for employees (Arso, S., Sfenrianto, S. & Wahyudi, 2018). Furthermore, mobile offices and firms that are into internet & IT

operations have often found telecommuting to be valuable in increasing efficiency and productivity (Amine, R. & Abdelmajid, 2017). The prospect of working remotely yet enables employees to have appreciable degree of freedom as they can carry out work functions from anywhere and at any time (Irby, 2014).

Despite the perceived advantages derivable from using telecommuting interventions, there are several issues that are associated with teleworking, and some of these have to do with the supervision or monitoring of employees, as well as the probable breakdown of communication links between different levels of an organization's setup. This communication problem can be linked to the mistrust that might exist between the team members involved in the telecommuting activities (Reilly & R.R., 2009). Though most of these issues are hinged on evaluating productivity, it is impossible to adequately address these issues without examining the level of employees' job satisfaction when working remotely. Moreover, promoting job satisfaction is perceived as the most significant advantage that comes from telecommuting (Pinsonneault, A. & Boisvert, 2001). Job satisfaction is assumed to be boosted as those utilizing telecommuting leverage on the freedom it presents to control the hours that spend at work thus resulting into increasing the possibility of positive work-life balance. Maruping & Likoebe et al. (2017) and Armstrong (2006), described job satisfaction as the attitude or feeling an employee displays towards his/her job. They further buttressed that it is positive and favourable attitudes that ultimately results in job satisfaction while negative and unfavourable one's lead to job dissatisfaction. There are a couple of work-related factors that affect the attitude of an employee towards his/her job, and some of these include the constituents of the team, supervisors' disposition/support, salary and working conditions (George J.M., 2008). It is, however, not out of place to see other aspects that are associated with an employees' needs and/or desires impacting the attitude, and these have sometimes been included among the most critical indicators of job satisfaction (Aziri, 2011).

It was obvious that the COVID-19 pandemic caught many organizations unaware in respect of doing business the usual way. As such, provisions had to be made to ensure continuity, and this was what teleworking presented to several organizations who had to keep their businesses running. It has become pertinent to make attempt towards understanding job satisfaction because some of these employees, who had been made to work through teleworking supports, might have the setting somewhat strange thus raising the tendency for wanting to quit their job. More so, in the instance where there had been appreciable commitment to the job while telecommuting, understanding job satisfaction will enable researcher and even managers to have an inkling of those factors that might have made the employees remain in their job even without having to make the daily transit to physical office location. In this present study, the researcher assesses the attitude and autonomy associated with the teleworking environment, which are two of the major elements that could impact the job satisfaction level of the employees. Considering this, these three variables will be separately evaluated and then compared to assess which of them is more likely to affect the job satisfaction level of employees the more. The need

to adopt a socio-technical framework and technology acceptance model (TAM) is therefore evident since both attitude and autonomy – which border on the social aspect – are being studied within the context of teleworking systems.

It is against this background that this study was put forth as the researcher seeks to evaluate/understand the level of satisfaction employees had while utilizing teleworking support systems to carry out their work functions – which would have normally been done within the walls of a physical (traditional) office environment. The study was conducted in India, and it focuses on employees that worked remotely during the compulsory quarantine caused by COVID-19.

1.2 Aim & Objectives

The aim of this research is to study the various factors and it's impacts on employees' job satisfaction during the teleworking caused by COVID-19.

The objectives are thus stated as follow:

To evaluate the factor impacting job satisfaction level of employees using teleworking measures/factors during the COVID-19 pandemic.

To compare and evaluate the impacts of attitude, autonomy, and managerial support on the job satisfaction level of employees using teleworking measures during COVID-19 pandemic.

1.3 RESEARCH QUESTION:

RQ1: Attitude, autonomy, or managerial support - what impacts more on the job satisfaction level of employees during COVID-19 pandemic?

Chapter 2: Literature Review

2.1 Teleworking versus Conventional Work Settings

Zhang (2016), aimed to evaluate the detrimental effects of working in virtual offices on job satisfaction and emphasized that organizations do face various challenges particularly with respect to policy. It was stressed that changes in virtual work environment are linked to achievement recognition, communication, social relations, and work-life balance. The alteration in the sequence of communication among co-workers, as well as the social relations of achievement recognition and work-life balance can serve as predictors for employees' job satisfaction.

Valerie J. Morganson, V.J., Major, D.A., Oborn, K.L., & Verive (2010), examined the differences between carrying out tasks at telework locations and the conventional work environment basing the evaluation on variables such as job satisfaction, work-life balance, and inclusion. The regression analyses results found that the levels of work-life balance and job satisfaction were similar in both work settings.

Gajendran, R.S. & Harrison (2007), proposed a hypothetical framework for evaluating the impacts of telecommuting, identifying mediating mechanisms that are hinged on individual outcomes that entailed job satisfaction. Furthermore, the mediating variables represented three conceptual themes – psychological control, the inclination towards relational impoverishment, and work-family. The authors pinpointed that the themes reflected some degree of mutual incompatibility with regards to the impact of teleworking on employees. More pointedly, it was stressed that the attainment of positive outcomes from psychological control and the effective management of the work-family interface may bring about isolation and relational impoverishment among the personnel involved in telecommuting. The findings from this study revealed the probable gap in communication when employees are left to dictate the flow of telecommuting activities without much intervention from their organizations. They also asserted that telecommuting was beneficial in lowering turnover intentions and role stress among employees even as job satisfaction was increased.

Golden & Veiga (2008), carried out a study, involving 321 employees, to assess the association between telecommuting and job satisfaction. Telecommuting was measured using the number of hours that employees spent in executing their professional tasks and the researcher ended up proposing a curvilinear relationship. Based on this relationship, it was posited that lower level of telecommuting is directly related to higher job satisfaction level among employees while higher level of telecommuting has a direct relationship with higher level of job satisfaction. The authors observed that the relationship between job satisfaction and remote working diminished with the decrease in job satisfaction in the instances of higher levels of telecommuting.

In a similar development by Fonner, K.L. & Roloff (2010), also evaluated the relationship between telecommuting and job satisfaction and found a positive association in a study involving 192 participants – 103 office-based employees and 89 telecommuters. They analysed the extent to which telecommuting impacted employees' job satisfaction by measuring variables such as work-life conflict and stressful activities [like interruptions, organizational politics, information exchange and meeting appointments]. While comparing the results from the two groups of participants; the researchers observed that employees who worked remotely tend to have a higher degree of job satisfaction than the office-based employees, with work-life conflict playing a substantial mediatory role in the relationship. As a matter of emphasis, the telecommuters in this study worked remotely for three or more days on a weekly basis. The findings from this study also showed that telecommuters, by having less work-life conflict, and this ultimately resulted in significant benefits that triggered higher job satisfaction level. The researcher concluded that having to spend less than half of the week in a conventional office avails employee more flexibility and brings about a balance in work and personal roles.

Allen, T.D., Golden, T.D. & Shockley (2015), also discovered a result like the one obtained by Golden & Veiga (2005) when they conducted a meta-analysis that revealed the positive association between telecommuting and job satisfaction. The curvilinear relationship in this study was highlighted by the unequal relationship that existed between the three variables, with the researcher discovering that increase in telecommuting led to increased job satisfaction only to a certain point. Once this point was reached, a decline in employees' job satisfaction was noticed. It was against this backdrop that the authors emphasized that the noticeable curvilinear relationship might have evolved from the lack of social interaction among employees. This further gave rise to increased tendencies towards isolation that the teleworkers often experience in the week. A vast majority of employees working remotely recount segregation from work culture as an issue with which they are faced as stated by Crandall, W. & Gao (2005), seclusion from both the work and social environment is observed. A handful of these telecommuters worry that there is a propensity for online relations to displace the person-to-person real life contact.

2.2 Factors affecting teleworking

As with any organizational framework or environment, there are quite a number of factors that determine the effectiveness of telecommuting. Baruch & Nicholson (1997), categorized these factors into four – technological, individual, organizational and home-family. These factors, which present a broad view of the concept of telecommuting, shall now be briefly discussed:

Technological factors: Technology is regarded as a critical element of teleworking; in fact, Baruch & Nicholson (1997), viewed it as the nature of job in this respect. The vast embrace of technological innovations has been the major reason telecommuting is thriving (Wetzstein et al., 2007). This does not look to be subsiding any time soon with the current unfolding of events across the globe.

Individual factors: Concerning individual factors, the criteria that qualify an employee to be a teleworker, as well as the identification of traits that are fundamental to such employees are brought under scrutiny. More so, the profile of a (prospective) teleworker may be subsequently vetted by the management (Bailey & Kurland, 2002). According to Walls et al. (2007), variables like age, education and race could be highly essential in determining an employee's inclination towards telecommuting.

Home-family factors: Home-family factors can be closely linked to individual factors, especially in the event whereby an employee has children to cater (Gareis et al., 2004). It is apparent that in a scenario like that, there may be heightened level of distractions which could ultimately disturb the flow of work. The influence of gender cannot be fully dissociated from the discussion bordering on the effects of home-family elements on telecommuting.

Sarbu (2015), pointed out that men have higher tendencies to engage in telecommuting activities compared to women who may have to take care to certain domestic chores – however, it must be emphasized this may not always be the case as cultural variations may play a significant part.

Organizational factors: Organizational factors concern evaluating the kind of tasks that can be executed within a telecommuting environment (Overbey, 2013). In view of this, organizations within knowledge-based and white-collar sectors are more inclined to adopt (Mayo, M., Gomez-Mejia, L., Firfiray, S., Berrone, P. & Villena, 2016). In exploring organizational factors further, attention is drawn to an organization's social framework wherein telecommuting can be utilized in implementing measures that would lead to the generation of sustainable impacts that for continual [and effectual] management of the workforce (Dima et al., 2019).

2.3. Information Technology Companies in India

Information technology has been one of the major elements that have brought about a great change in the way businesses are done, and India can be regarded as a leader in the industry. Notably, India has been one of the bright spots for software and technology service offerings with substantial exports of direct IT services, IT-enabled services (ITeS) and innovations that advance the propagation of business process outsourcing (BPO) (Mathur, 2006). The IT and BPO sectors have contributed, in no mean manner, to India's economy, even as it delivers certain socio-economic benefits – through the creation/improvement of jobs and standard of living – to the populace (Allad, I. & Maisura, 2015). All these are well enshrined in the definition of Information Technology which is, as described by, “the utilization of hardware, services and infrastructure

to create, store, exchange and leverage information in its various forms to accomplish any number of business objectives”. By this, the significance of IT to telecommuting yet become apparent, and the IT environment within India makes it very much possible to organizations to efficiently transit unto telecommuting framework – from the conventional mode of operations.

Nevertheless, internet connectivity is remaining an integral part of telecommuting as organizations aim to ensure consistent and effective communication among the employees working remotely. One cannot rule out the fact that an employee’s telecommuting activities may culminate in getting services delivered to the end-consumers hence the need to put the overall connectivity range cannot be overemphasized. It is against this background that it suffices to briefly discuss the state of internet connection in India. In terms of internet connectivity and usage, India, now, is lagging in some ways, when compared to nations like China, USA, Brazil and so on. India digital news report stated that in conjunction with Internet and Mobile Association of India, showed that less than half of the population have access to the internet (Aneez et al., 2019). While internet penetration is higher in the urban areas, there is nearly the same number of internet users in both urban and rural areas.

2.4 Conceptual Design:

2.4.1. Technology Acceptance Model (TAM)

The technology acceptance model (TAM), which was proposed by Davis (1989) , itemizes the impact of perceived usefulness and perceived ease of use of technology on the attitude of individuals towards the use of technology, and both perceived usefulness and perceived ease of use are further affected by various external elements (Opoku & Francis, 2019). Perceived usefulness is defined as “the degree to which person believes that using a particular system would enhance his or her performance” while perceived ease of use is “the degree to which person believes that using a particular system would be free of effort (Trakulmaykee et al., 2015) . Additionally, an individual’s intention to embrace the use of technology is determined by perceived usefulness and perceived ease of use (Chuttur, 2009). Lin(2007), emphasized that the technology acceptance model is founded upon the theory of reasoned action that highlights how social behaviour is triggered by individual attitude which ultimately predicts the use and/or adoption of information system.

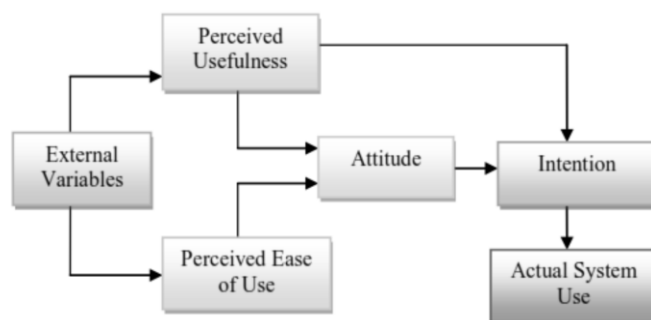


Figure: Technology acceptance model (TAM) Adapted from Ajibade (2018)

It is worth noting that having concrete practical and theoretical knowledge of models and structures that make it possible to evaluate the use of IT systems will go a long way in helping individuals – and researcher – gain appropriate understanding of the elements that enhance the use of such systems thereof

(Maruping & Likoebe et al., 2017). In the theoretical framework put forth by Venkatesh & Davis (2000), cognitive instrumental practices and social influences were viewed as critical in expounding and understanding usage intentions and perceived usefulness. Moreover, there exist a correlation between performance outcome and job relevance when determining perceived usefulness. According to Ajibade (2018), the rules, policies and IT guidelines set in place by organizations have a way of regulating technology acceptance, and the intention to use IT systems even as the employees' desire for promotion or drive towards professional development moderates their attitude to increasingly use IT in ensuring improved performance.

The focus of technology acceptance model has been majorly the usefulness of technology and how it conveniently drives adoption intentions from individuals (Lai, 2017), but it is important to look beyond these factors as Lee & Jun (2007), rightly posited in order to gain a comprehensive understanding of the situation that is attainable within the teleworking framework – especially as employees' job satisfaction is also concerned. Nonetheless, the incorporation of the technology acceptance model is justified when one considers that teleworking encompasses much more than just communication among employees as job designs and work processes are also prominent features (Tahavori, 2015) .

It is, however, important to attempt to study the factors attitude, autonomy, and managerial support within the context of a sociotechnical framework which brings human and technology into a mix. The technology subsystem encompasses the work organization along with the tools, machines, and equipment to be employed while the social subsystem entails individuals and teams, with consideration given to establishing control, coordination, and boundary management (Mumford, 2006).

2.4.2. Socio-technical Theory

Socio-technical theory is hinged on the interdependent nature of (work) activities that involve people, technology, and environment (Sawyer & Jarrahi, 2014), and this has been widely applied in self-regulating work groups and/or self-managing teams that has individuals carrying out interrelated activities as may be perceptible within a telecommuting setting (Appelbaum, 1997).

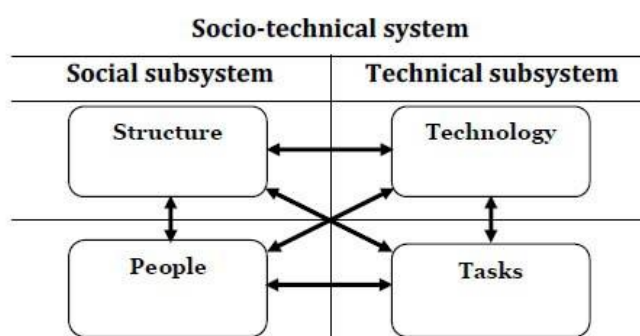


Fig. Socio technical theory

Socio-technical systems tend to humanize jobs by redesigning practices, and this is yet another reason to study employees' attitude under this framework as the employees must contribute to the design process in order to mould how the socio-technical system can be used in enhancing work performance (Ghaffarian, 2011). Again, since such a system can promote flexibility, it is pertinent to also examine the level of autonomy that can be afforded employees that carry out their job functions using socio-technical frameworks.

The conceptual design for this study has been developed to show the complex teleworking environment that entails both social and technical subsystems. The social subsystem concerns the structure in place at the organizations that the employees are answerable to, and it is assumed that whatever decisions made by the organizations will have an impact on the employees and vice versa. The technical subsystem, on the other hand, is about the teleworking system provided for the employees to carry out their job functions. Shedding more light on the conceptual model; the organizational structure is measured by managerial support while employees' disposition towards working remotely is evaluated by variables such as mindfulness, attitude, job autonomy, and job satisfaction. The effectiveness of the teleworking system is assessed by perceived usefulness, with some attention given to the likely impact ease of use might have on how employees view the (teleworking) system.

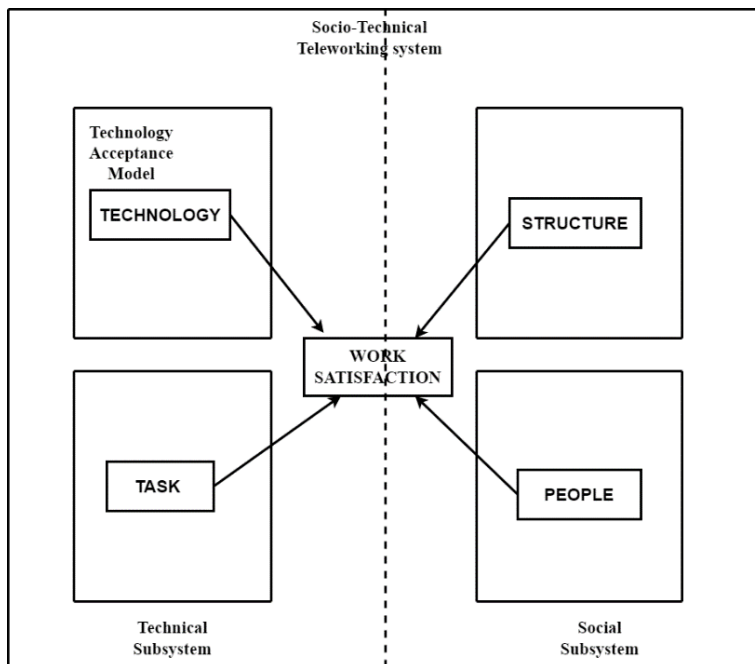


Figure 1: Conceptual Model combining Socio-technical theory and Technology acceptance model

((Bentley et al., 2016) ; (Ahmady et al., 2016); (Ghosh & Sahney, 2013); (Maier et al., 2019))

2.5 Formulation of hypotheses:

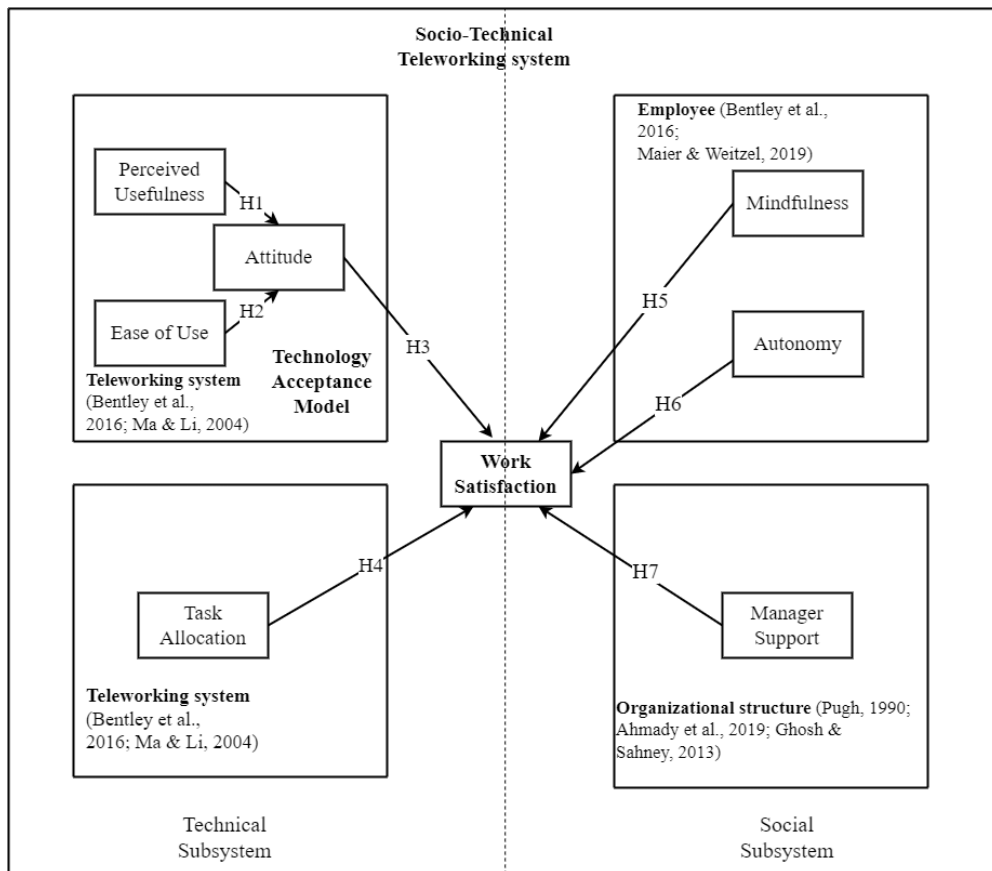


Figure 2: Research Model based on conceptual design combining Technological acceptance model with Socio-technical theory ((Bentley et al., 2016) ; (Ahmady et al., 2016); (Ghosh & Sahney, 2013); (Maier et al., 2019))

Hypothesis 1: Attitude mediates the relation between **Perceived usefulness** and job satisfaction

The provision of the required technology to carry out telecommuting tasks at an organizational level may not be enough as such innovations must be put to judicious use if competitive advantage is to be attained (Kpolovie & Awusaku, 2016). Because perceived usefulness of technological supports has been reported to have correlation with a user's behavioural disposition [towards such support] (Venkatesh & Davis, 2000), there is a tendency that the level of satisfaction will get affected in some ways.

Hypothesis 2: Attitude mediates the relation between **Ease of use** of teleworking system and job satisfaction

It is expected that the predisposition and/or attitude a teleworking will be affected by the ease of use of available technology, and could ultimately impact the level of job satisfaction derivable from such setup. Surendran & others (2012), highlighted that perceived ease of use is one of the two elements of technology acceptance model – which is of tremendous importance in the teleworking framework – and it is the extent to which individuals find a certain technology simple to use (Vahdat et al., 2021) .

More so, it is very possible that users of a proposed technology show some degree of averseness in instances where they find it difficult to utilize. Summarily, a technology that is perceived to bring appreciable convenience will be embraced by employees and this could eventually encourage increased job satisfaction level and vice versa.

Hypothesis 3: There is a significant positive association between attitude and job satisfaction while telecommuting

Attitude is regarded as an important psychological element that determine job satisfaction or dissatisfaction among employees in an organization (Zhu, 2013). Teleworkers, especially those within the information technology sector, have been found to have positive attitudes towards working remotely (Bentley et al., 2016). This has occurred, employee turnover rate declined considerably thus reflecting the degree to which teleworkers are satisfied with doing tasks from a remote workspace.

Hypothesis 4: Task allocation in teleworking setting than usual office setup has negative impact on job satisfaction

Task allocation, which is a function of work intensity, is yet another variable of consideration when evaluating the teleworking environment. Looking at the large volume of work that evolved with the application of teleworking during the COVID-19, there is a high tendency of employees' job satisfaction being negatively impacted. In the study conducted by Kolakowski et al.(2020), it was found out that some employees had to deal with unmanageable workload while working from home during the pandemic. Furthermore, it has been reported that increased work intensity arising from teleworking can have a detrimental effect on the well-being and stress levels of employees (Eurofound, 2017). According to Golden (2012), and Hartig et al., (2007) , working extensively via a teleworking setup can lead to reduce level of job satisfaction and even cause employees to be exhausted often (Kolakowski et al., 2020).

Hypothesis 5: Mindfulness positively impacts job satisfaction.

Dane (2011), posited that mindfulness centres on employees concentrating on specific tasks while they are in the “here and now”. It is about making concerted efforts towards beating distractions to achieve a goal or objective. Mindfulness hinges on employees being deeply immersed in a task thus promote employee engagement (Gallup, 2017), and this has been found to enhance job satisfaction. Rayton, B.A. & Yalabik (2014), described attitude within the context of employee morale which triggers the willingness of employees to execute tasks amidst increased level of job satisfaction.

Hypothesis 6: There is a significant positive association between job autonomy and job satisfaction while telecommuting

Autonomy, with respect to the execution of organizational/work functions, is described as “the degree to which a job offers considerable liberty, giving free-hand and choice to the individual in scheduling the work and also defining the means to achieve the tasks” (Naqvi, S.M.M., Ishtiaq, M., Kanwal, N. & Ali, 2013). According to Kelliher & Anderson (2008), there is an increased sense of autonomy that arises from the flexibility of working remotely. Autonomy is emboldened as employees take charge of the frequency of their work, putting in efforts as they deem fit (Bailey & Kurland, 2002). This consequently result in increased employee job satisfaction (Gajendran, R.S. & Harrison, 2007). The exercise of control that comes with job autonomy, particularly over the schedule of work activities and their performance could have an impact on the way tasks are allocated (Breugh, 1999). Job autonomy, in the first instance, connotes the freedom and/or discretion employees act on to execute a job function in the way they deem fit (Breugh, 1999). With job autonomy allowed within an organizational framework and teleworking environment, an employee has tremendous influence on his/her work schedule as well as procedures that are required to complete the task (Yang, L., Emerson, D.J. & Brink, 2016). As such job autonomy is in place, there is a higher tendency for the employees to have stress-free sessions and this could ultimately lead to increased satisfaction (Saragih, 2011).

Hypothesis 7: There is a significant positive association between Manager Support and job satisfaction

Manager support is another factor that is posited to influence the level of employee job satisfaction, and this may be premised on the extent to which such support promotes reduces turnover intentions, lessens work-related stress, work-family balance (Fonner, K.L. & Roloff, 2010). According to Anderson et al. (2015) & Contreras et al. (2020), managerial support makes workflow easy for employees within the teleworking environment. More so, manager support is reported to reduce work-related stress hence increasing the level of employee job satisfaction (Babin & Boles, 1996).

Chapter 3: Research Methodology

A quantitative method was adopted in this study as this methodology provides details on an observed parameter by generating numerical data which would then be statistically analysed (Saunders et al., 2009). The quantitative method allows researcher to derive more objective results from a relatively large sample size (Hartman, 2004). The inherent objectivity of quantitative research is better appreciated in the situation whereby a research study is centred on the evaluation of casual relationships (Pervez & Ghauri, 2005). Besides the fact that quantitative research can be of immeasurable benefit in assessing the general characteristics of a big population, it is also useful when attempting to explain a phenomenon from a comprehensive angle (Barbour, 2008). Additionally, with this method of research, the generalization of the information concerning the population at large can be eventually derived (Silverman, 2005). As per this present study, employing a quantitative research method provides the leverage for measuring the impacts of various independent variables on the dependent, and developing the discussion, upon statistical analysis.

3.1 Sample selection

There are different methods used in selecting the sample for research, and in this study, a probability sampling technique was used. This technique presents equal chance of selection to every element of a particular study population (Cavana et al., 2001). As such, there is little or no room for biases in the selection of the study participants who were provided with questionnaire having the indicator variables used in measuring the dependent and independent variables.

3.2 Sample size

There are various ways through which researcher check the suitability of the sample size utilized in a study. In this present study, power analysis has been employed; this method was chosen as it puts the model structure, projected level of significance and the estimated effect sizes into consideration (Marcoulides, G.A. & Chin, 2013). G*Power 3.1.9.7 software developed by UCLA Statistical Consulting.

The minimum total sample size regarded as acceptable was found to be 89. The sample size for this study is set at 209; this value is well above the minimum size obtained through G Power calculation thus the suitability of the number of participants required to run a valid evaluation is guaranteed. Among 209 participants only 154 participants were asked to perform teleworking, and 55 participants selected “NO” as they were not performing teleworking and were redirected to the end of the survey.

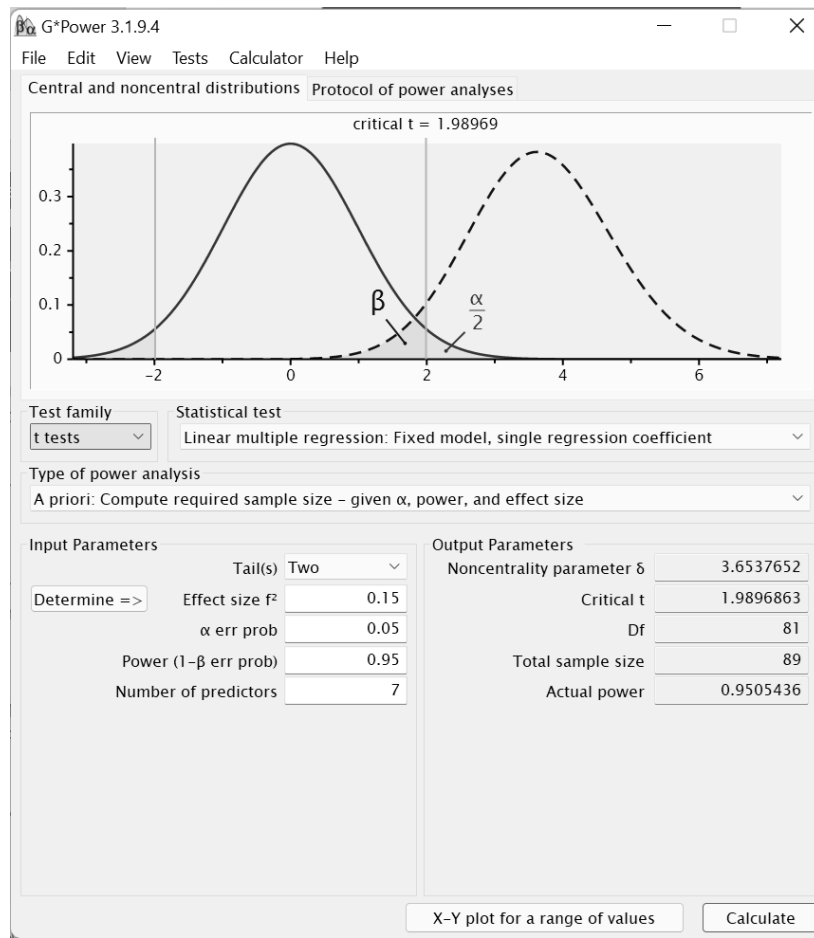


Figure 3: G Power calculation indicating minimum sample size.

3.3. Data collection

A comprehensive questionnaire, with indicators to measure variables, was designed for the purpose of data collection, and the responses so generated are termed 'primary data' (Creswell, 2013). The questionnaire was made available to prospective study participant through online survey which is reported to be a cost-effective and time-saving data collection method when considerably large sample size is involved (Zikmund, 2003). Moreover, online survey allows the participants to have enough time to consider their options – without pressure or interference from the researcher – and sustain or boost their confidence level (Zikmund, 2003).

3.4 Questionnaire design

As emphasized earlier, a questionnaire with close-ended items (that is, indicators) was used to assess the responses of teleworkers on variables such as attitude, autonomy, perceived usefulness, mindfulness, and satisfaction – the first five (variables) are the independent variables while the last one (satisfaction) is the dependent variable. Questionnaires are usually recommended when there is a need to gather data from a large number of study participants (Rowley, 2014). Another advantage of using questionnaire is that it assures of high response rate, especially when survey is used (Gill, J. & Johnson, 2010). The questionnaire for the study proper had a total of 21 items that were further subdivided into 6 categories to measure each of the variables. Each of these categories has 3 indicators except for the ones that were designed to measure attitude and mindfulness which has 4 indicators. Every indicator on the questionnaire was scored using the Likert scale (1 – 7) where 1 = Strongly Disagree; 2 = Disagree; 3 = Somewhat Disagree; 4 = Neither Agree nor Disagree; 5 = Somewhat Agree; 6 = Agree; 7 = Strongly Agree (*Appendix I*).

It should be noted that the questionnaire used was developed in such a way that allowed the researcher to separate respondents that had not utilized teleworking innovations in carrying out organizational tasks during the COVID-19 pandemic. Owing to this, the researcher was only able to use 154 completed questionnaires out of a total number of 209 (questionnaires) obtained, 55 respondents had selected “NO” when asked if their organizations deployed teleworking environment. 30.32% participants were working from home since more than 8 months and minimum requirement to attend this survey was 2 months or more. 60% of the participants had received hardware from their organization to perform the telework. 56.77% participants received the compensation from their organization for the Internet usage.

Chapter 4: Data Analysis

4.1. Structural Equation Modelling

The data gathered from the survey was analysed using path least squares structural equation modelling (PLS-SEM) through the SmartPLS 3.0 Software package – this was developed (Ringle, C.M., Wende, S., & Becker, 2015). The PLS-SEM method presents researcher with the avenue to apply casual prediction to structural equation modelling as it highlights the structures that give casual explanations for the prediction emanating from the evaluation of statistical models (Haneir et al., 2019). PLS-SEM is one of the approaches used in assessing structural equation modelling (SEM) which is a method of multivariate data analysis (Haenlein, M. & Kaplan, 2004). PLS-SEM method has been widely utilized by researcher due to the benefits it offers when evaluating complex models having multiple constructs, indicator variables and structural paths with no assumptions made on the distribution of data (Haneir et al., 2019). In PLS-SEM, total variance is employed in measuring the parameters in view (Sarstedt et al., 2017). Generally, this method is used in the instances where a researcher wishes to analyse data by assessing hypothetical framework from through a predictive approach, as well as when there is more than one measured construct in a path model (Haneir et al., 2019). It is on this basis that it becomes justifiable to adopt PLS-SEM in this present study where the researcher aims to analyse the complex organizational environment – involving social and technical systems – with focus on organizational structure and teleworking subsystem. With this method, the researcher can effectively evaluate the relationship between hypothesis testing and prediction thus allowing the validation of results (Shmueli, 2010), which lays the foundation for detailed discussion as the researcher gains comprehensive understanding of the concepts being studied.

4.2. Analytical tests

Series of tests were run through the PLS algorithm and bootstrapping options available in SmartPLS 3.0. Bootstrapping is valuable for the estimations of point variance and data distribution, as well as testing the significance through a resampling technique (Carson, 2016). On the other hand, partial least squares algorithm, which is run consequent upon the development of a model, makes it possible to conduct analyses bordering on validity, regression, and effect size to mention just a few.

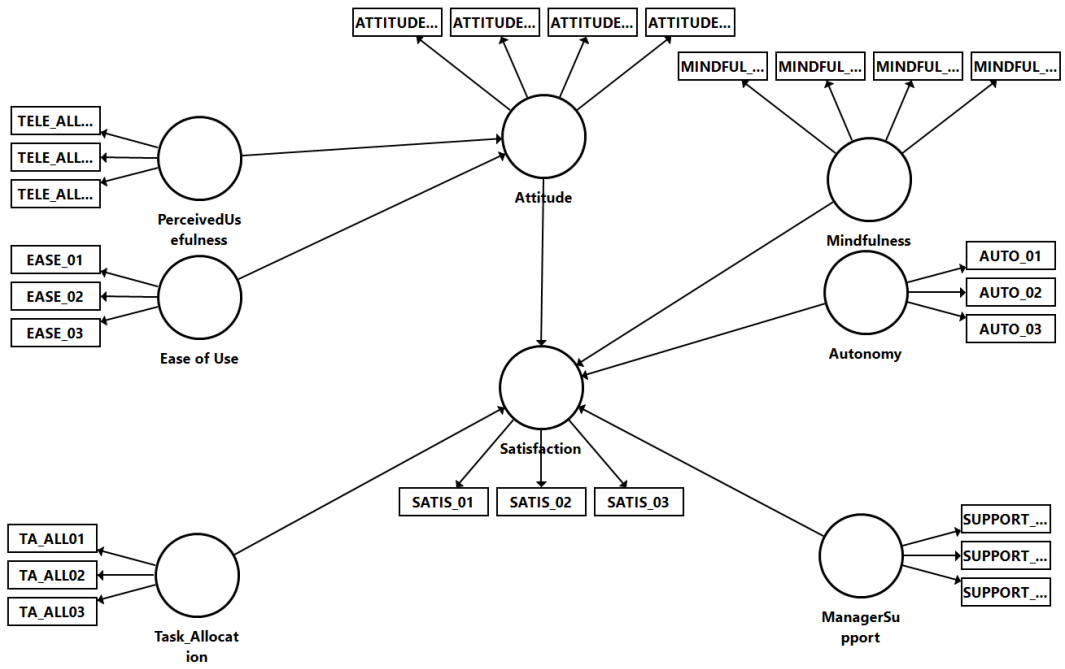


Figure 4: Model design in SmartPLS 3.0 based on conceptual design and research model

Chapter 5: Results

The results and findings from the analyses conducted will now be discussed in this section, and discussion shall follow suit.

5.1 Path coefficient

Path coefficient is normally analysed for the purpose of evaluating the structural model of the partial least squares model. Rather than depending on the distribution of data, it uses squared multiple correlations (R^2) (Shanmugapriya, S. & Subramanian, 2015). This does not mean path coefficient should be seen in the same vein as correlation coefficient (Murthi, 2016). Besides, path coefficient enables a researcher to decipher the extent to which a path model fits the relationships that have been hypothesized beforehand.

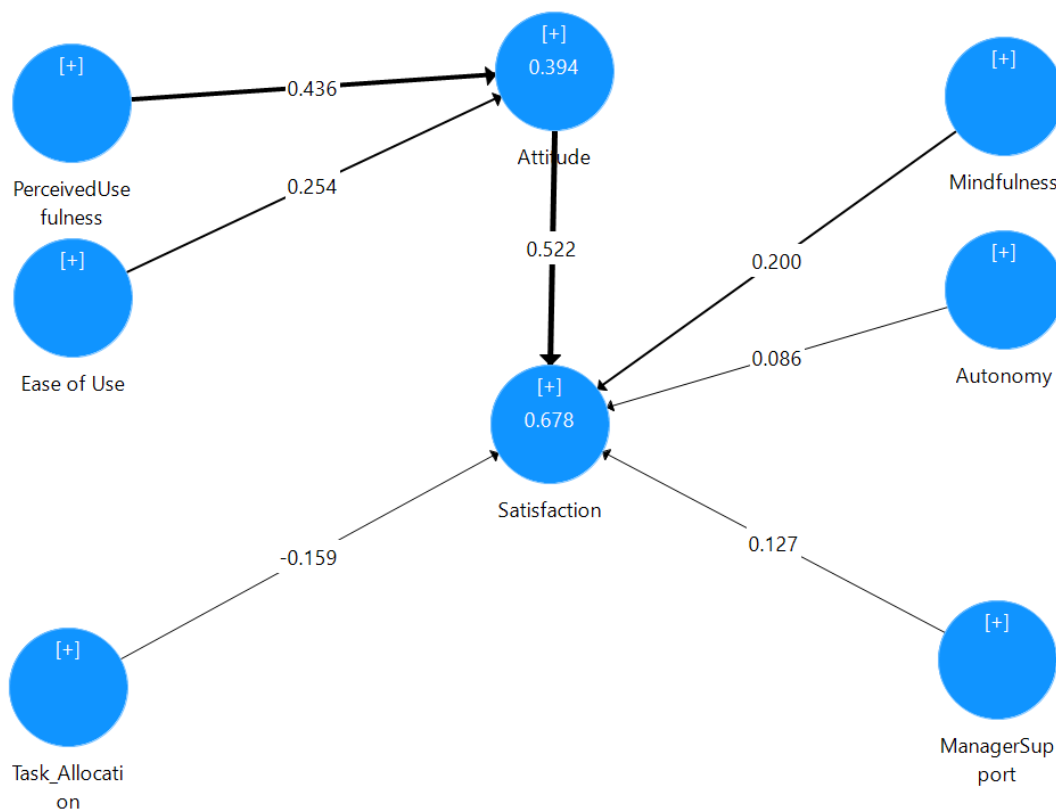


Figure 5: Path model along with the path coefficients (for inner model) and outer loadings (for outer model) in smartPLS 3.0.

5.2 Validity

The validity of the construct in this research was tested using three different measurement parameters – composite reliability, Cronbach’s alpha, and Average variance extracted. The need to run validity and reliability tests is informed by the high correlations and interchangeability that are associated with the indicators used in measuring the endogenous variables (Haneir et al., 2019).

Composite reliability is a form of construct validity used in evaluating the internal consistency of a scale (Netemeyer, R., Bearden, W. & Sharma, 2003). Composite reliability can have a value of between 0 and 1, with 0.6 or greater being regarded as ‘acceptable’ (Höck & Ringle, 2006); this implies good reliability. Cronbach’s alpha is another measurement model for testing the internal reliability of a scale – it is notably a more conventional measure. Like composite reliability, Cronbach’s alpha is also scored between 0 and 1, with 0.8 and above connoting good scale while 0.70 is regarded as ‘acceptable’ (Carson, 2016). The last validity measurement model is the Average variance extracted (AVE) – another form of construct validity – which tends to be more all-encompassing as it is using in testing both convergent validity and discriminant validity (Carson,2016). In other words, Average variance extracted can give an insight into the relationship that exists between constructs, as well as providing details that confirms the non-existence of such relationships – in other cases. For AVE, a value of 0.5 and above is considered to confirm the validity of a model (Höck & Ringle, 2006) .

Table 1: Construct for measurement model (with square root of AVE in bold).

	1	2	3	4	5	6	7	8
Attitude	0.85							
Autonomy	0.41	0.76						
Ease of use	0.53	0.47	0.87					
Manager support	0.51	0.42	0.38	0.89				
Mindfulness	0.71	0.39	0.48	0.59	0.78			
Perceived usefulness	0.59	0.47	0.63	0.57	0.54	0.85		
Satisfaction	0.77	0.42	0.53	0.55	0.67	0.68	0.91	
Task allocation	-0.07	0.08	-0.05	-0.03	0.03	-0.06	-0.18	0.79
Cronbach’s Alpha	0.87	0.63	0.85	0.88	0.79	0.82	0.90	0.77
Composite Reliability	0.91	0.80	0.91	0.92	0.86	0.89	0.93	0.83
Average Variance Extracted	0.73	0.58	0.77	0.80	0.61	0.73	0.83	0.63
Mean	0.73	0.57	0.77	0.80	0.61	0.73	0.83	0.57
Standard Deviation	0.02	0.035	0.03	0.02	0.03	0.03	0.02	0.14

Table 2: Heterotrait-monotrait ratio

	1	2	3	4	5	6	7
Attitude							
Autonomy	0.54						
Ease of use	0.60	0.64					
Manager support	0.58	0.56	0.44				
Mindfulness	0.82	0.55	0.58	0.67			
Perceived usefulness	0.70	0.67	0.75	0.67	0.65		
Satisfaction	0.87	0.55	0.61	0.61	0.76	0.79	
Task allocation	0.15	0.15	0.11	0.05	0.26	0.12	0.17

Table 3: Mean, STDV, T-Values, P-values.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Attitude -> Satisfaction	0.522	0.518	0.076	6.834	0
Autonomy -> Satisfaction	0.086	0.091	0.061	1.41	0.159
Ease of Use -> Attitude	0.254	0.258	0.082	3.083	0.002
ManagerSupport -> Satisfaction	0.127	0.13	0.069	1.841	0.066
Mindfulness -> Satisfaction	0.2	0.196	0.083	2.426	0.016
PerceivedUsefulness -> Attitude	0.436	0.434	0.073	5.94	0
Task_Allocation -> Satisfaction	-0.159	-0.15	0.061	2.588	0.01

Table 4: Values indicates the outer loading of each Indicators.

	Attitude	Autonomy	Ease of Use	ManagerSupport	Mindfulness	PerceivedUsefulness	Satisfaction	Task_Allocation
ATTITUDE_01	0.875							
ATTITUDE_02	0.793							
ATTITUDE_03	0.837							
ATTITUDE_04	0.91							
AUTO_01		0.769						
AUTO_02		0.751						
AUTO_03		0.764						
EASE_01			0.809					
EASE_02			0.914					
EASE_03			0.913					
MINDFUL_01					0.772			
MINDFUL_02					0.567			
MINDFUL_03					0.867			
MINDFUL_04					0.887			
SATIS_01							0.902	
SATIS_02							0.917	
SATIS_03							0.918	
SUPPORT_01				0.913				
SUPPORT_02				0.914				
SUPPORT_03				0.865				
TA_ALL01								0.832
TA_ALL02								0.661
TA_ALL03								0.886
TELE_ALLOW01						0.833		
TELE_ALLOW02						0.863		
TELE_ALLOW03						0.878		

Table 5: Total effects results.

	Attitude	Autonomy	Ease of Use	ManagerSupport	Mindfulness	PerceivedUsefulness	Satisfaction	Task_Allocation
Attitude							0.522	
Autonomy							0.086	
Ease of Use	0.254						0.133	
ManagerSupport							0.127	
Mindfulness							0.2	
PerceivedUsefulness								
s	0.436						0.228	
Satisfaction								
Task_Allocation								-0.159

5.3 Discussion

The researcher has been able to evaluate the casual relationships that exist between the endogenous independent variables and endogenous dependent variables and found out some interesting results. But before delving into this proper, it is important to stress that the constructs designed for this study reflect highly notable degree of reliability and validity, with composite reliability values ranging between 0.80–0.93 and AVE ranging from 0.580–0.833 – all these values are very well within the acceptable range. In essence, the integrity of the model is ascertained.

All the hypotheses tested showed significant positive result except managerial support, autonomy, and task allocation. More so, dwelling on the path coefficient, one will realize that despite two of the three central element – that is, managerial support, autonomy, and task allocation– not having significant influence on job satisfaction, they still brought about some changes. For one, the finding shows that every 100% increase in autonomy, employee job satisfaction is bound to increase by about 8%, while a 100% rise in managerial support causes job satisfaction to rise by around 13%. Employees’ attitude is observed to be the most impactful variable that drives job satisfaction in this research as a 56% rise [in job satisfaction] is realized among the teleworkers where positive attitude subsists. This corroborates the findings of the study conducted by (Ahmad et al., 2010), and one can safely infer that the injection

of positive attitude into the execution of tasks within a socio-technical system is capable of boosting job performance as employees are satisfied with their jobs. To have a more comprehensible evaluation of the association between attitude and job satisfaction, it is needful to examine the mediatory role played by variable attitude for such factors as perceived usefulness and ease of use. As it stands, it was seen that these two variables significantly mediated the relationship between attitude and job satisfaction. A tenable explanation for this is that positive attitude can be spurred in the instances where employees perceive a technology to be useful in achieving their work objectives. A contrary event can cause the build-up of stress among the employees, and such scenario could eventually influence the employees' attitude in a negative way (Nwosu et al., 2018) .

While the observation that autonomy has no significant effect on the level of employees' job satisfaction in this study does not agree with what was found in the work of Thompson & Prottas (2006), where it was pinpointed that job satisfaction increases proportionately with autonomy – it is necessary that one does not interpret the result in isolation. This is especially since the volume of work allocated to employees working through socio-technological system during the COVID-19 pandemic seems to be exhaustive to the point of having a negative impact on the job satisfaction level of the employees. So, even though the teleworkers might have been allowed some degree of freedom while carrying their duties, the high job demands that are feasible during the period, made the impact somewhat inconsequential with respect to job satisfaction. More notably on task allocation, a significantly negative association was observed between task allocation and job satisfaction with a path coefficient of -0.109; this means that for every 100% increase in task allocation, job satisfaction will decrease by around 16%. From this observation, it can be inferred that most of the teleworkers that were active during the pandemic, had loads of work on their hands, and this ultimately affected their job satisfaction level. Multiple studies have shown that increasing workload can be detrimental to the level of satisfaction employees derive from their jobs (Butt & Lance, 2005). In fairness to the organizations, however, it is quite understandable since some of these organizations may not have had the whole of their workforce partaking in the remote work environment thus placing great demand on those that were available. Notwithstanding, such excessive work demands could eventually result in increasing job-related stress and workplace conflicts which may negatively affect employees' job satisfaction (Brewer, E. & McMahan-Landers, 2003).

Another interesting aspect worth buttressing on is the fact the teleworkers did not get adequate managerial support, and this reflected the level of job satisfaction that was attainable. The finding here is somewhat in agreement with (Raza et al., 2017) that of where management support, through human resource activities, was observed to be nearly non-existent, and this increased the tendency of the employees to become dissatisfied with their job. Nonetheless and about this study, one needs to exercise some caution before drawing a conclusion as the teleworking setup feasibility with the disruption brought by the pandemic.

At this point, it is not out of place to add that, due to the limited level of managerial support, most of the employees engaged in telecommuting functions were such that had considerable interest in what they do – organizational tasks. Though the impact of reward system was not studied in this research, it is very likely that the motivating factors that drove such interests and/or output were more intrinsic than extrinsic – since managerial support had a non-significant relationship with job satisfaction. Variables such as income, job relevance, fringe benefits and promotion opportunities have been highlighted as notable motivating factors that drive employees’ job satisfaction (Nguyen, A.N., Taylor, J. & Bradley, 2003). The moderating effect of autonomy on the relationship between task allocation and job satisfaction was also observed to be significantly positive. This shows that job autonomy, which is primarily about freedom and control over work schedule and execute, can help in reducing the negative impact of task allocation – as noted in this study – on job satisfaction thus bringing about a more positive outcome. The moderating effect of autonomy on the relationship between role ambiguity – which is an aspect of job autonomy – and job satisfaction has also been reported by (Terason, 2018); the author asserted that managerial assignment could determine the direction of the association between task allocation satisfaction.

5.4 Theoretical and practical implications

Studies of this sort are valuable in understanding the concept of the socio-technological working environment and how employees fit into the system, especially in the event of crisis. More significantly, the research-based findings will further enrich the bank of knowledge around the subject matter and even set a viable foundation upon which models can be designed or repurposed to drive the effectiveness of the system. As per the practical implications, the findings from this study can be considered when integrating teleworking functionality into the setup of an organization, and such moves will inspire managements to be better prepared to face crises and unplanned eventualities – like the COVID-19 pandemic echoed – in the future hence paving avenue for organizational efficiency. So, while organizations are focused on ensuring that the technical needs – like computer hardware, internet access, modem – of the system are guaranteed, they will also pay heed to the social aspects [encompassing managers and employees] since none of the two subsystems – technical and social subsystems – can exist on its own in a teleworking environment. By the way, teleworking is hinged on sub-optimization wherein one subsystem is integrated into another (subsystem) for the propagation of an operation (Hendrick & Kleiner, 2002). Moreover, since the management will need to look beyond only employees’ attitude to improve job satisfaction – as the significantly positive impact of employees’ attitude may even be short-lived – it is important that other aspects be duly investigated. This may mean establishing better and efficient communication among all levels of teleworkers – from top-level managers to employees at the lower cadre. In fact, the satisfaction of employees in a teleworking environment is posited to be boosted by the collaborations that are established within socio-technological subsystems in place (Bayrak, 2012). Going forward, and as we are already observing, the

manner with which organizational activities are being performed has largely tilted towards teleworking as more and more organizations are embracing the concept – aftermath the incidence of COVID-19. It, therefore, behoves that manager overseeing activities within the teleworking environment have appreciable understanding about how the system works and be opened to adopting or embracing new innovations that will advance the prompt execution of job functions. As a result of this, organizations will not be short of integrating support system that are easy to use into their telecommuting framework. Again, organizations should commit more efforts towards occasionally training and involving more of the employees in their workforce in teleworking activities. This measure will be effective in reducing the work burden on the few teleworkers available, and even aid in increasing job performance at individual and organizational levels. Over and above all, besides this study being a credible addition to the body of knowledge on the study of job satisfaction within the teleworking environment, it can also serve as a template or archetype upon which larger studies on the topic can be based.

5.5 Summary of hypothesis testing

The table below shows the result from the testing of hypotheses after analysis was run using 0.05 as the significance level for the test. In the instance where the reported level of significance is greater than 0.05, the null hypothesis is accepted, otherwise, it is rejected.

Table 6: Research hypothesis status after the empirical results have been analysed.

Code	Research hypothesis	Status
H1	Attitude mediates the relation between Perceived usefulness and job satisfaction	Confirmed
H2	Attitude mediates the relation between Ease of use of teleworking system and job satisfaction	Confirmed
H3	There is a significant association between attitude and job satisfaction while teleworking	Confirmed
H4	More task allocation in teleworking setting than usual office work setup can impact negatively on job satisfaction	Not confirmed
H5	There is a significant association between mindfulness and job satisfaction	Confirmed
H6	There is a significant association between job autonomy and job satisfaction	Not confirmed
H7	There is a significant association between Manager Support and job satisfaction	Not confirmed

5.6 Conclusion

Teleworking has proven to be highly valuable for the purpose of pushing business functions through, but the satisfaction of employees at the forefront appeared to have been given little or no attention as seen in this study which is centred on the Indian telecommuting sector. The onus seems to fall more on the shoulder of the teleworkers than the organizations themselves as we observe that among autonomy, attitude and managerial support, the attitude is registered as the most significant factor impacting the job satisfaction. Task allocation is not impacting significantly on job satisfaction. In view of this and coupled with the fact that teleworking appears to have come to stay, it is necessary that organizations start re(designing) a structure and work culture that would help them leverage the opportunities therein – while carrying their entire workforce along. This may, on the long run, determine how well organizations will be able to build sustainable business which would be hinged on employees' performance.

5.7 Limitation and future work:

This research was conducted during a time that many organizations were yet to fully have a well-defined socio-technological system to attend to their teleworking needs. It was more of a transitional phase as management teams took reactionary – rather than proactive – measures towards ensuring operational continuity. As such, the events obtainable might have had some impacts on the responses provided by the respondents. In view of this, other studies may be required to further strengthen and/or justify the findings of this present study.

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Appendix I

QUESTIONNAIRE

Objective: Questionnaire is developed to study the factors impacting teleworking Employee's job satisfaction during COVID-19 in India-2020-2021.

Direction: Please check (✓) and rate yourself based on your experience in Teleworking during COVID-19 Pandemic using following scale.

Screening question:

Is teleworking requested by your organization during covid-19 pandemic?

YES

NO (navigates to the end of the survey)

Q1. For how many months you are teleworking from home?

2 months or less

3

4

5

6

7

8 or more

Q2. Does your company provide hardware for telework?

YES

NO

Q3. Does your company provide some compensation for Internet used for teleworking?

YES

NO

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

A. MEASURING TASK ALLOCATION	1	2	3	4	5	6	7
1. I get more tasks allocated to me while telecommuting than what I get when working at the office.							
2. When I add it all up, I work more total hours when I telecommute than when I work in the office							
3. The tasks usually allocated to me makes me work more hours in telecommuting than in office							
B. MEASURING SUPERVISION (AUTONOMY / FREEDOM)							
1. There is a lot of freedom in doing my job while telecommuting							
2. My manager allows me to organize my work during telecommuting							
3. The company framework gives me enough autonomy for my telecommuting activities							
C. PERCEIVED USEFULNESS							
1. When I have a technology-related query from home, someone in the organization is always accessible							
2. The technology is effective and reliable to turn out work as fast as possible							
3. The technology that is used for one's work is flexible to keep up with change arising out of job requirements							
D. MEASURING SATISFACTION							

1.	I feel very satisfied working with the telecommuting technologies							
2.	I find enjoyment in teleworking							
3.	I am satisfied with my work efficiency in telework							
E.	MEASURING ATTITUDE							
1.	I am enthusiastic about working remotely							
2.	I am committed with telecommuting							
3.	I prefer to continue in telecommuting rather than going back to office							
4.	I try to find new solution whenever things are not functioning well while telecommuting							
5.	I feel motivated because of the telecommuting							
F.	MEASURING MINDFULNESS							
1.	I get immersed in my job while telecommuting							
2.	I get carried away while carrying out a task on the telecommuting technology/device							
3.	The ambience in which I remotely work is conducive and without distractions							
4.	It is easy for me to concentrate on what I am doing while telecommuting							

