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Technology Adaptation and Social Support affecting Workplace Resilience: IT Employees in Bangalore

Chinmai Nandini S*

Abstract

The purpose of this study is to investigate the effects of technological adaptation and social support on resilience at the workplace among IT employees in Bangalore. Employee resilience now depends on their ability to adjust to new technologies as they continue to change the workplace. Various factors, including support from supervisors, peers, and family, influence this adaptation process. The purpose of this study is to examine the role of technology adaptation and social support in producing resilience at the workplace and to provide a conceptual framework that will be used in future studies around this topic. For the study, few research tools were applied, they were correlation and linear regression analysis, it was conducted to evaluate the relationship between these variables. The findings revealed no significant correlation between technology adaptation and resilience, while family support was found to positively influence resilience. These results have more scope for further exploration of the complex dynamics between technology, social support, and resilience, providing effective information for organizations to implement change in a effective manner.

Keywords: IT employees, technology adaptation, social support, family support, workplace resilience

* CHRIST (Deemed to be University), Bengaluru, Karnataka, India; chinmainandini.s@gmail.com

Introduction

Ideas like digitalization, big data, artificial intelligence, and analytics are changing how industrial operations are conducted in the Fourth Wave of Industrialization. (McKinsey & Company, 2022). When comparing Industry 4.0 with previous versions we can see that emphasizes is on efficiency, interconnectivity, and rapid adaptation to the fast-changing global environment, and 4.0 is also known for transformation and disruption with AI reshaping job roles, profiles and leading to organizational restructuring. However, growth and progress is always looked upto positively, but this shift is also creating fear of job loss, robots replacing humans, which hinders AI adoption (Ambati et al., 2020). Accepting changes and adapting, helps in sustenance and constant growth of the organizations. So employers who have embraced technology were better equipped to manage challenges like the COVID-19 pandemic, maintaining functionality and minimizing losses (Oikonomou et al., 2023). This ignited the need for digital skills and adaptability among employees, highlighting the importance of resilience in unpredictable market conditions (BGC, 2020). Popular framework The Technology Acceptance Model (TAM), which is a foundation for understanding technology adoption, emphasises perceived usefulness and ease of use, clearly states that technology is to support humans not to remove them (Marangunić & Granić, 2014; Davis, 1989).

TAM has been widely used in a variety of industries, including marketing, e-commerce, and information systems, with differing outcomes depending on the situation. For instance, in e-learning, perceived ease of use was less significant (Al-Gahtani, 2016), while healthcare technology has less influence on the adoption of recent technology (Kummer, Schäfer & Todorova, 2013). Being the oldest framework applied in the organisation, it still has criticism for the self-reported measures, which lead to bias (Venkatesh & Davis, 2000). Nevertheless, TAM is still used as one of the best technologies in a few countries like the Netherlands and India. These countries have high reliability on this technology (Dhagarra et al., 2020; Singh, Sinha & Liébana-Cabanillas, 2020).

Technology is unpredictable, for which the only solution is to be resilient, which defines as the ability to remain updated, composed and adaptive in the face of adversity, and is critical in navigating

organizational challenges (HBR, 2016). As we are growing in years and adapting new trends and technology they must invest in resilience-building strategies, including adaptive coping skills and technology training, to foster employee well-being (Ter et al., 2016). Research indicates that workplace resilience and technology acceptance are positively correlated, particularly for small and medium-sized businesses (SMEs), which should spend money on technology training to improve resilience (Ismail et al., 2023). Resilience is not just standing firm in difficult situations, but it slowly influences an individual's personal traits and social support, with studies showing gender and age differences. For instance, as per study it is reported that men tend to exhibit higher resilience due to stronger environmental mastery, while social support during the pandemic significantly boosted resilience for both genders (Aggarwall, 2022; Boardman et al., 2009; Ojo et al., 2021).

Challenges like technology obsolete will impact the society as whole, for which employers have to make sure workplace problems related to technology are taken care by assisting the individuals. Positive feedback from colleagues and supervisors improves job satisfaction and stress management (Mikkola et al., 2018). Research also highlights that support to be having clarity on conceptualization of social support in the workplace, emphasizing its structural and functional aspects (Leow & Leow, 2021). Research has shown that social support greatly boosts resilience, especially in new employees, by lowering stress and enhancing performance (Galanis et al., 2022). However, the specific types of support most effective in promoting resilience and technology adaptation remain underexplored (Jolly et al., 2020).

This research combines TAM, resilience, and social support frameworks to evaluate the impact of technology adaptation on employee wellbeing and organizational approaches in the context of Bangalore's IT sector. As a hub of technological innovation, Bangalore presents unique challenges for employees who must continuously adapt to evolving technological demands. Although previous research has established the importance of social support in facilitating technology adaptation, this study will explore the types of support that are best suited to support resilience and adaptability. In doing so, the research will provide organizations

with practical evidence on designing interventions for facilitating employee health at a time of rapid digitalization.

This study makes a contribution to the body of knowledge on workplace resilience, technology adaptation, and social support through the analysis of their interconnections. The study is also practically useful in providing implications for organizational policy that may improve employee resilience and productivity. The research fills a considerable research gap and creates avenues for future investigation into how social support moderates the relationship between technology adaptation and resilience and its practicality for developing workplaces that are increasingly supportive and resilient. The growing demand for skill upgrading in organisations also reaffirms the importance of social support in reducing stress and enhancing resilience, particularly during employees' technology adaptation process.

It has been demonstrated that Technology Acceptance Models (TAM) combine social support and resilience in organisational settings, where resilience is a predictor of successful technological change adaptation (Alam et al., 2023). When discussing about social support, trust plays a major role in relationships, which mediates (Molino et al., 2020). Technology do bring along the resistance from older generation also experience is one factor, which looks upto adopting ICT underscore the importance of understanding how factors like age and experience influence resilience (Wang et al., 2017; Fernández-Díaz, 2021). This study looks at these factors to fill in the gaps about how social support affects resilience and adaptation to technology. It aims to give useful advice on building strong workforces that can handle tech changes.

Research Objectives

O1: To determine that technology adaptation positively affects workplace resilience.

O2: To determine that both technology adaptation and social support affect workplace resilience.

O3: To determine which source of social support (family, friends or supervisor) influences workplace resilience the most.

Research Method

This exploratory research is a multiple linear regression study. The independent variable in the study is the technology acceptance and social support and the dependent variable is the workplace resilience. Data is collected from various individuals in the same duration of time to measure the scores of all the variables from IT employees from 20 – 60 years of age in Bangalore. The experiment uses purposive sampling in order to determine the participants that will take part in the study. Data from the sample is collected through purposive sampling where data is collected based on inclusion and exclusion criteria. Further, all individuals must not report a history of mental health conditions because resilience is negatively correlated with indicators of mental ill-being, such as depression, anxiety, and negative emotions.

Interior criteria:

- IT employee working in Bangalore
- 20-60 years of age
- At least one year experience at work

Exterior criteria:

- History of mental illness
- Interns
- People not coming under the binary gender category

In order to carry out this research study, participants will be sent questionnaires online. Willing participants will also be sent a social demographic sheet and informed consent. The instructions will be available on the form and participants will be encouraged to reach out to the researchers with any questions they may have.

In this study, we aim to collect data or information following the ethical principles of APA. All data or information from the participants will be collected via online will be accessible only by the researcher. In order to avoid harm and maintain participants' rights, confidentiality is maintained. Furthermore, participants will be given the liberty to withdraw from the study whenever they feel like. IRB clearance has been given after the proposal was approved.

Resilience at Work Scale - RAW (Winwood et al., 2013)

A 20-item questionnaire to measure resilience at work. It consists of 7-factors: living authentically, finding your calling, maintaining perspective, managing stress, interacting cooperatively, staying healthy, building networks rated on a 7-point Likert scale: 1 = strongly disagree to 7 = strongly agree.

Technology Acceptance Model Questionnaire - TAM (Davis, 1989)

A 12-item questionnaire to measure how well individuals understand, accept and use any technology. Technology acceptance is divided into two parts – perceived usefulness (PU) and perceived ease of use (PEU) and each consists of 6-items on a 7-point Likert scale: 1 = extremely unlikely to 7 = extremely likely.

Items on the SSS Caplan et al. (1980)

Present research primary aimed at the contextualized validation of the "Social Support Scale" of Caplan, et.al. (1980) which has three dimensions [support from supervisors, colleagues, and family] and each dimension had four. The seven-point Likert scale used here has ranges from 1-7 (1=strongly disagree, 2 -6 have no verbal labels assigned to, and 7= strongly agree).

Operational Definition

There are three main variables that are required to be defined for this research study.

TAM is defined as "the degree to which a person believes that using a particular system would be free from effort" (Davis, 1989).

Workplace resilience is defined as the ability to deal with adversities at work and positive adaptations to crisis situations and bounce back with a steady state of well-being/performance.

Social support refers to having relationship and support from friends, family and other people in our social circle to turn to in times of need or crisis at work to give you support and help.

Results

The data was collected and 109 responses were received in the stipulated time period allotted for data collection. A total of 105 (female-48, male-57) responses were used as 4 responses didn't fit into the sample category.

Table 1

Descriptive analysis

Variables	PU	EOU	SS	CS	FS	RAW
Mean	34.6	34	17.5	20.5	20.4	40.8
Median	35	34	17	20	20	41
Mode	36	36	16	20	20	43
SD	4.25	4.31	3.86	2.83	3.26	6.01
p-value	<.001	<.001	0.206	0.005	<.001	0.02

Note. PU-percieved usefulness; EOU-ease of use; SS-supervisor support; CS-colleague support; FS-family support; RAW-resilience at work

Table 1 shows the descriptive statistics calculated for all study variables (PU, EOU, SUPERVISOR, COLLEAGUE, FAMILY, RAW). The TAM scale consists of two dimensions and the mean score for PU was 34.6 (SD = 4.25, p<.001), with a median of 35 and a mode of 36 and the mean score for EOU was 34 [SD = 4.31; P<.001], with a median of 34 and mode of 36. The social support scale consists of three subsets and the mean score for SS was 17.5 (SD = 3.86, p>.05), with a median of 17 and a mode of 16; the mean score for CS was 20.5 (SD = 2.83, p<.05), with a median of 20 and a mode of 20; the mean score for FS was 20.4 (SD = 3.26, p<.001), with a median of 20 and a mode of 20. The mean score for RAW scale was 40.8 (SD = 6.01, p<.05), with a median of 41 and a mode of 43.

When the results are split by gender, the mean score of females is less than males for the following categories – PU, EOU, SS, CS. The mean for FS is slightly higher in females (20.8) than males (20.1) and the mean scores for resilience are equal to each other (40.8).

The correlation analysis revealed significant positive relationships between the dependent variable (RAW) and the independent variables: SUPERVISOR (ρ = .382, $p < .001$), COLLEAGUE (ρ = .386, $p < .001$), and FAMILY (ρ = .417, $p < .001$).

PU and EOU have shown to have no significant relationship with RAW.

Table 2

				Overall Model Test			
Model	**R**	**R^2**	**Adjusted R^2**	**F**	**df1**	**df2**	**p**
1	0.291	0.0847	0.0667	4.72	2	102	0.011
2	0.573	0.3286	0.2947	9.69	5	99	<.001

Multiple linear regression

Predictor	Estimate	SE	t	p	Stand. Estimate
Intercept	12.901	5.232	2.47	0.015	
PU	-0.285	0.168	-1.70	0.093	-0.201
EOU	0.367	0.163	2.25	0.027	0.263
SUPERVISOR	0.324	0.163	1.99	0.050	0.208
COLLEUGUE	0.375	0.230	1.63	0.105	0.177
FAMILY	0.583	0.161	3.63	< .001	0.316

The correlation analysis revealed significant positive relationships between the dependent variable (RAW) and the independent variables: SUPERVISOR (ρ = .382, p < .001), COLLEAGUE (ρ = .386, p < .001), and FAMILY (ρ = .417, p < .001). PU and EOU have shown to have no significant relationship with RAW.

Regression model shows that impact of only TAM dimensions does not have an overall model fit (p>0.001) and explains 8% of the variance (adjusted R^2 = .066). The model including only support factors explain 27.3% of the variance in RAW (adjusted R^2 = .294). Multiple Regression Analysis (table 3) shows that Model 2, which included all predictors, significantly improved the prediction of RAW compared to Model 1, explaining 32.9% of the variance in RAW (adjusted R^2 = .295), $F(5, 99) = 9.69$, $p < .001$. In the final model, EOU (β = .367, p = .027) and FAMILY (β = .583, p < .001) were

significant positive predictors of RAW, while SUPERVISOR (β = .324, p = .050) approached significance. PU (β = -.285, p = .093) and COLLEAGUE (β = .375, p = .105) were not significant predictors.

Discussions

The results of this study offer valuable insights into the relationships between technology adaptation, social support, and workplace resilience, aligning with but also challenging the proposed hypotheses. These findings contribute to a more nuanced understanding of how technological and social factors influence employees' capacity to adapt and thrive in dynamic work environments.

Objective 1: Technology Adaptation and Workplace Resilience

The initial theory suggested that increased use of technology would lead to more resilient workplaces. Contrary to expectations, there was no significant positive correlation between the Technology Acceptance Model (TAM) factors—Perceived Usefulness (PU) and Perceived Ease of Use (EOU)—and Resilience at Work (RAW). This discovery contradicts the theory suggesting that workers' views on tech's usefulness or simplicity don't have a major effect on their ability to bounce back at work. This contrasts with the broader literature, which suggests that technology adaptation enhances efficiency, reduces stress, and fosters resilience (Venkatesh & Davis, 2000; Ismail et al., 2023). The study's lack of a significant correlation may indicate that, although technological proficiency may lessen operational stress, it has no direct bearing on a person's capacity to handle more general work-related stressors or adjust to changes. This finding invites further exploration into the complexity of the relationship between technology and psychological resilience, as technology adaptation alone may not be sufficient to improve an employee's overall resilience at work.

Objective 2: The Role of Social Support and Technology Acceptance in Workplace Resilience

The second hypothesis proposed that both social support and technology acceptance would positively influence workplace resilience. While this hypothesis was partially supported, the findings revealed that only family support had a significant positive

effect on RAW. This outcome suggests that family support plays a more crucial role in enhancing workplace resilience than technology acceptance or colleague support. These results align with previous studies that emphasize the buffering effect of social support in reducing stress and fostering resilience, particularly the influential role of family support (Cohen & Wills, 1985). However, contrary to expectations, neither PU nor support from colleagues showed a significant impact on resilience. This finding highlights the importance of the home environment, suggesting that emotional and practical support from family members may provide a more stable and reliable foundation for building resilience in the workplace.

Interestingly, the absence of a significant effect of supervisor support on resilience scores also raises important considerations. Previous research has often emphasized the critical role of supervisory support in promoting employee well-being and resilience (Greenhaus & Powell, 2006). The lack of significance here could suggest that supervisors may not be providing sufficient emotional or psychological support, or that their support may not be perceived as integral to resilience-building by employees. This points to the potential need for organizations to focus more on enhancing supervisory roles to include emotional support and development of resilience-oriented leadership practices.

Objective 3: The Differential Impact of Social Support Sources on Workplace Resilience

The third hypothesis proposed that the source of social support—whether from family, colleagues, or supervisors—would differentially affect workplace resilience. The study's results confirmed that family support was the strongest predictor of RAW, with a significant p-value of <.001, while supervisor support approached significance ($p = .05$), and colleague support had no significant effect. This differential impact suggests that the source of social support is indeed critical, with family support offering a more substantial and consistent form of emotional and psychological backing than support from colleagues or supervisors. Familial support might provide a sense of stability and emotional security that is not as readily available in workplace relationships, where support may be more variable or contingent upon the dynamics of organizational hierarchy (Greenhaus & Powell, 2006). This finding

underscores the need to consider the quality, consistency, and reliability of social support in resilience-building efforts.

The relatively weaker impact of supervisor support approaching significance suggests that while supervisors may have a role in resilience, it is not as strong as family support. This finding could indicate that employees may not view their supervisors as key emotional support figures, or that the support provided by supervisors may not sufficiently address the emotional and psychological needs required for resilience. It points to a gap in the way supervisory roles are structured, suggesting that organizations may need to train supervisors in more effective, resilience-building leadership strategies.

Conclusion

The study provides valuable insights into the relationship between technology adaptation, social support, and workplace resilience. Contrary to initial expectations, technology adaptation—measured by perceived usefulness and ease of use—did not significantly impact workplace resilience. This challenges the assumption that technological competence directly enhances resilience, suggesting that while technological efficiency is important, it may not be sufficient for fostering resilience. Family support, however, emerged as the most significant predictor of workplace resilience, highlighting the critical role of personal social networks in managing workplace stress. Colleague and supervisor support did not show a significant influence, implying that workplace support systems alone may be inadequate in fostering resilience.

The findings have several implications for organizations. While technological adaptation remains important, organizations should focus on creating comprehensive support systems that prioritize emotional and psychological well-being, particularly by recognizing the importance of family support. Supervisor training should extend beyond technical guidance to include emotional and psychological support that helps build resilience. Additionally, fostering a workplace culture that emphasizes work-life balance and offers flexible policies can further enhance employee well-being.

The study's limitations include a small and non-diverse sample size, reliance on self-reported data, and the potential for participant bias. Future research should explore the mediating role of social support and factors such as coping strategies, organizational culture, and leadership styles. Personality factors, intrinsic motivation and other factors can motivate employees' resilience. Incorporating mixed methods, including both quantitative and qualitative data, and utilizing a larger, more diverse sample can provide more robust and generalizable results. Additionally, future studies should investigate why technology adaptation did not influence resilience in this study, examining potential contextual variables that may moderate this relationship.

Overall, the study emphasizes the multifaceted nature of workplace resilience, with family support playing a pivotal role. Organizations should integrate policies that not only enhance technological competence but also bolster emotional well-being through family-friendly policies, supervisor training, and peer support initiatives. These insights can guide organizational development practitioners in designing more holistic employee development programs that foster resilience and adaptability in an increasingly digital workplace.

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