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The Impact of Organizational Stress on Financial Performance: Evidence from Software Development Companies

Shyamali Satpathy[a], Violeta Cvetkoska[b], Gokulananda Patel[c]

[a] *IILM Graduate School of Management, Faculty of OB and HR*
Email : shyamali.satpathy@iilm.edu
[b]*Ss. Cyril and Methodius University in Skopje*
Faculty of Economics – Skopje
Email: vcvetkoska@eccf.ukim.edu.mk
[c]*Professor of Decision Sciences*
Birla Institute of Management Technology, India
Email: gn.patel@bimtech.ac.in

Abstract

The aim of this paper is to examine the impact of organizational stress on financial performance in Indian software development companies. A questionnaire was distributed to employees of 17 Indian software development companies and filled by 501. We identified constructs using a literature review and expert opinion, which were then confirmed using exploratory and confirmatory factor analysis. Four stressors are used in this study: job insecurity, work-overload, technological complexity, and technological uncertainty. In the instance of software development companies in India, our findings indicate that stress has no effect on profitability (profit per asset) and vice versa. Additionally, work overload contributes to complexity and job insecurity. Profit orientation drives techno-complexity, while techno-uncertainty is driven by techno-complexity. We discovered that age is the key demographic influencer affecting stress positively and that when the average age exceeds 28 years, the average stress level increases by 15.6 units. This study can assist managers at software development companies in making fact-based decisions about the stressors identified and so foster a more productive work environment.

JEL classification: C38, C83, M15.
Keywords: organizational stress, financial performance, stressors, causality, software development companies.

1. Introduction

Many software development companies in India are concerned that job stress may adversely affect employee performance. Frequent technological changes, high demand uncertainty, and an intense competitive environment put psychological pressure on employees (Sengupta and Singh, 2013 April 29). Evidence from psychological studies suggests that high stress and anxiety can adversely affect employee performance and, consequently, the financial

performance of organizations (Karunanithy and Ponnampalam, 2013). In this study, we surveyed employees from 17 software development companies in India to measure organizational stress and evaluate the assertion that stress adversely impacts the financial performance of a company. The empirical evidence from our study does not support this claim (Straub, 1989).

There has been a remarkable change in the software development industry in India post-globalisation. The industry has now become one of the fastest growing industries, particularly during the last decade. The primary reasons are the rise in use of information and communication technologies (ICT), the evolution of the web 2.0/3.0 and the exponential growth of social media. The reason is justified on the ground that IT benefits organisations by getting better results with increased efficiency and productivity (Hitt and Brynjolfsson, 1996). Various studies have provided supporting evidence on the impact of information and ICT on work and productivity, as well as other positive outcomes such as cost savings and innovations (Barua et al., 1995; Black and Lynch, 2001; Hitt and Brynjolfsson, 1996).

As a consequence of increased competition, the industry is now so output-driven that it puts pressure on employees to be efficient and cost-effective (Agarwal et al., 2012). This puts pressure on IT professionals to improve their competitive capabilities and performance, and ultimately, they go through a stress level.

Past studies show evidence of various concepts of stress and factors causing stress. Similarly, some other studies have acknowledged technology as a source of stress (Barber and Santuzzi, 2015). The different characteristics of ICT, such as constant connectivity and universality, create conditions of stress and work flexibility. Some of the key problems in software development companies are requirements ambiguity, poor change management, and a lack of quality practices (Langer et al., 2014). The nature of the work, work overload, job insecurity, and rapid obsolescence of skills due to frequent changes in technology are causing stress in the IT sector. The way employers engage their employees in software development organizations during the complete life cycle of employment, starting from hiring to exit, is completely different as compared to other industries. Rapid technological innovation has necessitated the continuous upskilling of human capital in software development organizations (Bapna et al., 2013). These organisations try to utilise their manpower to the maximum to achieve their goals. There are high levels of organizational productivity loss which are directly linked to workplace stress and a lack of employee wellness (John, 2018 January 17). Employers, therefore, face an increasing challenge of dealing with workers who are not only personally depressed but may also adversely impact the productivity of their organizations. According to the findings of the latest survey by Optum, 2018, shared exclusively with ET, nearly half the employees in India suffer from stress. The survey was conducted in 2018 among 800,000 employees in 70 large companies, each with a minimum workforce of 4,500. All IT professionals are dealing with work overload and are also struggling to deal with the rapid changes in ICT, and there is always a threat from others having better knowledge and skills in technology. This also results in a feeling of job insecurity, causing stress at workplaces.

When employees go through a certain level of stress and anxiety, they lose confidence and interest in taking on responsibilities, and their performance goes down. Decreased performance followed by low commitment, high job dissatisfaction, and high attrition have been attributed to the associated high level of stress (Bhal and Gulati, 2007). The concern is so high that employers in IT sectors have emphasized that it may decrease organizational performance in various ways.

The Yerkes–Dodson law based on the relationship between pressure and performance demonstrates that performance increases with stress or mental arousal, but only up to a point (Yerkes and Dodson, 1908). When performance increases with an optimum level of stress, and when the level of stress becomes too high, performance decreases (Gino, 2016). Stress at a certain level leads to positive outcomes, such as an increase in overall efficiency and production. Based on this relationship between stress and performance, it is necessary to understand how much stress individuals are currently experiencing at work. Based on the level of stress, it can be both beneficial and damaging. This leads to the notions of "eustress" and "distress," which describe two different scenarios associated with stress (Selye, 1974). Eustress is broadly referred to as stress that creates a challenge or an opportunity, and distress as stress that creates a threat or hindrance.

The insecure environment in the IT sector in the form of additional demands and stressors on employees may lead to a feeling of job insecurity, which may give an extra incentive to perform and work harder, leading to more productivity and output in the organisation. From the above discussion, it can be said that many aspects of these researchers' observations and statements reflect that it is nevertheless useful to keep track of crucial organizational performance measures such as profit per asset. The literature on stress arising out of using ICT focuses on the demands relating to the use of ICT, which the individual in the software development sector is unable to deal with and that leads to adverse consequences. There are many observed impacts of stress, such as lower job commitment, reduction in professional effectiveness, low output, more conflict and isolation, and more employee turnover (Igbaria and Siegel, 1992). There is also an impact of stress creators on employee innovation based on the nature of each creator (Chandra et al., 2019). Although some studies show the impact of stress on employee motivation and performance, they do not address the relationship between stress and the financial performance of an organization. The financial performance, which is measured in terms of profit per sale, profit per asset, etc., reflects the overall financial health of an organisation. The aspect of financial performance in service firms is important as it reflects the management effectiveness and overall profitability of the organization. In laying out a new direction, the paper challenges the current ideas on stress with an argument that stress can be seen as a positive motivator, in contrast to the much-examined negative outcomes. Stress can be harnessed for positive outcomes such as more efficiency, more productivity, and more profit in an organization.

In the existing literature, there is no prior research that has empirically established the relationship between stress and the financial performance of an organization, which motivates us to investigate the impact of organizational stress on financial performance in the case of software development companies. The objective of the present study is threefold. First, the constructs have been identified based on the literature and experts' opinions, and then confirmed through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Second, the relationship between profit per asset in software development companies and total stress has been addressed. We got it as a fixed effect. Third, the causality between total stress and profits has been identified. The proposed research framework could be of practical value to any service firm. Managers can benefit from the outcomes of the paper by having a clear picture of stress factors and conducting necessary research in order to find out the true impact of these factors on the financial performance of a software development company. On the basis of the literature survey, findings from the environmental scan, and discussions held with some HR professionals in the software development sector, the key factors of stress were identified to prepare the questionnaire. Thus, stressors are selected based on their relevance to the phenomenon under study in the present work.

The paper is structured as follows. Section 2 presents the literature review. Section 3 describes the used methodology and data. Section 4 presents and analyses the obtained results, and Section 5 concludes the paper.

2. Literature Review

Although stress has always been related to tension and burnout, different disciplines have different understandings of the concept. Stress is considered a physiological problem by most researchers (Ivancevich and Matteson, 1980). It is quite evident in the arguments of the researchers that stress has been perceived in different ways. Some researchers attempted to determine whether it is a stimulus or a response, if it is an individual trait, and if it is caused by interaction between the individual and the environment (Beehr and Newman, 1978; Katz and Kahn, 1978). From the environment interaction perspective, there is a unique relationship between every individual and their environment, which formulates the significance of different factors in one's life and influences the ability or inability to adopt to some of them (Lazarus, 1966). Stress is considered a particular relationship between the person and the environment that is perceived by the person as taxing or exceeding his or her resources and endangering his or her well-being (Lazarus and Folkman, 1999). Also, stress has been considered as an adaptive response based on individual differences that is a consequence of any action, situation, or event that places special demands on a person (Ivancevich and Matteson, 1980).

Stress is a general term that can range from low to high levels. A moderate level of stress may be desired, beneficial, and even healthy. Positive stress helps improve athletic performance. It also plays a factor in motivation, adaptation, and reaction to the environment. Excessive amounts of stress, however, may lead to bodily harm and mental illness. Humans experience stress, or perceive things as threatening, when they do not believe that their resources for coping with obstacles (stimuli, people, situations, etc.) are enough for what the circumstances demand. When people think the demands being placed on them exceed their ability to cope, they experience stress. Positive psychological stress can lead to motivation and challenge instead of anxiety. The effects of experiencing eustress, which is positive stress, versus distress, defined as negative stress, are significant. While colloquially lumped together, the various types of stress should be treated as separate concepts. There are four variations of stress. On one axis, he locates good stress (eustress) and bad stress (distress). On the other hand, there is over-stress (hyperstress) and under-stress (hypostress). The ultimate goal would be to balance hyperstress and hypostress perfectly and have as much eustress as possible (Selye, 1974). As with distress, stress is extremely useful for a productive lifestyle because it makes working enjoyable instead of a chore.

There has been evidence that some level of stress is good for intrapersonal development and improves productivity (Soylu and Campbell, 2012). There are studies based on psychological theory which argue that up to some level of stress can help in positive attributes including motivation, awareness, creativity, productivity, etc. (Longenecker et al., 1999). At the same time, if emotional stress is at excessive levels, it can lead to poor human health. Stress may arise when somebody assesses that the demands imposed by the environment exceed the individual's resources and thus threatens their wellbeing (Cooper et al., 2001). Normal job demands/job strain levels with an energetic buffer at the employee level can be used for extra work effort, which ultimately lowers the risk of organisational performance failure (van Veldhoven, 2005).

Karunanithy and Ponnampalam (2013) explore the relationship between stress and its separate dimensions (job-related factors, organizational factors, and individual factors) on employee performance in the Commercial Bank PLC in Sri Lanka. Absenteeism, punctuality, customer/coworker relations, feedback from superiors, and self-confidence are all used to assess performance.Ajayi (2018) investigates the impact of job stress on job performance and job satisfaction in the case of the Nigerian banking industry. Job stress factors are considered: lack of administrative support, excessive workload and work demand, problematic customer relations, co-worker relationships, family and work life balance, and associated risks with the job.

Sharma and Kaur (2013) explore the impact of demographic factors on occupational stress in 19 life insurance companies in India. 374 employees were surveyed, of which 300 were males, and 53% were under the age of 29 years.

Al-khasawneh et al. (2013) explore the relationship between job stress (expressed by five stressors: family factors, economic factors, job difficulty, peers' competition, and organizational climate) and the job performance of nurses in a hospital in Jordan. Job performance is expressed by creativity and innovation, as well as the ability to solve problems and make decisions.

Yousefi and Abdullah (2019) investigate the influence of the following organizational stressors: workload, role ambiguity, and role conflict on academic performance in public universities in Malaysia. Yousefi et al. (2020) investigate the impact of three organizational stress indicators (workload, role ambiguity, and role conflict) on the job performance of academic staff from 32 Malaysian private universities.

Most industries are focusing on stress management as the performance structures are being investigated as an impact of stress. Stress management is getting more and more attention in software development companies due to fast technological changes, increased competition, and the nature of employment. IT professionals may be coping with too much pressure, long working hours, or rapid changes in technology, deadlines to meet, and changing priorities. The IT sector is different from other sectors due to a combination of high pay, low job insecurity, intensive use of ICT and strong competitiveness (Bhattacharya and Basu, 2007). Previous studies have identified causes of stress among IT professionals based on various approaches to stress. Stress due to technology has been considered a modern disease and is caused by an individual's inability to deal with technology in an efficient and right way (Brod, 1984).

The use of ITC depends on both a user's attitude towards using technology and what he or she perceives about the benefits or advantages of using the same (Davis, 1989). However, it is the individual's personal impression of ICT that changes the perceptions of job holders, leading to work overload and more and more assignments beyond one's capacity (Aborg and Billing, 2003). Techno overload, techno invasion, techno complexity, techno insecurity, and techno uncertainty are the stressors related to ICT at the workplace (Tarafder et al., 2007). Work-overload is the situation where an assigned task exceeds a job holder's capacity or skill level (Cooper et al., 2001). This clearly signifies a situation where technology users are expected to work longer and faster. The software development industry demands more use of information technology to get involved with colleagues beyond working hours. The nature of work makes individuals experience role conflict when they find themselves pulled in various directions as they have to respond to many sources of work. Long working hours, meeting deadlines, and resource inadequacy (Aziz, 2003) are also cited as major stressors in the IT profession.

Employees in the software development sector always feel threatened as there is always a fear of losing their jobs, either due to the emergence of new IT devices or replacement by others having better knowledge (Ashford et al., 1989). ICT also leaves individuals in organizations with obsolete skills (Ayyagari et al., 2011). The rapid changes in technologies also create a problem of higher levels of job insecurity. Also, the paper has discussed that the constant changes in technologies have a negative impact on the perceptions of individuals on the use of ICT as they feel pressured to be updated to face the competition. As a result, the complexity of technology presents a unique challenge to users in learning new skills to manage such projects (Morris and Venkatesh, 2010). Due to this, working professionals perceive ICT as the main cause of work stress and employee burnout. Technological changes resulting in increased job demands have pressurised individuals to acquire new job skills to handle new sets of work environments (Sami and Pangannaiah, 2006).

In the existing literature, we have not found a study that has established empirically the relationship between stress and the financial performance of an organization, and that motivated us to conduct this study. In our study, we investigate the impact of organizational stress on financial performance in 17 software development companies in India.

3. Methodology and Data

In order to understand the stressors in software development companies, we have developed a questionnaire based on literature review analysis (Ragu-Nathan et al., 2008; Carlotto et al., 2017) and feedback from industry professionals. It consists of 6 open questions regarding demographic information and 30 closed questions, i.e. statements. A questionnaire was developed because of the relevance of the stressors in the software development industry. Employees in the software industry experience stress based on the complexities of various factors contributing to stress. In addition to the literature survey, the industry experts' opinions, in the given context, suggested the requirement for a set of questionnaires. This questionnaire has brought into focus factors contributing to the occurrence of these problems software professionals are facing. The respondents were required to rate each statement on a five-point Likert scale (1 = Not Agree at All; 2 = Somewhat Agree; 3 = Can't Say; 4 = Agree; 5 = Strongly Agree). Our sample for analysis consisted of employees at 17 software development companies in India. Those companies were selected based on their employment strength (not less than 4,000 employees). The questionnaire was distributed online through a Google form from October 2019 to January 2020 to 398 randomly selected employees (from all 17 companies). The respondents were asked to fill out the questionnaire and send it back. In total, 334 respondents have sent the filled questionnaire back. Two responses from unengaged respondents were deleted, giving the final response a value of 332. The process supported the change to the questionnaire, and 25 of the closed questions were retained after consulting experts from the information technology industry and academics. The questionnaire (Appendix-1) was administered from April 20 to June 2020 and a total of 501 valid responses were retained, including 332 of earlier responses.

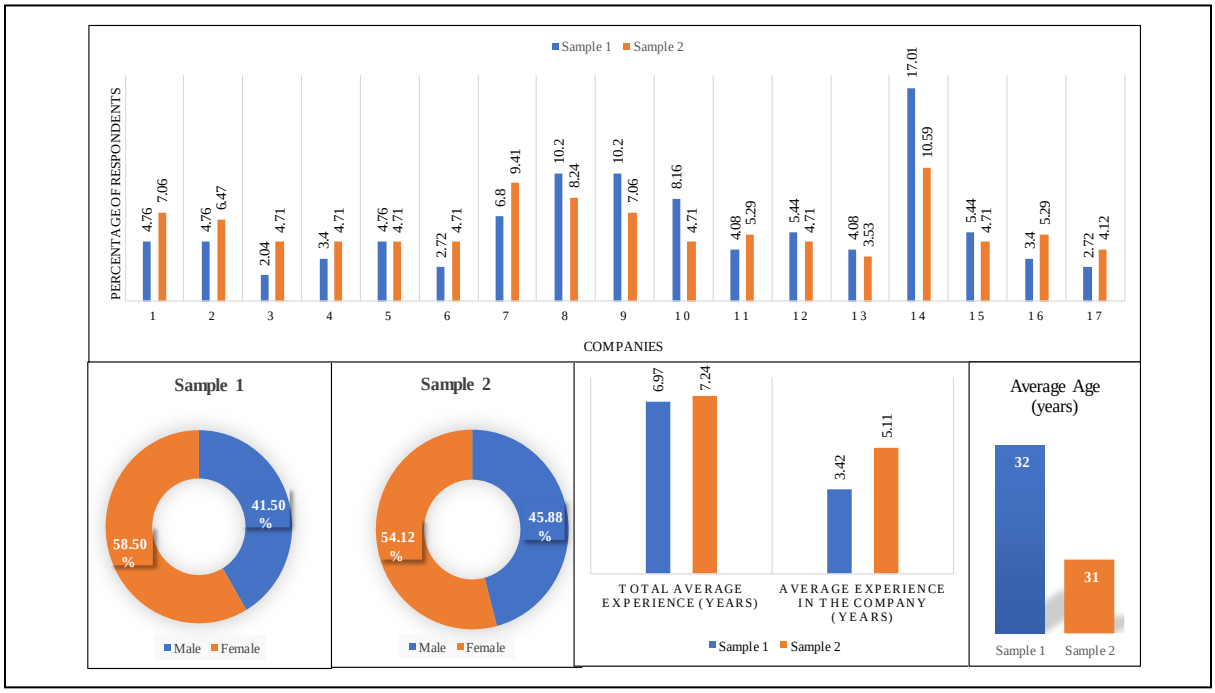
4. Results and analysis

4.1 Demographic results

The descriptive analysis of the pre-testing sample, i.e., sample 1, (332 respondents), and the final sample, i.e., sample 2, (501 respondents), is shown in Figure 1. Based on the data for sample 2, 54.12% of the respondents are female, while 45.88% are male; the average

experience in the company is approximately 5 years, while the average age of the respondents is 31. The next analysis is considered sample 2.

Figure 1. Demographic data for the respondents in Samples 1 and 2



4.2 Exploratory Factor Analysis Results

The 25 statements referred to various factors causing stress among the employees. Responses to these 25 statements were treated with exploratory factor analysis. The process resulted in a drop of seven items when Principal Component Analysis (PCA) was used with varimax rotation. We found four stressors, i.e., factors, which we have named as: Job Insecurity (JI), Work-overload (WO), Techno-complexity (TC), and Techno-uncertainty (TU), considering the factor loads. These factors are based on their relevance to technology impacting the software developing employees, and they are discussed in 4.2.1. The appropriateness of the data for factor analysis was confirmed by the Kaiser-Meyer-Oklin (KMO) measure. The KMO value was 0.94. This indicates that the sample is statistically significant (Hair et al., 1998). These items explain 67.76% of the total variance. An Eigen value greater than 1 in the factor solution is retained (Nunally and Bernstein, 1994). Factor loadings are shown in Table 1. The reliability of each construct calculated is significant with Cronbach's Alpha values of 0.93, for Job Insecurity is 0.92, for Work Overload is 0.92, for Techno Complexity is 0.83, and for Techno Uncertainty is 0.73. All Cronbach's alpha values are meeting their threshold of more than 0.7 (Carmines and Zeller, 1979; Peterson, 1994).

4.2.1 Stressors

Job insecurity is the feeling of a threat of losing a job (Ashford et al., 1989). Employees in the software developing sector always feel threatened as there is always a fear of losing their jobs, either due to the emergence of new IT devices or replacement by others having better knowledge.

Work-overload is the situation where an assigned task exceeds a job holder's capacity or skill level (Cooper et al., 2001). This clearly signifies a situation where technology users are expected to work longer and faster. Software development jobs demand more use of information technology to get involved with colleagues beyond the working hours.

Individuals are constantly engaged with technology in order to complete their assignments and meet the deadlines. Yousefi et al. (2020) found that the major stress indicator that impacts negatively on academic work performance is workload, followed by role ambiguity and role conflict.

Techno-complexity is a situation where complex technology systems make employees spend more time and effort updating their skills to use new applications. Employees in the IT sector are also facing challenges in availing collaboration tools to remotely connect and network.

Techno-uncertainty relates to the frequent changes in the software development sector. To keep pace with the present situation, employees have to constantly upgrade their skills to avoid obsolescence of their skills.

Further, to confirm the constructs, confirmatory factor analysis is used.

Table 1. Factor Structure of Stressors

Factors		**Variables/ items**	**Factor Loading**	**Cronbach Alpha (α)**
JI	F8	There is unreasonable pressure to meet the deadlines to save my job.	0.607	0.93
	F19	New technology puts a threat to me at work.	0.582	
	F20	My fear of losing the job increases due to the obsolescence of skills.	0.701	
	F21	I feel a constant threat to my job security.	0.703	
	F23	I am threatened by the new recruits with new technology skills.	0.707	
	F24	I feel there is less sharing of knowledge among co-workers for fear of being replaced.	0.715	
	F25	I do not see a long-term commitment to me (job security) here.	0.668	
WO	F1	I often have too many assignments due at the same time.	0.667	0.92
	F2	I often have to work more than I can handle.	0.609	
	F3	I am forced to work with a very tight work schedule.	0.593	
	F4	I am forced to change my work habits to be updated.	0.590	
	F5	I often work beyond official working hours.	0.716	
TC	F6	I do not know much about the technology required to handle my job.	0.711	0.83
	F9	I often find it too complex to understand a new technology.	0.740	

	F10	I find others know more about technology than I do.	0.623	
TU	F12	There are constant changes in the software in our organization.	0.647	0.73
	F13	There are constant changes in the hardware in our organization.	0.563	
	F14	There are frequent updates to computer networks in our organization.	0.691	

4.3 Confirmatory Factor Analysis Results

The objective of confirmatory factor analysis is to test whether the data fits a hypothesized measurement model. Confirmatory research calls for rigorous instrument validation to establish greater confidence in findings (Straub, 1989). The indices for model-fit are presented and explained below.

At Lavaan, a factor-based SEM in R, provided a Chi-square value of 305.456 with 129 degrees of freedom. Table 2 summarizes the Comparative Fit Index (CFI), the Root Mean Square Error of Approximation (RMSEA), the Tucker-Lewis Index (TLI), and Standardize Root Mean Square Residual (SRMR) for 501 responses, demonstrating the derived instrument's reliability. The AVE (Average Variance Extracted) and CR (Composite Reliability) values for construct validity are provided in Table 3. In the measurement model, the AVE and CR are determined using equations (1) and (2), respectively, based on standardized factor loading (λ). (Figure 2).

$$AVE = \frac{\sum \lambda^2}{N} \tag{1}$$

$$CR = \frac{(\sum \lambda)^2}{(\sum \lambda)^2 + \sum(1-\lambda^2)} \tag{2}$$

where λ are the factors loaded into CFA and N, the number of statements loaded into the corresponding factor.

Table 2. Model Fit Indices

Sample Size	CFI	RMSEA	TLI	SRMR
501 (cumulated)	0.950	0.067	0.941	0.045

Figure 2. Measurement Model

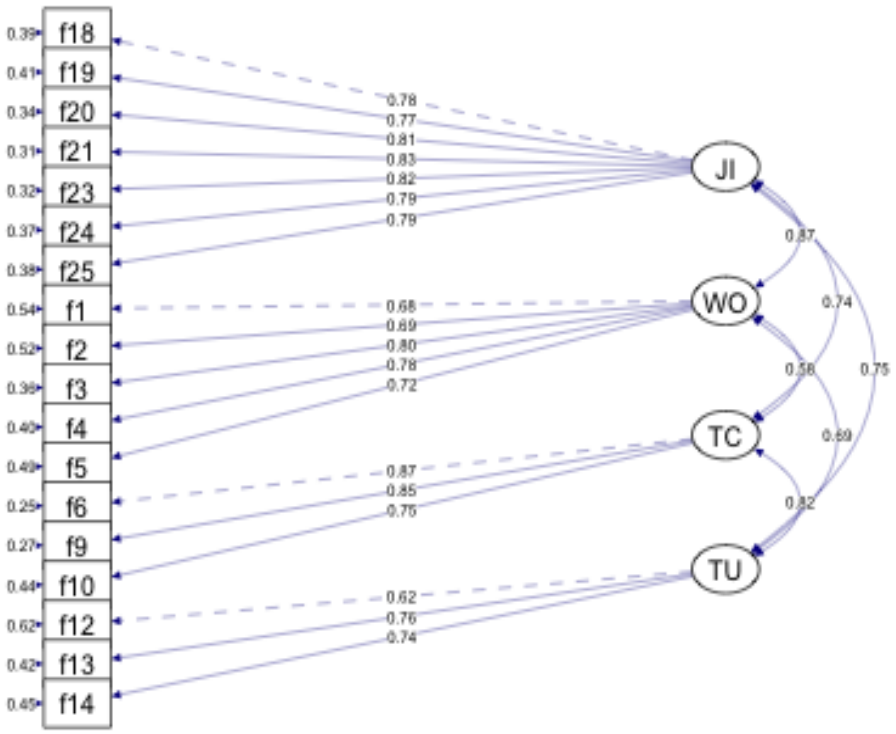


Table 3. Reliability of Derived Measurements

Constructs	AVE	CR
Job Insecurity	0.63	0.92
Work Overload	0.60	0.88
Techno Complexity	0.68	0.86
Techno Uncertainty	0.50	0.75

4.4 Profit per asset for Indian software development companies

As profit is a residual after deducting all the expenses a company incurs, it conveys the efficiency and productivity achieved by its employees. A profit ratio against assets per employee is a better indicator as sales growth is normally a result of two factors: the number of units sold and inflation. Inflation is an uncontrollable factor, and more unit sales may be caused by more demand in general and more efforts by sales employees, thus not representing the productivity of all the employees.

Profit and assets of the 17 software development companies were gathered from "ProwessIQ" (n.d.)1 from 2016-17 to 2019-20. The average profit per asset for all 17 companies was

[1] https://prowessiq.cmie.com/ (accessed on September 20, 2021)

calculated by taking three consecutive financial years (16-17 to 18-19 and 17-18 to 19-20) and it is shown in Table 4.

Table 4. Profit per asset

Company Number	Profit /Asset	Profit/Asset
	2016-17 to 2018-19	2017-18 to 2019-20
1	0.0493	0.0520
2	0.0945	0.1183
3	0.2539	0.2330
4	0.1587	0.1521
5	-0.4125	-0.3962
6	0.2121	0.2232
7	0.0802	0.0262
8	0.2244	0.2320
9	0.2076	0.1918
10	0.0762	0.0647
11	0.3166	0.3311
12	0.1127	0.1325
13	-0.2530	-0.3181
14	0.3386	0.3543
15	0.2177	0.1985
16	0.1123	0.1046
17	0.1516	0.1805

4.5 Causality

Correlation does not necessarily imply causation in any meaningful sense. The Granger (1969) approach has been used to determine the causation of construction and total stress with profit per asset and vice-versa. In Table 5 are presented the chi-square values and probability.

All data series are stationary at a 5% significance level as per the Addison-Dicky Fuller test.

The results are in agreement with Chipunza and Samuel (2012) that work overload contributes to a perception of job insecurity. The work disagrees with Nam (2019) that the perception of job insecurity increases with technological complexity and also disagrees with Nam (2019) that technological uncertainty has a significant impact on job insecurity. This indicates that the population is more prepared for the uncertainty when compared with the population in the USA, where Nam (2019) conducted the study. Neither does the profit orientation of the organization impact the job insecurity. In terms of the influence of work load, it is observed that causality is insignificant in disagreement with Mulki et al. (2008).

In the case of technology complexity, it has a weak significant impact (10% significance) on the level of technology complexity perceived by employees, confirming microeconomic and organizational theories on scale of economies and profit orientation of organizations. The results confirm that complex technologies are being adopted as a way to deal with increasing work overload due to profit-seeking behaviour.

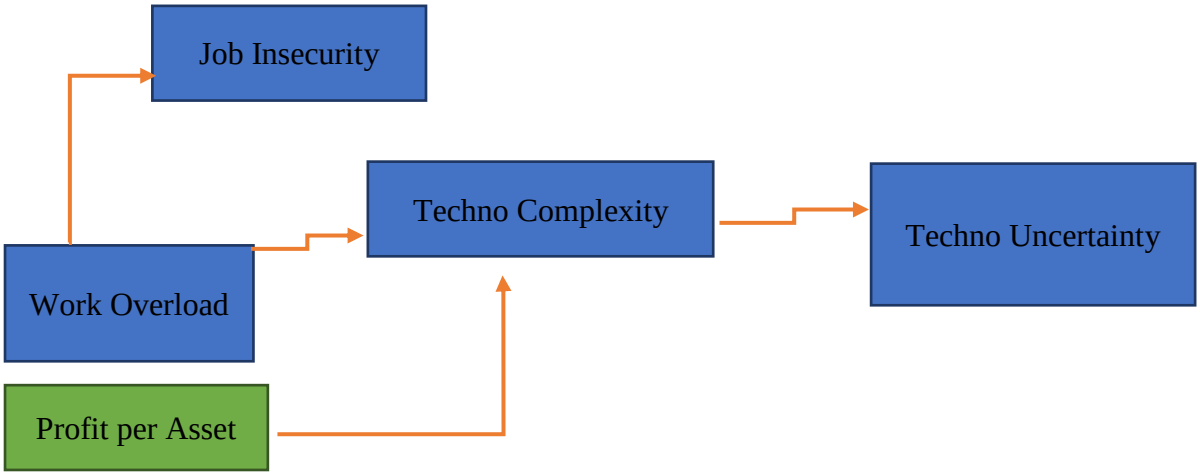
When it comes to technology uncertainty, it is driven by technology complexity at a weak significance level (10%). The rest of the factors are insignificant.

Based on the findings of Karunanithy and Ponnampalam (2013), the correlation coefficient between the overall stress and the employees' performance is -0.433, which implies that the stress has a moderate negative effect on their performance. In addition, the stressor organizational factors affect the employees' performance negatively when the job and individual factors are excluded. In addition, Ajayi (2018) shows evidence that all job stress factors affect great stress on the employees in Nigerian banking and have a negative effect on their job performance. Van Veldhoven (2005) found that when work speed and quantity are low, the financial performance of a business unit (expressed by the profit-to-cost ratio) is good. The most important observation in the context of the Indian economy is that stress has had no impact on profitability and profitability has had no impact on stress. The overall results indicate that work overload is driving complexity and job insecurity. Technological complexity is also being driven by profit orientation, and technological uncertainty is being driven by technological complexity. This indicates the current situation in the Indian industry that is undergoing digital transformation, adopting complex technologies and technological uncertainties that are arising from there. In Figure 3, we present our causality model. The model clearly shows that technological complexity plays a mediating role between work overload and technological uncertainty.

Table 5. Granger Causality

Dependent Variable: PA			Dependent Variable: WO			Dependent Variable: JI		
	Chi-sq	Probability		Chi-sq	Probability		Chi-sq	Probability
PA	0.529	0.467	PA	0.924	0.336	PA	1.551	0.213
WO	0.730	0.393	JI	1.755	0.185	WO	4.958	0.026
TC	0.174	0.677	TC	0.062	0.803	TC	1.488	0.222
TU	0.003	0.960	TU	0.077	0.781	TU	1.034	0.309
Dependent Variable: TC			Dependent Variable: TU			Dependent Variable: PA		
	Chi-sq	Probability		Chi-sq	Probability		Chi-sq	Probability
PA	2.871	0.090	PA	0.787	0.375	TS	0.186	0.912
JI	0.008	0.930	JI	1.265	0.261			
WO	4.397	0.036	WO	0.009	0.925	Dependent Variable: TS		
TU	0.0001	0.991	TC	2.993	0.0.084	PA	1.789	0.409

Figure 3. Causality Model

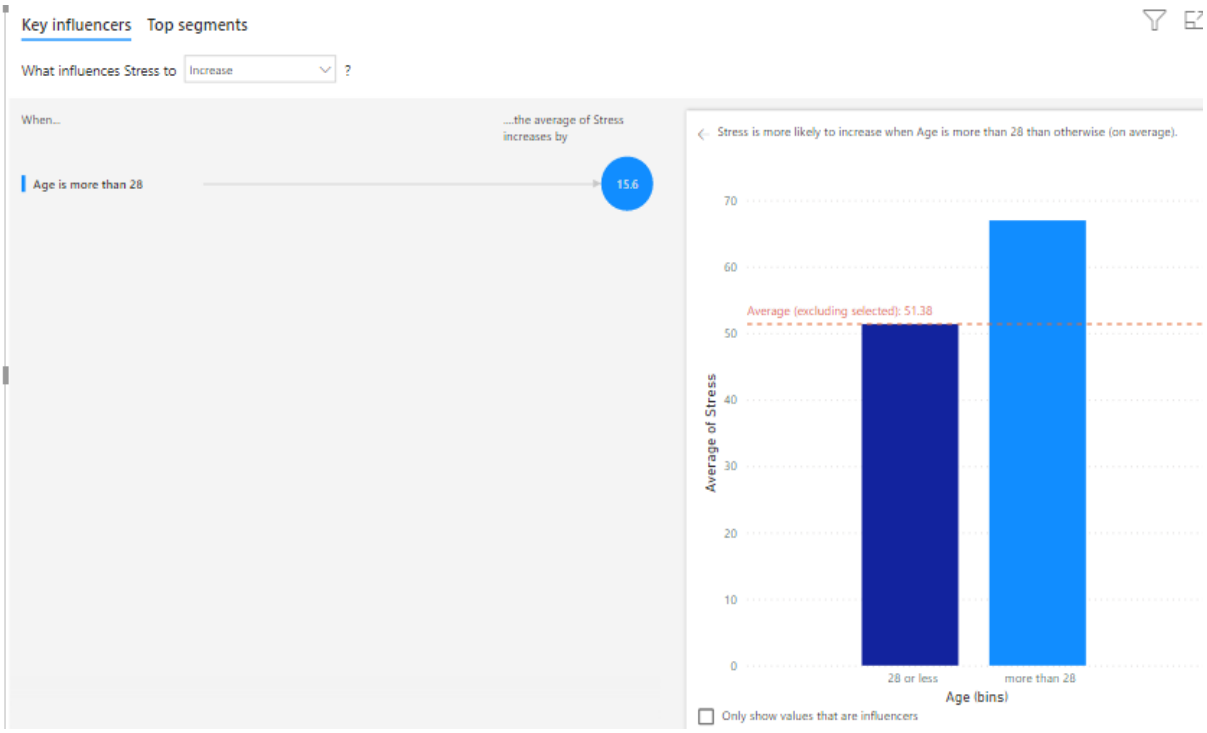


4.6 What demographics drive the increase in organizational stress?

Rathore (2018) focuses on the IT industry in India, more precisely in the Delhi-NCR region, and investigates factors that affect organizational stress as well as the impact of demographic factors on role stress. Based on his findings, IT professionals experience high levels of work-related stress, which is compounded by the fact that their demographics play a significant role in stress.

We have investigated the influence of three independent variables: age, gender, and experience on stress, which is a dependent variable. We used the artificial-driven visual in Power BI Desktop, Key Influencers that presents the drivers of the outcome of interest. After selecting this AI-driven tool, in the analyze field, we have to drag and drop the stress as a dependent variable. Then in the Key Influencers visual appeared a question, "What influences stress (increase or decrease)?" From the dropdown arrow, we have selected increase, and in the field Explain by, we have dragged and dropped age, experience, and gender, which represent independent variables. After running the logistic regression with the integrated machine learning algorithm in Power BI Desktop, we discovered only one significant predictor, specifically age (Figure 4). Based on Figure 4, we can see that when the age is more than 28 years, the average stress increases by 15.6 units. The overall average of stress is 62.14, and the average stress when the age is greater than 28 years is 4.84 units higher than the overall average. Our findings about age are in accordance with the study by Sharma and Kaur (2013) that found that the higher the age, length of service, monthly income, and hierarchical level, the higher the occupational stress is, and the negative consequences on the health of insurance sector employees.

Figure 4. Key Influencers of Stress



5. Conclusion

In this study, we have investigated the impact of organizational stress on financial performance (profit per asset) in the case of software development companies in India. We have chosen 17 companies to conduct the research through a questionnaire. Those companies have an employment strength of not less than 4,000.

Based on the literature review analysis and experts' opinions, we have identified constructs, and exploratory factor analysis and confirmatory factor analysis were used for their confirmation. We have identified four stressors: job insecurity, work-overload, techno-complexity, and techno-uncertainty.

According to the obtained results, we can state that stress has no impact on profitability (expressed by profit per asset) and vice versa in our analysed case, which is not in agreement with the study performed by Straub (1989). In addition, based on our causality model, we have found that complexity and job insecurity are driven by work overload. Also, technological complexity is driven by profit orientation and technological uncertainty. Also, we have found that a key demographic influencer on stress is age, so that when the average age is more than 28 years, the average stress increases by 15.6 units.

This study has attempted to establish the relationship between stress and financial performance (profit per asset) in the case of software development companies in India, through which the existing literature on stressors on financial performance have been enriched.

Since the scope of this study was limited to only four stressors in software development companies in India, in future, a more comprehensive study considering other stressors can be done. The impact organizational stress on financial performance in software development

companies in India's neighboring countries can also be explored. The findings of the paper intend to provide an insight to the mangers in various ways, a further study on the impact of managerial capability on stress in software development companies in India's neighboring countries can also be done. The study can also guide the future researchers to replicate this study in different context.

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Appendix 1

(Administered to regular full-time employees only by Google Sheets)

Survey Questionnaire 1

Dear Sir/Madam,

Your participation in our research will be completely confidential and you will remain anonymous throughout the process. The data collected within this research will not be used individually, but will be part of the sample for the research. The aim of the research is to investigate the stress in software development companies in India.

Interviewer Name	
Supervisor Name	
Date of Interview	D D - M M - 2019
Location of Interview	

Demographic information:

Employee's name or code (optional)	
Designation	
Years of Total Experience	
Years Spent in the Company	
Gender	
Age	
Marital Status	
Family Type: Nuclear/ Joint	

For each statement given below, we would kindly ask you to rate, on a scale of 1 to 5, (1 = **Not Agree at All; 2 = Somewhat Agree; 3 = Can't Say; 4 = Agree; 5 = Strongly Agree)** the option that describes you the most.

1.	I often have too many assignments due at the same time.	1	2	3	4	5
2.	I often have to work more than I can handle.	1	2	3	4	5
3.	I am forced to work with a very tight work schedule.	1	2	3	4	5
4.	I am forced to change my work habits to be updated.	1	2	3	4	5
5.	I often work beyond official working hours.	1	2	3	4	5
6	I do not know much about the technology required to handle	1	2	3	4	5

	my job.					
7	I often receive different assignments from two or more sources.	1	2	3	4	5
8	I do not find enough time to understand a new technology.	1	2	3	4	5
9.	I often find it too complex to understand a new technology.	1	2	3	4	5
10	I find others know more about technology than I do.	1	2	3	4	5
11	There are always new developments in the technologies in our organization.	1	2	3	4	5
12	There are constant changes in the software in our organization.	1	2	3	4	5
13	There are constant changes in the hardware in our organization.	1	2	3	4	5
14	There are frequent updates to computer networks in our organization.	1	2	3	4	5
15	I have to work during my weekends and vacations.	1	2	3	4	5
16	I often receive assignments without adequate resources.	1	2	3	4	5
17	I often have to go beyond the policy in order to carry out my assignments.	1	2	3	4	5
18	There is unreasonable pressure to meet the deadlines to save my job.	1	2	3	4	5
19	New technology puts a threat to me at work.	1	2	3	4	5
20	My fear of losing the job increases due to the obsolescence of skills.	1	2	3	4	5
21	I feel a constant threat to my job security.	1	2	3	4	5
22	I always have to update my skills to avoid being replaced.	1	2	3	4	5
23	I am threatened by the new recruits with new technology skills.	1	2	3	4	5
24	I feel there is less sharing of knowledge among co-workers for fear of being replaced.	1	2	3	4	5
25	I do not see a long-term commitment to me (job security) here.	1	2	3	4	5