Determinants of Occupational Stress in Information Systems Professionals Post COVID-19: A Factor Analysis Approach

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ABSTRACT

The life of every individual has changed overnight with the arrival of COVID-19. The various surveys conducted at State and National Level stated that COVID-19 is not only disrupting organisations and institutions but also disrupting the work and personal lives of the employees. The invisible enemy made everyone alter the mode of communication with one another and made them to get engaged with different methodologies which lead to a new normal have caused occupational stress among employees. Occupational Stress is taking a toll on the mental, physical and emotional health and productivity of employees. The current study was planned to examine the various occupational stressors and to identify those stressors that influence Information Systems Professionals working in Hyderabad city. The primary data was collected using Occupational Stress Index (OSI) by stratified random sampling method from 1064 information systems professionals belonging to the Large, Medium, Small, and Start-up IT companies in Hyderabad. The factor analysis affirmed a twelve-factor model of occupational stressors in the Information Systems Professionals which confirms that the instrument used for the current research for assessing occupational stress has the high insightful/analytical capacity/ability for identifying areas requiring key concentration in the IT sector.

Keywords: Occupational Stress, COVID-19, Information Systems Professionals, Factor Analysis, Hyderabad, Categories of IT Companies.

1.0 Introduction

1.1 Analytical review of key technologies in ICT domain

The majority of employees knew what they were expected to do while working from office/workplace/factory suddenly didn't have clarity on how to quantify the productivity while working from home. They started introspecting about the contribution and value that they are creating/should create in new normal post-pandemic has added stress to their daily lives. Information Systems professionals are experiencing high levels of stress as many of them have lost their jobs or are working for reduced hours. Occupational stress is identified a serious medical problem, which has serious emotional, physical and psychological implications on employees wellbeing. Pre COVID-19 around 80% of working professionals in India have complained that they are experiencing stress, anxiety and depression and this percentage have increased to around 90% during and post COVID-19 as employees were unprepared for the pandemic, job separation, salary reductions, working from home etc., Irrespective of age, gender, income, experience and designation every information system professional is experiencing stress due to above stated factors. While some level of stress is acceptable but high/chronic stress has become a common ailment that leads to issues such as anxiety, depression, high blood pressure, blurred vision, insomnia, skin rashes, migraines, and heart problems start affecting employee productivity and wellbeing. Combating the stress appears to be a key focal point for individuals and organizations.

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Automation of business processes using artificial intelligence, IoT (Internet of things), surge in IT (Information Technology) and its applications and growing demand for high quality digitised services and products (P.S.Manjula, 2015) has created an unprecedented demand for Information Systems Professionals around the world as well as in Hyderabad. The Information Technology (IT) Sector is the fastest growing sector in Telangana. Telangana IT/ ITES exports reached to Rs. 1,28,807 crores in 2019-20 when compared to Rs. 1,09,219 crores from the previous year 2018-19 at the rate of 17.93% against 8.09% all India. The sector provided direct employment to 5,82,126 professionals in 2019-20 in comparison to 5,43,033 professionals in 2018-19, there is an increase of 7.2% against the national growth rate of 4.93%. The growth story is phenomenal in the last quarter of FY 2019 -20 (Jayesh Ranjan, 2020). According to the white paper prepared by Hyderabad Software Enterprises Association (HYSEA), CBRE, KPMG and Telangana Government and released by Minister for IT and Industries, Telangana expects a growth of 10% for the FY 2021 in IT sector in Telangana. But this is subjected to second and third wave of COVID-19. The recent survey conducted by HYSEA stated that 38% of the IT companies which took part in the survey believe that their revenues will be negative or remain flat. The report also stated that the number of layoffs were less during and post COVID-19 and the Telangana State Government has set-up a "Layoff Redressal Committee" and gave counseling several professionals and organisations during COVID-19 times.

2.0 Literature Review

(Devi.T, 2011) examined the impact of high levels of stress on organisational level outcomes, its impact on behavior, mind, body and emotions and recommended the coping strategies to be implemented at organisational level among 200 Information Technology professionals belonging to technical and middle level of management from six IT companies. The major stressors identified were organisational changes, fear of job loss, emphasis on competition, lack of employee control, increasing technology, Workload, organization culture and push of multi-tasking. The stress coping strategies suggested were like finding triggers and stressors, stress management programs supportive organizational culture, physical activities, life style modification programs, proper job design, stress counseling and to participate in spiritual programs.

(Rani, 2013) identified that relationship with peers and superiors, working hours, programmes related to women development and role ambiguity were the factors that contribute to occupational stress among women IT professionals. Adoption of more stress coping strategies by the individuals and organisations was given as a suggestion.

(B.Prathyusha C. M., 2014) studied about the health problems faced by the software professionals which was carried among 90 software professionals in Hyderabad city. The study revealed that prolonged working hours and sitting; and the continuous viewing of the computer screens/monitors are crucial factors affecting the health of the software professionals. The study also mentioned the practices followed by the professionals to cope up with the occupational stress and health problems.

(B.Prathyusha C. M., 2014)identified the coping strategies used by the software professionals to handle stress and investigated gender wise differences with regard to coping strategies by software professionals. The data was collected using a structured questionnaire from 100 software professionals belonging to different IT companies in Hyderabad and the sampling technique adopted was convenience sampling. The results showed that diet, sleeping for long hours, exercise, yoga, art of living, and mediation are some of the popular stress coping strategies adopted by the software professionals.

(Misra, 2015) studied about the different predictors of stress and stressful work conditions among 50 software employees of age between 30-40 years working in 4Soft, Oracle, Satyam and Accenture in Hyderabad during the last five years. The results were that the employees who worked in

these companies from past five to eight years experienced stress due work pressure and working hours and have high levels of dissatisfaction

(B.Prathyusha C. M., 2015) conducted a survey using PLSS (Professional Life Stress Score) developed by David Fontana to assess the professional life stress among 150 software professionals belonging to different IT companies in Hyderabad. The data was collected by using convenience sampling method. The results showed that there the software professionals were experiencing moderate to high level of Professional Life Stress.

(B.Prathyusha C. M., 2016) measured occupational stress using Occupational Stress Index (OSI) given by Srivastava A. K. and Singh A. P. among 500 IT Professionals working in different IT companies in Hyderabad. The data collected was analysed using descriptive statistics and the results proved that the IT Professionals were experiencing high levels of stress.

(K.D.V.Prasad, 2016) conducted study to identify the factors causing occupational stress and its effect on job performance among 90 women and 110 men on the causes of occupational stress and its effect on performance at the workplace of IT companies. NASSCOM listed companies and the employees working more than 12 hours and were only considered for the study. The results indicated that women were experiencing high levels of stress when compared to men, the factors causing stress among them were same and were suffering from severe back and neck pain due to long sitting hours.

(Vimala Thomas, 2019) conducted a cross sectional study on occupational stress among Information Technology professionals working in Hyderabad. The study revealed that around 46%, 33%, and 21% of the professionals are experiencing low, moderate and high stress levels.

There were very fewer studies and it is also noticed that no holistic and exclusive study was conducted to determine factors affecting occupational stress among IS professionals in Hyderabad pre or post COVID-19. It involves a special mention that the studies conducted by the researchers prior to this study have done survey mostly in National Association of Software and Service Companies (NASSCOM) listed top five companies or in Indian based IT companies but not delved into and across the categories (Large, Medium, small and Start-ups) of IT companies. Hence, the present research is a pioneer study that endeavored to bridge this research gap.

3.0 Objectives

1. To examine or evaluate the various occupational stressors and to identify those stressors that are effecting the Information Systems Professionals post COVID-19.

4.0 Research Methodology

4.1 Sources of data

Structured questionnaire was used to collect primary data from Information Systems Professionals in Hyderabad. The researcher adopted a standardized questionnaire of Occupational Stress Index (OSI) developed by Professors S.K.Srivastava and A.P.Singh (Srivastava A.K., 1984) consisting of 46 statements.

For this standardized questionnaire, Cronbach's alpha-coefficient was found to be 0.90 and Reliability coefficient determined by Split-half (odd-even) method was 0.937. Secondary data was collected from journals, newspapers, internet and business magazines.

4.2 Sample

The sample for the study consisted of 1064 information systems professionals from categories of IT companies using proportionate stratified random sampling. Four categories of IT companies (Large, Medium, Small and Start-up) were considered into four strata. Using Simple Random Sampling Technique, the sample is taken from each stratum. Stratification was done on the principles

that the strata are homogenous within themselves and categories of IT companies are non-overlapping in order to gain a fastidiousness in estimation of characteristics of population.

S. No.	Category	Turnover	Number of professionals
1	Large	More than 200,00,00,000	More than 1000
2	Medium	10,00,00,000- 200,00,00,000	301-1000
3	Small	50,00,000- 10,00,00,000	51-300
4	Start-up	Upto 50,00,000	0-50

Table 1: Break up of Categories of IT companies (Strata)

Source: ICT Policy 2016

4.3 Tools

To analyse the data the tools adopted were Factor analysis and Principal Component Analysis.

5.0 Results and Discussions

To identify the stressors which are influencing the information systems professionals, factor analysis was carried on 46 variables. The following table 2 shows the descriptive statistics (mean and standard deviation) related to sources of stress.

Table 2: Descriptive Statistics (Mean and Standard Deviation) Related to Sources of Stress

Item code	Statement	Mean	Standard
			Deviation
Var1	I have to do a lot of work in this job	3.98	.829
Var2	The available information relating to my job-role and its outcomes are vague and insufficient.	3.02	1.095
Var3	My different officers often give contradictory instructions regarding my works.	2.84	1.055
Var4	Sometimes it becomes complex problem for me to make adjustment between political / group pressures and formal rules and instructions	3.12	1.121
Var5	The responsibility for the efficiency and productivity of many employees is thrust upon me.	3.54	.983
Var6	Most of suggestions are heeded and implemented here.	2.48	.875
Var7	My decisions and instructions concerning distribution of assignments among employees are properly followed.	2.47	.854
Var8	I have to work with persons whom I dislike.	3.09	1.108
Var9	My assignments are of monotonous nature.	3.08	.983
Var10	Higher authorities do care for my self-respect.	2.58	1.036
Var11	I get less salary in comparison to the quantum of my labor/work.	3.74	1.105
Var12	I do my work under tense circumstances.	3.24	1.102
Var13	Owing to excessive workload I have to manage with insufficient number of employees and resources.	3.04	1.059
Var14	The objectives of my work-role are quite clear and adequately planned.	2.37	.885
Var15	Officials do not interfere with my jurisdiction and working methods.	2.90	1.218
Var16	I have to do some work unwillingly owing to certain group /political pressures.	3.08	1.068
Var17	I am responsible for the future of a number of employees.	3.16	1.003
Var18	My co-operation is frequently sought in solving the administrative or other work related problems at higher levels.	2.71	.957

Var19	My suggestions regarding the training programmes of the employees are given due significance.	2.56	.864
Var20	Some of my colleagues and subordinates try to defame and malign me as unsuccessful.	2.77	1.028
Var21	I get ample opportunity to utilize my abilities and experience independently.	2.55	.979
Var22	This job has enhanced my social status.	2.36	.925
Var23	I am seldom rewarded for my hard labor and efficient performance.	3.26	1.011
Var24	Some of my assignments are quite risky and complicated.	3.56	.969
Var25	I have to dispose off my work hurriedly owing to excessive workload	3.12	1.029
Var26	I am unable to perform my duties smoothly owing to uncertainty and ambiguity of the scope of my jurisdiction and authorities.	2.94	1.015
Var27	I am not provided with clear instructions and sufficient facilities regarding the new assignments entrusted to me	2.88	1.071
Var28	In order to maintain group conformity sometimes I have to do/ produce more than the usual.	3.68	.836
Var29	I bear the great responsibility for the progress and prosperity of this organisation/ department/ project.	3.81	.857
Var30	My opinions are sought in forming important policies of the organisation / department/ project.	2.79	1.031
Var31	Our interests and opinion are duly considered in making appointments for important posts.	2.76	.948
Var32	My colleagues do co-operate with me voluntarily in solving administrative and other work related problems.	2.21	.853
Var33	I got ample opportunity to develop my aptitude and proficiency properly.	2.42	.975
Var34	My higher authorities do not give due significance to my post and work.	2.88	1.008
Var35	I often feel that this job has made my life cumbersome.	3.02	.957
Var36	Being too busy with official work I am not able to devote sufficient time to my domestic and personal problems.	3.21	1.142
Var37	It is not clear that what type of work and behaviour my higher authorities and colleagues expect from me.	2.89	.987
Var38	Employees attach due importance to the official instructions formal working procedure.	2.48	.792
Var39	I am compelled to violate the formal and administrative procedures and policies owing to group/ political pressures.	2.56	.924
Var40	My opinion is sought in changing or modifying the working system, implements and conditions.	2.81	.902
Var41	There exists sufficient mutual co-operation and team-spirit among the employees of this organisation.	2.31	.918
Var42	My suggestions and co-operation are not sought in solving even those problems for which I am quiet competent.	2.91	.999
Var43	Working conditions are satisfactory here from the point of view of our welfare and convenience.	2.46	.892
Var44	I have to do such work as ought to be done by others.	3.31	.938
Var45	It becomes difficult to implement all of a sudden the new dealing procedures and policies in place of those already in practice.	3.51	.983
Var46	I am unable to carry out my assignments to my satisfaction on account of excessive load of work and lack of time.	3.24	1.128

Source: Primary data and A. K. Srivastava and A. P. Singh, 'The manual of Occupational Stress Index', Manovaigyanic Parikshan Sansthan, Varanasi, 1984.

Kaiser-Meyer-Olkin (KMO) and Bartlett's Test result is shown in the Table 3. 0.882 is the value of the KMO measure of sampling adequacy which indicates that the sample data for conduct of factor analysis for the 46 variables is appropriate. To find the presence of correlation among the variables the statistical tool used was the Bartlett's test of Sphericity. There is a significant relationship among the variables as the p-value (Sig.) is 0.00. The test statistic value of chi-square with 1035 degrees of freedom (df) is 14766.935.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.882	
	Approx. Chi-Square	14766.935
Bartlett's Test of Sphericity	df	1035
	Sig.	.000

Table 3: KMO and Bartlett's Test

Source: Primarv data

Communality value ranges from 0 to 1. The value '0' means no variance and value '1' means total variance explained by common factor and if the variance is less than 0.5, it can be removed from the further study. Table 4 exhibits communalities table. Variables like Var8, Var10, Var16, Var22, Var23, Var24, Var28 and Var43 are removed for further analysis as all these variables have the value of variance to be below 0.5. Remaining all variables are considered for further analysis.

Table 4:	Communalities

Item code	Initial	Extraction
Var1	1.00	.638
Var2	1.00	.580
Var3	1.00	.578
Var4	1.00	.636
Var5	1.00	.523
Var6	1.00	.624
Var7	1.00	.604
Var8	1.00	.462
Var9	1.00	.557
Var10	1.00	.387
Var11	1.00	.526
Var12	1.00	.546
Var13	1.00	.587
Var14	1.00	.523
Var15	1.00	.600
Var16	1.00	.484
Var17	1.00	.573
Var18	1.00	.553
Var19	1.00	.546
Var20	1.00	.589
Var21	1.00	.563
Var22	1.00	.485
Var23	1.00	.399
Var24	1.00	.487
Var25	1.00	.616
Var26	1.00	.596

Var27	1.00	.616
Var28	1.00	.466
Var29	1.00	.618
Var30	1.00	.627
Var31	1.00	.627
Var32	1.00	.689
Var33	1.00	.596
Var34	1.00	.580
Var35	1.00	.574
Var36	1.00	.592
Var37	1.00	.599
Var38	1.00	.609
Var39	1.00	.530
Var40	1.00	.529
Var41	1.00	.578
Var42	1.00	.546
Var43	1.00	.496
Var44	1.00	.615
Var45	1.00	.682
Var46	1.00	.664
Extraction Method: PCA (Pr	incipal Component Analysis)	÷

Table 5 : Total Variance Explained

	Initial	Eigen values		Extrac Loadir	tion Sums of ngs	Squared	Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.909	17.194	17.194	7.909	17.194	17.194	3.577	7.776	7.776
2	4.809	10.455	27.648	4.809	10.455	27.648	3.009	6.541	14.317
3	1.932	4.2	31.849	1.932	4.2	31.849	2.801	6.089	20.407
4	1.651	3.589	35.438	1.651	3.589	35.438	2.522	5.482	25.889
5	1.487	3.233	38.67	1.487	3.233	38.67	2.327	5.059	30.948
6	1.435	3.12	41.791	1.435	3.12	41.791	2.12	4.608	35.556
7	1.33	2.892	44.683	1.33	2.892	44.683	2.04	4.434	39.991
8	1.225	2.663	47.346	1.225	2.663	47.346	2.03	4.413	44.404
9	1.177	2.559	49.905	1.177	2.559	49.905	1.686	3.666	48.07
10	1.088	2.365	52.27	1.088	2.365	52.27	1.482	3.222	51.292
11	1.029	2.237	54.507	1.029	2.237	54.507	1.312	2.853	54.144
12	1.019	2.215	56.722	1.019	2.215	56.722	1.186	2.577	56.722
Extraction Me	Extraction Method: PCA (Principal Component Analysis)								

The above table 5 exhibits the items of Principal Component Analysis (PCA) using varimax rotation. Factor analysis is conducted on all the 46 variables, on the criteria that Eigen value is greater than one. All the 46 variables were reduced to 12 components as shown in the Fig.1 (Scree Plot) which together explain 57% of total variance.

More than 56.723% of the variance have been explained by the first twelve components, which proves that the variables chosen for the study are relevant. Rotated Component Matrix shown in Table 6 indicate how each factor correlates with each item. For easy reading and understanding of the below table the values are suppressed to 0.4.



Figure 1: Scree Plot



	Comp	Components										
	1	2	3	4	5	6	7	8	9	10	11	12
Var1	.672											
Var 2		.637										
Var3			.681									
Var4				.478								
Var5					.520							
Var6						.773						
Var7							.583					
Var9									.773			
Var11												.621
Var12											.641	
Var13	.454											
Var14		.405										
Var15			.672									
Var17					548							
Var18						.490						
Var19							.705					
Var20								.819				
Var21									.460			
Var25	.603											
Var26		.647										

Var27			.637									
Var29*												
Var30						.535						
Var31							.744					
Var32								.523				
Var33									.530			
Var34										.424		
Var35											.576	
Var36	.661											
Var37		.409										
Var38			.777									
Var39*												
Var40						.524						
Var41								.434				
Var42									.605			
Var44	.618											
Var45			.806									
Var46	.751											
a. Rotat	ion conve	erged in	16 iterati	ons.					•			
Var29* an	d Var39*	are hav	ing values	s less th	nan 0.4							
Rotation M	Iethod: V	arimax	with Kais	er Nori	nalizatior	1						
Extraction	Method:	Princip	al Compo	onent A	nalysis.							

The following are the measures and item loadings of the twelve factors in order of their importance.

5.1 Role overload

The first component accounted for 17.194% of the total variance. This component had significant loading of 6 statements. Table 7 shows the factor loadings of these variables.

Item code	Statement	Loading
Var1	I have to do a lot of work in this job	.672
Var13	Owing to excessive workload I have to manage with insufficient number of employees	.454
	and resources.	
Var25	I have to dispose off my work hurriedly owing to excessive workload	.603
Var36	Being too busy with official work I am not able to devote sufficient time to my domestic	.661
	and personal problems.	
Var44	I have to do such work as ought to be done by others	.618
Var46	I am unable to carry out my assignments to my satisfaction on account of excessive load	.751
	of work and lack of time.	

Table 7:	Component	1-Significant	Loadings	of Variables
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Source: Primary data and A. K. Srivastava and A. P. Singh, 'The manual of Occupational Stress Index', Manovaigyanic Parikshan Sansthan, Varanasi, 1984

The component is named as "Role Overload" as all the statements are positively loaded as shown in table 7, it proves that the occupational stress is caused to Information Systems professionals due to excessive workload.

5.2 Role ambiguity

This component accounts for 10.456% of the total variance and has significant loading of four statements. Table 8 shows that the factor loadings of these variables.

Item code	Statement	Loading
Var2	The available information relating to my job-role and its outcomes are vague and	.637
	insufficient.	
Var14	The objectives of my work-role are quite clear and adequately planned.	.405
Var26	I am unable to perform my duties smoothly owing to uncertainty and ambiguity of the	.647
	scope of my jurisdiction and authorities.	
Var37	It is not clear that what type of work and behaviour my higher authorities and colleagues	.409
	expect from me.	

Table 8:	Component	2-Significant	Loadings	of Variable
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Source: Primary data and A. K. Srivastava and A. P. Singh, 'The manual of Occupational Stress Index', Manovaigyanic Parikshan Sansthan, Varanasi, 1984.

The component is named as "Role Ambiguity" as all the statements describe that the occupational stress is caused due to ambiguity and uncertainty of the job roles performed.

5.3 Role conflict

This component accounts for 4.21% of the total variance and has significant loading of five statements. Table 9 shows the factor loadings of these variables.

Table 9:	Component	3-Significant	Loadings of	f Variables
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Item code	Statement	Loading
Var3	My different officers often give contradictory instructions regarding my works.	.681
Var15	Officials do not interfere with my jurisdiction and working methods.	.672
Var27	I am not provided with clear instructions and sufficient facilities regarding the new	.637
	assignments entrusted to me.	
Var38	Employees attach due importance to the official instructions formal working procedure.	.777
Var45	It becomes difficult to implement all of a sudden the new dealing procedures and policies in	.806
	place of those already in practice.	

Source: Primary data and A. K. Srivastava and A. P. Singh, 'The manual of Occupational Stress Index', Manovaigyanic Parikshan Sansthan, Varanasi, 1984.

The component is named as "Role Conflict" as all the statements describe that the occupational stress is caused due to sudden changes in the procedures and policies, for not providing clear instructions regarding new assignments and job roles being ill-defined.

5.4 Political pressures

This component accounts for 3.590% of the total variance and has four statements, out of four, only one statement is taken into consideration. Remaining statements are removed from the study as Var39 has factor loading to be less than 0.4 and Var16 and Var28 have the value of variance to be below 0.5. Table 10 shows the factor loadings of these variables. The component is named as "Political Pressures" as all the statements describe that the occupational stress caused is due to make adjustment between formal rules and instructions and group/ political pressures.

Item code	Statement	Loading
Var4	Sometimes it becomes complex problem for me to make adjustment between political /	.478
	group pressures and formal rules and instructions	
Var39	I am compelled to violate the formal and administrative procedures and policies owing to	Not considered
	group/ political pressures. (Loading is less than 0.4)	

Table 10: Component 4-Significant Loadings of Variables

Source: Primary data and A. K. Srivastava and A. P. Singh, 'The manual of Occupational Stress Index', Manovaigyanic Parikshan Sansthan, Varanasi, 1984.

5.5 Persons responsibility

This component accounts for 3.234% of the total variance and has significant loading of three statements, out of three, only two statements are considered. Var39 is removed from the study as it has the factor loading to be less than 0.4. Table 11 shows the factor loadings of these variables.

Table 11: Component 5- Significant Loadings of Variables

Item code	Statement	Loading
Var5	The responsibility for the efficiency and productivity of many employees is thrust	.520
	upon me.	
Var17	I am responsible for the future of a number of employees.	548
Var29	I bear the great responsibility for the progress and prosperity of this organisation/	Not considered
	department/ project. (Loading is less than 0.4)	

Source: Primary data and A. K. Srivastava and A. P. Singh, 'The manual of Occupational Stress Index', Manovaigyanic Parikshan Sansthan, Varanasi, 1984.

The component is labelled as "Persons responsibility" as the stress is caused due to the responsibility of productivity and efficiency of many employees is upon the Information System professional and the negative loading of var17 indicates that the extent of stress is reduced when the responsibility of the future of number of employees is in the hands of Information Systems professional.

5.6 Under participation

This component accounted for 3.13% of the total variance and has significant loading of four statements. Table 12 shows the factor loadings of these variables.

Item code	Statement	Loading
Var6	Most of suggestions are not heeded and implemented here.	.773
Var18	My co-operation is frequently sought in solving the administrative or other work related	.490
	problems at higher levels.	
Var30	My opinions are sought in forming important policies of the organisation / department/ project.	.535
Var40	My opinion is sought in changing or modifying the working system, implements and	.524
	conditions.	

Table 12: Component 6-Significant Loadings of Variables

Source: Primary data and A. K. Srivastava and A. P. Singh, 'The manual of Occupational Stress Index', Manovaigyanic Parikshan Sansthan, Varanasi, 1984.

The component is named as "Under Participation" as all the statements describe that the occupational stress is due to the suggestions and opinions are not sought out from Information systems professionals for solving the problems or in changing the policies.

5.7 Powerlessness

This component accounts for 2.894% of the total variance and has significant loading of three statements. Table 13 shows the factor loadings of these variables.

Item code	Statement	Loading
Var7	My decisions and instructions concerning distribution of assignments among employees	.583
	are properly followed.	
Var19	My suggestions regarding the training programmes of the employees are given due	.705
	significance.	
Var31	Our interests and opinion are duly considered in making appointments for important	.744
	posts.	

Table 13: component 7-Significant Loadings of Variables

Source: Primary data. and A. K. Srivastava and A. P. Singh, 'The manual of Occupational Stress Index', Manovaigyanic Parikshan Sansthan, Varanasi, 1984

The component is named as "Powerlessness", as all the statements elucidate that the occupational stress in Information Systems professionals is caused due to not being involved in suggestions related to training programmes, opinions related to appointments for important positions and decisions relating to distribution of assignments.

5.8 Poor peer relations

This component accounts for 2.664% of the total variance and has four statements, out of which three statements are considered. The statement Var8 is not considered for further study as the value of variance below 0.5. Table 14 shows the factor loadings of these variables.

Table 14:	Component 8-	Significant 1	Loadings of	Variables
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Item code	Statement	Loading
Var20	Some of my colleagues and subordinates try to defame and malign me as unsuccessful.	.819
Var32	My colleagues do co-operate with me voluntarily in solving administrative and other	.523
	work related problems.	
Var41	There exists sufficient mutual co-operation and team-spirit among the employees of this	.434
	organisation.	

Source: Primary data and A. K. Srivastava and A. P. Singh, 'The manual of Occupational Stress Index', Manovaigyanic Parikshan Sansthan, Varanasi, 1984.

This component is named as "Poor Peer Relations" as all the statements describe that the relationship with colleagues and subordinates lead to occupational stress.

5.9 Intrinsic impoverishment

This component accounts for 2.558% of the total variance and has four statements. Table 15 shows the factor loadings of these variables.

Item code	Statement	Loading
Var9	My assignments are of monotonous nature.	.773
Var21	I get ample opportunity to utilize my abilities and experience independently.	.460
Var33	I got ample opportunity to develop my aptitude and proficiency properly.	.530
Var42	My suggestions and co-operation are not sought in solving even those problems for	.605
	which I am quiet competent.	

Table 15: Component 9- Significant Loadings of Variables

Source: Primary data and A. K. Srivastava and A. P. Singh, 'The manual of Occupational Stress Index', Manovaigyanic Parikshan Sansthan, Varanasi, 1984

This component is named as "Intrinsic Impoverishment" as all the four statements describe that the occupational stress is caused due to monotonous assignments, cooperation and suggestions of the employee are not sought in in solving problems.

5.10 Low status

This component accounts for 2.364% of the total variance and has three statements, out of which only one variable is considered. The statements Var10 and Var22 are not considered for further study as the value of variance is less than 0.5. Table 16 shows the factor loading of the variable.

Table 16: Component 10- Significant Loadings of Variables

Item code	Statement	Loading
Var34	My higher authorities do not give due significance to my post and work.	.424
Source: Primary data and A. K. Srivastava and A. P. Singh, 'The manual of Occupational Stress Index', Manovaigyanic		
Parikshan Sansthan, Varanasi, 1984		

This component is labelled as "Low Status", as the statement describes that the occupational stress is caused due to higher officials not giving due respect and significance to the professional work and the designation.

5.11 Strenuous working conditions

This component accounts for 2.238% of the total variance and has four statements, out of which two variables are considered. The statements Var24 and Var43 are not considered for further study as the value of variance is less than 0.5. Table 17 shows the factor loadings of the variables.

Table 17: Component 11-Significant Loadings of Variables

Item code	Statement	Loading
Var12	I do my work under tense circumstances.	.641
Var35	I often feel that this job has made my life cumbersome.	.576

Source: Primary data. and A. K. Srivastava and A. P. Singh, 'The manual of Occupational Stress Index', Manovaigyanic Parikshan Sansthan, Varanasi, 1984

This component is named as "Strenuous Working Conditions" as the above statements describe that the stress is caused due to the working conditions.

5.12 Unprofitability

This component accounts for 2.216% of the total variance and has two statements, out of which only one variable is considered. The statement Var23 is not considered for further study as it has the value of variance less than 0.5. Table 18 shows the factor loadings of the variable.

Table 18: component 12-Significant Loadings of Variables

Item code	Statement	Loading
Var11	I get less salary in comparison to the quantum of my labor/work.	.621
<i>a</i> b :		

Source: Primary data and A. K. Srivastava and A. P. Singh, 'The manual of Occupational Stress Index', Manovaigyanic Parikshan Sansthan, Varanasi, 1984.

This component is named as "Unprofitability", as the above statement describes that the

occupational stress is related with remuneration (increments and salaries).

Table 19 shows factor loadings based on factor analysis for the factors influencing occupational stress among Information Systems professionals.

Components	Item	Factor Loading
Role Overload	I am unable to carry out my assignments to my satisfaction on account of excessive load of work and lack of time.	.751
Role Ambiguity	I am unable to perform my duties smoothly owing to uncertainty and ambiguity of the scope of my jurisdiction and authorities.	.647
Role Conflict	It becomes difficult to implement all of a sudden the new dealing procedures and policies in place of those already in practice.	.806
Political Pressures	Sometimes it becomes complex problem for me to make adjustment between political / group pressures and formal rules and instructions	.478
Persons Responsibility	The responsibility for the efficiency and productivity of many employees is thrust upon me.	.520
Under Participation	Most of suggestions are heeded and implemented here.	.773
Powerlessness	Our interests and opinion are duly considered in making appointments for important posts.	.744
Poor Peer Relations	Some of my colleagues and subordinates try to defame and malign me as unsuccessful.	.819
Intrinsic Impoverishment	My assignments are of monotonous nature.	.773
Low Status	My higher authorities do not give due significance to my post and work.	.424
Strenuous Working Conditions	I do my work under tense circumstances.	.641
Unprofitability	I get less salary in comparison to the quantum of my labor/work.	.621

Table 19: Factor Loadings

Source: Primary data and A. K. Srivastava and A. P. Singh, 'The manual of Occupational Stress Index', Manovaigyanic Parikshan Sansthan, Varanasi, 1984.

6.0 Limitations

The present study has certain limitations like:

- This research was conducted only among 12 selected Information Technology companies. in Hyderabad, Telangana State.
- This study is based purely on the feelings/ attitudes/opinions of the respondents which can change/vary from situation to situation, time to time while answering the questionnaire.
- Present research concentrations only on identification of occupational stressors experienced by the Information Systems professionals post COVID.

7.0 Conclusions

In conclusion, a twelve factor model of occupational stressors was confirmed using factor analysis in the Information Systems Professionals in post COVID-19 which proves that the scale adopted for the present research has high analytical capability for measuring occupational stress and for identification of areas which require key focus in the Information Technology sector/ industry.

Majority of Information Systems Professionals are adopting individual strategies to overcome the occupational stress post COVID-19 by reading books and newspapers, gardening, meditation and yoga, watching television and movies with families, spending time with family members, cooking etc., It is not only the individual strategies help in overcoming the occupational stress.

It is very important that the IT companies also understand the needs of its employees and provide what is best for them which can help the Information Systems professionals to overcome the stress in a better way during post COVID. Constant appraisal programs, challenging assignments, recognition, awards and rewards, proper definition of the job roles, providing job security, frequent town hall meetings and appreciation from the superiors should be provided to reinstate and motivate them to feel **"work and home"** instead of "**work from home"**.

References

B.Prathyusha. (2021). The Effect of Demographic Variables Occupational Stress: A Study on Software Professionals. *Recent trends and Innovation in Business* (pp. 145-158). Hyderabad: KGRL College.

B.Prathyusha, C. P., & Reddy, S. (2016). A Quantitative Erudition of Occupational Stress in Information Technology Professinoals. *International Journal of Computational Engineering and Management*, 1-4.

B.Prathyusha, Prasad, C. S., & Reddy, M. S. (2014). Occupational Stress, Health Concerns ans Coping Strategies of software professionals- an empirical study. *NCESTM 2K14* (pp. 107-109). Hyderabad: Malla Reddy Engineering College.

B.Prathyusha. (2021). The Effect of Demographic Variables Occupational Stress: A Study on Software Professionals. *Recent trends and Innovation in Business* (pp. 145-158). Hyderabad: KGRL College.

B.Prathyusha, C. P., & Reddy, S. (2016). A Quantitative Erudition of Occupational Stress in Information Technology Professinoals. *International Journal of Computational Engineering and Management*, 1-4.

B.Prathyusha, Prasad, C. S., & Reddy, M. S. (2014). Occupational Stress, Health Concerns ans Coping Strategies of software professionals- an empirical study. *NCESTM 2K14* (pp. 107-109). Hyderabad: Malla Reddy Engineering College.

B.Prathyusha, Prasad, C., & Reddy, M. S. (2014). Investigation of stress coping strategies in software professionals. *Stress Management Professional- An International Journal*, 35-40.

B.Prathyusha, Prasad, C., & Reddy, S. (2015). Professional Life Stress among Software Professionals in Hyderabad- An Evaluaton. *International Journal of Innovative Research in Science, Engineering and Technology*, 12371-12376.

Devi.T, U. (2011). A Study on Stress Management and Coping Strategies with reference to IT Companies. *Journal of Information Technology and Economic Development*, 30-48.

Drucker.P.F. (1954). The pratice of management: A study of most important function in American Society. New York: Harper.

Jayesh Ranjan, I. E. (2020). Annual Report 2019-20. Hyderabad: Government of Telangana.

K.D.V.Prasad, R. V. (2016). A Comparative analysis on the causes of Occupational Stress among Men and Women employees and its effect on performance at the workplace of Information Technology Sector. *International Journal of Management Excellence*, 797-807.

Misra, A. (2015). Globalisation and stress among computer professionals. *International Journal of Multidisciplinary Research and Development*, 288-291.

P.S.Manjula, P. (2015). Occupational Stress and its impact on Work Exhaustion-An Empirical Study among Information System Personnel. *International Journal of Appplied Business and Economic Research*, 6419-6431.

Rani, A. (2013). Workplace Stress among Women in IT Sector. *Gavesana Journal of Management*, 86-88.

Srivastava A.K., S. A. (1984). Manual of the Occupational Stress Index. Varansi: Banaras University.

Vimala Thomas, Y. K. (2019). Study on stress among software professionals in Madhapur area of Hyderabad. *International Journal of Management Excellence*, 4062-4066