

# **PERCEPTION OF EMPLOYEES WORKING IN IT INDUSTRY TOWARDS WORK FAMILY CONFLICT WITH REFERENCE TO CHENNAI REGION**



**Balaji Mahadevan**, *Research Scholar, External Part Time, VIT Business School, VIT University, VIT Chennai.*  
*balajimahadevan71@gmail.com*

**Reeves Wesley**, *Professor, VIT Business School at VIT Chennai*

## **ABSTRACT**

Work and family conflict occurs when there are incompatible demands between the work and family roles of an individual that makes participation in both roles more difficult. The study is about Work-Family Conflict among Employees in IT industry. The main objective of the study is to identify the influence of personal profile of IT employees on various variables of Work-Family Conflict and to know whether marital status influences the factors of the work family conflict. For this purpose a sample of 150 is collected from the respondents based on survey method and percentage analysis, Anova and t-test were used as a tool for analyzing the data. The conclusion is that Work-Family conflict of IT employees is influenced more by work and family role variables. Mostly the Family Social support influences the work family conflict than Work Place support. While taking care of the health of others, it is important that IT employees should learn and use the methods and techniques to take care of their own health also.

## **WORK-FAMILY CONFLICT**

The study is about Work-Family Conflict among Employees in IT industry. Research on work-family conflict has been conducted primarily in Western industrialized nations, most notably in the United States, but economic and business globalization has made work-family issues increasingly important in developing countries. In India almost all researches on working ambience, i.e. quality of work life, work stress, work life balance, retention strategies, work culture/climate, job evaluation, talent management, policy formations etc., are directly or indirectly connected with Work-Family Conflict.

In India, having a male child is seen as a man's ultimate obligation, a religious need, and a source of emotional and family fulfillment. Male children are treated with more respect and given additional advantages than female children since they are more wanted. Male children are socialized to be more forceful, less tolerant, autonomous, self-sufficient, demanding, and bossy. Females, on the other hand, are trained to be self-sacrificing, meek, accommodating, caring, altruistic, adaptable, tolerant, and religious from an early age, and to place a high emphasis on family. Women of modest means have historically worked outside the house in rural places. The number of middle- and upper-class women working to augment their husbands' wages has increased significantly in metropolitan regions. The woman in a traditional Indian household is often reliant, submissive, obedient, modest, and nonassertive, and she goes out of her way to please her husband. Women are tasked with the care of the house and the children, as well as the old parents and relatives.

But in the modern Indian Family, the women are not dependent on their husband. They give an equal contribution in earning money, managing and caring their family. "The house does not rest upon the ground, but upon a woman". Women have been enhancing their status in education and taken a considerable part in industries as well. In recent years, we've seen twin-strike married people sharing family hardships in the workplace, creating a stressful situation with time demands, stress, role conflict, and so on, resulting in Job Strain. Coimbatore city firms are taken for the present research; and responders are IT workers who fundamentally contribute as the backbone of the company.

### DEFINITION

Job-family conflict arises when an individual's work and family obligations have contradictory demands, making participation in both roles more challenging. As a result, the conflict occurs at the work-life nexus. Work-family conflict is essential for both businesses and people since it has negative repercussions. Conflict between work and family, for example, is linked to higher burnout, leaving intentions, and workplace stress, as well as poor health and job performance.

### STATEMENT OF THE PROBLEM

What exactly is the purpose of life? To be content as well as helpful. There are only two options for how you can spend your life. It's as though everything is a miracle. The other seems to believe that everything is a miracle. If a person is not to become a bother to the rest of the world, he or she must have a job. We mortals get nothing from life unless we labour hard. A man must labour for money in order to live, yet being a social creature, he also need a family. Social studies research also shows the effects of job and work-related factors, as well as the same in the family domain.

In this sense, it would be more pertinent to attempt to research the level of Work-Family Conflict, which could aid companies in focusing on IT employees' work styles, providing a high level of job satisfaction, and reducing problems related to them in the workplace, which could aid them in successfully handling their family roles and responsibilities without much stress. Many studies have shown that substantial demands from both the work and home environments may lead to high levels of work-family conflict for many people. The person, i.e. IT workers, is the focus of this research rather than the industry, and various factors have been applied to each domain (i.e., work and family) to identify the extent of conflict he or she has between his or her job and family obligations.

The researcher has to find a model in this study on IT employees in Coimbatore. IT employees' are selected for this study, just because of the significance of their role in the workplace, due to their responsibility and demands of their work. It has been under prediction that the allegiance and job nature of them undeniably affect their family life and may influence their work life and work involvement very badly without excluding productivity. Rawal et. al (2021), Poongodi M et. al(2022), Poongodi M et. al (2021), Dhiman P et.al (2022), Sahoo S.K et.al (2022), K.A et. al(2022), Dhanraj R.K et. al (2020), Poongodi M et. al (2019), Poongodi M et. al (2020), M. M. Kamruzzaman et. al (2014), M. M. Kamruzzaman et. al (2021), Md Selim Hossain et. al (2019), Mingju Chen et. al (2019)

### NEED OF THE STUDY

- India is a country of diversified cultures, traditions and habits where the IT employees has to act as stabilizing element to mitigate the suffering which has been accentuated and accelerated.
- This study is designed to explore the work-family conflict among IT employees. Because, An IT employee is an indispensable partner of the team and a valuable link between the doctors and the patients. They have more roles and responsibilities in her family also. She is to take care of companies duties as well as her family roles. The companies role will give impact in her family role and vice versa. She is in a situation to play a multiple role in both the environment. She has to balance her responsibilities in both Family and Work.

### OBJECTIVE OF THE STUDY:

- To identify the influence of personal profile of IT employees on various variables of Work-Family Conflict.
- To know whether demographic factors influences the factors of work-family conflict.
- To know whether marital status influences the factors of the work family conflict.

### RESEARCH METHODOLOGY:

The study's key contributing factors the goal of the investigation, the research design specification, sample design, data collecting, questionnaire design, and statistical methods for evaluating the acquired data.

**Research design:**

The research study is descriptive in nature. It has been used for analyzing the work – family conflict which exists in the Companies. Descriptive study is a research study that describes the characteristics of any individual or of groups. Here it describes the characteristics in terms of the various variables of Work Family Conflict.

The major descriptive research is used to fact finding of different kinds.

**SAMPLE DESIGN:**

From the universe of Chennai companies, Researcher has selected 10 companies for collecting data. Around 15 IT employees were selected randomly from each of 10 major companies to have a 150 sample respondents in the study using Simple Random Sampling Technique.

**DATA COLLECTION:****Primary Data**

The study's key contributing factors the goal of the investigation, the research design specification, sample design, data collecting, questionnaire design, and statistical methods for evaluating the acquired data.

**Secondary Data**

Secondary data were also collected in the study from published data related to the Work Family Conflicts of IT employees and opinion about the companies services were collected from the respective companies survey. Apart from this data, leading journals and magazines related to women IT employees were also referred for this study.

**STATISTICAL TOOLS:** Percentage analysis and Anova.

**LIMITATIONS OF THE STUDY**

However, there are certain limitations to the research. The amount of time spent with IT staff to gather information for the in-depth interview was significant. In addition, the amount of time spent with IT staff to complete the survey was restricted. This research is also linked to the common sampling flaws encountered in similar methodologies. Furthermore, the research's results are only relevant to the study location, i.e. Chennai city or any other comparable circumstance, and broad application to other places is not desired.

**DATA ANALYSIS AND INTERPRETATION****AGE OF THE RESPONDENTS**

The above table reveals respondents are in below 25yrs, are in 26-35yrs and 17.3 percentage percentage of them are in above 45

AGE	Frequency	Percent
Below 25	68	45.3
26-35	41	27.3
36-45	26	17.3
Above 45	15	10.0
Total	150	100.0

that 45.3percentage of the 27.3 percentage of the respondents of them are in 36-45yrs, 10 yrs.

**MARITAL STATUS OF THE**

The above table of the respondents are of them are unmarried.

Marital Status	Frequency	Percent
Married	96	64.0
Unmarried	54	36.0
Total	150	100.0

**RESPONDENTS**

reveals that 64 percentage married and 36 percentage

**EDUCATION QUALIFICATION OF THE RESPONDENT**

Education Qualification	Frequency	Percent
Diploma	3	2.0
Graduation	101	67.3
Post Graduation	46	30.7
Total	150	100.0

The above percentage of the Graduation, 30.7 respondents are in Post Graduation and 2.0 percentage of them are studied Diploma.

table reveals that 67.3 respondents are in percentage of the

**EXPERIENCE OF THE RESPONDENT**

Experience	Frequency	Percent
Less than 5	92	61.3
6-10	41	27.3
Above 10	17	11.3
Total	150	100.0

The above table reveals that have less than 5yrs experience, have 6-10yrs experience and 11.3 10yrs of experience.

61.3percentage of the respondents 27.3 percentage of the respondents percentage of them have above

**WORK PLACE SUPPORT**

	NOR	%	NOR	%	NOR	%	NOR	%	NOR	%
I have good friends at my work place, which motivates me always	68	45.3	69	46	13	8.7	0	0	0	0
In my absence, my responsibilities can be handled by my peer group either partially or fully	43	28.7	89	59.3	18	12	0	0	0	0
My superior helps me to complete my tasks	14	9.3	92	61.3	44	29.3	0	0	0	0
I feel secure in the working environment	30	20	106	70.7	14	9.3	0	0	0	0
At the time of important family commitments, I am allowed to be 'off' from work	52	34.7	86	57.3	12	8	0	0	0	0
My relationship with the colleagues and peers is smooth and co-ordial.	68	45.3	69	46	13	8.7	0	0	0	0
My colleagues and	37	24.7	96	64	17	11.3	0	0	0	0

peers celebrate my accomplishments										
In critical situations, my subordinates are highly supportive	37	24.7	101	67.3	12	8	0	0	0	0

SA-Strongly Agree      A-Agree N-Neutral      D-Disagree      SD-Strongly Disagree

NR-No. Of Respondent

The above table shows about the level of acceptance on work place support. In analysing about the good friends in work place 45.3% strongly agree, 46% agree, and 8.7% are neutral about acceptance on motivation at work place due to good friends. In analysing about handling responsibilities by the peer group on absence 28.7% strongly agree, 59.3% agree, and 12% are neutral about acceptance on handling responsibilities by the peer group on absence. In analysing about supervisor helping to complete the task 9.3% strongly agree, 61.3% agree, and 29.3% are neutral about acceptance on supervisor helping to complete the task. In analysing about security with work environment 20% strongly agree, 70.7% agree, and 9.3% are neutral about acceptance on security with work environment. In analysing about permission given by the company for family commitment 34.7% strongly agree, 57.3% agree, and 8% are neutral about acceptance on given by the company for family commitment. In analysing about relationship with the colleagues and peers is smooth and co-ordinal 45.3% strongly agree, 46% agree, and 8.7% are neutral about relationship with the colleagues and peers is smooth and co-ordinal. In analysing about colleagues and peers celebrate the employees accomplishments 24.7% strongly agree, 64% agree, and 11.3% are neutral about colleagues and peers celebrate the employees accomplishments. In analysing about supportiveness on critical situations 24.7% strongly agree, 67.3% agree, and 8% are neutral about supportiveness on critical situations to the employees.

**WORK ROLE CONFLICT**

S.No	Factors	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
		No. Of Respondent	%	No. Of Respondent	%	No. Of Respondent	%	No. Of Respondent	%	No. Of Respondent	%
9.	After work, I am still energetic to do some of the things I would like to do at home	29	19.3	72	48.0	33	22.0	16	10.7	0	0
10.	I don't work for long hours, on overtime and even on holidays.	83	55.3	37	24.7	26	17.3	4	2.7	0	0
11.	I am so busy, still I find it increasingly comfortable to concentrate on the job in front of me.	27	18.0	74	49.3	43	28.7	0	0	6	4.0
12.	On the job, I am not exhausted, hence I am able to spend enough time to my personal interests.	14	9.3	67	44.7	64	42.7	5	3.3	0	0
13.	My work takes up time that I would like to spend	30	20.0	82	54.7	28	18.7	10	6.7	0	0

	with my family and friends.										
14.	My job makes it comfortable to be the kind of parent and spouse I would like to be.	17	11.3	83	55.3	38	25.3	12	8.0	0	0

The above table shows about the level of acceptance on work role conflict. 19.3% strongly agree, 48% agree, 22% are neutral, and 10.7% disagree about acceptance on feeling energetic after work by the employees. In analysing about work for long hours, on overtime and even on holidays 55.3% strongly agree, 24.7% agree, 17.3% are neutral and 2.7% disagree for working for long hours, on overtime and even on holidays. In analysing about comfortable to concentrate on the job still at busy schedule 18% strongly agree, 49.3% agree, 28.7% are neutral and 4% strongly disagree about comfortable to concentrate on the job still at busy schedule. In analysing about spending enough time to personal interest 9.3% strongly agree, 44.7% agree, 42.7% are neutral and 3.3% disagree about spending enough time to personal interest. In analysing about willingness to be with their spouse and children based on work pressure 11.3% strongly agree, 55.3% agree, 25% are neutral and 8% disagree about willingness to be with their spouse and children based on work pressure.

**WORK INVOLVEMENT**

S.No	Factors	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
		No. Of Respondent	%	No. Of Respondent	%	No. Of Respondent	%	No. Of Respondent	%	No. Of Respondent	%
15.	I am fully committed to my job.	17	11.3	91	60.7	36	24.0	6	4.0	0	0
16.	I sacrifice my personal commitments for my job.	23	15.3	52	34.7	51	34.0	15	10.0	9	6.0
17.	When I involved in my work I never become a 'CLOCK WATCHER'.	71	47.3	51	34.0	25	16.7	3	2.0	0	0
18.	My work is the most important part of my life.	23	15.3	87	58.0	40	26.7	0	0	0	0

The above table shows about the level of acceptance on work involvement. 11.3% strongly agree, 60.7% agree, 24% are neutral, and 4% disagree about full commitment to their job. In analysing about sacrificing their personal commitments for their job 15.3% strongly agree, 34.7% agree, 34% are neutral, 10% disagree and 6% strongly disagree for their personal commitments for their job. In analysing about involvement in work and not watching the clock by the employees 47.3% strongly agree, 34% agree, 16.7% are neutral and 2% disagree about involvement in work and not watching the clock by the employees. In analysing about work as the most important part in life 15.3% strongly agree, 58% agree, and 26.7% are neutral about work as the most important part in life.

**FAMILY SOCIAL SUPPORT**

S.No	Factors	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree	
		No. Of Respondent	%	No. Of Respondent	%	No. Of Respondent	%	No. Of Respondent	%	No. Of Respondent	%

				t		t					
19.	I receive good respect from the society, due to the job I am in.	34	22.7	73	48.7	43	28.7	0	0	0	0
20.	In the family, everyone understands my work pressure.	31	20.7	75	50.0	31	20.7	13	8.7	0	0
21.	My spouse always shares my family responsibilities.	57	38.0	72	48.0	21	14.0	0	0	0	0
22.	When I go to work, I forget about the worries of my family, because of my family support.	36	24.0	59	39.3	46	30.7	0	0	9	6.0
23.	My children are cooperative when I am busy in my work.	39	26.0	51	34.0	46	30.7	12	8.0	2	1.3
24.	My elders at home are found supportive to my family.	21	14.0	76	50.7	44	29.3	9	6.0	0	0
25.	My family members adjust themselves in any unusual situations demanded by my job.	11	7.3	101	67.3	28	18.7	10	6.7	0	0
26.	I always get a good night sleep without worrying about work.	13	8.7	54	36.0	78	52.0	5	3.3	0	0

The above table shows about the level of acceptance on family social support. 22.7% strongly agree, 48.7% agree, and 28.7% are neutral about good respect from the society, due to the job they are in. In analysing about understanding the work pressure by the family 20.7% strongly agree, 50% agree, 20.7% are neutral, and 8.7% disagree for understanding the work pressure by the family. In analysing about spouse always shares their family responsibilities 38% strongly agree, 48% agree, and 14% are neutral spouse sharing their family responsibilities. In analysing about family support 24% strongly agree, 39.3% agree, and 30.7% are neutral and 6% strongly disagree about family support at the time of work. In analysing about cooperation by the children 26% strongly agree, 34% agree, and 30.7% are neutral and 8% disagree and 1.3% strongly disagree about cooperation by the children at the time of work. In analysing about support from elders 14% strongly agree, 50.7% agree, and 29.3% are neutral and 6% disagree about support from elders at the time of work. In analysing about family members adjusting themselves at the time of work 7.3% strongly agree, 67.3% agree, and 18.7% are neutral and 6.7% disagree about family members adjusting themselves at the time of work. In analysing getting good night sleep without worrying about work 8.7% strongly agree, 36% agree, 52% are neutral and 3.3% disagree about getting good night sleep without worrying about work.

#### AGE vs WORK INVOLVEMENT

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	6.318	3	2.106	12.352	.000
Within Groups	24.891	146	.170		

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	6.318	3	2.106	12.352	.000
Within Groups	24.891	146	.170		
Total	31.209	149			

The above table shows about the comparison between age and work place involvement. The F value is at 12.352 and the level of significance is at 0.000 which is lesser than 0.05. Its inferred that there is a significant relationship between age and work involvement.

**DESIGNATION vs WORK PLACE SUPPORT**

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.931	5	.186	4.450	.001
Within Groups	6.024	144	.042		
Total	6.955	149			

The above table shows about the comparison between designation and work place support. The F value is at 4.450 and the level of significance is at 0.001 which is lesser than 0.05. Its inferred that there is a significant relationship between designation and work place support.

**EDUCATION QUALIFICATION vs WORK ROLE CONFLICT**

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	3.299	2	1.650	16.018	.000
Within Groups	15.139	147	.103		
Total	18.438	149			

The above table shows about the comparison between education qualification and work role conflict. The F value is at 16.018 and the level of significance is at 0.000 which is lesser than 0.05. It s inferred that there is a significant relationship between qualification and work role conflict.

**EXPERIENCE vs WORK ROLE CONFLICT**

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.657	2	.829	7.259	.001
Within Groups	16.780	147	.114		
Total	18.438	149			

The above table shows about the comparison between experience and work role conflict. The F value is at 7.529 and the level of significance is at 0.001 which is lesser than 0.05. It s inferred that there is a significant relationship between experience and work role conflict.

**FAMILY TYPE Vs WORK- FAMILY CONFLICT**

		Levene's Test for Equality of Variances		T Test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)



avgWP	EVA	8.194	0.005	0.262	148	0.794
	EVNA			0.321	104.078	0.749
avgWR	EVA	1.308	0.255	-4.884	148	0
	EVNA			-4.578	59.672	0
avgWI	EVA	2.008	0.159	-1.826	148	0.07
	EVNA			-1.686	58.282	0.097
avgFS	EVA	1.836	0.177	0.724	148	0.47
	EVNA			0.658	56.907	0.513
avgFI	EVA	5.819	0.017	-3.348	148	0.001
	EVNA			-3.06	57.397	0.003
avgFR	EVA	4.86	0.029	0.038	148	0.969
	EVNA			0.036	58.913	0.972

Equal Variances Assumed- EVA, Equal Variances Not Assumed-EVNA

The above table shows about the comparison between equal variance assumed and not assumed with family type and work- family conflict were the t value is at 0.262 which is greater than then the table value at 0.195. Its inferred that there is no significant relationship between family type and work place support. The t value is at -4.484 which is lesser than then the table value at 0.195. Its inferred that there is a significant relationship between family type and work role conflict. The t value is at 0.159 which is lesser than then the table value at 0.195. Its inferred that there is a significant relationship between family type and work involvement. The t value is at 0.177 which is lesser than then the table value at 0.195. Its inferred that there is a significant relationship between family type and family social involvement. The t value is at 0.017 which is lesser than then the table value at 0.195. Its inferred that there is a significant relationship between family type and family role conflict. The t value is at 0.029 which is lesser than then the table value at 0.195. Its inferred that there is a significant relationship between family type and family role.

## RESULTS, DISCUSSION & CONCLUSION

- Most of the respondents are from the age group of below 25 years.
- Majority of the respondents are married in our survey.
- Majority of the respondents are graduates in our survey.
- Majority of the respondents are having less than 5 years of experience in our survey.
- Most of the respondents are working as staff IT employees.
- There is no significant relationship between family type and work place support.
- There is a significant relationship between family type and work role conflict.
- There is a significant relationship between family type and work involvement.
- There is a significant relationship between family type and family social involvement.
- There is a significant relationship between family type and family role.

## SUGGESTIONS

- The companies can reduce the overtime of the employees so that the level of satisfaction on job can be increased which leads to increase in productivity.
- Employees need recognition and encouragement. They deserve to be treated with deep respect in society. An IT employes takes gentle care of patients to save their lives or cure their illness just as a loving mother or a sister or a member of the family.
- IT employees should learn and use the methods and techniques to take care of their own health also.

## CONCLUSION

Work-Family Conflict is a well-known social and psychological issue, according to the available data throughout the research with literature review in hand. Work-family conflict is common in Western countries, and it is increasingly becoming more prevalent in India. In the Indian economy, the healthcare business has its own meaning, and IT personnel are at the centre of it, with a work style that is completely different from others.

Work and Family Role Variables have a greater impact on IT personnel' work-family conflict. Work-family conflict is mostly influenced by family social support rather than work-place support. In the hospital business, human resources management focuses on a variety of topics related to nursing practises and policies. This, in turn, focuses on an individual's healthy existence within the context of the family. In terms of practical ramifications, these domino-effects imply that the hospital sector should be worried about work-family or work-family conflict as a source of stress in their workers' life, as well as a potential liability in terms of health-care expenses and productivity. Indeed, family-supportive programmes (e.g., flextime, child care aid, etc.) are one push for hospitals to offer at work, and for employed parents to develop such programmes, which has been a tool to lessen the occurrence of these disputes. The findings demonstrate that reducing work-family conflict improves job and family satisfaction among IT personnel.

## REFERENCES

1. Chitra, D., & Mahalakshmi, V. (2012). A study on Employees Perception on Quality of work life and Job satisfaction in manufacturing organization-An Empirical Study. *Trade & Commerce*, 1(2), 175-184.
2. Doble, N., & Supriya, M. V. (2010). Gender Differences in the Perception of Work-Life Balance. *Managing Global Transitions: International Research Journal*, 8(4).
3. Lalmuanawma, J., & Elizabeth, H. Psychosocial issues of working women and work family conflict: a review.
4. Namasivayam, K., & Zhao, X. (2007). An investigation of the moderating effects of organizational commitment on the relationships between work–family conflict and job satisfaction among hospitality employees in India. *Tourism management*, 28(5), 1212-1223.
5. Namasivayam, K., & Zhao, X. (2007). An investigation of the moderating effects of organizational commitment on the relationships between work–family conflict and job satisfaction among hospitality employees in India. *Tourism management*, 28(5), 1212-1223.
6. Priyadharshini, R. A., & Wesley, R. J. (2014). Personality as a determinant of work-family conflict. *Journal of Industrial Engineering and Management (JIEM)*, 7(5), 1037-1060.
7. Raj, A. E. A. I., & Julius, S. (2015). Working Father and their perceived work–life balance with special reference to Hyundai Motors (I) Private Limited at Chennai. *International Journal of Advanced Scientific Research & Development (IJASRD)*, 2(1), 50-58.
8. Ramasundaram, G. (2011). Working hours as an influencing factor towards work family conflict of women employees in IT sector in Chennai City. *TECNIA Journal of Management Studies*, 6(2), 35.
9. Rani, K. J., & Muzhumathi, R. (2012). Examining the relationship between work-Family conflict and organizational role stress on life satisfaction among women professionals in Chennai city. *European Journal of Business and Management, ISSN 2222–1905 (Paper) ISSN 2222-2839(Online)*, 4 (15), 2012. [www. iiste. org](http://www.iiste.org).
10. Tennakoon, U. S. (2015). The relationship between ICT use and work/family conflict: moderation effect of ICT perception. In *International Conference on Contemporary, Jaffna, Sri Lanka*. <http://conf.jfn.ac.lk/iccm/wp-content/uploads/2018/10/2015-Organization.pdf>.
11. Dhiman, P., Kukreja, V., Manoharan, P., Kaur, A., Kamruzzaman, M. M., Dhaou, I. B., & Iwendi, C. (2022). A Novel Deep Learning Model for Detection of Severity Level of the Disease in Citrus Fruits. *Electronics*, 11(3), 495.
12. Dhanaraj, R. K., Ramakrishnan, V., Poongodi, M., Krishnasamy, L., Hamdi, M., Kotecha, K., & Vijayakumar, V. (2021). Random Forest Bagging and X-Means Clustered Antipattern Detection from SQL Query Log for Accessing Secure Mobile Data. *Wireless Communications and Mobile Computing*, 2021.
13. Rawal, B. S., Manogaran, G., Poongodi M & Hamdi, M. (2021). Multi-Tier Stack of Block Chain with Proxy Re-Encryption Method Scheme on the Internet of Things Platform. *ACM Transactions on Internet Technology (TOIT)*, 22(2), 1-20.

14. M. M. Kamruzzaman, ""New Opportunities, Challenges, and Applications of Edge-AI for Connected Healthcare in Smart Cities,"" 2021 IEEE Globecom Workshops (GC Wkshps), 2021, pp. 1-6, doi: 10.1109/GCWkshps52748.2021.9682055."
15. Md Selim Hossain, MM Kamruzzaman, Shuvo Sen, Mir Mohammad Azad, Mohammad Sarwar Hossain Mollah, Hexahedron core with sensor based photonic crystal fiber: An approach of design and performance analysis," Sensing and Bio-Sensing Research, 32, 100426
16. Mingju Chen, Xiaofeng Han, Hua Zhang, Guojun Lin, M.M. Kamruzzaman, Quality-guided key frames selection from video stream based on object detection, Journal of Visual Communication and Image Representation, Volume 65, 2019, 102678, ISSN 1047-3203
17. M. M. Kamruzzaman: Performance of Decode and Forward MIMO Relaying using STBC for Wireless Uplink. JNW 9(12): 3200-3206 (2014)
18. M. M. Kamruzzaman, "Performance of Turbo Coded Vertical Bell Laboratories Layered Space Time Multiple Input Multiple Output system," Computer and Information Technology (ICCIT), 2013 16th International Conference on, Khulna, 2014, pp. 455-459.