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## Impact of Work After Hours On Organizational Commitment Level And Job Satisfaction: A System Dynamics Approach

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### Abstract

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### Keywords

Organizational commitment, system dynamics, Casual loop Diagram, Job Satisfaction

## ORIGINAL STUDY

# Impact of Work After Hours on Organizational Commitment Level and Job Satisfaction: A System Dynamics Approach

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## Abstract

Work after hours depend on the working conditions of the organization where positive relationship with the organizational commitment and the employee job satisfaction can be seen. Work after hours depend on the working Aim of the study is to recommend a model for the organizational commitment, Job satisfaction and work after hours' variables for any organization. Vensim 6.4 version and Stella 9.1.4 software packages were used for the analysis. Casual loop analysis was done to identify the interaction of the variables. Model is developed as fully causal loop analysis based on dimensions found in literature and extracted the applicable model. Formalized Casual diagram was mapped as a stock flow Model and simulated the model with previous research studies. Simulation results are matched with the previous literature for the verification of the relationships between the variables. Model validation is done with the direct structure test and sensitivity test. There is a limitation of the study which was that the System Dynamics was not supporting in interpreting the mediation effect of variables.

**Keywords:** Organizational commitment, System dynamics, Casual loop diagram, Job satisfaction

## 1. Introduction

Nowadays long working hours and after working is a common term in many organizations. This can be positively and negatively impact on the organizational performance in long time and short time basis (Nyanga et al., 2020). Work after hours depends on the working conditions of the Organization. Further positive relationship with the organizational commitment and the employee job satisfaction (Radosavljevic et al., 2017). Work after hour can be impact on negatively also in many organizations relate with occupational stress. One study is carried out in Korean white-collar staff and it evaluated the working after hour and the occupational stress of the workers. This study found that long working hours negatively impact on job satisfaction and working hours significantly related to psychological stress (LEE et al., 2016). There were some studies regarding the working hours

and occupational stress and those studies reported that long working hours increase the depression conditions for the employees (Tomioka et al., 2011; Virtanen et al., 2012). Further many studies were done for the identification of diseases such as diabetes mellitus (Kawakami et al., 1999) and some heart diseases (Virtanen et al., 2010). There are some research studies which has shown the strong correlations between psychological conditions like competitiveness, job security, demand for the jobs, insufficient job control, lack of rewards occupational climate and mental health with working extending hours (Ha, et al., 2008; Kim, et al., 2006). According to those results organizational environment and organizational commitment also taken into consideration to maintain the satisfaction level on employees (Luxmi, 2016). These variables used for this study to identify the interrelations among above three variables in system dynamics aspect. There are very limited researches have

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conducted in human resources aspects with the system dynamics applicability. Therefore, this research study carried out to identify a system dynamics model for work after hours on organizational commitment and employee job satisfaction.

## 2. Literature review

### 2.1. Organizational commitment

Commitment can be defined in many ways. The researchers [Radosavljevic et al. \(2017\)](#) explained commitment can be identified by affective commitment, continual commitment and normative commitment. Affective commitment means employees' emotional attachment to the organization. Continual commitment means awareness about the costs of leaving and normative commitment means employees' moral responsibilities. However organizational commitment is connected to the employees and the organization ([Buchanan, 1974](#)). It is the leading factor of organizational success ([Mcbain, 2005](#)). Attitudes and behaviors of employees are linked with the organization in many ways. Member based model and organization based model can be used to identify leading factors of organizational commitment ([Angle & Perry, 2015](#)).

Organizational commitment has linked with training and development, organizational justice, task orientation, knowledge sharing and compensation and incentives ([Woon et al., 2015](#)). Training and development help employees to be qualitative human resource by enhancing skills and knowledge. It is benefited to organization and also individuals for the success and achieving their goals. Organizational justice can be categorized in to procedural justice and distributive justice and they help in decision making procedure. Task orientation means tasks are divided among employees and each employee is specialized for the relevant task ([Mittal & Prashar, 2011](#)). Knowledge sharing means communicate information and knowledge within the organization. Compensation and incentives mean effort taken by the employees to achieve organizational and individual goals. [Woon et al. \(2015\)](#) has constructed and tested those five variables with organizational commitment. The results have shown that all of the variables have positively influenced for the organizational commitment ([Fornes & Rocco, 2004](#), pp. 391–398).

Organizational commitment is led by managers and the managing staff of the organization. Individual employee commitment has done by employees own skills, values, behaviors and attitudes. Positive consequences as willing to engage in organizational citizenship, extra role performance, accountability, job satisfaction, motivation, improved performance and final production, reduce the absenteeism, work related stress and employee turnover can be identified for the organizational and individual levels ([Fornes & Rocco, 2004](#), pp. 391–398). There are major factors which can affect for the organizational commitment level.

#### 2.1.1. Training and development

Employee's continuous training and development can be identified as a key factor for the retaining of satisfied employees in long run of the business. This is identified as the heart of the organization which gives the continuous growth and improvement of the organization ([Kumar, 2012](#)). This is identified as a process of learning provided for the organizational employees to capture the knowledge and technical skills that are required for the job ([Shukla, Kushwah, Jain, & Sharma, 2021](#)).

#### 2.1.2. Task orientation

The purpose of task or work orientation is acquainting the existing and especially new employees with their job. Employees who are received with sufficient work orientation and proper guidance from the organization tend to perform the necessary tasks efficiently and independently.

#### 2.1.3. Knowledge sharing

In the current highly competitive business world organizations who are consisted with best information has the highest ability to succeed in the business world. If any organization want to become successful in the business world, it is important for them to have the ability to learn and also to use the knowledge while having best information with them ([Rizvi, Teckchandany, & Ahuja, 2013](#)). A successful organization always consists with employees who have the ability to learn and implement the knowledge they get in a fast way.

#### 2.1.4. Compensation and incentives

The term incentive is used as a “promise to pay for a particular objective, pre – established goal or a performance which is more considered to be a physical output. Compensation is often identified as

a powerful communicator for organizational goals (Krishnaveni & Deepa, 2011) and it priorities that organizations expect to be successful and it must make the employees to become partners in the success of the organization.

#### 2.1.5. Organizational justice

Organizational Justice is a concept that goes back in to 1980s and it was formally introduced by Greenberg in 1987. From that the term organizational justice has identified as one of the most important in the organizational management research. It consists with the fair treatment of employees with in the organizational environment.

#### 2.2. Job satisfaction

Employee performance and effectiveness of any organization is based on several factors. If an employee is satisfied at work it causes to achieve individual and organizational goals (Bartolo & Furlonger, 1999). Job satisfaction is a combination of psychological, physiological and environment conditions to satisfy from the job (Happock, 1935). Job satisfaction is based on the role of an employee. Employees can be satisfied by achieving the individual goals and success of tasks (Barthwal & Srivastava, 2013).

Job satisfaction can be categorized into 9 dimensions or factors as pay, promotion, supervision, fringe benefit, contingent rewards, operating procedures, co-workers, nature of work and communication (Spector, 1985, pp. 693–713). According to Christeen et al. (2006) job satisfaction of employees is decided by job factors, job performance, firm performance and problems with role perceptions. Job satisfaction or dissatisfaction is based on managerial concern for employees, job design, social relationships, compensation, working conditions, perceived long range opportunities and level of need achievement (Rue & Byars, 2003).

According to Kaliski (2007) job satisfaction is the key factor of recognition, income, promotion and achieving goals and feeling fulfilment when completing the tasks. Job satisfaction is also caused to increase personal wellbeing and productivity. Commitment to organization, turnover, absenteeism, accidents, strikes and stress can be improved by job satisfaction for better output (Panwar & Khan, 2020). However, job satisfaction or dissatisfaction can be directly influenced employees' work (Swarnalatha & Prasanna, 2012).

#### 2.3. Work after hours

Covid-19 Pandemic needs a specific strategy to be tackled (Nyang et al., 2020) and pandemic also introduced several HR related challenges (Kumar et al., 2020; Pandey & Bajaj, 2020). It enhanced the number of working hours more than ever. When employees are working more than 48 h a week this can be explained as the work after hours or excessively long hours. This is defined as per the international labour standards along with the reference of relevant literature on the working hours with regard to occupational safety, work life balance, productivity and performance (Collewet & Sauermann, 2017). Number of hours worked is different in between countries based on the part-time work, working hour regulations and also agreements (Bruggeman et al., 2016; Kalakata, 2021). The employees and children have undergone extreme stress as a result of work after hours (Shukla & Sharma, 2018).

As shown by Bell & Hart (1998) the difference between extensive work and intensive work can clearly understand. Workers who are working more intensively may suffer from long hours since they are more tired and therefore, they may prefer to have short hours. Having a clear idea on the way how the number of worked hours' impact on the labour productivity is an important concept to understand the labour demand (Begum & Sarke, 2014) and also it is an important factor to determine the regulations related to working hours and management of the organizations (Barzel, 1973). Further long hours can lead to increased productivity and if any worker face any fixed set-up costs and also a fixed unproductive time with in the day.

#### 2.4. Relationship between organizational commitment, jobs satisfaction & work after hours

Employees are identified as a main contributing factor to the organizational success and many factors which impact on the employee behavior in an organization are identified as important and they can be supportive for the employee performance (Pohlman & Gardiner, 2000, pp. 104–111). The research literature that is available shows that the organizational commitment and job satisfaction are two known factors which impact on the employee performance (Bodla & Danish, 2009). As mentioned by Rehman et al. (2013) job satisfaction is the main important factor for many organizations either it is public or private. Further in countries which are highly developed or under developed job



satisfaction is the way how an employee feels about the different aspects of job (Bashir & Ramay, 2008, pp. 226–238).

In simple terms job satisfaction can be defined as a mood which result from the evaluation which is received on the work or the work experience of a particular employee and various theories are developed to identify on job satisfaction. Job satisfaction and individual and organizational factors which impact on the job satisfaction are discussed in various classical and modern theories (Rahman & Ferdausy, 2012).

As mentioned by Locke & Henne, (1986) job satisfaction can be defined as the cheerful emotional state which occurs in the peoples' mind when they achieve their purpose at work. Further Spector, (1997) mentioned that job satisfaction is the way how people feel about their work and the different responsibilities they are assigned with. This shows the level of satisfaction or the dissatisfaction on their job.

Employees are identified as the main factor which determined and lead the success of the organization in the current competitive business environment. Guest, D. E, (2002) mentioned that if the workers are handled in a proper manner the commitment received from the employees can lead the organization to increase their effectiveness while decreasing the turnover, absenteeism and enhance productivity from both individual and organizational level. Employees who are satisfied on their jobs tend to perform their duties well and they tend to be very well committed on their jobs and also to the organization. Therefore, it is important for the employee to know the factors which impact on their job satisfaction and how it would impact on the performance of the organization (Hanif, MF & Kamal, Y, 2009). Employee commitment and job satisfaction are topics that are currently in research in various parts of the world with regard to different field of studies (Fairbrother & Warn, 2003).

### 3. Methodology

#### 3.1. Model description

Long hours lead the company to use the capital goods in a better way (Feldstein, 1967). Further work fatigue can be related to number of hours worked so that there is a less marginal impact on the productivity of the extra hours per worker start to decrease (Pencavel, 2015). Further Singh & Pandey, (2004) mentioned that since the jobs are consisted with different areas, the idea of job

satisfaction is most of the time tied up as a multi-dimensional creation of many factors and in general it is defined as job satisfaction. Organization's commitment is defined as the employees' set of minds on being committed to serve the achievements of the goals of the organization which involves levels of identification, involvement and loyalty (Caught & Shadur, 2000). This study model (Fig. 1) focuses on 3 variables mainly work after hours. Organizational commitment and Job Satisfaction. Interactions among these variables were considered for the development of Model. This is hypothetical model to identify the causality regarding each variable.

#### 3.2. Method of analysis

Identification of three major variables is the initial stage of this research. Causal relationships identified based on the previous scholar findings. Based on the scholar findings causal loop diagram (CLD) constructed. CLD is the visual interpretation of the system functionality (Sterman J., 2000). Vensim 6.4 version software package used to construct CLD. Stock flow model is a visual representation of causal loop analysis. Stocks represent the entities which accumulate or be depleted. Stock flow diagram constructed best on CLD using Stella 9.4.1 software package. Stocks and flows identified prior to construct the stack floe model. In simple terms "Stock" is identified as a part of a system where value of a particular item at any time depends on the past behavior of the system. Stock can be physical or non-physical (Sterman & Booth, 2002). Model simulation done with the previous research findings. Secondary research data was used to do the simulation and those data used to get figures about the relationships of the model. Model simulation done with stella software and outputs used to interpret the model validity Model validation done with sensitivity test and direct structure assessment test.

### 4. Results and discussion

#### 4.1. Construction of causal loop diagram (CLD)

This helps to understand the casual relationships between variables with depict hypothesis.



Fig. 1. Research framework (Hypothetical model by author). JS-job satisfaction, OC-organizational commitment, WAH-work after hours.

Significantly CLD represents the feedback structure of the system and underlying the assumptions (Sterman & Booth, 2002). According to the feedback of the process there are two major loops named as reinforcing loop and the balancing loop.

4.1.1. Job satisfaction and organizational commitment reinforcement loop

Interaction of the job satisfaction and the organizational commitment rational based on the previous literature and many studies evident that there is significant positive relationship. Therefore, this loop will be positive feedback loop which is self-reinforcing. Reinforcing loops makes both grow and decay. This loop subject to change in growth and decay pattern (Fig. 2).

In this loop captures when high job satisfaction is there among employees’ organization commitment, it is increasing and with the same time organization commitment increasing leads to have high satisfied employees with the time. Simultaneously dissatisfied employees negatively impact on organizational commitment and low organizational commitment leads to make dissatisfied employees (Fig. 3).

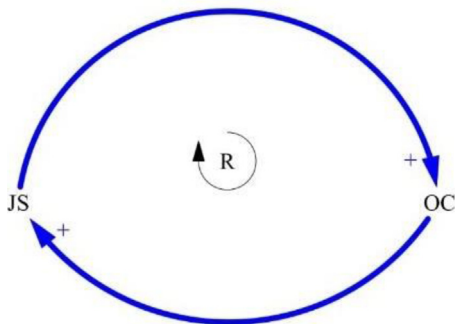


Fig. 2. Reinforcing loop CLD.

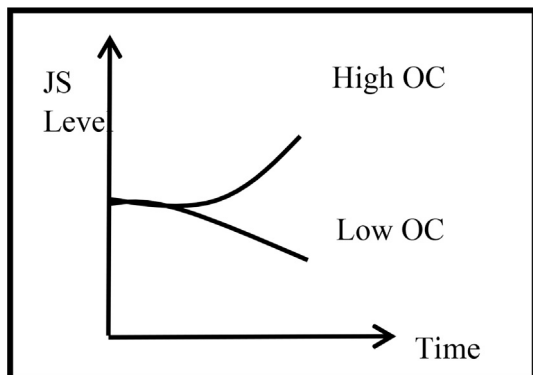


Fig. 3. Reinforcing loop behavior.

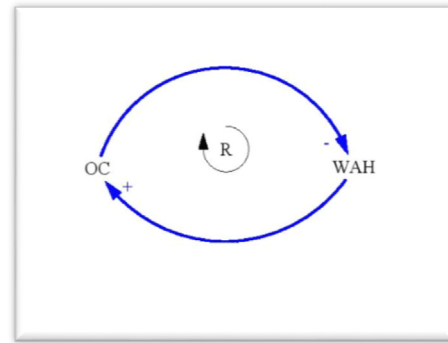


Fig. 4. Reinforcing loop.

4.1.2. Organizational commitment and work after hours –reinforcement loop

This loop (Fig. 4) which attempts OC positive or high-level leads to reduce the WAH but reduction of WAH leads to increase OC. There is an enhancing behavior in positive feedback reinforcing loops (Sterman & Booth, 2002). Organizational commitment and work after hours having negative correlations based on the previous studies.

Therefore, this reinforcing loop is having amplifying behavior. Desirable or high organizational commitment has well planned schedules based on the work efficiency. Therefore, it leads to reduce the work after hours for employees. If there is feasible working hours for the employees, it might be leads to enhance the organizational commitment.

4.1.3. Causal loop diagram (CLD)

Reinforcing loops can be combined (Fig. 5) to interpret the scenario with the complex behavior of variables. According to the reinforcing loop, it captures high satisfied employees which leads to work in committed manner and it increases organizational commitment. Desired organizational commitment leads to reduce work after hours. If reduce work after hours, it leads to increase organizational commitment. This can be a negative aspect in the scenario of less organizational commitment which leads to work long hours and it leads to reduce the organizational commitment. Based on this rationale CLD developed with the combination of reinforcing and balancing loop as the basic hypothetical model for the research study.

4.2. Stock flow model

This model developed by using the stella 9.14 software (Fig. 6) which visualizes the job satisfaction and work after hours are stocks. Flows are the movement rate of the stock in particular instant which effect either increase or decrease of the stock.

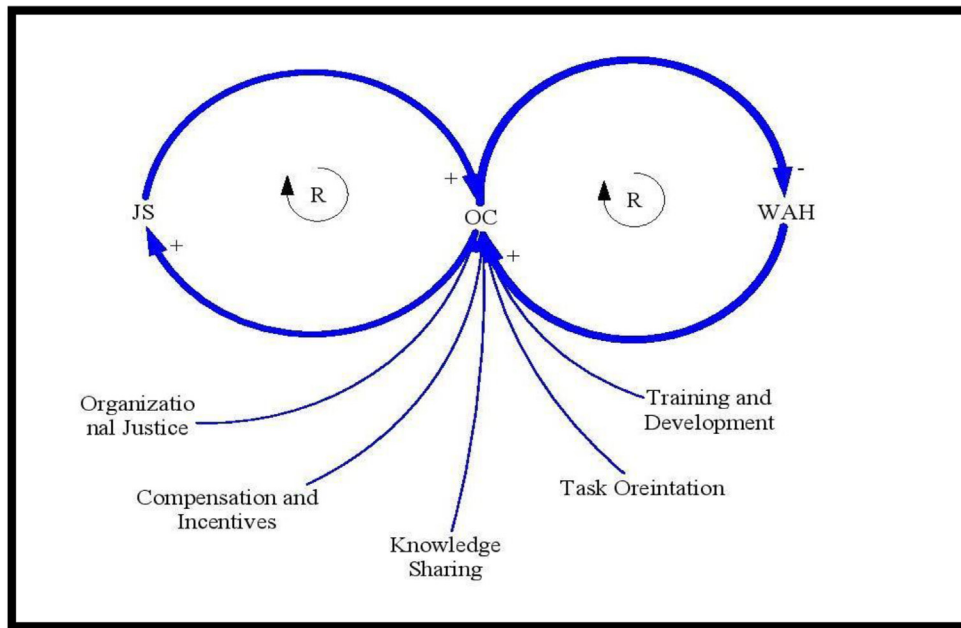


Fig. 5. CLD for the Variables (Vencim software output).

Organizational commitment level is the flow for the given study. Flow represents the rate in which the stock changes at a given instant. This can flow in to a stock causing an increase in the stock or flow out of stock making the stock to decrease. Flow can be identified as the rate in which a stock or a variable is getting changed. Exogenous factors are the items

which is influenced to the system positively or negatively but not affected by themselves (Sternan & Booth, 2002). In this model organizational commitment level influence by organizational justice, compensation and incentives, knowledge sharing, Task orientation and Training and development are taken as exogenous factors.

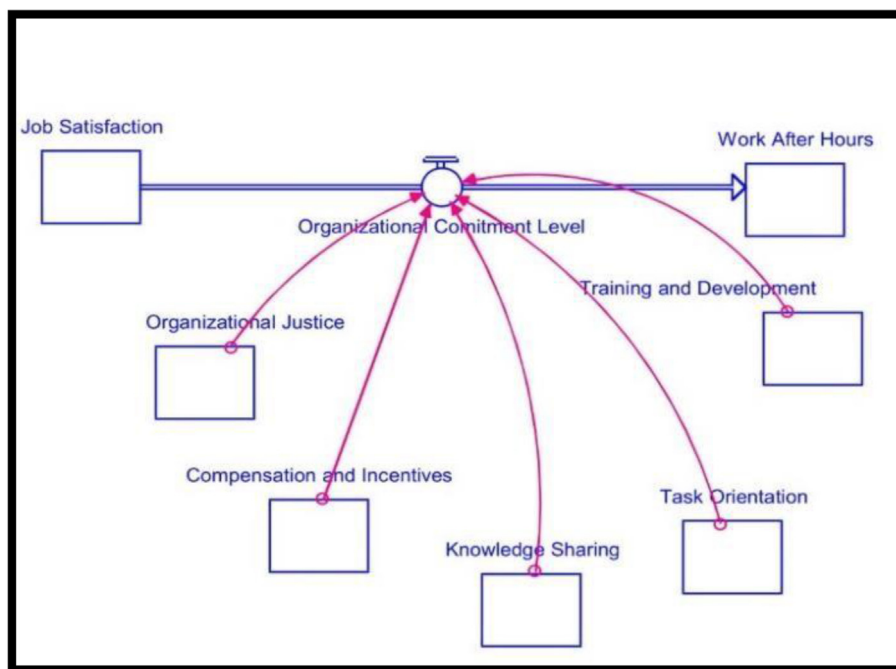


Fig. 6. Stock and flow model.



4.3. Model simulation with secondary data

Many previous research findings show positive relationship between job satisfaction levels. There were moderate or strong positive correlations between the variables., Recent study conducted in Pakistan Banking employees regarding same relationship and it evidenced correlation coefficient between two variables 0.659 at a significance level of  $p \leq 0.01$  (Ul Haq et al., 2014).

Anls et al. (2011) conducted a study to identify the impact of organizational commitment of job satisfaction and employee retention in pharmaceutical industry and resulted the beta value between two variables as 0.727 which means one-degree change OC leads to change the JS by 72.7%. There is an empirical study done in 2016 for the Malaysian 300 workers who belongs to X generation regarding organizational commitment. This study model is developed with organizational justice, compensation and benefits, task orientation and knowledge sharing. Structural model has used to test the causal relationships among constructs. Relationships between all independent variables and organizational commitment are positively correlated and statistically significant. R<sup>2</sup> Value for the model was 0.892 which shown that factors selection for the model has strongly predictive power on organizational commitment. Therefore, this study variables and standardized Beta Values used for the current study (Cheah, et al., 2016)

$$\text{Organizational Commitment} = 0.355 * \text{Compensation and Incentives} + 0.145 * \text{Knowledge Sharing} + 0.246 * \text{Organizational Justice} + 0.153 * \text{Task Orientation} + 0.224 * \text{Training and Development} \text{ (Table 1)}$$

Fig. 7 is a stella output after simulation predicts future trends according to the time by

organizational commitment and job satisfaction with work after hours and it is a downward trend of those variables. The figure also shows the distribution of both variables according to the time and it is decreasing. There is a positive relationship between organizational commitment and job satisfaction. When decreasing the organizational commitment, it affects to decrease job satisfaction with the growth of work after hours. Accordingly, there is an order which workload affects to job satisfaction and organizational commitment of organizations in a positive or negative manner.

There are some related studies which are revealing about the relationship. Saridakis et al. (2018) have done a study in Britain to explore the relationship between job satisfaction and organizational commitment and the study has been revealed that increases in job satisfaction of employees positively influence to organizational commitment. Increasing the job satisfactions leads for increasing organizational commitment and both variables are interrelated according to that study. Hedayat et al. (2018) have conducted research to analyses the relationship between organizational commitment and job satisfaction of Payam Nour University. The results show that there is a positive and significant relationship among organizational commitment and job satisfaction and also regression coefficient indicates that organizational commitment standards 42.2% with the changes of job satisfaction. According to the study of Leite et al. (2014) which purposed to study potential relationships of organizational commitment and job satisfaction, explained the results as organizational commitment is linked with job satisfaction due to individual and work characteristics. Variety of tasks and scope of work mainly influences to the job satisfaction which directly impact to the organizational commitment. This study describes the influence of work load or work

Table 1. Summary of secondary data.

Relationship with OC	Standardize Beta	Standard error	t-Value	Result	Supportive Literature
Compensation & benefits	0.355	0.032	11.047**	Supported	Leite et al. (2014) Saridakis et al. (2018) Culibrk J. D. (2018)
Knowledge sharing.	0.145	0.03	4.908**		(Bahramzadeh, 2012) (Salleh, et al., 2017) Pangil and Nasurdin (2019)
Organizational justice	0.246	0.034	7.220**	Supported	Buluc and Gunes (2014) Mohammadi (2013) Sokmen and Ekmekcioglu (2016)
Task orientation	0.153	0.026	5.979**	Supported	Brown (2003) Gholami (2016) Planer (2019)
Training & Development	0.224	0.025	8.823**	Supported	(Bashir & Long, 2015) (Butali & Njoroge, 2015) Ahamad and Bakar (2003)

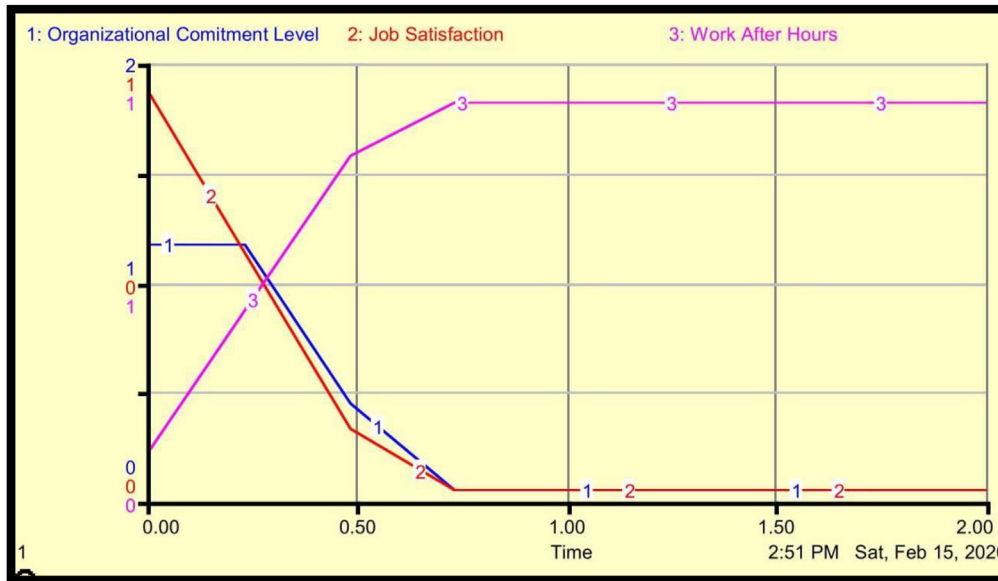


Fig. 7. Distribution of organizational commitment, job satisfaction and work after hours (Developed by author after simulation).

after hours for the main variables. Those studies are linked with explaining the positive relationship between organizational commitment and job satisfaction with the work after hours.

Above Fig. 8, stella output after simulation demonstrates the relationship between job satisfaction and work after hours. It can be identified a negative relationship between those two variables (Fig. 9). Workload, lower and fewer working hours, individual time dominance is attached to the work after hours. When the work after hours is high it affects to

reduce the job satisfaction of employees. There are some related researches for the explaining this relationship.

Lee et al. (2015) have conducted research to study the effect of work hour equivalence on job satisfaction of employees in Canadian workplace. According to the results it has explained employees who desire to fewer working hours was related to reduce the absenteeism. And also all the additional hours are not representing the positive influence for the job satisfaction. Wanger (2017) has



Fig. 8. JS and WAH distribution.

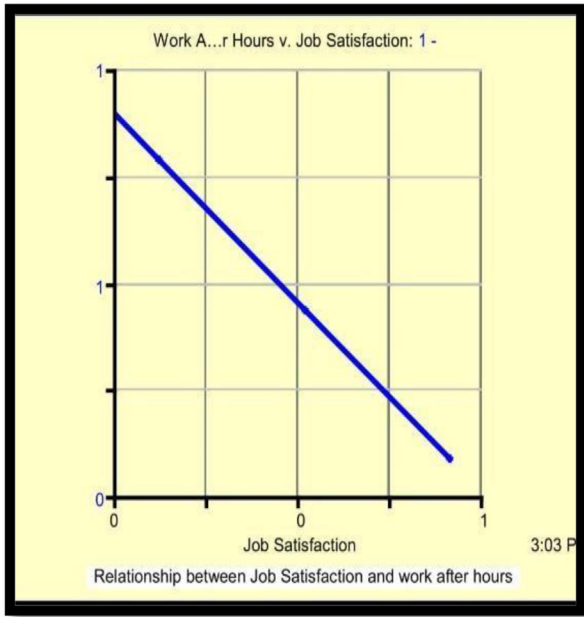


Fig. 9. Relationship between JS and WAH. (Developed by author after simulation).

examined the level of working time satisfaction of employees in Germany. The results show that individual time dominance is positively related to the high level working hour satisfaction. Employee friendly working time preparations will lead to have less stress and high satisfaction (Shukla &

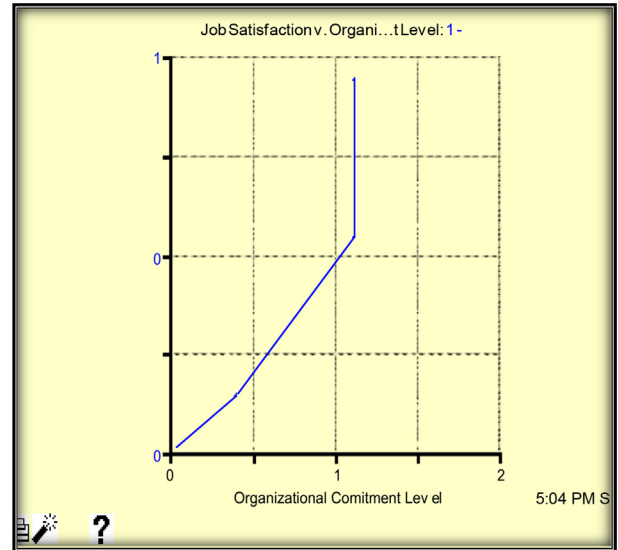


Fig. 11. Relationship OC and JS.

Mishra, 2021). Nakata (2017) examined the moderating effect of job satisfaction with the working hours and depressive symptoms (Mishra et al., 2021). The research revealed that long working hours are increasing the depression and reduce the job satisfaction.

Fig. 10 shows that when the organizational commitment level decreases, job satisfaction also decreases. Second Fig. 11 represents a positive

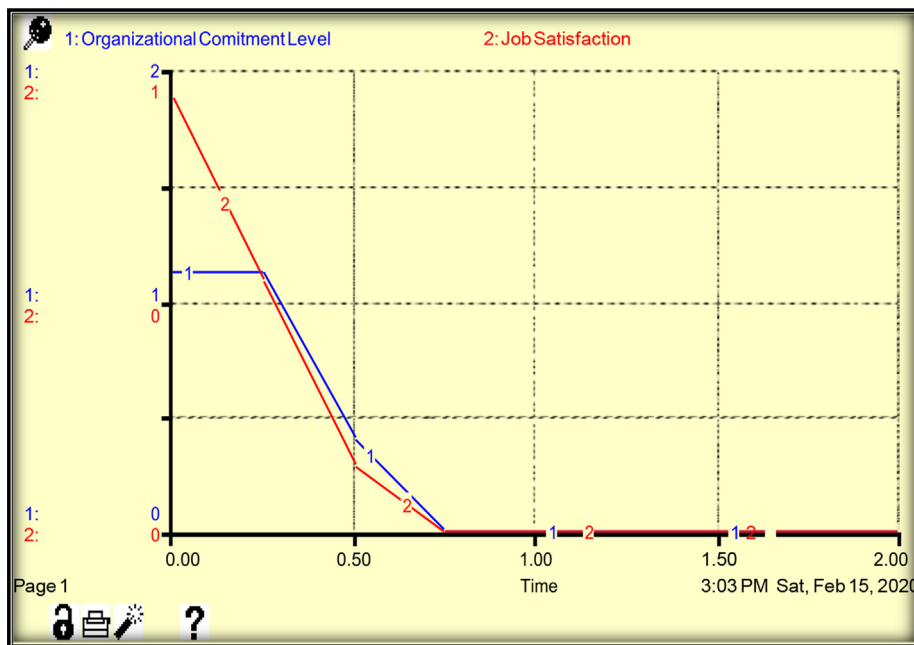


Fig. 10. Distribution of OC and JS with the time.

relationship between organizational level commitment and job satisfaction. Characteristics of organizational commitment also linked with the job satisfaction and employee turnover. Following studies represent the evidence for this relationship.

Ahmad (2018) has done a study to identify the relationship between job satisfaction and organizational offerings to employees. The results of the study have shown that there is a positive relationship between these two variables and ten job characteristics as organizational offerings are experienced to employees. Those are salary, recognition, co-workers, supervision, organizational policies, promotion, working condition, task requirement, job security and nature of work. Professionals' perceptions of the job are particularly dependent on the degree of satisfaction. Results of the study which has conducted by Culibrk et al. (2018) revealed that managerial position has higher scores for organizational commitment, and job satisfaction with other factors. The managers are more satisfied with their task and they are more committed to the organization than other employees and they are able to make decisions. Furthermore, job satisfaction in Serbia is influenced by organizational commitment have explained by the researchers.

#### 4.4. Key assumptions and model validation

##### 4.4.1. Key assumptions

Major assumption for the model is that only organizational commitment and Job satisfaction variables effects on work after hours. Median and moderate variables are not considered for the model development and assumed that organizational commitment and job satisfaction level cannot be zero in any condition since this is not practically find this kind of situation that does not exist in real world. Impact of personal traits (Eg: Self efficacy, personality, individual working capacity) not take into consideration.

##### 4.4.2. Model validation

4.4.2.1. *Direct structure assessment test.* This test has used for the validation of the model which is named as the system dynamics model match with the previous literature finding with the real case studies and data. All the relationships of each variable, causal loops assed with the past scholar findings and matched theoretically and empirically with the real word studies results.

4.4.2.2. *Sensitivity analysis.* Behavior pattern of the system dynamics model is significant than numerical

values since it is behavior-oriented simulation discipline (Hekimoglu & Barlas, 2010). Therefore, this study has done the simulation run for the study relevant to four conditions as below: (Table 2) (See Figs. 12–15).

Sensitivity analysis gives the information reading effects of variations in assumed information in model output and it helps to develop intuition on model structure and data collection effort (Sterman J., 2000) and it plays an integral role as a significant tool for evaluating the reliability of model outputs (Taylor et al., 2007). According to the simulation results for all the conditions shows above patterns of variable behaviour. It shows that more or less patterns are in similar shape. Therefore, behaviour of

Table 2. Dummy data for model validation.

JS	WAH	Condition
0.75	0.35	High JS and Low WAH
0.85	0.7	High JS and High WAH
0.5	0.3	Moderate JS and Low WAH
0.35	0.65	Low JS and High WAH

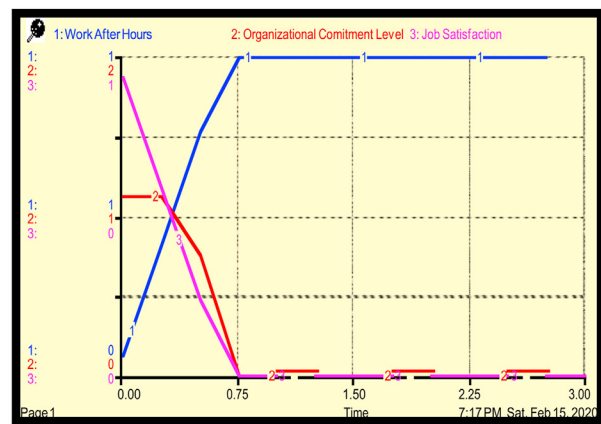


Fig. 12. High JS and low WAH. (Developed by author after simulation).

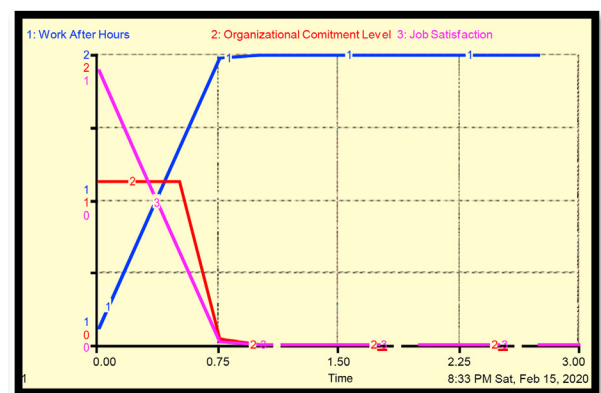


Fig. 13. High JS and high WAH. (Developed by author after simulation).



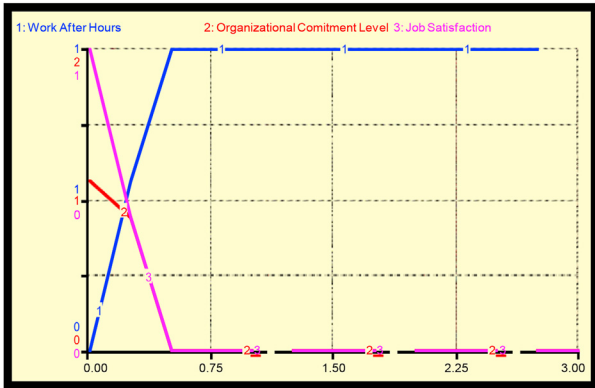


Fig. 14. Moderate JS and low WAH. (Developed by author after simulation).

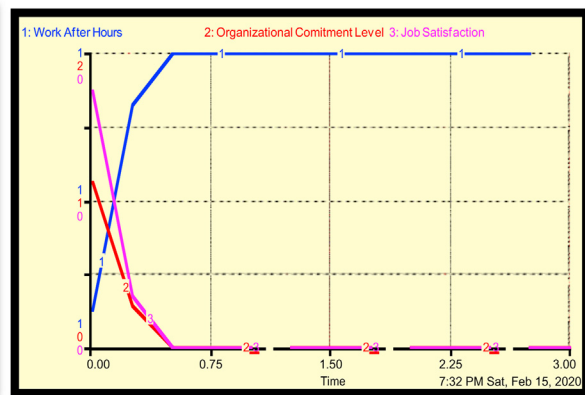


Fig. 15. Low JS and high WAH. (Developed by author after simulation).

JS and OC gives positive relationship in every condition and WAH gives negative relationship for the JS and OC. There were not given any contradictory patterns for any scenario. This is simulation results based on practical scenarios for the extreme conditions with precise perception and vague perception. In this condition same pattern of distribution indicates the model is passed the sensitivity test (Feng et al., 2017).

## 5. Conclusion

This study is done for a practical applicable System Dynamics Model for the work after hours by capturing the impact of causal feedbacks with the factors of job satisfaction of employees and organizational commitment level. This study reinforces to identify in major practical phenomenon for work after hours. Research framework and Casual loops developed based on the secondary data in past researches. Stock flow diagram mapped based on the CLD after identification of Major Stocks and flows.

Model simulated with the empirical data with the real case study figures. The results revealed the applicability for practical executions after the cross referenced of study and study results with previous Literature. Model results supported by many previous studies.

There should be major assumptions that need to consider on the practical implication of the model. They are that the job satisfaction and organizational commitment cannot be zero and not considering the personal traits. System Dynamic models are validated with different techniques. This study has used direct study test which supported by previous research findings and sensitivity test. Both the validation tests are passed with the model simulation results. Therefore, this model can be implemented with the practical business environment to identify the organizational culture and this will be a good practice for current and future strategic business decisions.

## 6. Limitation and scope for future research

System dynamics models not support for the mediation effect of variable. There are variables which can act as mediators. But this study not considered those variables. This will be a limitation of the study. This Model validation is done with the direct structure assessment test and sensitivity test with the support of previous scholar findings and data. There are some quantitative base model validation assessments for structure validity and behavior validity of the test that can be executing with the relevant data. Therefore, future studies can focus on the new model validation techniques and new associated variables (For Instance: self-efficacy) with model expansion.

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