

Job Satisfaction and Work Happiness as Mediating Variables Affecting the Working Environment and Performance of Medical Personnel in Samut Sakhon Province, Thailand

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The objectives of this research are: (1) to study the levels of working environment, job satisfaction, work happiness and performance of the medical personnel in Samut Sakhon Province, Thailand; and (2) to study the levels of job satisfaction and work happiness as the mediators affecting the working environment and work performance of the medical personnel in Samut Sakhon Province, Thailand. This was a quantitative research that used a survey research method with populations. The sample used in this research was 500 medical personnel in Samut Sakhon Province, Thailand. The research instrument was the questionnaire with the confidence value of Alpha's Cronbach coefficient at 0.986. The adopted research statistics were frequency, percentage, mean, standard deviation and analysis by the structural equation model by using the R program. It was found from the study results that work happiness had an overall average at a high level of 4.47, followed by the operational performance with an overall average of 4.46, job satisfaction with

an overall average of 4.43 and working environment with an overall average of 4.39,. For the analysis results of the structural equations model and factors influencing the work performance, it was found that working environment, work happiness and job satisfaction had a direct influence on work performance with the direct effect (DE) values of 0.108, 0.045, and 0.774, respectively; the working environment had a direct influence on job happiness and job satisfaction with a DE of 0.882 and 0.863; and working environment had an indirect influence on performance with the indirect effect (IE) value of 0.040 indicating that working environment has an influence on work happiness, job satisfaction and work performance. In addition, work happiness and job satisfaction are the mediators resulting in an increase in work performance in the organisation.

Keywords: *Working Environment, Job Satisfaction, Work Happiness, Work Performance*

Introduction

From the large Coronavirus or COVID-19 outbreak with the initial cause found for the first time on January 7, 2020 in Wuhan, the capital of Hubei Province in China, the World Health Organisation (WHO) declared the pandemic as an international public health emergency on January 30, 2020 (World Health Organisation, 2020). After that, it spread to various countries. In Thailand, the first case was reported on January 31, 2020 spreading into various regions, especially into the areas of Samut Sakhon Province. This province has its famous reputation from its seafood. It has to employ a large number of foreign workers, while many are affected by COVID-19. This causes a high burden for the medical workers, nurses, pharmacists, government officials, local administrators and other stakeholders with additional work. Thus, healthcare professionals are seen as the crucial resources for the management. It then requires to form great working environment for personnel quality of life and livings to promote their work happiness and job satisfaction. These factors have the key role to promote the efficiency and effectiveness in the personnel performance (Agarwal, 2020).

Research Objectives

- (1) To study the levels of working environment, job satisfaction, work happiness, and work performance of the medical personnel in Samut Sakhon Province, Thailand.
- (2) To study the degree of job satisfaction and work happiness as the mediating variables between working environment and the medical personnel performance in Samut Sakhon Province, Thailand.

Literature Review

This research studied the theoretical concepts related to working environment, work happiness, job satisfaction, and employee performance as follows.

(1) Working Environment: working environment refers to any concrete and abstract things in the surrounding affecting employee performance during their operation. Goetz et al. (2018) state that working environment is the employees surroundings while they are working and it has some effects on them. Some organisations may include the operational guidelines, work duration, physical environment, society, or cultures, where these result in positive working behaviour of the employees to put effort in to work with the organisational commitment. This was why the best working environment had the main role in indicating the degree of job satisfaction and employee performance (Nazeri et al., 2020). Birnbaum & Finkel (2015) state that working environment is the personal perception toward the job of a particular person. Working environment can be divided into three aspects: (1) Relationship dimensions, (2) Personal growth dimension; and (3) System maintenance and change dimensions. Next, Manyisa & van Aswegen (2017) divide working environment into three aspects: 1) Physical working condition, 2) Work schedules; and, 3) Psychological and social working conditions. From the related literatures review on working environment, the researcher forms the following hypotheses.

Hypothesis 1 (H1): Working environment has an effect on work happiness.

Hypothesis 2 (H2): Working environment has an effect on job satisfaction.

Hypothesis 3 (H3): Working environment has an effect on performance.

(2) Work Happiness: work happiness is the personal perception with preference or happiness toward their operating mission, things they love and that satisfy them, recognition, and honour from colleagues and people in general until it forms their future security and advancement. Williams et al. (2017) state that work happiness is positively related to job satisfaction and organisational commitment. Later, it was found by various researchers that work happiness was pleasant feelings, preference and happiness in life mission including positive emotions, no work stress, adaptability to any situations, and work colleagues that led toward achievement (Manosuthi et al., 2020b; Walden et al., 2017). Besides, Goetz et al. (2018) state that work happiness is an emotional effort from the liveliness and joy to work that creates job satisfaction in the organisation environment and results in good operational performance. It can be divided into 4 components: 1) Connection, 2) Love of the work, 3) Work achievement; and, 4) Recognition. Next, Moon et al. (2019) study the concept of work happiness as the perception from mental feelings with happiness at work and it affect on work performance. This leads to the personnel creativity, confidence, and braveness to encounter and participate in resolving any work problems. It can be divided into 3 components: 1. Arousal, 2. Pleasure; and 3.

Enthusiasm. Thus, from the literature review on the relevant research on work happiness, the researcher can form the following hypotheses.

Hypothesis 4 (H4): Work happiness has an effect on work performance.

Hypothesis 6 (H6): Work happiness is the mediating variable with an effect on working environment and work performance.

(3) Job Satisfaction: job satisfaction is a good feeling and positive attitude toward the current operation where the personnel gain good organisation recognition that supports them to put in effort and continue to work for the organisation. Also, their work happiness would result in higher work efficiency and the organisation's work achievement (Lee & Way, 2010). Besides, it also conveyed to job satisfaction that staff obtained from the organisation, while working toward success (Butt et al., 2020). Next, it is stated by Manosuthi et al. (2020a) that job satisfaction is a positive emotional condition from work experiences of that person based on the characteristics of the assigned tasks. Smith et al. (1969) state that job satisfaction is an attitude toward the job of a person in which, it can be divided into 5 aspects as follows: 1. Work, 2. Pay, 3. Promotion, 4. Supervision; and, 5. Co-workers. Therefore, from the literature reviews on the relevant research on job satisfaction, the researcher can form the following hypotheses.

Hypothesis 5 (H5): Job satisfaction has an effect on employee performance.

Hypothesis 7 (H7): Job satisfaction is the mediating variable with an effect on working environment and employee performance.

(4) Employee Performance: employee performance is the ability to manage human resources with fairness and righteousness in accordance with the needs of personnel. Thus, employees will be satisfied and given the highest performance (Khalid et al., 2014; Ramanut & Boonyoo, 2019). This results in an operation that reflects the ability to exercise the existing human resources in the management process for the benefits of efficiency and effectiveness achievement according to the organisation's goal (Nafei, 2015). It is stated by Thongrawd et al. (2020) that operational efficiency refers to the performance that results in satisfaction and from the compensation received from the performance based on 1) Equitable service, 2) Timely service, 3) Ample service, 4) Continuous service; and, 5) Progression service. Later, Farhat et al. (2020) conclude the components of employee performance in 4 aspects: 1. Quality, 2. Quantity, 3. Time and 4. Costs.

From the literature review on the relevant studies above, the researcher had developed the conceptual framework from theories and research related to the effect from job satisfaction and work happiness as the mediating variables for the work environment had resulted on the

performance of medical personnel in Samut Sakhon Province, Thailand. The researcher concluded and formed the research conceptual framework as can be seen in Figure 1.

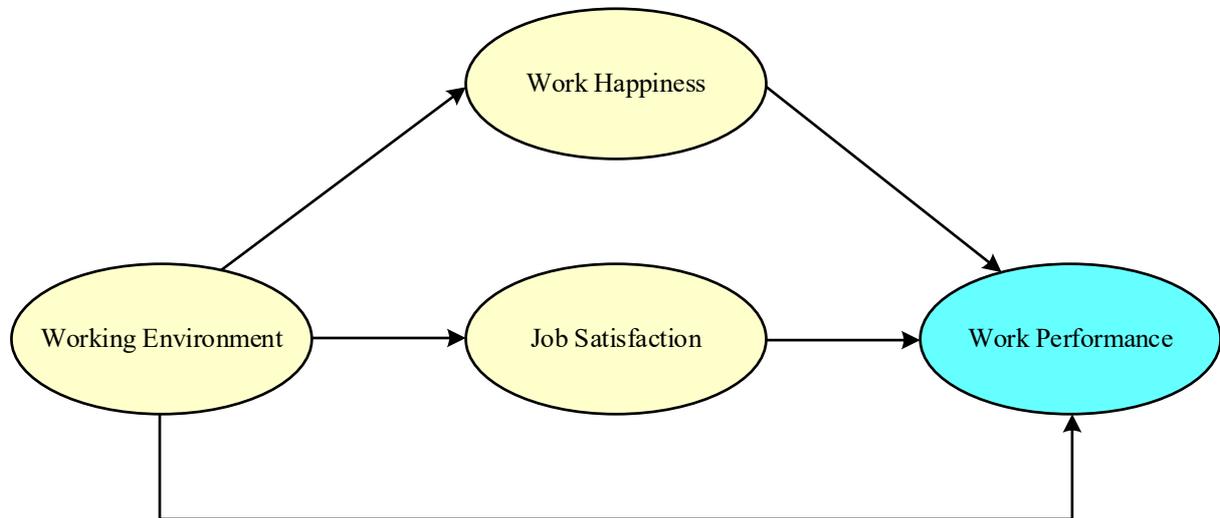


Figure 1: Research conceptual framework

Research Scopes

The researcher in this research studied the effects of job satisfaction and work happiness as the mediating variables of working environment which affected the medical personnel performance in Samut Sakhon Province, Thailand.

(1) Scope of content

The variables used in this research consist of

- working environment
- job satisfaction
- work happiness and
- performance

(2) Scope of population and group of samples

This research set the scope of population among the medical personnel in Samut Sakhon Province, Thailand. The sample size was set up using the formula for sample sizing based on the concept of SEM (Benitez et al., 2020; Comrey & Lee, 2013; Manosuthi et al., 2021). This was used in sample group sizing calculation at 500 samples. After that, the researcher chose Stratified Random Sampling and Purposive Sampling methods for sample selection.

(3) Scope of area

The scope of area in this study was the medical personnel in Samut Sakhon Province, from Mueang district, Katoomban district and Baanpaew district.

(4) Scope of time

This research spent 6 months conducting the study from January-April 2021.

Research Methodology

This was a quantitative research study that aimed to search and develop the information and measure the relationship between variables in order to measure the characteristics and behaviours into figures via survey research. A questionnaire was used where the researcher conducted the study within the scope and details for research implementation.

(1) Research Instrument: Questionnaire was the research tool. It was divided into 5 parts: part 1 was the check list questions related to the demographic factors of the respondents, while parts 2-5 contained rating scale questions with the aim to estimate working environment, job satisfaction, work happiness and performance (Nemoto & Beglar, 2014).

(2) Quality Assessment on Tool: The researcher assessed the questionnaire quality by asking three professionals to assess its validity based on Item Objective Congruence (IOC) with the values between 0.67-1.00 on all items. Then, testing reliability by try-out the pilot test on 30 samples from the groups with similar characteristics to the sample group to check on Alpha's Cronbach coefficient value. The confidence values from Alpha's Cronbach coefficient were shown at 0.986. After that the questionnaire was launched to collect data, while 500 questionnaires were distributed to the medical personnel in Samut Sakhon Province, Thailand.

(3) Research Statistics: The researcher checked on the questionnaire completeness and filled in the data with a ready-made program, the Structural Equation Modeling (SEM) was then analysed. The statistics analysis consisted of frequency, percentage, mean, standard deviation (SD), and Structural Equation Modeling (SEM) by R program (Manosuthi et al., 2021).

Results

(1) The data analysis found that most of the questionnaire respondents, or 54.29% of them, were female, 42.00% were aged between 31-40 years old and graduated with a Bachelor's degree for 73.80% with the average monthly incomes between 20,001- 30,000 baht at 76%. The descriptive statistics analysis results from \ working environment, job satisfaction, work happiness, and performance showed that the respondents had the opinion toward work happiness at the highest level at ($x = 4.47$, $SD = .505$); followed by work performance at ($x =$

4.46, SD = .509), job satisfaction at ($x = 4.43$, SD = .500) and working environment at ($x = 4.39$, SD = .526),.

(2) The results from the Structural Equation Modeling program R (Manosuthi et al., 2021) found that job satisfaction and work happiness had affected working environment and performance of the medical personnel in Samut Sakhon Province. The overall results from the Structural Equation Modeling which were the analysis results of correlations from the regression coefficient on direct and indirect effects on the performance can be seen in Figure 2.

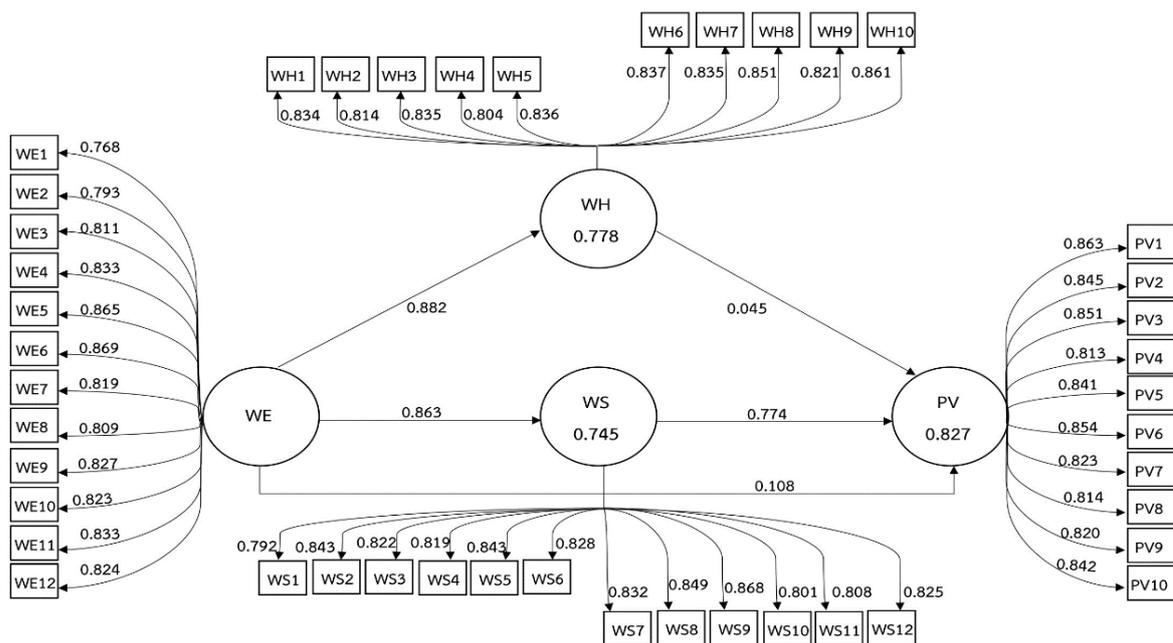


Figure 2: Route of correlations in SEM

According to Figure 1, it is found that the correlation from Structural Equation Modeling of (1) working environment (WE), direct effects on the performance (EP), work happiness (WH), and job satisfaction (JS) are respectively as follows: DE = 0.108, DE = 0.882 and DE = 0.863. Moreover, working environment (WE) also has an indirect effect on performance (EP) at IE=0.040. Besides, work happiness (WH) has an indirect effect on performance (EP) at DE=0.045, and job satisfaction (JS) has an indirect effect on performance (EP) of the medical personnel in Samut Sakhon Province, Thailand.

Table 1: Relationship between factors affecting on work performance

Variables (LV)	Variation (R2)	Effects	Working Environment (WE)	Work Happiness (WH)	Job Satisfaction (JS)
Performance (EP)	0.827	DE	0.108*	0.045*	0.774***
		IE	0.040	0.000	0.000
		TE	0.148	0.045	0.774
Work Happiness (WH)	0.778	DE	0.882***	0.000	N/A
		IE	0.000	0.000	N/A
		TE	0.882	0.000	N/A
Job Satisfaction (JS)	0.745	DE	0.863***	N/A	0.000
		IE	0.000	N/A	0.000
		TE	0.863	N/A	0.000

Remarks: DE = Direct Effect, IE = Indirect Effect, TE = Total Effect, N/A = Not Applicable

(3) The results of hypotheses testing from the analysis on the effects model of job satisfaction and work happiness as the mediating variables with effects on working environment that contributed toward the performance of the medical personnel in Samut Sakhon Province are shown with diverse path coefficients as in Figure 3.

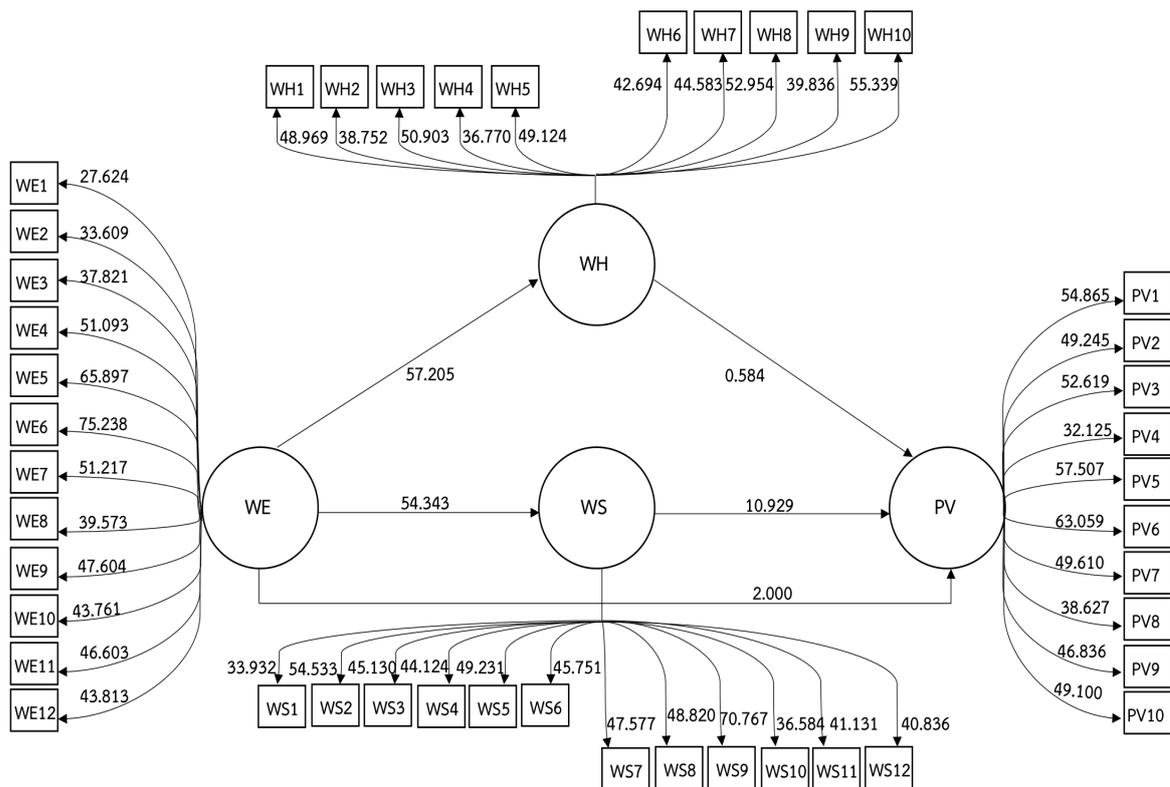


Figure 3: Hypotheses testing

Table 2: Hypotheses testing results conclusion

Hypothesis	Path coefficients (Coef.)	t-test values	Results
Hypothesis 1 (H1): Working environment has an effect on work happiness.	0.882***	57.205	Support
Hypothesis 2 (H2): Working environment has an effect on job satisfaction.	0.863***	54.343	Support
Hypothesis 3 (H3): Working environment has an effect on work performance.	0.108**	2.000	Support
Hypothesis 4 (H4): Work happiness has an effect on work performance.	0.045	0.584	Not support
Hypothesis 5 (H5): Job satisfaction has an effect on work performance.	0.774***	10.929	Support

Remarks: * refers to that p-value ≤ 0.10 or t value ≥ 1.65
 ** refers to that p-value ≤ 0.05 or t value ≥ 1.96
 ***refers to that p-value ≤ 0.01 or t value ≥ 2.58

From Table 2, the hypotheses testing results can be concluded as follows: (1) working environment has an effect on work happiness, job satisfaction, and work performance with the value of t-test at 57.205, 54,343, and 2.00, respectively. (2) work happiness has no effect on the personnel performance with the value of t-test at 0.584; and, (3) job satisfaction has an effect on work performance with the t-test value at 10.929.

(4) The analysis results on the effects from mediating variables that change the relationship between independent variables and dependent variables, while mediating variables are used to explain the mediation effect. The results of indirect effects testing are shown in Table 3 and Table 4, respectively.

Table 3: Results of mediation effect testing

Research Hypotheses	Effect	Boot SE	Boot LLCI	Boot ULCI
Hypothesis 6 (H6): Work happiness is the mediating variable with mediation effects on working environment and results on work performance.	.4073	.0582	.2974	.5228

Table 4: Results of mediation effect testing

Research Hypothesis	Effect	Boot SE	Boot LLCI	Boot ULCI
Hypothesis 7 (H7): Work satisfaction is the variable with mediation effects on working environment and results on work performance.	.6637	.0467	.5712	.7559

According to table, it can be seen that work happiness is the mediating variable in working environment and work performance, since the multiply value of the lower bound coefficient (Boot LLCI) is equal to .2974 and the upper bound coefficient (Boot ULCL) is equal to .5228; in which it did not cover at 0. This has reflected that work happiness is the mediating variable with mediation effects on working environment and work performance.

In addition, it is shown from Table 4 that job satisfaction is the mediating variable with mediation effects on working environment and performance because the multiply value of the lower bound coefficient (Boot LLCI) is equal to .5712 and the upper bound coefficient (Boot ULCL) is equal to .7559 and it does not cover 0. This has reflected that job satisfaction is the mediating variable with mediation effects on working environment and performance.

Discussion

From the study on the effects of job satisfaction and work happiness as the mediating variables for working environment and the performance of medical personnel in Samut Sakhon Province, the following was found:

(1) The working environment factor had influenced the workability of each person, while being confronting with various challenges. It also created satisfaction among personnel for their ongoing development. This conformed to the study by Wen et al. (2019) who studied the effects of working environment on job satisfaction, where they found that working environment and job satisfaction of personnel showed a positive correlation. This also conformed to the research by Goetz et al. (2018) who studied working environment and personnel in Pakistan and found that working environment had influenced the workability of each personnel toward goals. Thus, changing work environment would lead toward better personnel performance, and it would also result in organisation improvement. This supported the study by Karamanis, et al., (2019) on the effects of working environment over personnel satisfaction in the public sector of Greece where working environment had an effect on job satisfaction in the aspects of supervisor, working with colleagues, and job security.

(2) Work happiness was the emotional efforts with lively and joyful feelings toward a job and resulted in satisfaction in the work environment. This resulted in better performance where it was in accordance with Azeem (2010) who was aware of the importance of the personnel, where the academics found that work happiness had a positive relationship with job satisfaction and organisation commitment. This also conformed to Butt et al. (2020) who said that work happiness was a feeling, a pleasant feeling, and positive attitude. It was the good feeling in human beings from the positive experiences when obtaining the proper compensation and resulted in job satisfaction and efficient performance.

(3) Job satisfaction among personnel reflected their behaviour. Nazeri et al. (2020) studied job satisfaction and the personnel efficiency and found that job satisfaction influenced the personnel operation. Normally, satisfied personnel tended to accept the assigned tasks and put full efforts into working and quickly finished without mistakes. They did not ignore the duties and were happy to work that resulted in higher work efficiency (Lee & Way, 2010). This conformed to the study by Shi (2014) on the relationship between job satisfaction and staff loyalty in the Chinese manufacturing industry, where job satisfaction and staff loyalty showed a positive relationship. The more the personnel were satisfied, the more they showed enthusiasm to work.

(4) Employee performance was the no.1 latent variable with R^2 value of the employee performance factor at 0.827. It referred to that the fact that the no.1 latent variable setting on employee performance factor from this study was correct. Employee performance was found to have the effects on no.1 latent variable at the values of 0.863, 0.845, 0.851, 0.813, 0.841, 0.854, 0.823, 0.814, 0.820 and 0.842, respectively. Therefore, any business is required to be aware of the importance of a good working environment to promote job satisfaction that would lead to work happiness among the personnel. Therefore, this would boost everyone to take part in an effective and efficient operation.

Recommendations

The researcher suggests the issues for future research as below:

(1) It is suggested to study other factors with influence on personnel performance, such as transformational leadership, job motivation, organisational commitment, organisation culture, etc. Thus, it will add more potential performance and result in job satisfaction among the medical personnel.

(2) It is also suggested to make a comparison study between the effects of work happiness on job satisfaction of the medical personnel in public and private sector.

REFERENCES

- Agarwal, S. (2020). Leadership style and performance of employees, *International Research Journal of Business Studies*, 13(1), 1–14.
- Azeem, S. M. (2010). Job satisfaction and organisational commitment among employees in the Sultanate of Oman, *Psychology*, 1(4), 295-300.
- Benitez, J., Henseler, J., Castillo, A. and Schubert, F. (2020). How to perform and report an impactful analysis using partial least squares: Guidelines for confirmatory and explanatory IS research. *Information & Management*, 57(2), 1–16. <https://doi.org/10.1016/j.im.2019.05.003>
- Birnbaum, G. E. and Finkel, E. J. (2015). The magnetism that holds us together: Sexuality and relationship maintenance across relationship development. *Current Opinion in Psychology*, 1, 29–33.
- Butt, R. S., Wen, X. and Hussain, R. Y. (2020). Mediated Effect of Employee Job Satisfaction on Employees' Happiness at Work and Analysis of Motivational Factors: Evidence from Telecommunication Sector. *Asian Business Research Journal*, 5, 19–27.
- Comrey, A. L., and Lee, H. B. (2013). *A First Course in Factor Analysis*, Psychology Press.
- Farhat, N. M., Christodoulou, C., Placotas, P., Blankert, B., Sallangos, O. and Vrouwenvelder, J. S. (2020). Cartridge filter selection and replacement: Optimisation of produced water quantity, quality, and cost. *Desalination*, 473, 114–172.
- Goetz, K., Kleine-Budde, K., Bramesfeld, A. and Stegbauer, C. (2018). Working atmosphere, job satisfaction and individual characteristics of community mental health professionals in integrated care. *Health & Social Care in the Community*, 26(2), 176–181.
- Karamanis, K., Arnis, N. and Pappa, P. (2019). Impact of working environment on job satisfaction, *Theoretical and Empirical Researches in Urban Management*, 14(3), 5-21.
- Khalid, A. A., Tuffour, H. O. and Bonsu, M. (2014). Influence of poultry manure and NPK fertilizer on hydraulic properties of a sandy soil in Ghana, *International Journal of Scientific Research in Agricultural Sciences*, 1(2), 16-22.
- Lee, C. and Way, K. 2010. Individual employment characteristics of hotel employees that play a role in employee satisfaction and work retention, *International Journal of Hospitality Management*, 29, 344-353.
- Manosuthi, N., Lee, J. S. and Han, H. (2020a). Impact of distance on the arrivals, behaviours and attitudes of international tourists in Hong Kong: A longitudinal approach. *Tourism Management*, 78, 1–26. <https://doi.org/j.tourman.2019.103963>
- Manosuthi, N., Lee, J. S. and Han, H. (2020b). Predicting the revisit intention of volunteer tourists using the merged model between the theory of planned behavior and norm activation model. *Journal of Travel & Tourism Marketing*, 37(4), 510–532. <https://doi.org/10.1080/10548408.2020.1784364>
- Manosuthi, N., Lee, J. S. and Han, H. (2021). An innovative application of composite-based structural equation modeling in hospitality research with empirical example. *Cornell Hospitality Quarterly*, 62(1), 139–156. <https://doi.org/10.1177/1938965520951751>



- Manyisa, Z. M., & van Aswegen, E. J. (2017). Factors affecting working conditions in public hospitals: A literature review. *International Journal of Africa Nursing Sciences*, 6, 28–38.
- Moon, T. W., Hur, W. M. and Hyun, S. S. (2019). How service employees' work motivations lead to job performance: The role of service employees' job creativity and customer orientation. *Current Psychology*, 38(2), 517–532.
- Nafei, W. (2015). Meta-analysis of the impact of psychological capital on quality of work life and organisational citizenship behavior: A study on Sadat City University, *International Journal of Business Administration*, 6(2), 42.
- Nazeri, A., Seidi, M. and Fakhredin, S. (2020). Operating systems with high performance and organisational performance: The mediating role of creative atmosphere, job satisfaction and moderating role of learning and organisational culture. *International Journal of Management and Enterprise Development*, 19(4), 365–377.
- Nemoto, T. and Beglar, D. (2014). Likert-scale questionnaires. In *Proceedings of the JALT 2013 conference proceedings*, 1-8.
- Ramanut, S. and Boonyoo, T. (2019). Influence of sustainable competitive advantage as interacting variable between market orientation and the performance of Thai frozen seafood industry. *Silpakorn University Journal*, 39(5), 145-158.
- Shi, H. (2014). *The Relationship between Job Satisfaction and Employee Loyalty in the Manufacturing Industry of China* (Doctoral dissertation, Universiti Teknologi Malaysia).
- Smith, P. C., Kendall, L. M. and Hulin, C. L. (1969). *The Measurement of Satisfaction in Work and Retirement*, Rand Mc Nally, Chicago.
- Thongrawd, C., Ramanust, S., Narakorn, P. and Seesupan, T. (2020). Exploring the Mediating Role of Supply Chain Flexibility and Supply Chain Agility between Supplier Partnership, Customer Relationship Management and Competitive Advantage. *Int. J Sup. Chain. Mgt*, 9(2), 435.
- Walden, J., Jung, E. H. and Westerman, C. Y. (2017). Employee communication, job engagement, and organisational commitment: A study of members of the Millennial Generation. *Journal of Public Relations Research*, 29(2–3), 73–89.
- Wen, X., Gu, L. and Wen, S. (2019). Job satisfaction and job engagement: Empirical evidence from food safety regulators in Guangdong, China. *Journal of Cleaner Production*, 208, 999–1008.
- Williams, P., Kern, M. L. and Waters, L. (2017). The role and reprocessing of attitudes in fostering employee work happiness: An intervention study. *Frontiers in Psychology*, 8, 28–41.
- World Health Organisation. (2020). Preparing for large-scale community transmission of COVID-19. *World Health Organisation*, (February), 1–8. Retrieved from <https://apps.who.int/iris/bitstream/handle/10665/331243/COVID-19-02282020.pdfhttps://doi.org/10.21632/irjbs.13.1.1-14>