Impact of Working Environment towards Job Satisfaction of Teaching Engineers in Universiti Teknikal Malaysia Melaka

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ABSTRACT – Teaching engineers are an integral part of a technical university. Nowadays, many studies show how the working environment affects employees' job satisfaction. However, not much has been done that focuses on teaching engineers, especially on a qualitative approach. This study investigates the themes of working environment, which affects the job satisfaction of teaching engineers. This study utilizes focus-group discussion with 20 teaching engineers. As a result, six themes were identified; job promotion. benefits, salary, working conditions, organizational structure, and working relationship. It is hoped that this study can provide insights into aspects of enhancing the job satisfaction of teaching engineers.

1. INTRODUCTION

Malaysia is swiftly developing globally and urgently needs a technical and engineering workforce at differing levels, especially technology and engineering. To meet the demands, the government has emphasized technical and vocational education and training (TVET) to produce more Knowledge workers (K-Workers) [1]. Beginning from 2011, four Malaysian public universities have started to offer engineering technology programs to support the TVET agenda. These universities are grouped in a cluster known as the Malaysian Technical University Network (MTUN) [2]. It is a cluster of public technical universities that aids in technical and technology programs, having the sole purpose of teaching and preparing skilled human resources to contribute to its prospects. These clusters currently have only five universities in Malaysia, with one of them being UTeM.

Universiti Teknikal Melaka Malaysia or the Technical University of Malaysia Melaka is a higher education establishment established on the 1st of December 2000 under the University and University College Act 1971. It is widely regarded as the first technical public university in Malaysia and the 14th public university listed in Malaysia. It has had many local as well as overseas admission since its establishment. It was initially known as *Kolej Universiti Teknikal Kebangsaan Malaysia* (KUTKM) but had since undergone a rebranding and was given a new name on the 1st of February 2007, the term now known as UTeM. In total, there are three campuses, which are the main campus, the city campus, and the technology campus. UTeM also houses eight faculties and two learning centres specializing in engineering, engineering technology, ICT, and technology management disciplines, which is also why the university is categorized as an MTUN university.

Despite being new, UTeM has progressively produced quality students over the years. Regardless, academic staff in the establishment have expressed their concerns regarding the working environment. Like every other university in the country, this university strives to be one of the best. This can only be achieved if the work productivity of the university is boosted. Out of the eight faculties in UTeM, two are technical faculties, the Faculty of Electrical and Electronic Engineering Technology (FTKEE) and the Faculty of Mechanical and Manufacturing Engineering Technology. These faculties comprise academic staff, such as lecturers, professors, senior lecturers, associate professors, and teaching engineers. However, an essential academic staff that seems to be overlooked by many is the teaching engineers. Teaching engineers are considered the backbone of the technical faculties.

1.1 Teaching Engineers

Initially, teaching engineers were brought into the university after working in the industrial sector for five years or more. Teaching engineers or jurutera pengajar is used predominantly in UTeM, while other technical universities and polytechnics use Vocational Training Officers or *Pegawai Latihan Vokasional* (PLV). Despite the difference in name, they are the same thing, with similar scope and schemes. The name change showcases a more industrial outlook because teaching engineers possess an industrial qualification in terms of degree and industrial experiences of more than five years and are associated with government and non-government boards of engineers. Initially, they were placed in the engineering faculty but were then shifted to the technical faculties, which shows they are a significant aspect of the technical faculty.

Teaching engineers are placed there because they possess industrial experience and are deemed appropriate to create the syllabus. Academicians with significant industry experience or who have become engineers themselves are perhaps the best candidates to demonstrate the skills and knowledge required for graduates to function as engineers upon graduation. Academicians may convert experience to knowledge in the lecture halls if students are invested in learning and have their interests, needs, or desires met [3]. Those with

industrial experience will carry their skills into the classroom as students have yet to experience by participating in applicable class events [4]. Not just that, but those with deep industry knowledge and insight can generalize and have thoughts that go beyond what can be found in a classroom [3]. According to the participants, one of the main requirements of a teaching engineer is having industrial experience and a minimum degree-level education, emphasizing the former. Most teaching engineers would have to manage many practical and lab sessions, and having prior industrial knowledge would be beneficial.

Teaching engineers are solely responsible for the faculty labs, technical programs and curriculum, and industrial work. Their job scope can be seen from the illustration below:

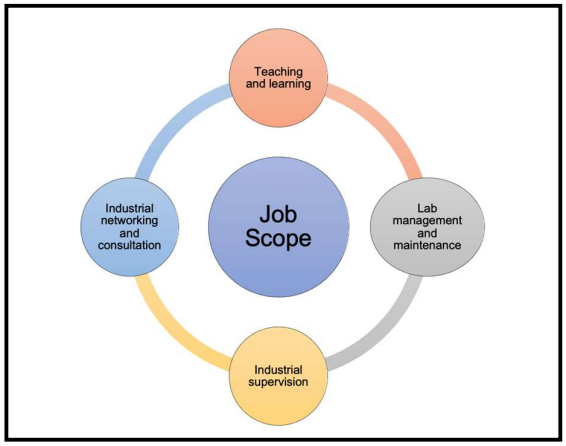

Figure 1 The job scope of teaching engineers

As can be seen above, these academic staffs are fundamental, and their contribution and skills should be regarded. Their every need and concern should be taken care of as well. Hence, the working environment of the university must be looked upon to ensure job satisfaction for the teaching engineers. This study aims to examine the working environment of teaching engineers here in UTeM. This study is focused on UTeM grounds for study. It will provide information and insights regarding the various themes of the working environment, which directly affect the job satisfaction of teaching engineers in the university. It is hoped that the study can provide insights into aspects of humanizing in enhancing the job satisfaction of teaching engineers.

2. METHODOLOGY

Twenty (20) teaching engineers in the technical faculty are chosen for this study. These academics have worked years in the working industries and have more insights into the workplace. Initially, the faculty deans were notified of this study. Once their approval was given, the selection of participants was made at the behest of the faculty. Once done, they will be contacted via phone, email, or in person. The participants were provided with a personal information letter (a letter where participants must fill out basic information) and a letter of approval (to ensure they approve of themselves being in the focus group discussion, which also explains the interview). The focus group discussion was conducted on the chosen participants in three sessions throughout the day. In addition, they were provided with verbal and written information regarding the study.

Table 1 Focus group discussion information.

Sessions	Participants
1	6
2	7
3	7
TOTAL	20

A team of graduate students of varying faculties with experience conducting qualitative research served as helpers to discuss. The primary researcher is the leader who conducts interviews. Two students worked as a team; one set up the recording equipment, and another photographed the sessions. The discussions were recorded with a voice recorded with permission from the participants. Once each session completes, the data is transcribed verbatim. To compensate for the participants' time, they were provided with food and beverages after each session.

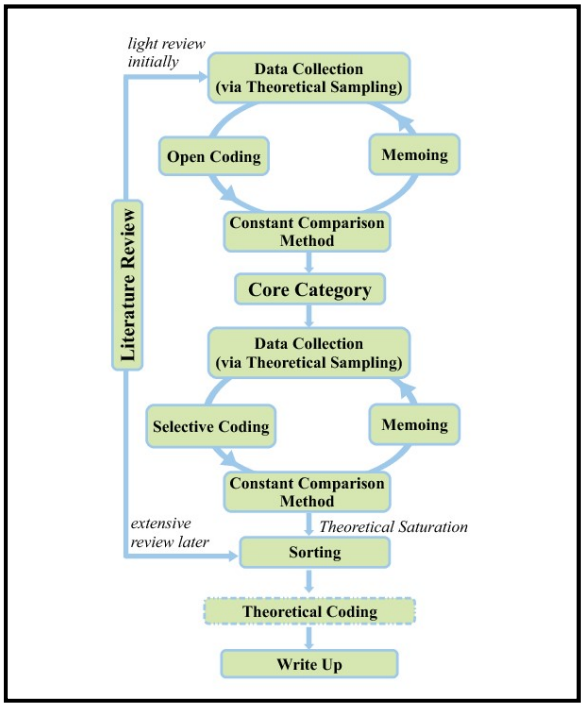

Figure 2 Constructivist Grounded Theory Framework (adapted from Hoda et al. [5])

This study utilizes the Grounded Theory approach, which is a method to create a theory. The approach gathers, synthesizes, analyzes, and conceptualizes qualitative data for the sole purpose of constructing a valid theory. The sampling procedure used in this research is theoretical sampling, which is gathering, coding, and simultaneously studying data to create a theory. This study involves a researcher picking well-known and experienced participants in the phenomenon under study. The researcher would create the sampling

population through their thoughts and comprehension regarding the collected and analyzed data [6]. This study also follows the Constructivist paradigm, whereby the experience and reflection of participants are taken into consideration. Since the research method used to collect data is a focus group discussion, it will allow the researcher to have a plethora of data that can be utilized. After the completion of each focus group discussion session, the data collected will be transcribed verbatim. Transcription in the analysis is essential as it builds theoretical sensitivity, which is the need for being sensitive over what data are crucial in building the grounded theory [7] brings the researcher closer to the obtained data and allows the researcher to critique and improve on the procedure of the interview. Each completed interview transcript will be checked at least twice for any mistakes that may occur, such as misspelled words or acronyms. The collected data will also be viewed through the preliminary data analysis, where researchers skim the data, again and again, to figure out the initial pattern, categories, concepts, themes, and ideas of the study. For this study, an adequate number of participants will be interviewed to get a clear illustration of how the working environment affects the job satisfaction of the teaching engineers. Appropriate sample size is obtained once data saturation occurs. Theoretical saturation happens when no new or relevant perceptions regarding a specific class exist, and the relationships between the classes are well defined and validated [8].

3. RESULTS AND DISCUSSION

The result revealed six themes of working environment that impacted teaching engineers' job satisfaction: job promotion, benefits, salary, working condition, organizational structure, and working relationship. The respondents focused on these themes, stressing how they impacted their work-life there. It is also interesting to note that most teaching engineers consider job promotion the most prominent theme to have impacted the overall job satisfaction throughout their time in the university. Job promotion is highlighted frequently, as most respondents feel that it is an issue that has impacted them the most. Teaching engineers have had a major revamp in their job promotion scheme, which changed the promotional period from one service scheme to another. This change was imposed by the government, subsequently making it harder for them to be promoted. There also exists an inequality between the promotional scheme of other academic staff, especially lecturers, which resulted in many teaching engineers feeling demotivated. The second theme highlighted is benefits. Teaching engineers are usually provided with many benefits. However, the one benefit that teaching engineers do not receive is the opportunity to study further. The respondents mentioned that this is due to a lack of allocations from the university, hindering them from pursuing higher education. This issue has also compelled many to leave the university to study further and become lecturers elsewhere.

The third theme mentioned is salary. The respondents expressed their discontent over how their salary is unreasonable in comparison with the work they do. They mentioned that while their job focuses on labs and tutorials, they are also doing more. They added that they have an almost similar job scope to lecturers but are not paid similarly. The fourth theme mentioned is working conditions. For the respondents, the overall response is favorable. Most respondents explained that they are well cared for and provided with equal amenities as other staff. The fifth theme mentioned is organizational structure. Respondents highlight that the faculty organizational structure is complex, and mismanagement is common. The teaching engineers there are usually made to do the most work as well, which causes dissatisfaction. The respondents also raised concerns about communication, adding that the higher authorities sometimes do not listen to their complaints. The last theme touches on working relationships. Teaching engineers sometimes feel that they are not acknowledged or respected for their work. They feel that they are sometimes looked down on amongst the academic community. Many respondents mentioned that they expect recognition for their work. Overall, the table below depicts the number of participants who spoke on each theme by session.

Table 2 Total participants for each theme of working environment.

Themes of Working Environment	**Sessions**			**TOTAL**
	1	**2**	**3**	
Job Promotion	5	5	6	16
Benefits	4	5	5	14
Salary	4	4	5	13
Working Conditions	3	3	4	10
Organizational Structures	3	4	2	9
Working Relationship	3	2	2	7

Table 3 below presents the descriptive words and terms that participants associated with the themes of the working environment.

Table 3 Words associated with the themes of working environment.

Job Promotion	Career path, service scheme, service grade, career prospect, work experience, upgrade, advancement, progress, achievable and exciting scheme, circular imposition, ministry, promotional period, key performance index, criteria, protocols, requirements, fast-track

Benefits	Advantage, gains, perks, privileges, aids, help, pensions, packages, extra, insurance, allowance, loans, further studying opportunity, study leaves, scholarship, grants, paid leave, postgraduate degree
Salary	Income, pay, money, cash, bonus, compensation, finance, increment, pay raise, financial burden
Working Conditions	Surrounding, situation, atmosphere, climate, culture, privacy, own room and labs, freedom, work schedule, flexibility, long breaks, work from home, different than industry
Organizational Structures	Hierarchy, management, flow of communication, administration, authority, university, complexity, workflow, head of department, organizational chart
Working Relationship	Seniority, respect, connection, bond, friendly, committee meeting, interaction, involvement, brother-sister, cooperation, acknowledgement, recognition, gratitude, work dynamics, partner

During the interview, the participants identified the themes of the working environment using different words and phrases, as portrayed above.

3.1 Theoretical Framework

Overall, the qualitative study has provided empirical evidence on the themes discussed regarding the work environment that impacts job satisfaction. Based on the themes determined to influence the working environment among teaching engineers in UTeM, a theoretical model has been built, suggesting the relationship among them. Figure 3 depicts the model built.

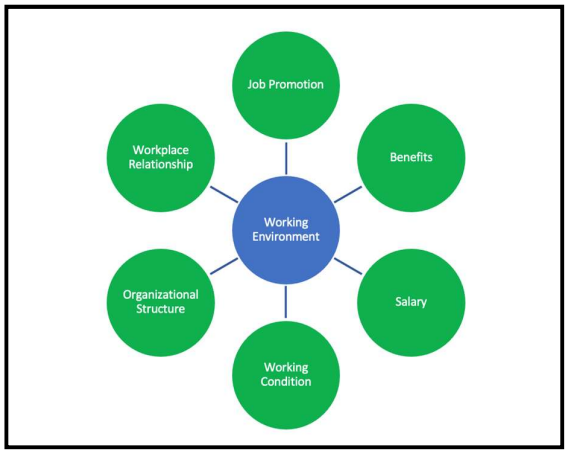

Figure 3 Theoretical framework of working environment

4. CONCLUSION

It could not be denied that teaching engineers are an essential asset to the faculty and the university. Their role and significance in developing and building the technical faculties are nothing short of stellar. The study reveals that the teaching engineers underwent tremendous changes in their career paths. The change was monumental as it defined the role of teaching engineers and provided more benefits and improvements to them. This study was also able to pinpoint crucial findings in the area of the work environment of the teaching engineers. In conclusion, the study has successfully uncovered six working environment themes that significantly impact the job satisfaction of teaching engineers in UTeM. It is hoped that with this study, stakeholders can find ways to improve the working environment of teaching engineers for the betterment of the university.

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