Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 8, No. 5, 2070-2075
2024
Publisher: Learning Gate
DOI: 10.55214/25768484.v8i5.1950

The influence of workplace environment on employee work performance among automotive engineers: A preliminary study

Norhasni Zainal Abiddin[1*]
National Defence University of Malaysia, Kuala Lumpur, Malaysia; Norhasni@Upnm.Edu.My (N.Z.A.).

Abstract: In organizations, the high performance of work has become more critical thing and workplace play a crucial part in giving engineers their job behaviors and attitude towards their performances. But in automotive, a sector renowned for its tight deadlines and stressful working conditions that often drive engineers to despair, an environment promoting collaboration, communication and ongoing learning, enabling engineers to better negotiate shifts impacting the industry like autonomous vehicles and emissions standards. It offers them the best chance of handling these republishing expectations and performing at their highest level. This pilot study intended to explore the impact of workplace attributes on work performance among automotive engineers in Klang Valley, Malaysia. Of these, 19 are automotive companies from which target respondents will be engineering employees who each represent a critical sector of the industry and should therefore be highly relevant to the research objectives. Different type of descriptive and inferential statistical methods has been used to analysis the data which is relevant for the research objective. This relationship is important for organisations who want to have their engineering staffs as productive as possible and for individuals who are trying to advance in a very competitive work environment. By conducting this preliminary study, it is hoped that overall comprehension of workplace dynamics in the automotive industry will continue to improve and strategies developed to maximise employee performance will enhance sustainability and ultimately, competitiveness of this local and global industry.

Keywords: *Automotive engineers, Employee performance, Klang valley, Organizational effectiveness, Workplace environment.*

1. Introduction

Work performance was traditionally measured on how closely an individual adheres to the tasks laid out in a job description. Performance is the capacity and effectiveness of systems, processes or individuals (Abiddin, 2007). Work performance itself has been redefined over the last few decades. This points that research has moved from jobs and their fixed duties to a broader view of work roles in changing organizational environments (Ilgen & Hollenbeck, 1991). Successful performance management is the key to unlocking human potential and driving an organization toward success. In practical terms, this means that in roles across most sectors, there is a growing demand for highly skilled engineers especially evident in the Klang Valley which serves as Malaysia's economic and industrial heartland. According to the IEM Monthly Bulletin (2022), engineers also face numerous difficulties in their multiple working conditions such as time management, lack of experience, communication barriers, work-life balance problem or compensation and HR aspect.

Finally, a supportive workplace encourages open communication and teamwork, which allows engineers to leverage their acquired skills more effectively for successful deployment of new projects. On the other hand, a less supportive or downright difficult environment can prevent these skills from being applied leading to conflicts, poor performance and inefficiency (Reber, 2022). With the fast pace

* Correspondence: Norhasni@Upnm.Edu.My

and heavy competition of the automotive industry, forcing engineers to cope with whatever new technologies have come along or however the newest project will need them to work we must look at the world of work to get a full picture of what may impact performance in order to be addressed. If the organizational culture is not supportive, if resources are inadequate or if the work climate is challenging, this may eventually lead to less-than-optimal performance.

Malaysia is one of those countries where the automotive industry has a significant role in its economy. With a view to the vital importance of this sector in promoting the industrial development, economic growth and generation of employment in the country. It is associated with many sectors like manufacturing, assembling, sales and also internal operations. The Malaysian government has always treated the automobile industry as a golden industry capable for industrialisation and technology improvement. An Overview of Malaysia Automotive Industry – The automotive industry in Malaysia is made up of different sectors which include manufacturing, assembling, distribution and services. This research, however, focuses mostly on the manufacturing sector.

The Klang Valley was chosen for this study due to its status as Malaysia's 'economic and industrial centre'. The Klang Valley, encompassing Kuala Lumpur and parts of Selangor, enjoys a concentration of automotive manufacturing plants, suppliers and related industries. The area accounts for a large share of Malaysia's auto-related foreign direct investment inflows and is home to numerous global car firms. The variety of automotive businesses operating in the area, including multi-nationals and local manufacturers supported a detailed overview of industry dynamics and training practices (Ibrahim et al., 2017). As such, the purpose of this study is to ascertain the effect of workplace environment on work performance in automotive industry companies within the Klang Valley Malaysia.

2. Literature Review

Workplace environment is the conditions and culture within the where employees work. The collective engagement and commitment and the employees' interest in their field of work also influences the wellbeing of the employees (Gunaseelan & Ollukkaran, 2012). The physical environment refers to context at which education takes place, equipment and Physical safety. The relational field can be defined in terms of the social environment of coworkers, supervisors, and organizational culture. The psychological environment here concerns job satisfaction, stress and well-being. An encouraging and positive workplace environment leads to heightened employee engagement, satisfaction and performance in the long term. Conversely, a negative work environment can lead to lower productivity, higher turnover rate and more absenteeism (Kocakulah et al., 2017; Kodarlikar et al., 2020). The advantages of understanding and enhancing the workplace environment were significant for any organizations, which are characteristics related with the performance of an employee, as well as the organizational success (Al-Omari & Okasheh, 2017).

The workplace environment is especially important in the engineering industry due to the high level of complex and technical work. One of the significant characteristics behind engineers is that they must have a high sense of coordination with their developments and consideration while solving issues in terms of both function and form (Kossiakoff et al., 2020). While such abilities appear coding external, a conducive workplace requires the capabilities for engineers being able to code at peak capacity. Some examples include access to state-of-the-art tools and technology, team rooms for collaborative work environments, fast feedback loops through trials, training systems to encourage constant development. We all know technology is changing so fast and engineering requires us to always be thinking of the next greatest thing. So how can performance live up to its previous standard when the pace at which everything around it changes?

For several reasons the workplace environment is but critical and very significant in engineering industry Al-Omari & Okasheh (2017). It boosts productivity by creating an organized and conducive environment for engineers to do their work with limited interruptions while being given the opportunity to access resources and tools, and a culture of sharing. It promotes Open Communication, Experimentation and Learning which are necessary to be ahead of new technologies (Innovation &

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 8, No. 5: 2070-2075, 2024
DOI: 10.55214/25768484.v8i5.1950

Creativity) in the market. In addition, a positive workplace environment leading to job satisfaction and the resulting high morale also helps increase employee retention. Engineers are more likely to stick with an organization that cares about their well-being and provides avenues for growth (Irabor & Okolie, 2019). Plus, high performing and high-quality work is a given when you work with engineers in an environment that encourages this. They will just do it whether or not you expect them to. Last but not least, it helps in stress reduction because a conducive environment manages the burdens of engineering projects where there are supportive relations and communication, clear and high management practices.

Job performance is a term used to indicate the amount of effectiveness, productivity and efficiency exhibited by a person in fulfilling the duties pertaining to his or her job within an organization. The concept in hand, is indeed multi-dimensional and includes factors defining the overall outcome employees or teams brought to any organization. Work performance is usually judged by predetermined targets that are in turn compared against the norms and standards set within the organisation. This assessment is done by considering multiple dimensions of performance, typically results, quality, timeliness and other relevant factors (Cascio & Aguinis, 2011).

Performance of work has always remained a topic in every organization. For this reason, training and development programs have become regular practice among many organisations in the era of global competitive forces (Neely, 1999) to keep up their work performances. It has long been positioned as such, and in fact the sustained measure of its organisational ability in terms of its productivity and effectiveness. Hence, the performance appraisal or monitoring has been a major segment of organizational performance (Rasit & Isa, 2014). This is why, at any point in time, an organisation should and must build a strong organisational performance culture so as to fulfill their goals and objectives.

There are not only individual differential features, but also situational constraints that cause work performance variations. Situation can also be an explanation for stress (Situational Approach, Sonnentag & Frese 2005) which are the conditions in the environment that encourage or impede performance, includes some methods that clarify workplace influences. Situational perspective in the models of work performance: Perhaps, it is important to consider that there may be a relationship between knowledge skills, effort and work performance. Other links can be moderated by other situational contexts, soft skills training (Izadikhah et al., 2010). It should be noted, however, that on the empirical level situational constraints conceptualization centers around what factors are pertinent to these constraints.

In addition, according to Ibrahim et al. (2017), the effectiveness of work performance improvement programs is dependent on the system of management that has been designed in an agency and may improve or hinder employee performance. If there has to be a better work performance, employees have to be given more decision-making powers in an organisation. In an organisation, even if all necessary information is provided to employees, work performance will rest upon the employee's ability to use the information for increasing work performance (Angeles Lopez-Cabarcos et al., 2022).

The organizational culture plays an important role in facilitating the engineer to apply his soft skills and thereby contributes largely to improved performance. Hirudayaraj et al. (2016; 2021) conducted a study has drawn on previous research that shows how positive workplace environments not only make it possible to apply soft skills, but also increase job satisfaction and willingness to stay at work.

3. Methodology

This study population represents engineers who work in the automotive industry, particularly in KL and Selangor region where the majority of automobile manufacturers are located in Malaysia. Being practiced in design, production, research and development (R&D), etc., these engineers mainly participate in cross-functional teams where soft skills are essential. By design, the idea behind this cohort is because it's a high energy and hyper-competitive industry which means you really do need technical expertise and real-world skills like problem solving, team-oriented thinking and leadership. The targeted population comprises engineers from 19 automotive companies, all of which are pillars in

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 8, No. 5: 2070-2075, 2024
DOI: 10.55214/25768484.v8i5.1950

their respective sectors that contribute towards attaining the objectives defined in this study (see Table 1).

Engineers at different levels and roles who participated in soft skills training programs of their corresponding organizations as the research subjects has been selected. Doing so ensures the sample represents diversity in engineering roles and expertise within the automotive industry, leading to increased relevance and richness of findings.

Table 1.
List of respondents of the research.

No.	Automotive company	Estimated number of engineers	Sample size
1	Perusahaan Otomobil Kedua Sdn Bhd (PERODUA)	300	169
2	Perusahaan Otomobil Nasional Sdn Bhd (PROTON)	250	152
3	Tan Chong & Sons Motor (Nissan)	200	132
4	UMW Toyota Motor	220	140
5	Honda Malaysia	180	123
6	Mitsubishi Motors Malaysia (MMM)	150	108
7	Volvo Car Malaysia	100	80
8	TC Euro Cars (Renault)	120	92
9	Mercedes-Benz Malaysia	130	97
10	BMW Malaysia	150	108
11	Sime Darby Motors Group	210	136
12	Mazda, Peugeot and KIA	170	118
13	TC Subaru	100	80
14	Volkswagen Passenger Cars Malaysia (VPCM)	120	92
15	Hong Leong Yamaha Motors Sdn Bhd	110	86
16	Boon Siew Honda Sdn Bhd	100	80
17	Motosikal dan Enjin Nasional Sdn Bhd (MODENAS)	150	108
18	Mofaz Motorsikal Sdn Bhd	90	73
19	KMSB Motors Sdn Bhd (Suzuki)	100	80
	Total	2,950	1,954

The study was conducted by responding through structured questionnaires to engineering employees in the automotive industry in Malaysia. The questionnaire was distributed both virtually and physically to enhance the response rate and availability. This study used the Statistical Package for the Social Sciences (SPSS) software to analyse data. SPSS is a commonly used tool for the management and analysis of data in social science research work as it is powerful and easy to use (Kelly & Palaniappan, 2022). The data analysis for this study was performed using both descriptive and inferential statistics to coincide with the research objective. The analysis also utilizes a systematic approach where it is hardly to bias the findings, their scope and how these results are relevant in answering the posed research questions. The table below illustrates the methods of analysis for every research objectives were indicated in Table 2.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 8, No. 5: 2070-2075, 2024
DOI: 10.55214/25768484.v8i5.1950

Table 2.
Data analysis methods.

No.	Research objective	Research question	Analysis method
1.	To determine the level of work performance efficiency among automotive engineers in the Klang Valley.	What is the level of work performance efficiency among automotive engineers in the Klang Valley?	Descriptive statistics (Mean, standard deviation)
2.	To investigate the relationship between workplace environment, and work performance among automotive engineers in the Klang Valley.	What is the relationship between work performance among automotive engineers in the Klang Valley?	Correlation analysis (Pearson correlation coefficient)
3.	To investigate the differences between workplace environment, and work performance among automotive engineers in the Klang Valley.	Are there differences in workplace environment, and work performance among automotive engineers in the Klang Valley?	Analysis of Covariance (ANCOVA)
4.	To investigate the effect of workplace environment on work performance among automotive engineers in the Klang Valley.	What is the effect of workplace environment on work performance among automotive engineers in the Klang Valley?	Multiple regression analysis

4. Expected Findings

The anticipated outcome of this study is to gain a deep insight into the effect of ambience on work behaviour and thus workers ability. The results will end up in better job descriptions by also highlighting the ideal environments to get work done, and align employee performance evaluation processes with true requirements of the engineering roles. It will improve the efficiency in engineering professionals, more collaboration and overall productivity of engineers to be competitive edge from the engineering sector in Klang Valley.

Through this focus on the workplace, the study will also offer insights into organizational culture, workplace resources and workplace climates. Knowledge of these factors will help organizations and managers to develop more supportive paradigms that contribute positively to superior job performance. It will also contribute to the development of holistic strategies for improving workplaces that result in a stronger, more resilient and dynamic engineering workforce in the Klang Valley.

5. Conclusion

A good workplace can set engineers up for success and aid in working more effectively. On the other hand, a poor environment such as with low communication, supportiveness and rigid hierarchical structures can make it difficult to develop one or multiple of these skills and thus will cause for less optimal job outcomes. This is especially crucial in the Klang Valley that hosts one of the potential sources and engines of economic growth, which is the automotive industry. It will not only improve work performance but also help to make the automotive companies competitive in this region globally. The literature has set out the importance of workplace contexts in influencing automotive engineers work performance in the Klang Valley. Furthermore, the employers in automotive industry have to provide an atmosphere conducive to lifelong learning.

Inspiring a great working atmosphere, the Klang Valley automotive industry can ensure that their engineers are more than ready to tackle the needs of Malaysia's ever-changing engineering landscape. In turn, this study will provide to the industry overall success and competitiveness locally as well as worldwide.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 8, No. 5: 2070-2075, 2024
DOI: 10.55214/25768484.v8i5.1950

Acknowledgments:
The author sincerely appreciate National Defence University of Malaysia's financial assistance in publishing this article.

References

[1] Abiddin, N. Z. (2007). Challenges in Ph.D. Studies: The Case of Arts Student. European *Journal of Social Sciences*, *5*(2), 83-93.
[2] Al-Omari, K., & Okasheh, H. (2017). The influence of work environment on job performance: A case study of engineering company in Jordan. International Journal of Applied Engineering Research, 12(24), 15544-15550.
[3] Angeles, M. P. H. (2012). Teaching Efficacy, Interpersonal, Intrapersonal Skills and Teaching Performance in the Tertiary School. IAMURE International Journal of Social Sciences, 2(1). https://doi.org/10.7718/ijss.v2i1.8
[4] Cascio, W. F., & Aguinis, H. (2011). Applied Psychology in Human
[5] Gunaseelan, R., & Ollukkaran, B. A. (2012). A study on the impact of work environment on employee performance. Namex International Journal of Management Research, 71, 1-16.
[6] Hirudayaraj, M., Baker, R., Baker, F., & Eastman, M. (2021). Habilidades interpersonales para ingenieros principiantes: Lo que buscan los empleadores. Education Sciences, 11(10), 1–34.
[7] Ibrahim, R., Boerhannoeddin, A., & Bakare, K. K. (2017). The effect of soft skills and training methodology on employee performance. European Journal of Training and Development, 41(4), 388–406. https://doi.org/10.1108/EJTD-08-2016-0066
[8] Ibrahim, R., Boerhannoeddin, A., & Kazeem Kayode, B. (2017). Organizational culture and development: Testing the structural path of factors affecting employees' work performance in an organization. Asia Pacific Management Review, 22(2), 104–111. https://doi.org/10.1016/j.apmrv.2016.10.002
[9] Ilgen, D. R., & Hollenbeck, J. R. (1991). Job design and roles. Handbook of industrial and organizational psychology, 2, 165-207.
[10] Institutions of Engineers, Malaysia (IEM), Monthly Bulletin, 2022. InTech. doi: 10.5772/intechopen.73785
[11] Irabor, I. E., & Okolie, U. C. (2019). A review of employees' job satisfaction and its affect on their retention. Annals of Spiru Haret University. Economic Series, 19(2), 93-114.
[12] Izadikhah, Z., Jackson, C. J., & Loxton, N. (2010). An integrative approach to personality: Behavioural Approach System, mastery approach orientation and environmental cues in the prediction of work performance. Personality and Individual Differences, 48(5), 590–595. https://doi.org/10.1016/j.paid.2009.12.012
[13] Kelly, E. A., & Palaniappan, S. (2022). The contribution of government policy and financial security control in Ghana's mobile money services. Cogent Social Sciences, 8(1), 2138105.
[14] Kocakulah, Mehmet C., Bryan, Timothy G., & Lynch, Stevie (2017). Effects of Absenteeism on Company Productivity, Efficiency, and Profitability. Business and Economic Research, 8, (1). Macrothink Institute. https://doi.org/10.5296/ber.v8i1.12395.
[15] Kodarlikar, M. R. U. D. U. L., & Umale, V. A. I. B. H. A. V. I. (2020). A healthy workplace environment: impact on employee and organizational performance. IRE Journals, 4(2), 116-122.
[16] Kossiakoff, A., Biemer, S. M., Seymour, S. J., & Flanigan, D. A. (2020). Systems engineering principles and practice. John Wiley & Sons.
[17] Neely, A. (1999). The Performance Measurement Revolution: Why Now and What Next? International Journal of Operations & Production Management, 19, 205-228.
[18] Rasit, Z. A., & Isa, C. R. (2014). The Influence of Comprehensive Performance Measurement System (CPMS) towards Managers' Role Ambiguity. Procedia - Social and Behavioral Sciences, 164(August), 548–561. https://doi.org/10.1016/j.sbspro.2014.11.145. Resource Management. Prentice Hall.
[19] Reber, M. (2022). Identifying the challenges aerospace engineers face during the transition from university to industry. In 129th American Society of Engineering Education Annual Conference and Exposition.
[20] Sonnentag, S., & Frese, M. (2005). Performance Concepts and Performance Theory. Psychological Management of Individual Performance, October 2017, 1–25. https://doi.org/10.1002/0470013419.ch1strueco.2004.05.001.