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THE IMPACT OF LEARNING AND DEVELOPMENT ON
EMPLOYEES' PRODUCTIVITY IN ELECTRICAL
MANUFACTURING SECTOR AT PENANG, MALAYSIA

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Abstract:

The purpose of this study is to evaluate the relationship between learning and development including effective training need analysis (TNA), effective training techniques and effective training contents on employees' productivity in electrical manufacturing sector at Penang, Malaysia. In order to examine the relationship a sample size of 222 respondents taken from 28 electrical manufacturing sector with 6322 population and 361 samples. A questionnaire was design for data collection to measure learning and development included effective training need analysis (TNA), effective training techniques and effective training contents on employees' productivity. Stratified sampling method was used to analyze the data used SmartPls 3.7.8. The result of the study shown that effective training need analysis (TNA), effective training techniques and effective training contents have a significant relationship on employees' productivity. The limitation of this study only covers electrical manufacturing sector. Suggested for future study focus on electronic, plastic and fabricated manufacturing sector in order to be more effective result in improving the learning and development practices in manufacturing sector.

Keywords:

Learning And Development, Effective Training Need Analysis (TNA), Effective Training Techniques, Effective Training Contents, Employees' Productivity

Introduction

Previous literature review found that learning and development are one of the human resource management practices that play a role in improving the knowledge, ability and skills of an employee in an organization. Every employee needed skills in performing their daily tasks more effectively. Without knowledge and skills, it is impossible for every employee to perform their job better. Learning and development have a significant relationship on employees'

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productivity. Skilled employees are able to realize the organization's goals towards maximizing production and profits (Amos & Natamba,2019; Awang, Ismail & Noor,2020). To achieve these goals, the organization needed learning and development that meets the needs of an employee so that a task performed successfully done according to the set time. Organizations need to layout relevant training to increase employee work productivity so that each work performed runs more smoothly. Employees also need to have a high passion in improving their knowledge and skills through effective learning programs (Febriyarso & Ruslan,2021). All opportunities involved training should be taken part for improvement in the performance of their daily tasks. All opportunities involved learning and development need to be given more attention by the organization. While, employees need to have a high spirit to attend any training that involved their duties and responsibilities in order to be more effective. Through learning and development, organizations are able to produce quality and productivity employees who can contributed their skills towards the improvement of the organization with greater excellence.

Objectives and Research Questions of the Study

Objectives of the Study

The objectives of the study is to make sure that employees have the capability, ability and skills as required by their daily tasks performance. There are three objectives in this study:

1. To evaluate the relationship between effective training need analysis (TNA) on employees' productivity in electrical manufacturing sector.
2. To examine the relationship between effective training techniques on employees' productivity in electrical manufacturing sector.
3. To identify the relationship between effective training contents on employees' productivity in electrical manufacturing sector.

Research Questions of the Study

Research questions in this study covered:

1. Is there any relationship between effective training need analysis (TNA) on employees' productivity in electrical manufacturing sector?
2. Is there any relationship between effective training techniques on employees' productivity in electrical manufacturing sector?
3. Is there any relationship between effective training contents on employees' job productivity in electrical manufacturing sector?

Literature Review

Effective Training Need Analysis (TNA)

Training Need Analysis (TNA) is a basic step that needs to be implemented before any training planning is made. The main objective of TNA is to collect and analyze the training needs for each employee so that the training provided is appropriate to their duties and responsibilities in the workplace. Previous literature review stated that a comprehensive TNA plays an important role in an organization to coordinate the skills available among the employees responsible for helping the organization achieved the set goals. If implemented properly, TNA helped organizations to identify training modules that are capable of solving specific problems and issues related to employee skills and knowledge can be resolved (Moradi, Mohamed & Yahya,2018). There is significant relationship between Training Need Analysis (TNA) on employees' productivity. Effective TNA makes a positive impact when organizations pay

attention by focusing on elements such as understanding what is meant by training needs analysis and its impact on organizational development, being better prepared to make training needs analysis with the right approach and giving positive impact to increased knowledge and skills required in the organization, able to identify training needs required at various levels in the organization in the short and long-term period, able to select and used various learning methods of training needs that can be identified more effectively, capable to use more practical methods to analyze information and data to identify the needs and priorities of a learning and development, have the ability to use a structured framework to demonstrate training solutions as proposed and obtain clear feedback from all parties involved in the organization to obtain approval for the implemented TNA (Abrar,2021; Raza,2019). Therefore, a completed TNA guaranteed the work performance of employees towards the quality and productivity that can be produced for the development of the organization.

Effective Training Techniques

Effective training techniques play the role to ensure that each training given strived to reach the workers more efficiently. Previous study stated that there are several training techniques that organizations practice to each of their employees. On-job training is an effective training technique because the training revealed to each employee about the real situation where they work. On-job training is the basis of every training where the most effective learning is when the employee himself can identify whether any problem faced by identifying their duties and responsibilities in more detail for the implementation of their daily tasks. They learn each exercise in a real situation and on-job training given them the advantage to identify what problems often occurred in the workplace and how to solve those problems effectively (Khan, Ahmad, Iqbal & Haider, 2019; Khan & Abdullah,2019). Off-job training also plays an important role of employee performance in the organization. Usually of-job training is done outside the workplace such as hotel or training center. There are employees who came from various organizations and employees involved in off-job training can shared job-related information, think of the best methods for problem solving and communicated with each other in group to take action in making decisions in any problem highlighted. Off-job training encouraged each employee to communicate effectively in any issues that arise, submit suggestions for problem solving and understand each other about the real situation in the workplace. Meanwhile, training techniques included face to face training, video sessions, group discussions and presentations (Nasikhin & Danila,2018; Topno 2019). Effective training techniques are very effective in the delivery of knowledge that involved the skills, competencies and abilities of an employee in handling their daily work performance in order to best output can be produced efficiently (Timah,2018; Bhat, 2019). The effect of effective training techniques on employees also which each employee is capabilities to demonstrated their knowledge that they learned effectively in the workplace.

Effective Training Contents

Contents in training modules is important to ensure that the training modules that has been made in accordance with the goals of learning and development. Previous literature review found that all contents of training are required to meet the needs of an employee in handling their duties in the workplace. Contents of training included their daily tasks, side tasks such as helping other departments to increase output and training in forming a positive work culture. The training modules are organized in an orderly manner based on current needs with priority given to specific tasks and responsibilities (Al-Eraky, Mohamed, Kamel, Al-Qahtani, Madini,Hussin & Kamel, 2019; Saputri, Lorensa, Asriani & Za,2020). Training contents is very important because without the right content relevance can cause the training program to

stray from the main goal. It is the duty of the learning and development department to identify the training that needs to be attended by employees, training related to their duties, organized training modules to meet the goals of the training and strive for each employee to practice all the knowledge learned in the training session. Employees need to have a positive attitude and be willing to take advantage of every training provided to improve their skills in handling their main tasks to the organization. Employees also need to be interested in the training contents provided to them in order for them to understand why the training is so necessary for them to attend (Karam, 2019; Nwali & Adekunle, 2021). Training contents that have nothing to do with the duties and responsibilities of an employee is training that is wasteful and a waste of time. This is because the training contents do not meet the needs of the organization and the needs of employees in performing their daily tasks (Aslam & Ratnayake, 2021; Jeni, Momotaj & Al-Amin, 2021). It is a need for organizations through the learning and development department to review training contents to ensure that each training conducted for employees meets the needs of the organization, build an employees who are skilled, capabilities and knowledgeable in producing their work with high quality and productivity of job performance (Kum, Cowden & Karodia, 2019; Gambo, 2019).

Employees' Productivity

Employees' productivity refers to employees who are able to produce the output which their organization has set to be achieved with excellence performance. Previous literature review stated that productivity of work results can increase the growth of the organization faster and be able to maximize profits for a long-term period. In order to achieve these goals, each employee must specialist the skills as required in performing their daily tasks in order to achieve the goals of the organization. Employees' productivity included employees with integrity which integrity is the most important characteristic not only for success in life but also at the workplace (Ole-Kinisa, 2019; Kadiresan, Selamat, Selladurai, Charles Ramendran & Mohamed, 2019). The level of integrity of employees can be assessed through the extent to which they are honest with themselves, employee intelligence that accounts for over 60 percent of their work productivity where this intelligence included employees' ability to set priorities in planning, completing assigned tasks and solving problem, have a friendly attitude and easy to work with male or female employees, where employees who have a good personality always be more successful with whatever they do because teamwork is the key to success, have self-determination where every employee has the ability to be patient when facing difficult moments at the workplace, have the nature of leadership which they do not like to give reasons when they do not know how to do the work and are able to lead in groups, teamwork in a given task. All of these characteristics are the best employees' productivity that can contributed to the development of the organization (Hamdan, Al-Abbadi, Zuhier, Almomani, Rajab, Alhaleem, Rumman, Mohammad, & Khraisat, 2019; Zemburuka & Dangarembizi, 2020).

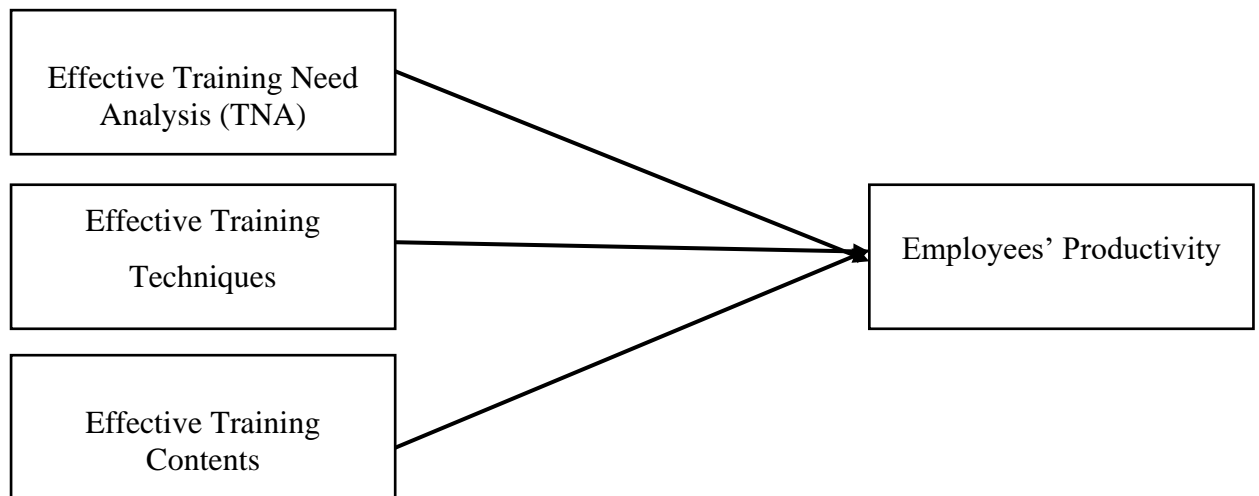
Conceptual Framework

Independent Variables

- Effective Training Need Analysis (TNA)
- Effective Training Techniques
- Effective Training Contents

Dependent Variable

- Employees' Productivity In Electrical Manufacturing Sector

**Hypothesis Development**

- H1. There is significant relationship between effective training need analysis (TNA) and employees' productivity in electrical manufacturing sector.
- H2. There is significant relationship between effective training techniques and employees' productivity in electrical manufacturing sector.
- H3. There is significant relationship between effective training contents and employees' productivity in electrical manufacturing sector.

Result**Participants**

The data was collected from 28 electrical manufacturing sector, 361 questionnaires were distributed and 222 questionnaires were analysis among the employees. The respondents were selected using the stratified sampling technique.

Measurement Scale

Questionnaires are designed in Linkert Scale (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree).

Data Analysis

The data obtained were studied using SmartPLS version 3.7.8 to discuss the findings obtained. SmartPLS is highly recommended by statistical scholars in producing accurate analysis of the cause and effect relationship of each variable. SmartPLS is also referred to as a large multivariate analysis technique in social and psychological research. SmartPLS is capable of analyzing measurement model evaluation and structural model evaluation.

Table 1 shown the Loading, Composite Reliability (CR), Average Variance Extracted (AVE) value for each construct studied and the lowest value is 0.647 and the highest value is 0.817. These values are greater than 0.5 (> 0.5), confirming that the study construct is able to explain the mean change of variance within the items (Fornell & Larcker, 1981; Gefen & Straub, 2005; Henseler, Ringle & Sinkovics, 2009).

Table 1
Loading, CR & AVE Results

	<i>Loading</i>	<i>CR</i>	<i>AVE</i>
Effective Training Need Analysis (TNA)		0.9105	0.5066
ETN1	0.7414		
ETN2	0.7647		
ETN3	0.7702		
ETN4	0.7432		
ETN5	0.7566		
ETN6	0.7871		
ETN7	0.7734		
ETN8	0.7253		
ETN9	0.7015		
ETN10	0.7224		
Effective Training Techniques		0.9166	0.5789
ETT1	0.7525		
ETT2	0.7970		
ETT3	0.8144		
ETT4	0.8082		
ETT5	0.8207		
ETT6	0.7702		
ETT7	0.7906		
ETT8	0.7790		
Effective Training Contents		0.9254	0.6086
ETO1	0.7235		
ETO2	0.7334		
ETO3	0.7766		
ETO4	0.7814		
ETO5	0.7555		
ETO6	0.7836		
ETO7	0.7363		
ETO8	0.7931		
Employees' Productivity		0.9400	0.6103
EP1	0.7495		
EP2	0.8007		
EP3	0.7774		
EP4	0.8025		
EP5	0.8005		
EP6	0.7617		
EP7	0.7822		
EP8	0.7819		
EP9	0.7932		
EP10	0.7609		

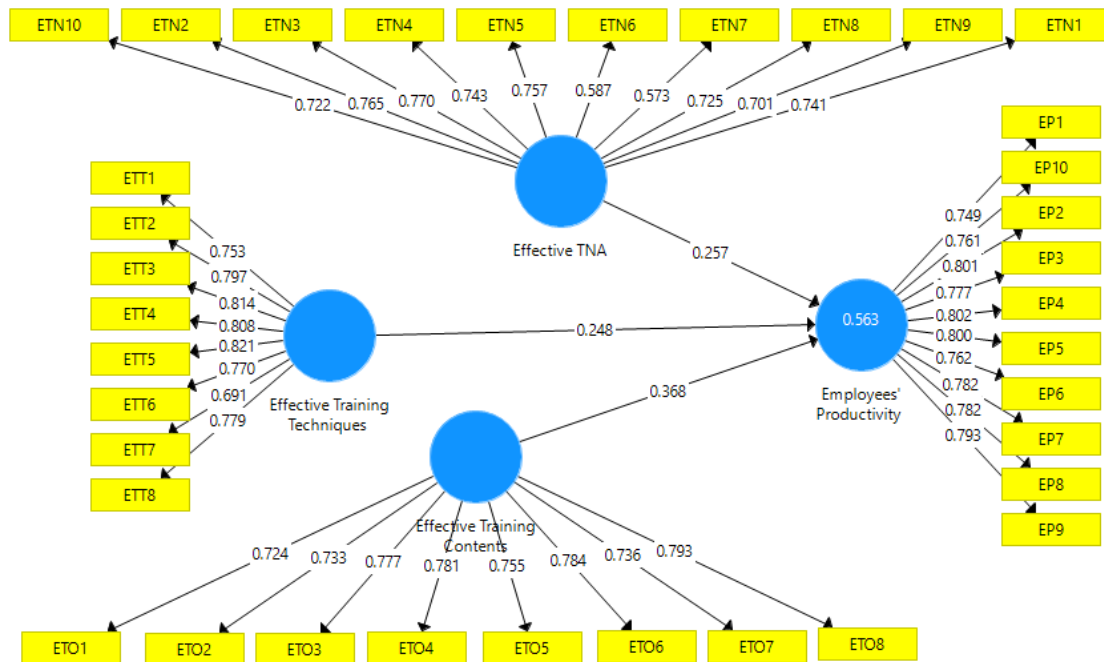


Figure 1: Structural Model Direct Effects

The discriminant validity test was measured through two methods, namely the Heterotrait-Monotrait (HTMT) criterion test and cross loading (Henseler et al., 2009). Table 2 below shown the output from the HTMT analysis. The results can be calculated easily using the formula as in (Henseler, Ringle & Sarstedt, 2015).

**Table 2
Discriminant Validity**

Constructs	ETN	ETO	ETT	EP
ETN	0.7118			
ETO	0.5497	0.7608		
ETT	0.5575	0.6834	0.7801	
EP	0.5974	0.6791	0.6430	0.7812

Note: Values in Bold face are the square root values of average variance extracted

Assessment of Structural Model

The findings for testing this direct effect model using SmartPLS software package version 3.7.8 that is through the structural equation model. This measurement aims to test the direct effect model and the effect model of the mediated variable. Therefore, empirical evidence has been used to construct a direct effect model as shown in Figure 3.

Table 3
Summary of Hypotheses

Relationship	Summary of Hypotheses				
	Beta	Std Error	T-Value	P-Value	Decision
ETN ->EP	0.2565	0.0529	4.8495	0.0000	Significant
ETO-> EP	0.3685	0.0533	6.9193	0.0000	Significant
ETT->EP	0.2482	0.0620	4.0026	0.0000	Significant

Discussion

Effective Training Need Analysis (TNA)

The results obtained shown that an effective training need analysis (TNA) variable has a significant relationship on employees' productivity in manufacturing sector ($\beta = 0.2565$; $t = 4.8495$; $p = 0.000$). H1 Accepted. The results also shown that training need analysis (TNA) contributed 25.7% ($R^2 = 0.257$) to changes in employees' productivity in manufacturing sector.

The results of this study shown that there is a significant relationship between effective training need analysis (TNA) on employees' productivity in the manufacturing sector. Properly planned training need analysis provided excellent benefits to employees especially employees who have unsatisfactory job performance. Planning in training analysis that is arranged in an orderly manner can provide an opportunity for each employee to attend training sessions that are planned through training need analysis to increase their work productivity. Therefore, training need analysis is a human resource management activity through learning and development practices that can play important role on employees' productivity in performing their daily tasks.

Effective Training Contents

The results obtained shown that an effective training contents variable has a significant relationship on employees' productivity in manufacturing sector ($\beta = 0.3685$; $t = 6.9193$; $p = 0.000$). H2 Accepted. The results also shown that effective training contents contributed 36.8% ($R^2 = 0.368$) to changes in employees' productivity in manufacturing sector.

The results of the study shown that there is a significant relationship between effective training contents on employees' productivity in the manufacturing sector. All contents of training included basic needs and current training needs to ensured that each employee can specialist on current technology based on the contents of training provided by the training provider. Training contents that cover all modules that involved the duties and responsibilities of an employee especially those that involved their daily tasks in the workplace. Training contents that meet the duties of an employee guaranteed satisfactory performance on their productivity of their work continuesly.

Effective Training Techniques

The results obtained shown that an effective training techniques variable has a significant relationship on employees' productivity in manufacturing sector ($\beta = 0.2482$; $t = 4.0026$; $p = 0.000$). H3 Accepted. The results also shown that effective training techniques contributed 24.8% ($R^2 = 0.248$) to changes in employees' productivity in manufacturing sector.

Findings from this study shown that there is a significant relationship between effective training techniques on employees' productivity in the manufacturing sector. Effective learning techniques that included on-job training and off-job training play an important role in increasing the work productivity of an employee. Effective training techniques have a positive impact on the spirit of an employee to learn their duties in more details so that the output produced meets the needs of the organization. By producing effective training techniques directly contributed to better employee work productivity.

Conclusion

The conclusion from this study shown that all variable involved effective training need analysis (TNA), effective training contents and effective training techniques have a positive effect on employee work productivity. This shown that all variable is important to employees' productivity in the manufacturing sector. Electrical manufacturing sector at Penang placed a great emphasis on the role of learning and development in improving the skills of each employee towards high work productivity that can contributed to the continuous growth of the organization. While every employee always takes the opportunities provided by the organization through learning and development in improving their work performance towards productive employees through the training provided. These results shown that learning and development have a significant relationship on employees' productivity in the manufacturing sector. Thus, every employee always has the necessary skills as a result of the training provided by the organization. Organizations are always moving forward together with their employees in specialist all the skills required as a result of learning and development programs implemented to all employees.

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