Electrical and Electronics Global Supply Chain: The Significance Effect of Psychological Empowerment on Organizational Business Performance

Wei-Kit Loke[#1], Noor Hidayah Binti Abu[#2], Foo-Wah Lim[#3]

[#]*Universiti Utara Malaysia, Kedah Malaysia*

[1]weikit@gmail.com
[2]dayah@uum.edu.my
[3]foowah@gmail.com

Abstract*— Human resources are the most important resources for all types of organizations. Psychological empowerment refers to individual's beliefs in their ability to feel empowered in an organization for better organizational business performance. Although Electrical and Electronics (E&E) industry contributes an excellent business performance in the past two decades, this industry was now facing significant challenges in maintaining the growth of their business performance, and it is necessary for them to move up the value chain. Thus, this study aims to examine the relationship between psychological empowerment and organizational business performance of E&E industry in Malaysia. In this study, psychological empowerment consists four elements namely autonomy, self-efficacy, impact, and meaning. By using self-administered survey, the data were obtained from 287 respondents from E&E companies in Malaysia. The data were then analyzed utilizing Partial Least Square Structural Equation Modelling (PLS-SEM) technique. The findings of this study provide insight into the importance of psychological empowerment in organizational business performance. The findings indicate that, of all those four elements of psychological empowerment, only autonomy, self-efficacy, and meaning have significant influences on the business performance in the E&E industry. Lastly, this study will contribute in term of theoretical, managerial and methodological perspectives, limitations and recommendation for future studies.

***Keywords*—** *Autonomy, Self-Efficacy, Impact, Meaning, Psychological Empowerment, Business Performance, Electrical and Electronics Industry, Human Resource Management*

1. Introduction

Over the years, organizations in Malaysia have experienced the effect of rising operating costs, such as the implementation of goods and services tax (GST), effect of a weak ringgit value on import costs, lack of local talent and stiff competition from the lower-cost competitors like China. All these have further capped the growth of the Malaysian E&E companies [1]. Malaysian E&E industry faces critical challenges in the continuance of development which originate from fierce competitors such as Singapore, Taiwan region, China, and other Asian countries. There are now increasing calls for E&E companies to move up the value chain as their share in the Malaysian exports has declined over the last 10 years. Although Malaysia has established an important cluster in E&E industry, most of the business activities have relatively low value added to the assemblies. Malaysia E&E industry has a minimal share in the higher value-added activities such as aviation components processing or research and development (R&D) [2].

In the technology segment, the contribution of E&E industry play a key role in global supply chain. This E&E sector has developed significantly and played an important role in the growth of the economy, particularly through the business trade industry. In Malaysia, although the performance of this sector was excellent in the past two decades, this industry faces significant challenges in maintaining its growth. According to [3], the share towards manufacturing high value-added products has decreased after the year of 1995 (from 30 percent in 1997 to 21 percent in 2008). Moreover, E&E output and export quarterly reports were inconsistent over years as growth fluctuated from 2006 to 2016. This implies that the industry has reached its saturation level [4]. The slowdown

International Journal of Supply Chain Management
IJSCM, ISSN: 2050-7399 (Online), 2051-3771 (Print)

trend of this organizational business performance is due to several factors including the decreased export, high concentration of low value-added assembly and stiff competition from countries like China, Taiwan, South Korea and Singapore which have high value-added activities [1].

In this situation, the key to organizational survival and existence lies in the quality and capacity of human resources. The industry must depend on human resource management to increase the volume of high value-added activities [5]. In other words, the role of human resources far exceeds the role of new technology, financial-related and material resources [6]. Therefore, the empowerment of human resource is an essential tactic to business organizational intrinsic motivation which will lead to the dynamic realization of employees, forming a foundation and chances for talents, personal ability and capabilities to flourish. The human resource empowerment is also the perceptions of individuals on their role in their respective work and the organization.

The review of the literature indicates that there are limited studies examining the effects of psychological empowerment on the organizational business performance of E&E industry in Malaysia. Moreover, numerous past studies studying on this topic were conducted in the Middle East [7], [8], and only a few studies such as [9] were done in the Asian context. Thus, to understand the organizational business performance within the E&E organizations, there is a necessity to carry out an empirical study to examine the importance psychological empowerment within E&E industry. Therefore, this study aims to confirm the existence of relationship between the psychological empowerment and organizational business performance.

2. Literature Review

2.1 E&E Industry in Malaysia

Electrical and electronics (E&E) industry is the largest yet the least restricted industry in Malaysia's manufacturing sector. The first semiconductor plant was established in Penang State in 1972, then Malaysia gradually becomes a major E&E industry global manufacturing hub. Four decades later, Malaysia continues to be a preferred investment destination for E&E industry. For several decades, the E&E products have been the largest traded items since the industry began to bloom in the 1960s. Until today, the industrial development has made Malaysia into one of the leading countries in the global E&E supply value chain [10]. According to the Malaysian Investment Development Authority (MIDA), the E&E business in Malaysia can be grouped into four sub-sectors which including electronic components, consumer electronics, industrial E&E products [11].

2.2 Psychological Empowerment

Empowering human resources is a concept of psychology that is related to personal feelings and beliefs, and is defined as a process of enhancing intrinsic motivation. Psychological empowerment is an approach that an employee uses to motivate himself and earn attention from management [12], [13]. Therefore, psychological empowerment can be defined as a proactive motivation for personal work roles and personal sense of control at work [14]. The psychological empowered staff has a sense of control of the task at hand.

Psychological empowerment influences employees in terms of their beliefs, thoughts, and attitudes. Employees that are empowered feel that they have the competency and ability required to work effectively. They are typically granted the freedom and autonomy to perform their job independently. They are better at managing and improving their work output. They pursue meaningful and valuable career goals and they were treated in a serious and fair manner [15]. To maximize the use of human resources, and expand the capacity in the workplace, it is necessary to have the continuous motivation to achieve organizational goals [16].

Hence, psychological approach contemplates empowerment as it encompasses four-dimensional construct of employees' perceptions [17] – [20], which includes autonomy, self-efficiency, meaning, and impact. Autonomy refers to self-determination or freedom to choose how they initiate and continue their work; self-efficiency or competence refers to the capacity of an individual to perform skillfully; meaning refers to a sense of meaningfulness that their work is important; and impact refers to the belief that an individual can influence work outcomes and create a difference in the organization [13].

Thus, psychological empowerment can be theorized by four dimensions to regulate sufficient cognition [21]. [22] integrating the four dimensions into a single variable provides an in-depth understanding of the concept of psychological empowerment. The concept of psychological empowerment have linked with several outcomes such as job satisfaction and citizenship behavior [23], organizational commitment [22], [24], business performance [7], [9], [25]–[27] and innovation [26], [28]–[30].

2.3 Business Performance

Business performance covers the organizational result or actual output that is measured against the targeted goals and purposes. Business performance is a multi-disciplinary field, it covers the perspectives of supply chain management, marketing, operations management, accounting, human resource management, economics, psychology and sociology [31], [32]. The concept of business performance is the measures of output for the organization and then adjustment or modification is taken on the process to enhance output, effectiveness, or process efficiency. Business performance is normally evaluated on the basis of organizational goals, growth, human resource effectiveness, product and service quality, supplier performance, customer and other major factors such as profitability [33].

Business performance is the most important element for each organization, either for profit or non-profit purposes [34]. However, it is not simple to define, conceptualize, and measure performance [34]. Besides, the improvement of organizational business performance is a focus for every manager in every business organization. In order to succeed at enhancing business performance, it is crucial for an organization to builds all-inclusive measurement indicators to provide clear directions and goals for the management team and the employees [35]. Business performance is a measure of the organization's goals and how well a business perform [36]. There is always an issue of organization management to measure organization performance and then evaluate and present in report form [37].

The E&E industry remains a critical driver of Malaysia economy as this industry contributes substantially to the total country's manufacturing output, job position, foreign direct investment and exports [38]. Malaysian manufacturing companies face local competitions as well as competition from foreign companies due to the nature of dynamic market competition. Total Quality Management (TQM), Six Sigma, just-in-time, and lean manufacturing are all important in addressing management issues and produces quality manufacturing items for customers. Previous studies have confirmed that companies that implement quality management will enable them to improve their innovation capabilities, organizational competitiveness and business performance levels [39], [40].

2.4 Theoretical Framework

The theoretical framework of this study is shown in Figure 1. The framework describes the relationship between psychological empowerment and business performance. From the theoretical framework, psychological empowerment comprises four dimensions which include autonomy, self-efficacy, impact, and meaning. The dimensions of psychological empowerment are hypothesized to have a relationship with the business performance in Malaysia's E&E industry.

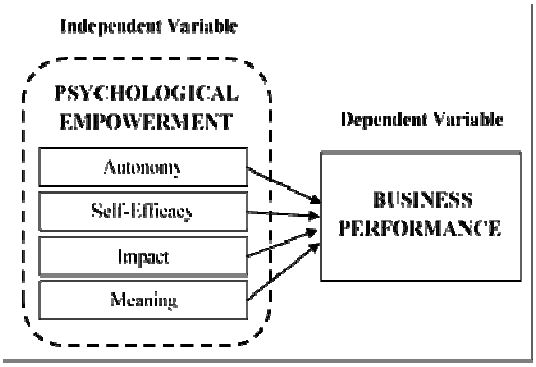

Figure 1. Theoretical Framework

There are total two main variables in this study which are psychological empowerment and business performance. All four dimensions of psychological empowerment will act as exogenous variables, and business performance will be the endogenous variable in this study.

2.5 Relationship between Psychological Empowerment and Business Performance

Psychological empowerment refers to the capacity or ability of employees to feel empowered in a working environment [41]. The performance of an employee can be enhanced by the sense of empowerment, and in turns promotes the growth of organizational business performance [42], [43]. Psychological empowerment is a complex management tool which need involves the high participation of employees. It had proved by 50 years of research. If psychological empowerment applied effectively, it can excellently improve the organizational business performance [7], [9], [26], [28], [44].

Empowering conditions such like chances for decision autonomy, challenge, and obligation to the employee, appreciation of employees results in sense of self-efficacy, sense of meaningfulness, impact, and autonomy [27], [45]. Consequently, they more likely to become more dedicated to their business organization [46], [47], as business performance is the outcome of organization management, and departmental agencies to implement or manage activities which produce ideas that modify organizational behavior and improve infrastructure to achieve higher performance.

Additionally, [48] proposed that empowerment will enhance workers' motivation and satisfaction that will contribute to better productivity. Also, [49] revealed that the empowerment of employee is a motivational method which helps to improve the engagement of employee and also raise their self-determination levels. In addition, [50] confirms that employee empowerment is a foundation of continuous improvement which will create a result in better organizational business performance. It is apparent from the previous discussion that a relationship is exist between psychological empowerment and business performance, but the strength of the relationship is not yet to be proven. Therefore, we propose that:

H4: *Psychological empowerment will have a significant and positive effect on the business performance of the electrical and electronic industry in Malaysia.*

H4a: *The autonomy will positively influence the business performance.*

H4b: *The self-efficacy will positively influence the business performance.*

H4c: *The impact will positively influence the business performance.*

H4d: *The meaning will positively influence the business performance.*

3. Methodology

This research employs a quantitative approach to investigate the influence of psychological empowerment on the business performance of E&E companies in Malaysia. A self-administered survey was chosen in this study because the survey can be completed with no intervention from the researcher [51]. Respondents were asked to respond to the survey items (see Appendix). A five-point Likert type scale ranging from "strongly disagree", "disagree", "neutral", "agree", and "strongly agree" was used. Out of 600 distributed questionnaires, a total of 287 questionnaires were considered usable for further analysis as responded by mid-level managers in E&E industry in Malaysia.

Moreover, in order to investigate the responses from the respondents, a five-point Likert scale was applied for every measurement items for facilitating the report of employees perceptions of psychological empowerment toward organizational business performance [52], [53]. After the collection of data, the data were analyzed using Statistical Package for Social Sciences (SPSS) version 20.0 and SmartPLS 2 M3.

Partial least square structural equation modeling (PLS-SEM) was applied to evaluate the relationship between psychological empowerment and organizational business performance. This was because the model estimation of its formal premises contains a larger range of flexible applications. In addition, PLS-SEM is more suitable for the analysis of predictive models, compared to theoretical testing model [54]. In addition, the purpose of the analysis is to determine the impact of latent variables that can be measured by the reflection measurement model. From this, the PLS approach becomes a more appropriate statistical approach for this study. Based on the hypotheses, this study comprises two structural models. Figure 2 refers to the first-order individual

model and the Figure 3 refer to second-order structural model.

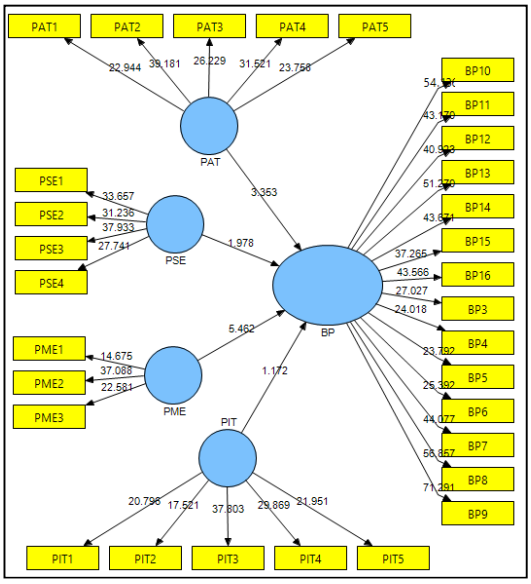

Figure 2. The First Order Structural Model for Individual Latent Variable

Notes: The 'PE' abbreviation refers to Psychological Empowerment. PAT = Autonomy, PSE = Self-Efficacy, PIT= Impact, PME = Meaning, and BP = Business Performance.

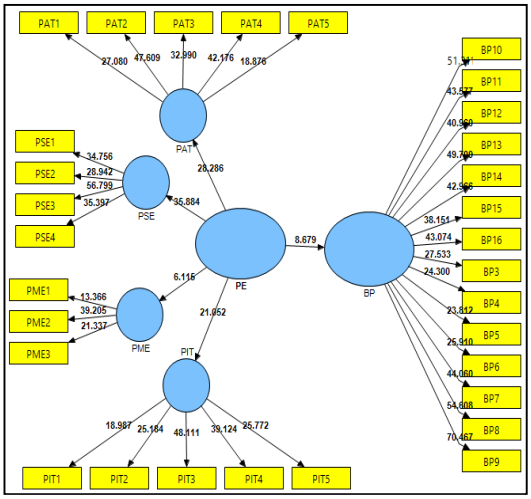

Figure 3. The Second Order Structural Model for Main Latent Variable

Notes: The 'PE' abbreviation refers to Psychological Empowerment. PAT = Autonomy, PSE = Self-Efficacy, PIT= Impact, PME = Meaning, and BP = Business Performance.

4. Data Analysis and Result

This part presents results from the data analysis of the reflective measurement model and structural model.

4.1 Analysis of the Reflective Measurement Model

The initial step in PLS-SEM analysis is the evaluation of the measurement model (outer model). Prior running PLS-SEM analysis to evaluate the measurement model, the researcher has to confirm the survey items are reliable and valid as these are the two main criteria used in the analysis to evaluate the measurement model [55]–[57].

Table 3 shows that the constructs have alpha values above 0.7. This indicates that the internal consistency is at a high level. The next analysis done by the researcher was to test the convergent validity. According to [54], convergent validity is assessed using composite reliability (CR), factor loadings and average variance extracted (AVE). The recommended values are above 0.50 for AVE, 0.70 for CR and above 0.50 for factor loadings [57]. The analysis confirms that the measurement of outer model possesses an adequate level of convergent validity as shown in Table 1 below.

Table 1: The Important Statistics of Measurement Model

Construct	Indicator	Loadings	AVE	CR
PAT	PAT1	0.755	0.632	0.895
	PAT2	0.838		
	PAT3	0.797		
	PAT4	0.829		
	PAT5	0.750		
PSE	PSE1	0.811	0.705	0.905
	PSE2	0.757		
	PSE3	0.787		
	PSE4	0.782		
PME	PME1	0.733	0.651	0.848
	PME2	0.874		
	PME3	0.808		
PIT	PIT1	0.761	0.639	0.898

	PIT2	0.746		
	PIT3	0.856		
	PIT4	0.842		
	PIT5	0.788		
BP	BP3	0.758	0.680	0.967
	BP4	0.759		
	BP5	0.742		
	BP6	0.769		
	BP7	0.842		
	BP8	0.871		
	BP9	0.890		
	BP10	0.849		
	BP11	0.849		
	BP12	0.858		
	BP13	0.862		
	BP14	0.832		
	BP15	0.819		
	BP16	0.829		

Notes: Where, the 'PAT' abbreviation refers to Autonomy, PSE = Self-Efficacy, PIT= Impact, PME = Meaning, and BP = Business Performance.

Next, discriminant validity was utilized to investigate to what extent a construct is dissimilar with another. Table 2 presents the results of the Fornell-Larcker Criteria test to compare the square root of the AVE for each construct with the correlation presented in the correlation matrix. The square root of AVE in bold is larger than the correlation of other constructs. As the conclusion, there is an establishment of construct's discriminant validity [57], [58].

Table 2. Discriminant Validity of Constructs

Con-structs	BP	PAT	PIT	PME	PSE
BP	**0.825**				
PAT	0.405	**0.795**			
PIT	0.288	0.376	**0.800**		
PME	0.443	0.292	0.209	**0.807**	
PSE	0.358	0.578	0.497	0.222	**0.840**

Notes: Where, the 'PAT' abbreviation refers to Autonomy, PSE = Self-Efficacy, PIT= Impact, PME = Meaning, and BP = Business Performance.

4.2 Analysis of the Structural Model

For the next step, it is necessary to evaluate the structural model (inner model). The core criterion for structural model evaluation is to determine the coefficient R^2. With a value of 0.30, the R^2 of business performance which represented as an endogenous latent variable has indicated a satisfactory level. Moreover, the communality value which is greater than 0.50 also meets the requirement of the study [59] as shown in Table 3.

Table 3. Structural Model Specification

Con-structs	Cronbachs' Alpha	R Square	Communa-lity
PAT	0.8545		0.6316
PIT	0.8586		0.6394
PME	0.7293	0.30	0.6511
PSE	0.8605		0.7047
BP	0.9636		0.6801

Notes: Where, the 'PAT' abbreviation refers to Autonomy, PIT= Impact, PME = Meaning, PSE = Self-Efficacy, and BP = Business Performance.

Additionally, the Stone-Geisser criterion Q^2 is computed by using blindfolding procedure [58]. In the analysis, all Q^2 values exceed the threshold of zero, which indicates the predictive relevance of the overall model. The assessment of effect size (f^2) and predictive relevance (q^2) was being used to ensure the critical role of exogenous latent variables. The effect size of each of the dimensions on the dependent variable is significant and having medium effect size, where Autonomy, Self-Efficacy, Meaning at f^2 0.24, 0.18 and 0.28. While the effect size of Impact is small at f^2 0.12. The q^2 value of 0.15 indicates that Meaning has a large influence on Business Performance. While Autonomy, Self-Efficacy, and Impact with q^2 value of 0.13, 0.10 and 0.05 had indicated a significant but small predictive relevance. At the same time, the global criterion of goodness-of-fit (GOF) value of 0.20 indicates that although it is a small value, it falls under the acceptance level between outer model and inner model.

Therefore, this model is suitable for further statistical analysis. The analysis shows that all the measures used are valid and reliable. Subsequently, it is suitable to explain the psychological

empowerment which influences the Business Performance of E&E industry.

4.3 Hypothesis Testing

The present study hypothesized that psychological empowerment will have a significant and positive influence on the business performance of the electrical and electronic industry in Malaysia. With respect to H1, the result suggests that there is a positive influence of psychological empowerment on organizational business performance (β=0.474, t=8.68, p<0.05); therefore, H1 is supported. More specifically, the dimension of autonomy, self-efficacy, and meaning are found to have significant positive effect on the business performance with t-values of 3.35, 1.98, and 5.46. However, it was found that impact has no effect on business performance. Based on these obtained results, meaning has the highest determining impact on business performance (0.340), followed by autonomy and self-efficacy. Table 4 shows that the results of the study support the hypotheses of H1a, H1b, and H1d, but do not support H1c.

Table 4. Hypothesis Testing

Hypo-theses	*Rela-tion-ship*	*Full Model*			*Sup-port-ed*
		β	*S.E*	*T*	
H1	PE → BP	0.474	0.055	8.68	Yes
H1a	PAT → BP	0.205	0.061	3.35	Yes
H1b	PSE → BP	0.126	0.064	1.98	Yes
H1c	PIT → BP	0.077	0.066	1.17	No
H1d	PME → BP	0.340	0.062	5.46	Yes

Notes: Where the 'PE' abbreviation refers to Psychological Empowerment. PAT = Autonomy, PSE = Self-Efficacy, PIT= Impact, PME = Meaning, and BP = Business Performance.

5. Discussion

This study examines the effect and relationships between the psychological empowerment dimensions and the business performance among mid-level managers in E&E industry in Malaysia. The overall results show a strong and positive relationship between psychological empowerment and business performance. This relationship is consistent with the result of the previous research [7], [9]. Specifically, a leader with high empowerment performs effectively and further improve the working conditions for both employees and organizations.

In this study, the dimensions of psychological empowerment which includes autonomy, self-efficacy, and meaning are significant to enhance organizational business performance. Therefore, increasing the sense of psychological empowerment of mid-level managers would improve their ability to improve organizational business performance. Managers with a sense of autonomy and authority to choose can make a better decision for their organization. Also, with the sense of competency, it will help the managers to boost their self-confidence in dealing in job-related issues. Furthermore, managers with a sense of job meaningfulness will boost intrinsic motivation among their organizational employees. Thus, increasing the sense of autonomy, self-efficacy and meaning can help to improve organizational business performance in E&E industry in Malaysia.

6. Contribution of the Study

Overall, this study contributes to theory, managerial and methodology perspectives.

6.1 Theoretical Contribution

The research contributes to validate the reflective model of psychological empowerment in E&E industry. The study demonstrates the importance of the psychological empowerment in influencing organizational performance in the E&E industry. First, the results show that each of the dimensions of psychological empowerment except a sense of impact has a significant effect on organization performance. Second, the simultaneous examination of the dimensions provides precise results of the psychological empowerment. Precisely, as the overall model is significant. Thereby, this study contributed to previous study theoretically through the empirical evidence in psychological empowerment and business performance of E&E in Malaysia.

6.2 Managerial Contribution

The immediate beneficiaries of this research would be the Malaysia's E&E industry, especially the four

major sub-sectors of E&E industries business organization which including electronic components, consumer electronics, industrial electronics and electrical products. Manufacturing sector from other nations would equally benefit from this research as E&E industry continues to be the leading industry within the manufacturing sector. The results of this study will help the mid-level managers to understand why psychological empowerment is critical to the organizational business performance. The study will explain the way to support the organizational business performance.

This study highlights the specific aspects of psychological empowerment that will add value to organizational business performance. Practitioners who manage the organizational operation, product and process design, and supply chains can get important insights from this study. The findings from the study can be used by the management of E&E industry to identify how to manage and improve the efficiency of its human resource and in turn enhance their organizational business performance. E&E industry should remain a critical driver of Malaysia economy as it has a substantial contribution to the total country's manufacturing output, job position, foreign direct investment (FDI) and exports [38].

6.3 Methodological Contribution

The use of PLS-SEM to determine the reflective latent variables of psychological empowerment has contributed in methodology perspective. To this end, latent constructs' Cronbach's Alpha reliability, AVE, factor loading, composite reliability, discriminant validity, Q^2 value, f^2 value, q^2 value, and GoF were all found to meet the recommended threshold. Consequently, this study has applied the reliable method of PLS-SEM successfully to examine the psychometric properties of latent constructs which had described in the research reflective model, and assessment of the predictive power of the model has explored the relationship between psychological empowerment and organizational business performance in a validated context.

7. Limitation and Recommendations for Future Research

This study has certain limitations. First, the study applied a cross-sectional survey rather than using the longitudinal method of data collection. The longitudinal method will take a longer period to verify the same variables that have investigated in this study, such as psychological empowerment and organizational business performance that change over time in most cases. Second, this study investigated data from E&E industry in Malaysia, future studies should consider E&E industry in other countries or examine other industries in Malaysia to compare the result of this study.

In addition, future research could examine more dimensions of psychological empowerment such as a sense of trust, sense of status, sense of confidence, sense of effectiveness, decision making and professional growth to increase the explanatory power of psychological empowerment. Besides, other types of empowerment such as behavioral empowerment, social and structural empowerment are also recommended to be examined in future studies.

Moreover, future study may take other predictor such as knowledge management, technological innovation, organizational learning and organizational culture in order to investigate the relationship toward organizational business performance. Additionally, other organizational outcomes such as job satisfaction and organizational citizenship behavior, organizational commitment, and innovation are recommended to be examined in the future studies.

8. Conclusion

The study concluded that psychological empowerment is a significant catalyst for successful organizational business performance in E&E industry. Specifically, the mid-level managers need to have the sense of autonomy, self-efficacy, and meaning to enhance their organizational business performance. In conclusion, middle managers should be aware of the importance and the influence of psychological empowerment toward their organizational business performance. The best practices in managing human capital is to

provide adequate psychological empowerment consistently.

References

[1] PEMANDU, *National Transformation Program: Annual Report 2015*, 1st ed. Putrajaya, Malaysia: Performance Management & Delivery Unit, Malaysian Prime Minister Department, 2016.

[2] Monash University Malaysia, *Selangor Industrial Master Plan Study*. 2016.

[3] R. Rasiah, "Are electronics firms in Malaysia catching up in the technology ladder?," *J. Asia Pacific Econ.*, vol. 15, no. 3, pp. 301–319, Jul. 2010.

[4] W.-K. Loke and N. H. B. Abu, "Analyzing the Impact of Knowledge Management on Technological Innovation: An Empirical Study of Electrical and Electronics Industry in Malaysia," *Int. J. Acad. Res. Bus. Soc. Sci.*, vol. 7, no. 7, pp. 640–648, 2017.

[5] National Economic Advisory Council, "Case Study-Electrical and Electronics Industry," 2010.

[6] G. K. Özbağ, M. Esen, and D. Esen, "The Impact of HRM Capabilities on Innovation Mediated by Knowledge Management Capability," *Procedia - Soc. Behav. Sci.*, vol. 99, pp. 784–793, 2013.

[7] M. Moradi and H. Jalilian, "The effect of psychological empowerment on organizational performance employees in Police, the mediating role of job stress, job satisfaction and organizational commitment," *Superv. Insp.*, vol. 31, pp. 73–98, 2014.

[8] E. M. V Erki and M. N. Asrollahi, "Investigating factors affecting psychological empowerment of employees (Case Study : Qazvin Province Water and Wastewater Company)," pp. 697–705, 2016.

[9] Sureshil, A. Jaleel, D. Suresh, and N. Abdul Jaleel, "Impact of Employee Empowerment on Organisational performance Case of Automobile Industry in Chennai city of Tamil Nadu in India," *Int. J. Innov. Sci. Eng. Technol.*, vol. 2, no. 4, pp. 20–31, 2015.

[10] Performance Management and Delivery Unit (PEMANDU), *National Transformation Program: Annual Report 2015*, 1st ed. Putrajaya, Malaysia, 2016.

[11] Ministry of International Trade and Industry, "Electrical & Electronics Industry," 2015. [Online]. Available: http://www.miti.gov.my/index.php/pages/view/2482. [Accessed: 16-May-2016].

[12] J. Edalatian Shahriari, J. Maleki, P. Koolivand, and M. Meyvand, "European Online Journal of Natural and Social Sciences.," *Eur. Online J. Nat. Soc. Sci. Proc.*, vol. 2, no. 3(s), pp. 330–338, 2013.

[13] G. Jordan, G. Miglič, I. Todorović, and M. Marič, "Psychological Empowerment, Job Satisfaction and Organizational Commitment Among Lecturers in Higher Education: Comparison of Six CEE Countries," *Organizacija*, vol. 50, no. 1, Jan. 2017.

[14] J.-S. Boudrias, A. J. S. Morin, and D. Lajoie, "Directionality of the associations between psychological empowerment and behavioural involvement: A longitudinal autoregressive cross-lagged analysis," *J. Occup. Organ. Psychol.*, vol. 87, no. 3, pp. 437–463, Sep. 2014.

[15] S. Salajeghe, R. P. Rashidi, and M. Mousaei, "Analysis of Psychological Empowerment and its Relationship with Knowledge Management (The Case of Jam Petrochemical Company Located in South Pars Area, Iran)," *Int. J. Acad. Res. Account. Financ. Manag. Sci.*, vol. 3, no. 4, pp. 245–253, 2013.

[16] J. Hanaysha and P. R. Tahir, "Examining the Effects of Employee Empowerment, Teamwork, and Employee Training on Job Satisfaction," *Procedia - Soc. Behav. Sci.*, vol. 219, pp. 272–282, 2016.

[17] B. L. Kirkman and B. Rosen, "Beyond Self-management: Antecedents And Consequences Of Team Empowerment," *Acad. Manag. J.*, vol. 42, no. 1, pp. 58–74, Feb. 1999.

[18] A. K. Mishra and G. M. Spreitzer, "Explaining How Survivors Respond To Downsizing: The Roles Of Trust, Empowerment, Justice, And Work Redesign," *Acad. Manag. Rev.*, vol. 23, no. 3, pp. 567–588, Jul. 1998.

[19] G. M. Spreitzer, "An empirical test of a comprehensive model of intrapersonal empowerment in the workplace," *Am. J. Community Psychol.*, vol. 23, no. 5, pp. 601–629, Oct. 1995.

[20] A. Y. Zhang, L. J. Song, A. S. Tsui, and P. P. Fu, "Employee responses to employment-relationship practices: The role of psychological empowerment and traditionality," *J. Organ. Behav.*, vol. 35, no. 6, pp. 809–830, Aug. 2014.

[21] K. W. Thomas and B. A. Velthouse, "Cognitive Elements of Empowerment: An 'Interpretive' Model of Intrinsic Task Motivation.," *Acad. Manag. Rev.*, vol. 15, no. 4, pp. 666–681, Oct. 1990.

[22] G. M. Spreitzer, "Psychological

Empowerment in the Workplace: Dimensions, Measurement, and Validation," *Acad. Manag. J.*, vol. 38, no. 5, pp. 1442–1465, Oct. 1995.

[23] Y. Wang, "Examining organizational citizenship behavior of Japanese employees: a multidimensional analysis of the relationship to organizational commitment," *Int. J. Hum. Resour. Manag.*, vol. 26, no. 4, pp. 425–444, Feb. 2015.

[24] M. L. Kraimer, S. E. Seibert, and R. C. Liden, "Psychological Empowerment as a Multidimensional Construct: A Test of Construct Validity," *Educ. Psychol. Meas.*, vol. 59, no. 1, pp. 127–142, Feb. 1999.

[25] A. Kariuki and C. Murimi, "Employee Empowerment and Organization Performance of Tata," vol. 7, no. 8, pp. 190–201, 2015.

[26] S. Berraies, M. Chaher, and K. Ben Yahia, "Employee Empowerment and Its Importance for Trust, Innovation and Organizational Performance," *Bus. Manag. Strateg.*, vol. 5, no. 2, pp. 82–103, 2014.

[27] K. Safari, A. S. Haghighi, A. Rastegar, and A. Jamshidi, "The relationship between psychological empowerment and organizational learning," *Procedia - Soc. Behav. Sci.*, vol. 30, pp. 1147–1152, 2011.

[28] A. N. Pieterse, D. van Knippenberg, M. Schippers, and D. Stam, "Transformational and transactional leadership and innovative behavior: The moderating role of psychological empowerment," *J. Organ. Behav.*, vol. 31, no. 4, pp. 609–623, Aug. 2009.

[29] H. Hüseyin, "The Impacts Of Employee Empowerment On Innovation: A Survey On Isparta And Burdur Organized Industrial Zones," *J. Int. Soc. Res.*, vol. 8, no. 37, pp. 977–989, 2015.

[30] A. Ertürk, "Linking Psychological Empowerment to Innovation Capability: Investigating the Moderating Effect of Supervisory Trust," *Int. J. Bus. Soc. Sci.*, vol. 3, no. 14, pp. 153–166, 2012.

[31] A. Neel, *Business Performance Measurement: Unifying Theory and Integrating Practice*, 2nd ed. United States of America: Cambridge University Press, 2008.

[32] W. Lu, *Information Acquisitions and Sharing through Inter-Organizational Collaboration: Impacts of Business Performance in China*, 1st ed. China: IGI Global, 2015.

[33] S. L. Fielden, M. J. Davidson, A. J. Dawe, and P. J. Makin, "Factors inhibiting the economic growth of female owned small businesses in North West England," *J. Small Bus. Enterp. Dev.*, vol. 10, no. 2, pp. 152–166, Jun. 2003.

[34] I. Y. Abu-Jarad, A. Yusof, and D. Nikbin, "A Review Paper on Organizational Culture and Organizational Performance," *Int. J. Bus. Soc. Sci.*, vol. 1, no. 3, 2010.

[35] S.-M. Tseng and P.-S. Lee, "The effect of knowledge management capability and dynamic capability on organizational performance," *J. Enterp. Inf. Manag.*, vol. 27, no. 2, pp. 158–179, Feb. 2014.

[36] L. Ho, "What affects organizational performance?," *Ind. Manag. Data Syst.*, vol. 108, no. 9, pp. 1234–1254, Oct. 2008.

[37] D. Crowther and G. Aras, *Corporate social responsibility*. Ventus Publishing ApS, 2008.

[38] PEMANDU, "ETP Anual Report 2014," 2015.

[39] A. Kieser and U. Koch, "Bounded Rationality and Organizational Learning Based on Rule Changes," *Manag. Learn.*, vol. 39, no. 3, pp. 329–347, Jul. 2008.

[40] N. Hussein, S. Omar, F. Noordin, and N. A. Ishak, "Learning Organization Culture, Organizational Performance and Organizational Innovativeness in a Public Institution of Higher Education in Malaysia: A Preliminary Study," *Procedia Econ. Financ.*, vol. 37, pp. 512–519, 2016.

[41] A. Ayob and S. Rohaida, "The Role of Psychological Empowerment on Employees Creativity: the Development of Conceptual Framework," in *2nd International Conference on Economics, Business and Management IPEDR*, 2011.

[42] N. A. Awamleh, "Enhancing Employees Performance via Empowerment: A Field Survey," *Asian J. Bus. Manag.*, vol. 5, no. 3, pp. 313–319, 2013.

[43] K. Greasley, A. Bryman, A. Dainty, A. Price, R. Soetanto, and N. King, "Employee perceptions of empowerment," *Empl. Relations*, vol. 27, no. 4, pp. 354–368, Aug. 2005.

[44] A. Kariuki and K. Kiambati, "Empowerment, Organizational Commitment, Organization Citizenship Behavior and Firm Performance," *Manag. Stud.*, vol. 5, no. 4, pp. 290–300, 2017.

[45] R. C. Liden, S. J. Wayne, and R. T. Sparrowe, "An examination of the mediating role of psychological empowerment on the relations between the job, interpersonal relationships, and work outcomes.," *J. Appl. Psychol.*, vol. 85, no. 3, pp. 407–416, 2000.

[46] R. Eisenberger, P. Fasolo, and V. Davis-

LaMastro, "Perceived organizational support and employee diligence, commitment, and innovation.," *J. Appl. Psychol.*, vol. 75, no. 1, pp. 51–59, 1990.

[47] B. J. . c Avolio, W. . Zhu, W. . d Koh, and P. . Bhatia, "Transformational leadership and organizational commitment: Mediating role of psychological empowerment and moderating role of structural distance," *J. Organ. Behav.*, vol. 25, no. 8, pp. 951–968, 2004.

[48] O.-I. Dobre, "Employee motivation and organizational performance," *Rev. Appl. Socio-Economic Res.*, vol. 5, no. 1, 2013.

[49] G. Meyerson and B. Dewettinck, "Effect of Empowerment on Employees Performance," *Adv. Res. Econ. Manag. Sci.*, vol. 2, 2012.

[50] W. Ke and P. Zhang, "Effects of Empowerment on Performance in Open-Source Software Projects," *IEEE Trans. Eng. Manag.*, vol. 58, no. 2, pp. 334–346, May 2011.

[51] J. Wolf, "Encyclopedia of Survey Research Methods," in *Encyclopedia of Survey Research Methods*, SAGE Publications, 2008, pp. 804–805.

[52] I. Brace, *Questionnaire design: How to plan, structure and write survey material for effective market research*. London: Kogan Page, 2004.

[53] U. Sekaran and R. Bougie, *Research Methods for Business : A Skill Building Approach*, 6th ed. Wiley, 2013.

[54] Hair, W. C. Black, B. J. Babin, and R. E. Anderson, *Multivariate Data Analysis: Global Edition*, 7th ed. London: Pearson Higher Education, 2010.

[55] J. Hulland, "Use of partial least squares (PLS) in strategic management research: a review of four recent studies," *Strateg. Manag. J.*, vol. 20, no. 2, pp. 195–204, Feb. 1999.

[56] T. Ramayah, J. W. C. Lee, and J. B. C. In, "Network collaboration and performance in the tourism sector," *Serv. Bus.*, vol. 5, no. 4, pp. 411–428, Dec. 2011.

[57] Hair, C. M. Ringle, and M. Sarstedt, "Editorial - Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results and Higher Acceptance." 14-Mar-2013.

[58] W. Reinartz, M. Haenlein, and J. Henseler, "An empirical comparison of the efficacy of covariance-based and varianced-based SEM," *Int. J. Res. Mark.*, vol. 26, no. 1, pp. 332–344, 2009.

[59] T. Rajalahti and O. M. Kvalheim, "Multivariate data analysis in pharmaceutics: A tutorial review," *Int. J. Pharm.*, vol. 417, no. 1–2, pp. 280–290, Sep. 2011.

Appendix: Questionnaire

The following statement seeks to understand the aspect of autonomy (PAT), self-efficacy (PSE), impact (PIT), meaning (PME) and business performance (BP).

Autonomy (PAT)

PAT1. My organization allows me to determine how I did my job independently.
PAT2. I could make my own decision when doing my work.
PAT3. I have freedom in the way I did my work.
PAT4. I have flexibility in how I do my work.
PAT5. I have choice in how I did the work.

Self-Efficacy (PSE)

PSE1. I am confident in my own ability to do my work.
PSE2. I had mastered the necessary skills to carry out my work.
PSE3. I have the necessary knowledge to perform my work.
PSE4. I am confident with my knowledge to perform my tasks.

Impact (PIT)

PIT1. I had control over what happened in my department.
PIT2. I had influence over what happened in my department.
PIT3. I had influence over the operational job outcomes.
PIT4. I had influence over the administrative job outcomes.
PIT5. I had influence on what happened in my work area.

Meaning (PME)

PME1. My job is very meaningful to me in this organization.
PME2. My job position is very important for me in the organization.
PME3. My job position activities are personally meaningful for me in this organization.

Business Performance (BP)

BP1. My organization accomplished our targeted overall revenue in the most recent year.

BP2. My organization accomplished our targeted sales in the most recent year.
BP3. My organization accomplished our targeted return of investment in the most recent year.
BP4. My organization achieved our targeted return on assets in the most recent year.
BP5. My organization achieved our targeted profit margin in the most recent year.
BP6. My organization accomplished a high level of consumer loyalty in the most recent year.
BP7. My organization retains a large number of customers in the most recent year.
BP8. My organization attracted a large number of new customers in the most recent year.
BP9. My organization secured a big portion of my desired market share in the most recent year.
BP10. My organization received less number of customer complaints compare to the most recent year.
BP11. In my organization, the speediness of our internal process has improved.
BP12. In my organization, the quality of our internal process has improved.
BP13. In my organization, the expenses of our internal process have reduced.
BP14. In my organization, the flexibility and adaptability of our internal process have improved.
BP15. In my organization, the effectiveness of our internal process has improved.
BP16. My organization had improved its operating strategy compared with last year.
BP17. My organization had improved its operating implementation abilities compared with last year.
BP18. My organization had upgraded and made improvement in research abilities compared with last year.
BP19. My organization had upgraded its products development skills compared with last year.
BP20. My organization had enhanced its employees' development skills compared with last year.