

# Employee's Experience and Perceived Environmental Performance of Malaysian Chemical Related Industry

Nur Amira Yahya, Amar Hisham Jaaffar

**Abstract:** *The previous research in environmental management practices suggests employee's green behaviour can be regarded as one of the important assets for business environmental endeavours. Nevertheless there is lack study that focuses on Malaysian chemical related industries. This paper aims to explore the nexus between employee's work experience, employee's past environmental experience, and employee's perceived environmental experience. 202 questionnaire were distributed through postal survey to manufacturing plant employees from eight chemical manufacturing industries from four regions in Malaysia including northern, central, east-coast, and southern. Data were analyzed using structural equation modelling at least the square. Based on the analysis, the study revealed that the employee's work experience has significant positive correlation with environmental performance that is seen by employees. Nevertheless employee's past environmental experience was otherwise. This study has significant managerial implication for Malaysian chemical related industry by showing that how employees can be important assets for the company to minimize the impact of chemical related industry to the environment.*

**Keywords:** *Employee's Experience; Perceived Environmental Performance; Malaysian Chemical Related Industry.*

## I. INTRODUCTION

### A. The importance of Chemical Related Industries to Malaysia Economies and its impact to environment.

Now, an environmental issue (climate change, global warming, environmental pollution, energy crisis, and etc.) is increasingly becoming a concern worldwide. This situation demands the contribution of all individuals and organizations to face these issues and challenges in a sustainable way. The sound environmental management practices supported with the environmentally expertise employee has been found as an important factor for firm's environmental performance [1]. Employee's involvement in firm's green initiative is undeniable [2]. Nevertheless there is less debate on the contribution of employees on environmental management practices. Malaysia has experienced economic development rapidly in recent years. One of the important industries that has contribute significantly to the Malaysian economy is chemical related industries.

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**Nur Amira Yahya**, College of Graduate Studies, Universiti Tenaga Nasional, 43000, Kajang, Selangor, Malaysia.

**Amar Hisham Jaaffar**, College of Business Management and Accounting, Universiti Tenaga Nasional, Sultan Haji Ahmad Shah Campus, 26700, Bandar Muadzam Shah, Pahang, Malaysia.

It is evidence that chemical industry has gone into tremendous development including higher practical skill of science, laboratory experiments, sufficient capital expenditure and a fairly big industrial demand for chemicals. Despite its important, chemical industry has been regarded as one of the major polluter to our planet [3]. For instance, a lot of incidents such as released of hazardous and toxic chemicals which lead to human death and environmental problems have been recorded [4]. Moreover, Malaysia's natural environment has been impaired by severe air and water pollutions, declining of natural wealth, ozone-depleting, reduction on forest and mangrove area, greenhouse effect and acid precipitation caused by chemicals released by the chemical industry [5].

### B. Problem Statement

Despite the huge contribution of chemical related industries to Malaysian economy, it is also lead to harmful effects to our countries [6]. Recently Malaysia have been shocked by chemical pollution crisis at Johor state. Thousands of victims suffered serious health problems due to the exposure to chemical wastes. Moreover, there is still limited information from the perspective of the employees in this industry particularly related to their environmental behaviour. Recently there is a called for all employee to have organizational citizenship behaviour for environment. This study try to focus on the aspect of environmental behaviour among employee in chemical related industry in order to identify solution to minimize the impact of chemical related business to environment.

### C. Objectives of the study

- To study whether employee's work experience influence their perceived environmental performance.
- To examine whether employee's environmental experience influence their perceived environmental performance.

### D. Significant of the study

The importance of this empirical research can be viewed from both the theoretical and practical contributions. From theoretical contribution, this study provides insight on employee pro-environmental behaviour and its factors. Furthermore this study provides knowledge on how the employees' from chemical related industry evaluate their company current environmental performance. From the

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practical perspective, this study will inform how employees from the chemical related industry can contribute to mitigate the impact of chemical related business on environment. Furthermore, it raised better understanding on how employee's expertise and experience matters to improve environmental management practices.

## II. MATERIAL AND METHOD

This section discusses the materials of this study, which are employee's past work experiences and past environmental experience, perceived environmental performance, the hypotheses for the study, and the conceptual research framework. The methods are the sample and measurement.

### A. Employee's Past Work Experience

Previous studies have revealed that employee's past work experience can produce their pro-social behaviour including pro-environmental behaviour [7] as well as affect their personal values [8]. Employee's past work experience increase the development of their professional values in their job which lead to be more quality and ethical. Previous study also shown that past work experience can facilitate organizational assimilation of the employee [9].

### Employee's Past Environmental Experience

Employee's past environmental related experiences affects their thinking styles and behaviour as well as permit them to develop specific skills and procedural knowledge regarding to environmental management practices [10]. Employee's past environmental related experience can be obtained through their past educational background, and through internal and external social capital [11]. Recent study revealed those employees which have experience worked in company with green organization climate possessed strong organizational citizenship behaviour for the environment [12]. Employee's past environmental related experience can be measured based on 1) employee's past tertiary education involved environmentally-related fields or disciplines; 2) employee's work experience in environmental related roles; 3) employees received any award or honour related to environmental sustainability practices; and 4) employee's past or current membership or management role in local community events, foundations and institution such as NGO [10, 20].

### B. Perceived Environmental Performance

Employee green behaviour can be regarded as key factor to their environmental performance. [13] Argued that when employees practice green behaviour, it will directly assist their organization improve its environmental efficiency. Employee's green behaviour can be regarded as a positive deviance behaviour towards the environment by creating green climate in the workplace, provide the awareness for their peer on the importance of business to minimize the impact on business to environment, as well as becoming the change agent for their company to behave ethically towards the environment [13].

## C. Hypothesis and Conceptual Framework

Based on the literature review, the conceptual framework (Fig. 1) and the hypothesis for this study are as follows:

H1: There is a positive significant relationship between employee's work experience and employee's perceived environmental performance.

H2: There is a positive significant relationship between employee's past environmental experience and employee's perceived environmental performance.

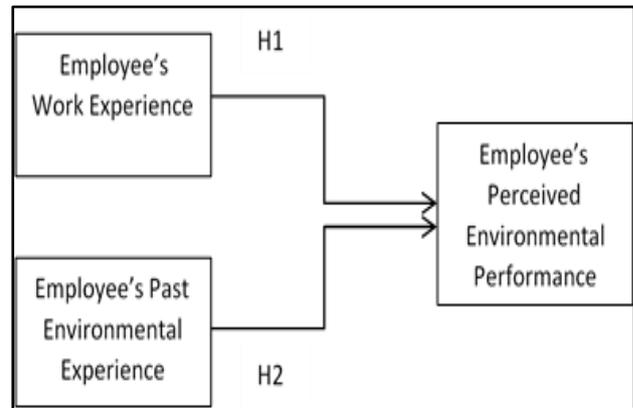


Fig. 1 Conceptual Framework of the study

## D. Sample

The data required for this research were collected through questionnaires by mail using a prepaid envelope. As the research consisted of employees in major petrochemical feedstock producers in Malaysia. By using a stratified random sample, a sample of eight companies selected employees located in four regions of Peninsular Malaysia including North, Central Region, South-East and South has been obtained. Drop-Off/Pick-Up Method were employed by place confidence to management team of the companies to distributed the questionnaire to employee that their task fall within the business activities that have most impact to environment. After a few time of follow up, this research received two hundred two (202) usable questionnaire from the eight selected major petrochemical feedstock producers in Malaysia

## E. Measurement

The measurement of employee's work experience was based on nominal scale, ranging from 1 (less than 5 years); 2(5 to 10 years); 3(11 to 15 years); 4 (16 to 20 years); and 5 (more than 20 years). While, the measurement of employee's past environmental related experience was adapted from [14] was based on nominal scale consisting 4 dimensions including 1) Education in Environmental

Related Fields (1 Yes, 2 No); 2) Work Experience in Environmentally Related Roles (1 Yes, 2 No); 3) Award or Honour related to Environmental sustainability (1 Yes, 2 No); and 4) Membership/Management Role in Environmental (1 Yes, 2 No). While last but not least, the measurement of employee's perceived environmental

performance was adopted from [15] comprising 5 items with a five-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

### III. RESULT AND DISCUSSION

#### A. Demographic Profile

Based on the descriptive statistic conducted in the study, out of 202 respondent, majority of them were male employees (69.31 percent) and female employees (30.69 percent). In term of academic qualification of the respondents, most of them have bachelor degree qualification (76.93 percent). Regarding the working experience of the respondents the percentage are heterogeneous where 20.79 percentages have less than 5 years of experiences, 26.73 percent have 5 to 10 years of experiences, 20.30 percent cover 11 to 15 years of experiences, 16.34 percent cover 16 to 20 years of experiences, and 15.84 percent cover experienced greater than 20 years

#### B. Measurement Model

A Partial Least Squares path-modelling approach was occupied employing the SmartPLS 3 software [16]. Following the standard recommended by [17], the first measurement model was presented and second structural model for path testing was highlighted. Table 2 shows the validation score and latent variables correlation of measurement model. Based on Table 1 all the items used for the study have satisfactory indicator reliability according to [17] and met the criterion of Fornell and Larcker which argue that each construct must distinct from one another [18].

#### C. Hypothesis Testing

The path coefficient model structure can be obtained through calculation algorithms PLS [19]. The coefficient of the road marks the hypothetical relationship between variables, whether positive or negative. PLS bootstrapping calculations are performed after calculating PLS algorithms in the structural model to obtain t values. [The most commonly used critical values for one-tailed tests were 1.645 with 95% interest, and 2.33 with 99% interest [19]. When the t-value greater than the critical value, the conclusion found that the coefficient of the road is important. The analysis show in Table 3 and Figure 2 signify that 1 out of 2 hypotheses were supported by significant relationships at  $p < 0.05$  level.

### IV. CONCLUSION

From the analysis of the data gathered, it is evident that employee's work experience matters to their perceived environmental experiences compare to their past environmental related experience. The results indicate that employee's past work experience can produce their pro-environmental behavior by increasing their environmental personal values in their job which lead to be more quality and ethical in their environmental endeavours. In contrast, employees past environmental related experience did not have any significant relationship with employee's perceived environmental experience. This result may be attributed to less number of respondents that possessed past environmental experience. This study has significant managerial implication for Malaysian chemical related industry by showing that how employees can be important assets for the company to minimize the impact of chemical related industry to the environment.

Table.2 Latent Variable Correlation

	Average Variance Extracted (AVE)	Composite Reliability	Cronbach's Alpha
Environmental Performance	0.805	0.954	0.939
Environmental Performance	0.805	0.954	0.939

Table. 3 Bootstrapping Result

	Original Sample (O)	Sample (M)	Mean	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values	Hypothesis
Environmental Experience -> Environmental Performance	0.21	0.107		0.234	0.897	0.37	Not Supported
Work Experience - > Environmental Performance	0.163	0.16		0.062	2.605	0.009	Supported

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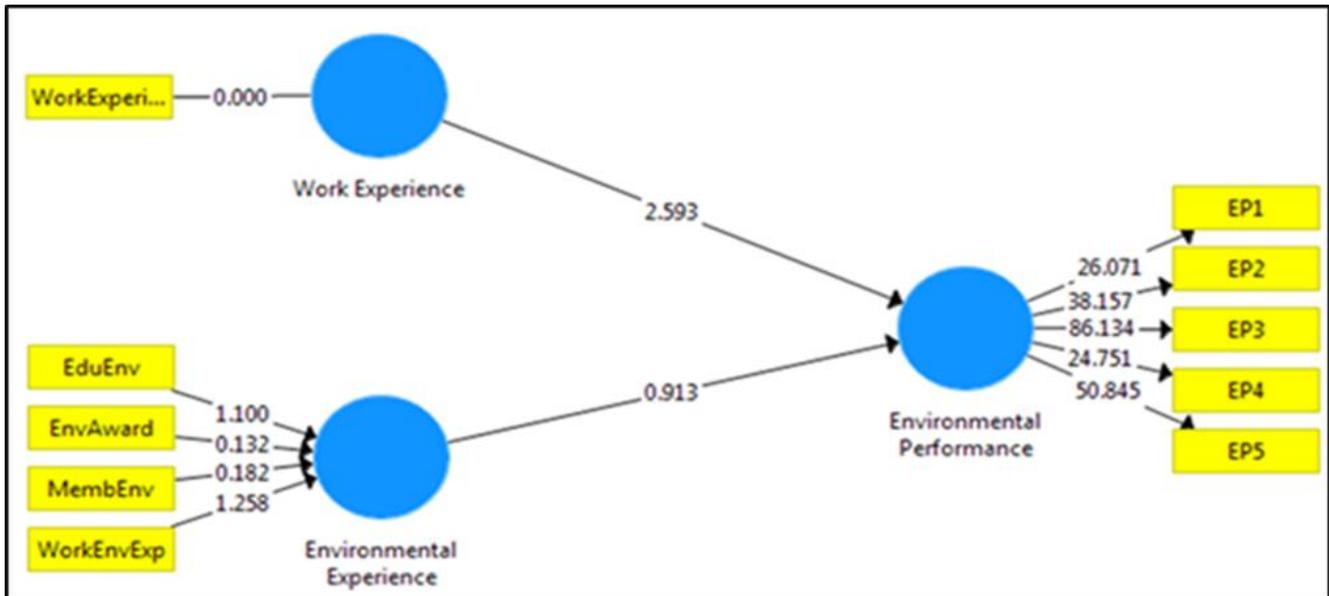


Fig.2 Research Model Result

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