The datasets designated in this article were obtained as a result of 10 months of data collection, carried out between August 2017 and May 2018 in Kuala Lumpur, Malaysia. The aim of the study was to evaluate the factors influencing adoption of battery electric vehicles (BEVs) in Malaysia. The data were collected from University Technology Malaysia (Kuala Lumpur campus) and five different companies in Kuala Lumpur. A total of 500 questionnaires were distributed and 322 questionnaires were obtained. After data screening, 312 datasets were analysed. Respondents of the study were postgraduate students, university lecturers and top to low level managers.© 2019 Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

1. Data

The dataset contains raw table data obtained as a result of 10 months of data collection, carried out between August 2017 and May 2018 in Kuala Lumpur, Malaysia. The data were collected from University Technology Malaysia (Kuala Lumpur campus) and five different companies in Kuala Lumpur. Data include 312 datasets of 21 variables which are: Intention to use of BEVs, Facilitating condition, anxiety of use (range anxiety), Perceived enjoyment, Social influence and environmental concern. This study used seven-point Likert scale which measured from 1 = “Strongly disagree” to 7 = “Strongly agree” [2]. After the data screening (Testing for Missing Data, Reliability and Outlier detection), the final
remained items shown in Table 1. This study uses Consumer Acceptance and Use of Information Technology (UTAUT 2) theory [3] as the underpinning theory and developed that in context of electric vehicles.

The variables used in the study are presented and defined in Tables 1–6 correspondingly:

2. Intention to use

Intention to use of a technology, is the degree to which a person has framed a mindful plan to use or purchase that technology in future [3].

3. Facilitating condition

Facilitating condition is described as the degree to which a person believes that there is technical infrastructure, or somebody existed to support in the usage of the technology or product [3].

4. Social influence

Social influence is the degree to which a person regards others opinion important about using a new system or product [3].
Table 1
Measurement items of Intention to Use.

| No. | Item                                                                 | Source |
|-----|----------------------------------------------------------------------|--------|
| int1 | If I had an electric car available, I would favor driving it rather than a traditional vehicle. | [3] |
| int2 | If I were to purchase a vehicle within the next 5 years, I would purchase an electric car. |  |
| int3 | I would recommend others to purchase an electric car.                   |        |
| int4 | There is a high probability that my next vehicle will be an electric car. |  |

Table 2
Items for facilitating condition.

| No. | Item                                                                 | Source |
|-----|----------------------------------------------------------------------|--------|
| fac1 | The resources necessary to use electric cars are existed.            | [3]   |
| Fac2 | I have the knowledge necessary to use electric cars.                 |        |
| Fac3 | Electric vehicle is compatible with other technologies I use.        |        |
| Fac4 | I can get help from others when I have difficulties using electric car. |  |

Table 3
Measurement items of social influence.

| No. | Item                                                                 | Source |
|-----|----------------------------------------------------------------------|--------|
| soc3 | Electric vehicles have a positive image in society.                  | [3]   |
| soc4 | People react positively when they see an electric car on the road.   |        |
| soc5 | People whose opinions are important to me find electric cars attractive. |  |
| soc6 | An electric vehicle would reflect my personality.                   |        |

Table 4
Measurement items for perceived enjoyment.

| No. | Item                                                                 | Source |
|-----|----------------------------------------------------------------------|--------|
| pe1 | Driving an electric car would be fun.                               | [3]   |
| pe2 | Driving an electric car would be enjoyable.                         |        |
| pe3 | Because of smoothness and high acceleration, driving an electric car is very pleasurable for me. |  |

Table 5
Measurement items for range anxiety.

| No. | Item                                                                 | Source |
|-----|----------------------------------------------------------------------|--------|
| anx1 | I have concerns about using electric cars.                           | [4]   |
| anx2 | The lack of enough infrastructure somewhat frightening to me.       |        |
| anx3 | I be afraid that I may not reach my destination using an electric car. |  |
| anx4 | I am afraid that I do not understand how to use the electric car.   |        |

Table 6
Items of environmental concern.

| No. | Item                                                                 | Source |
|-----|----------------------------------------------------------------------|--------|
| env2 | I want to preserve the environment.                                 | [5]   |
| env3 | Electric car contributes to saving environment for the next Generation |  |
| env3 | Electric cars cause less pollution.                                 |        |
5. Perceived enjoyment

Perceived Enjoyment or Hedonic Motivation is the extent to which using a specific system is perceived to be enjoyable. In other words, how much fun or pleasure using a product has [3].

6. Range anxiety

Range anxiety is fear that an electric vehicle doesn’t have enough battery range to reach the destination [4].

7. Environmental concern

Environmental concern refers to environmental awareness and knowledge about the ecology of the earth and environmental issues such as global warming. The consumer’s knowledge has a significant influence on their behaviour [5]. Table 7 shows the remained items after data screening.

Table 8 shows the demographic characteristics of respondents.

8. Experimental design, materials, and methods

According to diffusion of innovation theory, innovators are the first consumers to buy and use a new product [1]. They are, by nature, risk takers and are enthusiastic about the possibilities of new ideas and new ways of doing things. Early adopters are second group of product purchasers following innovators [1]. Those are the most influential people within any marketplace and they usually are thought leaders for other probable adopters. They might be very socialized and often generate reviews and other materials around new products in social media. Usually, both innovators and early adopters are in higher level of education and income [1]. The researcher tried to survey a sample of the early adopters according to diffusion of innovation theory. Questionnaire were randomly distributed among lecturers and postgraduates in UTM KL campus. A stratified sampling was adopted based on all the Technology Companies in Kuala Lumpur listed in Bursa Malaysia. Accordingly, beside postgraduate students and lecturers at University Technology Malaysia, the researcher contacted fifteen randomly selected Technology Companies in different areas of Kuala Lumpur. Five companies agreed to collaborate. Therefore, the respondents of study were postgraduate students, lecturers in University Technology Malaysia Kuala Lumpur (UTM KL) and top to low level managers in five companies in Kuala Lumpur.

This sampling method is used because the researcher aimed to survey postgraduates, PhD holders and managers of technology companies (as early adopters) and therefore the sample of this study does not confirm that subgroups are representing the whole population in Malaysia.

UTM KL is a graduate campus of University Technology Malaysia (UTM) and is under the same corporate structure as its main campus in Johor Bahru, Johor. At the time this study was conducted, UTM KL had 2420 postgraduate students and 366 lecturers.

The questionnaires were distributed among general managers, branch managers, department managers, and supervisors.

All the five companies agreed to collaborate with researcher have more than 100 employees.

| Table 7 |
| --- |
| The data file items. |
| Factors | The remained items after data screening |
| Intention to use of BEVs (INT) | int1, int2, int3, int4 |
| Facilitating Condition (FC) | fac1, fac2, fac3, fac4 |
| Social Influence (SI) | soc3, soc4, soc5, soc6 |
| Perceived Enjoyment (PE) | pe1, pe2, pe3 |
| Range Anxiety (ANX) | anx1, anx2, anx3, anx4 |
| Environmental Concern (EC) | env2, env3, env4 |
Table 8
Demographic variables.

| Gender   | 1: Male, 2: Female |
|----------|-------------------|
| Age      | 1: under 25, 2: 26–35, 3: 36–45, 4: 46–55, 5: over 55 |
| Ethnicity| 1: Malay, 2: Chinese, 3: Indian, 4: Iranian, 5: Other |
| Education| 1: Diploma, 2: Bachelor’s degree or equivalent, 3: Master’s degree, 4: Doctoral degree, 5: Professional degree |
| Monthly Personal Income (Malaysian Ringgit) | 1: RM 2001–3000, 2: RM 3001–4000, 3: RM 4001–5000, 4: Above RM 5000 |

a) Company A (Co. A) is a financial service company has several branches in Kuala Lumpur.
b) Company B (Co. B) is private IT company. It is in Petaling Jaya.
c) Company C (Co. C) is a consultant company which has two branches, one in Ampang, One in Shah Alam.
d) Company D (Co. D) is a private IT company Kuala Lumpur.
e) Company E (Co. E) is a private investment company Kuala Lumpur.

Fig. 1 shows the process of sampling for this research. The location of places where data was collected is shown in Fig. 2.

According to Hair et al. [6], for using SEM, the suitable sample size is debatable and depends on the factors like complexity of model, deviation from normality and estimation methods. Hair et al. [6] also recommended when the data meets the assumption of multivariate normality, the conservative ratio of ten cases per parameter is considered most appropriate. They also suggested that a minimum sample size of 200, guarantees a strong SEM result. In this study, a total of 500 questionnaire were distributed and 322 questionnaires were obtained, indicating a 64.4% rate of return. After data screening (outliers and missing data detection), 312 datasets were analysed.
Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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