

# SCENARIOS FOR RENEWABLE ENERGY ADOPTION

## 1. DATABASE DETAILS

Before collecting data from expert participants, the researcher created a database (named xxxx\_scenario, where xxxx represents the researcher's username on the cloud service being used) and the relevant tables to store participant data. The database consists of three tables:

- EXPERTS: This has 2 fields:
  - o expert\_id: Stores a unique identifier for each expert, consisting of the letter "E" followed by a counter value.
  - o criteria: Stores a string of "Y" (yes) and "N" (no) values, indicating whether the expert meets the corresponding criteria.
- FACTORS\_ENERGY : This table contains three fields:
  - o factor: Stores the factor number (e.g., 1, 2, 3, etc)
  - o f\_desc: Stores the factor name, which will be used in the questions presented to participants.
  - o f\_explain: Provides a more detailed explanation of each factor, displayed as tooltip text in the online tool.
- RELATIONSHIPS: This table has 2 fields:
  - o H-relationship: Stores the string of judgments submitted by experts for the "high" state of the independent factor on all other dependent factors.
  - o L-relationship: Stores the string of judgments for the "low" state of the independent factor on all other dependent factors.

The EXPERTS and RELATIONSHIPS tables are populated as experts complete the surveys.

The FACTORS\_ENERGY table is populated by the researcher before releasing the link to the online tool. This is done using a researcher-developed PHP script (getfactors.php) and the relevant Excel .csv file (energyfactors.csv) as input. The algorithm behind this process is detailed in Chapter 3, section 3.4.3.1 ).

The PHP code and associated Excel .csv files are available at [https://github.com/robyn-thompson/RE\\_Adop\\_files](https://github.com/robyn-thompson/RE_Adop_files).

The .csv file contains the names and descriptions of each factor, which are aligned with those presented in Table 13 of the thesis. These descriptions are used to populate the tooltip text, which appears on each judgment entry screen for the factors.

## 2. FIGURES AND SCREENSHOTS

The screenshot shows a web browser window with the address bar displaying 'scenario.biz.ht/welcome.php'. The page has a light blue background. At the top, the title 'Scenarios for renewable energy adoption' is centered. Below it, a message says 'Thank you for showing an interest in contributing to this Phd study.' followed by two paragraphs explaining the study's purpose and duration. A button labeled 'View Letter of Information and Consent' is centered. Below that, another message says 'Before completing the survey, please consent to being a participant.' A white box with a black border contains the question 'Do you agree to take part in the survey?' with 'Yes' and 'No' buttons. At the bottom, a small text line provides contact information and the DUT logo.

**Scenarios for renewable energy adoption**

Thank you for showing an interest in contributing to this Phd study.

The purpose of the study is to construct consistent scenarios.  
To accomplish this expert participants will provide evaluations  
of the impacts that 7 factors have on each other.

The survey should take about 15-20 minutes of your time.

[View Letter of Information and Consent](#)

Before completing the survey, please consent to being a participant.

**Do you agree to take part in the survey?**

This survey forms part of a Phd study being conducted at Durban University of Technology by Mrs RC Thompson  
To contact the researcher please email [robymt@dut.ac.za](mailto:robymt@dut.ac.za)

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Figure 1: Welcome page for RE study application (Source: Researcher developed tool, available at: <https://scenario.biz.ht/welcome.php>)

The screenshot shows a web browser window with the address bar displaying 'scenario.biz.ht/exit.php'. The page has a light blue background. At the top, the title 'Scenarios for adoption' is centered. Below it, a white box with a green border contains the message 'Thank you for your time.' At the bottom, a small text line provides contact information and the DUT logo.

**Scenarios for adoption**

**Thank you for your time.**

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Figure 2: Exit page (Source: Researcher developed tool, available at: <https://scenario.biz.ht/welcome.php>)

The screenshot shows a web browser window with the address bar displaying 'scenario.biz.ht/expertinfo.php'. The page has a light blue background. At the top, the title 'Background Information' is centered. Below it, a message says 'Complete the checklist to determine if you are a suitable participant.' A white box with a black border contains the heading 'Check all that apply to you' followed by a list of seven statements, each with a checkbox. At the bottom of the box are 'Back' and 'Save and Continue' buttons. Below the box, a small text line provides contact information and the DUT logo.

**Background Information**

Complete the checklist to determine if you are a suitable participant.

**Check all that apply to you**

- I have worked in the energy sector for 5 or more years ☐
- I have authored a book, published an article, or presented at a conference in the energy field ☐
- I have been invited to speak at an event in the energy field (in the last 3 years) ☐
- I have been the leader of a corporate team in the energy field ☐
- I am actively involved in energy policy making and decisions ☐
- I am a member of a committee in the field of energy ☐
- I am a point of contact for the media for energy matters ☐
- None of the above are applicable to me ☐

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Figure 3: Participant background information page for RE study application (Source: Researcher developed tool available at: <https://scenario.biz.ht/welcome.php>)

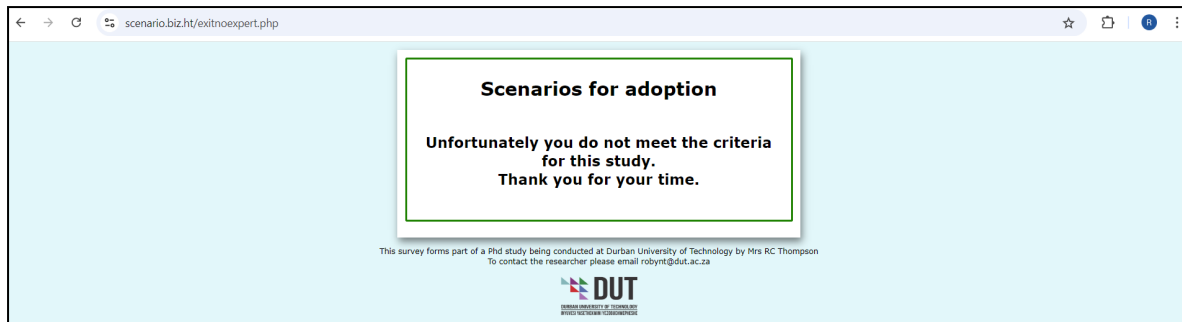


Figure 4: Non-expert exit page (Source: Researcher developed tool available at: <https://scenario.biz.ht/welcome.php>)

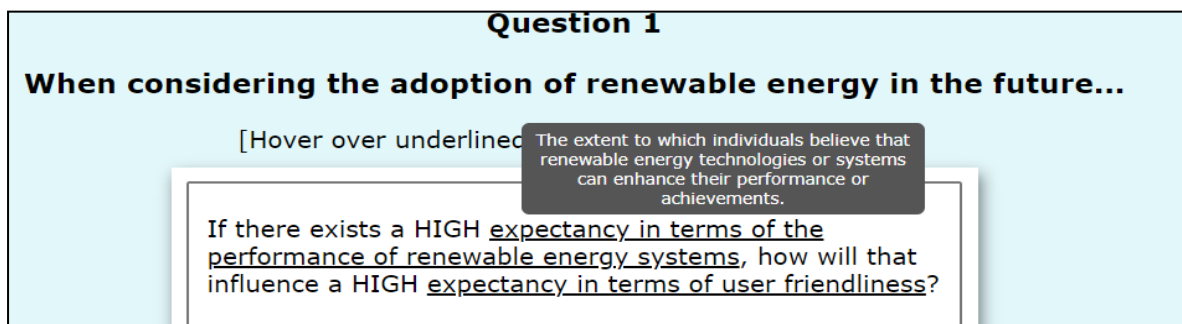


Figure 5: Tooltip for RE application on PC (Source: Researcher developed tool available at: <https://scenario.biz.ht/welcome.php>)

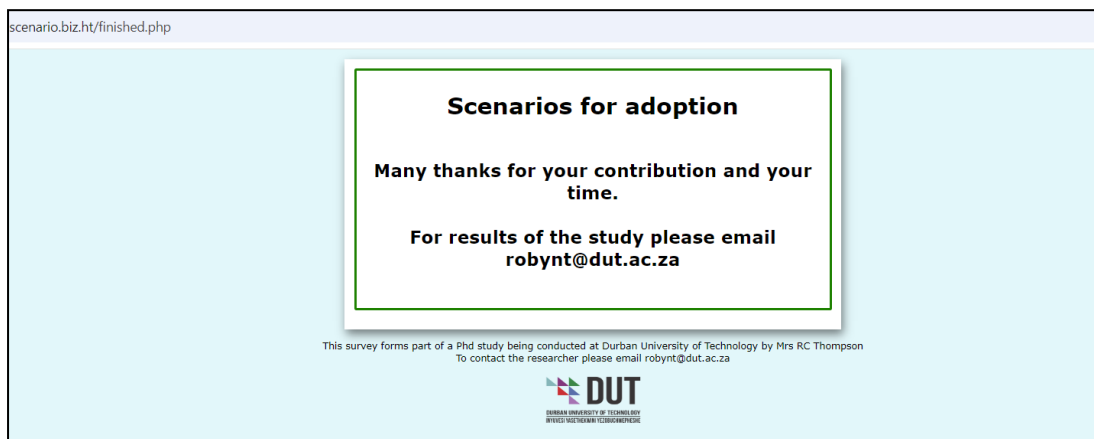


Figure 6: Final page for RE application (Source: Researcher developed tool available at: <https://scenario.biz.ht/welcome.php>)

## SCENARIOS FOR AI ADOPTION IN HIGHER EDUCATION

### 1. DATABASE DETAILS

Before collecting data from expert participants, the researcher created a database (named xxxx\_ai, where xxxx represents the researcher's username on the cloud service being used) and the relevant tables to store participant data. The database consists of three tables:

- EXPERTS: This has 2 fields:
  - expert\_id: Stores a unique identifier for each expert, consisting of the letter "E" followed by a counter value.

- criteria: Stores a string of “Y” (yes) and “N” (no) values, indicating whether the expert meets the corresponding criteria.
- FACTORS\_AI : This table contains three fields:
  - factor: Stores the factor number (e.g., 1, 2, 3, etc)
  - f\_desc: Stores the factor name, which will be used in the questions presented to participants.
  - f\_explain: Provides a more detailed explanation of each factor, displayed as tooltip text in the online tool.
- RELATIONSHIPS: This table has 2 fields:
  - H-relationship: Stores the string of judgments submitted by experts for the “high” state of the independent factor on all other dependent factors.
  - L-relationship: Stores the string of judgments for the “low” state of the independent factor on all other dependent factors.

The EXPERTS and RELATIONSHIPS tables were populated as expert participants completed the survey. Meanwhile, the FACTORS\_AI table was pre-filled with factor details and descriptions before data collection commenced. This was automated by the researcher-developed PHP script, `getfactors_ai.php`, which read data from a .csv file (`aifactors.csv`) containing factor names and descriptions. This data was then used to generate tooltip fields in the data collection tool, improving clarity for participants. All PHP scripts, along with the Excel .csv files used, are available in the researcher’s GitHub repository: [https://github.com/robyn-thompson/AI\\_Adop\\_files](https://github.com/robyn-thompson/AI_Adop_files).

## 2. FIGURES AND SCREENSHOTS

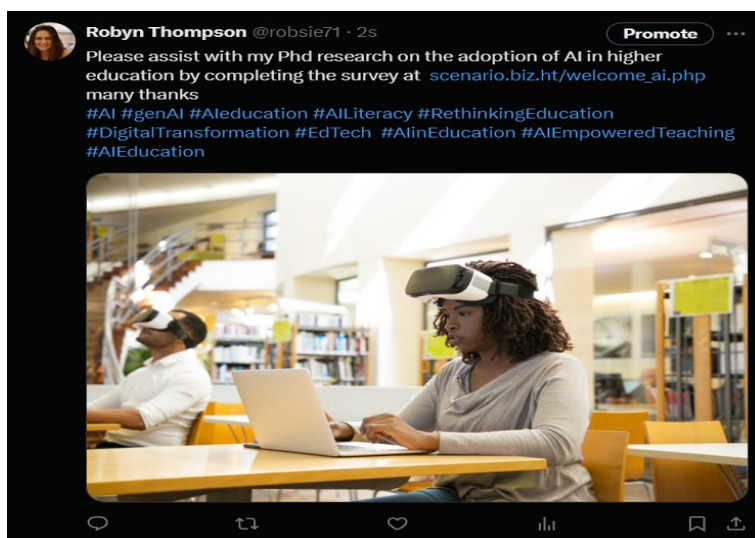


Figure 7: X post for distribution of survey link for AI in education data collection

**Scenarios for artificial intelligence adoption**

**Thank you for showing an interest in contributing to this Phd study.**

The purpose of the study is to construct consistent scenarios.  
To accomplish this expert participants will provide evaluations  
of the impacts that 7 factors have on each other.

The survey should take about 15-20 minutes of your time.

[View Letter of Information and Consent](#)

**Before completing the survey, please consent to being a participant.**

**Do you agree to take part in the survey?**

[Yes](#) [No](#)

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Figure 8: Welcome page for AI in higher education application (Source: Researcher developed tool, available at: <https://scenario.biz.ht/welcome.php>)

**Background Information**

**Complete the checklist to determine if you are a suitable participant.**

**Check all that apply to you**

I have worked in the AI sector for 5 or more years ☐

I have authored a book, published an article, or presented at a conference in the AI field ☐

I have been invited to speak at an event in the AI field (in the last 3 years) ☐

I have been the leader of a corporate team in the AI field ☐

I am actively involved in AI policy making and decisions ☐

I am a member of a committee in the field of AI ☐

I am a point of contact for the media for AI matters ☐

None of the above are applicable to me ☐

[Back](#) [Save and Continue](#)

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Figure 9: Participant background information page for AI in higher education application (Source: Researcher developed tool, available at: <https://scenario.biz.ht/welcome.php>)

**Question 9**

**When considering the adoption of AI in higher education in the future...**

[Hover over underlined phrases for extra clarification]

If there exists a HIGH expectancy in terms of user friendliness in higher education, how will that influence a HIGH level of AI awareness in higher education?

☐ strong restrictive influence  
 ☐ weak restrictive influence  
 ☒ no significant influence  
 ☐ weak promoting influence  
 ☐ strong promoting influence

If there exists a LOW expectancy in terms of user friendliness in higher education, how will that influence a HIGH level of AI awareness in higher education?

☐ strong restrictive influence  
 ☐ weak restrictive influence  
 ☒ no significant influence  
 ☐ weak promoting influence  
 ☐ strong promoting influence

19%  of 100%

[Back](#) [Next...](#)

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Figure 10: Judgement page for AI in higher education application (Source: Researcher developed tool, available at: <https://scenario.biz.ht/welcome.php>)