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:
  - 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_ENERGY : 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 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.

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

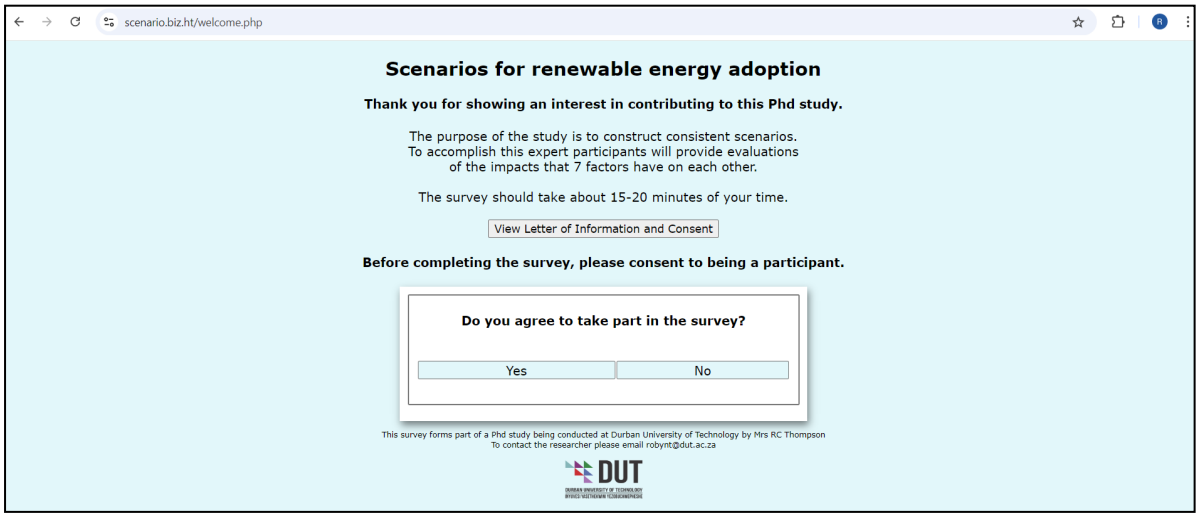

Figure 1: Welcome page for RE study application (Source: Researcher developed tool, available at: https://scenario.biz.ht/welcome.php)

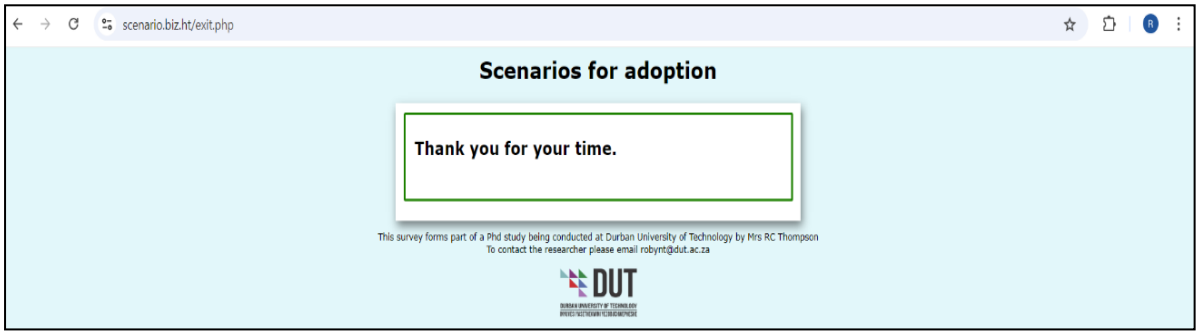

Figure 2: Exit page (Source: Researcher developed tool, available at: https://scenario.biz.ht/welcome.php)

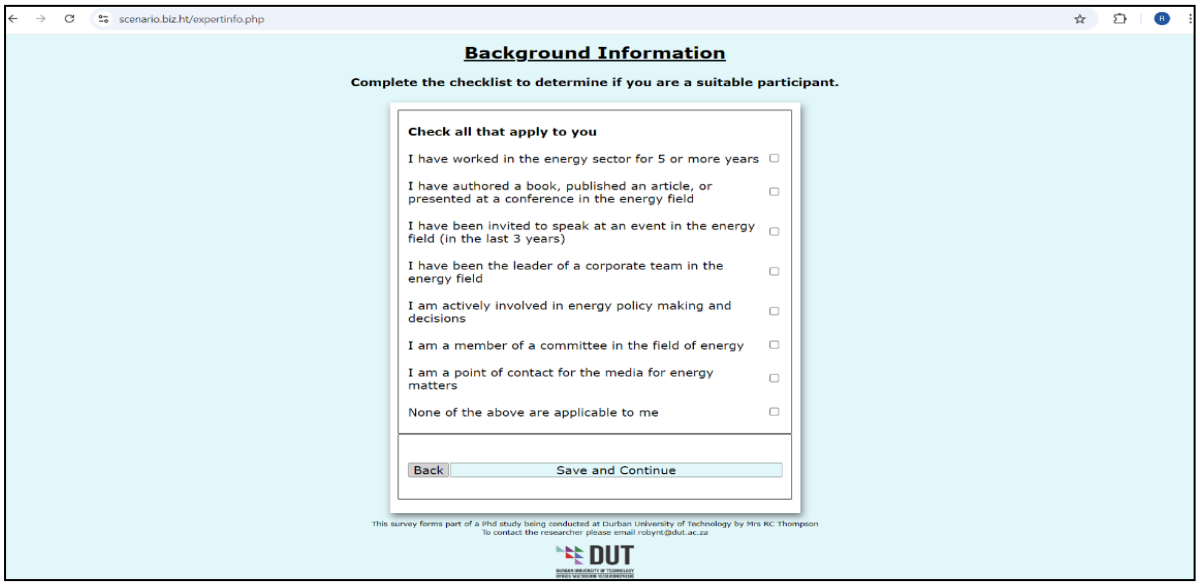

Figure 3: Participant background information page for RE study application (Source: Researcher developed tool available at: https://scenario.biz.ht/welcome.php)

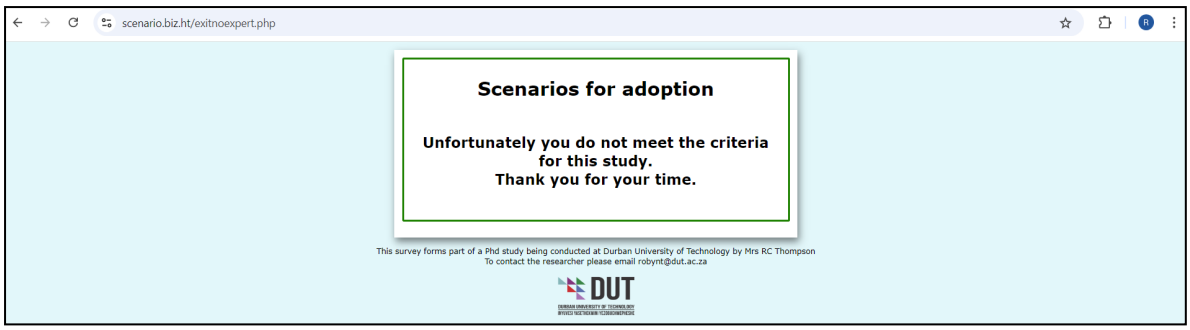

Figure 4: Non-expert exit page (Source: Researcher developed tool available at: https://scenario.biz.ht/welcome.php)

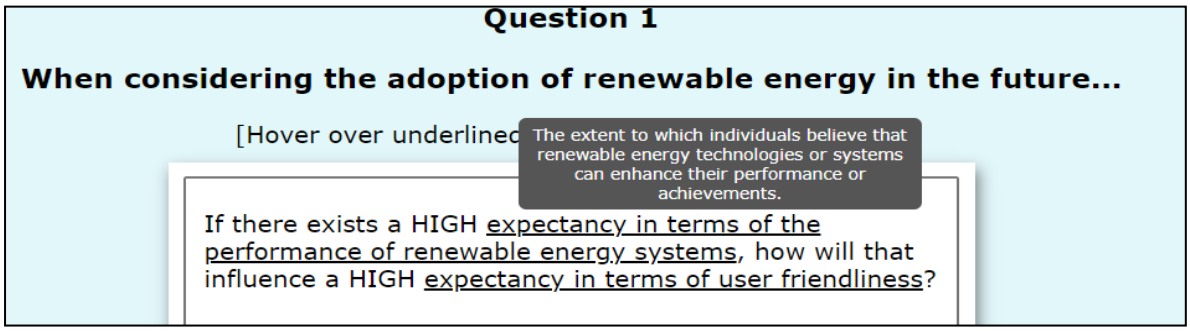

Figure 5: Tooltip for RE application on PC (Source: Researcher developed tool available at: https://scenario.biz.ht/welcome.php)

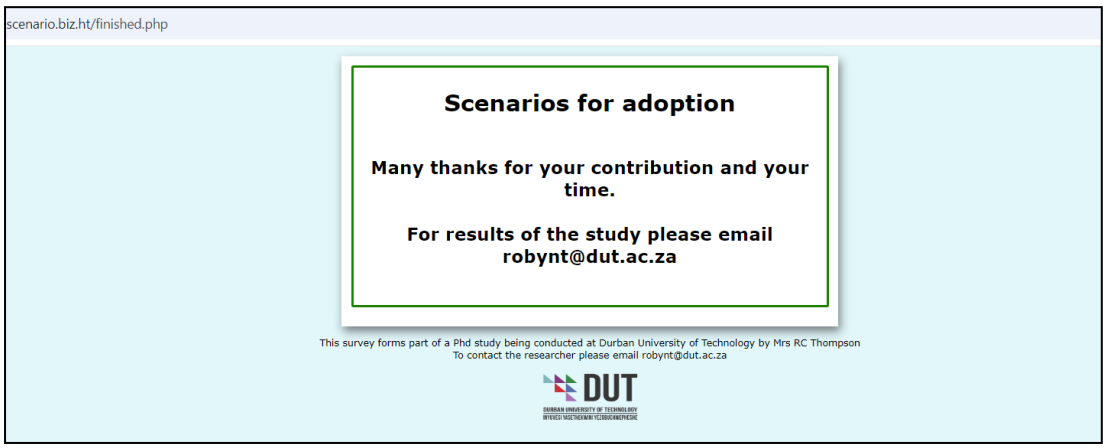

Figure 6: Final page for RE application (Source: Researcher developed tool available at: https://scenario.biz.ht/welcome.php)

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.

2. FIGURES AND SCREENSHOTS

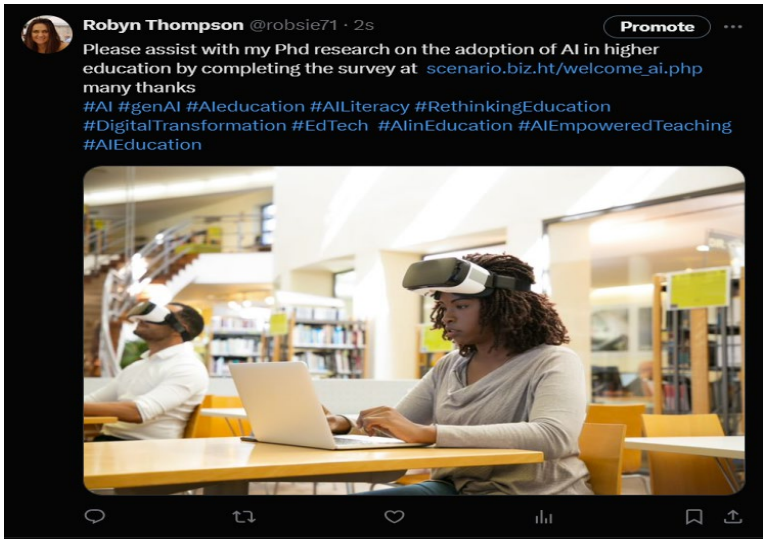

Figure 7: X post for distribution of survey link for AI in education data collection

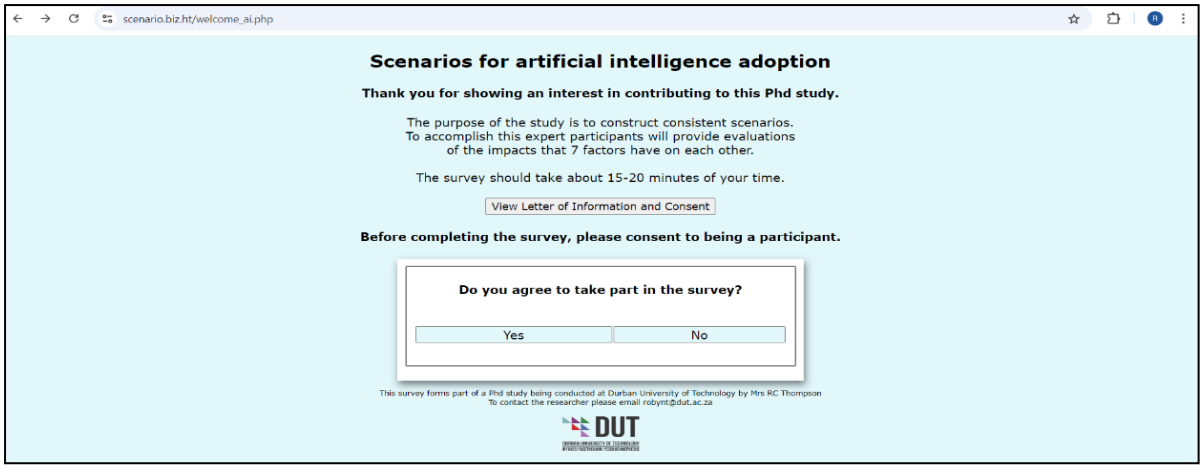

Figure 8: Welcome page for AI in higher education application (Source: Researcher developed tool, available at: https://scenario.biz.ht/welcome.php)

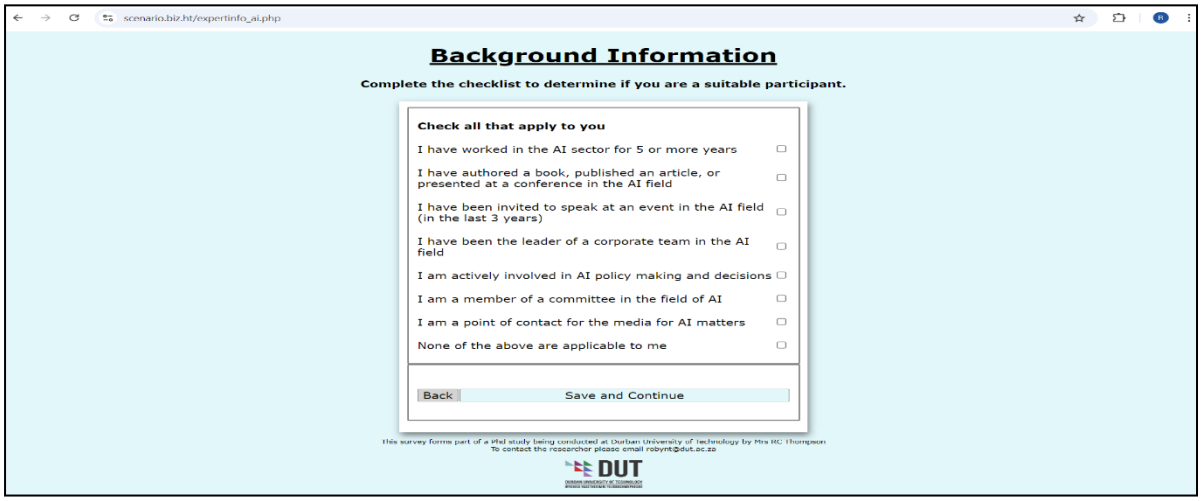

Figure 9: Participant background information page for AI in higher education application (Source: Researcher developed tool, available at: https://scenario.biz.ht/welcome.php)

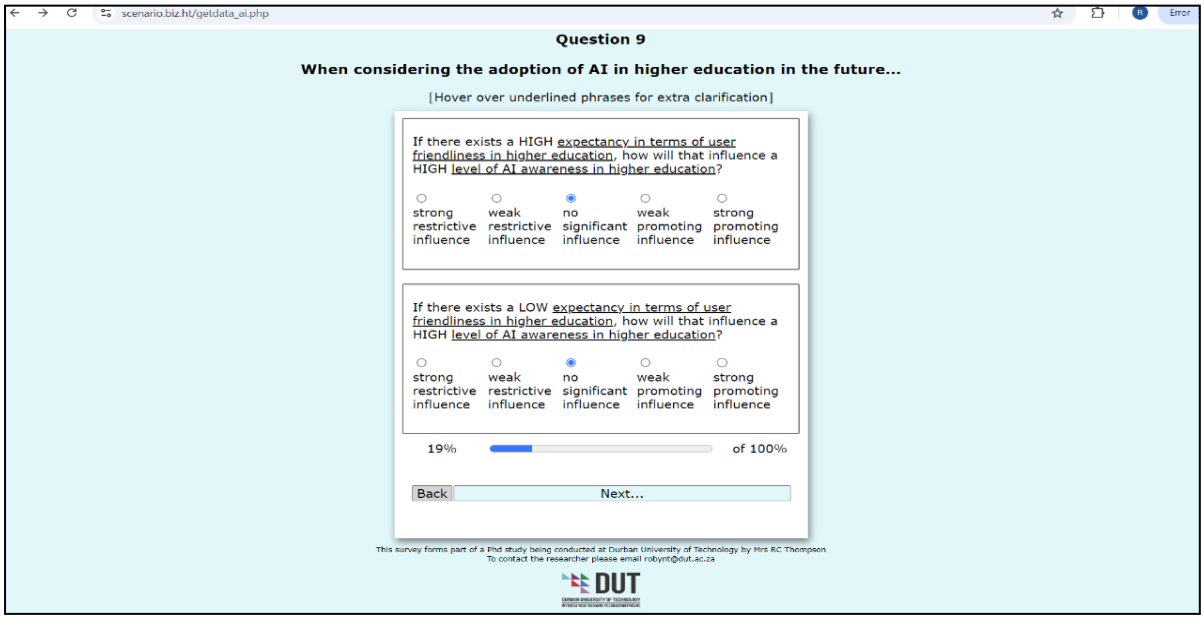

Figure 10: Judgement page for AI in higher education application (Source: Researcher developed tool, available at: https://scenario.biz.ht/welcome.php