

FIT5190 Assignment 1: Research Writing Task 1

Summarise your research

Example 1: Effective use of graphics in web page design

(1) A complete sentence to summarise what you are undertaking in your research in 20 words or less.

This research develops a neural network (NN) model to examine how graphics will affect users' feelings of a web page.

(2) A paragraph for elaborating your research by extending the sentence in (1) into structured ("linked") sentences.

To develop the NN model, a user-oriented experimental study on 96 university web pages is conducted based on the process of Kansei Engineering. The study identifies 7 web page design elements and 33 representative web pages as experimental samples for training and testing the NN model using morphological analysis. A grey relational analysis shows that the ratio of graphics to text is among the most influential design element of a web page in terms of the feeling words of easy-difficult, clear-confusing, and realistic-fancy. The NN model is built to formulate the relationship between the 7 web page design elements and the three feeling words. For a given ratio of graphics to text in web page design, the NN model can be used to determine the best combination of other web page design elements for matching desirable users' feelings. As a general rule, the ratio of graphics to text between 3:1 and 1:1 will give the users the best feelings of ease-to-use and clear-to-follow. The result of this study provides useful insights in using graphics on web pages that best meets users' specific expectations.

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Example 2: Selecting multiattribute decision making methods

(1) A complete sentence to summarise what you are undertaking in your research in 20 words or less.

This study develops a new empirical validity procedure for selecting a multiattribute decision making method for a given selection problem.

(2) A paragraph for elaborating your research by extending the sentence in (1) into structured (“linked”) sentences.

Many multiattribute decision making (MADM) methods are often available for solving a given multiattribute selection problem. This study develops a new empirical procedure to select the most valid MADM method when inconsistent ranking outcomes are produced by different MADM methods. The procedure aims at selecting a ranking outcome which has a minimum expected value loss, when true attribute weights are not known. An empirical study on a scholarship student selection problem in an Australian university, formulated as an MADM problem, is conducted to illustrate how the selection procedure works.

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Example 3: Sustainable planning of e-waste recycling activities

(1) A complete sentence to summarise what you are undertaking in your research in 20 words or less.

This study addresses the sustainable planning problem for e-waste recycling activities using fuzzy multicriteria decision making.

(2) A paragraph for elaborating your research by extending the sentence in (1) into structured (“linked”) sentences.

This study addresses the e-waste recycling planning problem by developing a novel sustainable planning approach for meeting the best sustainability interests of an e-recycling company. The approach uses a fuzzy multicriteria decision making (MCDM) method to evaluate alternative recycling activities of an e-waste recycling job in terms of their corporate sustainability performance on identified sustainability criteria under the environmental, economic, and social dimensions. In using the fuzzy MCDM method, a series of optimal weighting models are developed to determine the optimal weights for the three sustainability dimensions and their associated criteria. In consideration of an e-recycling company’s subjective sustainability preferences, the optimal weights reflect the best corporate sustainability performance of the e-waste products processed by the company under its current operational settings. An empirical study on a leading e-recycling company is conducted to illustrate how the approach works.

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Example 4: A performance-based approach to project assignment and performance evaluation

(1) A complete sentence to summarise what you are undertaking in your research in 20 words or less.

This study develops a new performance-based approach for integrating the project assignment and performance evaluation processes in a project-based organisation.

(2) A paragraph for elaborating your research by extending the sentence in (1) into structured (“linked”) sentences.

The performance-based approach uses the projects’ expected contribution and the project managers’ expected performance to integrate the project assignment and the performance evaluation processes. For project assignment, the approach optimally assigns a set of projects to a group of project managers by considering the total expected contribution of the projects and the expected performance of the project managers on the projects. For project performance evaluation, the approach measures the relative performance efficiency of the completed projects and of the project managers by developing an efficiency-based evaluation process using data envelopment analysis. An empirical study on an information technology project-based consulting company is conducted to illustrate the key processes involved in the performance-based approach.