EST 1892 LSBU

Data for Decision Making

Individual report

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1. Aim of the report and data collection

This report aims to critically examine perceived barriers against career awareness and student support at the LSBU Business school using guidance from the BADIR framework. The subject of this report was selected as it is relevant to several current issues. For instance, difficulty in securing graduating roles in the current job market calls for optimised career and academic support services from universities to ensure student success. To conclude, innovative solutions will be proposed to the Management Team based on the analysis of student feedback.

The SMART technique was used to devise 2-3 problem-specific questions which would validate or disprove each speculation. Crafting questions methodically allowed the effective collection of quantifiable, actionable, and rich in context insights, all crucial to meeting the study's objectives. To enable fair data representation, questions were formed using clear, accessible wording. Likert scales were used for data collection, each organized in a consistent manner to offer a diverse range of options without conveying assumptions to the respondents. The omission of distributing leading questions ensured the collection of fair data, and data bias was neither created nor reinforced.

The process of first-party data collection was challenging as factors which may have impacted the quality of collected data became apparent. Firstly, the observation of participants providing rushed responses may have indicated a hindrance towards the accuracy and validity of data collected, as responses potentially failed to fully reflect participants' true experiences. Next, difficulty was faced in obtaining a representative sample of students across different year groups and courses. Resultantly, results may have lacked generalizability and elements of sampling bias may have been present – in future, the use of random sampling will be increased to mitigate this risk.

Prior to distributing the survey, steps were taken to streamline the cleansing process. Through ensuring responses to all questions were mandatory, null responses and an incomplete data set were avoided. As users were prevented from entering multiple responses, no duplicate entries were made. Furthermore, encoding qualitative data into numerical values on Excel facilitated the effortless sorting and filtering of data, allowing data to be cleansed through focusing on specific criteria.

However, without a clear synchronization method in place, challenges were faced in continuously cleansing an influx of new responses. This difficulty emphasizes the significance of

establishing a data management system from the beginning of a project. In future, adopting SQL for data cleansing may assist in automatically updating datasets.

2. Data analysis using Excel

After encoding qualitative data into quantitative metrics during pre-processing, the ability to exploit Excel functions to perform swift calculations was achieved. Combining different measures of central tendency to analyze data served the advantage of identifying otherwise concealed patterns. For instance, the 'Mean' responses were used as a benchmark to signify the average sentiment held by respondents. Upon comparing the modes to this benchmark, an anomaly was identified in question 8, characterized by an extreme deviance from the standard response. Participants in this subset expressed an extreme level of dissatisfaction with employability calls (characterised by exceptionally low attendance). This served as a point of interest in which further analysis would be crucial to explore. Furthermore, a variety of additional analysis techniques were used, including the COUNTIF function to count data which met certain criteria.

Several methods were used to ensure that high data integrity and credibility would be upheld during analysis. For instance, a comprehensive survey ensured each speculation was thoroughly investigated and could be proven or disproved, which are critical features of science. The collection of first-party data minimized the risks of exposure to outdated, inaccurate or feigned information, which are commonly associated with secondary data collection. The use of second-party data in this research was strictly limited to exploring academic papers and vetted public data sets to investigate current issues crucial to the formation of initial speculations. Furthermore, this ensured that data reflected current sentiments and experiences held by the target population, aligned with the request of the LSBU Business School.

In hindsight, maintaining a clearer documentation of the analysis process through a changelog may enhance the transparency of research and allow findings to be replicated. This may further the validity of research and is critical to establishing the study's scientific nature. Additionally, the implementation of SPSS may allow the statistical analysis of a larger data set holding several variables (Levesque, 2007; Jasrai, 2020) in a user-friendly manner (Landau and Everitt, 2004). However, whilst the ability of SPSS to assist in generating reports may have been significantly advantageous (Wagner, 2019), the costly nature of SPSS may encourage the future adoption of free software materials such as R Programming as an alternative - this may enhance the data graphics used in analysis.

3. Data representation and interpretation

Several static visualization techniques were used to facilitate data interpretation. Firstly, using a bar chart allowed the immediate identification that over 56% of respondents wanted to access additional support in interpreting assignment feedback (shown in chart 3). Through the ability to compare data at a glance, it became strikingly apparent that only 2% of respondents expressed no interest in this service. This contrast demonstrates a remarkable demand for the service and may provide insight into why 17% of students are currently only engaging with feedback partially or not at all. The strengths of using a bar chart for graphical interpretation have been substantiated by studies revealing that numerical data is optimally comprehended by humans when represented as lengths in visual formats (McGill et al., 1984).

Arguably, scatterplots and stacked area charts were the most effective visualisation techniques used. Stacked area charts are used to illustrate the cumulative representation of data over different categories (Blackwell, 2004). This technique enabled the aggregation of three individual data components into one compelling graphic (see chart 2). Specifically, this tool was used to effectively visualize current attendance to employability insight calls and two variables which may influence attendance (extent to which companies currently featured align with student interest; the extent to which the presence of prestigious companies would encourage attendance). Furthermore, this visual effectively conveyed the findings extracted from data analysis in an accessible way. Next, scatterplots have been identified as a versatile method of indicating correlations between low-dimensional data (Friendly and Denis, 2005). This method enabled an effective demonstration of the positive correlation between student satisfaction with accessibility of career services and frequency of usage, validating one speculation (see chart 1).

Lastly, pie charts were effectively used to visually depict crucial proportion information. Audience attention was drawn to the fact that 70% of students are currently not actively seeking internship opportunities (see chart 4). Furthermore, incorporating donut pie charts into visualisation increased aesthetic appeal (see chart 5).

Using the McCandless method to guide data visualization allowed the creation of simple yet purposeful and compelling visuals (Engebretsen, 2020). The deliberate use of simple graphics, including pie charts and bar graphs, aimed to maximize audience engagement with content materials through stimulating system 1 thinking (Kahneman, 2011), allowing the audience to

grasp key insights swiftly. Furthermore, incorporating elements of Fung's chart trifecta ensured an alignment between LSBU's business problem, the data analyzed, and visuals represented (Fung, 2015). The use of deliberate placement of information in data visualisation allowed the manipulation of pre-attentive attributes to draw attention to key insights within the data presentation. In hindsight, using brighter colours in data visualisation could draw further emphasis on certain findings, as this triggers exogenous attention (Fuller, 2006). Furthermore, a point of interest for future study is in using dynamic visualization tools to display live updates in data. This may increase efficiency through reducing the need to manually adjust data updates.

4. Communicating results & conclusions to School's management

Several speculations were disproven during analysis. For instance, initial speculations suggested low engagement with employability insight calls stemmed from a misalignment between the companies featured and student interest. However, upon further analysis it was revealed that 76% of students reported interest in companies showcased during employability insight calls. This suggests the low engagement may be caused by an unaccounted-for variable, such as time constraints or motivational aspects, and indicates an area for further research. Despite this, analysis revealed that a remarkable 85% of participants viewed the presence of prestigious companies featured in employability calls as a factor which highly influences attendance; this is an adjustment worth considering for the LSBU Management Team to incentivize attendance. Furthermore, speculations suggested that students are failing to apply for internship opportunities due to the lack of emphasis from the university. Nonetheless, this was disproven as 64% of participants reported a sufficient or high level of emphasis is in fact placed on these opportunities, indicating that a third, unknown variable is affecting behavior. Here, an area for further research is suggested.

Next, a few speculations were validated and used to underscore the demand for improved academic support. This was most remarkably proven by the 56% interest in support with interpreting and implementing assignment feedback. This suggests that LSBU may invest in offering further academic enrichment courses or increase advertising efforts into the university's 'Assignment Surgery' initiatives to boost student awareness and engagement with the service. Lastly, a positive correlation was found between the satisfaction with the accessibility of career services and frequency of usage. Resultantly, LSBU may increase student engagement with career services by prioritising improvements to accessibility. Initiatives such as increasing awareness of available services on campus may be implemented.

A strength of the insights obtained from data in this research was the deliberate avoidance of heuristics and cognitive biases skewing results. This was achieved through recognizing pre-

existing beliefs prior to the study and actively challenging assumptions based on the data provided. Through this critical thinking, the risks of susceptibility to both interpretation and confirmation bias were minimised. This enhances the data credibility and integrity of results, allowing the management team to make data-driven improvements to student learning without reliance on anecdotal information. Implementing the suggested changes may increase engagement with career services and improve grades through support with assignment feedback interpretation.

5. Ethical aspect of using data

Business compliance with data ethics is strictly governed through regulations including the GDPR, DPA 2018 and Equality Act 2010, ensuring the fair collection, protection and analysis of data (Gov UK, 2020). Moreover, incentives for adhering to data ethics standards extends governmental regulation and may be a strategic decision with far-reaching market benefits. These may include increased profitability, stronger trust amongst stakeholders in the business and an enhanced reputation. Furthermore, a competitive advantage may be gained which allows the business to save costs and accelerate profitability (PwC, 2016). Maintaining strict data ethics standards aligns with the corporate values of LSBU, including integrity and commitment to excellence.

Extensive steps were undertaken to ensure compliance with data ethics throughout the research process (see Appendix). For instance, data privacy and confidentiality were respected through the omission of collecting personally identifiable information (PII). The demographic information collected was strictly limited to course name and year of study – this ensured that only crucial information was studied to enhance the contextual richness of data, students were the sole beneficiaries, and the risk of data abuse was minimized. Transaction transparency and data ownership was respected through explaining the research context to participants, addressing concerns, obtaining informed consent, and allowing participants to download a receipt of submitted responses. Data security measures were implemented to safeguard files against unauthorized changes and corruption.

6. References

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7. Appendix A

a. Please note: The majority of these responses were collected as categorical, ordinal data. However, responses were encoded during pre-processing in Excel. Following this, the majority of variables became quantitative and discrete.

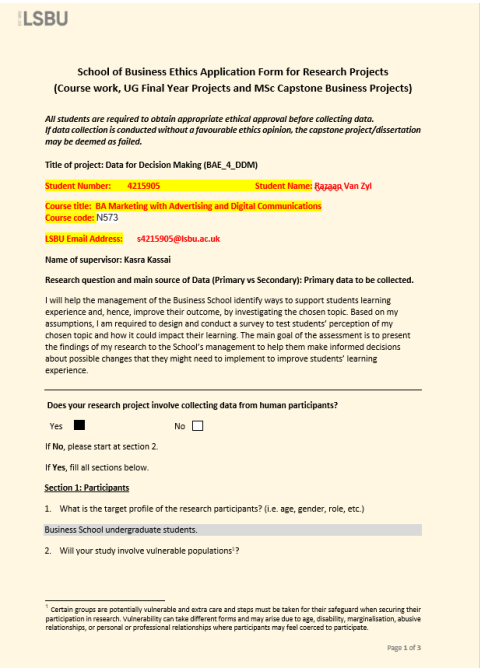
Assumptions	Question(s) regarding claims	Variables (types)	Validated (True/False)
Students would use career services more frequently if it was made to be more accessible.	Q4 and Q5.	1. Frequency of using career services (Categorical – Ordinal) 2. Satisfaction level of accessibility (Quantitative – discrete)	True
Students are not engaging with LSBU's employability insight calls due to misalignment between companies featured and student interest.	Q8 and Q9	1. Frequency of attending employability insight calls (Categorical – Ordinal) 2. To what extent do companies featured align with student interest (Categorical – Ordinal)	False

Students would attend employability insight calls more if prestigious companies were featured.	Q8 and Q10	1. Frequency of attending employability insight calls (Categorical – Ordinal) 2. To what extent would the presence of prestigious companies influence attendance to employability insight calls (Categorical – Ordinal)	True
If the university offered students more help with reviewing assignment feedback, students would review feedback more thoroughly.	Q11 and Q12	1. How frequently students are currently reviewing feedback (Categorical – Ordinal) 2. How many students would like to access support with interpreting assignment feedback (Categorical - Ordinal)	True
Students are not actively seeking internship opportunities because the university does not place a lot of emphasis on this.	Q14 and Q15	1. Whether students are actively seeking internship opportunities (Categorical – Nominal) 2. To what extent students believe the university places emphasis on internship opportunities (Quantitative – discrete)	False

b. **Link to questionnaire:**

https://forms.office.com/e/k440sUGsrA

c. **Ethics Application form:**



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School of Business Ethics Application Form for Research Projects
(Course work, UG Final Year Projects and MSc Capstone Business Projects)

All students are required to obtain appropriate ethical approval before collecting data.
If data collection is conducted without a favourable ethics opinion, the capstone project/dissertation may be deemed as failed.

Title of project: Data for Decision Making (BAE_4_DDM)

Student Number: 4215905 **Student Name:** Razaan Van Zyl

Course title: BA Marketing with Advertising and Digital Communications
Course code: N573

LSBU Email Address: s4215905@lsbu.ac.uk

Name of supervisor: Kasra Kassai

Research question and main source of Data (Primary vs Secondary): Primary data to be collected.

I will help the management of the Business School identify ways to support students learning experience and, hence, improve their outcome, by investigating the chosen topic. Based on my assumptions, I am required to design and conduct a survey to test students' perception of my chosen topic and how it could impact their learning. The main goal of the assessment is to present the findings of my research to the School's management to help them make informed decisions about possible changes that they might need to implement to improve students' learning experience.

Does your research project involve collecting data from human participants?

Yes ■ No ☐

If **No**, please start at section 2.

If **Yes**, fill all sections below.

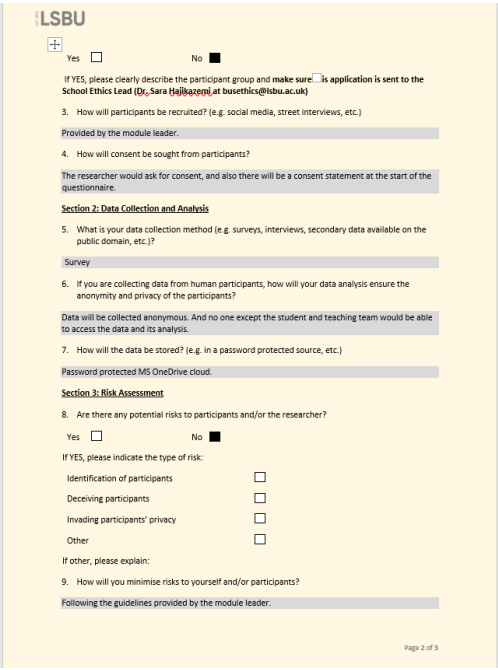
Section 1: Participants

1. What is the target profile of the research participants? (i.e. age, gender, role, etc.)

Business School undergraduate students.

2. Will your study involve vulnerable populations[1]?

[1] Certain groups are potentially vulnerable and extra care and steps must be taken for their safeguard when securing their participation in research. Vulnerability can take different forms and may arise due to age, disability, marginalisation, abusive relationships, or personal or professional relationships where participants may feel coerced to participate.



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Yes ☐ No ■

If YES, please clearly describe the participant group and **make sure is application is sent to the School Ethics Lead (Dr. Sara Hajikazemi at busethics@lsbu.ac.uk)**

3. How will participants be recruited? (e.g. social media, street interviews, etc.)

Provided by the module leader.

4. How will consent be sought from participants?

The researcher would ask for consent, and also there will be a consent statement at the start of the questionnaire.

Section 2: Data Collection and Analysis

5. What is your data collection method (e.g. surveys, interviews, secondary data available on the public domain, etc.)?

Survey

6. If you are collecting data from human participants, how will your data analysis ensure the anonymity and privacy of the participants?

Data will be collected anonymous. And no one except the student and teaching team would be able to access the data and its analysis.

7. How will the data be stored? (e.g. in a password protected source, etc.)

Password protected MS OneDrive cloud.

Section 3: Risk Assessment

8. Are there any potential risks to participants and/or the researcher?

Yes ☐ No ■

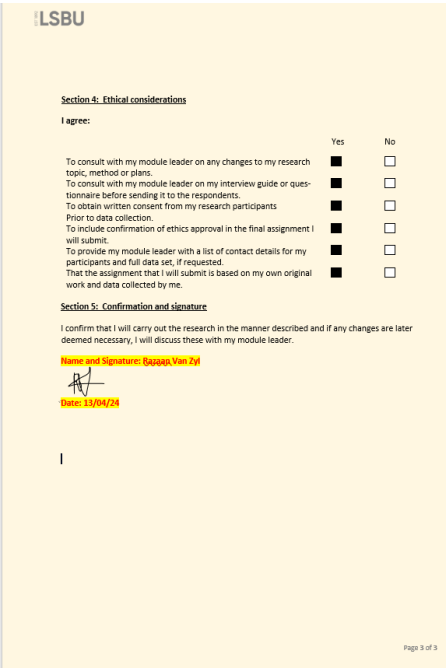
If YES, please indicate the type of risk:

Identification of participants	☐
Deceiving participants	☐
Invading participants' privacy	☐
Other	☐

If other, please explain:

9. How will you minimise risks to yourself and/or participants?

Following the guidelines provided by the module leader.



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Section 4: Ethical considerations

I agree:

	Yes	No
To consult with my module leader on any changes to my research topic, method or plans.	■	☐
To consult with my module leader on my interview guide or questionnaire before sending it to the respondents.	■	☐
To obtain written consent from my research participants Prior to data collection.	■	☐
To include confirmation of ethics approval in the final assignment I will submit.	■	☐
To provide my module leader with a list of contact details for my participants and full data set, if requested.	■	☐
That the assignment that I will submit is based on my own original work and data collected by me.	■	☐

Section 5: Confirmation and signature

I confirm that I will carry out the research in the manner described and if any changes are later deemed necessary, I will discuss these with my module leader.

Name and Signature: Razaan Van Zyl

Date: 13/04/24