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Research Methods (M5X01284)
Research Proposal
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Abstract

Based upon the previous research proposal, the purpose of this report is to provide a deeper understanding and highlight how data collection will be conducted. It will clarify whether the type of data used within the chosen research topic will be primary or secondary and give clear reasoning for why it has been selected. This paper also points out how a survey has been created and how grouped interviews will be employed using a series of suitably constructed questions to gather the relevant data. Furthermore, the report then goes on to give detail of how the collected data will then be analysed through a statistical programming software package to produce an outcome which will meet the overall aim and objectives of conducting the research.

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1.Introduction

To further develop upon the former research proposal. This report highlights the approach that will be carried out regarding data collection. It will address whether primary data or secondary data, or a mixture of both is deemed the most appropriate. Moreover, it will then consider the various strategies and methods of analysis to be applied, which are best suited for addressing and meeting the overall research aim and its objectives for the chosen research topic.

To clarify the main aim and objectives put forward in the previous research proposal are again highlighted as follows:

- **To develop a circular economy model including packaging for reverse logistics**
 1. Assessing the present life-cycle models for products and packaging
 2. Critically weigh up the impact of packaging and reverse logistics supply chains
 3. Propose recommendations that will assist with reducing and reusing packaging for increasing the performance of reverse supply chains

2.Data

To achieve the aims and objectives as previously addressed. Data will be collected in the form of both primary and secondary data.

2.1. Primary data

Primary data is data that is collected for the specific research problem at hand, using procedures that fit the problem best without the need to make use of any pre-existing resources (Hox and Boeijs, 2005).

Benefits of using primary data

To conduct research, a researcher may decide to use primary data. Primary data has many distinctive benefits for a researcher. Firstly, it can enable a researcher to acquire fresh and up to date data that is tangible to their requirements. Secondly, it can also allow the researcher to have absolute control over how the data is to be collected whilst also establishing the most appropriate methods, design, and data analysis techniques to be implemented.

For the chosen area of research, primary data will be collected using two differing approaches. Firstly, a survey will be distributed to all employees who work throughout Amcor's manufacturing and distribution sectors flexible Evesham. Secondly, two separate interviews will be carried out, the first of which is a

grouped interview with all senior managers within these departments. A second interview will be undertaken with the sites Managing Director (MD). The following reasons highlight why both of these approaches will be selected for collecting primary data.

- A survey will be selected as it enables a substantial amount of data to be gathered in a short period of time on a broad range of employees' opinions to see how current circular manufacturing and transportation processes are currently being coordinated within the company's supply chain. Having collated the data will give the researcher a generalised overview of where persistent problems lie and what improvements can be implemented to rectify such issues.
- A series of interviews will be chosen as an effective method of gathering data as it will help to establish what recommendations and future measures that senior managers propose as being practical for improving the circular performance within their supply chains as well as establishing what can be done to make current the current circular practices within Amcor Flexibles better.

2.2. Secondary data

Secondary data is the undertaking of further analysis of data that was initially collected for some other purpose. – (Saunders et al., 2016).

Benefits of using secondary data

For a researcher, making use of secondary data can yield numerous benefits. Taking the view of Saunders et al. (2016) into consideration, the primary advantage of secondary data is the significant reductions that can be seen regarding both time and money. Consequently, deducing both time and money, in turn, allows the researcher to have more time available to concentrate their efforts on analysing and interpreting data, thus has the potential to speed up the entire research process. Furthermore, the authors (Saunders et al., 2016) continue to specify that the use of secondary data can be considered favourable for a researcher, as the retesting of secondary data may present unanticipated new findings that can provide a greater level of assistance for answering the overall aim and objectives of the study.

For the proposed research, secondary data will be obtained through the previous year's data that has been recorded and produced by Amcor Flexibles Evesham (**finish**)

3. Survey design

3.1. Concepts of survey design

To collect data for research, a researcher may implement the use of surveys. A survey can provide the necessary means of gathering various data types such as factual data, monitoring data, attitudinal data, and perception-based data.

(Andres, 2012) has highlighted the numerous distinctive characteristics that a researcher must implement to form a well-crafted survey, they are addressed as follows:

- A clear understanding of the specifications of the types of survey instruments to be employed – whether the survey will be web-based or conducted in person
- Specify the sample and its size
- Produce properly constructed questions - make questions both easy to explain and understand and are written in clear and straightforward language and provide instructions to answer questions if it is required
- Sound budget and realistic schedule
- Have technical knowledge and sound understanding of how to conduct either statistical or qualitative analysis of the data

However, to ensure the desired outcomes for implementing the survey are realised, a researcher must design the survey by being mindful of the many critical constraints, considerations and trade-offs that may jeopardise the survey results. The main factor a researcher should consider is response burden - a researcher will need to ensure that the questions that they produce for the survey do not take a considerable amount of time and effort for a respondent to answer; whilst ensuring that they are scripted in such a way that they are easy for a researcher to explain and for a responder to understand (actual burden). Also, the researcher must produce questions that will keep their intended audience actively engaged with their questions to ensure that the respondents produce thought through answers (Snijders et al., 2013).

3.2. Survey questions

This particular part of the report will address the five survey questions (**Appendix A**) presented to the individuals working in the manufacturing and transportation sectors of Amcor Flexibles. The survey questions address what real-time processes the employees think can be altered to improve the levels of waste currently being accumulated, what production or transportation procedures the workers are currently seeing the most waste coming from, and what preventative measures are in place to reduce waste, and what are the current procedures regarding recycling.

4. Face to face interview

Another feasible or alternative method that a researcher can utilise for gaining the relevant data for research can be achieved by conducting face to face interviews. Adopting an interview-based approach to obtain data can present the researcher with many benefits (DeFranzo, 2014).

- **More accurate screening** - a face to face interview can contribute to more accurate screening. This means that the individual/s being interviewed cannot give misinformation whilst answering screening questions

related to the individuals' age, race or gender. Therefore, the individual's answers are less likely to be misleading or flawed when the data is later analysed.

- **Capture verbal and non-verbal cues** - the interview process can allow a researcher to actively see how an individual reacts to the questions they are being asked, which may suggest either a level of uneasiness or a heightened level of exuberance in the individual. Therefore, this may cause the researcher to channel their questions in other areas that they consider to be more appropriate to get more thought-out answers, or they might decide in some instances to remove questions that cause discomfort ultimately from the interview.
- **Keep focus** - As the interviewer has the sole control over how the interview is being conducted, they can maintain the focus and keep a responder on track to completing the questions asked of them as any notable distractions are removed. Therefore, it is more likely that the interviewer will get more comprehensive answers, thus providing better data for analysis.

To obtain data for the chosen research, the researcher will be applying a series of interviews to put forward the more complicated questions with the more senior members of Amcor Flexibles. The selection of interviews is to see if there is a direct correlation between all employees' views and opinions throughout the company.

4.1. Interview questions

This section of the paper will state eight questions asked when the interviews are being conducted (**Appendix B**). The questions are directly related to the managers of Amcor Flexibles overall understanding of the circular economy, asking their opinions of different approaches or recommendations that can improve the company's current circular processes in cost reduction and minimising their environmental impact and whether they consider the recycle programmes that the company has imposed are beneficial and how that they can be improved

5. Data analysis techniques

5.1. SPSS

In order to thoroughly analyse data, a researcher could use a series of analytical techniques. The statistical package for the social sciences (SPSS) is one such analytical tool that has provided researchers such as the likes of (Gusmerotti et al., 2019) with the ability to effectively analyse the data of the performance of different key drivers and approaches of the circular economy within a manufacturing environment. SPSS is a robust statistical program that can enable a user to have a better and more comprehensive understanding of large and complicated data sets. The statistical procedures used throughout the software program assist in ensuring that a high degree of accuracy is maintained when data is being analysed and helps the researcher decide which data is deemed as most appropriate for the study at hand.

Throughout the research, once data has been collected from surveys carried out by workers in the manufacturing and transportation sector of Amcor flexibles and the interviews conducted with managers that work within those departments, the data will then be subsequently analysed by applying the SPSS software. The statistical programme was chosen based on the researcher's prior knowledge of SPSS and its capability to manage large amounts of data effectively.

5.2. Modelling

An alternative approach that a researcher can implement to analyse data can be achieved by incorporating modelling. Many researchers have found the application of modelling highly beneficial, drawing from the research study's findings (Van Acker and Witlox, 2010). The authors designed and implemented a structural equation model for their research on car travel behaviour to see if there was a direct correlation between a series of different variables – car use and car ownership. It was concluded that the model was highly efficient for helping the authors to obtain a greater level of transparency of their data and helped them to determine which data is deemed as being the best suited for answering the aim and objectives of the study.

Due to the complex nature, the lack of time available to conduct the research project, and the researcher's inexperience in using a modelling programme, it will not be considered a viable choice for analysing the research data project.

4. Anticipated findings

Throughout the research, the researcher will strive to identify the possible solutions to the aim and objectives proposed in both this paper and the previous paper. Also, the research will hope to validate the results of the study conducted by (Paletta et al., 2019) on issues of packaging in the circular economy and the outcomes addressed by (Sasikumar and Govindan, 2008) regarding the improper conduct of recovering packaging and plastic products in a reverse supply chain. Moreover, the researcher also expects to find that the study will not only assist in developing the circular processes of Amcor Flexible but also provide assistance to help the company to reduce their costings.

Conclusion

To summarise, this report has provided an extensive account of the various methods that the researcher will apply for collecting and analysing data. Furthermore, it has also outlined in considerable depth the types of data that will be used (primary or secondary data) and has given clear reasons why the researcher had selected it. The report has also highlighted how and why the researcher will implement a survey (Appendix A) and interviews (Appendix B) to collect the data, describing the types of questions that will be asked and why they are being asked. Furthermore, the report has also brought to light the various benefits that both of these data collection techniques can offer the researcher and the various limitations and constraints that the

researcher must consider. Moreover, the report continues to specify the two different methods (SPSS or modelling) that can be employed to assist with analysing data and addresses which of these methods will be chosen by the researcher. Lastly, the report has addressed in detail the anticipated findings of conducting the research of which it aims to answer the aims and objectives of the study and ratify the opinions and findings that have been previously conducted by other researchers.

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Appendix A: Example of survey questions

- 1) Where within your job do you witness the most waste usually occurring from?
 - Time spent waiting for material
 - Lack of material availability
 - Defected products that require re-work
 - Incorrect information for the job
- 2) What current manufacturing and transportation procedures/processes do you think can be adapted to deduce/eliminate the amount of waste that is being generated?
- 3) Are you aware of the current recycling procedures that are currently in place at Amcor Flexibles?
- 4) Do you believe the current recycling procedures are effective at reducing the levels of waste?
- 5) Do you feel more adequate training is required to get a better knowledge and understanding of how recycling should be carried out?

Appendix B: Example of interview questions

- 1) What is Amcor Flexibles current understanding of the circular economy, and to what extent does the company actively engage in it?
- 2) What would you consider to be the most prevalent areas where Amcor flexibles are underperforming concerning their circular practices?
- 3) Where do you believe within the company's current manufacturing processes, better approaches can be applied to ensure a greater level of circularity?
- 4) Where do you believe within the company's transportation processes, better approaches can be implemented to ensure a greater level of circularity?
- 5) How much value is the company currently saving through the implementation of circular strategies?
- 6) Do you feel the introduction of the How2recycle programme has been effective at improving circularity at Amcor Flexibles?
- 7) What improvements do you feel could be made to make the How2recycle programme better?
- 8) How has collaborating with other like-minded companies helped to improve the circularity of the company?