NESPRESSO

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ST3188 COURSEWORK

MARKET RESEARCH PROPOSAL

WORD COUNT: 2999

Executive Summary

Founded in 1986, Nestlé Nespresso S.A., known as Nespresso, is now a global leader for coffee machines and capsules. Nespresso is committed to be sustainable socially, environmentally and economically to bring a positive impact to the globe.

This research proposal hopes to aid Nespresso in innovating its products by creating new coffee blends and brewing methods suited for customers around the globe, as well as improve customer satisfaction while being environmentally friendly. For simplification, the research aims (RA) are broken down into:

RA1: We seek to understand customers' preference for new coffee blends and new brewing technologies.

RA2: We seek to understand customer pain points to identify areas of improvement in quality, packaging and customer service.

RA3: We seek to evaluate the effectiveness of Nespresso's sustainability initiatives and identify further opportunities for further improvement.

With these research aims; I proposed several research questions and research objectives for us to investigate further in how to address these aims.

Questionnaires has been designed to aid in collecting primary data needed for our research objectives. Minimum sample size calculated to ensure that sample represents the population well. Additionally, questionnaire has been designed such that it can be reused for the next 2 times when we are collecting primary data again.

For most research objectives, I have allocated the most suitable statistical technique to use so that we can understand the data better and be able to compare data if needed. From the results, we can create recommendations that will greatly benefit Nespresso by helping Nespresso to achieve their sustainability aims and improve Nespresso image to the market. Each statistical technique has been backed by reasons as to why it is the most suitable technique to use.

Two research objectives have been allocated with focus group discussions so that we can have a bigger variety of opinions from customers. Participants from focus group discussions has been purposefully segmented into age group and region so that Nespresso can hear opinions from all ages and across the globe. This allows Nespresso to create products that will be able to cater to its customers taste across the globe.

Further recommendations were also given for Nespresso to consider doing as well.

Contents

Background

In 1991, a few years after Nespresso was founded, the first ever recycling program for capsules was started at its homeland, Switzerland with 34 collection points. Nespresso has then expanded to 59 countries worldwide with many collection points and drop-off points. This allowed them to reach a 32% recycling rate by the end of 2020.

Nespresso's "The Positive Cup" has a mission to shape communities and preserve landscapes for the better, leaving a positive impact on the lives of people and nature.[1] They protect rainforests by having regenerative agriculture, protect farmers livelihoods, have sustainable coffee sourcing methods etc.

With these efforts, Nespresso has managed to reduce the carbon footprint for a cup of coffee by 24%, as compared to its baseline in 2009.[2]

Problem Definition

In the client brief, it is stated that Nespresso aims to remain as a global leader in the premium coffee market. They want to innovate new coffee blends and brewing technologies, while also ensuring that customers of Nespresso have a positive experience and acknowledge Nespresso's efforts in being sustainable.

Nespresso stated that the research window is 6 months and that they prefer an online methodology.

Research Aims

Based on the client brief, this proposal will focus on three main research aims (RAs) to help Nespresso attain its objectives.

RA1: We seek to understand customers' preference for new coffee blends and brewing technologies.

RA2: We seek to understand customer pain points to identify areas for improvement in quality, packaging and customer service.

RA3: We seek to evaluate the effectiveness of Nespresso's sustainability initiatives and identify further opportunities for further improvement.

[1] Quoted from The Positive Cup Hub | Nespresso Sustainability | Nespresso
[2] Quoted from Climate, Nespresso demonstrates landmark sustainability progress with the publication of The Positive Cup | Nestlé Nespresso (nestle-nespresso.com)

With these research aims, I propose several research questions and research objectives for us to investigate further in how to address these aims.

Research Questions (RQ) and Research Objectives (RO)

Here are some proposed RQ(s) along with their respective RO(s) to address the RAs.

1. **For RA1:**

RQ 1.1: What are the characteristics that customers look for in coffee blends?

RQ 1.2: What brewing technologies do customers prefer for their coffee?

From the results of these questions, we can find out customers' preferred flavour profiles for coffee, what they hope to see created in the future, brewing technologies they frequently use and what led them to prefer the specific method. Knowing what brewing methods and flavours they prefer, we can do further research and develop new flavours that also mimics the taste attained from the brewing method.

ROs Proposed:

RO 1.1.1: Determine the flavour profiles customers prefer and want.

RO 1.2.1: Investigate the importance of convenience, time taken, flavour and brewing methods in brewing coffee for customers.

2. **For RA2:**

RQ 2.1: What is the level of satisfaction customers have of the quality of our products?

RQ 2.2: Are the products packaged in the best way possible?

RQ 2.3: How satisfied are customers with Nespresso's customer service?

These questions seek to understand customers perceptions of Nespresso in terms of quality, packaging and customer service. We can use results to know shortcomings and further improve Nespresso to appeal to customers.

ROs Proposed:

RO 2.1.1: Find out aspects of the product that gave rise to dissatisfaction.

RO 2.2.1: Assess customers satisfaction with packaging and find out what they dislike about the packaging.

RO 2.3.1: Measure overall customer satisfaction with the customer service and assess weaknesses.

3. **For RA3:**

RQ 3.1: How much did each of Nespresso's sustainability initiatives contribute to sustainability?

RQ 3.2: What are the other ways to make the coffee pod production process more sustainable?

These questions are to aid us in discovering the impact Nespresso has made for the environment and what more can be done such that Nespresso can further improve their sustainability efforts.

ROs Proposed:

RO 3.1.1: Assess the impact of each sustainability initiatives to the environment.

RO 3.2.1: Investigate if there are other greener alternative materials to be used to produce the pods.

Methodology & Data Collection

Objectives of this market research proposal incorporated causal, exploratory and descriptive research designs. The exploratory approach allows us to see customers thoughts on flavour profiles, packaging and customer service. The causal research design is used to investigate what variables, such as speed and convenience, influenced customers to prefer certain brewing technologies. Descriptive research design, specifically, longitudinal design is used so that we can assess customer service satisfaction over time in the span of 6 months.

Primary data will be collected via focus groups and questionnaire while secondary data will be collected using Nespresso's organisational database. I propose that for focus groups and questionnaire, we should give respondents $10 in completing the survey and additional $10 if they joined the focus groups, incentivising them.

Sample Size

In the client brief, Nespresso stated that they want their customers and competitor customers to be surveyed. To minimise cost while having an accurate representation of the population, I propose that we follow this formula $n \geq \frac{\left(Z_{\frac{\alpha}{2}}\right)^2 (\pi(1-\pi))}{e^2}$ to determine the minimum sample size required, where n represents sample size of Nespresso customers and non-Nespresso customers. We use a 95% confidence level (e = 0.05) and a 33% response rate as stated from an online article[3].

[3] Percentage cited from 22 Cool Online Survey Stats 2024 [to Increase Response Rate] (thrivemyway.com)

$$n \geq \frac{1 \cdot 96^2\big(0.33(1-0.33)\big)}{0.05^2}$$

$$n \geq 340$$

The minimum sample size should be 340. Nespresso can ultimately choose to increase sample size as they wanted at least 5000 respondents according to the client brief. Increasing the sample size is advantageous as it will provide represent the population better, producing more accurate results. However, this will be very costly especially due to questionnaire incentives.

Questionnaire

Two questionnaires will be made to aid in our research. Each questionnaire will have a sample size of at least 340 people. As Nespresso prefers an online methodology, the questionnaires will be done online. The questionnaires will also be done another 2 times, 3 months apart from the previous questionnaire. This is so that we can monitor changes in response, to see if there is any improvement after changes are made since the first questionnaire.

For Nespresso Customers

As Nespresso has a database of its customers who ordered online before, firstly categorise their customers to corporate and individuals. From each category, do simple random sampling then send out an email with the questionnaire attached so that customers can fill it up. This is to ensure both corporate and individual customers are fairly represented.

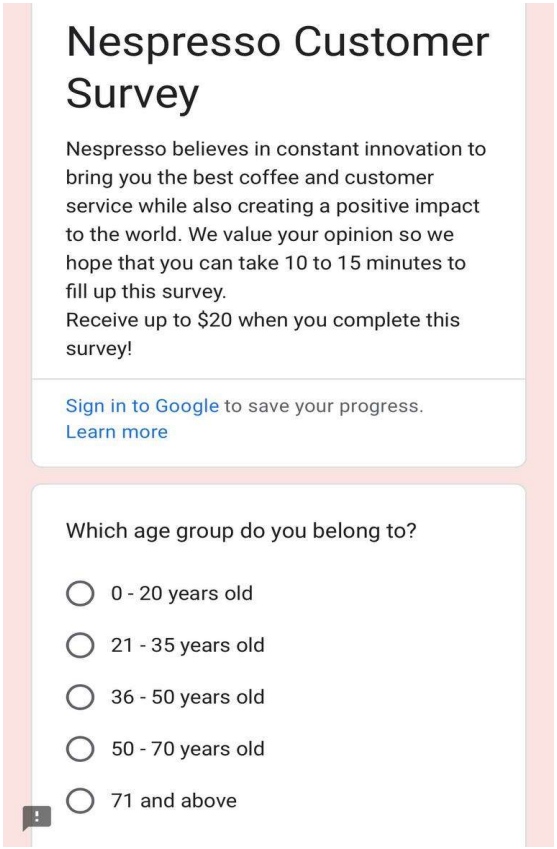

Figure 1: Nespresso Customer Questionnaire

Figure 2: Nespresso Customer Questionnaire (Continued)

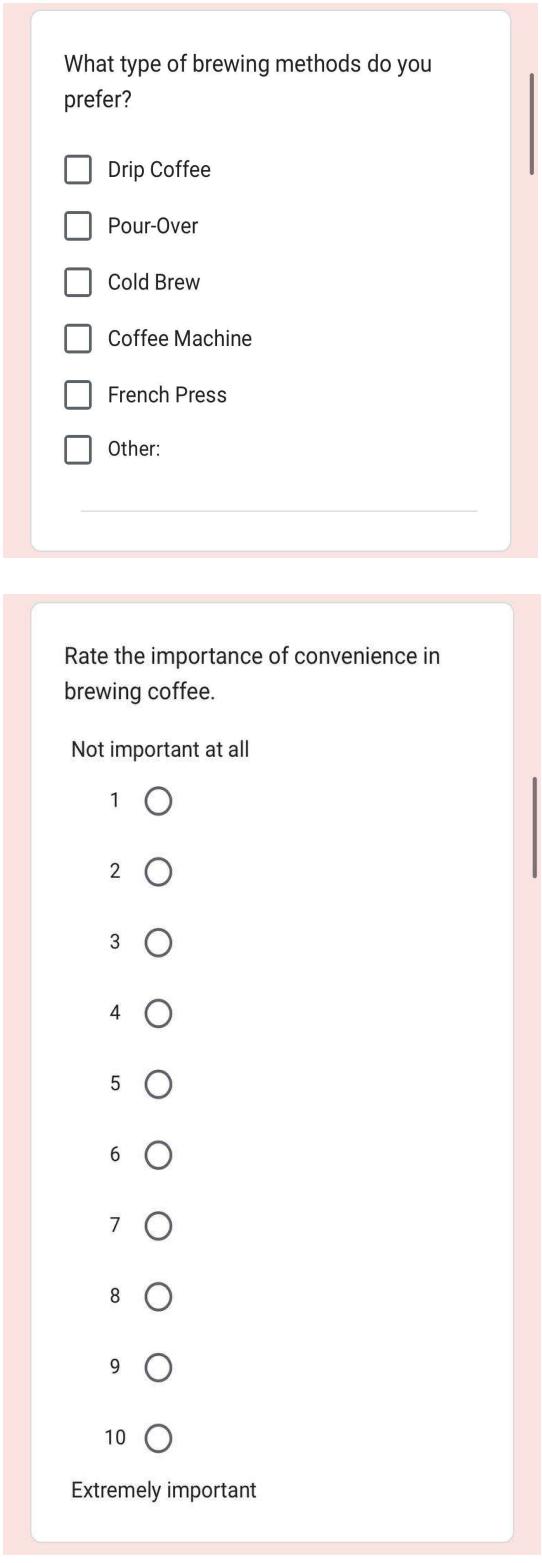

Figure 3: Nespresso Customer Questionnaire (Continued)

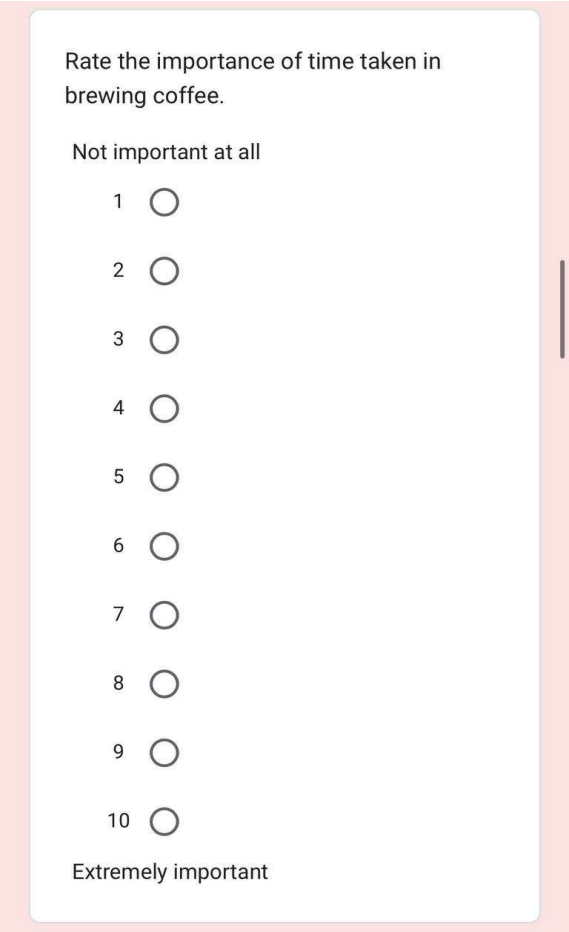

Figure 4: Nespresso Customer Questionnaire (Continued)

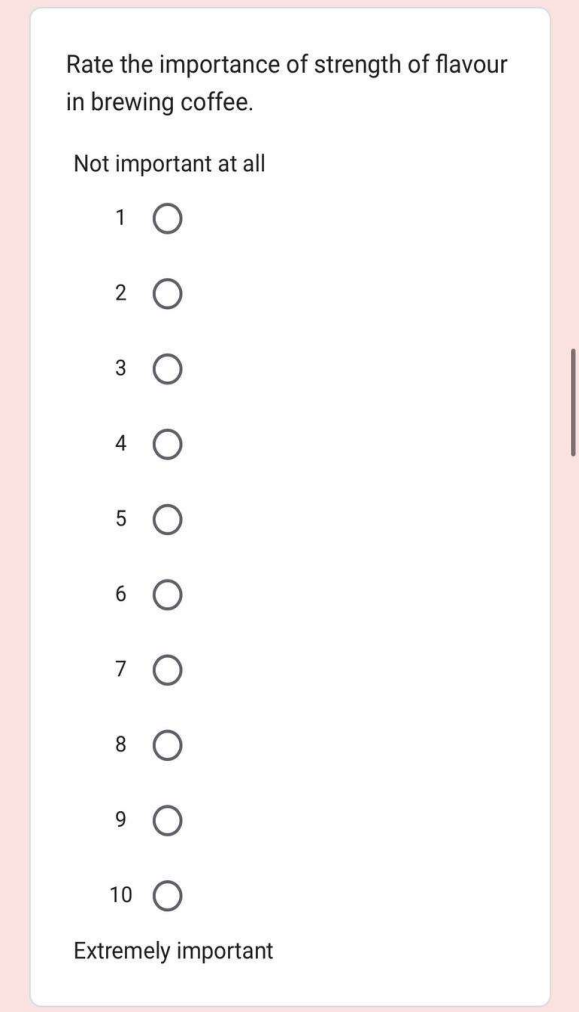

Figure 5: Nespresso Customer Questionnaire (Continued)

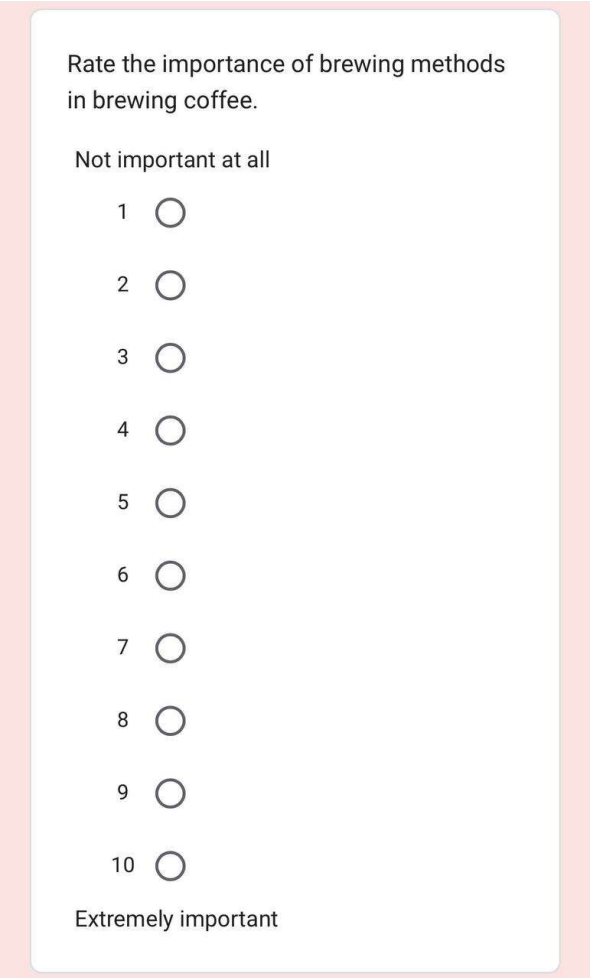

Figure 6: Nespresso Customer Questionnaire (Continued)

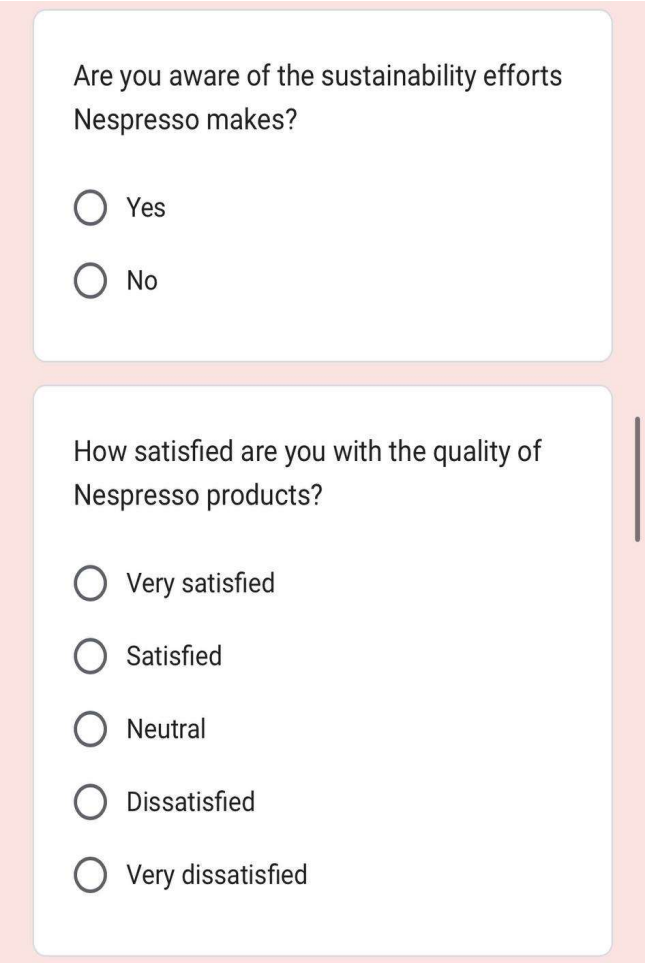

Figure 7: Nespresso Customer Questionnaire (Continued)

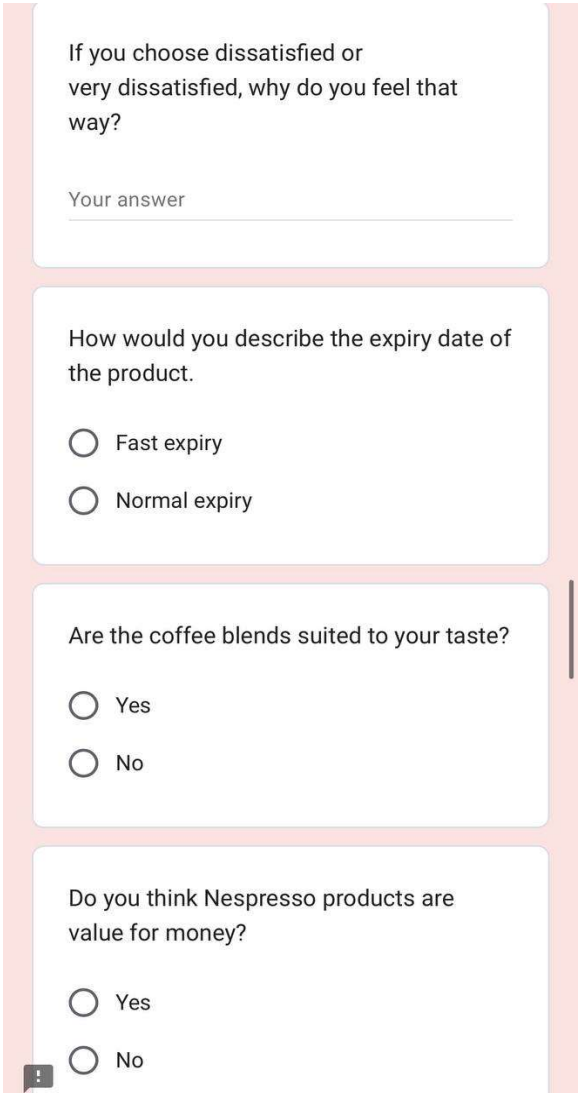

Figure 8: Nespresso Customer Questionnaire (Continued)

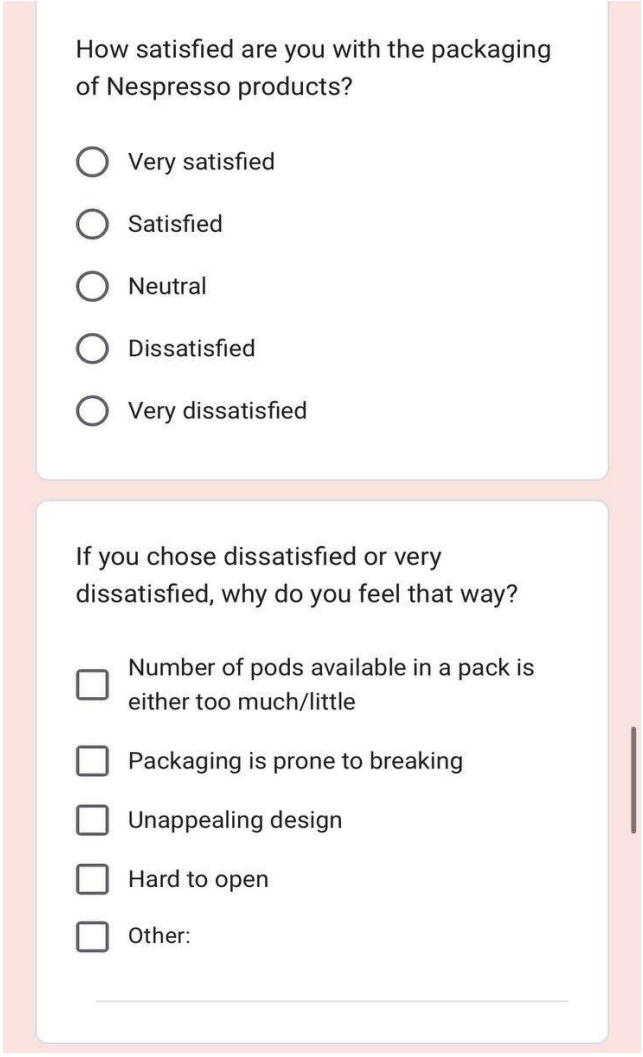

Figure 9: Nespresso Customer Questionnaire (Continued)

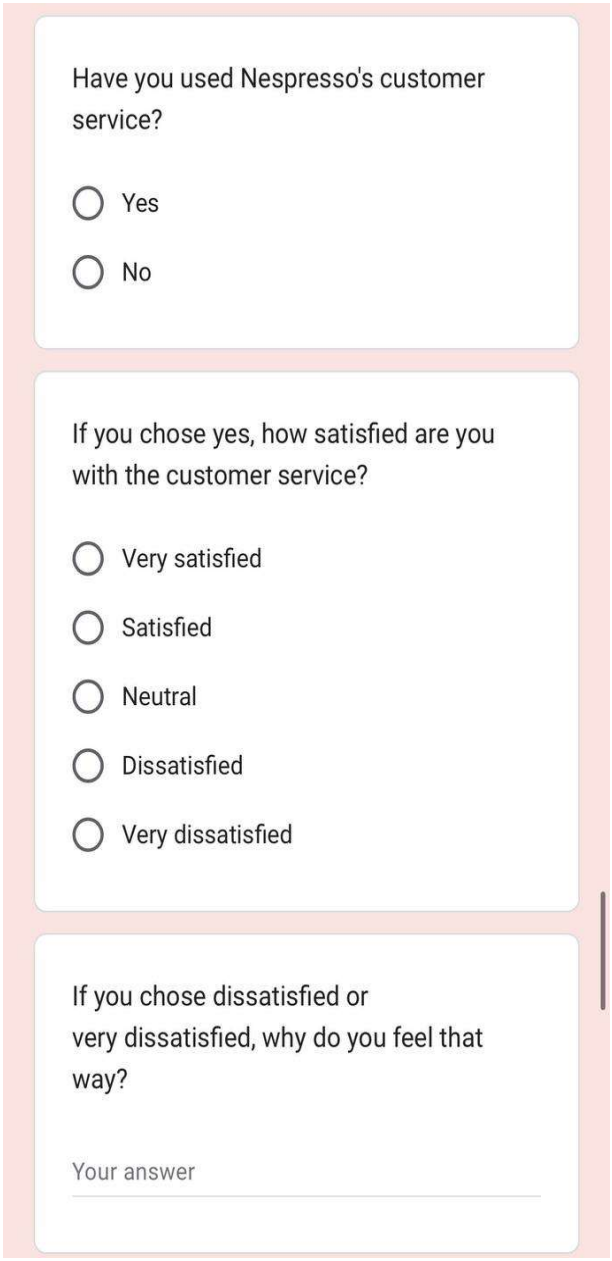

Figure 10: Nespresso Customer Questionnaire (Continued)

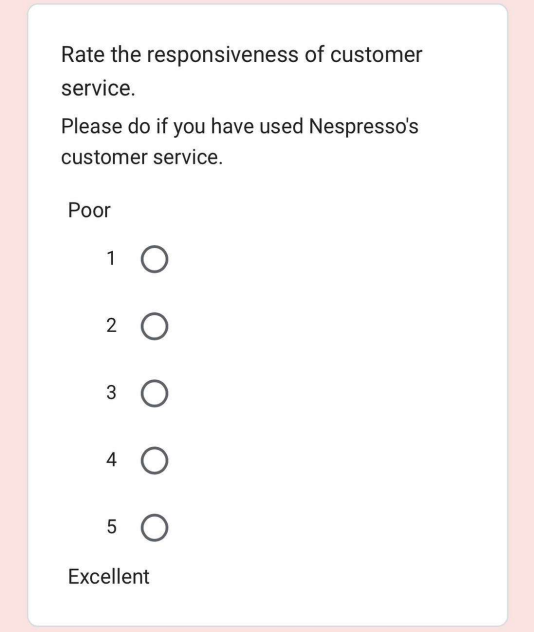

Figure 11: Nespresso Customer Questionnaire (Continued)

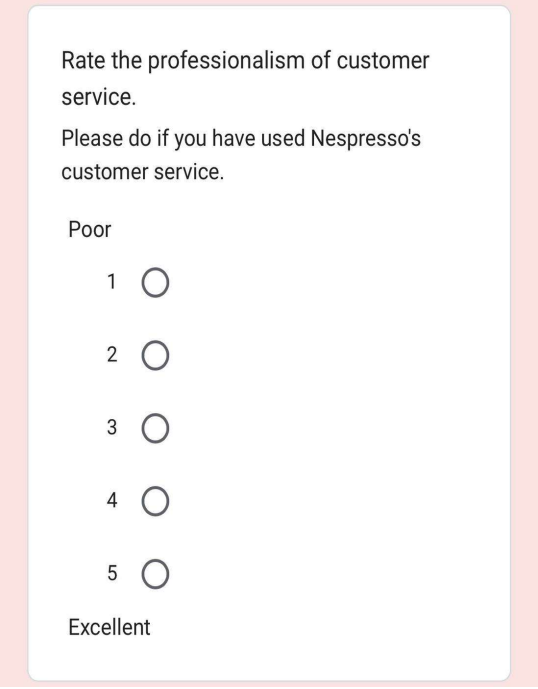

Figure 12: Nespresso Customer Questionnaire (Continued)

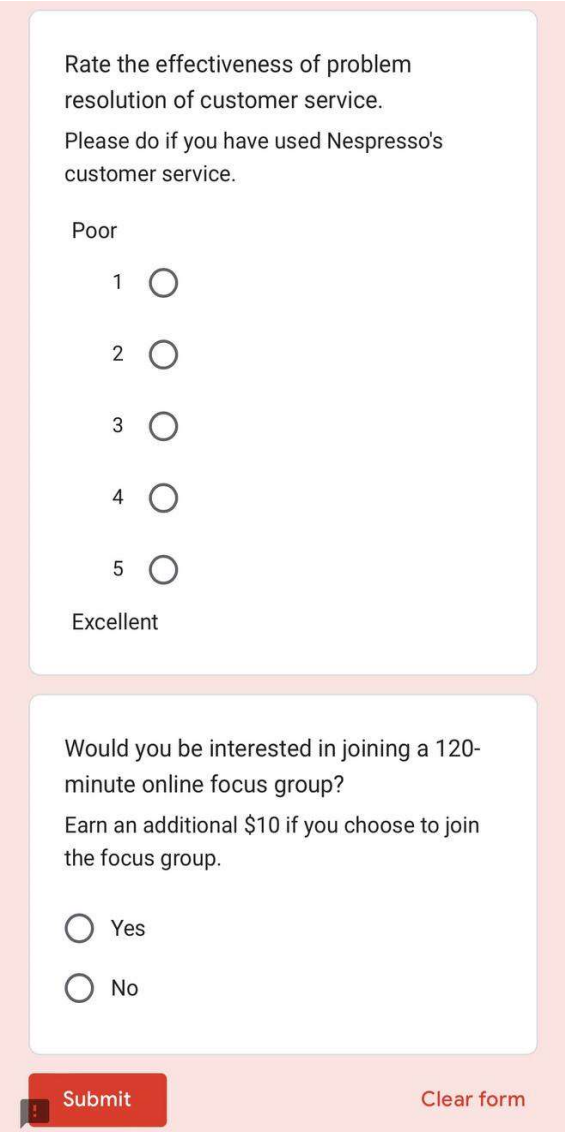

Figure 13: Nespresso Customer Questionnaire (Continued)

For Non-Nespresso Customers

Nespresso can do popups in malls and advertise their products while telling shoppers about the survey. QR codes can be made that will link to the questionnaire to allow shoppers easy access to the form. Advertisements about the questionnaire can also be made onto social media platforms.

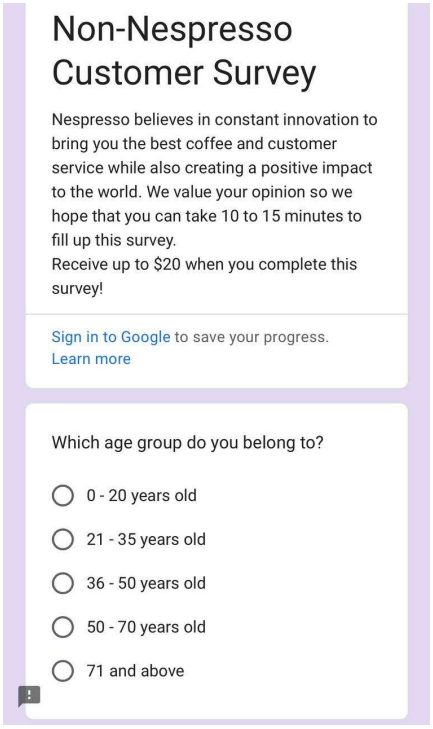

Figure 14: Non-Nespresso Customer Questionnaire

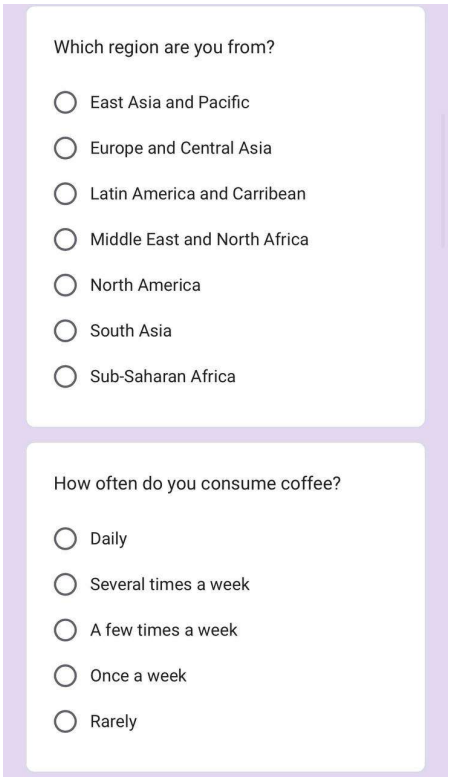

Figure 15: Non-Nespresso Customer Questionnaire (Continued)

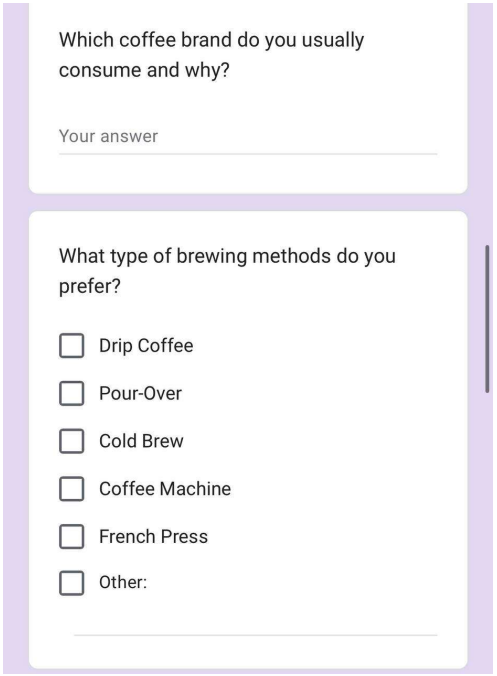

Figure 16: Non-Nespresso Customer Questionnaire (Continued)

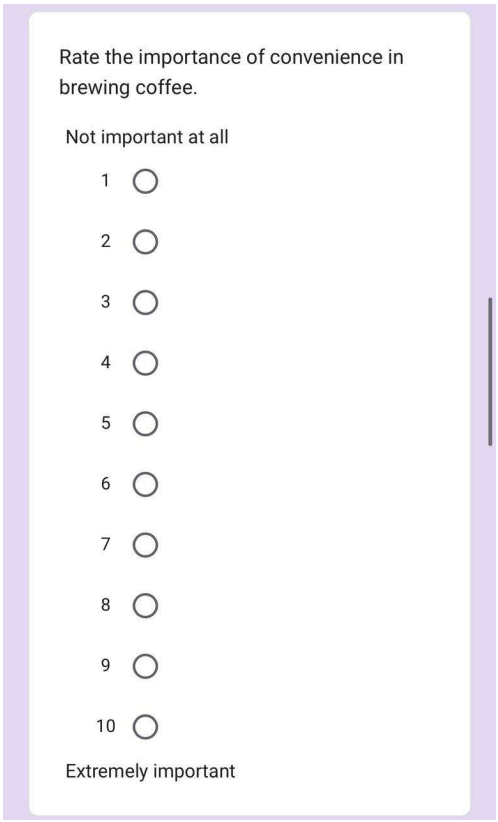

Figure 17: Non-Nespresso Customer Questionnaire (Continued)

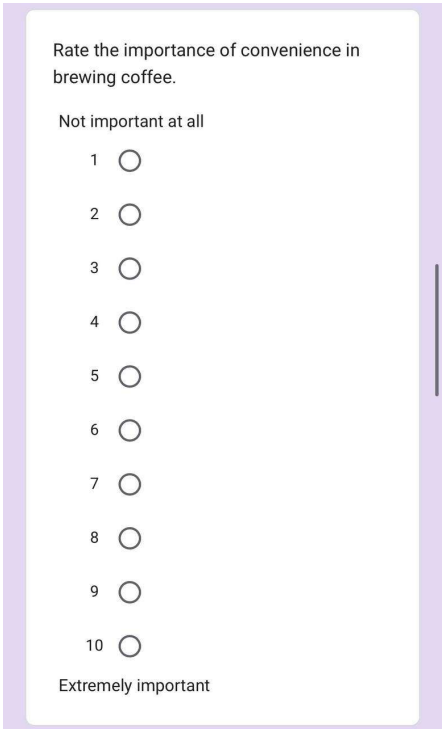

Figure 18: Non-Nespresso Customer Questionnaire (Continued)

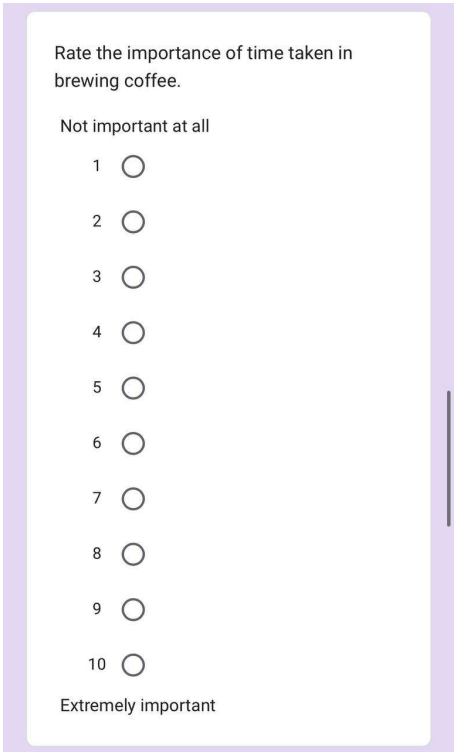

Figure 19: Non-Nespresso Customer Questionnaire (Continued)

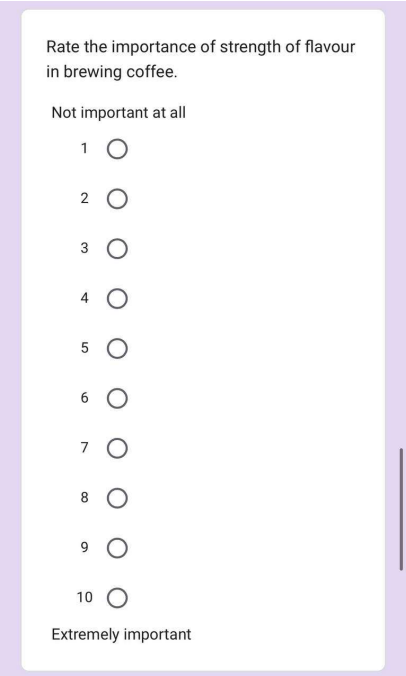

Figure 20: Non-Nespresso Customer Questionnaire (Continued)

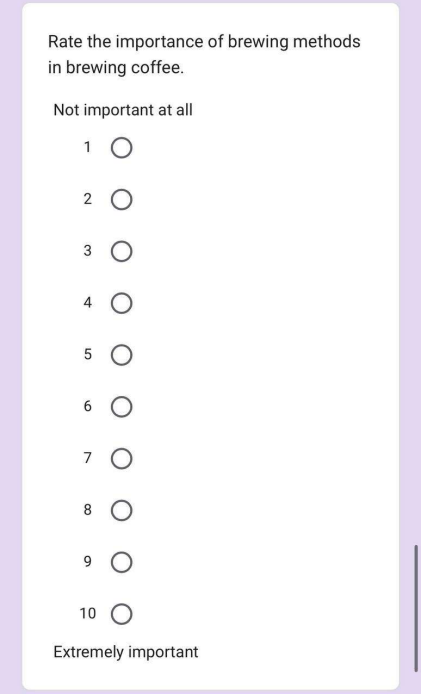

Figure 21: Non-Nespresso Customer Questionnaire (Continued)

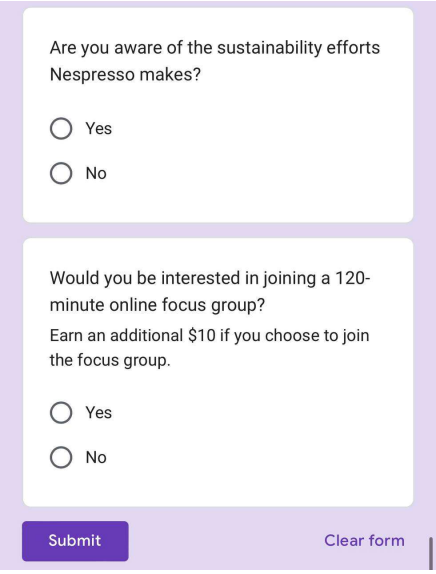

Figure 22: Non-Nespresso Customer Questionnaire (Continued)

Focus Groups

Qualitative focus group study will be conducted. From those who express interest in joining when filling the questionnaires, we will perform quota sampling whereby respondents are divided by region then age group. We will then categorise them into corporate and individual customers, when choosing participants for each focus group, we need to ensure that the proportion of corporate to individual is the same as Nespresso's database.

One focus group should contain one moderator and 10 participants from the same age group and region. The age group is based off the 5 age groups stated in the questionnaire and regions are based on information for the World Bank[4]. Therefore, there will be 35 focus groups.

Focus group discussion will be done online via zoom. Main benefits of focus groups are that we can get deeper insights, see from different perspectives and generate creative ideas. The benefits of online focus group are that respondents from all over the region can partake in the region-specific focus group and as participants do not need to physically see each other, they might have more confidence in voicing out their opinions.

Flow Chart

[4] Cited from world-by-region-map.pdf (worldbank.org).

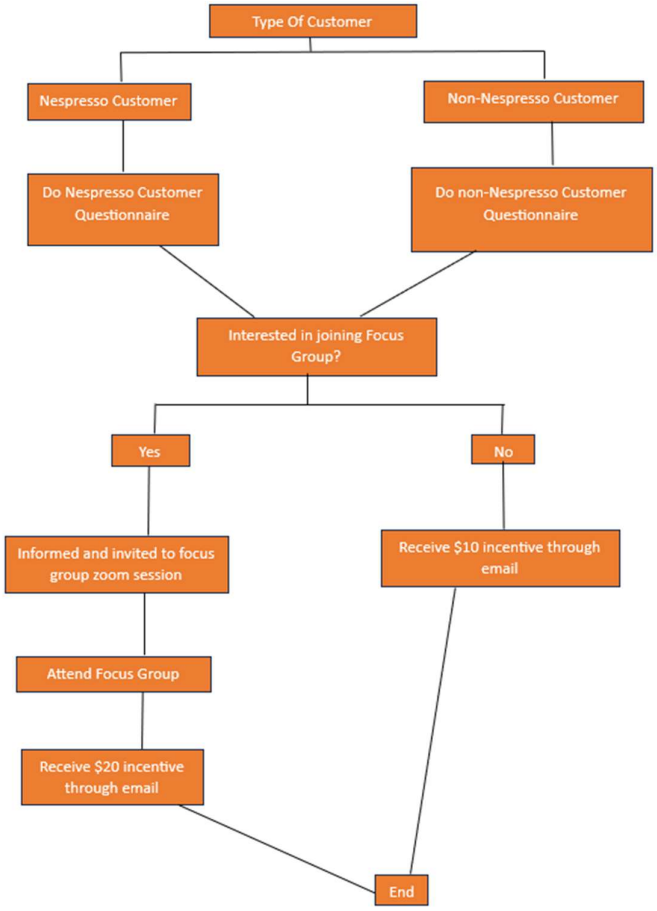

Figure 23: Flow Chart for Questionnaire and Focus Group Process

Data Collected

Primary Data

S/N	Variables	Data
1	Age Group	Categorical Ordinal/Continuous
2	Importance of Different Aspects when Brewing Coffee	Categorical Ordinal
3	Frequency of Coffee Consumption	
4	Satisfaction for Quality/Packaging of Nespresso Products and Customer Service	Continuous (Likert Scale 1 to 5)
5	Region of Residence	Categorical Nominal
6	Coffee Brand Used	Categorical Nominal
7	Preference of Brewing Methods	

Figure 24: Primary Data Collected

Secondary Data

S/N	Variables	Data
1	Environmental impact before and after sustainability initiatives	Continuous
2	Difference in satisfaction for quality/packaging/customer service between current and previous questionnaire	Continuous (Likert Scale 1 to 5)

Figure 25: Secondary Data

Data Analysis

RO1.1.1

We will be conducting focus group study to find out the flavour profiles customers prefer and want. From the focus group, participants can discuss what flavours, roast levels, caffeine percentage, coffee bean origin, brewing methods etc. that they prefer. Participants can also discuss the flavours they want to see in Nespresso in the future, potentially creating their own blend which can be proposed to Nespresso. Moderator should note down all the characteristics of coffee the focus group talked about such as flavours, to report back to Nespresso. Nespresso can then use the information to create new coffee blends suited to customers tastes. For example, if most customers prefer drip-coffee, Nespresso can come up with a blend that mimics the taste of drip-coffee.

Segmenting by region is to consider that different regions typically have specific flavour profiles they like. A Coffee Express article[5] stated that Africa coffees tend to taste bright and fragrant while Central and South America coffees taste mild and smooth. The flavour of coffee grown in the region will impact the citizen's taste. As a global brand, we want Nespresso to have products that cater towards the taste of people around the world. Regions will have region exclusive coffee blends to cater to the customers.

Segment by age groups as different age group will have different preference in coffee, for example, those 71 and above are more likely to prefer coffee that are less sweet as compared to those 20 and below. This will allow us to create new coffee blends that can cater to all ages.

[5] Cited from Taste Characteristics of Coffee Growing Regions - Coffee Express Roasting Company (coffeeexpressco.com)

RO1.2.1

As we want to investigate the importance of convenience, speed, flavour and brewing methods in brewing coffee for customers, I propose that we use multiple linear regression. The multiple linear regression model is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Independent Variable:

X_1: Level of Convenience

X_2: Time Taken to Brew

X_3: Strength of Flavour

X_4: Brewing Methods

Dependent Variable:

Y: Importance of Variable when Brewing Coffee

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$ are regression coefficients.

ε is the error term.

Nespresso then must take minimum 170 Nespresso customer (with corporate and individual proportion being the same as Nespresso database) and 170 non-Nespresso customers to make up a 340-sample size to use for SPSS.

Coefficients

Model		Unstandardised Coefficients		Standardised Coefficients			95.0% Confidence Interval for B	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)							
	X_1							
	X_2							
	X_3							
	X_4							

Figure 26: Coefficients Table

From SPSS, by using unstandardised coefficients, B column, we can find out with every additional 1 unit increase in an independent variable, Y changes by how much, with the other independent variables held constant. The bigger the change, the more important the independent variable is. We assume that these four independent variables are the only factors that affects people choice when brewing coffee.

Knowing the importance of these variables, we will need to create new coffee blends that can cater to customers needs. This will increase their satisfaction with Nespresso and might potentially attract new customers.

RO2.1.1

To find out aspects of the product that gave rise to dissatisfaction, we must do chi-square test of independence to find out the association between variables (fast expiry, not suited to customer taste and not value for money) and dissatisfaction for product quality. I will be using fast expiry date as an example.

H_0: There is no association between fast expiry date and dissatisfaction.

H_1: There is an association between fast expiry date and dissatisfaction.

O is for Observed Frequency

Expected Frequency (E) = (Row Total x Column Total)/Grand Total

		Satisfied or Very Satisfied	Dissatisfied or Very Dissatisfied	Total
Fast Expiry	**O**			
	E			
	((O-E) ^ 2)/E			
Normal Expiry	**O**			
	E			
	((O-E) ^2)/E			
Total				

Figure 27: Table for Chi-square Test of Independence

χ^2 = Sum of highlighted cells

Degree of Freedom = (rows - 1) * (columns - 1) = 1

At 5% significance level (α), critical χ^2 value is 3.841.

If calculated χ^2 is higher than 3.841, we will reject the null hypothesis and conclude that there is significant association between fast expiry date and dissatisfaction in product quality.

If calculated χ^2 is lower than 3.841, we will not reject the null hypothesis and conclude that there is insignificant association between fast expiry date and dissatisfaction in product quality.

Apply this technique to the other two variables. With this information, we will know what aspects of product quality that we need to improve on. Additionally, as the questionnaire allowed customers to fill in their own replies, we can use it to find out other prominent variables that give rise to dissatisfaction in product quality and improve from there.

RO2.2.1

Focus group will be done to find out how satisfied customers are with packaging. Participants can discuss on how Nespresso can better package their products such as selling a box of 6 different coffee blends so that customers can explore which they like or have boxes that sells more capsules so that customers do not have to keep going to the grocer to buy. They can complain about difficulties they faced with the packaging such as it being hard to open or suggest ways that Nespresso can make the packaging more attractive.

The focus group discussion can be held together with RO1.1.1.

RO2.3.1

To assess shortcomings in customer service, we will be using one-way ANOVA to assess differences in overall customer satisfaction ratings across different aspects of customer service. This allows us to see the major aspects which contributed to dissatisfaction, we should then focus on improving those major aspects. SPSS will be used to perform one-way ANOVA, assuming that the data is normally distributed between responsiveness, professionalism and problem resolution.

Descriptives

Aspect of Customer Service	Mean Satisfaction	Standard Deviation	Sample Size
Responsiveness			
Professionalism			
Problem Resolution			
Overall Sample			

Figure 28: Descriptives Table

Sample size for each aspect must be same throughout, containing the same proportion of corporate to individual customers in Nespresso's entire database.

ANOVA

	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-statistic	p-value
Between Groups					
Within Groups					
Total					

Figure 29: One-way ANOVA Table

H_0: There is no significant difference in overall customer satisfaction ratings across different aspects of customer service. (All means are equal)

H_1: There is a significant difference in overall customer satisfaction ratings across different aspects of customer service. (Not all means are equal)

We will be using α = 0.05,

Reject H_0 if p > 0.05 and conclude there is significant difference in overall customer satisfaction ratings across different aspects of customer service. We should then mainly focus on improving the aspect that has the lowest mean satisfaction rating.

Do not reject H_0 if p < 0.05 and conclude that there is insufficient evidence to show that there is significant difference in overall customer satisfaction ratings across different aspects of customer service. We should then spread our resources in searching how to improve that three aspects of customer service equally.

RO3.1.1

Nespresso need to provide data on the environmental impact, such as carbon footprint and waste generation, before and after implementing the sustainability initiatives and when further improvement is made to the sustainability initiatives. Further improvement to sustainability initiatives such as changing reusable pods material from aluminium to paper-based home-compostable pods.

Paired t-test will be used to assess the impact. Using the implementation of reusable pods as an example:

H_0: There is no significant difference in the environmental impact before and after implementation of reusable pods.

H_1: There is significant difference in the environmental impact before and after implementation of reusable pods.

Data Preparation

Unit of Analysis	Time Point	Environmental Impact
Unit 1	Before	Carbon Footprint:
		Waste Generation:
		...
	After	Carbon Footprint:
		Waste Generation:
		...
...	...	...

Figure 30: Data Preparation for Paired t-test

Legend:

Unit of Analysis: Units where environmental impact measurements are taken (e.g. offices)

Time Point: Before and after the implementation

Environmental Impact: Measurements for environmental impact of each unit and time point

Calculate the differences of environmental impact measurements before and after for each unit.

Ensure that:

- Differences between measurements are normally distributed. Check for normality using histogram.
- Measurements are independent of each other.

t - statistic $= \frac{\bar{d}}{s_d/\sqrt{n}}$

Where:

- $\bar{d}$ is the mean difference between measurements of each unit.
- s_d is the standard deviation of the differences.

- n is the number of unit of analysis.

Degree of freedom: $df = n - 1$

Using 5% significance level and *df*, we find the critical t-value.

Reject H_0 if calculated t-statistic > critical t-value and conclude that there is significant difference in the environmental impact before and after implementation of reusable pods.

Do not reject H_0 if calculated t-statistic < critical t-value and conclude that there is insufficient evidence that there is significant difference in the environmental impact before and after implementation of reusable pods.

Apply this method to the rest of the sustainability initiatives and further improvements so we can assess how effective the sustainability initiatives are. Informed decisions can be then made on whether to continue investing in the respective sustainability initiative.

RO3.2.1

First, we must research on the possible greener materials we can use to produce the pods (e.g. biodegradable, compostable material). Next, we can either choose to test produce a fixed sample of 1000 pods made of the different materials, which might be more costly due to new machinery costs, or we can perform calculations to estimate the environmental impacts through the steps to manufacture a fixed sample of 1000pods.

One-way ANOVA will be used to assess differences in environmental impact when producing the pods of different materials.

H_0: There is no significant difference in the environmental impact among different materials used for coffee pods.

H_1: There is significant difference in the environmental impact among different materials used for coffee pods.

Data Preparation

Material Type	Environmental Measurements
Aluminium	Carbon Dioxide Produced:
	Energy Consumption:
	Water Usage:
	...
Biodegradable	Carbon Dioxide Produced:
	Energy Consumption:
	Water Usage:
	...
...	...

Figure 31: Data Preparation for One-Way ANOVA

With SPSS, we assess the homogeneity of variances assumption using Levene's test. If the variance values are approximately equal across all type of materials, we proceed.

Material	Variance
Aluminium	
Biodegradable	
...	...

Figure 32: Table for Levene's Test

Perform one-way ANOVA.

ANOVA

	Sum of Squares (SS)	Degrees of Freedom (df)	Mean Square (MS)	F-statistic	p-value
Between Groups					
Within Groups					
Total					

Figure 33: One-Way ANOVA Table

Using α = 0.05,

Reject H_0 if p > 0.05 and conclude there is significant difference in environmental impact between materials. We then use the material that has the lowest environmental impact to produce pods and sell them in stores.

Do not reject H_0 if p < 0.05 and conclude that there is insufficient evidence to show that there is significant difference in environmental impact between materials, continue to use the current material.

If we switch to a new material, we produce a controlled amount for the public to try first so that we can gather feedback to assess if customers are satisfied with the new material. If they are, then we can permanently change the material used to make the pods. If the feedback is negative, we must further consider if it is worth to continue to research to improve the pod with new material or switch back to the old material.

Further Recommendations

I recommend that we apply the technique in RO3.2.1 for the rest of Nespresso's sustainability efforts such as coffee sourcing so Nespresso's sustainability initiatives can be strengthened.

Since we know the coffee brand non-Nespresso customers drink and reason why from the questionnaire, we can research into how Nespresso can improve such that non-Nespresso customers will choose Nespresso.