



**NESPRESSO**

Statistical Methods ST3188

UOL ID: 220460044

Word Count: 2999

## **Executive Summary**

Nespresso distributes its machines and capsules globally, focusing on machines that produce coffee from capsules containing pre-measured coffee grounds, including options for reusable pods.

Today, Nespresso achieves a balance in different aspects such as sustainability in their brand, maintaining product quality and sustaining its consumer relations. With sustained low pricing to maintain demands that provided for the livelihoods of smallholder farmers (Nespresso, n.d.) and ensure decent living and labour conditions in the coffee community.

While Nespresso had monopolised the capsule industry when it first started, there has since been entrances of more competitors. Thus, in the current age of technology where reviews can be viewed online and there are comparisons between brands easily accessible, Nespresso would need to delve into what is helping their customer retention and do necessary R&D's of their products to attract more customers.

This study aims to help Nespresso understand customers' preferences for new coffee blends and new brewing technologies, understand any customer pain point, and evaluate the effectiveness of its sustainability initiatives.

Each of the research aims consisting of its market problem and research problem can be further broken down into research questions and research objectives to allow for a more extensive analysis of the research aims. The proposal will include an outline of the data collected, showcasing how our research design is constructed, sampling method and methodology involved. Following that, we will explore the statistical techniques used to analyse the data and what insights it brings about.

Overall, we aim to provide Nespresso the relevant analysis to achieve its goal in maintaining its position as a leader in the premium coffee industry.

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## **1 Background**

In 2023, Nespresso's capsule market size is valued at USD 13375.0 million (Business Report Research, 2023), ~48% of the global coffee capsule market size US\$ 27.8 Billion (Market Research Report).

Breaking into the market in 1986 with a competitive edge through its Nespresso pods, Nespresso came out with a way to commercialise the barista-like experience at home with their first coffee machines and artisan coffee blends. Competing with café and instant coffees alike, Nespresso has established itself as a well-known coffee brand with big competitors such as Starbucks, Café Royal, and Keurig alongside emerging no-name imitators. With more emerging competitors, we understand the need to set the brand apart from others and attract more customers in today's market.

## **2 Problem Definition**

Mentioned in the client brief, Nespresso's business objective is to maintain its position as a leader in the premium coffee industry. This study aims to address these concerns in the 6-month window given for Nespresso to achieve market competitiveness through focusing on product innovation, customer satisfaction and corporate social responsibility efforts.

### **2.1 Research Aims**

In this proposal, we focus on the main research aims from the client brief through identifying its Marketing Problems (MP) and Research Problems (RP). We aim to understand coffee drinkers' preference for new coffee blend and brewing technology and through that, develop new coffee blend and brewing system. Having a better understanding of the consumer's preferences will allow for a more successful innovation (Smith J. , 2020) as more accurate information is given to research & develop (R&D) the coffee blends and brewing technologies.

Due to factors like increased competition in the industry (Smith A. , 2021), we aim to understand customer pain points as it would allow for an improved customer service experience and thereby, a better customer retention rate. Additionally, it is better for the brand's reputation as customers are more likely to share their positive experience to others via word of mouth (Stattin, 2023). Finally, we aim to understand the perception of coffee drinkers on Nespresso Sustainability initiatives on pods and evaluate the effectiveness of its sustainability initiatives in creating positive perception of sustainability of Nespresso pods. From there, we would identify opportunities missed by Nespresso to further improve their initiatives.

### **3 Research Objective**

We aim to achieve each RP by using some Research Questions (RQ) and propose research objectives (RO) that will address these RQs. This would allow for a better undertaking of each research aim with higher accuracy. Through the Client Brief, we can propose 3 main research objectives:

RO1: Understanding the consumer preference for new coffee blends and brewing technology. (Garcia E. & Nguyen, T., 2023)

RO2: Examine the relationship between better customer experience and increased customer retention rate. (HA, 2021)

RO3: Identifying how sustainability creates a positive brand perception. (Loh & Tan, 2020)

We propose constructing RQs to give us more insights about the relationship between coffee blends and brewing technology and Nespresso's market position. This would allow Nespresso to invest R&D in the direction with more consumer favourability. We hypothesize that these questions will give us data that can be clustered and analysed to develop new coffee blends and brewing systems beneficial to Nespresso.

RQ1.1a: What are some seasonal preferred new blend and technologies?

RQ1.1b: What are the general profiles of these group of coffee drinkers?

To understand the factors affecting the relationship between customer experience and customer retention. We hypothesize that different segments will have differing satisfaction scores (Suchánek, 2016) and there are some factors affects satisfaction of customers more significantly as compared to others. We believe that the results will enable us to pin-point the areas to improve on as we break down the RO with 4 main RQs:

RQ2.1: What is the average score for the overall satisfaction of customers?

RQ2.2: Is there a difference between the overall satisfaction between corporate and individual customers?

RQ2.3a: What are common brand attributes that affects customer satisfaction?

Q2.3b: How significant is the impacts for each factor?

RQ2.4: What are some pain points in these significant factors?

In recent years, Corporate Social Responsibility (CSR), has become more prominent and multifaceted due to the change in social norms and companies has since integrated into businesses. We hypothesize that we can categorise the initiatives into the 3Rs Reduce, Reuse and Recycle, each having a different perception score and that geo-cultural impacts will further emphasize its differences (Berglund, et al.,

2020). We delve into how Nespresso focuses on sustainability of pods for its CSR and how it as created a positive brand perspective with the assistance of the following RQs:

RQ3.1: Based on the perception of coffee drinkers, can the perception of these sustainability initiatives in pods be grouped into major components?

RQ3.2: Is there a difference in perception scores for these categories between customers and non-customers?

RQ3.3: Is there a difference in perception scores for these components across the five geographic zones?

## **4 Research Design**

This market research RO designed to incorporate exploratory research and descriptive (conclusive) research. Exploratory research is undertaken to gain more information on the market characteristics as well as find better define a problem while descriptive research conducted to measure and numerically validate a relationship.

### **4.1 Information Required**

Before diving into RQ1, we should ask pre-research questions RQ1.0 – RQ3.0 to understand the current take by coffee drinkers and set the context for exploratory findings by holding an online focus group (FG) and doing exploratory research.

RQ1.0: What are the new and existing features of coffee and brewing techniques?

RQ2.0: What does product quality, packaging and customer service mean?

RQ3.0: What are the initiatives taken for pods that promote sustainability? Are we able to group these perspectives into 3 groups?

### **4.2 Research Design and Research Methods**

The research design uses a mixed methodology, utilising both quantitative analysis and qualitative analysis. This approach combines the strength of both analysis methods as well as provide for a more holistic and comprehensive supplementation of the RP. Qualitative analysis encapsulates the behaviour, experience and feelings of participants (Malhotra & Nunan, 2017) while quantitative analysis is the interpretation of numbers to analyse patterns and relationships.

By conducting both online focus group discussions and online survey, we gather the necessary primary qualitative and quantitative data. We choose to keep both the focus group and survey online due to its cost efficiency and practicality. The cost saved from this can be redirected into cash incentives to increase participation rate.

Through qualitative analysis of the focus group, we can construct appropriate research hypothesis (RH) and test RHs using quantitative data and the relevant secondary data from Nespresso's database to understand the correlations of measured variables.



### **4.3 Scaling Technique**

Scaling assigns qualitative constructs with a quantitative matrix (Young, 1981). The research design would require the quantifying qualitative data through non-comparative scaling technique such as Likert scale on customer experience and sustainability and Semantic Differential to measure attitude and profile analysis respectively. When doing scaling, we must minimise the potential sources of error in measurements by avoiding poor questionnaire design and changes of sampling items included in scale (Young, 1981). Such errors can be avoided by taking the necessary precautions and doing ample preparation before launching.

### **4.4 Questionnaire**

An effective questionnaire design asks relevant questions that engages participants to answer and minimises no response errors.

We ask profiling questions to determine the usefulness of the response by categorising the respondents into the 3 categories: coffee drinkers, Nespresso customers, not relevant. We designed the questionnaire such that coffee drinkers answer section A and C while Nespresso customers answer all parts of the questionnaire. We can remove data from non-customer's section B if they accidentally answer it.

In section A, we find out more about RQ1.1 through a Semantic Differential Scale of coffee features (including brewing technologies) and RQ1.2 through demographic and geographic information accessible from the client and access panel database. Following that, in section B, we want Nespresso customers to quantify their overall satisfaction rating with Nespresso for RQ2.1. We can use data collected from 7-point Likert scales of customer experience factors determined from FG to answer RQ2.2 to RQ2.4. Lastly in section C, we verify Nespresso's sustainability awareness through Likert scales with questions that can be summated for its sustainability score.

At the end of the questionnaire, the contact email of the team is provided to answer participants inquires and vouchers will be distributed to incentivise completion.

## 5 Data Collection

The data would be collected through online survey broadcasted via email and online focus group discussions for increased efficiency in geographic flexibility and response time.

### 5.1 Sample size determination

While Nespresso would like a sample size of more than 5000 Nespresso customers globally, segmented appropriately, we propose an alternative sample size for the questionnaire that gives an adequate representative of the market and optimise costs. Ultimately, it is up to Nespresso to choose the final sample size. A larger sample size would be more advantageous in representing a more accurate population. However, having too large of a sample size would be costly and result in unnecessary expenditures.

At a 95% confidence level (5% significant level) with a population proportion precision of  $\pm 5\%$ . Taking into consideration, the typical online survey response rate of 25-30% (Muraleedharan & Menon, 2020), the formula below is used to determine the minimum sample size required:

$$n \geq \left( \frac{Z_{\alpha/2} \sqrt{\pi(1-\pi)}}{e} \right)^2$$

The minimum sample size of non-Nespresso customers required before considering response rate is  $n = 323$  rounded to next integer, assuming incentives given to the customer will lower the non-response rate and achieve a higher response rate of 30%.

To adjust for its sample size to market share, 48% of the sample size should come from Nespresso customers  $n, nespresso \approx 156$ . The participants of questionnaire will be selected through simple random sampling and the sample size from Nespresso of 156 should be adjusted for each segment (individuals and corporate) through its respective percentage from its customer database.

The other 52% sample size is from its competitors (omnibus)  $n, competitors \approx 168$ . Thus, the proposed sample size after market adjustment should be  $n = 324$ .

## **5.2 Focus Group Discussions**

Focus group discussions would allow a greater depth of discussion and more detailed responses from respondents. The focus group would be held online in small groups of not more than 10 participants, 1 moderator and 1 scribe with recording on and everyone's camera and microphone switched on to allow for the capturing of emotions of the discussion. It would be beneficial to hire an experienced moderator who is able to set the mood and lead conversations to have a more productive session and keeping the number of groups to less than 5 with under 10 participants per group would allow for a more insightful session as everyone would have an opportunity to be heard and having more than 5 groups might result in repetitive responses.

Thus, FG will use quota sampling to select 50 participants total from the Nespresso database and 3<sup>rd</sup> party omnibus, broken down into 24 participants (48%) to 26 participants (52%) with sample proportions that accurately represent the differing geographic regions.

### 5.3 Data Collected

#### 5.3.1 Primary Data from focus group and questionnaire

Variables	Data
Coffee blend preferences and technologies	Categorical Nominal
Factors affecting customer experience	Categorical Nominal
Sustainable initiatives on pods	Categorical Nominal
Seasonal preference of coffee blends	7-point semantic differential scale
Customer satisfaction rating	1 to 100 continuous rating scale
Customer experience	7-point Likert scale/ Categorical Ordinal
Packaging	7-point Likert scale/ Categorical Ordinal
Customer service	7-point Likert scale/ Categorical Ordinal
Reuse	7-point Likert scale/ Categorical Ordinal
Reduce	7-point Likert scale/ Categorical Ordinal
Recycle	7-point Likert scale/ Categorical Ordinal

#### 5.3.2 Secondary Data from Nespresso and Omnibus database

Variables	Data Type
Gender	Categorical Nominal
Age	Categorical Nominal
Region of Residence	Categorical Nominal
Segment (Individual)	Categorical Nominal
Segment (Corporate)	Categorical Nominal

## **6 Data Analysis**

### **6.1 Qualitative**

#### **6.1.1 Focus Group Discussions**

The 90-minute discussion would be conducted to better understand consumer perspectives and create a summary report on the results. It should be held by a friendly moderator with good interpersonal and observation skills. The questions asked should be open-ended allowing participants to elaborate on their points and probing questions should be used to broach further topics.

Some open-ended questions to ask:

“What are the new and existing features of coffee and brewing techniques?”

“What does product quality, packaging and customer service mean?”

“What are some of the initiatives taken on pods that promote sustainability?”

“What are some attributes that affect your experience as a customer?”

Some probing question:

“What do you think about ...”

“Can you give me an example of ...”

“Could you elaborate on what you mean by ... “

The focus group results will give an insight for RQ1.0, RQ2.0 and RQ3.0. Thereafter, insights for RQ1.0 can be clustered into current Nespresso flavour groups and give idea to R&D of new blends and brewing technologies, giving us direction on the factors affecting customer satisfaction.

## 6.2 Quantitative

All tests are done at a 5% significance level ( $\alpha = 0.05$ ) using SPSS.

### 6.2.1 RO1

#### 6.2.1.1 RQ1.1 Cluster Analysis

Variables	
V <sub>1</sub>	Coffee drinkers who prefer tropical coffee blends during summer
V <sub>2</sub>	Coffee drinkers who prefer orange, brandy, cinnamon and vanilla coffee blends for winter
V <sub>3</sub>	Coffee drinkers who prefer well rounded and roasted coffee blends for all seasons

Table 1: The Variables for Cluster Analysis

Cluster analysis is used to group and classify coffee drinking participants. We assign each participant with its respective geographic location, gender and age to their preferred blend category identified through the focus group.

To perform cluster analysis on categorical data, we use Ward's procedure which generates clusters to minimise the within-cluster variance. The means for all the variables in each cluster are computed to form a cluster centroid. Following, the variation of the cluster is calculated through the sum of each variable's squared Euclidean distance to the cluster centroid. Thereafter, the two clusters with the smallest increase in clusters are combined. From the analysis, we can find out which is the main demographic and age group of each blend and focus on more regional customised R&D for new coffee blends and brewing technology.

### 6.2.2 RO2

#### 6.2.2.1 RQ2.1 Confidence Interval

Confidence interval can be used estimate average satisfaction score. We can average the number from the response from the questionnaire of the question, "From a scale of 1 to 100, rate your overall satisfaction with Nespresso" and let it be sample mean of overall satisfaction rating,  $\bar{x}$ . As a reference, we will use Nespresso's 2022 overall satisfaction rate as  $\bar{x} = 84.3$  (B Corporation, 2022).

The confidence interval estimation of population mean  $\mu$  can be found using the following formula:

$$\mu = \bar{x} \pm Z_{\frac{\alpha}{2}} \sqrt{\frac{p(1-p)}{n}}, \text{ where } p \text{ is the response rate and } n \text{ is the sample size using } \bar{x} = 84.3.$$

The confidence interval of  $\mu$  is [84.2501, 84.3499].

### 6.2.2.2 RQ2.2 Independent t-test

Variables	
$\mu_1$	Population mean of customer satisfaction rating of individual customers
$\mu_2$	Population mean of customer satisfaction rating of corporate customers
$\sigma_1^2$	Sample variance of customer satisfaction rating of individual customers
$\sigma_2^2$	Sample variance of customer satisfaction rating of corporate customers

Table 2: The Variables of Independent t-test

SPSS Output:

Independent Test Samples									
		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
									Lower Upper
Customer satisfaction rating	Equal variance assumed		(A)			(B)			
	Equal variance not assumed					(C)			

Table 3: Independent Samples Test from SPSS

Levene's Test:

$$H_0: \sigma_{12} = \sigma_{22}$$

$$H_1: \sigma_{12} \neq \sigma_{22}$$

If (A) < 0.05,  $H_0$  will be rejected as there is sufficient evident to conclude that the variance between customer satisfaction rating of individuals and corporate customers are significantly different.

Independent t-test:

$$H_0: \mu_1 - \mu_1 = 0$$

$$H_1: \mu_1 - \mu_1 \neq 0$$

$H_0$  will be rejected if (B) or (C) < 0.05 as there is sufficient evidence to conclude that the mean customer satisfaction rating is different between individual and corporate customers.

### 6.2.2.3 RQ2.3 Linear Regression

Variables of customer experienced (extracted from focus group and secondary data)		
Product Quality, $X_1$	Coffee Quality	$X_{11}$
	Pod Quality	$X_{12}$
	Machine Quality	$X_{13}$
Packaging, $X_2$	Pod Packaging	$X_{21}$
	Machine Packaging	$X_{22}$
Customer Service (CS), $X_3$	Technical Assistance	$X_{31}$
	Responsiveness of CS	$X_{32}$
	Usefulness of Website	$X_{33}$
	Ease of Ordering	$X_{34}$
	Delivery Satisfaction	$X_{35}$

Table 4: Variables of Customer Satisfaction

SPSS Outputs:

#### Coefficients

Model		Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	( $A_1$ )				
	Coffee Quality	( $B_1$ )		( $C_1$ )		
	Pod Quality	( $D_1$ )		( $E_1$ )		
	Machine Quality	( $F_1$ )		( $G_1$ )		

Table 5: Coefficients of Product Quality ( $X_1$ ) from SPSS

#### Coefficients

Model		Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	( $A_2$ )				
	Pod Packaging	( $B_2$ )		( $C_2$ )		
	Machine Packaging	( $D_2$ )		( $E_2$ )		

Table 6: Coefficients of Packaging ( $X_2$ ) from SPSS



Coefficients					
Model		Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t Sig.
1	(Constant)	(A <sub>3</sub> )			
	Technical Assistance	(B <sub>3</sub> )		(C <sub>3</sub> )	
	Responsiveness of CS	(D <sub>3</sub> )		(E <sub>3</sub> )	
	Usefulness of Website	(F <sub>3</sub> )		(G <sub>3</sub> )	
	Ease of Ordering	(H <sub>3</sub> )		(I <sub>3</sub> )	
	Delivery Satisfaction	(J <sub>3</sub> )		(K <sub>3</sub> )	

Table 7: Coefficients of Customer Service (X<sub>3</sub>) from SPSS

X<sub>1</sub>, X<sub>2</sub> and X<sub>3</sub> are assumed to be non-multicollinear to simplification and utilise the estimated regression equation:  $Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \dots + \beta_n X_{in}$ , to rank the significance of customer satisfaction (RQ2.3)

Estimated regression equation for Product Quality, X<sub>1</sub>:

$$Product\ Quality = A_1 + B_1 X_{11} + D_1 X_{12} + F_1 X_{13}$$

Estimated regression equation for Packaging, X<sub>2</sub>:

$$Packaging = A_2 + B_2 X_{21} + D_2 X_{22}$$

Estimated regression equation for CS, X<sub>3</sub>:

$$CS = A_3 + B_3 X_{31} + D_3 X_{32} + F_3 X_{33} + H_3 X_{34} + J_3 X_{35}$$

Each estimated regression equation for score factors (X<sub>1</sub>, X<sub>2</sub>, X<sub>3</sub>) is made up of its partial regression scores for its sub-factors (X<sub>i1</sub>, X<sub>i2</sub>, ... X<sub>in</sub>) – the product of coefficient of unstandardized B and coefficient of beta constant. This means that for every 1 point increase in X<sub>ir</sub>, there is an increase of  $\beta_r$  in Y<sub>i</sub>, where  $r \in [1, n]$ . As the customer satisfaction score is the sum of product quality, packaging and customer service score, we can determine the extent of change in satisfaction score due to the change of  $\beta_r$  in Y<sub>i</sub> (Factor of CS score).

### 6.2.3 RO3

#### 6.2.3.1 RQ3.1 Factor Analysis

We will be using Factor Analysis to determine the number of significant components through principal component analysis. We will be using arbitrary numbers that should be replaced with actual numbers from inputting the questionnaire data into SPSS to illustrate how Factor Analysis can be used to group the perceptions of these initiatives.

V <sub>1</sub>	Pods can be recycled
V <sub>2</sub>	Pods are mainly made of recycled aluminium
V <sub>3</sub>	Collection of used pods is convenient
V <sub>4</sub>	There are rewards for recycling used pods
V <sub>5</sub>	Aluminium from used pods can be reused
V <sub>6</sub>	Coffee technology is used to reduce wastage
V <sub>7</sub>	Coffee machines are made of recycled plastic

Table 8: Variables for Factor Analysis

SPSS Outputs:

#### Total Variance Explained

Variables	Initial Eigenvalues			Extractn Sum Square Loading			Rotatn Sum Square Loading		
	Total	% of Var	Cumulative %	Total	% of Var	Cumulative %	Total	% of Var	Cumulative %
1									
2									
3									
4									
5									
6									
7									

Table 9: Total Variance Explained from SPSS

**Communalities**

	Initial	Extraction
Pods can be recycled	1.000	0.890
Pods are mainly made of recycled aluminium	1.000	0.877
Collection of used pods is convenient	1.000	0.812
There are rewards for recycling used pods	1.000	0.836
Aluminium from used pods can be reused	1.000	0.864
Coffee technology is used to reduce wastage	1.000	0.805
Coffee machines are made of recycled plastic	1.000	0.880

Table 10: Communalities from SPSS

**Scree Plot**

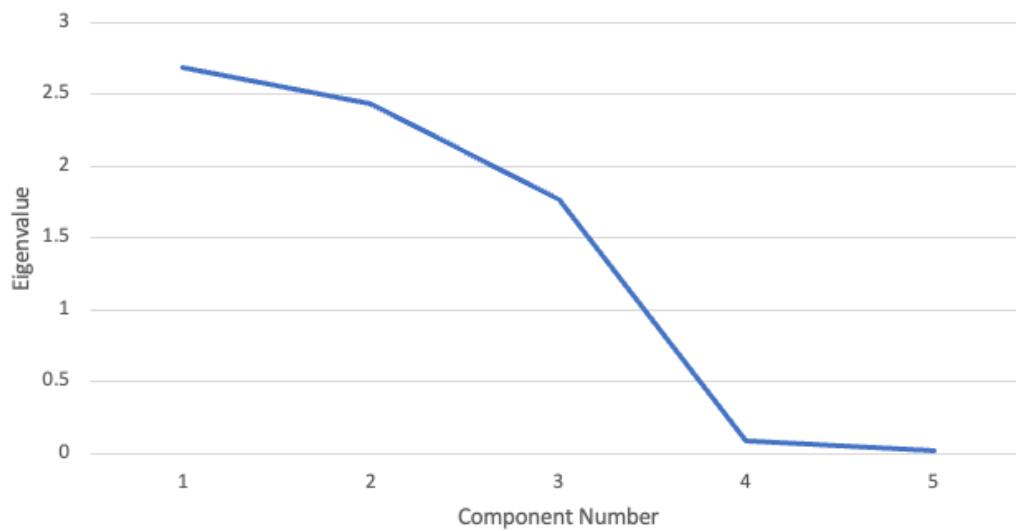


Table 11: Scree Plot from SPSS

**Component Score Coefficient Matrix**

	Component		
	1	2	3
Pods can be recycled	0.765	0.115	0.109
Pods are mainly made of recycled aluminium	0.678	0.217	0.245
Collection of used pods is convenient	0.850	-0.050	0.011
There are rewards for recycling used pods	0.123	0.500	0.119
Aluminium from used pods can be reused	-0.023	0.467	0.007
Coffee technology is used to reduce wastage	-0.321	-0.213	0.765
Coffee machines are made of recycled plastic	-0.045	-0.110	0.823

Table 12: Component Score Coefficient Matrix from SPSS

Communalities table indicates that all variables have high <sup>1</sup> communalities <sup>2</sup>. We assume it is appropriate to conduct factor analysis as preliminary analysis has been done for the correlations and factors with eigenvalues > 1 in “Total Variance Explained” are extracted.

From the scree plot, we observe that the elbow was formed after the 3rd component, indicating that it is appropriate to reduce the 7 variables into 3 factors.

The component Score Coefficient Matrix indicates the strength of relationship of the factor to its component. Using that the arbitrary factor scores can be estimated as follows:

$$F_1 = 0.765V_1 + 0.678V_2 + 0.850V_3 + 0.123V_4 + (-0.023)V_5 + (-0.321)V_6 + (-0.045)V_7$$

$$F_2 = 0.115V_1 + 0.217V_2 + (-0.050)V_3 + 0.500V_4 + 0.467V_5 + (-0.213)V_6 + (-0.110)V_7$$

$$F_3 = 0.109V_1 + 0.245V_2 + 0.011V_3 + 0.119V_4 + 0.007V_5 + 0.765V_6 + 0.823V_7$$

We refer to Rotation Sum Square Loading in Total Variance Explained to determine correlation between the variables and the factors. It is assumed that  $V_1$ ,  $V_2$  &  $V_3$  will high correlation with Factor 1,  $V_4$  &  $V_5$  having high correlation with Factor 2 and  $V_6$  &  $V_7$  having high correlation with Factor 3. By looking at the description of the variables, we can name Factor 1, 2 & 3 as Recycle, Reuse, Reduce respectively.

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<sup>1</sup> Extraction > 0.8

<sup>2</sup> Amount of variance a variable shares with all other variables.

### 6.2.3.2 RQ3.3 ANOVA

After concluding that our sustainability factors (3Rs) is Recycle, Reuse, Reduce, we group the participants into Middle East and Africa, Latin America, North America, Asia-Pacific and Europe to determine if there is a difference in perception scores each R across the five geographic zones.

The perception data and geographic zone of each participants will be used for ANOVA.

SPSS Output:

	Sum of Square	Mean Square	df	F	Sig
Between Group	(A)	(B)	(C)	(D)	(E)
Within Group	(F)	(G)	(H)		
Total	(I)	(J)			

Table 13: One-way ANOVA from SPSS

Hypothesis for R (R being one of the factors of 3Rs):

$H_0$ : There is no significant difference in perception score for R across the five geographic zones.

$H_1$ : There is a significant difference in perception score for R across the five geographic zones.

If  $p\text{-value} = P(F_{4,323} > (D)) = (E) < 0.05$ ,  $H_0$  is rejected and there is sufficient evidence to conclude that there is a significant difference in perception score for R across the five geographic zones at 5% significance level.

Alternatively, if  $p\text{-value} = P(F > (D)) = (E) > 0.05$ ,  $H_0$  is not rejected and there is insufficient evidence to conclude that there is a significant difference in perception score for R across the five geographic zones at 5% significance level.

To determine whether each R has a significant difference in perception score across zones, we have to conduct the ANOVA 3 times with each R. We expect for  $H_0$  to be rejected as cultural differences affects sustainability habits leading to the difference in perception scores. Thus, to increase effectiveness of initiatives, initiatives should be adapted to its zones.

## **7 Further Recommendation**

While it covers the client's requirements, this study has room for improvement. For example, we can understand more about pain points of CS through data visualisation to observe questionnaire statistics. Additionally, we can conduct independent t-test to determine the difference in perception score to deduce whether customers who are more exposed to the brand has better perception of Nespresso's sustainability initiatives as compared to non-customers. These are some ways to help explore areas where Nespresso can utilise to maintain its industry position.

## 9 Questionnaire



At Nespresso, we value the voices of all audiences. This survey's aim is to better understand your coffee preferences, customer service experience, as well as improve on our sustainability efforts. We hope that you could help this process by taking 15 minutes of your time to fill up this survey. Upon completion of the survey, participants will be given a SGD \$10 Paypal Voucher via email.

Name: \_\_\_\_\_

Email: \_\_\_\_\_

Do you drink coffee?

☐ Yes

☐ No

Are you a Nespresso customer?

☐ Yes

☐ No

### Section A:

We would like to develop a new coffee blend that you would take an interest in and would like to take into account your current coffee preferences in each of the 4 seasons.

#### Winter Preferences:

☐ Not Applicable

Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Floral
Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Spicy
Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fruity
Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Herby
Nutty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Chocolaty
Bitter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sweet
Salty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sour
Smooth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rough
White Roast	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dark Roast
Finely Milled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Roughly Milled

**Spring Preferences:**☐ Not Applicable

Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Floral
Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Spicy
Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fruity
Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Herby
Nutty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Chocolaty
Bitter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sweet
Salty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sour
Smooth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rough
White Roast	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dark Roast
Finely Milled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Roughly Milled

**Summer Preferences:**☐ Not Applicable

Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Floral
Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Spicy
Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fruity
Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Herby
Nutty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Chocolaty
Bitter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sweet
Salty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sour
Smooth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rough
White Roast	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dark Roast
Finely Milled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Roughly Milled

**Autumn Preferences:**☐ Not Applicable

Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Floral
Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Spicy
Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fruity
Original	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Herby
Nutty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Chocolaty
Bitter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sweet
Salty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sour
Smooth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rough
White Roast	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dark Roast
Finely Milled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Roughly Milled



## Section B:

Our objective at Nespresso is to provide a memorable experience for customers. We aim to provide you with excellent service to maintain your satisfaction with us during the time you spend with us at Nespresso.

Therefore, we would appreciate the feedback given to further increase your satisfaction.

From a scale of 1 to 100, rate your overall satisfaction with Nespresso:

\_\_\_\_\_ (1 being not satisfied at all, 100 being extremely satisfied)

### Customer Experience:

The quality of coffee is up to my expectation

I am able to use the pods as it is intended

The machine is of good quality

Strongly

Disagree

☐☐☐☐☐☐☐

Strongly

Agree

Strongly

Disagree

☐☐☐☐☐☐☐

Strongly

Agree

### Packaging:

The machine packaging is sturdy

The pod packaging is easy to use

Strongly

Disagree

☐☐☐☐☐☐☐

Strongly

Agree

### Customer Service:

Technical support is easily accessible

Customer service is responsive

The Nespresso website is useful

It is easy to order from Nespresso

The delivery was done well

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

### Section C:

Here at Nespresso, we believe in the long-term positive impact of sustainability. In this aspect, we would like to focus on sustainability on our Nespresso pods. We would greatly appreciate your honest opinions as it would assist us in moving a step closer to achieving our sustainability goal of achieving carbon neutrality.

	Strongly Disagree						Strongly Agree
Pods can be recycled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pods are mainly made of recycled aluminium	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collection of used pods is convenient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There are rewards for recycling used pods	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aluminium from used pods can be reused	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coffee technology is used to reduce wastage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coffee machines are made of recycled plastic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Thank you for taking the time to participate in this survey.

We look forward to bringing new coffee blends to you and hope to better your experience here at Nespresso. Should you have any enquires, you can contact us at [nespresso@nes.com](mailto:nespresso@nes.com)

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