
# Phinista

## Menu Presentation and Options Optimization

I-An Chien, Prudhvi Lanke, Yuchen Li
Rajashree Ramaprabu, Simiao Ye

# Project Background

## Goal:

Elevate customer experience by refining menu offerings to align with changing preferences, enhancing in-store comfort and increasing customer engagement through various channels, including social media.

## Significance:

Our approach ensures that every aspect of the customer journey is optimized based on insights gathered from interviews and client feedback, to maximize satisfaction and foster lasting connections with Phinista's brand, bolstering overall business performance.

# Project Background

## Survey Design Tailored to Objectives:

We meticulously designed each survey component to capture vital insights that align with Phinista's goals of enhancing customer satisfaction and improving business performance.

Through collaborative efforts with conversations with the manager, interviews with the clients, and the survey workshop, we refined the survey for clarity, comprehensiveness, and engagement.

Our survey aims to provide actionable insights into customer preferences, ordering habits, and satisfaction levels, empowering Phinista to make informed decisions for business success.

# Project Background

## Strategic Impact:

Our project aims to have a transformative impact on Phinista's operations, serving as a crucial step towards achieving their business objectives.

Through the comprehensive survey and strategic data analysis, we wish to provide Phinista with valuable insights that will inform key decisions to improve business performance.

By leveraging the provided insights, Phinista can make data-driven decisions that enhance the customer experience, drive customer loyalty, and ultimately achieve their business goals.

# Project Background

## Data Driven Decision Making:

Utilizing SPSS in analyzing the results from our Qualtrics survey,

we conducted regression analysis to understand which variables affect the individual's likelihood of recommending Phinista the most, followed by factor and cluster analysis to understand what types of customers visit Phinista for targeted marketing behaviors.

Lastly, we conducted one-sample and paired t-test to understand differences among our customers.

# Qualitative Findings


## Identifying Optimization Opportunities

Understanding slow days on weekdays highlighted the need to explore opportunities for optimization, leading to questions about visit frequency and preferred times of visit.

## Customer Experience

Recognizing the importance of menu placement and atmosphere to the customer experience guided questions about ordering methods, experience satisfaction, and preferences for ambiance.

## Menu Enhancements

Insights on menu options and availability informed questions about interest in trying new food and drink options and satisfaction with the current menu offerings.

# Qualitative Findings

## Menu Preferences and Expansion

Discovering recurring preferences for Vietnamese coffee and the potential for menu expansion influenced questions about menu preferences, willingness to try new items, and interest in non-coffee drink options.

## Target Audience Considerations

Noting the café's appeal to students and the importance of social media presence influenced questions about demographic information, social media usage, and collaboration with influencers.

## Quality and Atmosphere

Positive feedback regarding the café's atmosphere and product quality underscored questions about satisfaction with atmosphere, food presentation, and the likelihood of recommending the café to others.

# Survey Feedback Incorporation

## Refinement of Questionnaire Structure

We restructured the questionnaire based on feedback from classmates, prioritizing questions about visit frequency and ordering methods at the forefront to improve clarity and flow.


## Enhanced Clarity and Comprehensive Options

Feedback from the professor prompted us to ensure comprehensive response options and eliminate implicit alternatives in questions. We revised questions to provide clearer options and avoid assumptions, improving the accuracy of responses

## Scale Implementation

Following suggestions to add scales for questions about importance, we incorporated Likert scales to gauge the importance of various aspects, such as new drink and food options.

# Survey Feedback Incorporation

## Confidentiality Assurance

We highlighted confidentiality and anonymity in the survey introduction, addressing the professor's feedback to increase participant trust and encourage truthful responses.

## Question Separation and Wording Adjustments

We divided questions about food and drink preferences into separate inquiries and adjusted the wording of all questions to align with the professor's recommendations, ensuring clarity and precision in data collection.

## Visual Enhancement

In response to the client's suggestion, we added a picture of the updated menu to the survey, enhancing visual clarity and making the survey more engaging for participants.

# Survey Feedback Incorporation

## Incorporation of Client's Suggestions

We implemented further client suggestions, such as creating in-store QR survey print-outs and crafting creative social media survey templates, to diversify data collection methods and increase engagement.

## Modified questions

Manager wanted to rephrase the question "What factor stands out to you the most to make you visit our cafe more than once?" to "What is the important aspect for you that makes you visit our cafe more than once?"

For the question "How interested or uninterested would you be in trying out new food options?" If answered interested/very interested, redirect to a comment box option that lets the customer input the new options they would like to try.


# Subject Pool Description

Customers who visited Phinista at least once.

Focused on making in-store QR code print-outs to get feedback from those who visited recently.

Also distributed the survey through the cafe's Instagram to get responses from customers who are presumably more loyal to or interested in Phinista.

# Ideal Sample (We wish)

- Larger sample size (>100 people)
- All respondents visited more than once
- Completed all questions

The results might yield more statistic significance.

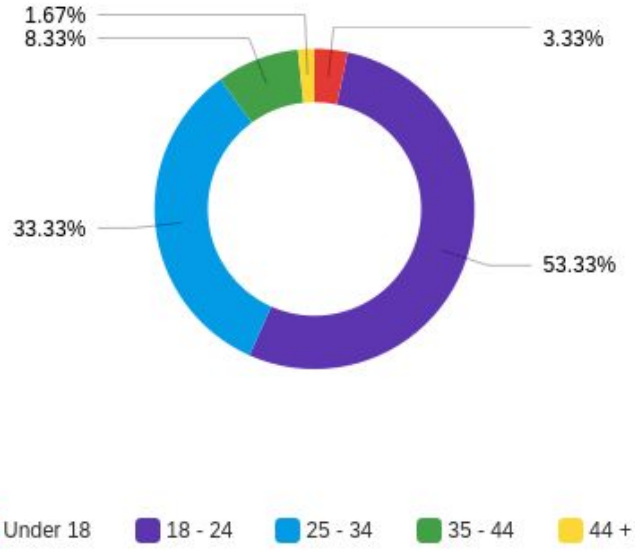
The respondents will be more aware of the change in menu display and food options, thus giving more precise or insightful feedback.

The results will have the same amount of responses for each question, allowing more robust interpretation of the data.

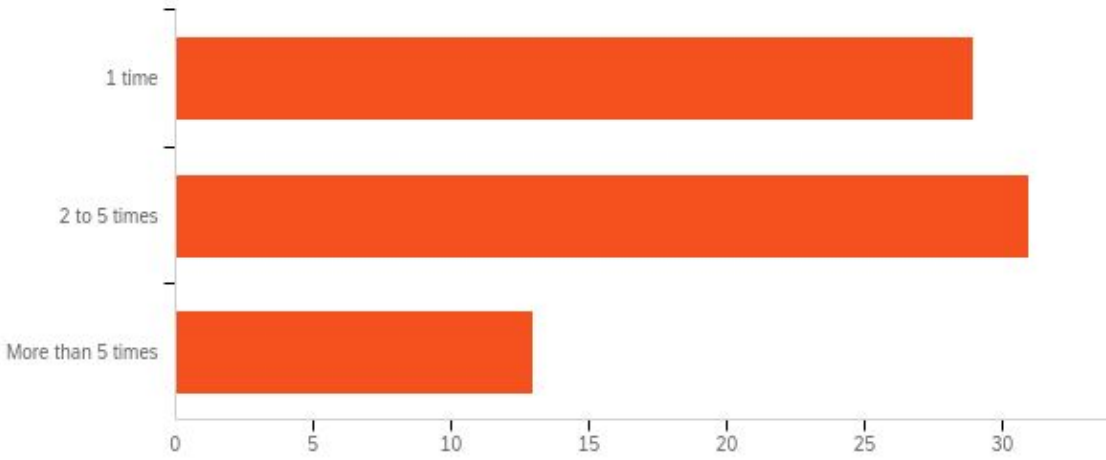
# Data Collection

- Collected 52 valid responses through April 1 to April 23
- Distribution channels: In-store QR print out + Phinista Cafe Instagram story

## Age Group




## Visit Frequency



# Handling Incomplete or Weird Questionnaires

## Incomplete:

Factor analysis: manually drop all variables with no responses

Regression analysis: automatically dropped the null values

## Weird:

No irrational responses

- Added an option that does not apply to true opening hours

Checking the textual answers to see if respondents answered reasonably

# SPSS Analysis - Regression

- Dependent Variable: Ratio
- Independent Variable: Interval & Ratio
- Utilized stepwise regression to see which variables are significant

## Key Results:

Constant

**2.211**

Rating of ordering method coefficient

**0.231**

P-value = 0.041

Interested in trying new food coefficient

**0.274**

P-value = 0.050

# SPSS Analysis - Factor Analysis

Focused on returning customers, who've visited the cafe more than once

**Total Variance Explained**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 3.139 | 19.616 | 19.616 | 3.139 | 19.616 | 19.616 | 2.655 | 16.596 | 16.596 |
| 2 | 2.769 | 17.308 | 36.925 | 2.769 | 17.308 | 36.925 | 2.623 | 16.393 | 32.989 |
| 3 | 2.203 | 13.771 | 50.695 | 2.203 | 13.771 | 50.695 | 2.494 | 15.588 | 48.577 |
| 4 | 1.664 | 10.399 | 61.094 | 1.664 | 10.399 | 61.094 | 1.728 | 10.799 | 59.376 |
| 5 | 1.621 | 10.132 | 71.227 | 1.621 | 10.132 | 71.227 | 1.625 | 10.157 | 69.533 |
| 6 | 1.268 | 7.927 | 79.153 | 1.268 | 7.927 | 79.153 | 1.539 | 9.620 | 79.153 |
| 7 | .803 | 5.022 | 84.175 | | | | | | |
| 8 | .694 | 4.335 | 88.510 | | | | | | |
| 9 | .642 | 4.010 | 92.520 | | | | | | |
| 10 | .490 | 3.063 | 95.583 | | | | | | |
| 11 | .449 | 2.805 | 98.388 | | | | | | |
| 12 | .126 | .787 | 99.175 | | | | | | |
| 13 | .104 | .649 | 99.823 | | | | | | |
| 14 | .028 | .177 | 100.000 | | | | | | |
| 15 | -3.390E-17 | -2.119E-16 | 100.000 | | | | | | |
| 16 | -3.547E-16 | -2.217E-15 | 100.000 | | | | | | |

Extraction Method: Principal Component Analysis.

# SPSS Analysis - Factor Analysis

## Interactive Patrons

Returning customers who like to order at the counter over scanning the QR menu.

## Gourmet Explorers

Customers who’re interested in new food items and care less about current drinks menu.

## Cyber Savers

Price-sensitive customers who like to order through online platforms

## Menu Connoisseurs

Customers who appreciate the current food menu and notice menu changes

## Ease Elders

Patrons valuing convenience, especially older customers.

## Flex Seekers

Customers who’re inclined towards flexible cafe hours

# SPSS Analysis - Cluster

## Cluster 1

Cluster 1 : mean 4.14, N = 7

- Price-sensitive customers who like ordering through online platforms
- Older patrons valuing convenience
- Customers who like the current food menu and notice menu changes

- Provide online discounts or loyalty programs
- Offer seasonal specials without alternating current menu

## Cluster 2

Cluster 2: mean 4.33, N = 15

- Customers who are less price-sensitive
- Customers who do not care about locations

- Introduce higher-end products
- Create unique café atmosphere

# SPSS Analysis - One Sample T-Test

How likely or unlikely would you recommend our cafe to friends or family based on the food options?


Test Value = 3

## Results

**Mean = 3.94** - This suggests that, on average, respondents are somewhat likely to recommend the cafe to friends or family based on the food options.

**Mean Difference = 0.94**

**Significance = <0.001**, indicating strong evidence to reject the null hypothesis. Similarly, the p-value for the two-sided test is also less than 0.001.

**Cohen's d = 0.864**, indicating a large effect size. This suggests that the difference between the observed mean and the test value is substantial.

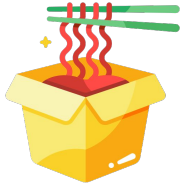
## Summary

Respondents are significantly more likely to recommend the cafe to friends or family based on the food options, compared to a neutral recommendation level.

# SPSS Analysis - Paired T-Test

1 5

Interest in trying



**Non-Coffee Drinks**

**Food**

## Paired Sample Correlation

Correlation coefficient = 0.360

The one-sided p-value is 0.018, and the two-sided p-value is 0.037, indicating that the correlation is statistically significant.

## Paired Sample Test

Mean difference = -0.088

The one-sided p-value is 0.327, and the two-sided p-value is 0.654, indicating that the difference between means is statistically insignificant.

# Limitations

## Sampling Bias

If the survey respondents are not representative of Phinista's customer base, the results may not accurately reflect the preferences and opinions of all customers.

## Self Selection Bias

Respondents who choose to participate in the survey may have different characteristics or experiences compared to those who do not participate, leading to biased results.

## Interaction Effects

Respondents may have taken the survey in groups, influencing opinions of all respondents in a particular group

## Survey Design

Due to not adequate prior knowledge on post survey statistical analysis, we did not have enough options to conduct various tests - like chi-square, Z test etc.

## Scale

Inadequate responses for clustering activity.

# Conclusions & Recommendations

**Likeliness to try food options -> Key variable in affecting customer behavior.**

## Consider

- Introducing a variety of food options
- Sticking to Vietnamese speciality
- Digital exposure for online customers

## To-dos

- Conduct more customer interviews & surveys
- Make the menu changes visible in store and on digital platforms

## For Cluster 1

- Provide online discounts or loyalty programs
- Offer seasonal specials without alternating current menu

## For Cluster 2

- Introduce higher-end products
- Create unique café atmosphere


Thank You!

# Appendix_1 - Regression

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 6.004 | 1 | 6.004 | 10.056 | .003[b] |
| | Residual | 20.301 | 34 | .597 | | |
| | Total | 26.306 | 35 | | | |
| 2 | Regression | 8.270 | 2 | 4.135 | 7.565 | .002[c] |
| | Residual | 18.036 | 33 | .547 | | |
| | Total | 26.306 | 35 | | | |

a. Dependent Variable: likeliness_to_recommend

b. Predictors: (Constant), ordering_method_rating

c. Predictors: (Constant), ordering_method_rating, interest_in_new_food

**Coefficients[a]**

| Model | | Unstandardized Coefficients B | Unstandardized Coefficients Std. Error | Standardized Coefficients Beta | t | Sig. |
|---|---|---|---|---|---|---|
| 1 | (Constant) | 3.003 | .381 | | 7.889 | <.001 |
| | ordering_method_rating | .325 | .102 | .478 | 3.171 | .003 |
| 2 | (Constant) | 2.211 | .533 | | 4.149 | <.001 |
| | ordering_method_rating | .231 | .108 | .340 | 2.131 | .041 |
| | interest_in_new_food | .274 | .135 | .324 | 2.036 | .050 |

a. Dependent Variable: likeliness_to_recommend

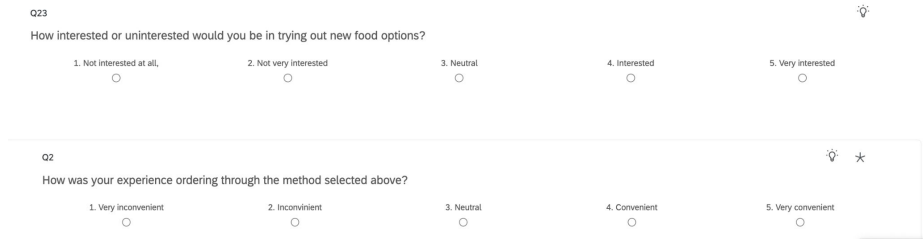
**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .478[a] | .228 | .206 | .773 |
| 2 | .561[b] | .314 | .273 | .739 |

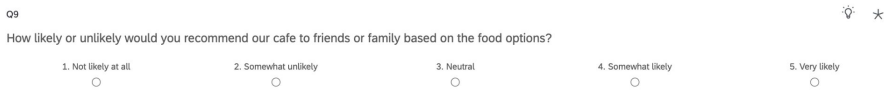
a. Predictors: (Constant), ordering_method_rating

b. Predictors: (Constant), ordering_method_rating, interest_in_new_food

## Independent Variables:




## Dependent Variable:

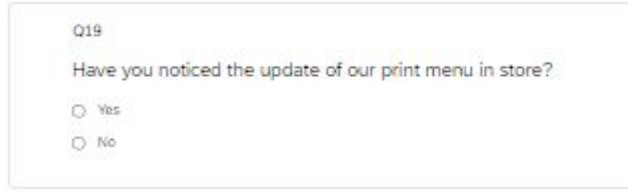


# Appendix_2_1 - Factor Analysis

**Total Variance Explained**

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 3.139 | 19.616 | 19.616 | 3.139 | 19.616 | 19.616 | 2.655 | 16.596 | 16.596 |
| 2 | 2.769 | 17.308 | 36.925 | 2.769 | 17.308 | 36.925 | 2.623 | 16.393 | 32.989 |
| 3 | 2.203 | 13.771 | 50.695 | 2.203 | 13.771 | 50.695 | 2.494 | 15.588 | 48.577 |
| 4 | 1.664 | 10.399 | 61.094 | 1.664 | 10.399 | 61.094 | 1.728 | 10.799 | 59.376 |
| 5 | 1.621 | 10.132 | 71.227 | 1.621 | 10.132 | 71.227 | 1.625 | 10.157 | 69.533 |
| 6 | 1.268 | 7.927 | 79.153 | 1.268 | 7.927 | 79.153 | 1.539 | 9.620 | 79.153 |
| 7 | .803 | 5.022 | 84.175 | | | | | | |
| 8 | .694 | 4.335 | 88.510 | | | | | | |
| 9 | .642 | 4.010 | 92.520 | | | | | | |
| 10 | .490 | 3.063 | 95.583 | | | | | | |
| 11 | .449 | 2.805 | 98.388 | | | | | | |
| 12 | .126 | .787 | 99.175 | | | | | | |
| 13 | .104 | .649 | 99.823 | | | | | | |
| 14 | .028 | .177 | 100.000 | | | | | | |
| 15 | -3.390E-17 | -2.119E-16 | 100.000 | | | | | | |
| 16 | -3.547E-16 | -2.217E-15 | 100.000 | | | | | | |

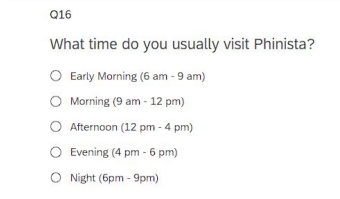
Extraction Method: Principal Component Analysis.



Q19

Have you noticed the update of our print menu in store?

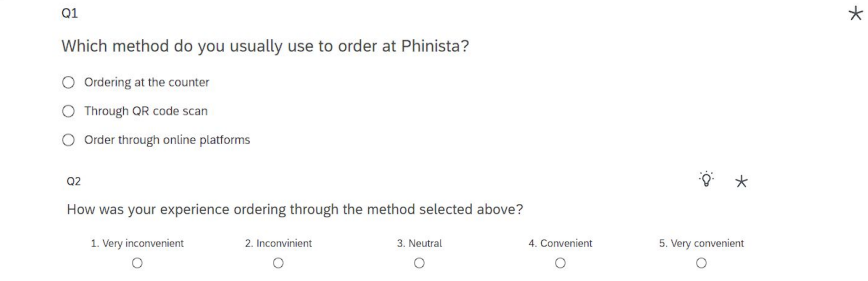
- Yes
- No



Q16

What time do you usually visit Phinista?

- Early Morning (6 am - 9 am)
- Morning (9 am - 12 pm)
- Afternoon (12 pm - 4 pm)
- Evening (4 pm - 6 pm)
- Night (6pm - 9pm)



Q1

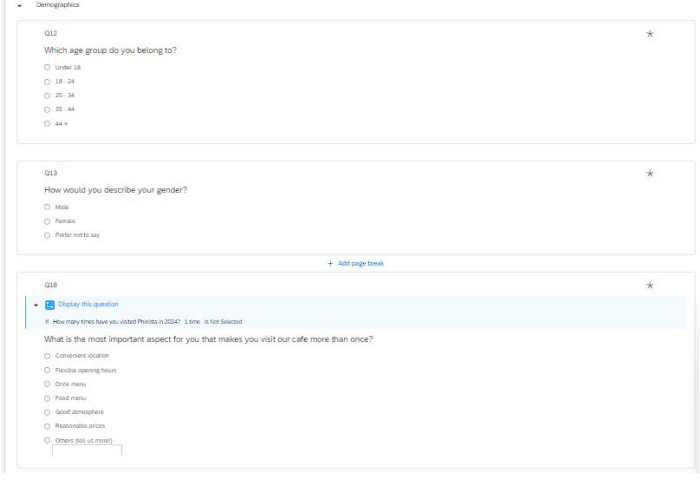
Which method do you usually use to order at Phinista?

- Ordering at the counter
- Through QR code scan
- Order through online platforms

Q2

How was your experience ordering through the method selected above?

| 1. Very inconvenient | 2. Inconvinient | 3. Neutral | 4. Convenient | 5. Very convenient |
|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ |



Demographics

Q12

Which age group do you belong to?

- Under 18
- 18 - 24
- 25 - 34
- 35 - 44
- 44 +

Q13

How would you describe your gender?

- Male
- Female
- Prefer not to say

+ Add page break

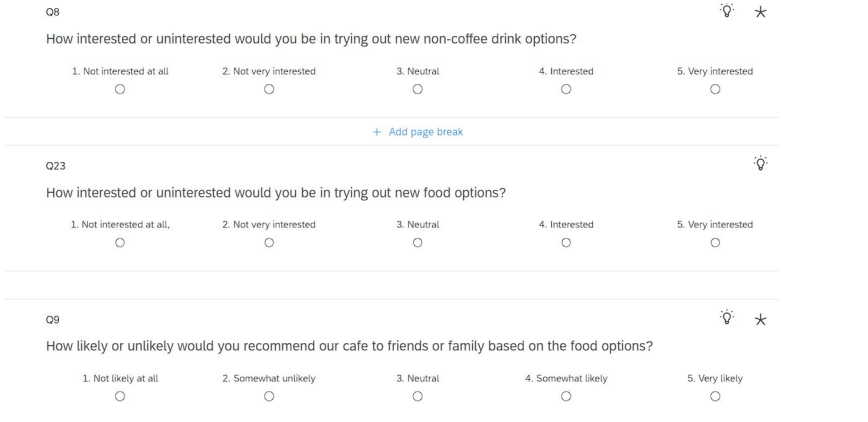
Q18

Display this question

If How many times have you visited Phinista in 2024? 1 time Is Not Selected

What is the most important aspect for you that makes you visit our cafe more than once?

- Convenient location
- Flexible opening hours
- Drink menu
- Food menu
- Good atmosphere
- Reasonable prices
- Others (tell us more!)



Q8

How interested or uninterested would you be in trying out new non-coffee drink options?

| 1. Not interested at all | 2. Not very interested | 3. Neutral | 4. Interested | 5. Very interested |
|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ |

+ Add page break

Q23

How interested or uninterested would you be in trying out new food options?

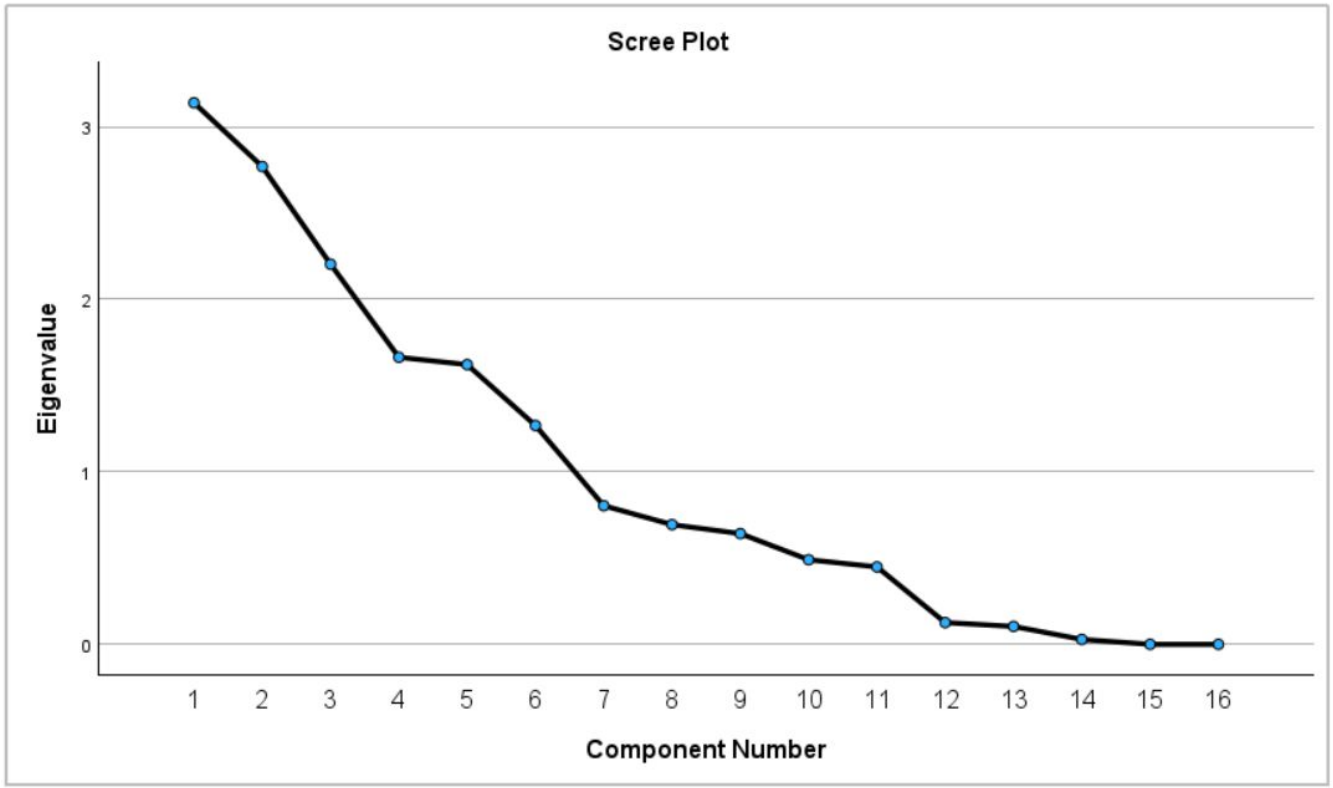
| 1. Not interested at all, | 2. Not very interested | 3. Neutral | 4. Interested | 5. Very interested |
|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ |

Q9

How likely or unlikely would you recommend our cafe to friends or family based on the food options?

| 1. Not likely at all | 2. Somewhat unlikely | 3. Neutral | 4. Somewhat likely | 5. Very likely |
|---|---|---|---|---|
| ○ | ○ | ○ | ○ | ○ |

# Appendix_2_3 - Factor Analysis



# Appendix_2_4 - Factor Analysis

**Rotated Component Matrix[a]**

| | Component | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| ordering_method_rating | .297 | .456 | .280 | -.272 | -.037 | .563 |
| interest_in_new_drinks | .565 | .246 | .120 | -.153 | .374 | .231 |
| interest_in_new_food | -.149 | .825 | -.013 | .207 | .034 | .049 |
| visit_time | .662 | .326 | -.227 | .192 | -.180 | .306 |
| age | -.065 | .110 | -.191 | -.151 | .621 | -.230 |
| gender | -.140 | -.663 | .030 | .110 | -.216 | .102 |
| discover_new_menu | -.066 | .260 | .410 | .664 | .037 | -.135 |
| Orderthroughonlineplatforms | -.060 | -.005 | .979 | .023 | -.085 | .001 |
| Orderingatthecounter | .880 | -.069 | -.351 | .041 | -.041 | -.249 |
| ThroughQRcodescan | -.924 | .078 | -.148 | -.057 | .091 | .270 |
| Convenientlocation | -.021 | .059 | -.024 | .023 | .880 | .039 |
| Drinkmenu | -.101 | -.784 | -.119 | -.258 | -.083 | -.231 |
| Flexibleopeninghours | -.282 | -.046 | -.097 | -.030 | -.099 | .866 |
| Foodmenu | .159 | .041 | -.159 | .875 | -.186 | -.039 |
| Goodatmosphere | .088 | .644 | -.180 | -.486 | -.409 | -.223 |
| Reasonableprices | -.060 | -.005 | .979 | .023 | -.085 | .001 |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

# Appendix_3 - Cluster Analysis

**Final Cluster Centers**

| | Cluster 1 | Cluster 2 |
|---|---|---|
| REGR factor score 1 for analysis 1 | .00705 | -.00329 |
| REGR factor score 2 for analysis 1 | .32041 | -.14952 |
| REGR factor score 3 for analysis 1 | .54162 | -.25276 |
| REGR factor score 4 for analysis 1 | .39637 | -.18497 |
| REGR factor score 5 for analysis 1 | .93472 | -.43620 |
| REGR factor score 6 for analysis 1 | -.16889 | .07881 |

**Number of Cases in each Cluster**

| | | |
|---|---|---|
| Cluster | 1 | 7.000 |
| | 2 | 15.000 |
| Valid | | 22.000 |
| Missing | | .000 |

➔ **Means**

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Included | | Excluded | | Total | |
| | N | Percent | N | Percent | N | Percent |
| likeliness_to_recommend * Cluster Number of Case | 22 | 100.0% | 0 | 0.0% | 22 | 100.0% |

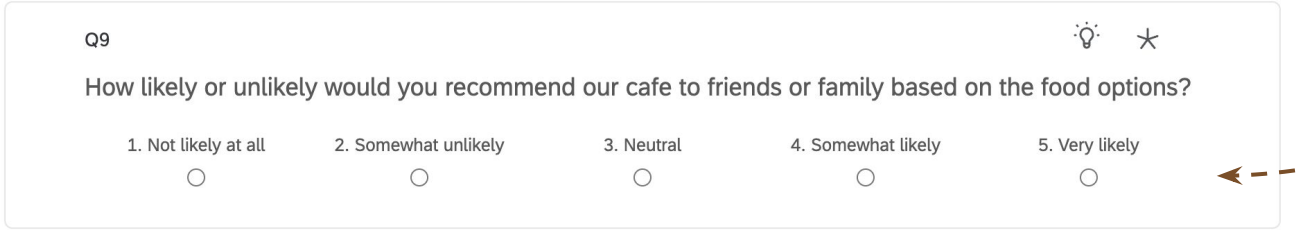
**Report**

likeliness_to_recommend

| Cluster Number of Case | Mean | N | Std. Deviation |
|---|---|---|---|
| 1 | 4.14 | 7 | .690 |
| 2 | 4.33 | 15 | .617 |
| Total | 4.27 | 22 | .631 |

# Appendix_4 - One Sample T-Test

**The Question**




**One-Sample Statistics**

| | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|
| Q9 | 53 | 3.94 | .864 | .119 |

**One-Sample Effect Sizes**

| | | Standardizer[a] | Point Estimate | 95% Confidence Interval Lower | Upper |
|---|---|---|---|---|---|
| Q9 | Cohen's d | .864 | 1.092 | .747 | 1.429 |
| | Hedges' correction | .877 | 1.076 | .737 | 1.409 |

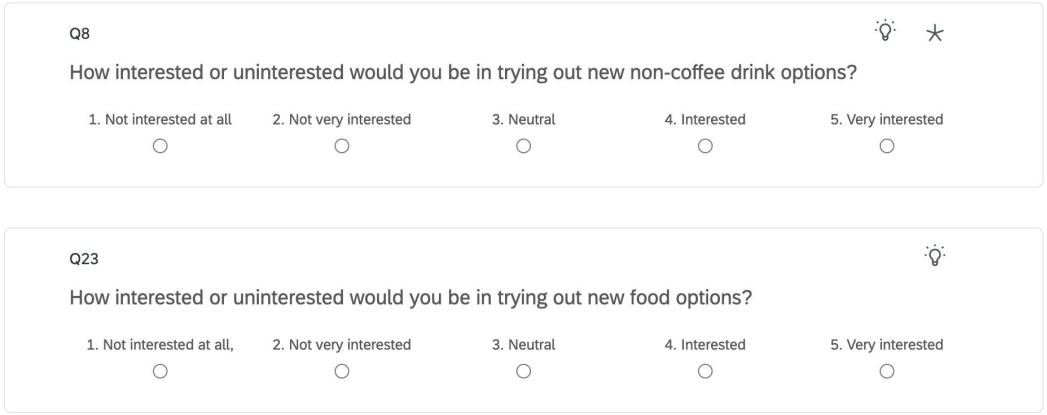
a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation.
Hedges' correction uses the sample standard deviation, plus a correction factor.

**One-Sample Test**

Test Value = 3

| | t | df | Significance One-Sided p | Significance Two-Sided p | Mean Difference | 95% Confidence Interval of the Difference Lower | Upper |
|---|---|---|---|---|---|---|---|
| Q9 | 7.948 | 52 | <.001 | <.001 | .943 | .71 | 1.18 |

# Appendix_5 - Paired T-Test




## The Questions

**Paired Samples Statistics**

| | | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Pair 1 | Q8 | 3.88 | 34 | .946 | .162 |
| | Q23 | 3.97 | 34 | 1.058 | .182 |

**Paired Samples Correlations**

| | | N | Correlation | Significance One-Sided p | Significance Two-Sided p |
|---|---|---|---|---|---|
| Pair 1 | Q8 & Q23 | 34 | .360 | .018 | .037 |

**Paired Samples Test**

| | | Paired Differences | | | | | t | df | Significance One-Sided p | Significance Two-Sided p |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference Lower | 95% Confidence Interval of the Difference Upper | | | | |
| Pair 1 | Q8 – Q23 | -.088 | 1.138 | .195 | -.485 | .309 | -.452 | 33 | .327 | .654 |

**Paired Samples Effect Sizes**

| | | | Standardizer[a] | Point Estimate | 95% Confidence Interval Lower | 95% Confidence Interval Upper |
|---|---|---|---|---|---|---|
| Pair 1 | Q8 – Q23 | Cohen's d | 1.138 | -.078 | -.414 | .260 |
| | | Hedges' correction | 1.165 | -.076 | -.404 | .254 |

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation of the mean difference.
Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

# Appendix_6 - Follow-up questions

Q1 Rate these statements on a scale of 1 (strongly disagree) to 7 (strongly agree)

a. I love vietnamese food
b. I love to drink coffee
c. I am a morning person
d. I am a night owl
e. I always try out new options when dining out
f. I like to stick to familiar options when dining out

Q2 What improvements would you suggest for Phinista's social media presence?

Open-text Response

# Appendix_6 - Follow-up questions

Q3 Would you be interested in participating in loyalty programs or promotions offered by Phinista?

Rate on a scale of 1 (Strongly Disagree) to 7 (Strongly Agree)

Q4 Would you be interested in attending events or workshops hosted by Phinista?

Rate on a scale of 1 (Strongly Disagree) to 7 (Strongly Agree)

Q5 How satisfied are you with the pricing of products at Phinista?

Rate on a scale of 1 (Extremely Dissatisfied) to 7 (Extremely Satisfied)

# Appendix_6 - Follow-up questions

Q6 Are there any specific dietary restrictions or preferences you would like to see catered to at Phinista?

1. Vegan options 2. Gluten-free choices

Q7 What type of food would you prefer at the cafe?
1. Spicy 2. Sweet 3. Sour 4. Other

Q8 What type of beverages would you prefer?
1. Hot 2. Cold

# Appendix_6 - Follow-up questions

Q9 How likely are you to visit Phinista again?

1. Very unlikely 2. Moderately likely 3. Neutral 4. Moderately likely 5. Very likely

Q10 What would be the main reason you'd like to visit Phinista again?

1. Food Drink 2. Atmosphere 3. Time of opening 4. Staff 5. Location

Q11 How would you prefer to be notified regarding any updates in the menu?
1. In-store Printouts 2. Google Updates 3. Social Media