MGT 475

Final Project Report

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EXECUTIVE SUMMARY

Major Findings

- Most sheet mask users are unaware of the existence of ear hooks (64.4% unaware)
- Users who place high importance in the fit of the mask also care about the mask quality
- Users prefer to relax when using sheet masks instead of trying to multitask (75.62%)
- People who have used and liked ear hooks liked them because of the better fit (50%)
- People who have used and disliked ear hooks disliked them because of the serum that got around their ears and, in their hair (37.5%)
- Most users are not willing to pay more for ear hooks (35.59%), at most 50c-$1 (33.90%)
- People who don't value brand name at all are more willing to use ear hooks, however, most people have some value for brand name (87.29% have some value for Brand).

Recommendations

- Core Recommendation: Should not proceed with Ear Hooks innovation
    - Majority of users unwilling to pay more for this feature or very little for the feature
    - R&D considerations to implement feature
        - Must be good quality mask
        - Avoids unwanted serum dispersion
        - Provides better fit-to-face
        - Have high quality serum
    - Would need to run marketing campaign to increase awareness in ear hook innovation (Unknown high cost)
    - Low willingness to pay for feature unlikely to offset high marketing and R&D cost

- Secondary Recommendation: In the event that the management decides to proceed with the innovation -
    - Need to run marketing campaign to increase awareness of ear hooks
    - Must maintain high quality serum (82.22% consider it highly important)
    - Ear hooks should be mainly to improve fit-to-face
    - Control serum around ear hooks to prevent spreading to ears and hair
    - Minimal increase in price ($0 to $1)

INTRODUCTION

Detailed Background

About the Company: Neutrogena is an American brand for skin care, hair care and cosmetics, headquartered in Los Angeles, California. It is part of the US-based Johnson & Johnson conglomerate. In 2018, Neutrogena was leading the acne treatment brand in the United States with a market share of 16.2%. The company has a consumer base of 12.27 million customers within the facial cleansing and medicated products. Since 1930, the brand value has been constructed and known worldwide, having distributed its products in over 70 countries.

Managerial Decision Problem: Neutrogena currently produces facial sheet masks and wants to introduce a new feature of ear hooks in them. The management needs to analyze the credibility of this new feature amongst its target customers by conducting market research. Currently, only a few companies have such sheet masks available. Also, not many popular companies are doing this in the US Market.

Business Environment

Sheet masks are most often associated with Korean skincare but in recent years they have shown up in more and more American drug stores and cosmetic stores. In 2018 it was estimated that the market value of sheet masks worldwide was around 283 million U.S. dollars, a figure that is expected to nearly double by 2026.
(Referenced from https://www.statista.com/topics/4584/us-face-masks-market/)

Swot Analysis: The idea of innovation in sheet masks enables us to perform a SWOT Analysis on the company and product considering the competitors in the same business.

Research Objectives

Given Neutrogena wants to assess the potential and credibility of featuring the new design of sheet masks with ear hooks, it is critical that our research report finds of whether there is a market and need for this

product. Additionally, we would like to propose viable strategies for the management to take action once we are able to determine the customer preferences and market needs. Some questions that we analyze for this purpose are as follows:

1. Are people aware of the presence of facial sheet masks with ear hooks?
2. Is there a current need in the market for such a product?
3. How different are these masks from existing sheet masks?
4. Would the customers be interested in trying it out?
5. If they want it:
    a. How much are they willing to pay for it?
    b. Do they see it being more convenient to apply?
    c. Would it make them more productive in terms of multitasking?
    d. Why do they want it?
    e. Opinion of current and potential consumers on this innovation for sheet masks.
    f. Intention to purchase these masks.

METHODOLOGY

Research Design

The research design of our project is *Exploratory Research*. To solve our marketing research problems, we have undertaken exploratory research techniques to obtain preliminary information pertaining to the feasibility of introduction of ear hooks feature in sheet masks. Exploratory Research has helped us in the following ways-

1. Learn key features of sheet masks which influence purchasing behavior
2. Gain background information of the general perception of customers towards sheet masks and customer needs
3. Development of hypothesis which could be tested under different scenarios to resolve the managerial decision problem

The methods through which we have done exploratory research is through some online literature research on the sheet mask industry, conducting focus group interviews and development of survey questionnaire. These methods are discussed in detail in the following sections.

Data Collection Method

1. **Focus Group**

   We conducted focus group interviews as one of the exploratory research techniques to gain integral insights. We outlined our discussion under the following broad topics: ***general behavior towards existing sheet masks, brands currently being used, design of the sheet masks and finally the pricing.***

   The focus group was not aware that Neutrogena is introducing facial sheet masks with a new feature of ear hooks, but most of them had been users of sheet masks which made their feedback relevant. Some key findings from the focus group are as follows:

   - While the participants were aware of Neutrogena as a famous cosmetic brand, they were not aware that Neutrogena also produced sheet masks.
   - Most of them preferred Korean or Japanese brands
   - Several concerns regarding facial sheet masks were around: quality of the serum, temperature of the mask, misfit of the mask etc.

   While the focus group had not used masks with ear hooks before, they frequently used face masks which helped us gauge their ideas and opinion towards the addition of ear hooks.

   - The quality of the face mask serum was the most important.
   - They were willing to pay higher amounts for higher quality masks/serums (~$20) while around $2-$3 for daily masks.
   - All members said they would like to know about the design of ear masks involving ear hooks to decide. They were apprehensive about using the masks with ear hooks for

varying reasons: 1. Serum on ear hook would get on hair 2. Ear hook would be fragile and possibly break 3. Serum on ear hook would feel gross around the ear.

- With the addition of ear hooks to sheet masks, people were willing to pay somewhere around $0 to $0.50 for this innovation.
- If it was a silicone reusable mask instead, participants were concerned about how hygienic the mask would be.

The focus group interview helped us develop several hypotheses such as -

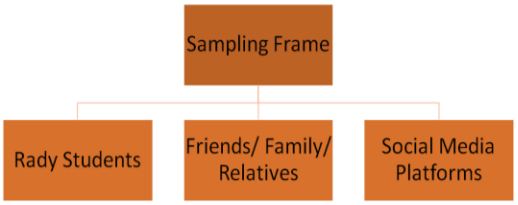
- People don't use face masks with ear hooks because they are not aware, they exist or see no clear benefit.
- People don't use face masks from Neutrogena because the perceived quality of Korean face masks are very high.
- People don't have an inclination towards face masks with ear hooks because they are more concerned about the quality of the face mask serum and design is of lesser significance.
- Most people treat the "sheet mask time" as time for relaxation instead of time for multi-tasking.
- People do not show strong brand loyalty in regards to face masks and have a particular set of options to go to always. At the same time, they are not open to trying out new brands. When it comes to skincare, they generally follow what their family/friends recommended to them, or explore new option

2. Questionnaire Development

After conducting the Focus Group study, we developed a survey questionnaire in alignment with the marketing research problems which we initially set for Neutrogena. The development of the questionnaire was to foster in-depth analysis of the ear hook feature in sheet masks which would aid in deriving valuable business insights. Additionally, the questionnaire was designed in such a way that the primary data derived from it would help in proposal of viable strategies for the management to take action once we are able to determine the customer preferences and market needs.

Sampling Framework

For the purpose of our research on sheet masks and introduction of ear hook features, our sampling frame (which we consider to be representative of the population and its needs) is as follows:



FINDINGS AND RECOMMENDATIONS

First a summary of our respondents. The majority of our respondents were based in the US or India (Refer to Figures 1.1.1 to 1.1.6). This makes sense since the respondents are people in our network and our group has people from India and the US. Out of our surveyed participants we found that most who had used a sheet mask before were Asian females from the age range of 18-34 years. Additionally, most of them are either students or employed. This also makes sense since these demographics are the majority of our network (Refer to Figures 1.2.1 to 1.2.5).

After conducting a focus group, we made several hypotheses we wanted to answer through our survey results. First: People don't use face masks with ear hooks because they are not aware. Second: People are more concerned about the quality of the face mask serum than the design of the face mask. Third: Most people treat the "sheet mask time" as time for relaxation instead of time for multitasking. Fourth: When it comes to skincare, people generally follow family/friends' recommendation.

To answer the first question, we performed a Chi-Squared test on the proportion of people who are aware of sheet masks with ear hooks. We found that more than half the population are unaware of ear hooks as a feature in a sheet mask. Assuming that the proportion of awareness of the ear hook feature is 0.5 (a conservative estimate given this niche feature), the high proportion of unaware survey respondents was statistically significant (p-value of 0.002 with 64.4% unaware of ear hooks feature). There is enough evidence for us to accept the alternate hypothesis that they are unequal. There are more people who are unaware than those who are. (Refer to Figure 2.1 for Analysis)

For the second question, we ran a Two-Way Chi-Squared test on importance placed on quality of serum and fit to face. The resulting p-value of the test was 0.111, which is not less than 0.05, meaning we could not reject the null hypothesis. Therefore, we cannot reject the null hypothesis. We cannot conclude that there is an association between importance in quality of serum and importance of fit to face (Refer to Figure 2.2.1 for Analysis). However, we found a valuable relationship between the importance of the quality of sheet and fit-to-face. When running a Two-Way Chi-Squared test on these variables, the p-value is 0.001. Therefore, we can reject the null hypothesis and accept the alternative. There is evidence to conclude that there is a relationship between importance of quality of sheet and importance of fit to face. (Refer to Figure 2.2.2 for Analysis). After visualizing the relationship between them, a positive correlation could be identified (Refer to Figure 2.2.3). Both of these together indicate a positive association between people who value the quality of the sheet mask and the fit to face of the mask. In other words, the more the person values the quality of the sheet mask, the more they value the fit to face or vice versa.

For the third question, we could not perform a test on the all sheet mask users' data since we allowed multiple options. However, from the visualization in Qualtrics we can see the distribution of responses (Refer to Figure 2.3.1). As shown, the majority of users prefer relaxing options rather than multitasking options (152/201 = 75.62% prefer relaxing)

For the fourth question, we performed a Chi-Squared Test on importance placed on other's recommendations. We assumed an equal distribution of 0.2 probability for each important group. The Chi-Squared test returned a p-value of less than 0.001, which is lower than our significance level of 0.05. Therefore, we reject the null hypothesis that the proportion of recommendation importance of the ear hook feature is equal. There is enough evidence for us to accept the alternate hypothesis that they are unequal (Refer to Figure 2.4.1). However, if we look at the actual numbers of the questions, the most unequal ones

are Moderately Important and Not at all important, which does not tell us a lot about people's consideration of recommendation importance (Visualization on Figure 2.4.2). If anything, it tells us that people don't care too much about others' recommendations when buying masks.

Other findings that are relevant are the information from people who have used ear hooks. While very few people have used it (12.18% of respondents), the majority of them liked using the ear hooks with the most common reason being that it provided a better fit to their face (Refer to Figure 3.1.1). Amongst those who disliked the ear hooks, the most common reason was that the serum got on the back of the back of their ears and in their hair (Refer to Figure 3.1.2). Another aspect we looked at was the correlation of different elements of importance. There were not any highly correlated elements, with the highest being between importance of Quality of Serum vs Quality of Sheet (0.65) (Refer to Figure 3.2.1 for table). We also considered the price they are currently paying per sheet mask vs the amount they're willing to pay additional for the ear hooks feature (Refer to Figure 3.3.1). The results are not too surprising with people who are paying more per sheet willing to pay more for the ear hooks feature. However, there are some interesting insights. 100% of people who pay less than 50 cents per sheet aren't willing to pay extra for ear hooks. The majority of people who pay $5-$10 per sheet aren't willing to pay any extra (40%). The majority of people who are paying >$10 per sheet are willing to pay 50c-$1 extra for the feature (50%). (Refer to Figure 3.3.2). However, it is important to note that the majority of people pay $1-$3 dollars per mask while <50c and >$10 are the least so these percentages are not entirely useful (Refer to Figure 3.3.3). Most people ($1-$3 current expenditure) are willing to pay $0 or 50c-$1 more for the ear hooks feature.

One last thing we analyzed was the effect of different importance on certain questions. First, we looked at, for survey takers who have used ear hooks, if there was a difference between people of different importance levels on whether they liked the ear hooks or not by running an F-test through linear regression. The only important variable that had significant difference between the people of different importance levels was how much they valued the price of the mask. From the regression, the F-test had a p-value of 0.001. The null hypothesis of this F-test is that whether or not the ear hooks user likes ear hooks is the same across price importance. As the p-value is less than the 0.05, we can reject the null hypothesis and accept the alternate hypothesis that at least one of the means is not equal across importance levels (Refer to Figure 3.4.1). However, this may not mean much as there are very few users of ear hooks in the survey (24/197).

Next, we considered if there was a difference between people of different importance levels on whether they would consider using ear hooks. The only important variable that had significant difference between the people of different importance levels was how much they valued the brand name of the mask. We gave survey takers the option of 'Yes', 'No', and 'Maybe'. To be more conservative we converted both 'No' and 'Maybe' to 0s and 'Yes' to 1s. From the regression, the F-test had a p-value of 0.028. The null hypothesis of this F-test is whether or not the user is willing to use ear hooks is the same across brand name importance. As the p-value is less than the 0.05, we can reject the null hypothesis and accept the alternate hypothesis that at least one of the means is not equal across importance levels (Refer to Figure 3.4.2). This means that at least one of the average willingness across importance levels is not equal and there is at least one importance group that considers using ear hooks differently than the others. By visualizing the brand name importance groups and their willingness to use ear hooks the different average becomes clearer (Refer to Figure 3.4.3). It turns out that people who don't value brand name at all are more willing to use ear hooks. However, people who don't value brand name at all is quite small at 12.71% of our survey respondents that use sheet masks (Refer to 3.4.4 and 3.4.5)

From these findings from the survey, we have several insights for management regarding whether they should introduce ear hooks.

- The majority of people do not know about the existence of ear hooks. If management desires to push products with ear hooks, they need to increase awareness and potential benefits.
- People who value the fit of the mask also care about the quality of the mask. If management decides to implement this innovation, they should advertise the benefits of the ear hooks in improving the fit to face.
- The majority of sheet mask users prefer to relax when using sheet masks, which means the ability to multitask is not a big concern for them.
- People who have used ear hooks liked it because of the better fit or disliked it because of the serum getting around their ears and in their hair. Design of a sheet mask with ear hooks need to improve the fit and address the concerns about rogue serum due to the ear hooks.
- Most sheet mask users aren't willing to pay more for ear hooks, at most 50c-$1
- People who don't value brand name at all are more willing to use ear hooks, however, most people have some value for brand name.

Taking into account these insights, we would recommend management not to carry out the ear hook innovation. Even if people are willing to use it, the majority of users are unwilling to pay extra for this feature. Most people prefer to relax when using sheet masks and don't need ear hooks to help them be able to multitask. People who care about fit to face also care about the quality of the mask which means the company would have to invest a considerable amount to create a quality sheet mask with ear hooks that improve fit to face. People who are willing to use ear hooks don't care about brand name at all but the vast majority of users have some value in brand name. All of these factors make adding ear hooks to sheet mask products a poor venture as there is minimal profit at unknown research and development cost for a small market of users willing to use it.

In the event that management still decides that this innovation is worth pursuing, the key issues they need to address are the following. User awareness of sheet masks with ear hooks needs to be increased through marketing. A sizable majority of our surveyed users did not know it existed. Quality of serum, quality of mask, and fit to face have to be considered. Quality of serum was Extremely or Very important to the vast majority of our survey takers. Quality of mask and fit to face are positively associated so both need to be considered when adding ear hooks. Multitasking isn't a concern for most users so the ear hooks should mainly address fit to face improvements. There has to be some consideration for the serum around the ear hooks or lack thereof since that's a large reason why people who used masks with ear hooks disliked it. The sheet masks with ear hook innovations need to be at the same price or 50c-$1 more expensive than existing sheet masks.

FUTURE RESEARCH

1. Perceptual Mapping:

1) Perceptual Map of company position – to understand Neutrogena's position and competitiveness in the industry from customers' perspective of view
2) Perceptual Map of competing products – to understand features of competitors' sheet masks and observe market trend & preferences
3) Perceptual Map of consumers' ideal – to understand customer's ideal combinations of characteristics of sheet masks

2. A/B Testing on Advertisements: advertising sheet masks with K-pop stars to increase product awareness and see whether people's unwillingness to try ear hook feature is caused by the lack of sheet mask awareness or not. To make the A/B test eligible, the test should be through local sales channels in the same or similar condition (sales volume, market size, customer demographic etc.)

3. Market Mix Modeling: using past advertisement data on sheet mask (if any) to come up with the effective promotion channel which will be helpful for strategic pricing and marketing

4. One-to-one Interviews: to get unfiltered and impartial information from each of the participants of focus group, such as body language, confidence levels, and other such factors before drawing conclusions.

5. Survey in a Bigger Population: sample size of previous survey is very small and involves less than 220 people. To run another survey in a bigger population will ensure the randomness of survey distribution and submission, in which case the bias will be minimized.

APPENDIX

Marketing Research Problems to be addressed with Primary Data

Given Neutrogena wants to assess the potential and credibility of featuring the new design of sheet masks with ear hooks, it is critical that our research report finds out whether there is a market and need for this product. Additionally, we would like to propose viable strategies for the management to take action once we are able to determine the customer preferences and market needs. Some questions that we analyze for this purpose are as follows

1. Are people aware of the presence of facial sheet masks with ear hooks?
   Answered. Analysis through hypothesis test. (chi-square)- Result - Mostly not aware
2. Is there a current need in the market for such a product?
   Q12 & Q19. Analysis through F-test for Q19 & Q10 (Only Q10_2 is rejected)
3. How different are these masks from existing sheet masks?
   Q7, Q15, Q17, Q18- Just visualize for this
4. Would the customers be interested in trying it out?
   Q19. Visualize together with above qn2.
5. If they want it:

a. How much are they willing to pay for it? Q22, Q13
b. Do they see it being more convenient to apply? Q19, Q20, Q17, Q18, Q15, Q16
c. Would it make them more productive in terms of multitasking? Q12
d. Why do they want it? Q15, Q16, Q17, Q18, Q10
e. Opinion of current and potential consumers on this innovation for sheet masks.
   Q19, Q20, Q17, Q18, Q15, Q16
f. Intention to purchase these masks. Q19, Q20

Survey Respondents Sampling across the World

Figure 1.1. 1 Respondents mapped on World Map

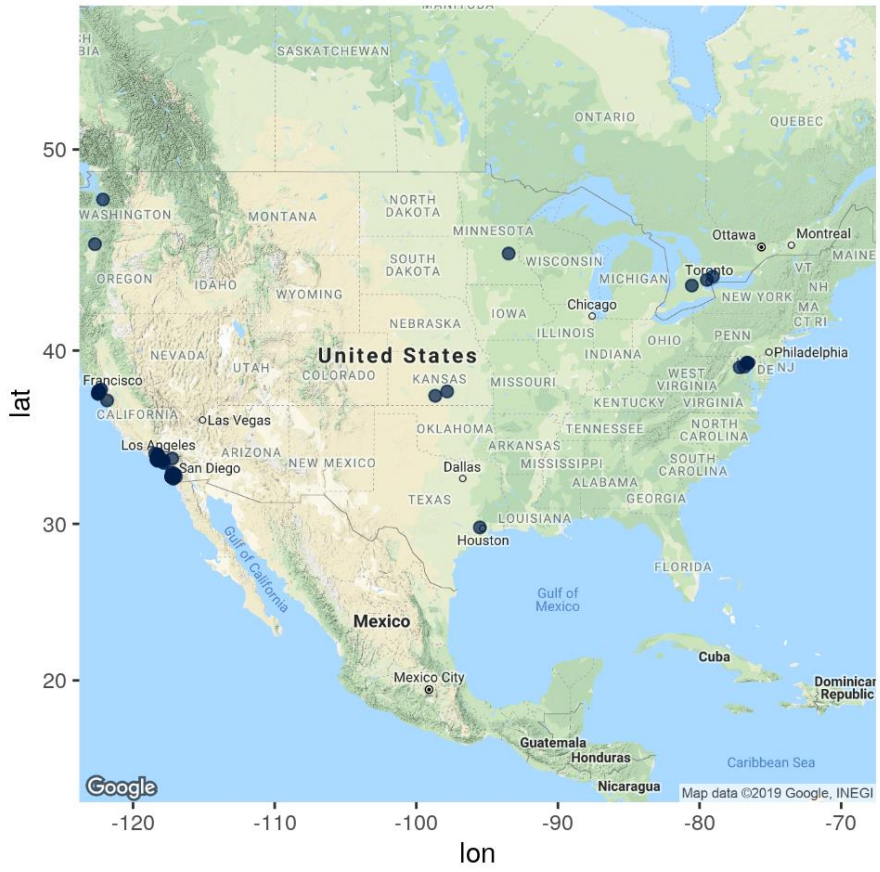


Figure 1.1. 2: US Respondents

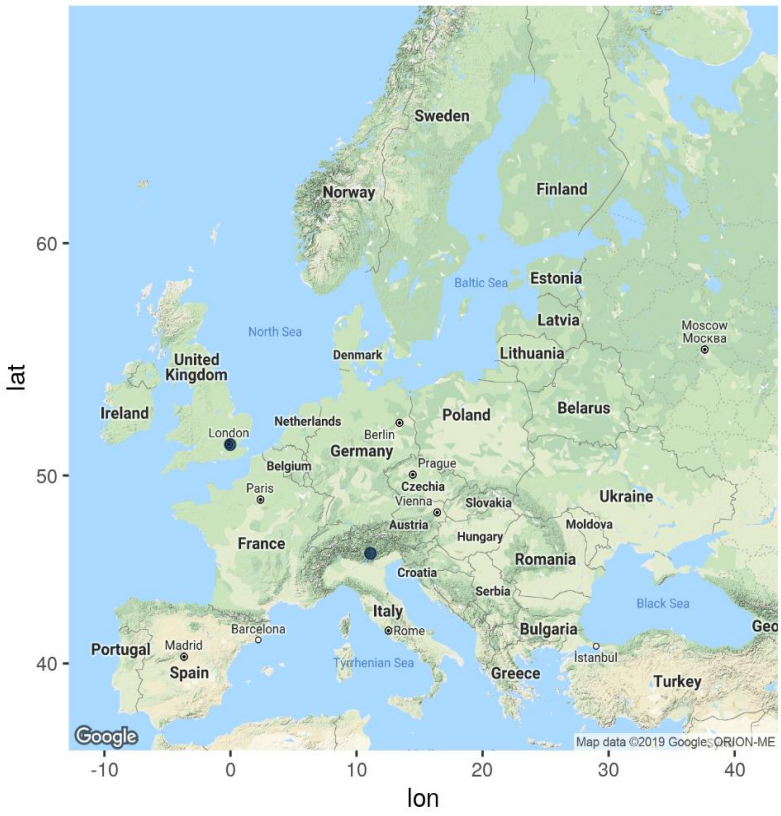


Figure 1.1. 3: Europe Respondents

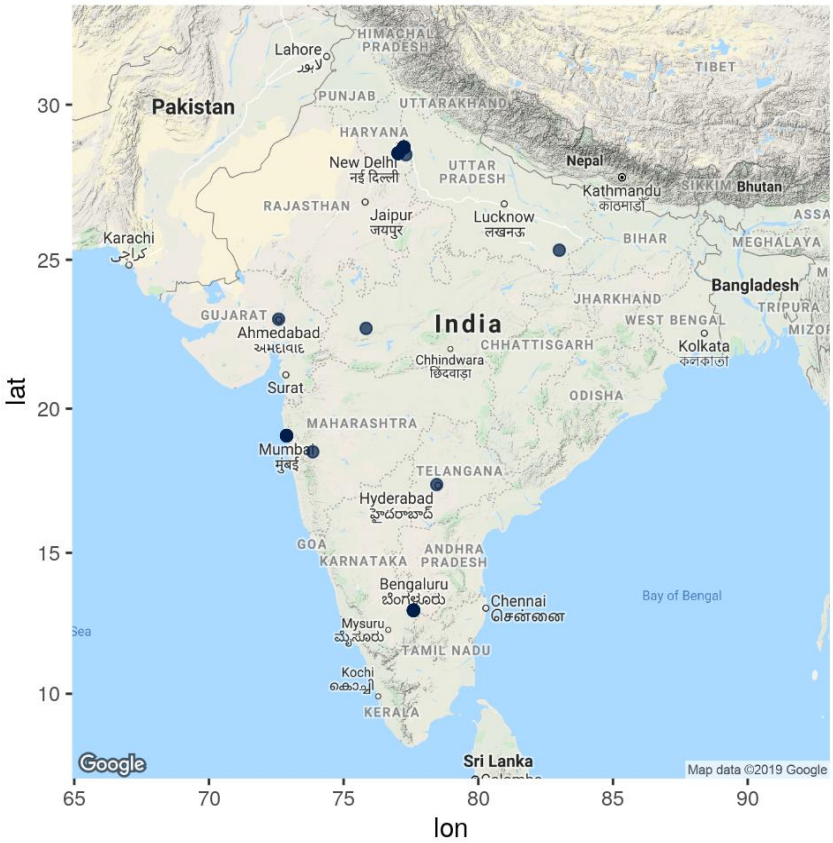


Figure 1.1. 4: India Respondents

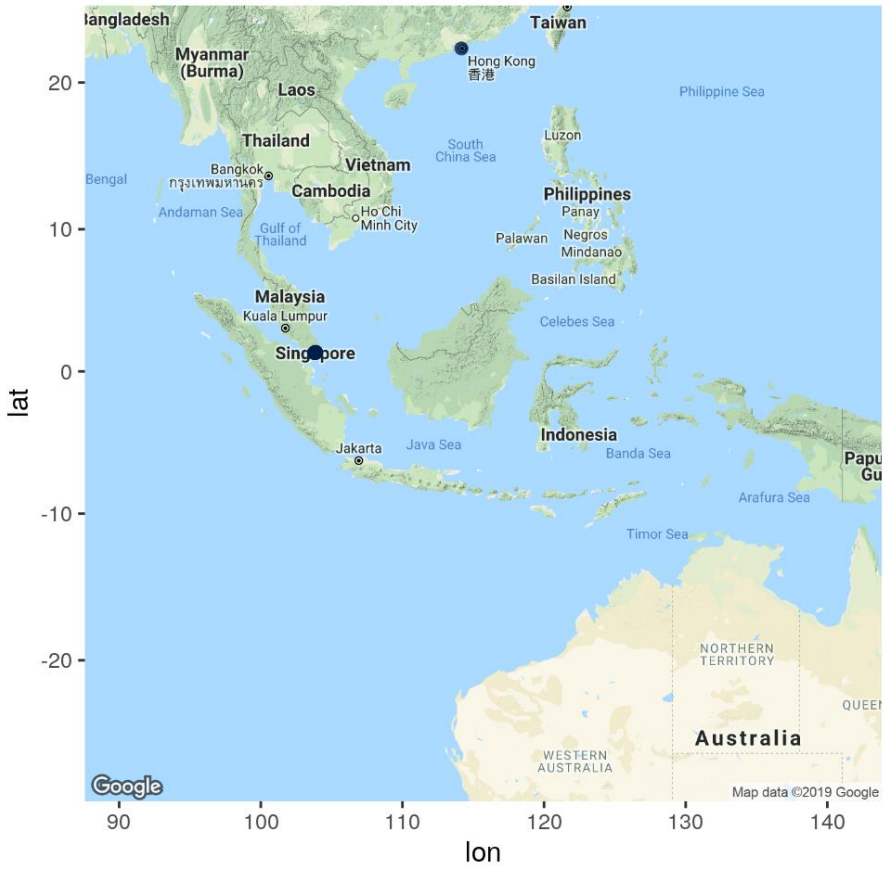


Figure 1.1. 5: South East Asia Respondents

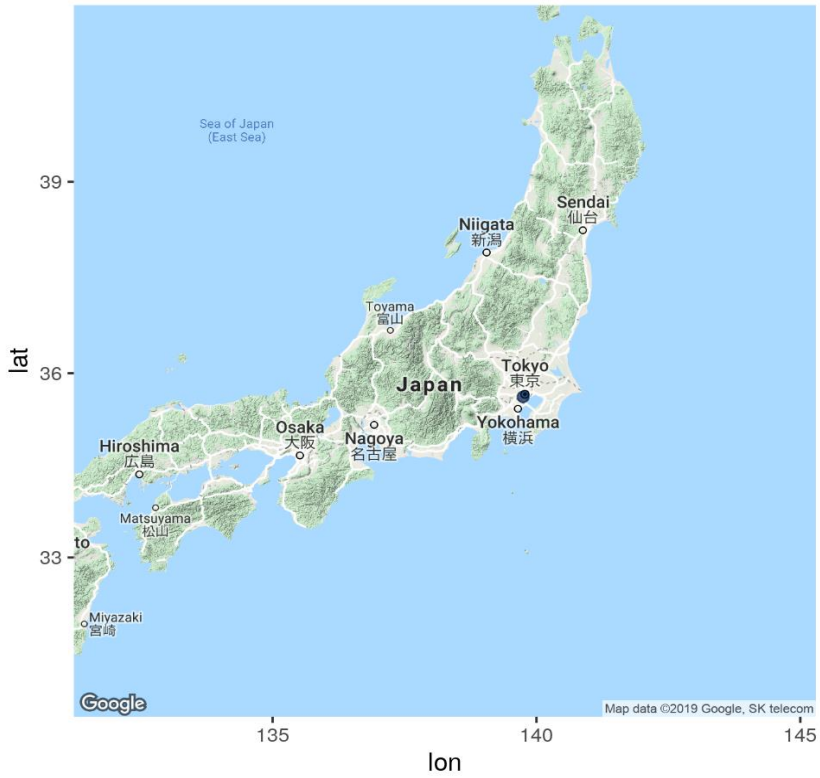


Figure 1.1. 6: Japan Respondents

Demographics visualizations

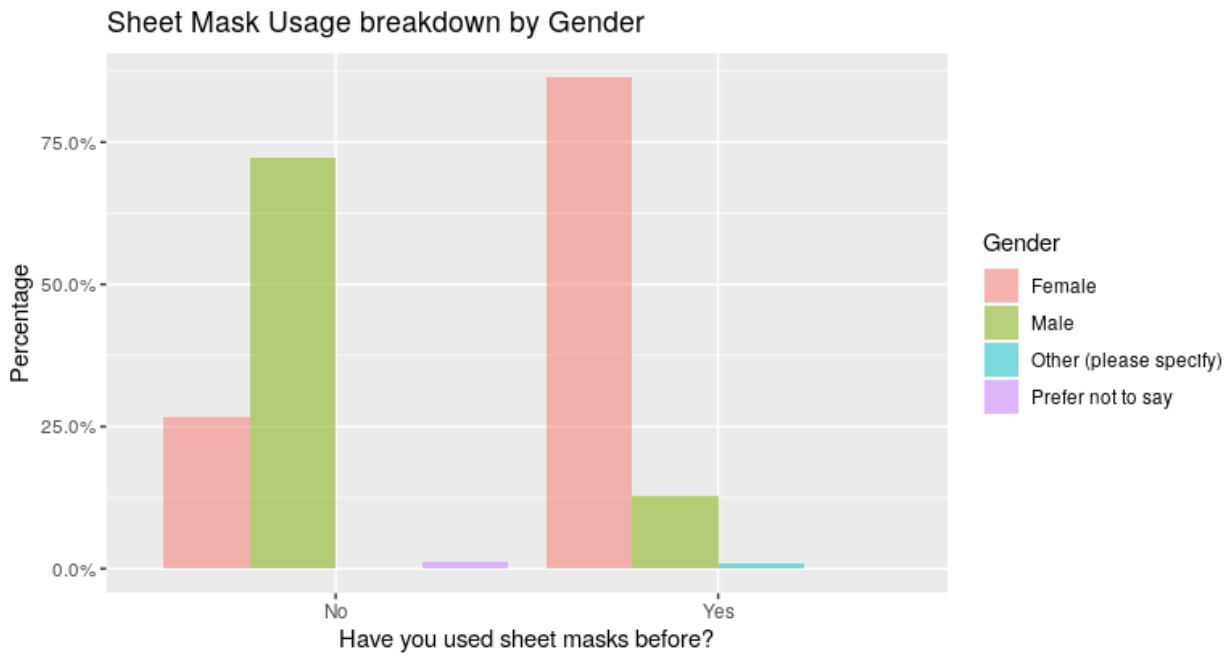


Figure 1.2. 1: Sheet Mask Usage breakdown by Gender

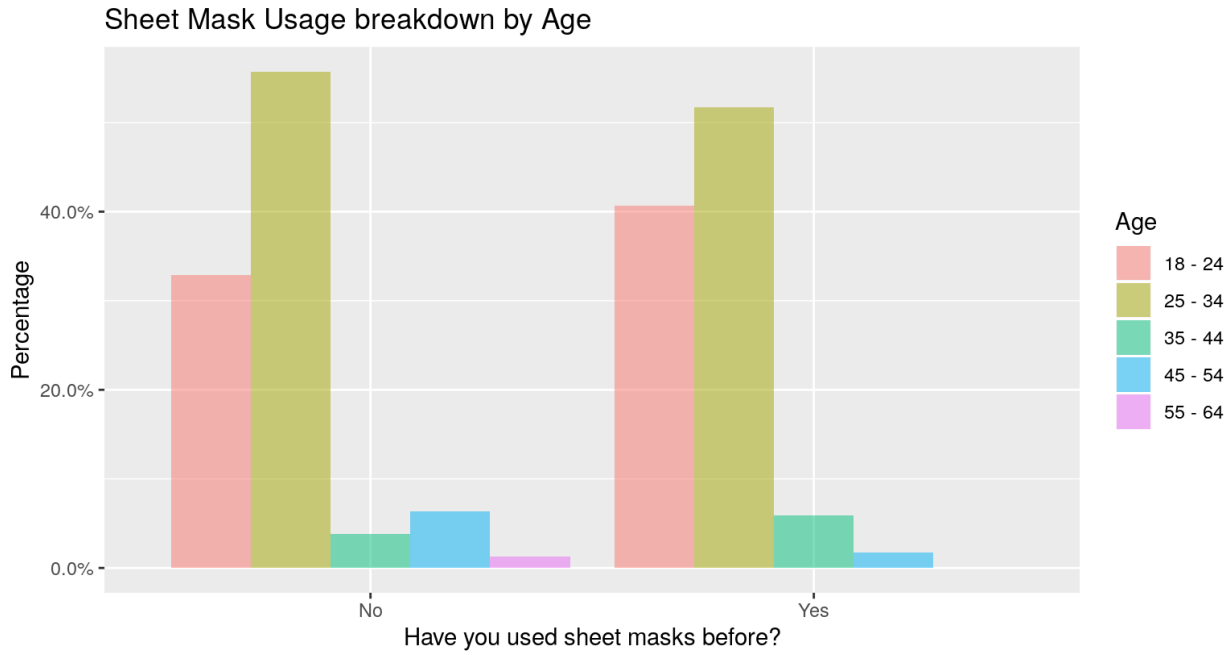


Figure 1.2. 2: Sheet Mask Usage breakdown by Age

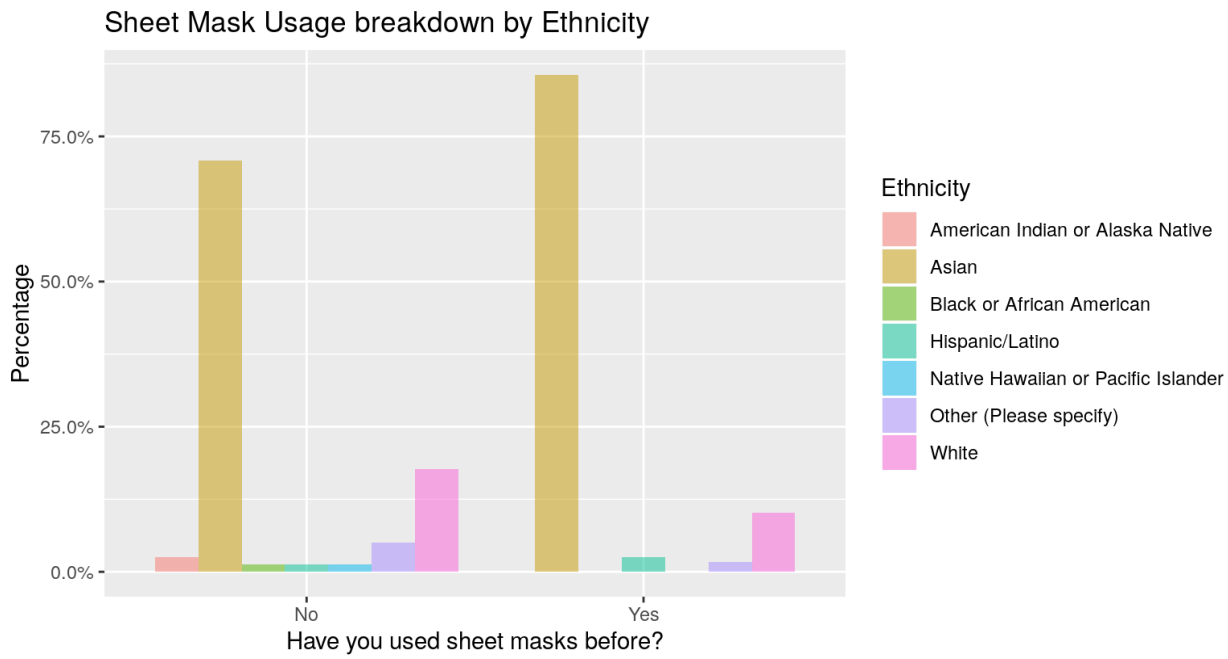


Figure 1.2. 3: Sheet Mask Usage breakdown by Ethnicity

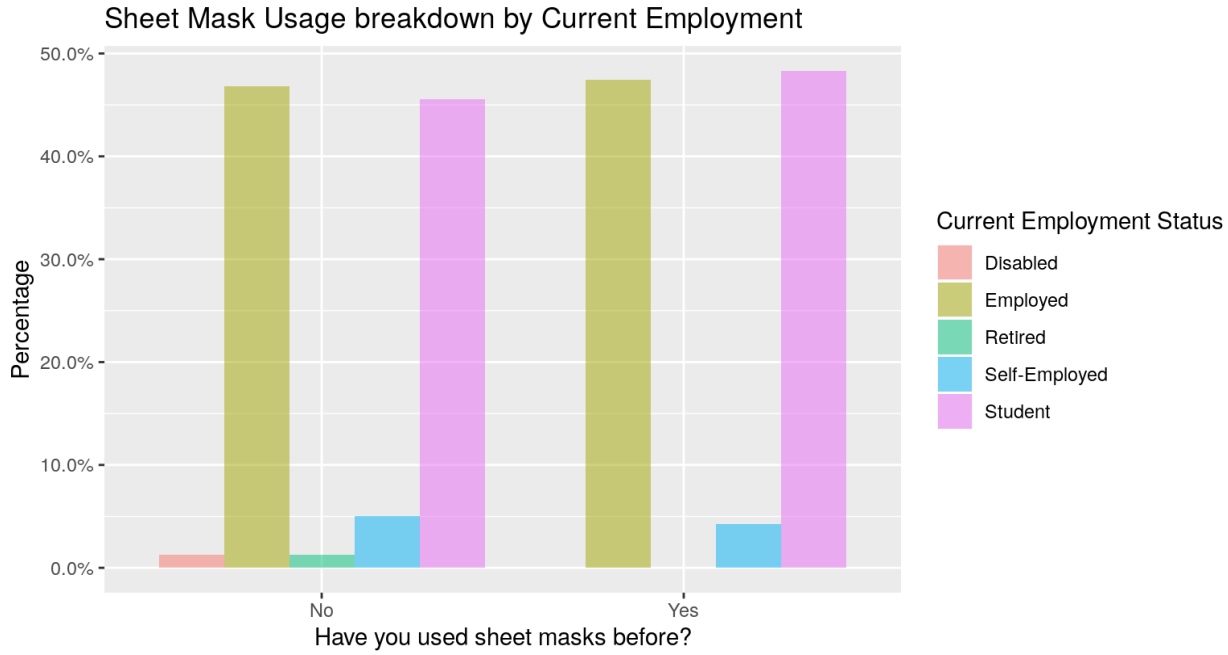


Figure 1.2. 4: Sheet Mask Usage breakdown by Current Employment

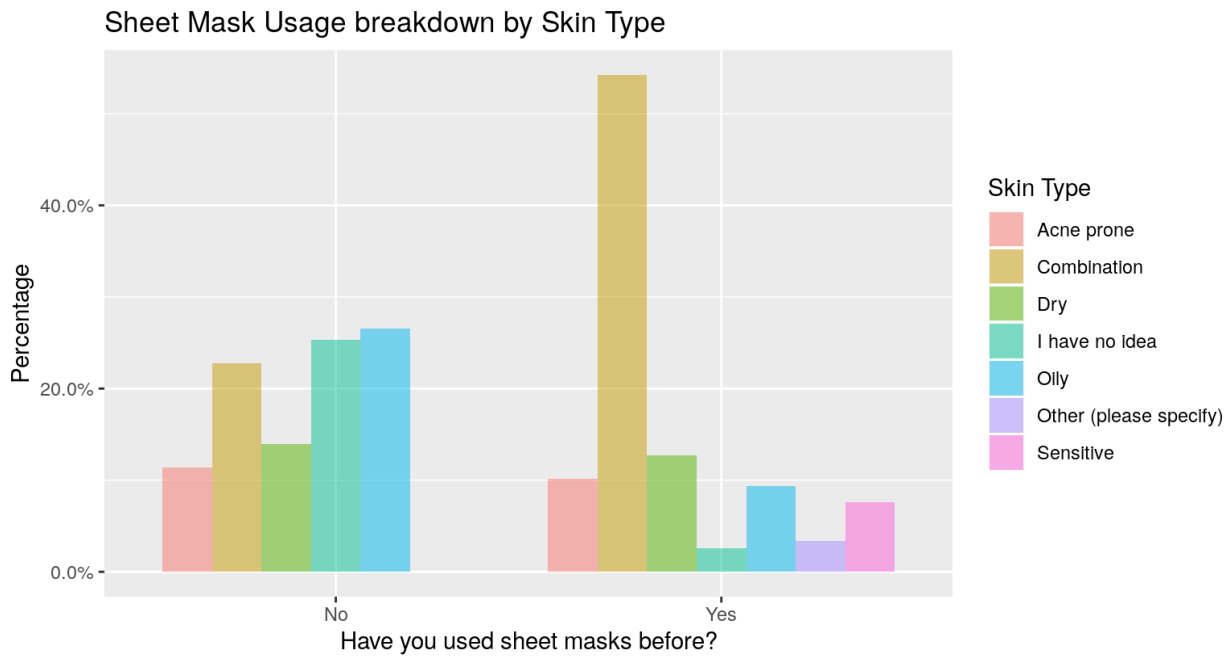


Figure 1.2. 5: Sheet Mask Usage breakdown by Skin Type

Statistical Analysis

Awareness of Ear Hook Feature

```
result <- goodness(Mask_Final_Data, var = "Q14", p = 0.5)
summary(result, check = c("observed", "expected", "chi_sq"))
```

```
## Goodness of fit test
## Data     : Mask_Final_Data
## Variable : Q14
## Specified: 0.5 0.5
## Null hyp.: the distribution of Q14 is consistent with the specified distribution
## Alt. hyp.: the distribution of Q14 is not consistent with the specified distribution
##
## Observed:
##    No   Yes Total
##    76    42   118
##
## Expected: total x p
##    No   Yes Total
##    59    59   118
##
## Contribution to chi-squared: (o - e)^2 / e
##    No   Yes Total
##   4.9   4.9   9.8
##
## Chi-squared: 9.797 df(1), p.value 0.002
##
## 0.0 % of cells have expected values below 5
```

Figure 2. 1: Goodness of Fit Test on Ear Hook Awareness

```
## Cross-tabs
## Data     : Mask_Final_Data
## Variables: Q10_5, Q10_4
## Null hyp.: there is no association between Q10_5 and Q10_4
## Alt. hyp.: there is an association between Q10_5 and Q10_4
##
## Contribution to chi-squared: (o - e)^2 / e
##                       Q10_4
## Q10_5                  Extremely important Moderately important
##   Extremely important   1.48                0.01
##   Moderately important  0.07                0.51
##   Not at all important  0.18                0.84
##   Slightly important    0.30                1.83
##   Very important        0.68                0.19
##   Total                 2.71                3.39
##                       Q10_4
## Q10_5                  Not at all important Slightly important Very important
##   Extremely important   0.21                 1.95               0.45
##   Moderately important  0.37                 1.23               2.43
##   Not at all important  5.99                 0.41               0.08
##   Slightly important    0.21                 1.39               2.20
##   Very important        0.12                 0.01               0.48
##   Total                 6.89                 4.98               5.63
##                       Q10_4
## Q10_5                  Total
##   Extremely important   4.10
##   Moderately important  4.60
##   Not at all important  7.50
##   Slightly important    5.93
##   Very important        1.48
##   Total                23.61
##
## Chi-squared: 23.605 df(*16*), p.value 0.088
##
## 72.0 % of cells have expected values below 5
## p.value for chi-squared statistics obtained using simulation (2,000 replicates)
```

Figure 2.2. 1: Two-Way Chi-Squared Test between importance of serum quality and fit to face

```
## Cross-tabs
## Data     : Mask_Final_Data
## Variables: Q10_6, Q10_4
## Null hyp.: there is no association between Q10_6 and Q10_4
## Alt. hyp.: there is an association between Q10_6 and Q10_4
##
## Contribution to chi-squared: (o - e)^2 / e
##                       Q10_4
## Q10_6                  Extremely important Moderately important
##   Extremely important   7.75                2.51
##   Moderately important  1.36                3.24
##   Not at all important  0.24                1.12
##   Slightly important    0.53                0.91
##   Very important        0.53                0.35
##   Total                10.41                8.13
##                       Q10_4
## Q10_6                  Not at all important Slightly important Very important
##   Extremely important   0.01                 4.63               2.68
##   Moderately important  0.00                 2.06               3.71
##   Not at all important  4.07                 0.12               0.03
##   Slightly important    1.00                12.08               2.22
##   Very important        0.79                 0.88               0.45
##   Total                 5.88                19.77               9.09
##                       Q10_4
## Q10_6                  Total
##   Extremely important  17.58
##   Moderately important 10.39
##   Not at all important  5.57
##   Slightly important   16.75
##   Very important        3.00
##   Total                53.29
##
## Chi-squared: 53.286 df(*16*), p.value 0.001
##
## 72.0 % of cells have expected values below 5
## p.value for chi-squared statistics obtained using simulation (2,000 replicates)
```

Figure 2.2. 2: Two-Way Chi-Squared Test between importance of mask quality and fit to face

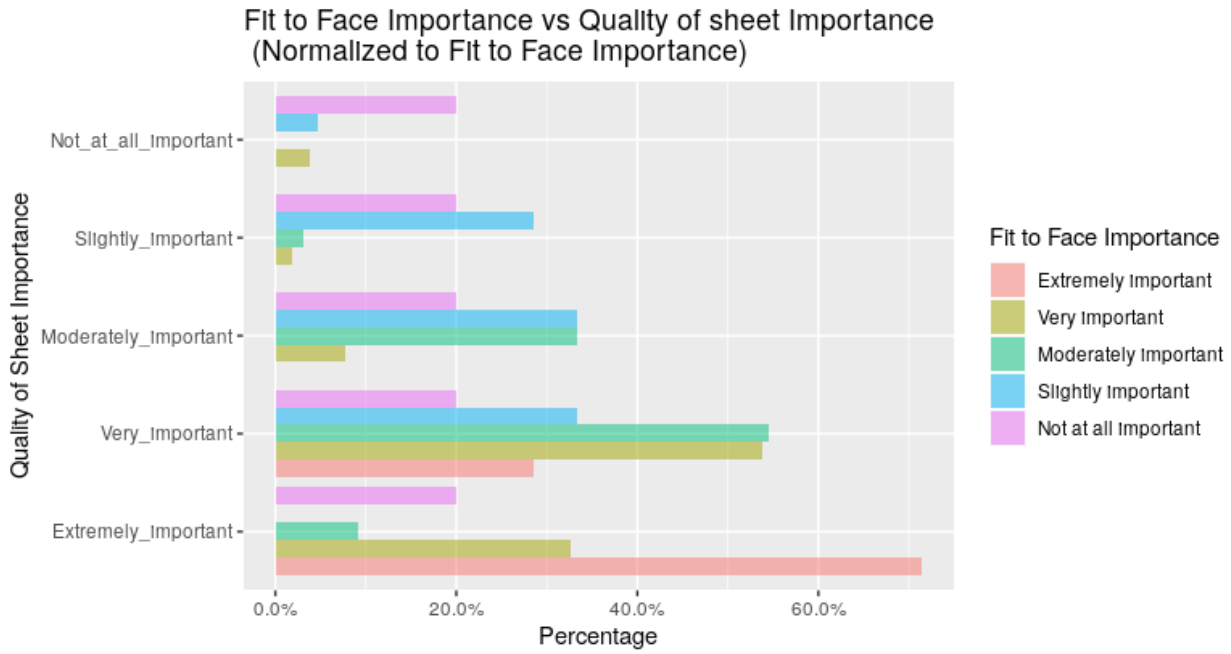


Figure 2.2. 3: Fit to Face Importance vs Quality of sheet Importance (Normalized to Fit to Face importance)

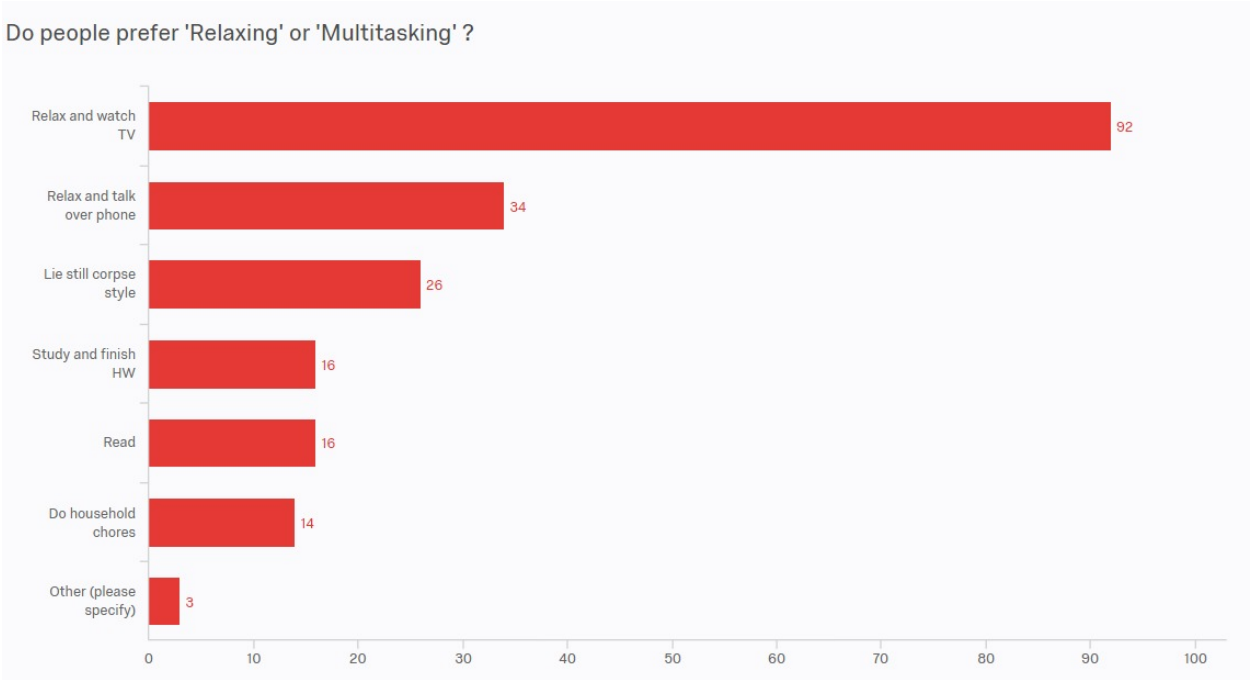


Figure 2.3. 1: Responses for what people prefer doing while using sheet mask

Impact of Recommendation on Mask Selection

```
result <- goodness(Mask_Final_Data, var = "Q10_3")
summary(result, check = c("chi_sq"))
```

```
## Goodness of fit test
## Data     : Mask_Final_Data
## Variable : Q10_3
## Specified: 0.2 0.2 0.2 0.2 0.2
## Null hyp.: the distribution of Q10_3 is consistent with the specified distribution
## Alt. hyp.: the distribution of Q10_3 is not consistent with the specified distribution
##
## Contribution to chi-squared: (o - e)^2 / e
##  Extremely important       Very important Moderately important
##                 3.13                 0.82                11.40
##   Slightly important Not at all important               Total
##                 0.49                10.31               26.15
##
## Chi-squared: 26.153 df(4), p.value < .001
##
## 0.0 % of cells have expected values below 5
```

Figure 2.4. 1: Goodness of Fit Test on Impact of Recommendation on Mask Selection

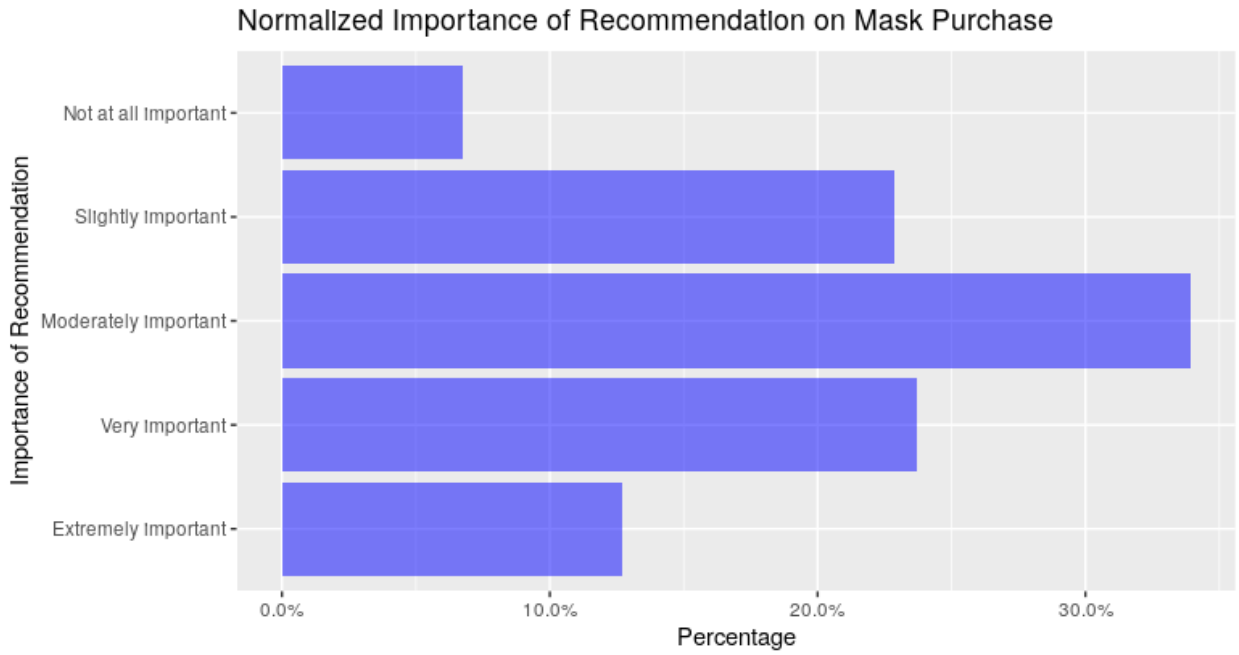


Figure 2.4. 2: Normalized Importance of Recommendation on Mask Purchase

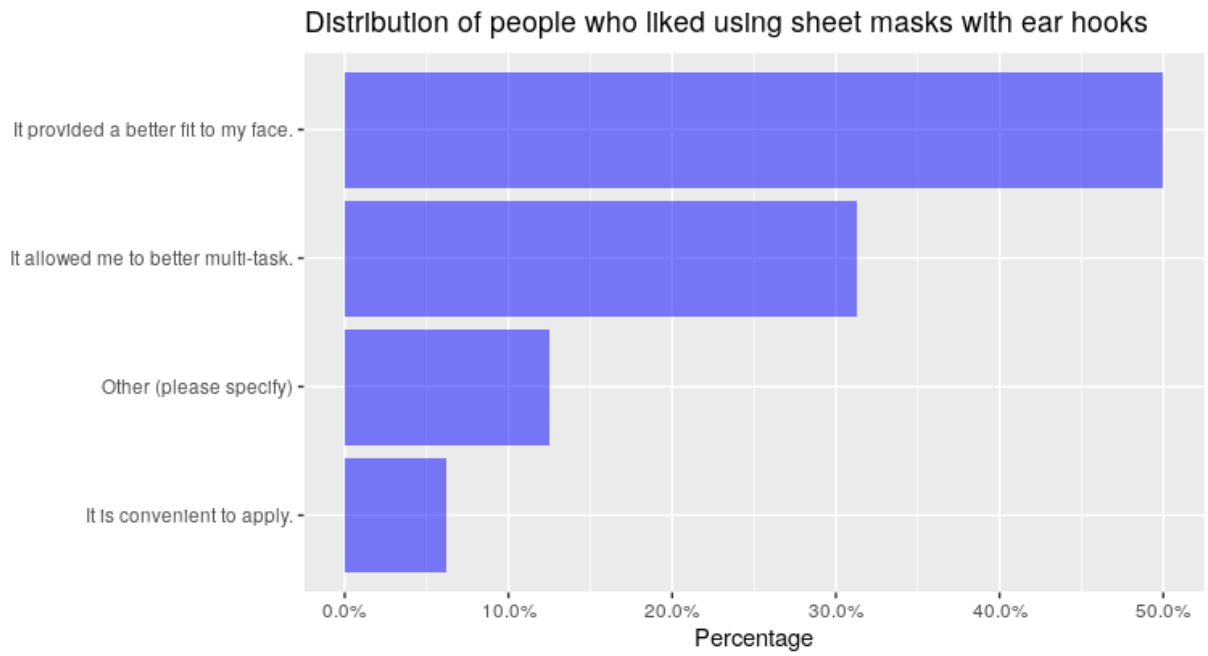


Figure 3.1. 1: Distribution of people who liked using sheet masks with ear hooks

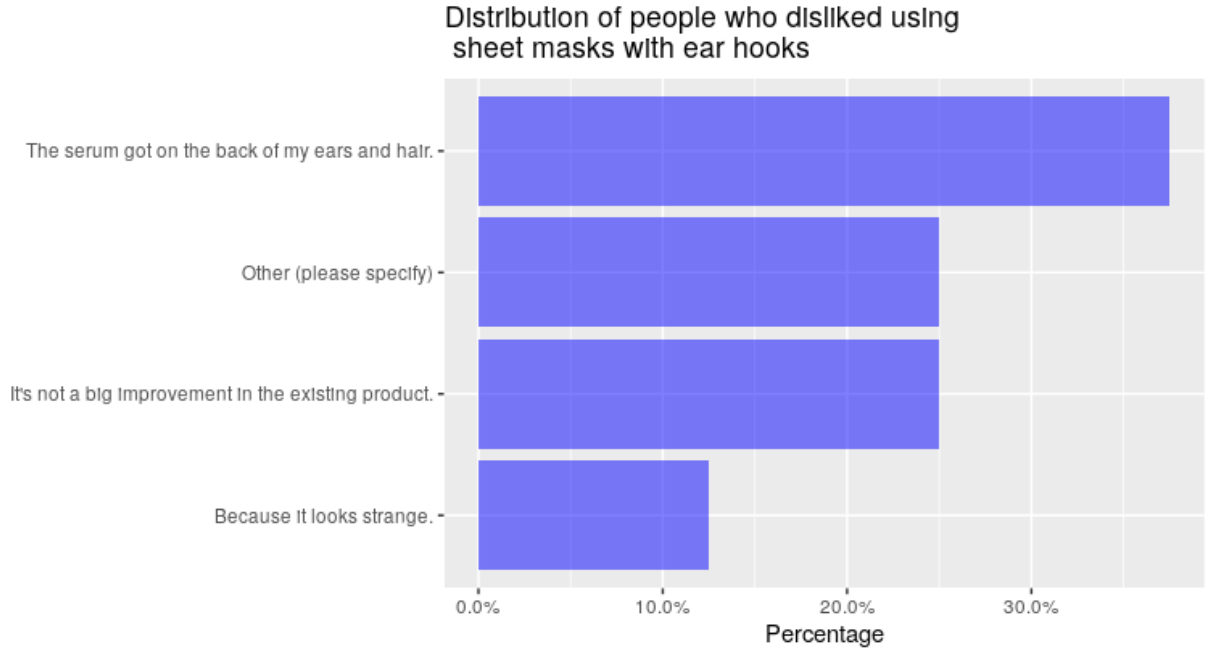


Figure 3.1. 2: Distribution of people who disliked using sheet masks with ear hooks

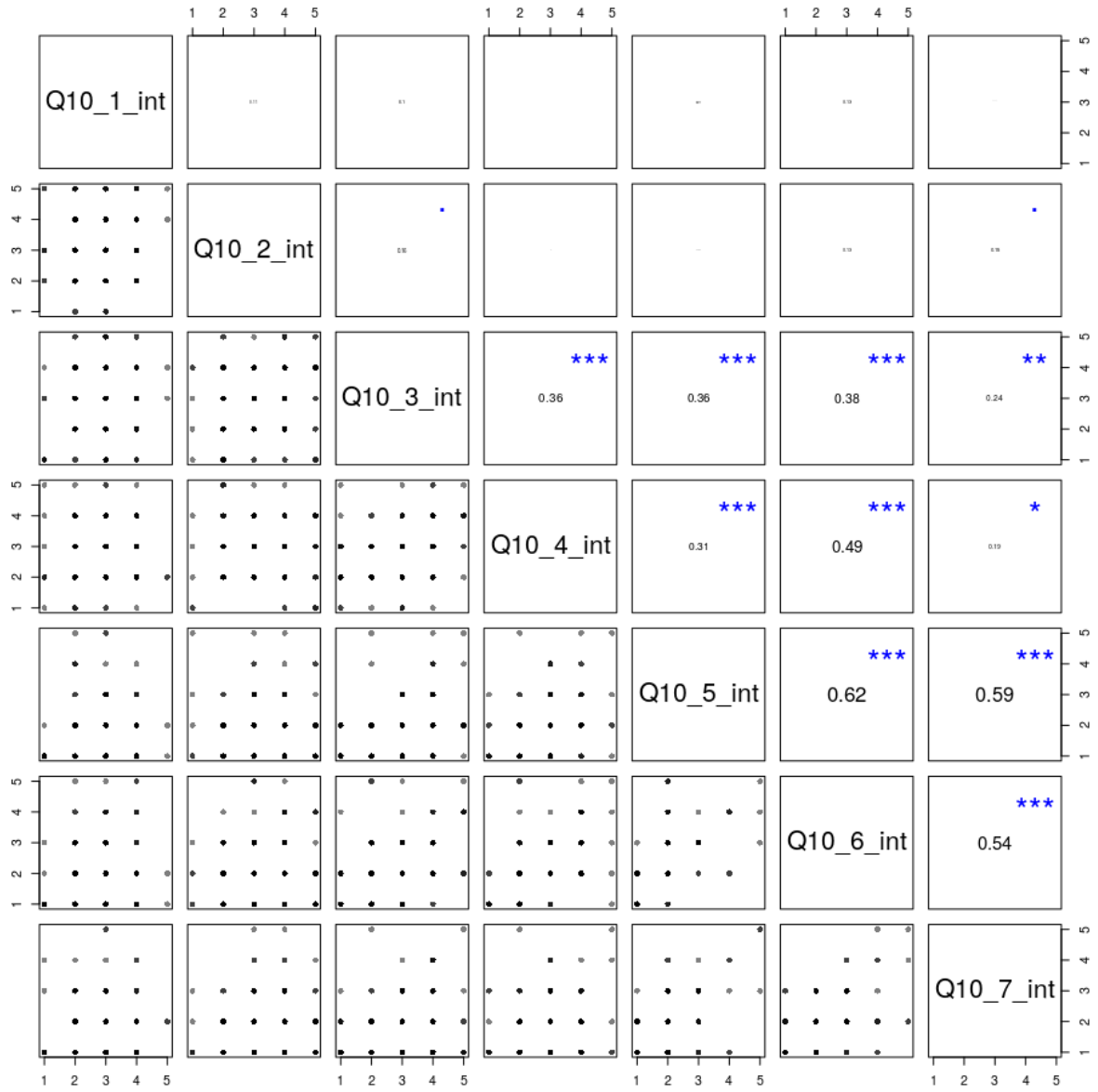


Figure 3.2. 1: Correlation Table for Importance Table

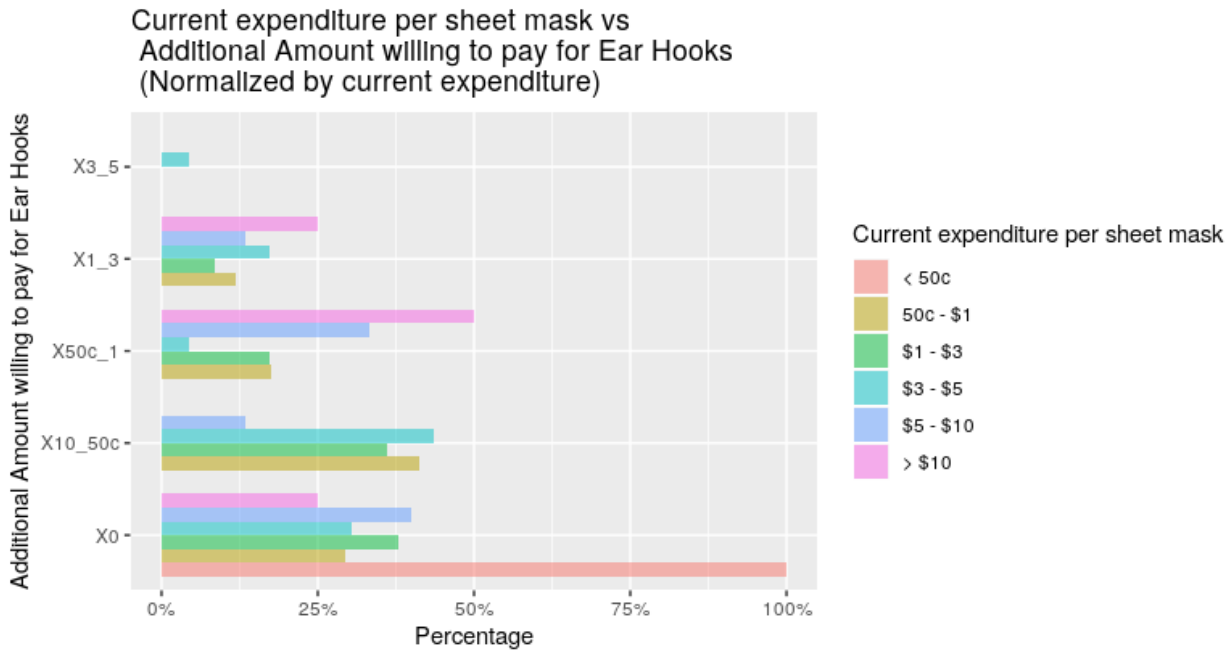


Figure 3.3. 1: Current expenditure per sheet mask vs Additional Amount willing to pay for Ear Hooks (Normalized by current expenditure)

Q13 <fctr>	X0 <chr>	X10_50c <chr>	X50c_1 <chr>	X1_3 <chr>	X3_5 <chr>	Total <chr>
< 50c	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%
50c - $1	29.41%	41.18%	17.65%	11.76%	0.00%	100.00%
$1 - $3	37.93%	36.21%	17.24%	8.62%	0.00%	100.00%
$3 - $5	30.43%	43.48%	4.35%	17.39%	4.35%	100.00%
$5 - $10	40.00%	13.33%	33.33%	13.33%	0.00%	100.00%
> $10	25.00%	0.00%	50.00%	25.00%	0.00%	100.00%
Total	35.59%	33.90%	17.80%	11.86%	0.85%	100.00%

Figure 3.3. 2: Table of Current expenditure per sheet mask vs Additional Amount willing to pay for Ear Hooks (Normalized by current expenditure)

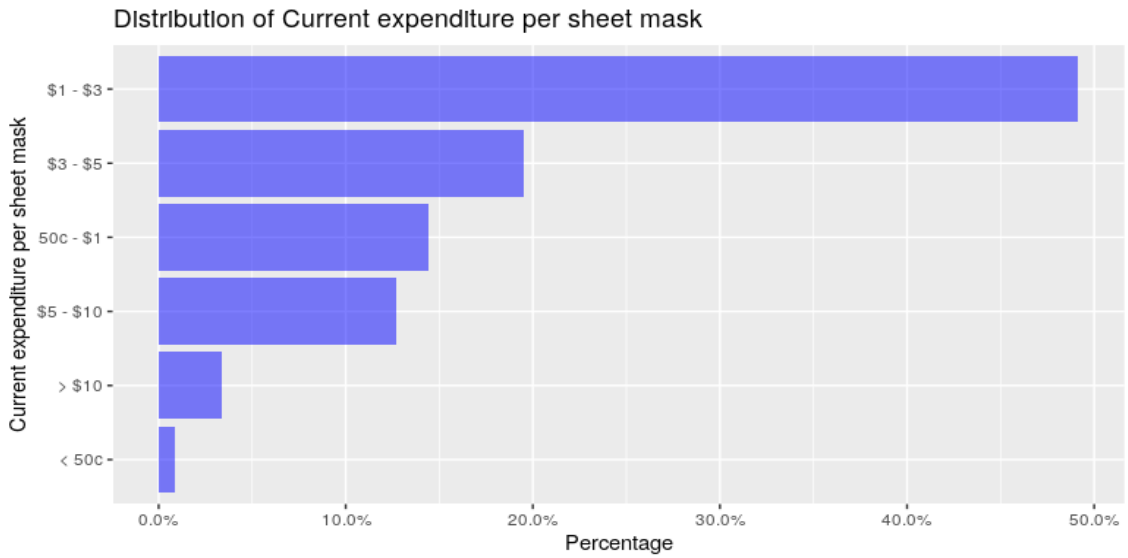


Figure 3.3. 3: Distribution of Current expenditure per sheet mask

```
## Linear regression (OLS)
## Data     : Mask_Final_Data
## Response variable    : Q16_rc
## Explanatory variables: Q10_1
## Null hyp.: the effect of Q10_1 on Q16_rc is zero
## Alt. hyp.: the effect of Q10_1 on Q16_rc is not zero
##
##                            coefficient std.error t.value p.value
##  (Intercept)                     1.000     0.348   2.873   0.009 **
##  Q10_1|Very important           -1.000     0.389  -2.570   0.018 *
##  Q10_1|Moderately important     -0.077     0.361  -0.213   0.834
##  Q10_1|Slightly important       -0.500     0.376  -1.330   0.199
##
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## R-squared: 0.546,  Adjusted R-squared: 0.478
## F-statistic: 8.007 df(3,20), p.value 0.001
## Nr obs: 24
```

Figure 3.4. 1: Linear Regression for F-Test of Opinion of people who have tried ear hooks(Q16) on Importance of Price (Q10_1)

```
## Linear regression (OLS)
## Data     : Mask_Final_Data
## Response variable    : Q19_rc
## Explanatory variables: Q10_2
## Null hyp.: the effect of Q10_2 on Q19_rc is zero
## Alt. hyp.: the effect of Q10_2 on Q19_rc is not zero
##
##                           coefficient std.error t.value p.value
##  (Intercept)                    0.500     0.241   2.075   0.041 *
##  Q10_2|Very important          -0.177     0.256  -0.693   0.490
##  Q10_2|Moderately important     0.000     0.259   0.000   1.000
##  Q10_2|Slightly important      -0.167     0.266  -0.626   0.533
##  Q10_2|Not at all important     0.300     0.271   1.106   0.272
##
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## R-squared: 0.114,  Adjusted R-squared: 0.074
## F-statistic: 2.858 df(4,89), p.value 0.028
## Nr obs: 94
```

Figure 3.4. 2: Linear Regression for F-Test of Willingness to use Ear Hooks(Q19) on Importance of Brand Name (Q10_2)

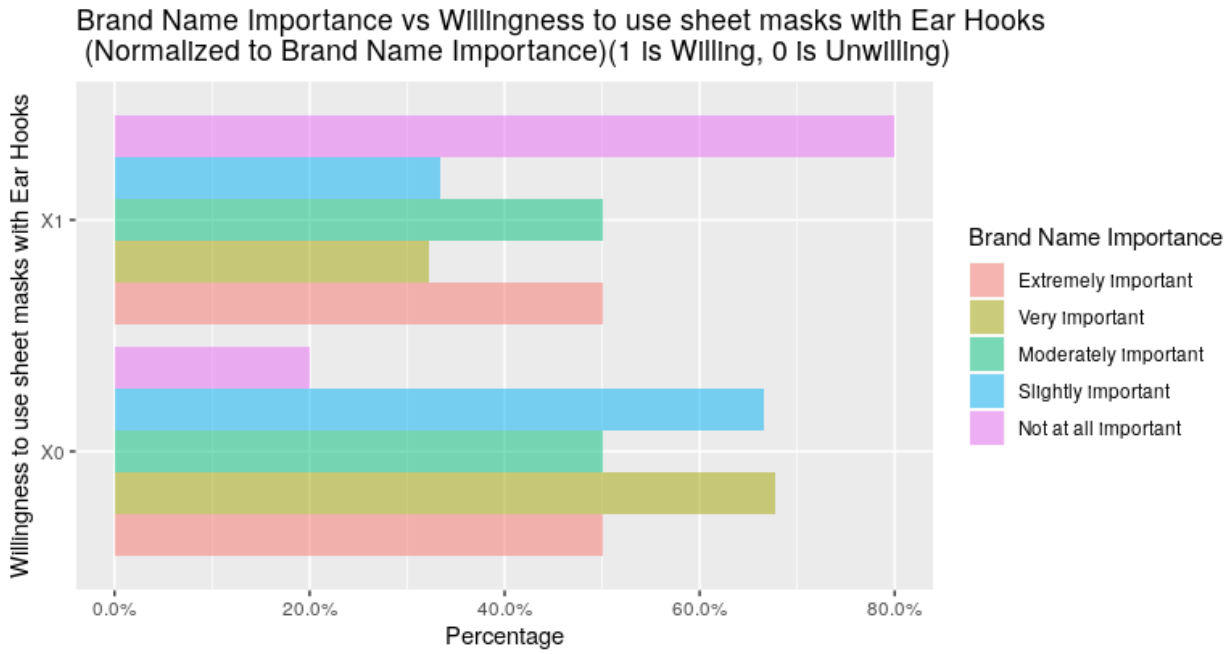


Figure 3.4. 3: Brand Name Importance vs Willingness to use sheet masks with Ear Hooks\n (Normalized to Brand Name Importance) (1 is Willing, 0 is Unwilling)

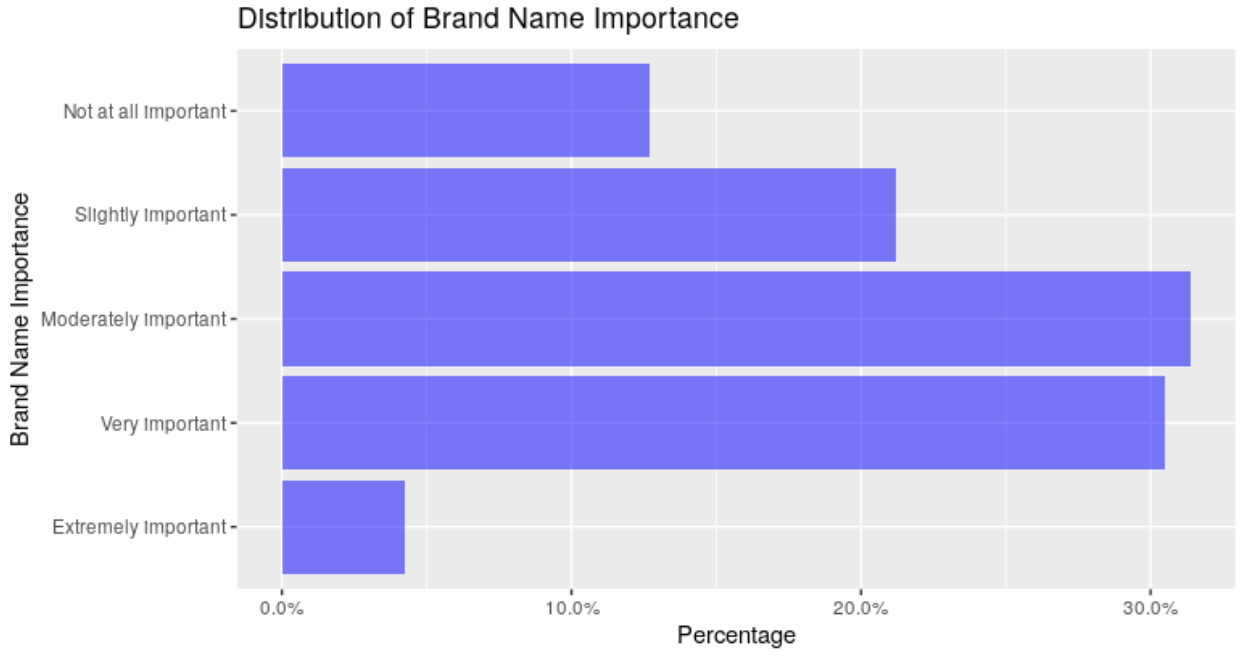


Figure 3.4. 4: Distribution of Brand Name Importance

Q10_2 <fctr>	n_obs <chr>
Extremely important	4.24%
Very important	30.51%
Moderately important	31.36%
Slightly important	21.19%
Not at all important	12.71%
Total	100.00%

Figure 3.4. 5: Table of Distribution of Brand Name Importance