

**Problem Chosen**

**A**

**2020  
MCM/ICM  
Summary Sheet**

**Team Control Number**

**# 2010755**

---

**XXX**

**Summary**

## Contents

1 Introduction . . . . .	1
2 Assumption . . . . .	1
3 M1 . . . . .	2
4 M2 . . . . .	3
5 M3 . . . . .	3
6 Strengths and Weaknesses . . . . .	3
6.1 Strengths . . . . .	3
6.2 Weaknesses . . . . .	3
7 A Letter . . . . .	3
Appendices . . . . .	4
Appendix A First appendix . . . . .	4
A.1 Wordcloud for pacifiers and microwaves . . . . .	4

## 1 Introduction

## 2 Assumption

There are some symbols appear in the model. We show them below:

Table 1: Symbols in Chapter 3

Symbols	Description
$i$	Station variable

## 3 M1

————— haven't decided where to put these sentences yet —————

We used LDA to get main topic of these reviews, and further draw a word cloud for each product. Word cloud is a direct way to demonstrate the frequency of words in a certain text. We show our word cloud of hair dryer as follows, other word clouds are attached to the appendix. Based on the rating level, we divide reviews into 2 categories: positive and negative. If the rating level is below 3, we regard words in this text as positive words and vice versa.

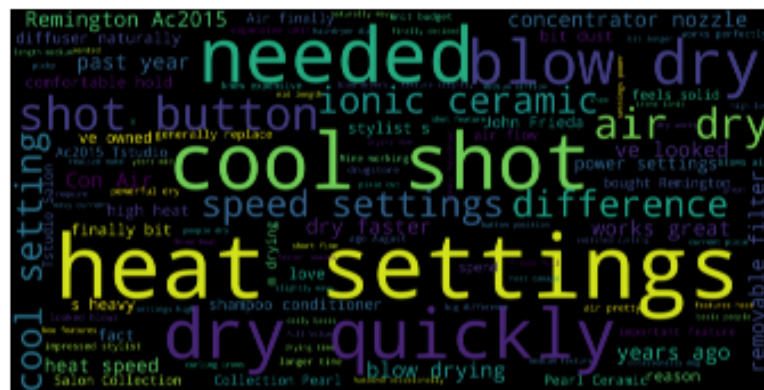


Figure 1: Wordcloud (positive) of hairdryer



Figure 2: Wordcloud (negative) of hairdryer

From the word cloud we got, we found some important features that decides a product is popular or not. We list several characteristic or points which are concluded from our word frequency research by classifying different rating levels separately.

Table 2: Keywords in reviews

Product Name	Description
Hairdryer	Heat and speed settings, dry, package
Pacifier	Shape, smooth, quality, easy to clean
Microwave	Appliance, stainless material, mode and function

As the table shows, customers have different requirements for different products. For example, hair dryer are reviewed most with words like heat settings, speed setting, how fast does the product dries, and its package. They complain for a terrible package.

For pacifier, parents expect them to be in suitable shape so that it fits well in a baby's mouth. Besides, pacifier are judged according to their materials and whether it is easy to clean. If a pacifier is of low quality and without a cute shape, it will be rated with 1 star most likely.

For a microwave, most consumers want it to fit well in their kitchen and works well with a stainless appearance and multiple functional modes like grill mode, convection settings, heating settings. And customers do not want microwaves stop working after a few weeks and thus require

a good after-sale service.

\_\_\_\_\_ haven't decided where to put these sentences yet \_\_\_\_\_

## 4 M2

## 5 M3

## 6 Strengths and Weaknesses

### 6.1 Strengths

### 6.2 Weaknesses

## 7 A Letter

\_\_\_\_\_ part of letter \_\_\_\_\_

To whom it may concerns:

For sales of hair dryers, customer care more about its quality, for example, how fast it dries and how is its heat setting. Most complaints are about packages, thus sellers should ensure the package of the product. Apart from packages, another small part of low rating are about the function deficiency, like burning temperature. Sellers need to make sure the hair dryer have good settings for heat and wind, maybe special mode like ionic mode can be developed to attract more 5 star ratings and positive reviews. Moreover, platform managers should encourage sellers to provide more information about function demonstration and detailed instruction or guidelines.

When it comes to approaches that contribute to more sales, suggestions are as follows: For pacifiers, a suitable size is more important than other factors. Most of bad feedback are about them being too big or small, which leads babies difficult to suck. And also, part of the reviews are about the shape and stuff. We found that cute shapes and smooth structures are preferred, so it is a wise choice for sellers to list pacifiers in items more clearly. Furthermore, a cute and appealing appearance may help because of babies' preference.

Unlike other 2 products, sellers should pay attention to the after-sale service of microwaves. If the microwave break down in just few weeks, seller should better change it with a new one. The attitudes during the service matters as well. Functionality is another point for electronic product like microwaves. We concluded that consumers tend to rate multi-functional microwave higher than ordinary ones. An interesting point we got is that many consumer show a preference for a stainless steel appearance, maybe due to its durability. As a result, when advertising for the products, sellers can focus on its material, especially stainless steel and provide a series novel functions, ranging from grill mode to heat settings. At the same time, the website should provide customers with clear solution for an after-sale service and strategies that deal with a product with bad quality.

\_\_\_\_\_ part of letter \_\_\_\_\_





Figure 4: Wordcloud (negative) of pacifier



Figure 5: Wordcloud (negative) of microwave



Figure 6: Wordcloud (negative) of microwave