conclution:

通过数据挖掘和深入分析, 我们对数据不仅有了大量的感性认识, 更有很多的理性认识. 我们发现很多时候,, 考察一个产品不能仅仅从对产品的评级来看, 评价, 评论日期等数据也十分重要. 并且通过对三个产品的时间模式进行统计分析得到了产品的销售量, 好评率和差评率随时间的变化模式. 发现pacifier随时间的推迟, 好评越来越多, 好评率比较稳定. 而其他两种产品虽然好评率在上升, 但是仍存在波动的趋势, 发展不够稳定, 尤其是microwave, 一度出现差评率大于好评率的现象, 说明市场上的microwave不能达到人们的满意需求, 阳光公司应着重注意其表现, 保证产品质量的同时注意市场变化情况, 对不同的市场环境进行有针对性的救护措施保证公司效益.

Through data mining and in-depth analysis, we not only have a lot of perceptual knowledge about the data, but also a lot of rational knowledge. We find that many times, it is very important to investigate a product not only from the perspective of product star\_rating, evaluation, review date and other data. And through the statistical analysis of the time patterns of the three products, we get the sales volume of the product, It is found that with the delay of time, pacifier has more and more favorable comments, and the favorable rate is relatively stable. Although the favorable rate of the other two products is rising, there is still a trend of fluctuation, and the development is not stable, especially the phenomenon that the negative rate is greater than the favorable rate once appeared in microave, It shows that the market of microwave can not meet people's needs. Sunshine company should pay attention to its performance, ensure product quality and pay attention to market changes, and take targeted rescue measures for different market environment to ensure the company's benefits  
 利用情感分析技术分析评价中的情感, 再与评级进行比较, 我们发现有五星差评和一星好评等异常情况, 同时, 对评价是否影响评级以及评级是否影响评价进行分析发现, 他们之间互相影响, 好的评级会对接下来的评论产生一定的影响, 同理, 不同的评论短语往往和不同评级对应. 所以在实际分析中, 如果二者出现了不同的趋势, 证明市场可能存在某种不合理的因素, 这时公司需要针对性的调查和解决, 最终使产品良好发展.

Using the emotion analysis technology to analyze the emotion in the review\_body, and then comparing with the rating, we found that there are five-star-poor rating and one star-high praise and other abnormal situations. At the same time, we found that whether the evaluation affects the rating and whether the rating affects the evaluation. They affect each other, and a good rating will have a certain impact on the next comment, Different comment phrases are often corresponding to different ratings. Therefore, in the actual analysis, if there are different trends between the two, it can prove that there may be some unreasonable factors in the market. At this time, the company needs to investigate and solve them, and finally make the product develop well.