

# Exploring the Relationship Between an Emotional Experience with Everyday Products and its Contribution to People's Well-being and Life Satisfaction

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## ABSTRACT

This paper explores how emotions in interacting with the product are related to happiness and life satisfaction. For this, a diary study was conducted to determine whether emotions provided by the product affect people's happiness and life satisfaction. Six participants were recruited for a three-week diary study. They are asked to rate their emotions with everyday products and also how the emotions contributed to their life satisfaction and happiness. A total of 216 products were reported, and related emotions were categorized into three groups: positive Emotion, positive-negative Emotion, and negative Emotion. The results indicate that only positive Emotion is a major contributor to happiness and life satisfaction than positive-negative Emotion. The findings highlight that the more positive emotions are provided, the higher the user's happiness which can lead to an increase in life satisfaction.

**Keywords:** Emotional design, Design for emotion, Happiness, Positive emotion

## INTRODUCTION

Emotions have a huge impact on people in various aspects, such as Learning ability, behavior, and judgment are substantially. Recent clinical studies have shown that positive emotion regulation in daily life has the advantage of preventing and solving health risks (e.g., reducing the risk of cardiovascular disease). Much previous research illustrates that both positive and negative experiences benefit people in some ways. Emotion itself is an important signal indicating a person's condition. The different emotions have different influences on people's perceptions, thoughts, and behavior (Frijda, 2017). In the case of negative emotions, they are very sensitive to changes and play a very important role in human security. However, designers generally want products that elicit good or pleasant emotions to affect users' emotions. However, negative emotions can also enrich the consumer experience. (Desmet, 2010; Pieter M A Desmet, Fokkinga, Ozkaramanli, & Yoon, 2021). Even if it is a negative emotion, it can play a sufficiently positive role when it is regulated properly for well-being. For example, the thrill felt on roller coasters can provide a fun experience, but fun can become fear when it goes to strong. Also it

is not good to provide a tremendously good feeling at once; it was more like happier and satisfied when the small positive experiences are frequently experienced in daily life (Diener, Sandvik, & Pavot, 2009, Diener et al., 2009). And when it comes to providing this small happiness, the importance of emotions provided by-products around people increases. In this product can defined as any product that people can imagine in their daily lives. Therefore, in this study, we want to determine which product emotions make people happier and contribute to users' satisfaction.

## METHOD

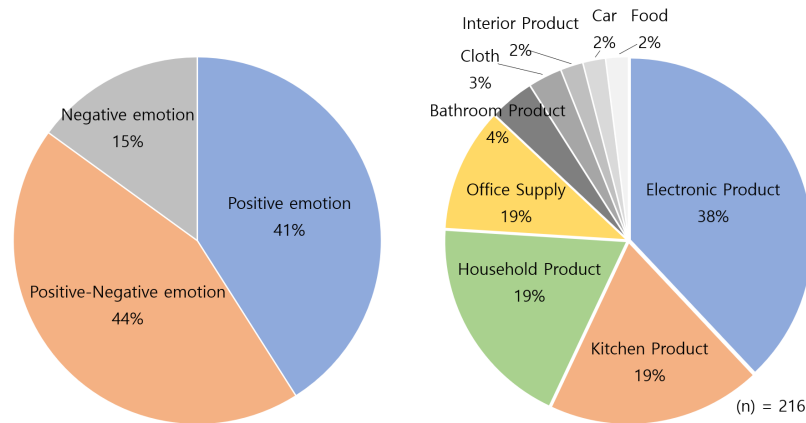
To evaluate the product emotion leads to happiness and satisfaction, the diary study method was undertaken. The diary study contains definition of 20 positive and negative emotions, and definition of product, 185 products of daily product examples and seven sets of three pages of research materials. The three pages determine which products created memorable emotions in daily life, what emotions were felt by those products, and whether the products affected happiness and life satisfaction. this research was conducted for three weeks to obtain many daily product emotions.

first page, participants reported feelings and episodes about the memorable product of the day by drawing or text. Second page, participants measure it from list of 20 positive emotions and 20 negative emotions in a scale of 1 to 5. Finally, the last page ended by measuring of its influence on happiness and life satisfaction and measured by Likert scale of 1 (strongly disagree) to 9 (strongly agree).

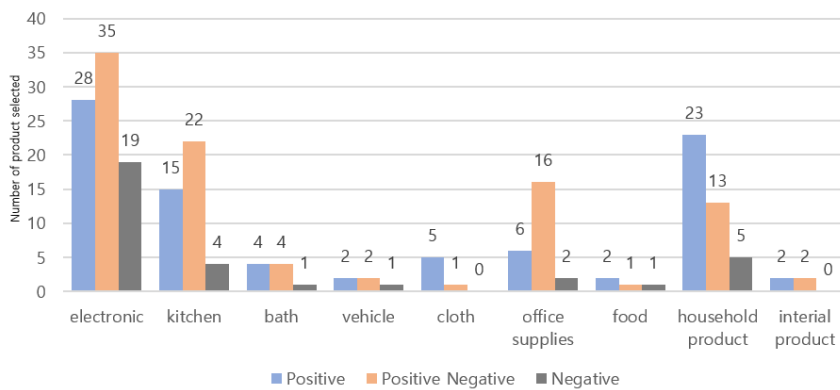
a total of six participants who majored in design graduate students. Four women and two men were recruited, whose ages ranged from 24 to 38 years old, on average 28 years old. Each participant received three diaries for three weeks, and each person reported feelings and episodes about the memorable product of the day. Then, participants wrote about which particular emotions they felt and their intensity with the product among positive and negative emotions. Finally, the last page ended by writing about its influence on happiness and life satisfaction. This procedure was repeated every day for three weeks with three diaries.

## RESULT

Two hundred sixteen classified products and products and all emotions divided into positive and positive-negative products were classified. The number of products that made only positive emotions were 87, positive and negative emotions was 96, and 33 negative emotions. As shown in Figure 1, the product category with the most number was positive-negative at 44%. Next was positive 41%, and the smallest number was negative 15%. In positive-negative emotions, the correlation between happiness and life satisfaction was generally reduced. Lastly, in the case of positive Emotion, it was found that most of the happiness was high, the same or more score in life satisfaction.



**Figure 1:** The percentages of emotions with everyday products (Left) and the percentages of everyday products reported in the study (Right).



**Figure 2:** Emotion classification according to product type.

Eleven categories were categorized and mentioned, and they were all categorized according to the categories defined in the online market. According to the product analysis from online market categories, the most selected product classification was electronics products (38%). The second most selected product categories are kitchen products (19%) and household products (19%) each. Finally, the fourth category is office supply (11%), including post-its, calendars, ballpoint pens, etc. other categories are bathroom products (4%), clothes (3%), and automobiles (2%), food (2%), and interior products (2%).

From Figure 2, classifications of various emotions show that products that made participants feel positive the most were electronics, kitchen products, and household products. In the case of positive-negative products, electronics, kitchen product, and office supplies were chosen the most. Conversely, the products with the most negative emotions were electronics, household products, and kitchen products, which were the same as positive ones.

**Table 1.** Result of t-test analysis between emotion, happiness, and life satisfaction.

	M		SD		T	P
	PN (n = 96)	P (n = 87)	PN (n = 96)	P (n = 87)		
Happiness	4.8854	5.9540	1.71599	1.46198	4.511	.000
Satisfaction	4.7604	5.5747	1.63993	1.39461	3.600	.000

(PN – Positive-Negative Emotion) (P – Positive emotion) \*\*p<.01

### Link to Product Emotions, Happiness, and Life Satisfaction

Prior to the analysis, outliers and normality checks were conducted. In the total number of samples, negative emotions were judged not to provide happiness and life satisfaction, so the number of products that provided only negative emotions was excluded from the experiment. This reduced the total number of samples to 183. After that, with SPSS checking the outlier, and could not find the extreme outlier, so the t-test proceeded.

If the t value is less than 0.05, the difference between the two groups, positive and positive-negative, is significant. However, with the t-values of happiness and satisfaction set to 4.5 and 3.6, it can be seen that the difference between happiness and satisfaction, positive emotions, and positive and negative emotions in this study is not significantly different.

### Emodiversity of Product

Table 2 determines the results of the emotions selected by the participants for three weeks. In the positive emotions felt in the product, the top three were satisfaction, relaxation, and joy. On the contrary, the top three negative emotions are annoyance, boredom, and dissatisfaction. Among them, it can be seen in satisfaction and dissatisfaction as opposite factors to each other. Also, joy and boredom are judged to be contradictory emotions.

## DISCUSSION

The main goal of this study was to define the product emotion that increases life satisfaction. As a result, shows the investigation of whether positive, positive-negative emotions affect happiness and life satisfaction. Through the T-test, there was no statistically significant difference in happiness and life satisfaction for the product ( $p > .05$ ). However, there is a positive product that provides more happiness and life satisfaction than the positive-negative product. Therefore, when manufacturing a product, it is important to design it so that as many positive emotions as possible. Saariluoma (2014) noted that the positive and negative emotional dimensions of user experience are independent. So, negative emotions do not necessarily eliminate positive emotions. However, products without negative emotions provide better happiness and life satisfaction than products that create negative emotions.

Participants' emotional state in various products data has shown that it greatly influences users' emotions depending on their emotional state. For example, a user's emotional state may impact on negative mood due to long work commutes (Novaco and Gonzalez, 2009), worries about economic

**Table 2.** Amounted emotion selected from participant's table.

Positive Emotion	P	PN	Negative emotion	PN	N
satisfaction	62	46	annoyance	32	16
relaxation	39	37	boredom	23	10
joy	36	22	dissatisfaction	22	14
confidence	19	8	disappointment	16	12
pleasant surprise	15	5	anxiety	13	8
desire	15	20	reluctance	13	3
hope	15	22	nervousness	12	7
energetic	14	11	frustration	10	6
amusement	11	8	anger	9	7
anticipation	11	7	fear	9	5
pride	9	7	distrust	7	4
inspiration	8	8	hate	7	10
love	7	10	regret	6	3
fascination	4	3	doubt	5	1
kindness	4	4	disgust	4	2
courage	3	5	insecurity	4	0
admiration	3	6	confusion	3	8
respect	2	5	pity	3	3
enchantment	2	2	embarrassment	2	3
sympathy	1	0	startle	2	0

hardship (Mani, Mullainathan. 2013; K., Sendhil. 2012), and poor sleep quality (Kahneman and Krueger, 2006). This negative emotional state has a significant impact on the emotions the product gives. The list of emotions felt in the products and why the product provides them were largely related, and the product emotions were maintained when it solves the problem. Through this, It explains it will be possible to maintain or amplify a person's basic emotional state according to the emotions provided by the product.

### Product Emotion and Happiness

As a result, products that provide satisfaction, comfort, and joy bring happiness to people. Satisfaction would be achieved by product usability to solve the problem that participants had. In the case of comfort and joy, it appears during or after a problem is solved. On the contrary, if usability is not achieved, it may provide negative Emotion, which would be dissatisfaction. Products with negative emotions cause annoyance, boredom, and dissatisfaction. Inconveniences after actual use solve the problem. If using a product interferes with their behavior, is boring or unsatisfying, people feel very negative emotions. In this way, when users do not do what they want or are not satisfied with what the product provides, it creates many negative emotions. However, it was also able to confirm the desire for improvement for better satisfaction.

## Everyday Products and Emotional Experiences

Positive-negative products were the most common in everyday products because the emotions are given in using the product gradually become familiar. (eg. Hedonic adaptation). In the case of products, many products were nearby users and used every day. They are familiar products from electronic products in their hand to kitchen products and household products. It is familiar to the users, but there is no clear relation between certain stimuli and certain types of emotions (Desmet *et al.*, 2016). Even if users use the same product, the same event would provide different emotions towards the different people which one person may be delighted, and others may offend the same product. In the case of smartphones, it is a product that appears in all emotional categories. However, depending on the situation, the feelings changed. It provided positive emotions when they solved users' needs or problems, but vice versa. They provided negative emotions when they could not solve the problem.

## CONCLUSION

This study aimed to determine how much product emotions affect people's happiness and life satisfaction. A Diary study was done with six recruited participants. They were asked to evaluate 40 different emotions, and life satisfaction assessment. They gave an appraisal of 216 products over three weeks. Through the t-test, to find out which emotional state provide happiness and life satisfaction, but as a result, positive Emotion and positive-negative Emotion did not find any significant difference to happiness and life satisfaction.

However, when looking at the t results, users gained a lot of happiness and life satisfaction when they provided only positive emotions. Therefore, considering the emotions of the product, it is recommended to provide only positive emotions as much as possible. The limitation of this study is that when looking at the life satisfaction evaluation, users' emotional state can provide different results from those in other emotional states. Life satisfaction and happiness were often used in economic or political research (Arechavala, Espina and Trapero, 2015) to measure emotional well-being. Therefore, as an additional study, further research on emotional well-being is needed.

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