

Analysis the Factors That Cause APPLE Products to Thrive with Even a High Price by the Regression Model

Xiaoyi Qian
qian.529@osu.edu

The Ohio state university, college of engineering, Columbus, Ohio, 43210, The United States

Abstract—As the price of APPLE devices increased, the sales and share of APPLE devices, such as iPhone, increased rather than decreased as people would have expected. This research paper is done to analyze and figure out the factors that contribute to the success of APPLE devices, and APPLE iPhone would be mainly analyzed. The regression model is used in calculating the index of each factor, to show the influence of the factors on consumer buying behavior. The comparison between APPLE iPhone 12 pro max, Samsung S21 Ultra, and HUAWEI P50 Pro shows that iPhone is not the most advanced model on the technical aspect, but the share of use is more than any other smartphone brands in the US. Then a questionnaire shows the most frequent element people consider when purchasing a new smartphone, which shows that Price, Interior functions, friendly operation interface and battery life are the most important factors. However, not all of them impact the purchasing behavior on APPLE iPhone devices. For the iPhone, based on the regression model and actual consumer data, price is not the most important factor since other brands' smartphones are only a little cheaper than iPhone, instead, peer influence and brand loyalty are considered to be the more important factors for APPLE products.

Keywords-iPhone, Sales, Interior design, Consumer decisions, factors.

1 Introduction

The first iPhone was published in 2007, the price of the first generation iPhone ranged from \$499 to \$599. The revenue of 2007 was \$24.4 billion. Now in 2021, the latest version of iPhone, iPhone12 PRO MAX, is priced ranging from \$999 and \$1,099. Apple Statistics (2021) published that the revenue that APPLE made within the year 2020 was \$274.3 billion [1]. The price for a new iPhone doubled within 14 years, and APPLE's revenue increased more than 10 times, which means APPLE earned more customers over the years as their price increased, compared with other smartphone brands. As the data shows, almost 50 percent smartphone users use iPhones (statista, 2021) [3]. Then a question is raised: what attracts APPLE's customers to buy apple products even when their price is getting more and more expensive. In this research, the functional differences from different models of two other brands are going to be compared first. The comparison would be done between HAWAII, APPLE, and Samsung. Then the study would figure out the normal factors that consumers would consider when they make the purchase decision. After that, the research would analyze the impact of the common factors on APPLE iPhone to check if the common factors also strongly impacted iPhone purchases. And then further analysis would be done on unique factors that impacted iPhone purchasing.

2 Literature review

2.1 Feature Comparison

A comparison is made among the three smartphone giants, APPLE, HAWAII, and Samsung. In the comparison, the main functions that consumers usually look into when purchasing smartphones are listed out. To make the comparison impartial, only the latest released models with the same storage, 256G, are selected. As shown in table 1, the screen size among the three models are relatively similar, HUAWEI P50 Pro screen's size is 0.6'' smaller than the other two models; Samsung has the best resolution, followed by APPLE, and then HUAWEI; Samsung has the longest battery life followed by HUAWEI and then APPLE; HUAWEI P50 Pro has the best camera; Both APPLE and Samsung support 5G; HUAWEI and Samsung has a higher refreshing rate compared with APPLE. APPLE has the best processor followed by HUAWEI and then Samsung. The listed features in table (2) are the features that are comparable. In table 2, the check mark represents the best model of one feature. Samsung Galaxy S21 Ultra has the most check marks, which means within the features that this paper is considered, Galaxy S21 Ultra is a more advanced model. However, price wise, APPLE iPhone12 Pro Max, for \$1,199, has the highest price (Apple, 2021) [5], followed by Samsung (Samsung Electronics America, 2021) [6], for \$1,049, and then HUAWEI, for \$1005 (HUAWEI, 2021) [4], at the time when research is done.

Table 1. Technical functions comparison between APPLE, HUAWEI, and Samsung

Brand	APPLE	HUAWEI	SamSung
MODEL	iPhone 12 Pro Max	HUAWEI P50 Pro	Samsung Galaxy S21 Ultra
Screen Size	6.7''	6.6''	6.7''
Resolution	2778 x 1284 pixels, 19.5:9 ratio, 458 PPI	2700 x 1228 Pixels, 450 PPI	1440 x 3200 pixels, 20:9 ratio
Price (when research is done)	\$1,199.00	\$1,005	\$1,049
Battery Life	10h53min; 3,687 mAh	4360mAh	12h03min; 5,000 mAh
Storage	256G	256G	256G
Camera	12MP	13MP	12MP
Refreshing Rate	60Hz	120Hz	120Hz

Dust and water resistance	IP68	IP68	IP68
Supporting 5G	YES	NO	YES
Wireless charging	YES	YES	YES
Weight	228g	195g	227g
Operating System	iOS (14.x)	Harmony OS	Android 11, One UI 3.1
Processor	Apple A14	Snapdragon 888 4G	Exynos 2100

Table 2. Comparison result from Figure 1

Brand	APPLE	HUAWEI	SamSung
MODEL	iPhone 12 Pro Max	HUAWEI P50 Pro	Samsung Galaxy S21 Ultra
Screen Size	✓		✓
Resolution			✓
Battery Life			✓
Camera		✓	
Refreshing Rate		✓	✓
Supporting 5G	✓		✓
Weight		✓	
Processor	✓		

2.2 Share of people with iPhone and iPhone Sales

Even though APPLE products are more expensive than the similar devices from other companies. APPLE iPhones are still the dominant smartphone brand in the US. In Figure 1 (statista, 2021) [3], the x-axis represents the year from 2014 to 2021, and the y-axis presents the share of smartphone users that are using the iPhone. As the data revealed in Figure 1, the share of iPhone

users increased each year. In 2021, almost half of the smartphone users in the United States will use iPhones. As the prices of the latest iPhone increased each year, the percentage of iPhone users actually increased.

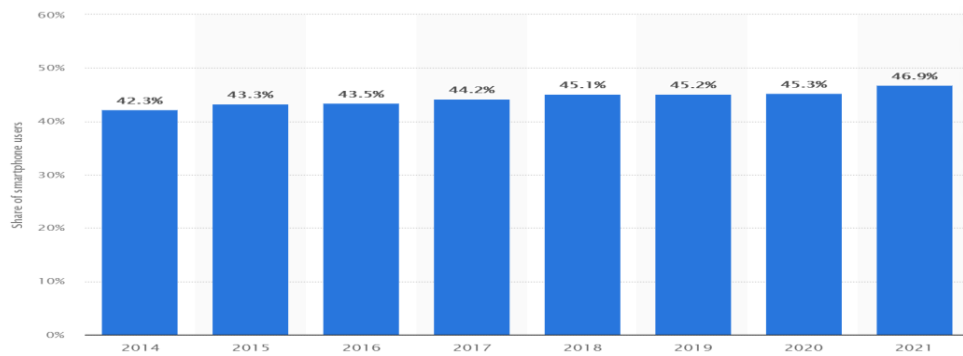


Figure 1. Share of smartphone users that use an Apple iPhone in the United States from 2014 to 2021

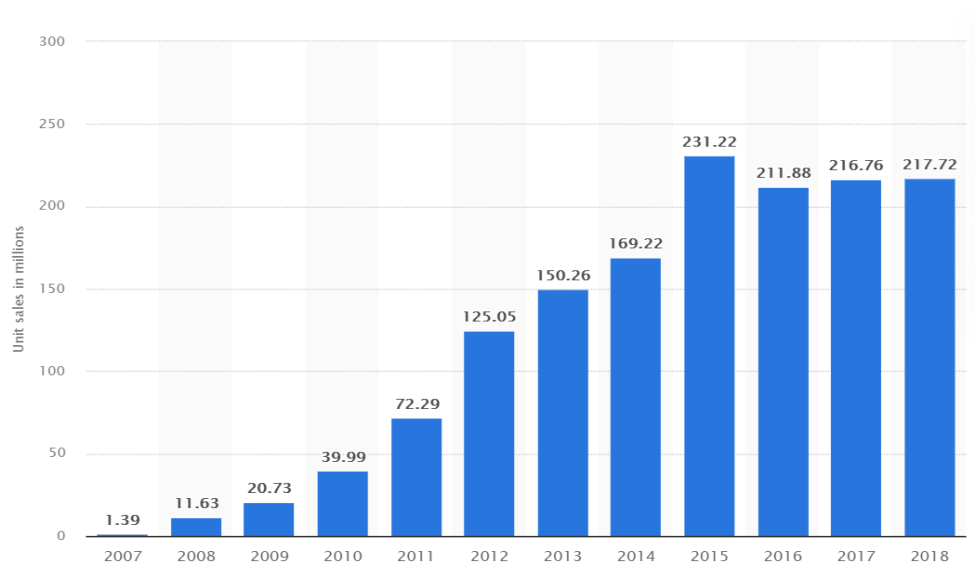


Figure 2. Unit sales of the Apple iPhone worldwide from 2007 to 2018

In Figure 2 (statista, 2021a) [2], x-axis represents year, and y-axis represents Unit sales millions. The sales of iPhone presents an increasing trend. Except from 2015 to 2016 the sales decreased, during other years the latter years' sales are always greater than the previous years' sales. Compared to the unit sale of 2007 with the unit sale of 2018, the sales are greater by more than 150 times. Combining the result from Figure2 and the price changes of iPhone, a conclusion that unit sales increased as price increased is made.

As the two figures above show, both the share of iPhone users and iPhone sales is the opposite of what people intuitively would expect when the price of a device increases.

3 Methods

3.1 Factors that affect customers decision when buying smartphones

A questionnaire was sent out to 252 reponents, the part that is listed below is the part that is related to this research.

Table 3. Model analysis

	Sex	Age	Educa tion	Curren t job	Monthly income	Frequency of changing smartphone	External elements	Internal elements	Brand relationship
Sex									
Age	-0.208*								
Education	-0.142	0.019							
Current job	-0.137	0.331*	-0.019						
Monthly income	-0.248*	0.472*	0.158*	0.524*					
Frequency of changing smartphon e	-0.037	0.136*	0.037	-0.027	-0.066				
External elements	-0.054	-0.084	-0.056	-0.004	-0.012	-0.224*	(0.72)		
Internal elements	0.008	-0.058	0.046	-0.009	-0.052	-0.080	0.478*	(0.71)	
Brand relationshi p	0.025	-0.107	-0.006	0.020	-0.043	-0.170	0.339*	0.419*	(0.83)

Table 4. Research methodology and questionnaire design

2. What internal factors will affect the purchasing decision of smartphone consumers?	Product Price	17 – 18
	Product Function	19 – 22
	Product Appearance	23 – 25
	Social Influence	26 – 28
	Brand Awareness	29
	2-3 Brand Relationship Quality	
	Brand Experience	30 – 31

In the majority of the participants, 85% of the respondents, agreed that the price is a sharp influence on choosing a smartphone, however, ninety-three of the participants disagreed that they would choose the phone with a lower price when they are hesitating between two phones. 89% of the respondents agreed that the interior function is a very important influence when they buy new smartphones. 87% of the respondents think a friendly operation interface is a big influence when choosing smartphones. 89% participants would consider battery life when buying smartphone. 85% would take appearance as a factor when choosing phones (Chen & Lin, 2016) [8].

The questions in Table 3 are aimed to ask the participants' opinion on what consumers consider and how much they consider each factor. Based on the questionnaire result. In Table 3, the most frequently impacting factors when considering buying new smartphones can be summarized as Price, Interior functions, friendly operation interface, battery life.

3.2 Specifically for iPhone

3.2.1 Price

iPhone has the highest price among the models that are compared in the literature review section. However, it can not be a strong influence on customers when they consider buying an iPhone. Because, first of all, the price of the iPhone does not exceed the other two models by too much compared with their prices. iPhone is 194 US dollar more expensive than the HUAWEI P50 pro, and 150 US dollar more expensive than the Galaxy S21 ultra. Based on the result from the questionnaire, when a customer hesitates between two phones the possibility of the customer buying the cheaper one is not certain. Therefore, the higher price of the iPhone does not produce a strong negative impact on the customer's decision of buying smartphones (Chen & Lin, 2016) [8].

3.2.2 Friendly operation interface

In Figure 3 (Gottesman, 2021) [9], the x-axis represents four most common operating systems, and y-axis represents user satisfaction. Based on the result, most of the users, 70%, prefer the iOS operating system the most. One thing that the customers prefer about iOS over other operating systems is because the iOS system has a very similar operating interface along most of the APPLE devices. The similarity in the operating system avoids unnecessary learning curves. Compared with the Android system, google play has a totally different interface than that of windows on laptops.

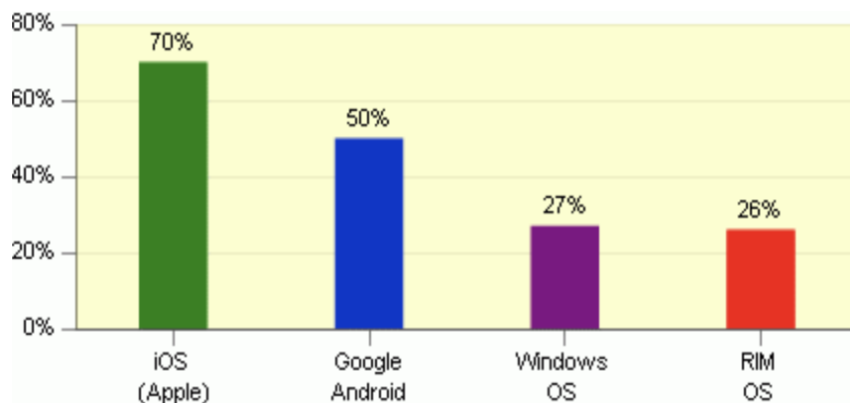


Figure 3. Satisfaction Rating Based Upon MOBILE Operating System

3.2.3 Appearance

The analysis by the quantification theory type indicated that the male and female preferences are different.

As the result of the survey showed, both male and female participants like the iPhone's design. Male customers prefer a smooth phone surface more, iPhone 12 pro max has a smooth back design, but females prefer matte texture, such as the design on iPhone 7 (Apple Support, 2021) [7]. Male prefer slim designs, however, females do not consider the thickness of the phone. Both male and female customers prefer lens design more (Lo & Liao, 2018) [10]. However, the

iPhone's external design changed back and forth. Before iPhone 6, the shape of iPhone was more sharp and had more lens, but from iPhone 6 to iPhone 11, APPLE changed the shape to be more round, and since iPhone 12 APPLE switched the shape back to its old model. But the sales of different iPhone models did not fluctuate because of the appearance changes. Hence, appearance is not an important factor when people consider buying a new iPhone since the aesthetic criteria differs from individual to individual and did not cause noticeable changes on customer buying behavior for iPhone.

Table 5. The results of the analysis by the quantification theory type I by gender

		Ranking #1	Ranking #2	Ranking #3	Partial Coefficient of Correction	
Adjectives for appearance	Stylish	Male	Stylish lens design	Simple and brief shape	Aesthetic style design	0.804
	Female	Stylish lens design	Matte texture	Smooth phone surface	0.469	
	Consistent	Male	Smooth phone surface	Simple and brief shape	Slim design	0.737
	Female	Matte texture	Slim design	Simple and brief shape	0.566	
	High-quality	Male	Matte texture	Aesthetic style design	-0.750	
	Female	Matte texture	Color	Simple and brief shape	0.556	
	Comfortable	Male	Smooth phone surface	Color	Matte texture	0.741
	Female	Matte texture	Smooth phone surface	Color	0.332	
	Succinct	Male	Slim design	Color	Smooth phone surface	0.726

	Female	Matte texture	Smooth phone surface	Color	0.599	
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3.2.4 Brand loyalty

Møller (2011) [13] stated that Brand Loyalty can be explained as the way to measure the current number of customers of the particular brand. It could also be defined as the customers' willingness to recommend the product to other people (Nam & Whyatt, 2011) [14]. In other words, brand loyalty is not just a one time purchase but a continuously expanding purchase. It implies that brand loyalty can be increased by improving the relationship between brand and its consumer. By increasing brand loyalty, a product would be known and purchased by more people.

Table 6. Multiple Regression Table

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	.862	1.606		.537	.593
x1	.119	.125	.089	.950	.345
1 x2	.213	.141	.155	1.514	.133
x3	.280	.123	.226	2.279	.025
x4	.276	.072	.364	3.805	.000

a. Dependent Variable: y

Source: Primary Data by SPSS 20

Based on table 6 above, a formula is obtained as follow:

$$Y = 0.226X_3 + 0.364X_4$$

- X₁ = Brand Awareness
- X₂ = Perceived Quality
- X₃ = Brand Loyalty
- X₄ = Customer Satisfaction

In Table 6, X₁, X₂, X₃, X₄ represents Brand Awareness, Perceived Quality, Brand Loyalty, and Customer Satisfaction accordingly. Multiple regression analysis is used to determine the relationship between dependent variables to one or more independent variables. The equation $Y = 0.226X_3 + 0.364X_4$ calculates the purchase Intention. In this case, Purchase Intention, Y, is the dependent variable and X₃, X₄ are the independent variables. In Table 6, only standardized coefficient is used because it can show, among the four independent variables, who has a greater effect towards purchase intention. As shown in the result, Brand Loyalty is the second important influence on consumer purchase intention with a coefficient of 0.226 (Gita, 2014, p68) [15]. This result strengthened that a strong customer loyalty would lead to a high purchase intention, which would lead to a high sale revenue. APPLE has been voted as the top one company for excellent marketing for ten years by CMO survey. Excellent marketing would enhance the relationship between customers and company, which implies that the relationship between APPLE and the

consumer is strong and the APPLE has a strong brand loyalty. Therefore, iPhone customers would keep purchasing the iPhone over other products because of brand loyalty.

3.2.5 Peer influence

Peer influence is the indirect or direct influence that an individual would get from a group of people. The influence of peer pressure does not only impact individuals that belong to a group, but also impacts the individuals who do not feel they belong to a group when they spend time together. Experiments have shown that the impact of peer pressure is strong. It can change children's understanding about one thing from not acceptable to fully acceptable. From KidsHealth (n.d.) [11], this notion works for all teens from different age ranges. Peer pressure does not only apply to teens, but also adults. A study done in the 1950s by the social psychologist, Solomon Asch, had participants point out the shortest line, based on memory, 75 percent of the real participants followed the suit and chose the wrong line. (FocusVision, n.d.) [12].

Based on a study on peer pressure on buying behavior, APPLE products are a huge aspect of peer pressure influence. Because APPLE devices are expensive people would use APPLE devices to show off their financial ability. Gradually people would see people with iPhone as "cool" people. APPLE aimed at this point as well with their advertisement to make people want to invest more in their company. Hence peer influence is a major factor for the iPhone.

4 Conclusion

In this study, the three models from APPLE, Samsung, and HUAWEI are compared based on their technical functionalities, and prices. Based on the data from official websites, the three models from different brands have similar functions, and the prices. The major factors led to the thrill of APPLE are price, interior functions, friendly operation interface, battery life, appearance, and after-sale service. The data showed that even though the iPhone's price is a little higher than smartphones from other brands with similar functions, a small price difference is not a major effect when customers vacillate between devices. For a friendly operating system, the iPhone seems to be more competitive, reflected by higher interface consistency and higher satisfaction. Although appearance seems to be a major factor on consumers' decisions on purchasing smartphones, it is not a major factor on iPhone purchasing. Peer influence and brand loyalty are stronger influences for iPhone purchases, which is different from the factors that consumers consider when they buy new smartphones in general.

This research can be used for case study when needed to further analyze each influence of what APPLE did to achieve the impact they have nowadays. Further analysis can be done on when brand loyalty starts building up for a startup technology company.

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