

# A Comparative Analysis of Consumers' Smart Phone Preferences by NLP Preference Sensation Types

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## **Abstract**

*This research analyzes the correlation between user's behavioral patterns based on preferred sensory organs and their preference for smartphones so that smartphone developers may have better idea of which user types to focus on in the future. The result of this research indicated that, in terms of NLP primary preferred sense types, those who prefer Galaxy phones and iPhones did not differ by much in their responses, however; in terms of individual types, 60% of type V preferred iPhone while 65% of type K preferred Galaxy phone. With 60 survey participants composed of Type V whose 60% preferred iPhone and Type K whose 65% preferred Galaxy Phone, this study carried out a factor analysis of the 4 sections, exterior appearance satisfaction, usability satisfaction, service satisfaction and value satisfaction. As a result, it was found that users preferring iPhone showed a higher degree of exterior appearance satisfaction, while user preferring Galaxy Phone showed high degrees above average in all the 4 items.*

**Keywords:** *NLP primary senses, consumer preference, smart phone*

## **1. Introduction**

Global enthusiasm for smart phones is hot. The news in IT markets has a high interest in new technologies and their roles for smart phones, according to which expectations for iPhone 5 or Galaxy S3 are becoming higher as well. That is because Apple's I-Phones and Samsung's Galaxy phones are competing for the supremacy in global markets for smart phones.

According to Gartner, smartphones continued to drive overall mobile phone sales, and the fourth quarter of 2012 saw record smartphone sales of 207.7 million units, up 38.3 percent from the same period last year. Also, Gartner predicts that sales of worldwide smartphone sales to end users will be close to 1 billion units in 2013, and overall mobile phone sales to end users are estimated to reach 1.9 billion units.

In the fourth quarter of 2012, Apple and Samsung together raised their worldwide smartphone market share to 52 percent from 46.4 percent in the third quarter of 2012. Samsung ended the year in the No. 1 position, in both worldwide smartphone sales and overall mobile phone sales. In the fourth quarter of 2012, Samsung's overall smartphone sales continued to accelerate totaling 64.5 million units, up 85.3 percent from the fourth quarter of 2011. In 2012, Samsung totaled 384.6 million mobile phones sales, of which 53.5 percent (up from 28 percent in 2011) were smartphone sales. Apple's sales reached 43.5 million units in the fourth quarter of 2012, up 22.6 percent year-on-year. In 2012, Apple totaled 130 million smartphone sales worldwide. While the demand for iPhones in the fourth quarter remained strong, consumers' demand favored the less expensive iPhone 4 and 4S models.

However, what is important is that consumers' choice always change. Regardless of whether it is a new design or a new technology, consumers always choose something.

Professor Donald Norman, a great worldwide design scholar, has stated that emotional design is a design touching 'emotion' exerting the greatest and the most immediate influence on the purchase decision by consumers, which cannot succeed simply because of a beautiful design for the product appearance or its outstanding functions.

If that was the case, then one cannot help asking a question why consumers are choosing iPhones or Galaxy phones out of numerous smart phones, and generating curiosity as to what characteristics the emotion of people choosing those phones has.

There are about a hundred smartphones out in the market but people's interest and preference for iPhone and Galaxy phone left them with limited choices. It is inevitable to think about why such phenomenon is happening. Of all the various reasons and factors, this research focuses on user's NLP types and senses and how they lead them to prefer certain smartphones.

Through NLP preferred sense survey, it finds out which sense type prefers iPhone and Galaxy phone. Then it explores the difference between the types by cross-correlating the people who prefer iPhone and Galaxy phone in different types.

## **2. Theoretical Background**

Human senses can be divided into sense of sight, sense of hearing, somatic senses (sense of touch, sense of taste and sense of smell) and internal sensation, and every person has a particular sense organ he or she prefers to use much more. NLP is an abbreviation of Neuro-linguistic Programming created by Bandler and Grinder, U. S. neurologists, in the late 1970s, and as a new approach to develop the superiority of inherent human abilities, it is such a strong tool to understand principles of human mind and behaviors and achieve goals most effectively.

Bandler said that all the human behaviors are information and data made by their internal changes, and these internal changes are exposed by microscopic physical and physiological variables including macroscopic behaviors possible to observe, such as body postures, vocal quality, facial expressions, colors and tones, muscular tension, breathing positions, eye motions and hand movements. Therefore, he said that noticing these changes well would lead to drawing human inner psychological circumstances and changes. Moreover, as an academic field studying human subjective experience, NLP discovers that human experience has a certain structure, and by modifying the structure, it can change human experience itself. Such a structure varies by individuals and is formed into their life patterns while being developed and adopted as a survival function as people grow up. If these patterns are re-programmed, they will turn into advanced forms [2].

In NLP (Neuro-linguistic Programming), senses are called representational systems, and representation means to represent certain external situations, objects, experiences or what they experienced or perceived in the past and draw images clearly to mind, which is conducted through our sensory systems. It also corresponds to a sort of inner map, and our inner maps represent kinds and methods of perception. People have individually different ways of recognizing and perceiving the external world as they are quite subjective in other words, every individual has a different representational system. Human senses can be a channel through which people recognize the outside world as well as tools by which they show their ideas or thoughts to the outside. The more people use a particular sense for their daily affairs in the outside world, the more sensitive the sense gets. Then, the sense can be used as a preference representational system over the other senses. To figure out people's preference sensation is also a very important criteria to understand how individuals are related with the outside world.

N from the term, 'NLP', means 'neuro', indicating our mind, which shows our intentional effort is required when we build up our inner worlds. L means 'linguistic', indicating that human mind, that is our thoughts and emotions, is encoded and systematized through a language, further giving meaning to them, and even nonverbal expressions are included in this definition. P means 'programming', indicating that a series of patterned and systematized neurological processes work on the formation of human behaviors and consciousness, and humans organize them by their conscious or unconscious will.

NLP is on the premise that each individual has an ability and skills to change his behaviors. Accordingly, since the process of representing actual objects perceived through senses depends on a cognitive filtering operation, the acceptance of Cognitive Theory greatly works on NLP.

Psychologists have been studying how people's personalities may be categorized and interact with social and psychological adaptation and they claim the formation of personality is strongly affected by genetic, physiological, and social cultural factors. NLP is a powerful tool that allows us to understand how people's mind and action are processed and better achieve our goals most effectively [3]. It is closely related to user experience. User experience is a comprehensive experience felt and thought of by a user while directly or indirectly using a certain system, product or service. Creation of positive user experience is an important task for industrial design, software engineering, marketing and economics, and a major issue that can bring satisfaction of user needs, improvement of brand loyalty, success in markets.

Mention of early users' experience may be found in "User Experience with the CYBER Graphics Terminal" by E.C. Edwards and D.J. Kasik [7]. In 1970's and 1980's since then, many studies were conducted, it has been attempted to produce the values of positive experience from mutual communion between human and machine mainly in the context of human centered design (HCD). Particularly, Donald Norman, who was an employee of Apple computer at the time has since influenced design of Apple computers as a designer of user experience in 1993, and exerted a great influence on those studying human-computer interactions. User experience is a concept used in computer interaction studies, and many principles of user experience have still originated from the development of software and hardware in the computer engineering field. Now, however, this concept is widely applied for not only computer products but services, products, processes provided through industry, as well as society and culture. All of this can be done by sensory system, which recalls the previous experiences, because people's inner map about their past experiences represent types and ways of perception. The inner map evolves through individual's experience and subjectivity that perceive the outer world. As a certain sense is used more than others, the sense may become a part of preferred representational system.

Preferred sense can be an important clue that reveals the way individuals interact with the world and it is closely related with lifestyles including and not limited to learning, educating, and sales [4].

## **2.1. Principle of NLP**

The principle of NLP includes formation of rapport, goal setting, sensory acuity, and behavioral flexibility. Rapport is about a mutual-trust relation and its reactivity, and it can be applied not only to human relations with others, but to relations with oneself [5]. Rapport with oneself can be explained with a rapport with the body, a rapport with the mind or spirit and a spiritual or super-individual unity. Setting up clear goals based on what you want will lead you to a more advantageous position in accomplishing goals. Goals should be positively stated to get much better results, and you should think of the results as concretely as possible.

To obtain much better results, it is necessary to establish goals related to one's own environment as much as possible.

Sensory sensitivity is one's way of seeing, hearing and feeling what has happened to oneself by using one's senses. Through feedback from this process, one can modify one's direction, further achieving goals more effectively in one's relations with others. Behavioral flexibility means to widen the range of choice while keeping several behavioral alternatives in mind, and such flexibility is demonstrated good enough to take various different actions till you obtain what you want.

## **2.2. Representational system of NLP**

In NLP, senses are called representational systems, and a representational system is a combination of macroscopic experiences possibly observed with the naked eye and microscopic sensory information possibly observed in terms of neuro-physiology [1].

Representational systems can be classified into some subordinate domains, visual, auditory, kinesthetic (corresponding to the sense of touch) and auditory-digital. In addition, there are other subordinate domains called, 'olfactory' corresponding to the sense of smell and 'gustatory', corresponding to the sense of taste.

This research assumes them to be a part of kinesthetic. While NLP counseling system plays an important role for NLP's principle, this research did NLP survey to find out people's preference for smartphones. The participants were divided into four types: visual-preferred V, auditory-preferred A, kinesthetic-preferred K, and auditory-digital-preferred D.

## **2.3. Each type's characteristics**

Human's five senses become a perceptive tunnel to the outer world and process all the information flowed in. Just like people tend to use a certain sense to perceive certain things, the same thing occurs in inner world and such sense is called, preferred representational system or the primary sense system [6].

People in Type V (Visual), which is the visual representational system, like being so neat and tidy that they are good at arranging and organizing things well. Since they focus on the sense of sight, they are relatively less sensitive to sound, but sometimes have difficulties in remembering instructions properly. When meeting someone new, they care much about outward appearance, and they are quite good at remembering people's faces. They mostly use such predicates as, 'see', 'imagine', 'clear', 'brilliant' and 'seems great'.

People in Type A (Auditory), which is the auditory representational system, are more likely to talk to themselves and like moving lips as if they were muttering to themselves. They are so sensitive to noise that they are often hindered in doing something. Besides, they are good at remembering what they've heard once, find it more effective to be instructed verbally than in writing, and react to particular tones of voice. Lastly, in human relations, they get fascinated by other people's voices, remember people's voices better than people's faces and have deep emotions.

People in Type K (Kinesthetic), which is the kinesthetic representational system, are slow speakers. They like physical contacts and tend to memorize things while taking actions in person. Besides, they are sensitive to physical contacts and have their feelings, emotions or intuition well-developed, and they are more likely to express their opinions through behaviors and tend to talk to others at a close distance.

People in Type D (Digital), who prefer internal sensation, intently analyze and think of environments and circumstances. They tend to inquire into principles and try to be logical, while valuing being logical for procedures, orders and systems. Besides, they often show

some of the other representational systems, and since they are sensitive to expressions mainly composed of words and terms in communication, they try to have a good command of a language.

### 3. The experiment

The subjects for this experiment were 93 males and females in their 20s or 30s. The experiment lasted from May 20th, 2012 to June 10th, 2012.

**Table 1. The demographic**

Age \ Gender	Male(%)	Female(%)	Total(%)
20's	23(24.7%)	27(29.1%)	50(53.8%)
30's	19(20.4%)	24(25.8%)	43(46.2%)
<b>Total</b>	42(45.1%)	51(54.9%)	93(100%)

Preferred Representational System Test was implemented to make measurements between different NLP primarily preferred sense types. People's preferred sense types by age and gender are like the followings.

**Table 2. Primarily preferred sense by age**

Age \ Types	NLP primarily preferred sense types (%)				Total(%)
	V	A	D	K	
20's	26(27.9%)	10(10.8%)	6(6.5%)	8(8.6%)	50(53.8%)
30's	14(15.1%)	8(8.6%)	9(9.6%)	12(12.9%)	43(46.2%)
<b>Total</b>	40(43%)	18(19.4%)	15(16.1%)	20(21.5%)	93(100%)

**Table 3. Primarily preferred sense by gender**

Gender \ Types	NLP primarily preferred sense types (%)				Total(%)
	V	A	D	K	
Male	11(11.8%)	10(10.8%)	9(9.6%)	12(12.9%)	42(45.1%)
Female	29(25.8%)	8(8.6%)	6(6.5%)	8(8.6%)	51(54.9%)
<b>Total</b>	40(43%)	18(19.4%)	15(16.1%)	20(21.5%)	93(100%)

Each NLP preferred sense type prefers the followings smart phones.

**Table 4. Primarily preferred sense by types**

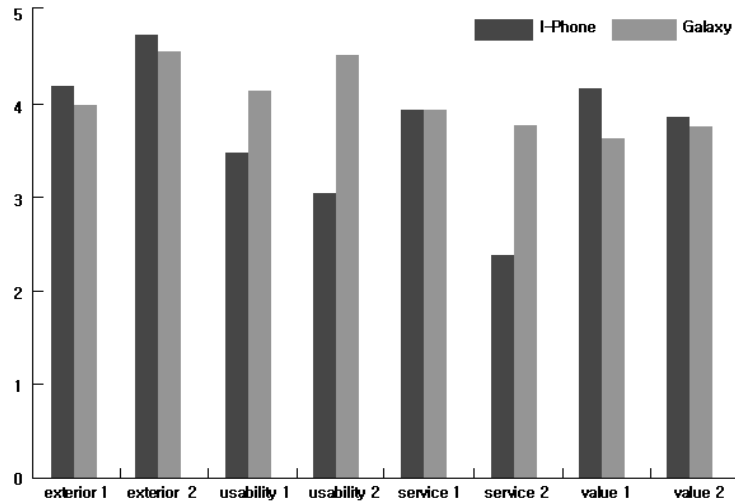
Types phone	NLP primarily preferred sense types (%)				Total(%)
	V	A	D	K	
<b>Galaxy</b>	16(17.2%)	10(10.8%)	9(9.6%)	13(14%)	48(51.6%)
<b>i-phone</b>	24(25.8%)	8(8.6%)	6(6.5%)	7(7.5%)	39(48.4%)
<b>Total</b>	40(43%)	18(19.4%)	15(16.1%)	20(21.5%)	93(100%)

Out of all the 93 survey participants, 43% were Type V and 21.5% were Type K, and it was found that 60% of Type V preferred iPhone, while 65% of Type K preferred Galaxy Phone. Therefore, this study provided 4 sections of satisfaction, exterior appearance satisfaction, usability satisfaction, service satisfaction and value satisfaction with two factors arranged for each section. Every section and factor were devised in reference to Lee. YJ & Kim JD's 'The Comparison of iPhone and Galaxy Phone Users' Emotional Types'.

**Table 5. Sectional Factors**

<b>Exterior Appearance Satisfaction</b>	Exterior 1	Attractive
	Exterior 2	Not boresome but luxurious
<b>Usability Satisfaction</b>	Usability 1	Functions easy and convenient to find and use in time
	Usability 2	Errors easy to solve
<b>Service Satisfaction</b>	Service 1	Easy and simple to upgrade
	Service 2	Easy and simple A/S
<b>Value Satisfaction</b>	Value 1	Differentiated from others
	Value 2	Feeling of superiority

This survey was based on a 5-point scale, and the following shows th results.



**Picture 1. Type V Preference and Type K Preference out of the NLP Types**

#### 4. The result

As for all types (V,A,D and K types), 51.6% of them were in favor of Galaxy Phone while 48.4% of them preferred iPhone. The difference was quite minimal. When it came to different types, V (visual) was the most popular type, being 43% of the demographic; followed by type K (Kinesthetic), 21.5%; then type A (Auditory), 19.4%; and finally type D (Auditory-Digital) ended up being the lowest, 16.1%.

The result of preferred smartphone by different types suggests that majority of type V were fond of iPhone. Almost 60% of type V, which is about 25.8% of the whole demographic, preferred iPhone. On the other hand, type A, D, and K tend to prefer Galaxy phone. In fact, 13 out of 20 type K subjects preferred Galaxy phone over iPhone and that is about 14% of the whole demographic.

Out of the people in Type V and Type K, iPhone-preferred users showed the highest degree of exterior appearance satisfaction, and a relatively high degree of value satisfaction, over 4 on average. Galaxy Phone-preferred users showed high degrees over average in most of the items. On the other hand, it was found that iPhone users showed lower scores in usability satisfaction and service satisfaction than Galaxy Phone users.

#### 5. Conclusion

Recently, Apple and Samsung dominate over half the Korean smart phone market, and this study attempted to approach this trend in a human essential respect. Also this research analyzes the correlation between user's behavioral patterns based on preferred sensory organs and their preference for smartphones so that smartphone developers may have better idea of which user types to focus on in the future. The result of this research indicated that, in terms of NLP primary preferred sense types, those who prefer Galaxy phones and iPhones did not differ by much in their responses, however; in terms of individual types, 60% of type V preferred iPhone while 65% of type K preferred Galaxy phone.

With 60 survey participants composed of Type V whose 60% preferred iPhone and Type K whose 65% preferred Galaxy Phone, this study carried out a factor analysis of the 4 sections, exterior appearance satisfaction, usability satisfaction, service satisfaction and value satisfaction. As a result, it was found that users preferring iPhone showed a higher degree of

exterior appearance satisfaction, while user preferring Galaxy Phone showed high degrees above average in all the 4 items.

With 60 survey participants in Type V and Type K, this study carried out a 5 point-scale survey, while arranging two factors for every section, exterior appearance satisfaction, usability satisfaction, service satisfaction and value satisfaction. As a result, it was found that iPhone-preferred users showed a higher degree of exterior appearance satisfaction, while Galaxy Phone-preferred users showed high degree over average in all the 4 items.

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