EFFECT OF COLORS ON TAXI SELECTION CHOICE OF CONSUMERS IN BANGKOK

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Blue is for the trust of everyone towards me
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Orange is for the energy keeping me to accomplish the goal
Yellow is for the optimism of my mentors
Purple is for the wisdom of generating new knowledge to others
Red is for the love and encouragement of my family, friends, and mentors

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ABSTRACT

The purposes of this research were first to study passengers' taxi selection choices in order to gain knowledge about passengers' taxi color preferences in Bangkok and then to apply this knowledge to practical strategies for taxi operators. Taxis were chosen as they tend to be the form of public transportation that is the most convenient, comfortable, and private as well as offering the most comprehensive route coverage in Bangkok.

Moreover, Bangkok is seen to have a variety of colorful taxis nowadays, and color is one of the most outstanding strategies for attracting the consumer's choice according to many studies. Literature pertaining to the significance of color, color impact, color association, generations of color, and colors and gender were reviewed. Based on the reasons mentioned above, taxi color seems to be a very interesting topic to examine, yet there are currently a limited number of studies related to this topic.

In conclusion, valuable knowledge would be generated both for the public and specifically for business-related organizations in order to understand more about taxi passengers' behavior on the color, which is not only a differentiation tool, but also a valuable asset or effective strategy for drawing customers' attention and eventually delivering greater products and service value to consumers for their satisfaction.

KEY WORDS: TAXI COLOR / COLOR EFFECT / COLOR ASSOCIATION

73 pages

ผลของสีที่มีต่อการตัดสินใจเลือกใช้บริการรถแท็กซี่สำหรับลูกค้าในพื้นที่กรุงเทพมหานคร
EFFECT OF COLORS ON TAXI SELECTION CHOICE OF CONSUMERS IN BANGKOK

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บธ.ม. (การวิเคราะห์และการสร้างตัวแบบธุรกิจ)

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บทคัดย่อ

จุดประสงค์ของงานวิจัยนี้ประกอบไปด้วย ศึกษาการตัดสินใจเลือกใช้บริการรถแท็กซี่ของผู้โดยสารในพื้นที่กรุงเทพมหานคร เพื่อรวบรวมความรู้เกี่ยวกับสีของรถแท็กซี่ที่ผู้โดยสารพึงพอใจในบริเวณดังกล่าว และนำความรู้เหล่านั้นมาประยุกต์ใช้เป็นกลยุทธ์ปฏิบัติการสำหรับผู้ประกอบการรถแท็กซี่ เนื่องจากการขนส่งสาธารณะที่ถือว่าสะดวกสบาย ส่วนตัว และสามารถครอบคลุมทุกเส้นทางการเดินทางในกรุงเทพมหานครได้มากที่สุด คือรถแท็กซี่

นอกจากนี้กรุงเทพมหานครยังเต็มไปด้วยรถแท็กซี่หลากหลายสีสัน และจากงานวิจัยหลายๆชิ้นบ่งบอกว่า สีเป็นหนึ่งในกลยุทธ์ที่สำคัญที่สุดเพื่อใช้ดึงดูดความสนใจของลูกค้าในการตัดสินใจเลือกซื้อ หัวข้อการทบทวนวรรณกรรมนั้นเกี่ยวข้องกับความสำคัญของสี ผลกระทบของสี ความเชื่อมโยงของสี ยุคของสี สีและเพศ ซึ่งสอดคล้องกับงานวิจัยต่างๆ ดังที่ได้กล่าวมาข้างต้น สีของรถแท็กซี่จึงเป็นปัจจัยสำคัญปัจจัยหนึ่งที่น่าสนใจต่อการศึกษา นอกเหนือจากนั้นยังมีงานวิจัยเกี่ยวกับเรื่องนี้ที่ค่อนข้างจำกัดในอดีต

โดยสรุปแล้ว งานวิจัยในครั้งนี้จะก่อให้เกิดความรู้ที่มีคุณค่ามากมายทั้งต่อสาธารณะและโดยเฉพาะองค์กรที่เกี่ยวข้องทางธุรกิจ เพื่อจะเข้าใจพฤติกรรมของผู้โดยสารต่อปัจจัยสี ซึ่งไม่ใช่แค่การสร้างความแตกต่างเท่านั้น แต่สียังเป็นเครื่องมือที่สร้างสรรค์ กลยุทธ์ที่มีประสิทธิภาพในการดึงดูดความสนใจของลูกค้า และสียังสามารถส่งมอบคุณค่าของสินค้า และบริการเหล่านั้นเพื่อก่อให้เกิดความพึงพอใจของลูกค้าในที่สุด

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CHAPTER I
INTRODUCTION

1.1 Background

It is undeniable that transportation is a very important part of our life especially in Bangkok. Everyday, people travel around, head to work or go to school by using their own cars or public transportations including bus, boat, sky train, subway, motorcycle taxi, and motorized rickshaw. However, the mode of public transportation that offers the most convenience, comfort, privacy and ability to cover all routes in Bangkok tends to be the taxi. Hence, due to public complaints about the shortage of taxis in Bangkok 17 years ago, the Anand Panyarachun administration decided to abolish the taxi quota system in 1992 in order to respond to the excess passenger demand for taxis at that time. This allowed the taxi business to run into the free market mechanism. It has caused a rapid increase in the number of Bangkok taxis from 13,000 to 70,000 at the present (Wongruang, 2009).

Nowadays, Bangkok is seen to have a variety of colorful taxis: red, pink, yellow, blue, green, etc. These colors come in several combinations: single-color, bi-color, or single-color with stripe. Since taxi transportation has become increasingly crucial to city living, Bangkok could possibly be just one of many places in the world where taxi colors have become the consumer's choice of preference over other criteria. Consequently, taxi companies frequently come up with the up-to-date colors for taxi exteriors to differentiate themselves from their competitors. One report shows a similar example of colorful taxis being used in Beijing and claimed that taxis were considered as a "name card" of a city since it is believed that brightly colored taxis can provide comfort and an easy feeling for passengers. Moreover, the choice of colors also reflected public popularity and opinion as to their favorite colors (Xinhua, 2005).

The change in consumer tastes and heightened competition in the marketplace made it compulsory for taxi operators to respond to the need of individualization. Moreover, color is one of the most crucial strategies contributing to

influence the consumer's choice and purchasing decision (Funk and Ndubisi, 2006). Some people tend to say that colors can be just as important as picking a name, because color can silently carry information in a complex world. Color also conveys ideas, creates favorable impressions and stimulates action (Marney, 1996). Moreover, in a psychological aspect, the research indicates that people make up their minds within 90 seconds of their initial interactions with either people or products. Furthermore, about 62-90 percent of assessment is based on colors alone (Singh, 2006).

Walker (1991) suggests that "color accounts for 60% of the acceptance or rejection of an object and is a critical factor in the success of any visual experience" (p.33). From the quote above, the validity of corporate success coming via the "power of color" (Walker, 1991) could be proven within the business world, such as with Apple's iPod introduced in January 2004 in five metallic colors, as well as with a repeat performance in 2006 with five new colors in the Nano version: with Volkswagen's bright green VW Beetle introduced in 1998: and with Heinz Co.'s stellar blue ketchup in 2003 (Harrington, 2006).

Losses in the competitive advantages of businesses could occur if color decisions or color strategies have been made inefficiently. In the competitive business world, where profits count and new different strategies have been launched to capture greater market shares, companies cannot ignore color. They must generate knowledge to support critical decisions and develop color strategies in order to enhance their competitive advantages (Harrington, 2006)

According to the marketing perspective, several models could be used to explain the consumer behavior regarding taxi selection choice. There are, for instance, the Holistic Marketing Approach, Color Associative Learning, A Cross-National Study of Color Meanings and Preferences, and Color Lifestyle Segmentation. The Holistic Marketing Approach is a very broad model. However, one of the four elements, Integrated Marketing, which considers the 4Ps as its core value, reveals that color has a profound effect on the Product criterion (Funk and Ndubisi, 2006). Color has also been noted as a significant factor for global brands like Procter & Gamble. Additionally, one of the key associations displayed on the hypothetical mental map of consumers for the Dole brand is color (Kotler and Keller, 2006).

Moreover, different taxi colors could reflect different passengers' brand awareness and their positioning in consumers' minds. For example, consumers may view light blue taxis as safe and relaxed to ride in since every light blue taxi is installed with a GPS gadget, in order for the companies to track their vehicles. In addition, blue was considered a relaxed and trustworthy color according to color meaning from a cross-cultural study (Madden, Hewett and Roth, 2000). Finally, for the Color Lifestyle Segmentation that is involved with taxi selection choices, some people tend to be the leaders or so-called "innovators" in adopting a new product, while some others might be the followers or "laggards".

From the above psychological & marketing perspectives, there arises a question in my mind as to whether Colors could be used as a differentiation strategy for taxi companies to attract passengers, based on their color perception.

Therefore, this research is conducted to understand consumers' color perception regarding taxi choice. The findings will be discussed and developed into marketing strategies for taxi companies in Bangkok to help them capture the right target market, and achieve long-term growth. Also, the outcome may help taxi operators in creating a brand personality for their passengers to identify and recall.

1.2 Significance of the Study

This study was conducted based on a theoretical framework of color meaning and preferences among consumers as one of the most important weapons for presenting products and brands. Color is an integral part of products, services, packaging, logos, and other collateral aspects. It can be used as an effective means of creating and sustaining the brand and corporate images in the consumer's mind (Madden, Hewett and Roth, 2000).

In everyday life, colors have profound effect on our choices, if we are not color-blind. For instance, when everything else is equal, it always comes to our mind what color shirt to wear or what color laptop or car to buy. Moreover, it might also include what color taxi to ride as well. These decisions have always been supported by some reasons behind them; it was the color that involved itself and blended into our choices. This proposition has been put as an additional item in the record of newly

registered taxis since 2005. Ever since the color of taxis was accepted in the registration, the number of new taxis on the road has kept increasing tremendously. There were approximately 9,800, 14,000 and 10,000 new registered taxis at the end of 2005, 2006 and 2007, respectively (see Table 1).

Number of registered new vehicles that comply with the vehicle law on land transportation across the country for fiscal year 2005 - 2007					
Type of vehicles	Numbers of vehicles			Percentage changed	
	Year 2005	Year 2006	Year 2007	Year 2005/2006	Year 2006/2007
Total	2,696,827	2,797,080	2,468,058	3.72	-11.76
A. Total cars that comply with the vehicle law	2,641,926	2,733,119	2,402,187	3.45	-12.11
A1. Private cars (load up to 7 people)	311,366	308,928	304,234	-0.78	-1.52
A2. Private cars (load up more than 7 people)	14,392	15,463	20,317	7.44	31.39
A3. Private trucks	317,740	337,547	304,967	6.23	-9.65
A4. Tricycle private cars	98	85	69	-13.27	-18.82
A5. Taxis between provinces	-	-	-	-	-
A6. Taxis (load up to 7 people)	**9,864**	**13,954**	**10,312**	**41.46**	**-26.10**
A7. Four-wheel small taxis	17	43	103	152.94	139.53
A8. Tricycle taxis	60	328	1,675	446.67	410.67
A9. Charter serviced limousines	280	259	268	-7.50	3.47
A10. Traveling serviced cars	17	3	19	-82.35	533.33
A11. Rental cars	15	3	12	100.00	300.00

Table 1.1: Adapted new registered taxi (year 2005-2007)
Source: Department of Land Transport

Prior to that time, newly registered taxis totaled approximately only 7,000 each year. This may reflect the significance of color playing an important role in the consumer's purchase decision, which in turn drives taxi operators to respond.

To support this hypothesis, this study will first survey a number of passengers about their taxi-color perception, based on theoretical color associations and meanings. Also, questions on preferable taxi colors and other questions including reason for choosing, color lifestyle segmentation, and related factors on taxi selection choice will be asked. Hopefully, new knowledge about Thai people's interpretation of color meanings and their resultant preferences with regards to taxis would be

generated from the research. Accordingly, this knowledge would enable professional taxi operators to adopt certain marketing strategies to benefit their businesses.

1.3 Research Question

The question for this study has been refined to: "Do differences in passengers' personal factors result in differences in taxi color choices, and how?" Moreover, the objectives of this research are as follows:

1. Study passengers' taxi selection choices in order to gain knowledge about passengers' color preferences.
2. Apply the passengers' color preferences into practical strategies for taxi operators.

1.4 Scope of the Study

This cross-sectional survey was conducted in Bangkok and its metropolitan areas. Approximately 500 taxi passengers were asked to fill in a 2-page questionnaire while riding in a taxi. Then, taxi drivers collected and returned the questionnaires to the researcher for immediate analysis.

1.5 Operational Definitions

1. Taxi color: In this research, examined taxi colors were single-color taxis and single-color with stripe only. Bi-color taxis were excluded from the study.
2. Taxi passengers: In this research, samples were passengers who use the taxi rental company's services.

1.6 Limitation

This research was observed only in the greater Bangkok areas. The results of this observation cannot be considered representative of the whole population of Thailand.

1.7 Methodology

This research was conducted as a cross-sectional, descriptive, quantitative study to document and understand taxi passengers' color preferences and their feelings behind those colors that they perceived. Samples were collected through questionnaire using the self-administered approach. Demographic and psychographic questions were incorporated into the questionnaire. All answers are provided in a Likert-type scale, thus making it easy to use SPSS software to analyze the data.

CHAPTER II
LITERATURE REVIEW

In this research, related information, studies and literature reviews are presented in detail as follows:

2.1 Reviews related to taxis

- 2.1.1 Definitions of Taxi
- 2.1.2 A History of Taxis
- 2.1.3 Taxis in Thailand
- 2.1.4 Taxi Driver Requirements
- 2.1.5 Taxi Statistic Information
  - 2.1.5a Numbers of Taxi and Taxi Entrepreneurs
  - 2.1.5b Numbers of new registered taxis (Categorized by brand)
  - 2.1.5c Taxi colors

2.2 Reviews related to color

- 2.2.1 Significance of Color
- 2.2.2 Color Impact
- 2.2.3 Color Association
- 2.2.4 Generations of Color
- 2.2.5 Colors and Gender

2.1 Reviews related to taxis

2.1.1 Definitions of Taxi

According to the Oxford Dictionary, a taxi is a motor vehicle licensed to transport passengers in return for payment of a fare (Oxford University Press).

While The Concise Oxford Dictionary of English Etymology defined a taxi (also called taxi-cab, which is taxi-meter cab) as a cab fitted with a taximeter automatic contrivance to indicate distance traversed and fare due (Hoad, 1996).

2.1.2 A History of Taxis

Paris and London were the first places to have modern taxi transport systems. Established in the early 17th century, they were carriages pulled by horses that could be hired by the public. In the 19th century, due to the increasing level of speed and safety, Hansom cabs were the most popular choice at that time. The taxicab is named after the taximeter, an instrument invented by Wilhelm Bruhn in 1891 that automatically recorded the distance traveled and/or the time consumed, thus enabling the fare to be accurately measured (Taxicab, 2010). The first modern meter-equipped taxicab was the Daimler Victoria, built by Gottlieb Daimler in 1897.

Gasoline-powered taxicabs began operating in Paris in 1899, in London in 1903, and in New York in 1907. It was Harry N Allen who imported taxicabs to New York from France and he was also the first one to start painting taxicabs the distinctive yellow, which is today seen as one of the landmarks of New York City. Later at the beginning of 20th century, taxis were exported around the world, and then developed to have radio communication installed to improve the efficiency and speed of the service (Economic Expert).

In addition, the word ‘taximeter’ is an adaptation of the French word “taximetre”, which is in turn a derivation of the German word “taximeter”, coined from Medieval Latin “taxa” which means “tax/charge” together with “meter” from Greek “metron” meaning measure (Bartleby, 2000)

2.1.3 Taxis in Thailand

The taxi business in Thailand was established around 1924-1925 and was called "Miles Car" after the Mini Austin model that was used for taxis at that time. There were 14 Miles Cars providing services as public transportation within Bangkok; however, the Miles Car's financial status was deep in the red and they were forced to close their operations due to higher fares compared to other public transportation options, the unfamiliarity of passengers, and other public transportation alternatives. Later in 1947, the taxi business became increasingly popular in Thai society because it was more convenient and faster than other alternatives. Taxis were called "Renault" at first because of the car model that was used. Other car models were Austin, Datsun Bluebird, Heno, Toyota, Lancer Champ, and Honda (Department of Land Transport, 2007).

A flexible taxi service fare system that was dependent on a bargaining approach was adopted. However, it resulted in the negative outcomes on a non-standard pricing system and worse traffic problems. Moreover, the rising demand for a taxi service was an important factor for the government in deciding to abolish the taxi quota system in 1992 in favor of a free market mechanism, to implement a standard pricing system by installing meters in taxis, and to develop the use of multiple colors for taxis that we see nowadays (Department of Land Transport, 2007).

2.1.4 Taxi Driver Requirements

Becoming a taxi driver is a very complex learning and training process since taxi drivers have to contact at least two government departments. The process in the Driving License and Transport Personnel License Branch is as follows (Skok and Vikiniyadhanee, 2005)

(1) Taxi drivers are requested to register their application forms before 9 a.m., but only on Tuesdays or Thursdays.

(2) Cab drivers then receive 2 hours of training on criminal cases and traffic regulations from police and Land Transport officers.

(3) They must then undergo an eye examination. Drivers failing this part are not allowed a re-examination.

(4) The next step is the taking of an examination paper, which has two parts. To pass, drivers must have correctly answered at least 24 out of 30 multiple-choice questions. Drivers failing this part may retake the examination later.

(5) Lastly, a driver passing all these stages has to return the following day with a criminal record check issued by a police department from the driver's home region.

2.1.5 Taxi Statistic Information

According to the Department of Land Transport, there are several statistics on taxis shown as follows (Department of Land Transport, 2007).

2.1.5a Numbers of Taxis and Taxi Entrepreneurs

Numbers of Taxi Entrepreneurs	
Cooperative	26
Limited Partnership	108
Company Limited	307

Numbers of Taxis	
Cumulative number of registered taxis	112,793
Expired taxis (12 years)	37,271
Taxi balance	75,522

2.1.5b Numbers of new registered taxis

(Categorized by brand)

Cumulative number from 2002 - 2006

No.	Brand	Total
1	Toyota	47,336
2	Mitsubishi	1,031
3	Nissan	486
4	Mazda	94
5	Daewoo	10
6	Honda	8
7	Isuzu	259
8	Suzuki	14
9	Ford	6
10	Kia	1
11	Hyundai	2
12	Chevrolet	87
	Total	49,334

2.1.5c Taxi colors

Nowadays, we currently have about 28 minor taxi colors on the road in Bangkok. According to the Department of Land Transport's regulations in order to ask for permission to have their own cooperative taxi color, the cooperative is required to register at least 1,000 taxis.

2.2 Reviews related to color

Nowadays, a consumer's buying behavior is influenced by cultural, social, and personal factors. Cultural factors exert the broadest and deepest influence. Culture is the fundamental determinant of a person's wants and behavior. Each culture consists of smaller subcultures that provide more specific identification and socialization for

their members, including nationalities, religious groups, racial groups, and geographic regions (Kotler and Keller, 2006). Therefore, one crucial factor that is influenced by culture and involved in a consumer's buying behavior for any product or service is color.

2.2.1 Significance of Color

According to the Oxford Dictionary, color is the property possessed by an object of producing different sensations on the eyes as a result of the way it reflects or emits light (Oxford University Press). It was Sir Isaac Newton who discovered color in modern science in 1666 when using a prism to separate spectral light that is visible to the human eye. The visual spectrum ranges from red at one end through orange, yellow, green, blue, and purple at the other end (Harrington, 2006). The longest wavelength is red, while purple has the shortest wavelength (Singh, 2006).

Regarding the knowledge of modern science, the eye is a receptor of wavelengths and the brain is where wavelengths' signals are interpreted and translated into different colors. Surprisingly, the human eye/mind can distinguish almost 10 million colors; however, colors are subjective. Blue is blue only in our thoughts since it causes the eyes to create colors (Harrington, 2006)

Color is one of the many marketing tools that global managers use to create, maintain, and modify brand images in customers' minds. The significance of color to convey meaning is evident from the existence of the Lanham Act in the United States, which protects product colors as trademarks (Madden, Hewett and Roth, 2000).

As a result, many researches indicate its importance through their findings: for instance, Cooper (1994) has shown that color ranks among the top three considerations, along with price and quality, in the purchase of an automobile. In addition, automobile manufacturers change approximately 30 percent of their colors each year and use color consultants to advise them on the color palette three to four years before a color is introduced. Furthermore, Igloo Products Corporation used a color consultant to develop cooler colors for the firm and later attributed a subsequent 15 percent increase in sales to the new colors (Funk and Ndubisi, 2006).

2.2.2 Color Impact

People react to color both physiologically and psychologically. Physiologically, experts claim the reaction to color is the same regardless of culture. Hot colors increase the blood pressure, heart rates and the rate of respiration. For example, the color red can make people very assertive, whereas purple will calm down any overactive gland or organ (Marney, 1996). Blue and green are considered cool colors providing warm and calm feelings. On the other hand, red, yellow, pink and orange are considered warm colors that provide excitement and aroused feelings.

Psychologically, colors are known to possess emotional and psychological properties which evoke definite feelings, vivid memories and mental pictures. There are researches on color and emotion that began in the late 1800s in order to study color preferences. Hence, emotional connections to colors could be understood by each individual, which is why they prefer one color over another (Harrington, 2006). Van Gogh's paintings would be the best example of the effect of colors on a person, comparing black and white paintings with colored paintings (Smarty, 2008). The meanings associated with different colors are important to marketers because the tools used to communicate brand image are mechanisms of meaning transfer (Madden, Hewett and Roth, 2000).

Wagner Color Research Institute found that colors had associations with certain images. For example, blue is associated with wealth, trust, and security; gray is associated with strength, exclusivity, and success; and orange denotes cheapness. These associations may explain why banks are more likely to color their logos and collateral using blue and gray rather than orange. Another proof is that Wagner advised hot dog restaurants in the United States to add a little orange to the color of its building. As a result, a 7 percent increase in sales was reported (Madden, Hewett and Roth, 2000).

2.2.3 Color Association

People in different environments or cultures, would perceive the meaning of each color or color association differently. The area of research that can be used to explain consumers' responses to the colors of products is associative learning.

Associative learning occurs when individuals make connections between events that take place in the environment (Shimp, 1991). However, since an association is not directly observable (Mazur, 1990), classical conditioning researchers examined physiological responses in which a conditioned stimulus and an unconditioned stimulus were paired and would then elicit a conditioned response (Funk and Ndubisi, 2006). For example, Stuart et al. (1987) paired a brand of toothpaste with images of water scenes and subjects developed more favorable attitudes toward the toothpaste than a control group.

In general, according to one study, red is more often associated with the attributes of being exciting-stimulating, orange with distressed-disturbed-upset, blue with tender-soothing, purple with dignified-stately, yellow with cheerful-jovial-joyful, and black with powerful-strong-masterful. Another finding on primary (second and third grade) students and college students stated that yellow, orange, and blue were designated as happy colors; while red, black, and brown were designated as sad colors (Madden, Hewett and Roth, 2000). Another study reveals that white has been associated with peace and purity, while light blue is considered the color of calmness or healing. On the other hand, red has been associated with blood, strength, health and passion; purple with royalty for its rarity and expense; green with coolness; and yellow with joyousness and brightness (Funk and Ndubisi, 2006).

Hence, associative learning can also explain how certain colors have come to hold certain meanings for people of different cultures. In each culture, associations are learned by people based on connections they make between colors and their meaning (Grossman and Wisenblit, 1999). For example, green, associated with nature and growth in most countries, may denote death in South America and countries with dense jungle areas. Some of the most important differences noted were which colors indicated expensive or inexpensive products. Whereas in China and Japan, the color gray was associated with being inexpensive, the opposite was true among US consumers. In Asian countries, the color purple was associated with being expensive, but not in the USA (Grossman and Wisenblit, 1999). Hence, due to international differences in taste, companies need to take these factors into consideration. For instance, red lingerie sells apparently very well in Spain but only if it is flamenco red, whereas lilac sells poorly in Scandinavia, because it is asserted that it is a color of

mourning there. However, blue is regularly preferred to other hues (Funk and Ndubisi, 2006).

Basically, many studies have shown a lot of meanings associated with each color as follows:

- Blue: associated with such attributes as wealth, trust, security, calmness, gentleness, tender-soothing, happiness, healing, and high quality.
- Green: associated with such attributes as wealth, healthiness, peace, pleasantness, gentleness, hopefulness, nature, growth and death.
- White: associated with such attributes as cleanliness, simplicity, peace, pleasantness, gentleness, purity and righteousness.
- Red: associated with such attributes as love, danger, excitement, hotness, activeness, and sadness.
- Orange: associated with such attributes as cheerfulness, playfulness, happiness, energy, warmth, cheapness, and distress.
- Pink: associated with such attributes as femininity, love, romance, admiration and tenderness.
- Yellow: associated with such attributes as cheerfulness, joyfulness, optimism, wealth, energy, happiness, brightness, and trustworthiness.
- Purple: associated with such attributes as dignify-stately, mourning, mystery, wisdom, royalty, expensive (Japan, PRC, South Korea), and inexpensiveness (USA).
- Gray: associated with such attributes as strength, exclusivity, and success.
- Black: associated with such attributes as power, strength, sadness, mourning, masculinity, elegance and death.

Another interesting conclusion from Funk and Ndubisi on color and product choice is that gender roles may determine the importance of certain colors over others for various product categories. It means that consumers' color preferences differ depending on the product type. For instance, the most popular colors for

clothing are blue, red and black; automobiles are preferred in blue, gray, red, white and black; while beige is preferred for carpeting, furniture and paint (Funk and Ndubisi, 2006).

2.2.4 Generations of Color

Though to some degree our reactions to color are psychologically and culturally induced, age makes a difference in how we respond to color. It is one reason why our color preferences change over time as our age increases and we move through the life-cycle. We might tend to favor one color at a youthful stage of life but it could be replaced by other colors when we are grown up. For example, individuals over 65 prefer buttery yellows, clear blues, fresh pinks and warm whites because they may be retired, less active and spend a lot of time indoors. Baby boomers are drawn to soothing colors, such as cleansing and iridescent blues. Generation X adults look for the colors of a global palette such as exotic greens, violet, indigo, and Asian reds. Playful neons and tropical hues delight today's youth. Infants prefer high-contrast colors such as red and blue (Trent, 2000).

2.2.5 Colors and gender

There is also research stating that gender differences between men and women result in the different decision-making processes of individuals, such as financial decision making, hospital problem solving, and college course and major selection (Funk and Ndubisi, 2006). This also includes decision-making in terms of color as well. Indeed, there are several issues that have been examined which relate to consumer behavior in order to support gender differences in decision-making, including relationships between gender identity and a consumer's perceptions of masculinity and femininity in products, female role portrayal in advertising, food/gendered product preference, gift shopping/gift choice/gift exchange, etc (Funk and Ndubisi, 2006).

As the results, relationship between color dimensions and product choice is moderated by gender. The impact of attitude towards color and the impact of color

attractiveness are significantly higher for female consumers than male consumers. In contrast, the impact of color significance is statistically higher for male consumers. Hence, men tend to select an automobile color based on the significance of the color, while women tend to select automobile color based on the attractiveness of the color and their liking towards that color. That is the reason why most women often choose more colorful and strongly attractive cars (Funk and Ndubisi, 2006).

Moreover, there are differences in perception of colors between genders. One study shows that men were more tolerant of gray, white or black than women. On the other hand, women responded to combinations of red and blue more frequently. It was also found that a combination of red and blue was most preferred by adults (Singh, 2006).

Therefore, each different color could be a very important part of a product purchase decision, delivering itself as a marketing weapon to attract customers in selecting a particular taxi to hail in Bangkok.

CHAPTER III
METHOD OF ANALYSIS

3.1 Research Approach

The research was conducted in the form of quantitative investigation to document and understand taxi passengers' preferred color and the reasons behind their decisions by using a cross-sectional, descriptive approach.

3.2 Research Design

The field of taxi color study is quite new and emerging, so a quantitative research methodology was selected by using the questionnaire survey approach. This methodology helped to create a substantial clear picture and also provide statistical information of this regarding the topic in order to explore the effect of colors on taxi selection choices of consumers. Hence, passengers' preferred choice of color and other related information would be revealed.

3.2.1 Population Samples

In this study, the population samples were passengers in Bangkok and its metropolitan areas who were willing and able to use taxi services as a mode of transportation. In addition, these population samples had to have reading and writing skills, either in Thai or English, and also consented to participate in the research. The total population sample of taxi passengers in Bangkok and its metropolitan areas is 1 millions passengers (Kamolchote and Srisurapanon, 2007).

3.2.2 Samples

Taxi passengers in Bangkok and its metropolitan areas which met the requirements above and sample size was determined using the Taro Yamane formula (Yamane, 1967) as follows:

$$\text{Samples (n)} = \frac{N}{1 + N(e)^2}$$

Where, N = Population of taxi passengers in Bangkok and metropolitan areas
= 1,000,000 (Kamolchote and Srisurapanon, 2007)
e = Margin of error / Allowable error
= 0.05

Therefore, calculated samples are approximately 400. However, in order to minimize response and non-response errors, the sample size was increased by 25 percent. Therefore, the total sample size was 500.

3.2.3 Sampling Techniques

The sampling method is probabilistic by nature. A systematic random sampling method was used by selecting every odd number of passengers who get in a taxi during the survey period. If the target respondent refused to answer, the next odd sample was invited by a taxi driver, who was trained by the researcher.

These samples were the responsibility of 25 taxi drivers working equally during day and night shifts. In other words, there were 20 samples randomly selected on every odd number of passengers from each taxi drivers.

3.2.4 Tools of Analysis

Primary data was collected through questionnaire surveys. To frame the research question, secondary data search via reliable third-party resources on the Internet, journals, news articles, and books was employed. The questionnaire was comprised of 2 parts: demographic and psychographic. The scales used were mostly multiple choice, closed-ended, and rank-order type questions.

Part 1 The questionnaire was comprised of general demographic information containing 10 questions in the survey. Screening questions on Color Vision Deficiency were asked in the first place in order to separate those who have problems with color vision out of the study for accuracy. Other questions included information about age, sex, marital status, education level, occupation, average income, and general information of taxi usage.

Part 2 The latter part contained 15 questions on the effect of color on taxi selection choices of consumers in Bangkok. The questions were designed by a researcher in a cooperative with an advisor and were based on literature reviews. There were 8 questions related to the psychographic information on passengers' color association with each of the taxi colors in the market nowadays by having participants rank 1 to 5 on each color association (1 = most associated feeling and 5 = least associated feeling). Another 7 questions related to passengers' color preferences on taxis and the supporting reasons.

3.3 Data Collection

1. Taxi drivers, who were trained by the researcher, were responsible for conducting the survey. Each one of them conducted the research with their passengers in Bangkok and its metropolitan areas. These samples were the responsibility of 25 taxi drivers working equally during day and night shifts. In other words, there were 20 samples randomly selected on every odd number of passengers from each taxi drivers. If the passengers refused to participate in the survey, the next odd passenger was selected by the taxi driver to do the survey instead.

2. The taxi drivers explained to the passengers that the research was part of the MBA (Business Modeling and Analysis), at Mahidol University International College and then asked the question whether the passenger could spare about 10 minutes to complete the survey.

3. If the subject agreed to participate, they were provided with the Participant Information Sheet and the Informed & Voluntary Consent Form. They were given 5 minutes to read both of the forms.

4. After reading and deciding to participate, then they were provided with a pen/pencil and the questionnaire.

5. Surveys were collected from passengers by the trained taxi drivers during the survey period in Bangkok and its metropolitan areas. The surveys from each taxi each day were collected for further cleaning process and analysis for statistic information by using statistical packages for social science study (SPSS).

3.4 Data Analysis

After data collection and cleaning processes were completed. All questionnaires collected were analyzed by using statistical packages for social science study (SPSS).

1. Descriptive Statistics

Descriptive Statistics were analyzed for instances of frequency and percentage in order to explain general information based on their several details submitted as follow:

1.1 Personal factors, such as age, gender, marital status, level of education, occupation, average income, and basic taxi transportation details.

1.2 Passengers' attitude toward taxi color factors, such as color association, preferred taxi color, reason for selecting, color segmentation, and other preferred taxi selecting factors.

2. Inferential Statistics

Chi-square was conducted in order to study the relationships between several factors including personal factors and passengers' attitude toward taxi colors with passengers' preferred taxi color.

3.5 Ethical Issues

It is ensured that the researcher has the responsibility to respect and protect the rights of the individuals participating in this study. The surveyor would not force or threaten the subjects to participate in the survey and the subjects could withdraw from the survey process if they did not agree to it or if they felt uncomfortable. Ethic approval was obtained from Mahidol University Institutional Review Board prior to proceedings. The scope of questions was developed in full awareness of potential ethical and confidential issues.

CHAPTER IV
DATA ANALYSIS AND RESULTS

In this chapter, data analysis was conducted by using the Statistical Package for Social Sciences (SPSS) to calculate statistical information, such as frequency, percentage and mean. The hypothesis was tested by using T-Test, F-Test.

4.1 General Information of Respondents

The first part of the questionnaire describes general information related to screening questions on the potential problem of whether respondents have Color Deficiency or not, as well as questions about age, gender, marital status, education background, occupation, average monthly income, frequency of taxi use per week, time of day taxis are used, and number of passengers in the taxi. Respondents' general information was displayed in the form of frequency and percentage as follows:

Response Error Rate = 50 / 450 = 11.11%

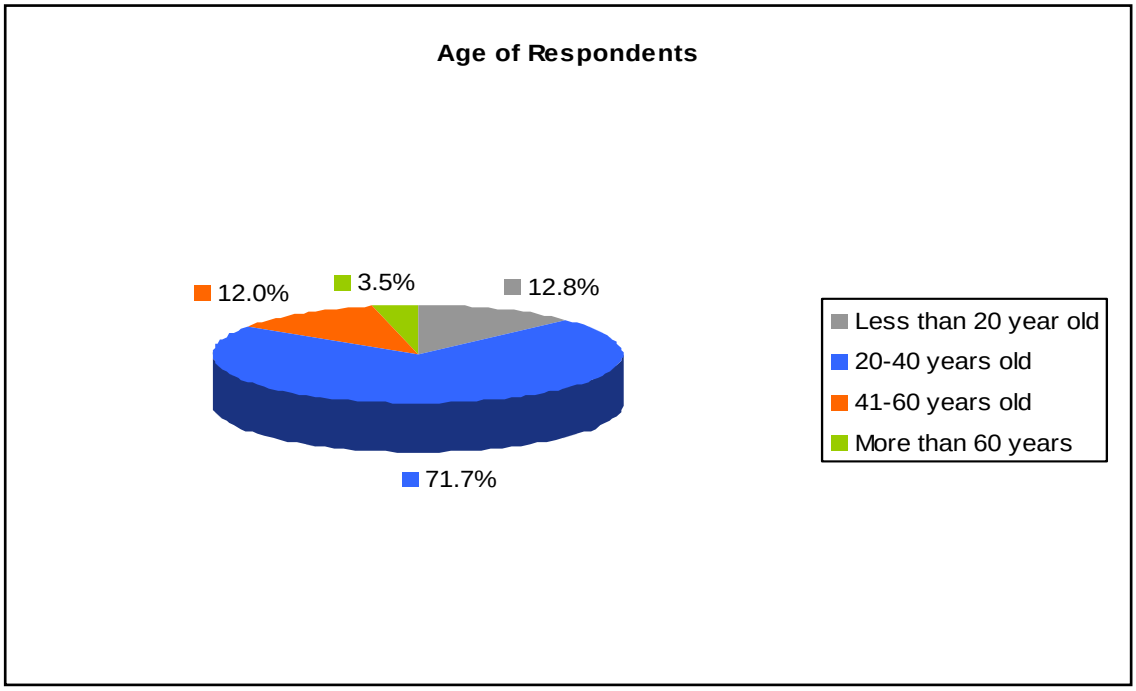
Non-Response Error Rate = 50 / 500 = 10.00%

Table 4.1 Descriptive Statistics for Age of Respondents

Age	Frequency	Percentage
Less than 20 years old	51	12.8
20-40 years old	287	71.7
41-60 years old	48	12.0
More than 60 years old	14	3.5
Total	400	100.0

Source: The Author

Figure 4.1 Pie Chart Showing Age Distribution of Respondents



Source: The Author

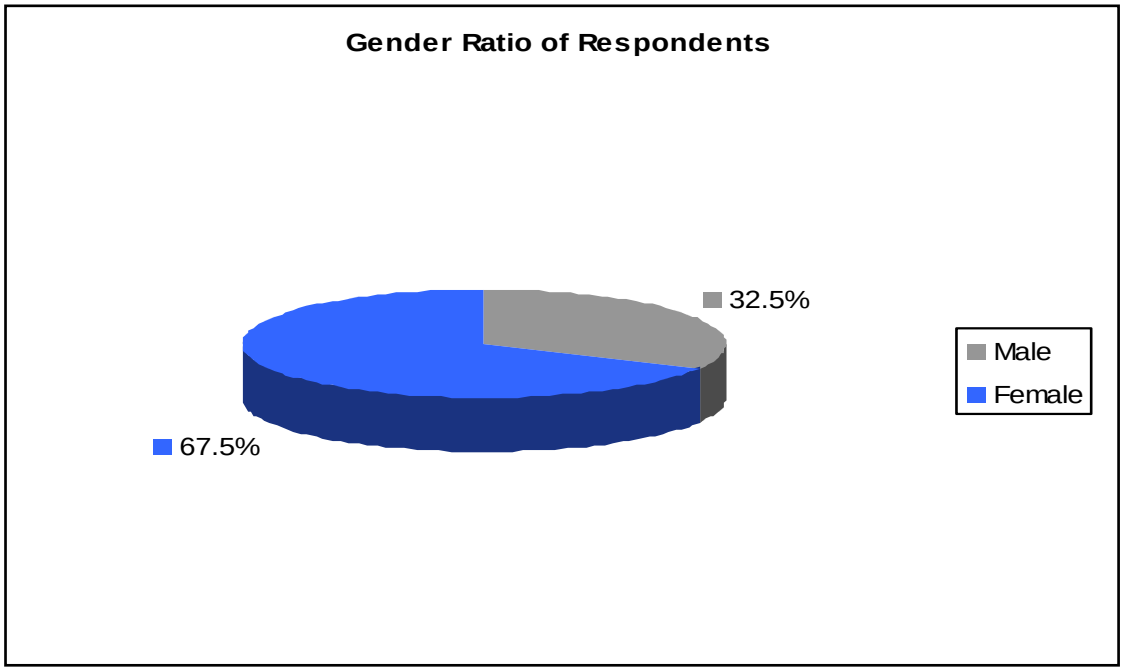
As shown in table 1 and figure 1, the majority (71.7%) of the respondents were in the group of 20-40 years old. Another 12.8 percent of the respondents were in the group of less than 20 years old, while an additional 12 percent were in the group of 41-60 years old, and only 3.5 percent were those older than 60 years old. The data reveals that most of the respondents are working people.

Table 4.2 Descriptive Statistics for Gender of Respondents

Gender	Frequency	Percentage
Male	130	32.5
Female	270	67.5
Total	400	100.0

Source: The Author

Figure 4.2 Pie Chart Showing Gender Ratio of Respondents



Source: The Author

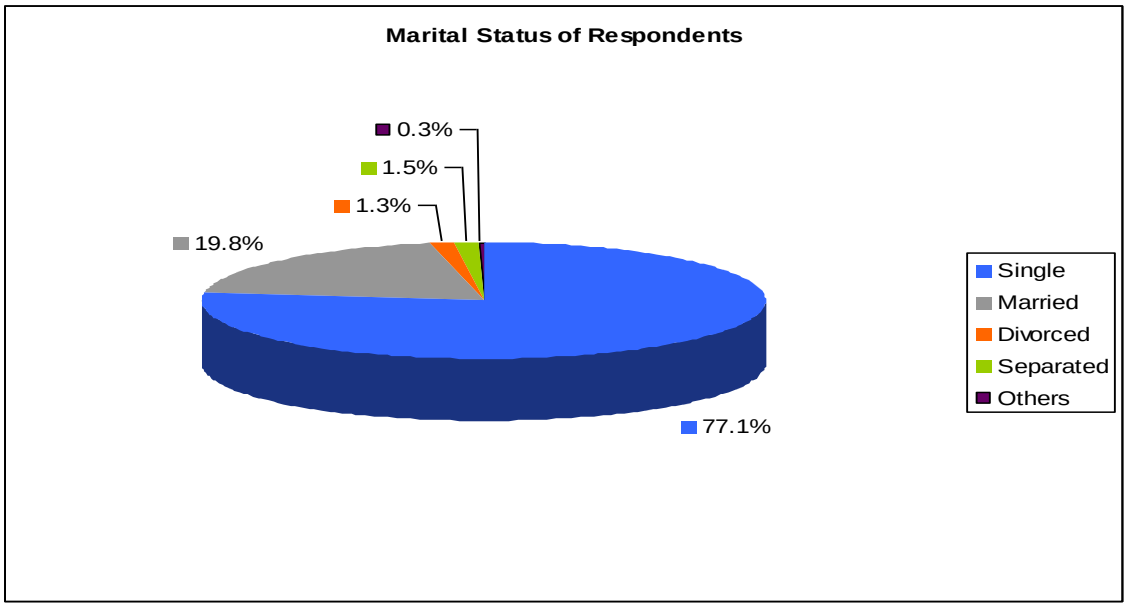
According to table 2 and figure 2, most of the respondents using taxi services in Bangkok are female (67.5%) and the rest are male (32.5%). The ratio is about two to one, female to male.

Table 4.3 Descriptive Statistics for Marital Status of Respondents

Marital status	Frequency	Percentage
Single	309	77.1
Married	79	19.8
Divorced	5	1.3
Separated	6	1.5
Others	1	.3
Total	400	100.0

Source: The Author

Figure 4.3 Pie Chart Showing Marital Status of Respondents



Source: The Author

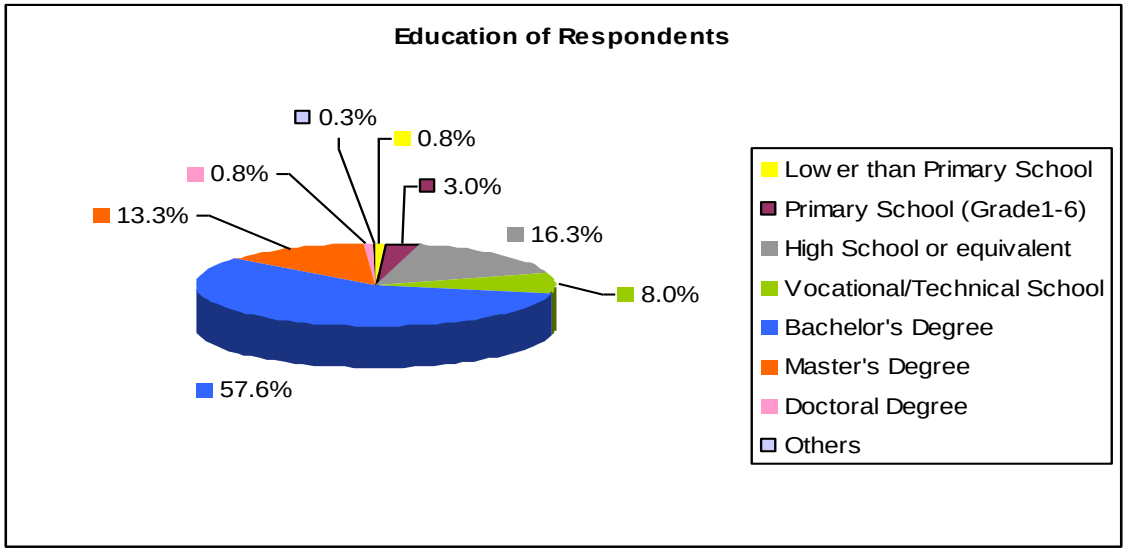
As shown in table 3 and figure 3, approximately 77 percent of the respondents were single, 19.8 percent were married, and approximately 3 percent were separated, divorced, and other type of family status.

Table 4.4 Descriptive Statistics for Education of Respondents

Education	Frequency	Percentage
Lower than Primary School	3	0.8
Primary School (Grade1-6)	12	3.0
High School or equivalent	65	16.3
Vocational/Technical School	32	8.0
Bachelor's Degree	231	57.6
Master's Degree	53	13.3
Doctoral Degree	3	0.8
Others	1	0.3
Total	400	100.0

Source: The Author

Figure 4.4 Pie Chart Showing Education of Respondents



Source: The Author

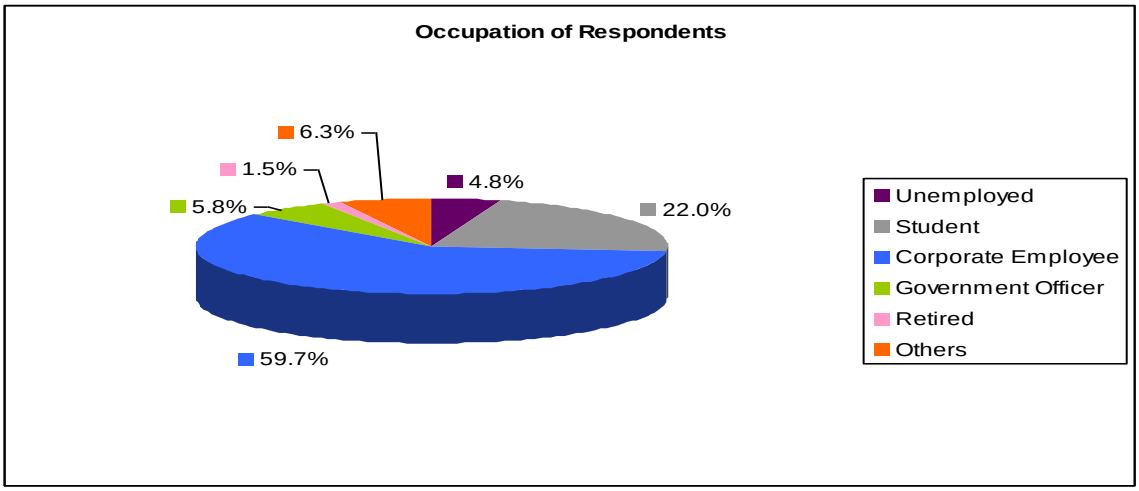
According to table 4 and figure 4, the majority of the respondents graduated with a Bachelor's Degree (57.6%), followed by High School or equivalent (16.3%), Master's Degree (13.3%), Vocational/Technical School (8.0%), Primary School (Grade1-6) (3.0%), Lower than Primary School (0.8%), Doctoral Degree (0.8%) and others (0.3%).

Table 4.5 Descriptive Statistics for Occupation of Respondents

Occupation	Frequency	Percentage
Unemployed	19	4.8
Student	88	22.0
Corporate Employee	239	59.8
Government Officer	23	5.7
Retired	6	1.5
Others	25	6.3
Total	400	100.0

Source: The Author

Figure 4.5 Pie Chart Showing Occupation of Respondents



Source: The Author

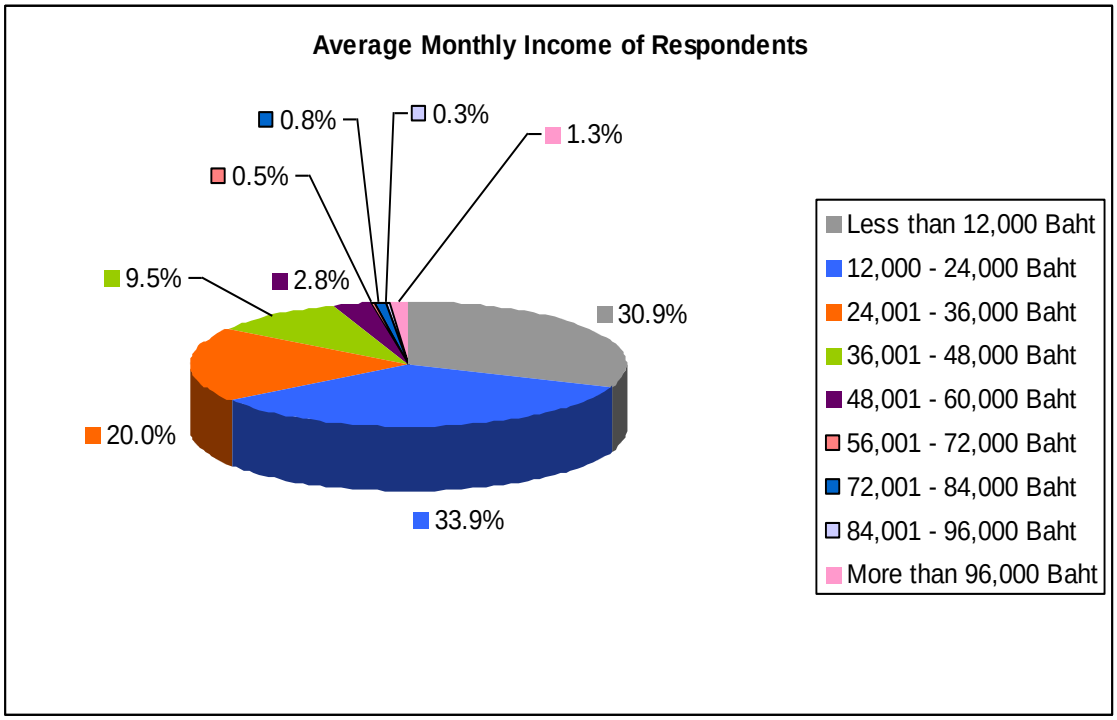
As shown in table 5 and figure 5, roughly sixty percent of the respondents were corporate employees. The second largest occupation of the respondents was students (22.0%), followed by others (6.3%), government officers (5.8%), unemployed (4.8%), and retired (1.5%).

Table 4.6 Descriptive Statistics for Average Monthly Income of Respondents

Average Monthly Income	Frequency	Percentage
Less than 12,000 Baht	124	31.0
12,000 - 24,000 Baht	136	34.0
24,001 - 36,000 Baht	80	20.0
36,001 - 48,000 Baht	38	9.5
48,001 - 60,000 Baht	11	2.8
56,001 - 72,000 Baht	2	0.5
72,001 - 84,000 Baht	3	0.8
84,001 - 96,000 Baht	1	0.3
More than 96,000 Baht	5	1.3
Total	400	100.0

Source: The Author

Figure 4.6 Pie Chart Showing Average Monthly Income of Respondents



Source: The Author

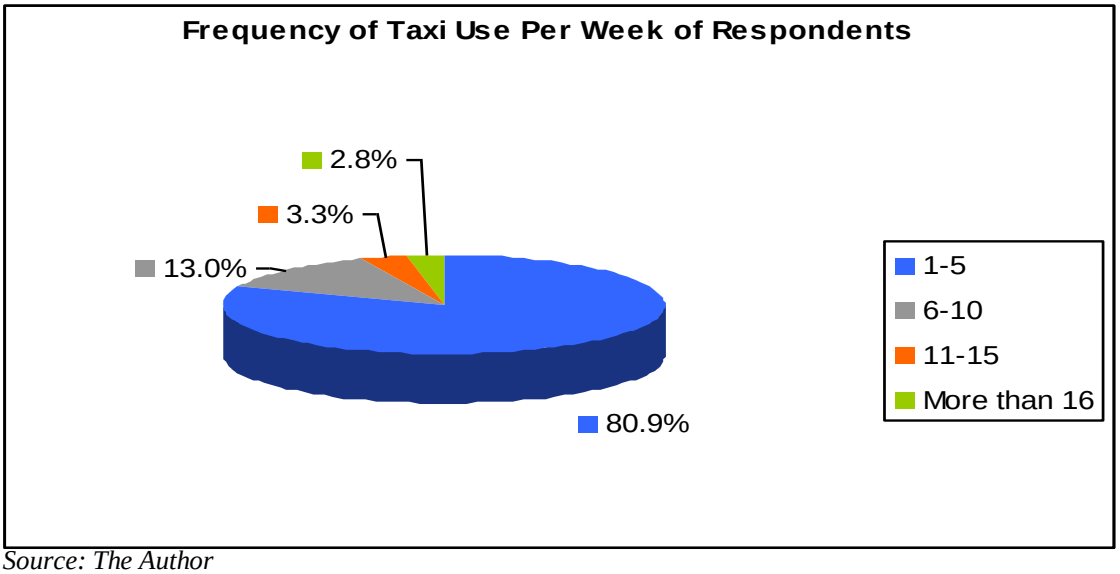
According to table 6 and figure 6, a total of 85 percent of the respondents earned less than 36,000 Baht on average per month, This figure is comprised of 34% (12,000 - 24,000 Baht/month), 31% (less than 12,000 Baht), and 20% (24,001 - 36,000 Baht). The other 15 percent were high income earners: 36,001 - 48,000 Baht (9.5%), 48,001 - 60,000 Baht (2.8%), more than 96,000 Baht (1.3%), 72,001 - 84,000 Baht (0.8%), 56,001 - 72,000 Baht (0.5%), and 84,001 - 96,000 Baht (0.3%).

Table 4.7 Descriptive Statistics for Frequency of Taxi Use Per Week of Respondents

Frequency	Frequency	Percentage
1-5	324	81.0
6-10	52	13.0
11-15	13	3.3
More than 16	11	2.8
Total	400	100.0

Source: The Author

Figure 4.7 Pie Chart Showing Frequency of Taxi Use Per Week of Respondents



Source: The Author

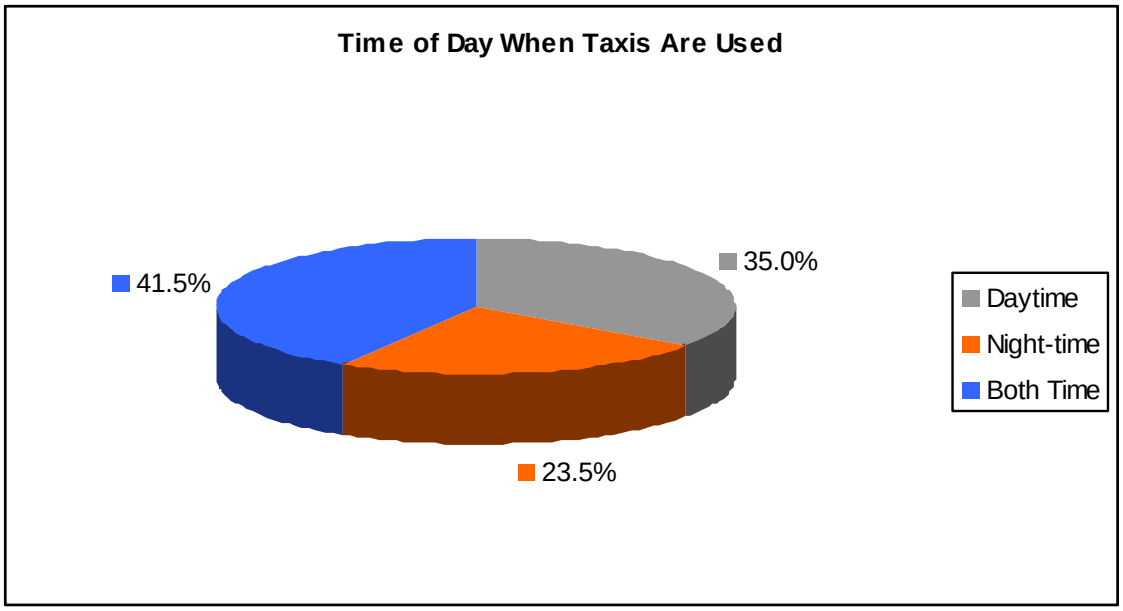
As shown in table 7 and figure 7, the frequency of taxi use per week by respondents was in the range of 1-5 times per week (81.0%), 6-10 times per week (13.0%), 11-15 times per week (3.3%), and more than 16 times per week (2.8%).

Table 4.8 Descriptive Statistics for Time of Day When Taxis Are Used

Time to ride taxi	Frequency	Percentage
Daytime	140	35.0
Night-time	94	23.5
Both Time	166	41.5
Total	400	100.0

Source: The Author

Figure 4.8 Pie Chart Showing Time of Day When Taxis Are Used



Source: The Author

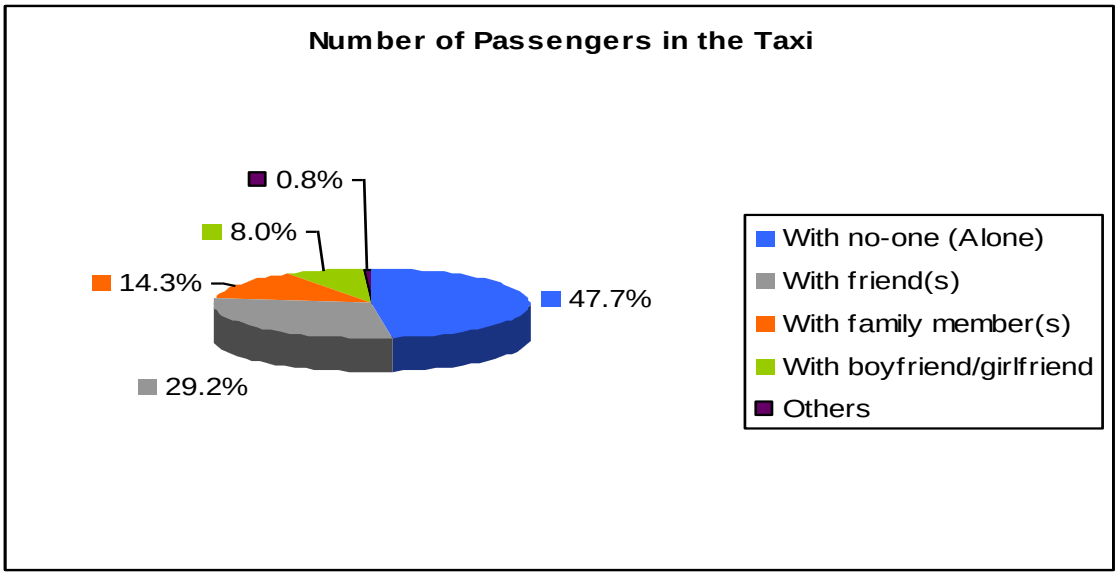
According to table 8 and figure 8 regarding the time of day when taxis are used, most of the respondents ride taxis in both the day time and the night time (41.5%), followed by day time only (35.0%) and night time only (23.5%).

Table 4.9 Descriptive Statistics for Number of Passengers in the Taxi

Number of Passengers in the Taxi	Frequency	Percentage
With no-one (Alone)	191	47.7
With friend(s)	117	29.2
With family member(s)	57	14.3
With boyfriend/girlfriend	32	8.0
Others	3	0.8
Total	400	100.0

Source: The Author

Figure 4.9 Pie Chart Showing Number of Passengers in the Taxi



Source: The Author

As shown in table 9 and figure 9 regarding the number of passengers in the taxi, approximately 47.7% of the respondents rode taxis alone, 29.2% with friend(s), 14.3% with family member(s), 8.0% with boyfriend/girlfriend and 0.8% with others.

In conclusion of the respondents' general information, a significant majority of respondents were categorized as follows:

- 20 – 40 years old
- Female
- Single
- Bachelor's Degree graduated
- Corporate Employee
- Average Income 12,000 – 24,000 baht
- Ride taxis 1 – 5 times per week
- Ride taxis in both the day time and night time
- Ride taxis alone (unaccompanied)

4.2 Effect of Colors on Taxi Selection Choice of Consumers in Bangkok

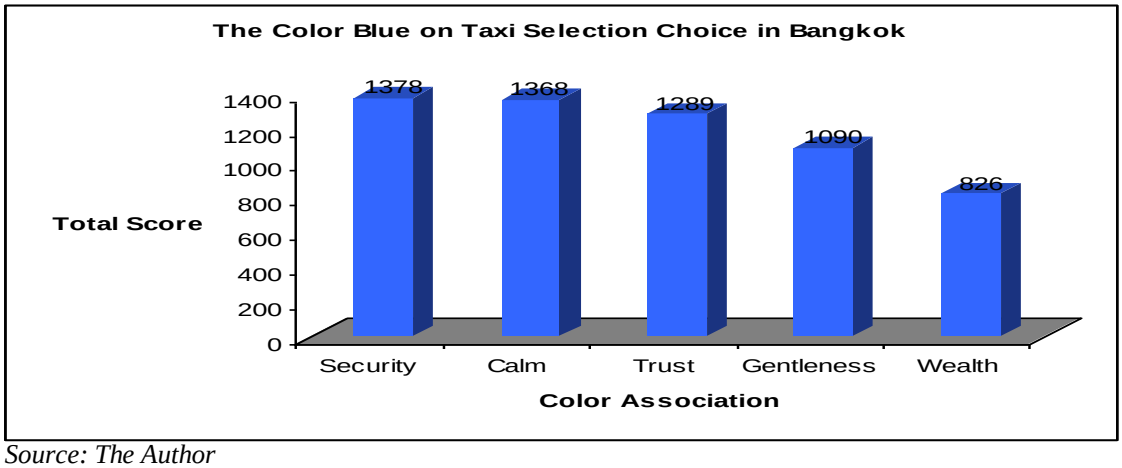
The second part of the questionnaire sought information about the effect of colors on the taxi selection choice of consumers in Bangkok. All information was presented in the form of ranking, frequency and percentage of the respondents as follows:

Table 4.10 Descriptive Statistics for the Color Blue on Taxi Selection Choice

Items on effect	Most associated feeling (5 points)	More associated feeling (4 points)	Moderate associated feeling (3 points)	Less associated feeling (2 points)	Least associated feeling (1 points)	Total score	Sequence
Security	106	93	110	58	30	1378	1
Calm	120	88	75	77	37	1368	2
Trust	55	119	110	95	18	1289	3
Gentleness	68	73	52	98	106	1090	4
Wealth	46	25	50	70	206	826	5

Source: The Author

Figure 4.10 Column Chart Showing the Color Blue on Taxi Selection Choice



Source: The Author

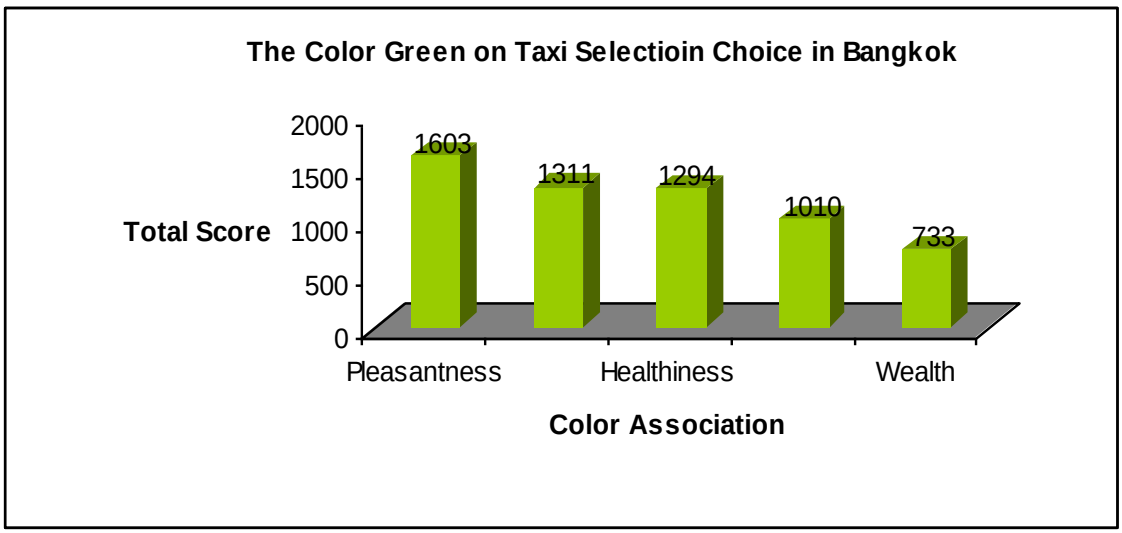
From table 10 and figure 10 of descriptive statistics for the color blue on taxi selection choice in Bangkok, the majority of the respondents felt that the color blue was associated with security the most, followed by calm, trust, gentleness and wealth.

Table 4.11 Descriptive Statistics for the Color Green on Taxi Selection Choice

Items on effect	Most associated feeling (5 points)	More associated feeling (4 points)	Moderate associated feeling (3 points)	Less associated feeling (2 points)	Least associated feeling (1 points)	Total score	Sequence
Pleasantness	202	86	47	46	16	1603	1
Peace	73	118	95	78	33	1311	2
Healthiness	69	98	122	83	25	1294	3
Gentleness	15	73	101	132	76	1010	4
Wealth	36	22	33	60	246	733	5

Source: The Author

Figure 4.11 Column Chart Showing the Color Green on Taxi Selection Choice



Source: The Author

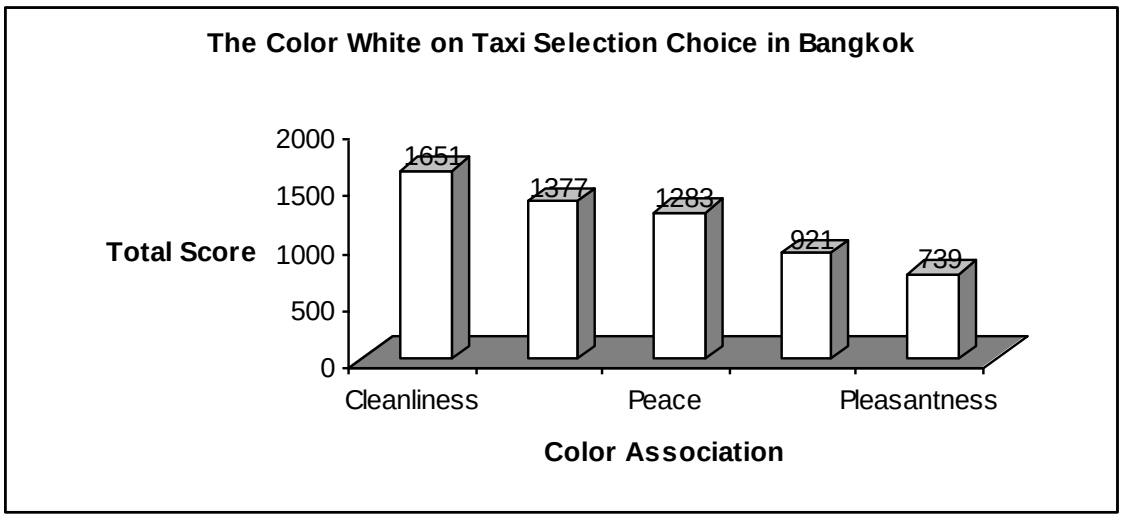
From table 11 and figure 11 of descriptive statistics for the color green on taxi selection choice in Bangkok, the majority of the respondents felt that the color green was associated with pleasantness the most, followed by peace, healthiness, gentleness, and wealth.

Table 4.12 Descriptive Statistics for the Color White on Taxi Selection Choice

Items on effect	Most associated feeling (5 points)	More associated feeling (4 points)	Moderate associated feeling (3 points)	Less associated feeling (2 points)	Least associated feeling (1 points)	Total score	Sequence
Cleanliness	243	65	33	20	37	1651	1
Simplicity	58	164	102	51	23	1377	2
Peace	54	103	146	68	27	1283	3
Gentleness	24	40	75	157	102	921	4
Pleasantness	18	26	44	103	207	739	5

Source: The Author

Figure 4.12 Column Chart Showing the Color White on Taxi Selection Choice



Source: The Author

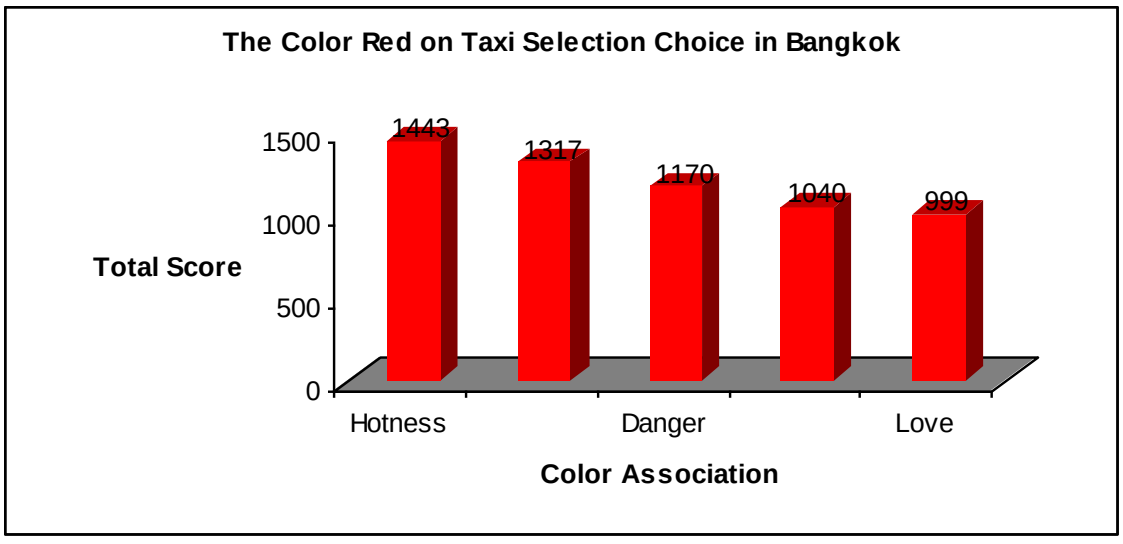
From table 12 and figure 12 of descriptive statistics for the color white on taxi selection choice in Bangkok, the majority of the respondents felt that the color white was associated with cleanliness the most, followed by simplicity, peace, gentleness and pleasantness.

Table 4.13 Descriptive Statistics for the Color Red on Taxi Selection Choice

Items on effect	Most associated feeling (5 points)	More associated feeling (4 points)	Moderate associated feeling (3 points)	Less associated feeling (2 points)	Least associated feeling (1 points)	Total score	Sequence
Hotness	126	100	92	57	23	1443	1
Excitement	44	131	146	58	19	1317	2
Danger	102	68	50	60	118	1170	3
Activeness	54	53	60	148	82	1040	4
Love	73	45	50	74	156	999	5

Source: The Author

Figure 4.13 Column Chart Showing the Color Red on Taxi Selection Choice



Source: The Author

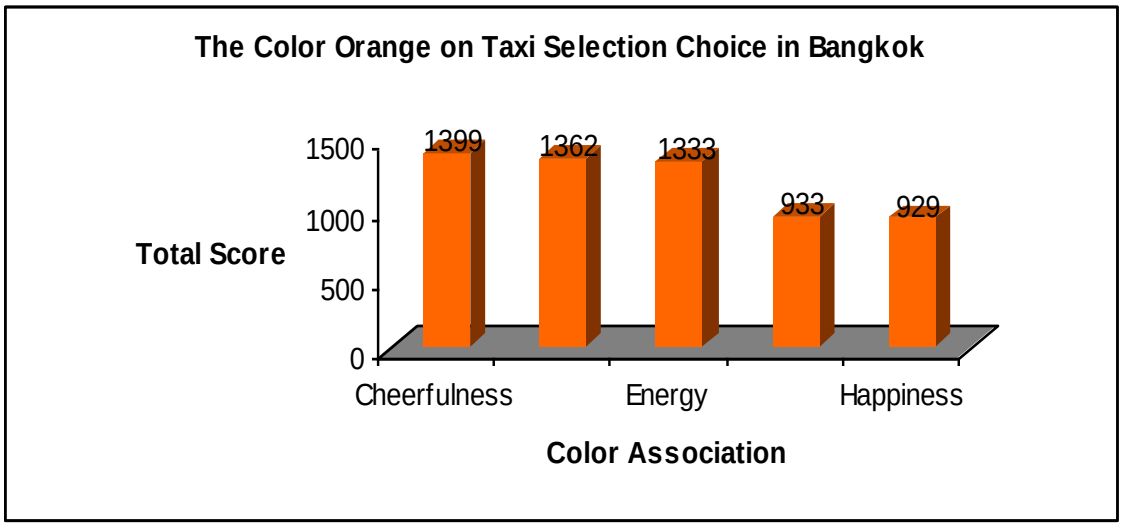
From table 13 and figure 13 of descriptive statistics for the color red on taxi selection choice in Bangkok, the majority of the respondents felt that the color red was associated with hotness the most, followed by excitement, danger, activeness and love.

Table 4.14 Descriptive Statistics for the Color Orange on Taxi Selection Choice

Items on effect	Most associated feeling (5 points)	More associated feeling (4 points)	Moderate associated feeling (3 points)	Less associated feeling (2 points)	Least associated feeling (1 points)	Total score	Sequence
Cheerfulness	126	101	74	47	49	1399	1
Playfulness	90	121	91	60	35	1362	2
Energy	109	78	99	68	43	1333	3
Warmth	42	58	48	98	151	933	4
Happiness	29	40	86	124	118	929	5

Source: The Author

Figure 4.14 Column Chart Showing the Color Orange on Taxi Selection Choice



Source: The Author

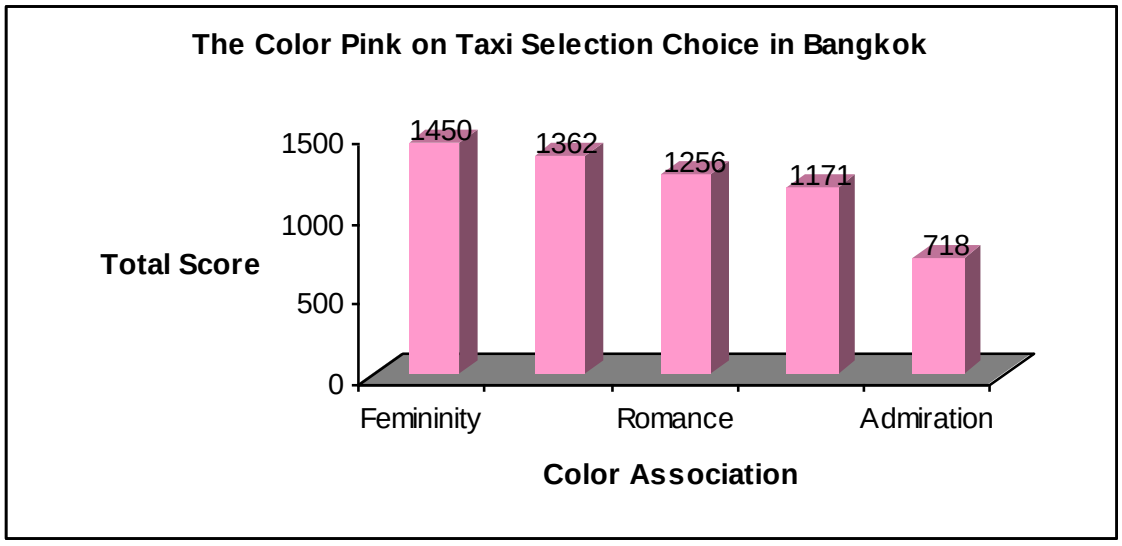
From table 14 and figure 14 of descriptive statistics for the color orange on taxi selection choice in Bangkok, the majority of the respondents felt that the color orange was associated with cheerfulness the most, followed by playfulness, energy, warmth and happiness.

Table 4.15 Descriptive Statistics for the Color Pink on Taxi Selection Choice

Items on effect	Most associated feeling (5 points)	More associated feeling (4 points)	Moderate associated feeling (3 points)	Less associated feeling (2 points)	Least associated feeling (1 points)	Total score	Sequence
Femininity	144	98	65	53	37	1450	1
Love	103	102	93	61	38	1362	2
Romance	47	101	140	88	21	1256	3
Tenderness	80	66	64	128	59	1171	4
Admiration	23	30	36	67	241	718	5

Source: The Author

Figure 4.15 Column Chart Showing the Color Pink on Taxi Selection Choice



Source: The Author

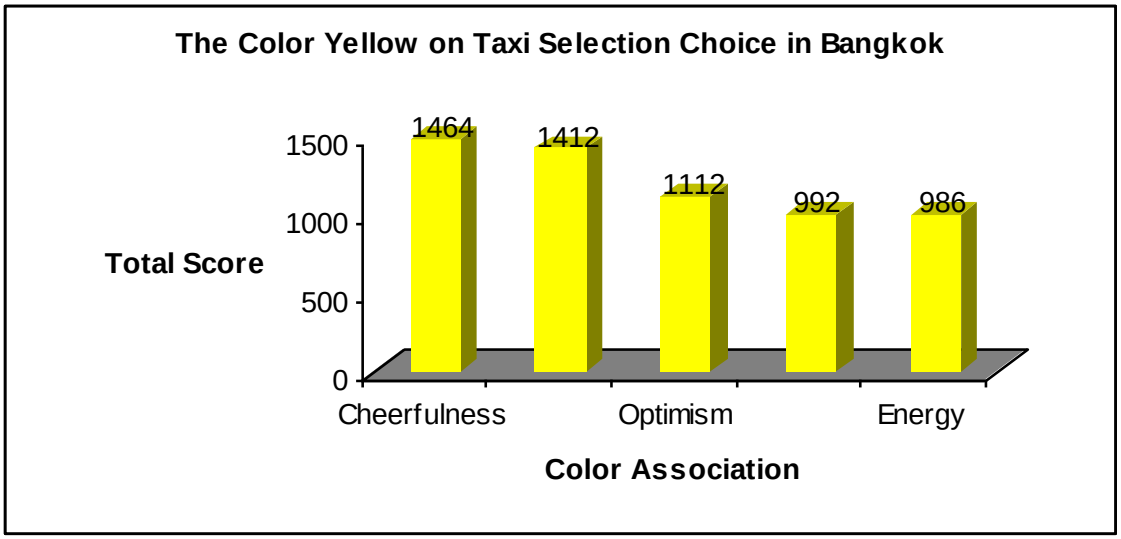
From table 15 and figure 15 of descriptive statistics for the color pink on taxi selection choice in Bangkok, the majority of the respondents felt that the color pink was associated with femininity the most, followed by love, romance, tenderness and admiration.

Table 4.16 Descriptive Statistics for the Color Yellow on Taxi Selection Choice

Items on effect	Most associated feeling (5 points)	More associated feeling (4 points)	Moderate associated feeling (3 points)	Less associated feeling (2 points)	Least associated feeling (1 points)	Total score	Sequence
Cheerfulness	128	119	82	33	36	1464	1
Joyfulness	97	124	92	70	15	1412	2
Optimism	59	57	111	85	86	1112	3
Wealth	65	48	43	104	138	992	4
Energy	50	47	69	109	123	986	5

Source: The Author

Figure 4.16 Column Chart Showing the Color Yellow on Taxi Selection Choice



Source: The Author

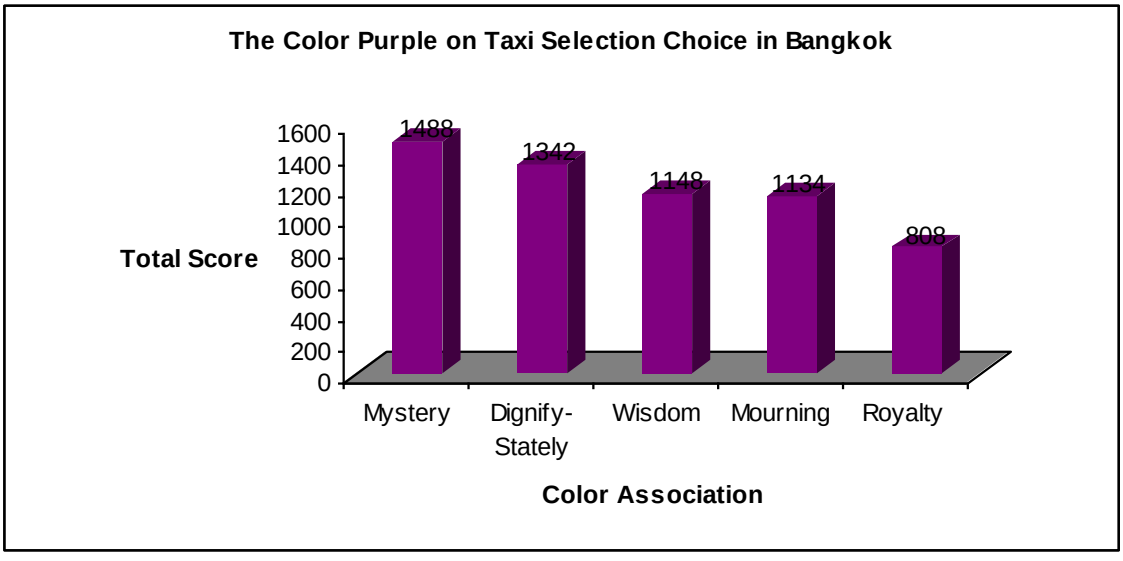
From table 16 and figure 16 of descriptive statistics for the color yellow on taxi selection choice in Bangkok, the majority of the respondents felt that the color yellow was associated with cheerfulness the most, followed by joyfulness, optimism, wealth and energy.

Table 4.17 Descriptive for Statistics the Color Purple on Taxi Selection Choice

Items on effect	Most associated feeling (5 points)	More associated feeling (4 points)	Moderate associated feeling (3 points)	Less associated feeling (2 points)	Least associated feeling (1 points)	Total score	Sequence
Mystery	160	87	69	54	25	1488	1
Dignify-Stately	109	88	89	70	38	1342	2
Wisdom	32	88	118	125	32	1148	3
Mourning	67	96	57	70	104	1134	4
Royalty	27	37	60	75	195	808	5

Source: The Author

Figure 4.17 Column Chart Showing the Color Purple on Taxi Selection Choice



Source: The Author

From table 17 and figure 17 of descriptive statistics for the color purple on taxi selection choice in Bangkok, the majority of the respondents felt that the color purple was associated with mystery the most, followed by dignify-stately, wisdom, mourning and royalty.

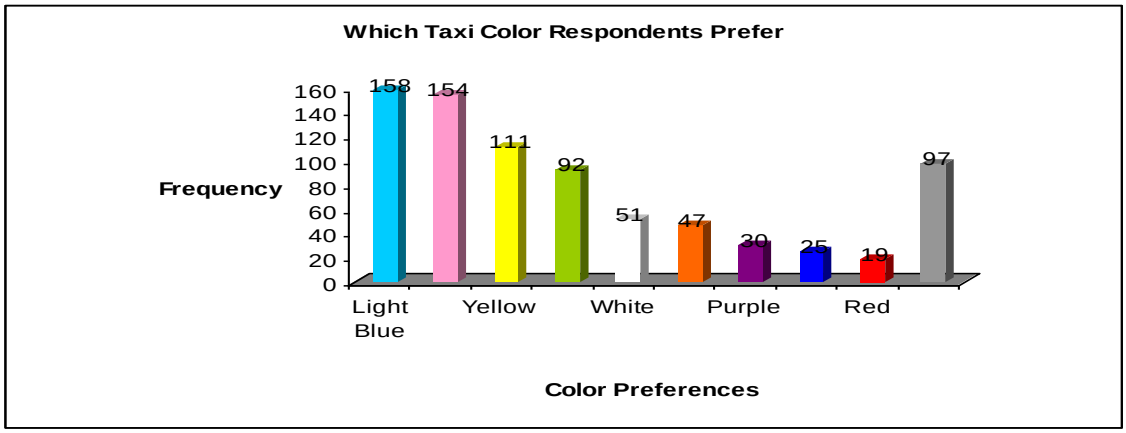
Table 4.18 Descriptive Statistics for Which Taxi Color Respondents Prefer

Color	Frequency	Percentage
Light Blue	158	39.5
Pink	154	38.5
Yellow	111	27.8
Green	92	23.0
White	51	12.8
Orange	47	11.8
Purple	30	7.5
Dark Blue	25	6.3
Red	19	4.8
No preferred color	97	24.3

Source: The Author

*Choose more than one (n=400)

Figure 4.18 Column Chart Showing Which Taxi Color Respondents Prefer



Source: The Author

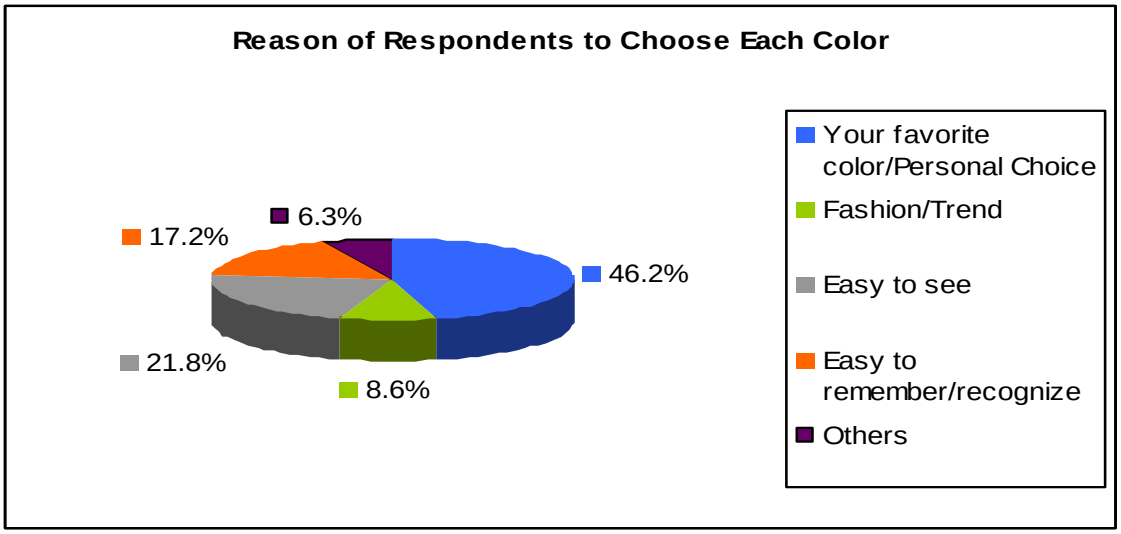
As shown in table 18 and figure 18 of descriptive statistics for which taxi color respondents prefer, approximately 40 percent of the respondents chose light blue as their preferred taxi color, followed by pink and yellow.

Table 4.19 Descriptive Statistics for the Reason of Respondents to Choose Each Color

Reason	Frequency	Percentage
Your favorite color/Personal Choice	140	46.2
Fashion/Trend	26	8.6
Easy to see	66	21.8
Easy to remember/recognize	52	17.2
Other	19	6.3
Total	303	100.0

Source: The Author

Figure 4.19 Pie Chart Showing Reason of Respondents to Choose Each Color



Source: The Author

According to table 19 and figure 19, most of the respondents chose the color light blue, pink and yellow because these were their favorite color/personal

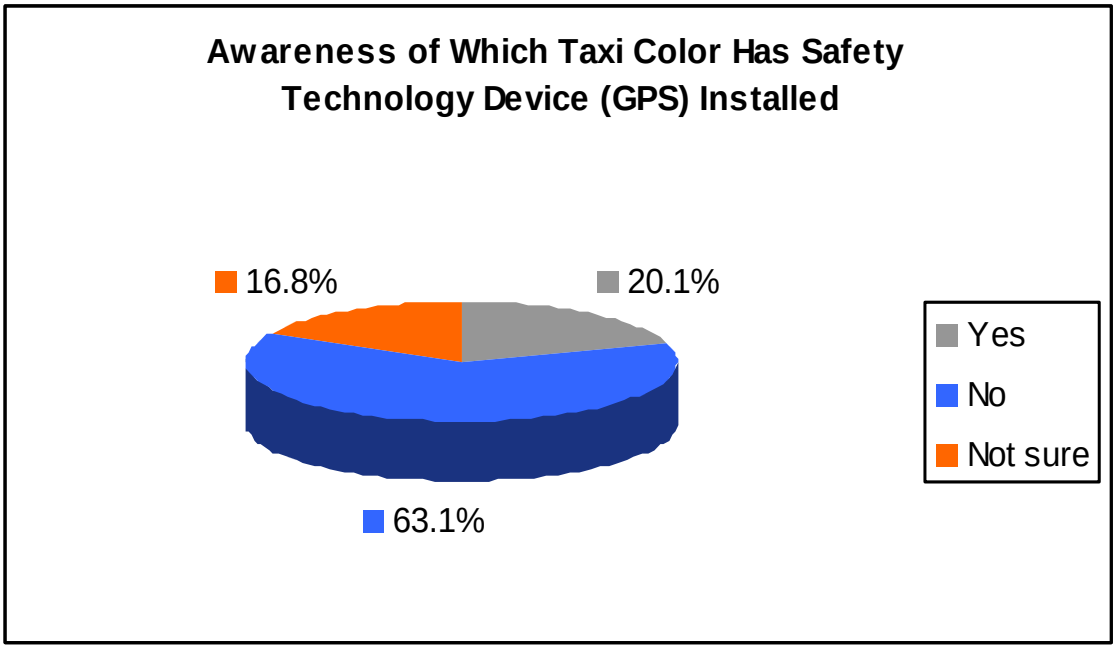
choice (46.2%), followed by being easy to see (21.8%), being easy to remember/recognize (17.2%), fashion/trend (8.6%) and others (6.3%).

Table 4.20 Descriptive Statistics of Respondents for Awareness of Which Taxi Color Has Safety Technology Device (GPS) Installed

Awareness of GPS Installed	Frequency	Percentage
Yes	61	20.1
No	191	63.0
Not sure	51	16.8
Total	303	100.0

Source: The Author

Figure 4.20 Pie Chart Showing Awareness of Which Taxi Color Has Safety Technology Device (GPS) Installed



Source: The Author

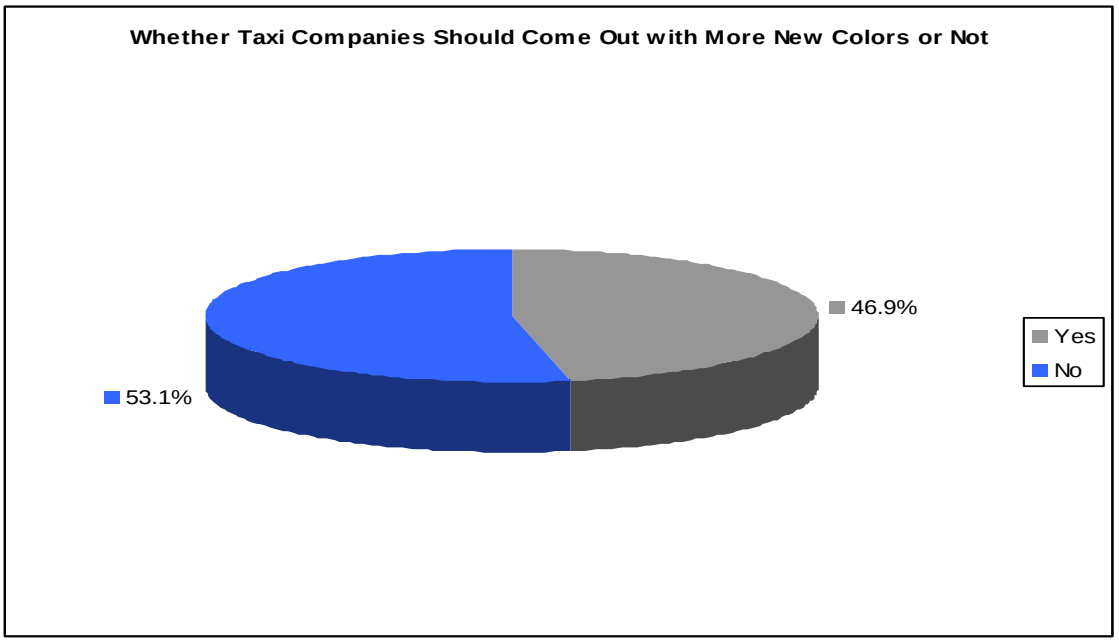
As shown in table 20 and figure 20 of descriptive statistics of respondents' awareness of which taxi color has safety technology device (GPS) installed, approximately 63 percent of the respondents were not aware which color taxis have safety technology devices (GPS) installed, 20.1 percent were aware and 16.8 percent were not sure.

Table 4.21 Descriptive Statistics of Respondents Whether Taxi Companies Should Come Out with More New Colors or Not

Whether Taxi Companies Should Come Out with More New Colors or Not	Frequency	Percentage
Yes	142	46.9
No	161	53.1
Total	303	100.0

Source: The Author

Figure 4.21 Pie Chart Showing Whether Taxi Companies Should Come Out with More New Colors or Not



Source: The Author

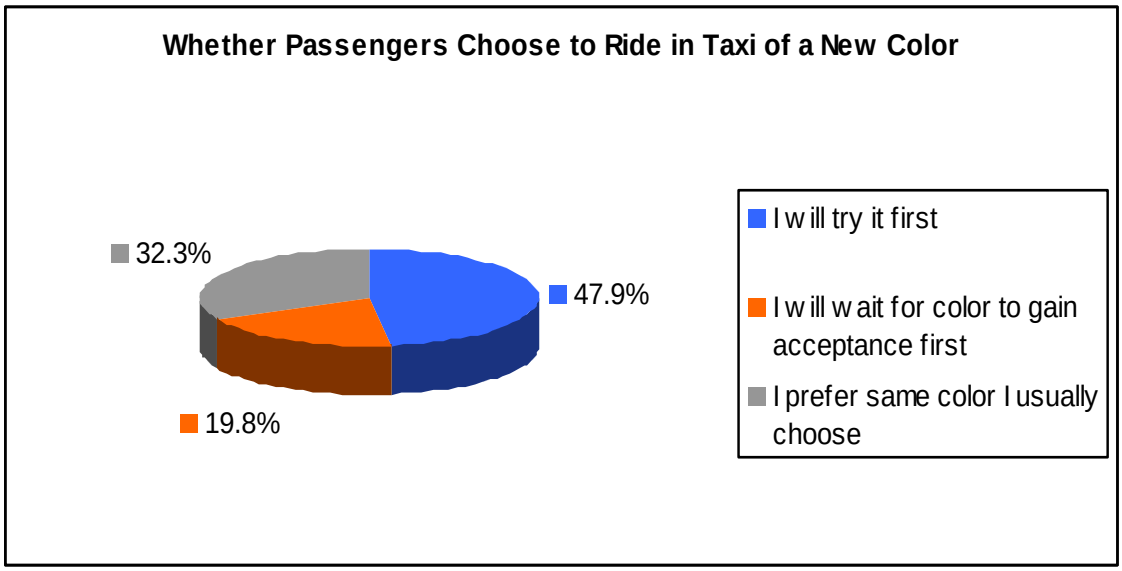
According to table 21 and figure 21 of descriptive statistics of respondents whether taxi companies should come out with more new colors or not, most of the respondents did not agree that taxi companies should come out with more new colors in the market (53.1%) while the rest agreed that they should come out with more new colors (46.9%).

Table 4.22 Descriptive Statistics of Respondents to Choose Whether to Ride in Taxis with a New Color

Choose Whether to Ride in Taxis of a New Color	Frequency	Percentage
I will try it first	145	47.9
I will wait for color to gain acceptance first	60	19.8
I prefer same color I usually choose	98	32.3
Total	303	100.0

Source: The Author

Figure 4.22 Pie Chart Showing Whether Passengers Choose to Ride in Taxi of a New Color



Source: The Author

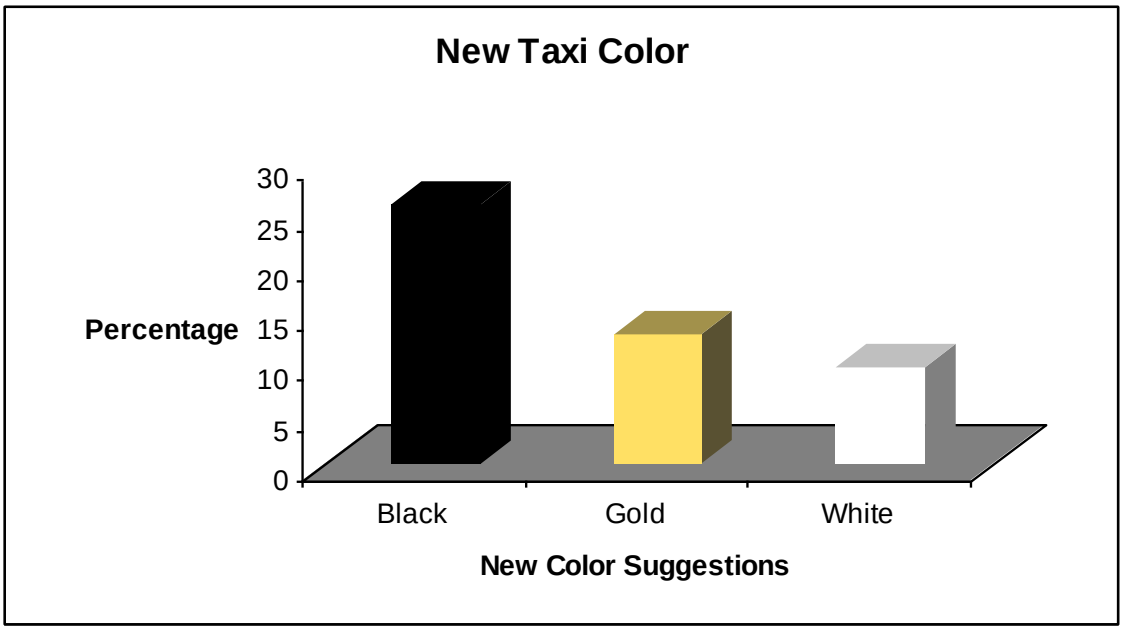
As shown in table 22 and figure 22, if there is new taxi color in the market, 47.9 percent of the respondents will try it first, 32.3 percent prefer the same color they usually choose, and 19.8 percent will wait for the color to gain acceptance first.

Table 4.23 Descriptive Statistics of Respondents for New Taxi Color

Color	Frequency	Percentage
Black	70	25.8
Gold	35	12.9
White	26	9.6
Rainbow color	21	7.7
Silver	19	7.0
Green	18	6.6
Brown	17	6.3
Gray	11	4.1
Purple	9	3.3
Yellow	9	3.3
Blue	9	3.3
Cream	9	3.3
Pink	7	2.6
Indigo	3	1.1
Old rose	2	0.7
Orange	2	0.7
Red	1	0.4
Dark blue	1	0.4
Reflected color	1	0.4
Dark brown	1	0.4
Total	271	100.0

Source: The Author

Figure 4.23 Column Chart Showing New Taxi Color



Source: The Author

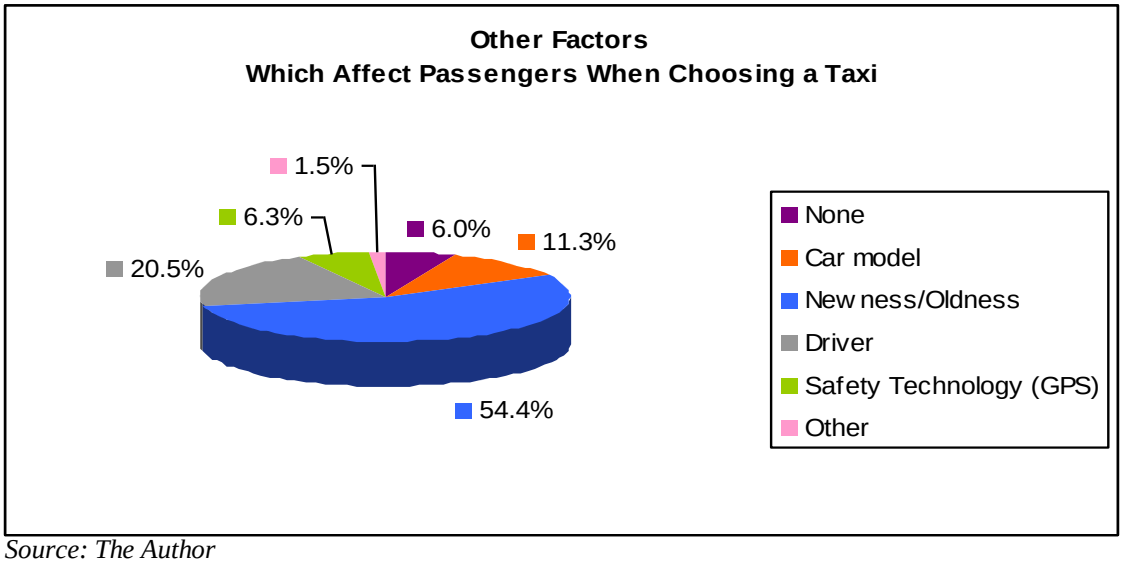
According to table 23 and figure 23, most of the respondents suggested that the new color for taxis should be black (25.8%), followed by Gold (12.9%) and white (9.6%).

Table 4.24 Descriptive Statistics for Other Factors Which Affect Passengers When Choosing a Taxi

Factors	Frequency	Percentage
None	24	6.0
Car model	45	11.3
Newness/Oldness	218	54.4
Driver	82	20.5
Safety Technology (GPS)	25	6.3
Other	6	1.5
Total	400	100.0

Source: The Author

Figure 4.24 Pie Chart Showing Other Factors Which Affect Passengers When Choosing a Taxi



Source: The Author

As shown in table 24 and figure 24, approximately 54 percent of the respondents stated that newness/oldness of the taxi affects their selection choice, 20.5 percent consider the driver, 11.3 percent think about the car model, 6.3 percent consider Safety Technology (GPS), and 1.5 percent consider other factors.

From the survey in the part of the Effect of Colors on the Taxi Selection Choice of Consumers in Bangkok, the statistics reveal a lot of useful information such as each taxi color's association under Thai people's scope, taxi color preference, reason to select taxi color, color lifestyle segmentation, other factors on taxi selection choice, etc., which will be discussed in the following section.

For every color association used in this survey was referenced according to many researches and studies about color association. However, after this survey was conducted by using rank-order type of questions and analyzed by using a weighted score approach in order to sum up the total score for each color association, some useful information on Thai people's color association which has already been mentioned above, was able to be gathered and presented. Thus, under Thai people's scope, each color association is shown as follows:

- Blue associated with security, calm, trust, gentleness, wealth

- Green associated with pleasantness (statistically significant from other associations), peace, healthiness, gentleness, wealth
- White associated with cleanliness (statistically significant from other associations), simplicity, peace, gentleness, pleasantness
- Red associated with hotness, excitement, danger, activeness, love
- Orange associated with cheerfulness, playfulness, energy, warmth, happiness
- Pink associated with femininity, love, romance, tenderness, admiration
- Yellow associated with cheerfulness, joyfulness, optimism, wealth, energy
- Purple associated with mystery, dignify-stately, wisdom, mourning, royalty

More importantly on the climax question of passengers' preferred taxi color, the results came out that the most preferred light blue as a taxi color with a percentage of 39.5, followed by the color pink with a percentage of 38.5, the color yellow with 27.8 percent, the color green with 23.0 percent as fourth rank and no preferred taxi color with a percentage of 24.3. Seemingly, the top four most popular taxi colors are more colorful compared to others; light blue and pink are still the most preferred taxi colors over time, while yellow as recent color having entered the market appeared to be in third place instead of green which used to be popular in the past.

Statistics from the survey show that most of the respondents were female and in the younger age group of people; this might explain why the most preferred taxi colors were light blue and pink, which are linked to feelings of security and femininity reflecting the characters of these passengers. Yellow and green are associated with the feelings of positive meanings, which could influence the taxi decision making of passengers before they select a taxi. Moreover, the reasons behind their taxi decision selection choices are because those colors are their favorite colors or personal choices, with a percentage of 46.2; followed by easiness to see those colors, with a percentage of 21.8, giving it the second highest rank; easiness to remember the colors, with 17.2 percent, and finally fashion/trend color, with 8.6 percent. Despite those preferred

colorful taxi colors being selected, there are still 24.3 percent of people who do not have any preferred taxi colors affecting their decision making for selecting taxis.

Moreover, there are some additional questions in the survey in order to gain more useful answers to understand the behavior or information of taxi passengers so that taxi rental operators can adapt and apply this knowledge into practical strategies to run their transportation businesses. Most of the respondents, with a percentage of 63.0, were not aware which taxi colors have the safety technology devices (GPS) installed, while 20.1 percent were aware of those GPS devices and 16.8 percent were not sure. These answers could directly reflect the problem that those taxi service operators are not successful in promoting or advertising the presence of their installed safety technology devices (GPS) in their taxis because from the survey most of the respondents did not even know which taxis have GPS installed. Thus, those taxi service operators with GPS devices already installed or due to be installed are suggested to do more public relations or advertisings to provide awareness of the safety or security feelings for passengers about which taxi colors have safety devices in order for them to recognize and select taxis of those colors for their rides.

On the question of whether taxi companies should come out with more new colors in the market or not, 53.1 percent of respondents said no to this question. On the other hand, 46.9 of the respondents supported having more new taxi colors come out into the market. The results of these two answers are pretty close to each other, which means that almost half of the population would like to see more new taxi colors and the other half would not like to add more new taxi colors to the existing market. For the color lifestyle segmentation question, the results showed that when a new taxi color enters the market, a majority of 47.9 percent of passengers would try it first, followed by 32.3 percent of passengers who still preferred to use the same taxi color that they usually select, and lastly 19.8 percent would wait for the color to gain acceptance first. In reference to the marketing theory, the result show that almost half of the people who travel by taxi tend to be the leaders or so-called innovators who usually adopt the new products released out in the market, while a small number of passengers tend to be the followers or so-called laggards. For this reason, releasing new taxi colors into the market by taxi rental companies would be accepted and attract most of the passengers to select them.

For future opportunities, there is still some useful information on new taxi colors suggested by respondents and other factors of taxi selection choices which could be used as tactical strategies in future research. A wide range of new taxi colors was suggested in the survey as mentioned above; however, the top three colors suggested as new taxi colors in the market by respondents were black (25.8%), gold (12.9%), and white (9.6%). Two of the colors, black and gold, do not exist in the market nowadays, which means that these new colors could represent an opportunity for taxi rental companies to explore. Finally, the result of other factors which affect passengers in choosing taxis revealed that the "newness/oldness" factor was ranked in first place with 54.4 percent, followed by the "driver" factor with 20.5 percent, and the "car model" factor with 11.3 percent ranked third. These numbers could tell the business operators specific areas to improve or focus on in order to capture and deliver consumer satisfaction to an optimal degree.

Hypothesis

1. Relationship between personal factors and preferred taxi color

Table 4.25 Relationship between personal factors and preferred taxi color

Personal factor	Prefer taxi color									
	Yellow	Light Blue	Dark Blue	Green	Pink	Purple	Orange	Red	White	No preferred color
Age										
Less than 20 years old	19	**24**	5	14	17	5	3	5	8	12
20-40 years old	71	106	12	60	**109**	17	34	8	32	77
41-60 years old	16	19	5	14	**21**	7	9	4	8	7
More than 60 years	5	**9**	3	4	7	1	1	2	3	1
Gender										
Male	40	**50**	11	28	42	7	19	5	14	37
Female	71	108	14	64	**112**	23	28	14	37	60
Marital status										
Single	83	**119**	17	70	118	21	34	13	39	78
Not single	28	**39**	8	22	36	9	13	6	12	19
Education										
Lower than Primary School (Grade1-6)	5	6	3	5	**7**	2	4	3	3	-
High School or equivalent	27	**29**	8	20	28	7	5	5	5	11
Vocational/Technical School	10	**15**	-	8	**15**	5	4	3	4	6
Bachelor's Degree	57	87	11	48	**88**	11	27	4	27	65
Higher than Bachelor's Degree	12	**21**	3	11	16	5	7	4	12	15
Occupation										
Student	30	**40**	8	22	33	4	8	7	12	23
Corporate Employee	59	90	10	61	**94**	20	30	8	25	60
Government Officer	4	5	2	3	5	1	4	2	4	**6**
Unemployed/Retired/ Other	18	**23**	5	6	22	5	5	2	10	8
Income										
Less than 12,000 Baht	45	**52**	10	32	50	12	12	9	17	26
12,000 - 24,000 Baht	31	53	10	28	**54**	12	14	7	16	37
24,001 - 36,000 Baht	15	**32**	5	15	29	4	13	3	10	16
More than 36,000 Baht	20	**21**	-	17	**21**	2	8	-	8	18

Source: The Author

From table 25, when we classified preferred taxi color by using demographic information, the following was discovered:

Age

Less than 20 years old: The passengers who are less than 20 years old prefer Light Blue, Yellow, and Pink colored taxis respectively.

20-40 years old: The passengers who are between 20-40 years old prefer Pink, Light Blue, and Yellow colored taxis.

41-60 years old: The passengers who are between 41-60 years old prefer Pink, Light Blue, and Yellow colored taxis.

More than 60 years old: The passengers who are more than 60 years old prefer Light Blue, Pink, and Yellow colored taxis.

Gender

Male: The male passengers prefer Light Blue, Pink, and Yellow colored taxis.

Female: The female passengers prefer Pink, Light Blue, and Yellow colored taxis.

Marital status

Single: The passengers who are single prefer Light Blue, Pink, and Yellow colored taxis.

Not single: The passengers who are not single prefer Light Blue, Pink, and Yellow colored taxis.

Education

Lower than Primary School (Grade1-6): The passengers with an education background lower than primary school level (Grade1-6) prefer Pink, Light Blue, Yellow, and Green colored taxis.

High School or equivalent: The passengers with an education background of high school or equivalent level prefer Light Blue, Pink, and Yellow colored taxis.

Vocational / Technical School: The passengers with an education background of vocational / technical school level prefer Light Blue, Pink, and Yellow colored taxis.

Bachelor's Degree: The passengers with an education background of bachelor's degree level prefer Pink, and Light Blue colored taxis.

Higher than Bachelor's Degree: The passengers with an education background of higher than Bachelor's Degree level prefer Light Blue, Pink, and Yellow colored taxis.

Occupation

Student: The passengers who are students prefer Light Blue, Pink, and Yellow colored taxis.

Corporate Employee: The passengers who are corporate employees prefer Pink, Light Blue, and Green colored taxis.

Government Officer: The passengers who are government officers prefer Light Blue, Pink, Yellow, Orange, and White colored taxis.

Unemployed / Retired / Other: The passengers who are unemployed / retired / other prefer Light Blue, Pink, and Yellow colored taxis.

Income

Less than 12,000 Baht: The passengers who earned less than 12,000 Baht/month prefer Light Blue, Pink, and Yellow colored taxis.

12,000 - 24,000 Baht: The passengers who earned 12,000 - 24,000 Baht/month prefer Pink, Light Blue, and Yellow colored taxis.

24,001 - 36,000 Baht: The passengers who earned 24,001 - 36,000 Baht/month prefer Light Blue, Pink, Yellow, and Green colored taxis.

More than 36,000 Baht: The passengers who earned More than 36,000 Baht/month prefer Pink, Light Blue, and Yellow colored taxis.

In conclusion, relationships between demographic information and preferred taxi colors were presented. Most of the respondents representing the taxi passengers' population who were categorized by demographic details such as age,

gender, marital status, education level, occupation and average income per month prefer light blue and pink colored taxis with slightly different numbers in each aspect from the survey. Moreover, it could be found that there's a significant result showing that males would mostly prefer light blue, while females would mostly prefer pink, which reflected their nature of characteristics. However, there are some differences in the age and occupation factors' with results deviating from light blue and pink. For respondents who are less than 20 years old, most prefer light blue in the first place and yellow as a second rank, and for respondents whose occupation is government officer, most have no preferred taxi color in the first place instead of light blue and pink color.

2. Relationship between personal factors and passengers' attitude toward taxi colors with passengers' preferred taxi color

Table 4.26 Relationship between personal factors and passengers' attitude toward taxi colors with passengers' preferred taxi color

Personal factor	Attitude					χ^2	df	Sig.
	Your favorite color/Personal Choice	Fashion/Trend	Easy to see	Easy to remember/ recognize	Other			
Age						12.685	12	.392
Less than 20 years old	**20**	6	9	2	2			
20-40 years old	**96**	16	43	40	15			
41-60 years old	**15**	3	12	9	2			
More than 60 years	**9**	1	2	1	-			
Gender						3.912	4	.418
Male	**38**	10	21	20	4			
Female	**102**	16	45	32	15			
Marital status						2.442	4	.655
Single	**108**	21	50	36	16			
Not single	**32**	5	16	16	3			
Education						17.511	16	.353
Lower than Primary School (Grade1-6)	**6**	1	4	5	-			
High School or equivalent	**24**	8	14	7	1			
Vocational/Technical School	**8**	5	5	5	3			
Bachelor's Degree	**82**	10	35	27	12			
Higher than Bachelor's Degree	**20**	2	8	8	3			
Occupation						8.233	12	.767
Student	**29**	8	17	6	5			
Corporate Employee	**84**	12	36	35	12			
Government Officer	**8**	1	4	4	-			
Unemployed/Retired/ Other	**19**	5	9	7	2			
Income						14.278	12	.283
Less than 12,000 Baht	**44**	9	23	18	4			
12,000 - 24,000 Baht	**42**	9	20	18	10			
24,001 - 36,000 Baht	**28**	7	13	14	2			
More than 36,000 Baht	**26**	1	10	2	3			

Source: The Author

*Significant at level 0.05

From table 26, when Chi-square (χ^2) was used to test the second hypothesis, there was no significance found between age, gender, marital status, education level, occupation, average income and passengers' attitude toward taxi colors with passengers' preferred taxi color (Sig. > 0.05). Therefore, personal factors do not relate to passengers' attitude toward taxi colors with passengers' preferred taxi color. For details, it was shown that the passengers with different age, gender, marital status, education level, occupation, and average income decide to choose a taxi color because it is their favorite color or personal choice.

CHAPTER V
DISCUSSION, RECOMMENDATIONS AND FUTURE RESEARCH OPPORTUNITIES

5.1 Summary of the Study

The purposes of this research were to (1) study passengers' taxi selection choices in order to gain knowledge about passengers' color preferences and (2) apply the knowledge about passengers' color preferences into practical strategies for taxi operators since it is undeniable that transportation is a very important part of our lives especially in Bangkok, and the public transportation that is the most convenient, comfortable, private and able to cover all routes in Bangkok tends to be the taxi. Nowadays, Bangkok is seen to have a variety of colorful taxis and their numbers have increased rapidly from 13,000 to 70,000 at the present (Wongruang, 2009). Moreover, color is one of the most crucial strategies contributing to influence the consumer's choice and purchasing decision (Funk and Ndubisi, 2006). Moreover, about 62-90 percent of purchasing decision is based on colors alone (Singh, 2006). Therefore in the competitive business world, where profit counts and new different strategies have been launched to capture greater market share, companies cannot ignore color, must generate knowledge to support critical decisions, and must develop color strategies in order to enhance their competitive advantages (Harrington, 2006).

The literature of many studies pertaining to the significance of color, color impact, color association, generations of color, and colors and gender was reviewed as part of the process of this author's research. After the cleaning process, four hundred respondents participated in this study's questionnaire. A systematic random sampling method was used, which involved selecting every alternate passenger who get into a taxi during the survey period. The questionnaires were completed by the participants using a self-administered approach, which took approximately 5-10 minutes in length and was aided by trained taxi drivers.

The survey consisted of 2 parts, with mostly multiple choice, closed-ended, and rank-order questions. Part 1 comprised of 10 questions on general demographic information and Part 2 comprised 15 questions on the effect of color on the taxi selection choice of consumers in Bangkok related to passengers' color association, color preferences and their supporting reasons.

5.2 Discussion

Walker (1991) suggests that "color accounts for 60% of the acceptance or rejection of an object and is a critical factor in the success of any visual experience" (p.33). From the quote above, the fact of company's achieving success via the "power of color" (Walker, 1991) could be proven within the business world in examples such as Apple's iPod introduced in January 2004 in five metallic colors and then re-introduced in 2006 with five new colors in the Nano version, Volkswagen's bright green VW Beetle introduced in 1998, and Heinz Co.'s stellar blue ketchup in 2003 (Harrington, 2006). As a result, more companies now see color as an opportunity to differentiate; add aesthetic attraction; or solidify a bond, relationship or experience with customers (Harrington, 2006).

The literature review (Chapter Two) provided background knowledge relating to color, which is one of the most crucial factors that has been influenced by culture and is involved in consumers' buying behavior for any products or services. The chapter elaborated on each detailed topic, such as the significance of color, color impact, color association, generations of color, and colors and gender.

Significance of Color

To support the literature review (Chapter Two) in terms of the significance of color, Cooper (1994) showed that color ranks among the top three considerations, along with price and quality, in the purchase of an automobile. Additionally, Igloo Products Corporation used a color consultant to develop cooler colors for the firm and attributed a subsequent 15 percent increase in sales to those new colors (Funk and Ndubisi, 2006). Accordingly, of this research's participants, there are more who have their own preferred taxi color (light blue, pink, yellow, etc) than those who do not

have any preferred taxi color. Moreover, differences in passengers' personal factors resulted in different taxi color preferences of passengers as well. Other than color, passengers would decide on other factors such as newness/oldness, driver, car model, and safety technology. These other factors provide an opportunity for future research.

Color Impact and Color Association

The literature review on color impact and color association pertained to knowledge that people react to color both physiologically and psychologically. Physiologically, experts claim the reaction to color is the same regardless of culture, while psychologically, colors are known to possess emotional and psychological properties which evoke definite feelings, vivid memories and mental pictures. The Wagner Color Research Institute found that colors have associations with certain images. For example, blue is associated with wealth, trust, and security; gray is associated with strength, exclusivity, and success. These associations may explain why banks are more likely to color their logos and collateral using blue and gray (Madden, Hewett and Roth, 2000). Moreover, people in different environments and cultures, would perceive the meaning of each color or color association differently. Associative learning occurs when individuals make connections between events that take place in the environment (Shimp, 1991).

As shown in the literature review, many studies have referred to many color associations and assigned different meanings to each different color; nevertheless, the results of the survey provided extended new knowledge of specific color associations for each different taxi color in the scope of the culture of Thai passengers in Bangkok. By connecting the results of preferred taxi colors and the color association of Thai passengers in Bangkok, it was discovered that passengers decided to select taxis based on the colors that generate positive meaning, such as security, femininity, cheerfulness, pleasantness, etc. Furthermore, these colors were selected when choosing a taxi because they were their favorite color or personal choice instead of factors like easiness to see, easiness to remember, and fashion/trend color, regardless of the general personal factors.

Generations of Color

From the research, it is clear that age makes a difference in how we respond to color. It is one reason why our color preferences change over time as our age increases and we move through the life-cycle (Trent, 2000). As a result, individuals over 60 years old preferred light blue and fresh pink as referenced in the study because they may be retired, less active and spend a lot of time indoors. Baby boomers (in the group of 41 – 60 years old) preferred fresh pink and light blue, which was slightly different from earlier studies which suggested that Baby boomers are drawn to choose cleansing and iridescent blues. Those in the Generation X and Generation Y groups (in the group of 20 to 40 years old) preferred fresh pink and light blue, which is different from earlier studies' findings that those in the Generation X and Generation Y groups look for the colors of a global palette, such as exotic greens, violet, indigo, and Asian reds. Group of respondents which was less than 20 years old preferred light blue and yellow, which is slightly different from earlier studies that indicated the youth preferred high-contrast colors, such as red and blue.

Colors and gender

In terms of colors and gender, it was stated in the research that gender differences between men and women resulted in the different decision-making processes of individuals, which included decision-making in color as well. Several issues relating to consumer behavior have been examined in order to support gender differences in decision-making, including relationships between gender identity and consumer's perceptions of masculinity and femininity in products. The relationship between color dimensions and product choice is moderated by gender; that is the reason why most women often choose more colorful and strongly attractive cars (Funk and Ndubisi, 2006). From the survey, it tends to be a significance which is different between males and females in choosing a taxi by color. Males were more attracted to light blue while females were more attracted to pink, which is a feminine and attractive color as referenced in the study.

Summary of Other Findings

There is some additional information in the survey which can be utilized to gain more useful understanding of the behavior of taxi passengers. First of all, most of the participants were not aware which taxi colors have the safety technology devices (GPS) installed. These answers could directly reflect the problem that those taxi service operators have in not being successful in promoting or advertising the presence of installed safety technology devices (GPS) in their taxis with the intention of influencing a passenger's decision to choose their taxi. Moreover, the majority of respondents were against having more new taxi colors in the market. For the color lifestyle segmentation, the results show that if there is new taxi color in the market, almost half of the passengers would like to try it first, followed by passengers who would still prefer the same taxi color they usually select, and passengers who would will wait for color to gain acceptance first. For future opportunities, there is still some useful information on new taxi colors suggested by respondents. A wide range of new taxi colors was suggested in the survey as mentioned above; however, the top three colors suggested for new taxi colors in the market by respondents are black, gold and white. Two of the colors, black and gold, currently do not exist in the market, suggesting these new colors could be an opportunity for taxi rental companies to explore.

5.3 Recommendations

As many studies have shown, color ranks among the top factors for consumers' in their purchase considerations. Equally, this survey revealed that the top three preferred colors for taxis in Bangkok are light blue, pink and yellow. Therefore, taxi operators would have opportunities to focus on these preferred colors in order to attract passengers and give them a sense of satisfaction. Moreover, taxi operators should focus on the quality of the color as well, which could indirectly affect the attractiveness of the taxi color. The newness/oldness of the taxi should also be considered since this factor was determined as another important issue for passengers' consideration (other factors which affect passengers when choosing a taxi will be presented in the future research opportunities topic later in this chapter).

The tactical strategies of taxi operators should be executed to capture and deliver satisfaction to a target group that matches the results of the majority of passengers, which included demographic details such as single females, teenagers, working people, people with a Bachelor's degree, people working as corporate employees, people earning an average income of less than 24,000 baht per month, and people using taxi services alone during both the day time and the night time. Taxi operators could adapt their strategy to these demographic groups by taking actions, such as launching colorful new taxis to attract these younger passengers, launching new services unique to specific taxi colors in order to enhance passengers' perceptions toward these taxi colors and improve recognition (for example, providing female magazines in every pink taxi so that femininity would be emphasized together with the color pink which could attract more female passengers to use the service) or launching some techniques to support the attractiveness of these taxi colors (for example, installing a blinking blue light sign on light blue taxis in order to capture passengers' attention to select the ride).

Promoting safety technology devices (GPS) would still be necessary for firms that have already installed these gadgets and firms that plan to install GPS in the future. Therefore, those taxi operators would have competitive advantages in terms of the consumers' safety perception when compared with their rivals; otherwise, taxis with or without GPS installed would be no different in the consumers' perception. Moreover, taxi operators would have opportunities to release new taxi colors into the market since the number of passengers who agreed and disagreed with having new taxi colors in the market were pretty close to each other, even though the number of passengers who disagreed with this idea were slightly more in number than the passengers who agreed with it. To support the above tactical strategies of new colors, passengers tend to select them immediately since most of the taxi passengers were considered to be leaders (innovators) in terms of this product, and the preferred new taxi colors are black, gold and white with black being the most popular and white the least popular of the three.

Lastly, researcher would add suggestions to policy makers that the government should release the taxi color policy by regulating the taxi operators not to have too many shades of the same taxi color in order to avoid causing passengers'

misperception toward each different taxi colors in the market. Moreover, government should have regulation to control and offer passengers the security while using taxi services because a lot of passengers ride taxi alone during both the day time and the night time in order to enhance security perception toward this product and service.

5.4 Study Constraints and Future Research Opportunities

In this study, the survey was conducted on passengers who use the taxi services and delivered by taxi drivers who had been trained by the researcher in order to obtain the most accurate results from the primary source. Therefore, one constraint that occurred during the study was that the researcher was not the direct contact point with respondents but rather it was trained taxi drivers who might approach the passengers differently in practice. However, the taxi drivers were trained to approach respondents using the same method as the researcher including introducing, explaining, providing and collecting the questionnaires in order to have the same standard and gather the most accurate results from passengers as effectively as the researcher could.

For future research opportunities, several issues could be further explored in order to gain more knowledge. First, future studies might be done in different approaches by using Conjoint or Discriminant Analysis in order to estimate the value of product attributes, for example, the value of product attribute toward teenager and adult, or GPS benefits toward taxi companies and customers. Second, future studies may help to discover more details about other factors which affect passengers when choosing a taxi and may consider the importance of the color factor together with other factors. Third, the developed understanding of color association should be further studied and compared with its effects on other types of products or services in order to categorize and gain more knowledge about consumers' preferences towards color association. Finally, future research should consider and focus on the strategies used to enhance the competitive advantages for taxi operators over their rivals especially in terms of color-relating strategies.

5.5 Impact of Findings

A great deal of knowledge to support understanding about taxi passengers' color preferences with differences in personal characters as influenced by color issues was presented in and contributed to this study. Color was proven to be a valuable creative asset or effective strategy to attract customers' attention and be used as color preferences in selecting taxis for the ride. Moreover, psychological reasons behind these color preferences were revealed and could be exploited for future opportunities. Also, other supportive findings would provide additional useful information in order to create effective strategies for taxi companies in the near future. As a final point, the results of this study might be considered significant resources for the taxi business or others fields of business in order to enhance the knowledge of entrepreneurs, exploit competitive advantages, and eventually deliver a greater value of products and services to consumers thus enhancing their satisfaction by using knowledge of color strategy and its impacts.

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APPENDIX

Questionnaire on Effect of Color on Taxi Selection Choice in Bangkok

Part 1 General Information (For Participants)

Remark: Please fill out your answer / mark the appropriate box

1. Do you have any problems with Color Vision Deficiency?
   1. ☐ Yes (Please stop and return) 2. ☐ No

2. What is your age?
   1. ☐ Less than 20 2. ☐ 20-40
   3. ☐ 41-60 4. ☐ More than 60

3. What is your gender?
   1. ☐ Male 2. ☐ Female

4. What is your current marital status?
   1. ☐ Single 2. ☐ Married
   3. ☐ Divorced 4. ☐ Separated
   5. ☐ Other, please specify ……

5. What is the highest level of education you have completed?
   1. ☐ Lower than Primary School 2. ☐ Primary School (Grade1-6)
   3. ☐ High School or equivalent 4. ☐ Vocational/Technical School
   5. ☐ Bachelor's Degree 6. ☐ Master's Degree
   7. ☐ Doctoral Degree 8. ☐ Other, please specify ……

6. What is your occupation?
   1. ☐ Unemployed 2. ☐ Student
   3. ☐ Corporate Employee 4. ☐ Government Officer
   5. ☐ Retired 6. ☐ Other, please specify ……

7. What is your average income per month? (Baht/Month)
   1. ☐ Less than 12,000 Baht 2. ☐ 12,000 – 24,000 Baht
   3. ☐ 24,001 – 36,000 Baht 4. ☐ 36,001 – 48,000 Baht
   5. ☐ 48,001 – 60,000 Baht 6. ☐ 56,001 – 72,000 Baht
   7. ☐ 72,001 – 84,000 Baht 8. ☐ 84,001 – 96,000 Baht
   9. ☐ More than 96,000 Baht

8. How many times do you use taxi per week?
   1. ☐ 1-5 2. ☐ 6-10
   3. ☐ 11-15 4. ☐ More than 16

9. Generally, when do you ride taxi?
   1. ☐ Daytime 2. ☐ Night-time
   3. ☐ Both Time

10. Generally, who do you ride taxi with?
   1. ☐ With no one (Alone) 2. ☐ With friend(s)
   3. ☐ With family member(s) 4. ☐ With boyfriend/girlfriend
   5. ☐ Other, please specify ……

Part 2 Questions on effect of color on taxi selection choice in Bangkok

Remark: Question 1 – 8. Each question, please rank your feelings associated with color provided below from most to least 1 – 5 (1 = most associated feeling, 5 = least associated feeling)

1. Blue	2. Green	3. White	4. Red
• _____ Wealth	• _____ Wealth	• _____ Cleanliness	• _____ Love
• _____ Trust	• _____ Healthiness	• _____ Simplicity	• _____ Danger
• _____ Security	• _____ Peace	• _____ Peace	• _____ Excitement
• _____ Calm	• _____ Pleasantness	• _____ Pleasantness	• _____ Hotness
• _____ Gentleness	• _____ Gentleness	• _____ Gentleness	• _____ Activeness
5. Orange	**6. Pink**	**7. Yellow**	**8. Purple**
• _____ Cheerfulness	• _____ Femininity	• _____ Cheerfulness	• _____ Dignify-Stately
• _____ Playfulness	• _____ Love	• _____ Joyfulness	• _____ Mourning
• _____ Happiness	• _____ Romance	• _____ Optimism	• _____ Mystery
• _____ Energy	• _____ Admiration	• _____ Wealth	• _____ Wisdom
• _____ Warmth	• _____ Tenderness	• _____ Energy	• _____ Royalty

Remark: Question 9 – 14. Please fill out your answer / mark the appropriate box.

9. If you could choose, which taxi color do you select? (You can choose up to 3 colors)

1. ☐ Yellow 2. ☐ Light Blue 3. ☐ Dark Blue
4. ☐ Green 5. ☐ Pink 6. ☐ Purple
7. ☐ Orange 8. ☐ Red 9. ☐ White
10. ☐ No preferred color (Please skip to Question 14)

10. Why do you choose this color (from question 9)?

1. ☐ Your favorite color/Personal Choice 2. ☐ Fashion/Trend
3. ☐ Easy to see 4. ☐ Easy to remember/recognize
5. ☐ Other, please specify ……

11. Are you aware of which taxi color that has Safety Technology Device (GPS) installed?

1. ☐ Yes 2. ☐ No 3. ☐ Not sure

12. Should taxi companies frequently come out with more new colors?

1. ☐ Yes 2. ☐ No

13. If there's new taxi color in the market, when would you choose this new taxi color for ride?

1. ☐ I will try it first
2. ☐ I will wait for color to gain acceptance first
3. ☐ I prefer same color I usually choose

14. In your opinion, what should be new taxi color? Color: ……

15. What other factors do you think affecting your choice on taxi?

1. ☐ None 2. ☐ Car model
3. ☐ Newness/Oldness 4. ☐ Driver
5. ☐ Safety Technology (GPS) 6. ☐ Other, please specify ……

Thank you very much for your cooperation

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