
# FACTORS AFFECTING CUSTOMER'S BUYING DECISION FOR TOYOTA CAR IN BANGKOK

by

SAETHKARN NIMMANPATCHARIN

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of

Master of Business Administration

Graduate School of Business
Assumption University
Bangkok Thailand

November 2001

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**Examined on : November 2001**
**Approved for Graduation on :**

Graduate School of Business
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2001

# ABSTRACT

Since Thailand ran into the economics recession, most people are more careful to spend their money. Automobile market behavior is a significant interest because of the substantial impacts of automobile production and use on a variety of business concerns including trade flows, business cycles, and energy demand. Although recent public attention has been focused on governmental attempts to increase sales of domestic vehicles via voluntary export restrictions, Thai government has been an active participant in the automobile market through direct product quality regulation for many years.

This research study is based on the statement of the problem of "**Which factors explain or predict Thai consumer buying behavior toward Toyota cars in Bangkok**?" The objective of this research is to study the consumer buying decision of Thai people concerning Toyota cars purchasing and to explain the buying behavior of Thai consumers based on product attributes and demographic profiles.

For this research, the data were acquired via self-administered questionnaire with 382 respondents who bought any Toyota car or have participation role in buying a car. Convenience-sampling technique is chosen. All data are analyzed and summarized by using the Statistical Package for Social Science (SPSS). This thesis applies Multiple Regression Analysis as a statistic tool to test both hypotheses.

The results from the test of 2 hypotheses can be explained that there are many factors of product attributes and demographic profile effect the customer's buying decision for Toyota car in Bangkok as followings:

| **Automobile attributes** | **Demographic profile** |
|---|---|
| •Performance quality | •Income |
| •Price | |
| •After-sale service | |
| •Level of fuel consumption | |
| •Safety | |

Therefore, the major recommendations regarding the study's findings are that when automobile company creates marketing strategy which emphasizes on those automobile attributes. In addition, future study should study on other automobile brands such as Honda, Mitsubishi, BMW etc.

## Acknowledgement

The successful completion of this thesis was not possible all alone but instead it was completed with assistance from many contributors. Hence, I would like to take this opportunity to express my gratitude to all those people and organizations that have in some ways or the other involved themselves in assisting me in the completion of this thesis.

I would firstly like to express my sincerest gratitude to Dr. Navin Mathur, my advisor for his generous guidance, invaluable suggestions and constructive comments. Without his support this thesis would never has been completed.

As well, I would also gratefully thanks to Dr. Theerachote Pongtaveewould as well as Dr. Thongdee Kijboonchu, for their constructive criticism and suggestions that improve my thesis substantially.

I would also like to thank the officers of the Toyota company in Thailand for all information and cooperation in providing me all the data. Absolutely, without them, this thesis cannot be completed.

Last but not least, I would like to give special thanks to all my friends, Ms.Kanyarat, Mr.Peerayot, Ms.Safina and all questionnaire respondents, for their assistance, and participation during my thesis writing.

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# CHAPTERONE

## GENERALITIES OF THE STUDY

### 1.1 Introduction of Study

### 1.1.1 The Background of The Automobile Industry

Automobile industry is one important industry for economic development due to its relationships to other industry such as steel, rubber, electronics, and plastic. Since a unit of car comprises of more than a thousand part items which are manufactured from various kinds of raw material, development in automobile industry will affect several industries, both forward and backward linkage industries (Somchai, 1991). At the same time, automobile industry creates employment, revenues, skill development and technology. Important factor to push auto industry to further development are government's supervision, protection and investment promotion.

Thailand's automotive industry has grown remarkably in recent years, with the operation of production lines of international car producers as Toyota, Isuzu, Mazda, Mitsubishi, Nissan, Honda, Ford, Chrysler, General Motors and Volvo among others in the country. The industry however actually began in the early 1960s and was initially highly successful in attracting auto makers from the United States. Japan and Europe, who set up assembly plants as joint ventures with Thai companies. Many passenger cars and commercial vehicles were assembled, first from imported semi-knocked down (SKD) kits and later from completely knocked down (CKD) kits. With strong networks of parts suppliers, dealers and service centers, Japanese automakers now make up for 92 percent of the Thai automotive market. Thai firms have become more actively involved in autoparts production with the foundation laid by Japanese subcontractors. The industry have been liberalized during the 1990s to encourage local parts and components makers to improve their efficiency, technology, and product quality ahead of the 2000 deadline for the WTO TRIMs agreement, which will effectively remove the present 54 percent local content ratio for passenger cars, 70 percent for pick-up trucks and 62 percent for commercial vehicles. (www.thaitrade.com)

Since its early beginnings in the sixties, the automotive industry of Thailand alternating feats of expansion and contraction. The policies that have shaped the development of the automotive industry in three decades.

### 1.1.2 History of Boom and Bust

The import substitution policy during the 1960s ushered the beginning of the automobile industry in Thailand. To encourage domestic production, tariff rate on completely knocked down (CKD) vehicles was set at 40 percent, while tariff rate on completely built 80 percent. As a result, production increased from 525 units in 1961 to 12,000 units in 1969, and sales rose from 6,806 to 65,445 units in the same period. The investment promotion policy attracted investments from Europe, America and Japan. At least nine assembly plants were set up from 1961 up to 1969. The Importation of major auto parts contributed to deterioration of trade balance that the Thai government was forced to raise the tariff on CKD kts from 40 percent to reduce the trade deficit. And to boost investment in domestic automotive parts, the government imposed minimum local content require more percent on automotive assembly. This policy encourages Japanese to bring in their parts suppliers to Thailand.

A major obstacle to the development of the domestic auto parts industry pevious was weak domestic demand. The absence of scale economies raise costs and resulted in high automotive prices. Domestic demand was further four-fold increase in oil prices in 1973, which caused automotive sales to cost much as 50 percent of its 1969 level. By 1975, the Thai economy started to pick up, growing at 4.95 percent increased to 9.17 percent in 1976 and 9.86 percent in 1977. Automotive sales increased by 29 percent, reaching 101,323 units in 1977 although domestic production was only 65,875 units. The wide gap between sales and production meant that was beign satisfied by imports, hence trade balance on automotive was ordered to reduce the trade deficit and boost the domestic industry, importation vehicle with engine size of 2300 c.c.a and below was banned. In addition, the raised the tariff rates on CKD kits from 50 to 80 percent, and on CBU vehicles capacity over 2300 c.c. from 80 to 150 percent. The measure may be attributed to the lobbying efforts of the Thai Auto Manufacturer's Association (TAPMA). But despite the import ban, domestic

passenger cars in 1979 dropped from 21,869 units to 21,602 units due to the imported parts.

The sales of automobile improve slightly in 1977. This was due to the slowdown in the agricultural sector, which the purchasing power of a large segment of the population. The government has limits on the number of models to be produced in order to arrest the increased production and to enable the domestic parts producers attain economies further boost the development of the parts industry, the government raise requirement to 54 percent. This policy gave rise to new investments industry parts. In 1985, sales of automobiles suffered another setback following the slowdown caused mainly by a dramatic fall in world agricultural prices. To solve the impact of the slowdown, the government implemented several tax measure the rate on CBU vehicles with engine capacity of 2300 c.c. In addition, the appreciation of the Japanese Yen put cost of major auto parts imported from Japan. These twin pressures raised prices of passenger cars by 40,000-50,000 baht per unit, while the average price up vehicles increased by approximately 10,000 baht per unit.

**1.1.3 Partial Liberalization (1990-1996)**

Since 1987, sales of automobile have been bolstered by strong economic grown. From 1987 to 1990, the economy expanded at an average rate of 10 percent. Since then automotive sales remained buoyant. In 1989, sales rose by 43 percent from 145,360 units to 208,243 units. Within four years, sales of automobiles grew by 15.2 percent, compared to 8.2 percent grown in 1961-1989. Demand was so strong that automotive production with its rapid growth. In 1990, sales grew at an unprecedented rate of 46 percent. Given the strong demand, the Thai government allowed the assembly to expand their capacity and also relaxed the importation of passenger cars with capacity of 2300 c.c. and less. The limitation on the number of automobile also lifted to provide consumers with more choices.

By 1992, the government reduced the tariff rates anew. Tariff on CBU with engine of 2400 c.c. and below was reduced to 42 percent, and on CBU with engine of 2400 c.c. was reduced to 68.5 percent. Thus, lower domestic automobile combined with economic expansion, spurred the rise in sale. Several factors account for the

strong automotive sales between 1992-1996. First, the liberalization of taxi registration boosted the demand for passenger engine capacity of 1600 c.c. Second, the government imposed a require vehicles to be sold beginning January 1993 should have a catalytic compelled producers to dispose their stocks before the deadline. To do this, vehicle promotions were launched. The sales promotion campaign offered low do and interest-free financing schemes. Third, during this period, automobile introduced low-priced vehicles because of tight competition in the market. For example, the Toyota Corolla, model introduced in 1996 was priced only at 423,000 baht demand resulted in some 10,000 unserved orders. Toyota also introduced Solluna priced at slightly over 300,000 baht. Honda used the same strategy by introduced City model, which is price lower than their other models. To keep pace with an unprecedented rise in sales, the assemblers expanded capacity. Toyota set up a new plant with a capacity of 50,000 units per a plant. Honda also put up a new capacity of 60,000 units per year in Ayuttaya province.

In the mid-1990s, the big three (General Motors, Chrysler, and Ford) annual decisions to set up their own assembly plants in Thailand, recognising the potential of becoming the export hub in the Southeast Asian region. The locate in Thailand was also motivated by the fact that Thailand has a developed automotive parts industry compared to its neighbors. As more assembly plants were set up, a significant number of foreign automobile manufacturers also established their production bases in Thailand. The expansion of automotive industry also fueled by the financial liberalization policy initiated in 1993.

### 1.1.4 The Crisis and its Aftermath (1997-Current)

Since the domestic market accounted for approximately 90 percent of automobile sales. The crisis hit the automotive industry where it hurts most. In 1997, sales 363,156 units from 589,126 units in 1996. In 1998, automobile sales continue declining to 144,065 units a drop of 76 percent from 1996 sales. What caused the drop in automobile sales? To be sure, automotive sales on a downward trend since mid-1995. The growth of gross domestic product dropped to 5.5 percent in 1996 from 8.8 percent a year earlier. But the float baht in 1997 resulted in – 1.3 percent change in GDP for the year. (www.asean-auto.org)

### 1.1.5 Today's industry

The Thai Auto-Parts Manufactures Association (TAPMA), founded 20 years ago, is the prime force in the development and upgrade of the industry. Another important force is the Autoparts Industry Club in the Federation of Thai Industries. The Thai Chamber of Commerce and the Department of Export Promotion, through is extensive overseas network of Thai Trade Centers plus regular trade shows and missions, actively promotes the industry abroad, are the means of promoting exports.

The United States is the industry's largest export market, with Thai producers selling to the big US warehouses who seek many of their components from Asia. Many products are now made to specifications given by these outlets. Quality is important as the warehouse bears the responsibility of warrantee, and its own reputation.

From 1991-1996, sales of automobile in Thailand continued to be strong with a compound annual growth rate of 11.7 percent, (compared to 8.2 percent growth during 1961-1990) with sales peaking in 1996 at 589,459 units. Several factors account for the strong automobile sales between 1993-1996.

- The liberalization of taxi registration boosted the demand for passenger cars with engine capacity of 1600cc.
- The government imposed a requirement that all vehicles sold at thee beginning January 1993 should have a catalytic converter. This forced many producers to launch promotions to dispose of the stock before the deadline.
- Many automobile producers introduced low priced vehicles because of tight competition in the market. Japanese automobile dominated this market.

Automobile sales were already on a downward trend since mid-1996 followed by the currency floatation in May 1997, which also affected Thai automobile industry.

- The depreciation of Thai baht raised the prices of import automobiles directly and affect the cost of imported material used for domestic assembled automobile.

- The credit crunch in Thai Banking system in the late 1997- mid 1998, following the suspension of 56 finance companies, have affected automotive demand. Consumer's purchases of automobiles were sharply declined since over 70 percent of sales were financed through credit.

- The adjustment of automobile tax structure, Value added tax (VAT) was raised from 7 percent to 10 percent in October 1997, causing prices to increase.

However, in 1997, during the economic crisis, sales of automobile fell sharply to 144,065 units in 1998 or drops 76 percent from 1996's sales record. Table 1-1, illustrates the historical sales of automobile in Thailand during 1991-2000.

**Table 1-1: Total Automobile Sales Volume During 1991-2000**

| Brand | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Toyota** | 75,095 | 95,910 | 120,384 | 126,477 | 159,658 | 163,940 | 107,121 | 42,661 | 74,619 | 71,300 |
| **Honda** | | | 24,033 | 31,840 | 27,439 | 42,421 | 37,157 | 16,559 | 24,595 | 30,139 |
| **Nissan** | 51,401 | 63,462 | 71,875 | 65,124 | 88,048 | 93,120 | 42,569 | 12,990 | 21,671 | 30,896 |
| **Mitsubishi** | 34,455 | 46,325 | 70,109 | 70,197 | 71,426 | 74,715 | 35,203 | 15,840 | 19,172 | 30,241 |
| **Mazda** | 12,881 | 20,555 | 25,536 | 22,696 | 23,628 | 19,134 | 14,730 | 5,482 | 3,859 | 7,247 |
| **Isuzu** | 58,275 | 74,130 | 86,128 | 98,729 | 118,998 | 122,044 | 82,519 | 32,753 | 52,110 | 57,628 |
| **Other Japanese car** | 23,456 | 37,080 | 9,746 | 19,846 | 25,507 | 24,156 | 11,034 | 3,000 | 3,631 | 4,847 |
| **Hyundai** | | 5,102 | 8,252 | 7,150 | 7,266 | 6,005 | 3,179 | 1,056 | 1,615 | 707 |
| **Kia** | | | | | | 2,640 | 1,011 | 382 | 463 | 343 |
| **Daewoo** | | | | 1,880 | 3,288 | 2,910 | 1,423 | 786 | 637 | 321 |
| **BMW** | 2,110 | 4,252 | 6,340 | 7,045 | 4,836 | 4,008 | 2,441 | 1,009 | 1,840 | 2,415 |
| **Benz** | | 6,546 | 11,291 | 11,223 | 14,082 | 7,737 | 6,628 | 1,996 | 1,396 | 2,830 |
| **Volvo** | 3,735 | 3,725 | 5,524 | 5,642 | 5,601 | 5,153 | 2,977 | 947 | 1,002 | 1,592 |
| **Opel** | | | | 6,980 | 5,004 | 2,030 | 1,290 | 1,079 | | |
| Chevrolet | | | | | | | | | | 1,463 |
| Ford | | | 2,972 | 3,196 | 5,278 | 3,031 | 3,837 | 3,885 | 7,749 | 16,573 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Chrysler | | | | | 1,308 | 3,935 | 3,386 | 1,057 | 745 | 1,008 |
| Volkswagen | | | | | 2,831 | 4,084 | 2,579 | 605 | 592 | 1,163 |
| Peugeot | 1,541 | 2,010 | | | 2,286 | | | 635 | 1,327 | 550 |
| Other European car | 5,611 | 3,891 | 6,019 | 7,645 | 6,404 | 8,063 | 3,501 | 1,679 | 1,327 | 327 |
| **Total** | 268,560 | 362,987 | 456,468 | 485,678 | 571,580 | 589,126 | 363,156 | 144,065 | 218,330 | 262,189 |

**Source: Toyota Motor Thailand, 2001.**

The sales volumes after 1998 continue growing but it's not as high as before. During 1998-2000, there are many factors causing negative effect on Thai automobile industry including fluctuation in oil price, flood disaster in the North-East and South of Thailand, depreciation of the Thai baht, and political instability. However, the total automobile sales volume in 2000 increased 20.1 percent from 1999.

Japanese brand has dominance in the Thai automobile market (89% market share in total automobile sales in 2000) followed by European & American brand and Korean brand respectively. The market leader in vehicles sold included Toyota, Isuzu, Honda, Mitsubishi and Nissan. The one-ton pickup truck is the dominant vehicle in Thailand. About one-third of all vehicles sold in Thailand in the mid–1990s was the pickup trucks produced by two market leaders, Toyota and Isuzu.

**Table 1.2: Sales and Production of Vehicle**

| Type of Vehicle | Heavy Commercial | Passenger Car | Pick Up 1 Ton | Total |
|---|---|---|---|---|
| **1990** | **70,590** | **65,864** | **167,613** | **304,067** |
| **1991** | **46,415** | **66,779** | **155,366** | **268,560** |
| **1992** | **58,541** | **121,488** | **182,958** | **362,987** |
| **1993** | **57,911** | **174,162** | **224,388** | **456,461** |
| **1994** | **71,917** | **155,670** | **258,091** | **485,678** |
| **1995** | **84,396** | **163,371** | **323,813** | **571,580** |
| **1996** | **88,733** | **172,730** | **327,663** | **589,126** |
| **1997** | **42,772** | **132,060** | **188,324** | **363,156** |
| **1998** | **16,502** | **46,300** | **81,263** | **144,065** |

Source: Thai Automotive Industry Club, Thai Federation of Thai Industry; Toyota Motor Thailand Co., Ltd.

### 1.1.6 The Future

With increasing experience from overseas, Thailand aims to become a world-class autoparts producer. The country has a huge advantage with its rubber and plastics as it is currently the world's largest producer of rubber. For the past few years, Thailand has seen petrochemical and plastics become a prime industrial sector. Thailand has in fact emerged as the center of plastic injection molding in Southeast Asia. Pick-up trucks and motorcycle sales have helped spur this growth, with production volumes allowing economy of scale. Much of the complex blending and synthetic rubber technologies needed in the auto sector are coming from several joint venture companies.

The casting industry is well developed, and the quality of cast products for the OEM and REM markets is high, due to the transfer of foreign technology. The majority of part produced are brake drums, disc rotors, hubs, brackets and clutch housings. Engine blocks and cylinder heads are also produced locally, as are exhaust manifolds and flywheels, while ball joints, universal joints, push rods and other forged parts are made for the OEM and REM sectors. Joint venture companies dominate in the electrical parts sector, producing wiring harnesses, alternators, motors, electric signal lamps and spark plugs, while local supplier of safety glass for windshields and labor-intentsive products such as seat assemblies, door trims, floor mats, rear view mirrors, steering wheels, gear shift holders and spotlights are enjoying strong exports, especially to Europe and Australia.

The Board of Investment (BOI) has meanwhile designed incentive packages to attract foreign investors in the autopart sector, and full promotion status is being offered to manufacturers of engine parts, transmissions, brakes, steering and suspension systems, radiators, fuel tanks, filters, wiring harnesses, gaskets, and leaf springs. Tax incentives are also being offerd to 14 specified support industries including mold and die making, jigs, tooling, heat and surface treatments, and engineering plastics. (www.thaitrade.com)

## 1.1.7 BACKGROUND OF TOYOTA MOTOR CORPORATION

Japanese Toyota Jidosha Kk, Japanese parent company of the Toyota group and one of the largest automobile manufacturers in the world. Most of its subsidiary companies are involved in the production of automobiles, automobile parts, and commercial and industrial vehicles. Headquarters are in Toyota city.

Toyota Motor Corporation began in 1933 as a division of the Toyoda Automatic Loom Works, Ltd., now a subsidiary. It was incorporated as the Toyota Motor Company, Ltd., in 1937. Since then Toyota has established several related companies, including Toyoda Machine Work, Ltd. (1941), and Toyota Auto Body, Ltd. (1945). During the 1960s and '70s the company expanded at a rapid rate and began exporting large numbers of automobiles to foreign markets. Toyota also acquired such companies as Hino Motors, Ltd. (1966),which manufactures buses and large trucks, Nippondenso Company, Ltd., which makes electrical auto components, and Daihitsu Motor Company, Ltd. (1967). For several decades Toyota has been Japan's largest automobile manufacturer. The company took its present name in 1982, when the motor company was merged with Toyota Motor Sales Company, Ltd. Toyota has assembly plants and distributors in many foreign countries, and its vehicles, some in the form of unassembled units, are exported to more than 140 countries. In addition to automative products, subsidiaries manufacture rubber and cork materials, steel, synthetic resins, automatic looms, and cotton and woolen goods. Others deal in real estate, prefabricated housing units, and the import and export of raw materials.

Toyota Motor Corp, the world's third-largest carmaker, said on Wednesday it would set up an Internet-based communications network for its group firms and suppliers to save cost and time on various production levels. Over the past decade, Japan's top automaker had separate communications and data protocols in different regions and divisions, resulting in inefficiencies and superfluous costs. Under the new network, all systems including development, logistics and sales would be integrated. Toyota's unit that supports the group's global telecommunications network will construct the new high-speed Internet Protocol network using technology provided by the Japanese unit of Cisco Systems Inc. Many global

automakers have been eyeing new communications networks to enhance efficiency. In May last year, Japan's third-ranking automaker Nissan Motor Co Ltd joined hands with Japan Telecom Co to form a next-generation information and communications network that would cut its communications costs by 30 percent. Toyota did not say how much it would save in costs from the newsystem, which's to be completed by March 2003. (www.britannica.com)

By 1947 over 100,000 vehicles had been produced. The first Toyota arrived in U.S.A. in 1957. Today more than half of the Toyotas sold in America are produced there. Over 80 million Toyota vehicles have been built, with vehicles currently marketed in North America through approximately 1,200 dealerships.

Toyota Motor Thailand – maker and exporter of the sportrider SUV, the Hilux one-ton truck, as well as the Camry, Corolla, and Soluna sedan – is still trying to shake off its share of aches and pains from the economic crisis dubbed the "Asian Fu." In an attempt to end lethargic growth and recapture lost market share, the company (which is about 70 percent owned by Japan-based Toyota Motor) announced a major three-year plan in 2000 to reorganize its business model by increasing warranty coverage, locallizing production in Thailand, and adopting US management techniques. If successful, the company, Thailand's automotive market leader, hopes to increase market share to 35 percent from less than 29 percent. (www.hoovers.com)



## 1.2 STATEMENT OF PROBLEM

Since Thailand ran into the economics recession, most people are more careful to spend their money. Automobile market behavior is a significant interest because of the substantial impacts of automobile production and use on a variety of business concerns including trade flows, business cycles, and energy demand. Although recent public attention has been focused on governmental attempts to increase sales of domestic vehicles via voluntary export restrictions, Thai government has been an active participant in the automobile market through direct product quality regulation for many years. During the past quarter century, many automakers have competed in the automobile market to correct perceived market failures through a variety of market demand. This trend alters some characteristics of newly produced vehicles

(e.g. miles per gallon), thereby achieving firm's objective (improved fuel efficiency) as old vehicles are retired and replaced by new one.

Furthermore, automobile sales growth has obviously proved the importance of city cars for urban Thais. According to the number, industry observers forecast intense competition in all segments of the automobile industry, customers can expect to see more inducements to buy in the form of more accessories included as standard items, as well as attractive hire purchase packages. Most people desire a genial and warmhearted family, especially a family leader who has extensive version. Whenever the leader desiderates motor vehicle, he would consider about his family as priority for decision making. The decision would meditate capacious of vehicle which the vehicle would comfort all family members. Moreover, vehicle should be serviceable for everyday life, low fuel consumption rate, low maintenance costs, and reasonable price (the most important).

Therefore, this study will focus on investigating the factors that can explain consumer buying behavior toward general cars in Bangkok. The research problem is **"Which factors explain or predict Thai consumer buying behavior toward Toyota cars in Bangkok?".**

## 1.3 RESEARCH OBJECTIVES

The purpose of this research is to investigate the factors involve with Thai automobile buying decision and only focus on Toyota, automobile market leader in Thailand. The specific objectives of this study are :

- To study the consumer buying decision of Thai people concerning Toyota cars purchasing .

## 1.4 SCOPE OF THE STUDY

1. Only Toyota passenger cars (all models since 1998) in Bangkok are considered.
2. Only Thai people stay in Bangkok are considered.

3. The target respondents are only the Toyota car owners and potential users.
4. Only six automobile attribute are considered to see whether they have relation with the consumer's purchasing decision.

   The attributes relate to factor in evaluation of car includes:

   - Performance quality
   - Style
   - Price
   - Level of fuel consumption
   - Safety
   - After-sales service

## 1.5 LIMITATION

This study is limited to the Toyota company in Thailand and customers who live in Bangkok only. Time is the most important limitation to the 3 month period. In addition, cost of surveying is another important limitation. This study is limitted to the customer who live in Bangkok because of the cost and time.

## 1.6 IMPORTANCE OF THE STUDY

Owing to the need for survival in the economic recession, most of people have tried to cut extraordinary products to secure their financial status. However, there has been increased in automobile sales for years. Many studies related to consumer buying behavior are unable to conclude the factors involving with consumer behavior in economic slowdown. Moreover, the competition in the automobile market is very high. This study could help to explain the reasons why people buy the cars inspire of economic crisis and why they should buy their cars. As a result, it could predict the factors affecting consumer buying decision.

## 1.7 DEFINITION OF TERMS

**After-sales service:** All assistance that marketer can provide to maintain the product use-ready (Jagdish, Banwari and Bruce, 1999)

**Attribute:** The characteristics or features that an object may or may not have. It can be identified into two classes; intrinsic attributes and extrinsic attributes. Each attribute provides the consumer with a specific benefit that has some degree of utility of that consumer (Mowen & Minor, 1998).

**Automobile:** A self-propelled passenger vehicle that usually has four wheels and an internal-combustion engine, used for land transport. Also called **motorcar.**

**Brand:** Brand is a name, symbol, or other distinguishing feature that serves to identify the goods or services of one seller and to set them apart from those of competitors (Mason and Hazel, 1987).

**Comfort:** A condition or feeling of pleasurable ease, well being, and contentment

**Passenger Car:** A railcar which passengers ride

**Performance:** The level at which the primary characteristics of the product operate. It is the ability of the product to perform its function (Kotler, 1997)

**Safety:** A device designed to prevent accidents

**Style:** Style describing the product's looks and feel to the buyer. It simply describes the appearance of a product (Kotler, 1997)

**Demographic Characteristics:** A broad term covering the various social and economic characteristics of a group of households or a group of individuals. Refers to characteristics such as the number of members of household, age of head of household, occupation of head household, education of household members, type of employment, ownership of home, and annual household income. (J. Thomas Russell and W. Ronald Lane, 1993)

# CHAPTER TWO

## LITERATURE REVIEW

To begin the concept of customer's buying decision in the literature review has provided general concepts related to customer behavior, buying decision and factors influencing in the process. There is also an idea of consumer attitudes along with different concepts.

## 2.1 THE CONSUMER DECISION PROCESS

The purchase process is initiated when a consumer becomes aware of a need. This awareness may come from an internal source such as hunger or an external source such as marketing communications. Awareness of such a need motivates the consumer to search for information about options with which to fulfill the need. This information can come from personal sources, commercial sources, public or government sources, or the consumer's own experience. Once alternatives have been identified through these sources, consumers evaluate the options, paying particular attention to those attributes the consumer consider most important. Evaluation culminates with a purchase decision, but the buying process does not and here. In fact, marketers point out that a purchase represents the beginning, not the end, of a consumer's relationship with a company. After a purchase has been made, a satisfied consumer is more likely to purchase another company product and to say positive things about the company or its product to other potential purchasers. The opposite is true for dissatisfied consumers. Because of this fact, many companies continue to communicate with their customers after a purchase in an effort to influence post-purchase satisfaction and behavior. (www.britannica.com)

Boon and Kurtz (1998) concluded that consumer complete a step-by-step process to make purchasing decisions. The length of time and the amount of effort they devote to a particular purchasing decision depends on the importance of the desired good or service to the consumer. Purchases with high levels of potential social or economic consequences are said to be high-involvement purchase decisions. Buying a new car or deciding where to go to college are two examples of high-

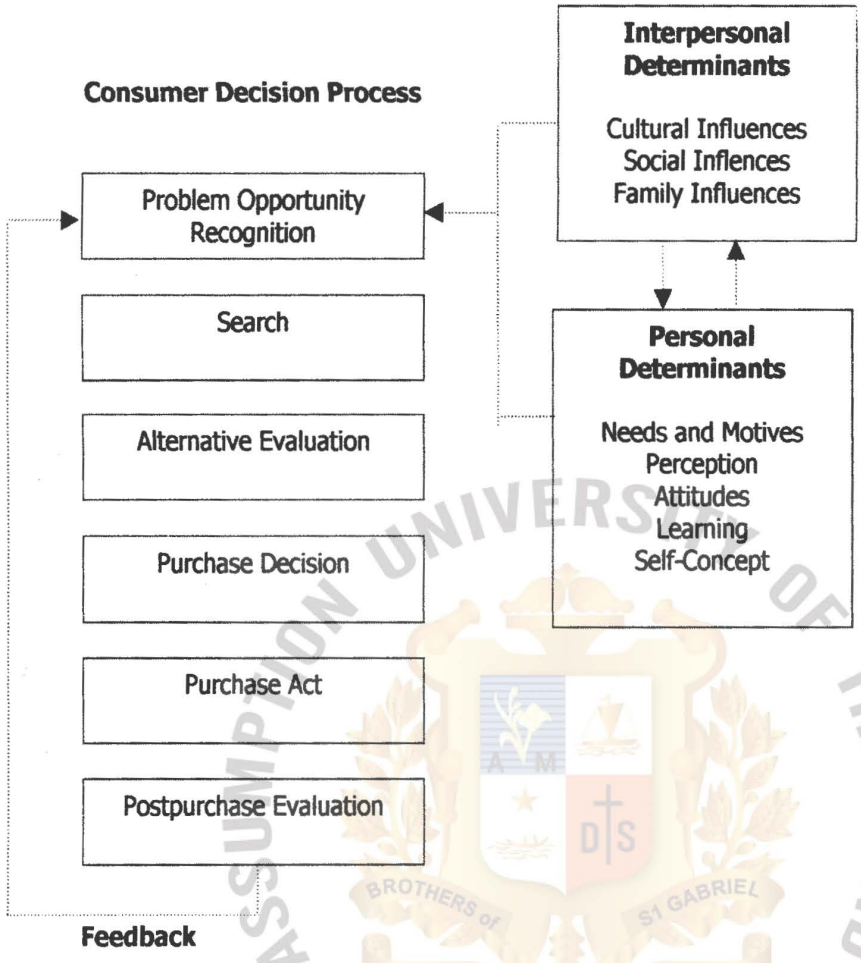
involvement decisions. Routine purchases that pose little risk to the consumer are low-involvement decisions. Purchasing a candy bar from a vending machine is a good example.

Consumers generally invest more time and effort to purchase decisions for high-involvement products than to those for low-involvement products. A car buyer, for example, will probably compare prices, spend time visiting dealer showrooms, and ask for advice from friends before making the final decision. Few buyers invest that much effort in choosing between Nestle's and Hershey's candy bars. They will still go through the steps of the consumer decision process but on a more compressed scale. Consumers apply the decision process in solving problems and taking advantage of opportunities. Such decisions passed them to correct different between their actual and desire states. Feedback from each decision serves as additional experience to help guide subsequent decisions.

### 2.1.1 Problem or Opportunity Recognition

The most common cause of problem or opportunity recognition is routine depletion of the individual's stock of an item. However, the consumer may possess an inadequate assortment of products, or be dissatisfied with a present brand or product type. This situation is common in purchases of new automobiles, furniture, or fall clothing. Consumers often become bored with current products; nothing more than a desire for change may be the underlying rationale for the decision process that leads to a new-product purchase. Another important effect on problem or opportunity recognition results from changed financial status, which may permit some consumers to make purchases that they had previously postponed.

**Figure 2.1 An Integrated Model of the Consumer Decision Process**




## 2.1.2 Search

During the second step in the decision process, the consumer gathers information related to his or her attainment of a desired state of affairs. This search identifies alternative means of problem solution. High-involvement purchases may elicit extensive information searches, while low-involvement purchases require little search activity. The search may cover internal or external sources of information. Internal search is a mental review of stored information relevant to the problem situation.

Consumers often solve problems through internal search, alone that is, by relying on mentally stored information to make purchase decisions. Achieving favorable results using a certain car polish may motivate a consumer to repurchase this brand rather than considering other options. Since external search involves both time and effort, consumers will complete it only when memory cannot supply

adequate information. Marketers try to influence consumer decisions during the search process by providing persuasive information about their goods or services in a format useful to consumers.

### 2.1.3 Alternative Evaluation

The third step in the consumer decision process is to evaluate the evoked set of options identified during the search step. Actually, it is difficult to completely separate the second and third steps, since some evaluation takes place as the search progresses; consumers accept, discount, distort, or reject incoming information as they receive it. The outcome of the evaluation stage is the choice of a brand or product in the evoked set or possibly a decision to renew the search for additional alternatives, should all those identified during the initial search prove unsatisfactory. To complete this analysis, the consumer must develop a set of evaluative criteria to guide the selection. Common evaluative criteria include price, brand name, and country of origin. Evaluative criteria can also vary with the consumer's age, income level, social class, and culture.

### 2.1.4 Purchase Decision and Purchase Act

The search and alternative evaluation stages of the decision process result in the eventual purchase decision and the act of making the purchase. At this stage, the consumer has evaluated each alternative in the evoked set base on his or her personal set of evaluative criteria and narrowed the alternatives down to one. The consumer then decides the purchase location. Consumers tend to choose stores by considering such characteristics as location, price, assortment, personnel, store image, physical design, and services. In addition, store selection is influenced by the product category. Some consumers choose the convenience of in-home shopping via telephone or mail order rather than traveling to complete transactions in retail stores. Marketers can smooth the purchase decision and purchase act phases by helping customers to arrange for financing or delivery.

### 2.1.5 Postpurchase Evaluation

Consumers are generally satisfied if purchases meet their expectations. Sometimes, however, consumers experience some post purchase anxieties, called cognitive dissonance. This psychologically unpleasant state results from an imbalance among a person's knowledge, beliefs, and attitudes. For example, a consumer may experience dissonance after choosing a particular automobile over several other models when some of the rejected models have desired features that the chosen one does not provide. Dissonance is likely to increase 1. As the dollar values of purchases increase, 2. When the rejected alternatives have desirable features that the chosen alternatives do not provide, and 3. When the purchase decision has a major effect on the buyer. In other words, dissonance is more likely with high-involvement purchases than with those that require low involvement. The consumer may attempt to reduce dissonance by looking for advertisements or other information to support the chosen alternative or by seeking reassurance from acquaintances who are satisfied purchasers of the product. The individual may also avoid information that favors an unchosen alternative. Someone who buys a Toyota is likely to read Toyota advertisements and avoid Nissan and Honda ads. Automobile dealers recognize the possibility of buyer's remorse and often follow up purchases with letters or telephone calls from dealership personnel offering personal attention to any customer problems. Advertisements that stress customer satisfaction also help to reduce cognitive dissonance. (Boon and Kurtz,1998)

## 2.2 Defining of Product Attributes

***Attributes:***

The most common interpretation of product attributes is that each attribute provides the consumer with a specific benefit that has some degree of utility for that consumer. Brand preferences and choice probabilities are defined as functions of attribute utilities, and attribute utilities are assumed to increase as the perceived importance of the attribute increases (Mowen & Minor, 1998).

Attributes are the characteristics or features that an object may or may not have. Two broad classes of attributes have been identified.

- **Intrinsic attribute** are those that pertain to the actual performance quality of the product, while

- **Extrinsic attributes** are those that apply to external aspects of the product such as price, brand name, and service (Mowen & Minor, 1998).

  Developing a product or service involves defining the benefits that it will offer. These benefits are communicated and delivered by product attributes such as quality features, and style and design etc. (Kotler and Armstrong, 2001).

People consider automobile attributes differently according to the type of automobile needs (Laohawilai, 1990). However, many researchers had found the common attributes that customer considers when evaluating the car as follows;

**◆Performance Quality**

Performance quality refers to the level at which the primary characteristics of the product operate. The premium quality allowed firm to charge a premium price; they benefited from more repeat purchasing, consumer loyalty, and positive word of mouth. However, the manufacturer must design a performance level appropriate to the target market and competitors' performance levels. A person who drives 10 blocks to work each day does not need a Rolls-Royce (Kotler, 1997).

***Performance quality*** or product quality is the ability of a product to perform its functions. For example, a Rolls-Royce provides higher performance quality than a Chevrolet: It has a smoother ride, handles better, and lasts longer. Beyond quality level, high quality also can mean high levels of quality consistency, which means freedom from defects and consistency in delivering a targeted level of performance (Kotler and Armstrong, 2001).

Performance is one of the attributes of the vehicle, which consumer considers when purchasing an automobile (Srikantharajah, 1994). Pornprasertsakul (1981) has classified how to measure performance of cars from many factors including engine capacity (horse power), maximum speed, acceleration, and driving system.

**◆Price**

Price is one of the most important attributes evaluated by consumers. Managers need to be aware of its role in the formation of consumer's attitudes. In

some instances consumers are highly price sensitive, so that high price relative to competitors may eliminate the product from consideration (Mowen, & Minor, 1998).

In other cases, however, price can be used as a surrogate indicator of product quality, with the result that a higher price is viewed positively by certain segments of the market. Product price can be either positive or negative influence on consumers (Mowen, & Minor, 1998).

Sermsaksasithorn (2000) identified price as automobile attributes, which can be measured by retail price, interest rate financing, repair & maintenance cost and spare part cost.

**◆After-sales service**

Service is any act of performance that one party can offer to another that is essentially intangible and does not result in the ownership of anything. Automobile manufacture are classified into *tangible good with accompanying service*. This consists of a tangible good accompanied by one or more service to enhance its consumer appeal (Kotler, 1997).

In general, buyers are looking for good service before and after they make their purchase selections. In addition, they want their purchase to be convenient, not time consuming and in a time and place that fits their schedule. Customers receive service value during pre-purchase and post-purchase phases of product acquisition (Jagdish, Banwari and Bruce, 1999).

Service in the post-purchase phase, generally known as ***after-sales service*** or after-sales product support, refers to all the assistance a marketer can provide to maintain the product. This service value accrues in as much as it enables the user to derive the maximum utility from the product or service. Two specific avenues are available to marketers for this service: product-use advice and product maintenance (Jagdish, Banwari and Bruce, 1999).

Levitt (1972) observes that "the more technologically sophisticated the generic product (e.g. cars and computers), the more dependent are its sales on the quality and

availability of its accompanying customer service (e.g. availability of repair service when cars breakdown, annual maintenance service and warranty fulfillment)".

Improving the after sales service is the key to gaining market share. It is important not only because it can increase the product value contents but also it can reduce the risks after purchasing. The good after sales service is the good way to solve the after purchasing dissonance, which is extremely important for a high involvement purchasing (Jijun, 1996).

**◆Level of fuel consumption**

Level of fuel consumption is one attribute valuation economy of car in each model. It is measured by number of distance by kilometer per litre. This attribute also affect the price of car (Laohawilai, 1990).

Because of modern technology, most of the new vehicles are very economical in the sense of fuel consumption than very old vehicles. At the same time as the age of the automobile increases the fuel consumption increases. In addition, it is noticed that most of the passenger cars operated by diesel are running more distance per one liter of fuel than the other type of automobiles. However, new car are mostly operated by unleaded fuel because of environmental consideration (Srikantharajah, 1994).

**◆Style**

Style describes the product's looks and feel to the buyer. Normally, buyers are willing to pay a premium for product, which is attractively styled. Many car buyers pay a premium for Jaguar automobiles because of their extraordinary look, although Jaguar had a poor record of reliability. Style has the advantage of creating product distinctiveness that is difficult to copy (Kotler, 1997).

Style can provide the characteristic of car showing how it looks like such as luxury or sporty. It can be measured from interior design and decoration, beauty and shape also (Pornprasertsakul, 1981).

◆**Safety**

On the whole it has been proven that most customers have a tendency to consider *safety*, economy and overall quality performance of car before making a decision to purchase (Thailand Business, 1981).

Boulding and Purohit (1996) had distinguished between safety generated by preventive features and safety generated via crisis features in automobile market. These two features are different in measurement.

- *Preventive safety* feature is measured by probability of death occuring via a reduction in the probability of automobile crash. For example, antilock brakes do not provide added protection against injury or death in the event of an accident but presumably increase a driver's ability to avoid an accident.
- *Crisis safety* feature is measured by probability of death occuring via reduction in the probability of death in the event of automobile crash. For example, airbags or safety belts do not prevent accidents, but in the event of an accident, they provide added protection against injury or death.

Consumer evaluate both crisis and preventive safety measures because many decisions about crisis features can only be made beforehand.

Pornprasertsakul (1981) defined the safety of car including the visibility and braking system. Laohawilai (1990) has mention the reason when people make a decision to buy a car may be safety attribute, which includes central lock system and Brake ABS.

## 2.3 The effect of product attributes on product evaluation

The evaluation stage basically is a frame between the choice set of the previous stage of information search to one brand selection. However, there are certain basic concepts that a consumer takes into consideration in general with most products in the evaluation stage. First consumer wants to satisfy a need. In order to satisfy the need he/she will look for certain benefit from the product solution. Third, the consumer sees each product as a bundle of *attributes* with varying capacity to

satisfy their needs. Various consumers would weight each attribute according to their needs. Consumer develops a set of brand belief about where each brand stands in terms of attributes. (Evans & Berman, 1992)

Consumers evaluate products based on product attributes which can be divided into physical (tangible attributes of the product) and image (Extrinsic) variables. Image variables include such attributes as *price, brand name, service, and country of origin.* In the absence of physical variables, consumers use image variables to assess quality. (Hubber and McCann, 1982)

Products and product attributes are major stimuli that affect consumer cognitions, attitudes and behaviors. These attributes may be physical and concrete or psychological and subjective. Psychological attributes are for instance, design and quality. Products are evaluated by consumers in terms of their own values, goals, beliefs and past experiences. Physical and psychological product attributes give rise to consequences or benefits. These benefits may be functional or psychological. (Evans, Moutinho & Raaji, 1996)

In general, attributes relate to product performance. They can be further divided into product related and non-product related attributes. Product related attributes are connected to the product category. They are familiarly called features. As an example, *performance of engine, is a product related attribute of a car.* Non-product related attributes are defined as external aspects, which relate to product purchase or consumption. They include four types of information: price, packaging, the identity of typical consumer and where in what situation the product is used. (Pitta & Katsanis, 1995)

A consumer's overall attitude towards an object is a function of many attributes of the object. The attitude forms as a result of the consumer's strength of feeling or the strength of the salient beliefs, about the attributes and also the evaluation of those beliefs. (Blythe, 1997)

## 2.4 CLASSIFYING CONSUMER PROBLEM-SOLVING PROCESSES

The consumer decision processes for different products require varying amounts of problem-solving efforts. Marketers recognize three categories of problem-solving behavior: routinized response, limited problem solving, and extended problem solving. The place of a particular purchase within this framework clearly influences the consumer decision process.

### Routinized Response Behavior

Consumers make many purchases routinely by choosing a preferred brand or one of a limited group of acceptable brands. This type of rapid consumer problem solving is referred to as routinized response behavior. A routine purchase of a regular brand of soft drink is an example. The consumer has already set evaluative criteria and identified available options. External search is limited in such cases, which characterize extremely low-involvement products.

### Limited Problem Solving

Consider the situation in which the consumer has previously set evaluative criteria for a particular kind of purchase but then encounters a new, unknown brand. The introduction of a new shampoo is an example of a limited problem-solving situation. The consumer knows the evaluative criteria for the product, but the situations demand moderate amounts of time and effort for external searches. Limited problem solving is affected by the number of evaluative criteria and brands, the extent of external search, and the process for determining preferences. Consumers making purchase decisions in this product category are likely to feel involvement in the middle of the range.

### Extended Problem Solving

Extended problem solving results when brands are difficult to categorize or evaluate. The first step is to compare one item with similar ones. The consumer needs to understand the product features before evaluating alternatives. Most

extended problem-solving effort involves lengthy external searches. High-involvement purchase decision usually requires extended problem solving. (Robertson, 1996)

## 2.5 TYPES OF CONSUMER BUYING DECISIONS AND CONSUMER INVOLVEMENT

### Consumer buying tasks

A consumer's buying task is affected significantly by the level of purchase involvement. The level of involvement describes how important the decision is to the consumer; high involvement is usually associated with purchases that are expensive, infrequent, or risky. Buying also is affected by the degree of difference between brands in the product category. The buying task can be grouped into four categories based on whether involvement is high or low and whether brand differences are great or small. (www.britannica.com)

All consumer buying decisions generally fall along a continuum of three broad categories: routine response behavior, limited decision making, and extensive decision making (see Table 2.1). Goods and services in these three categories can best be described in term of five factors: level of consumer involvement, length of time to make a decision, cost of good or service, degree of information search, and the number of alternatives considered. The level of consumer involvement is perhaps the most significant determinant in classifying buying decisions. Involvement is the amount of time and effort a buyer invests in the search, evaluation, and decision processes of consumer behavior.

**Table 2.1: Continuum of Consumer Buying Decision**

| | ROUTINE | LIMITED | EXTENSIVE |
|---|---|---|---|
| INVOLVEMENT | Low | Low to moderate | High |
| TIME | Short | Short to moderate | Long |
| COST | Low | Low to moderate | High |
| INFORMATION SEARCH | Internal only | Mostly internal | Internal & external |
| NUMBER OF ALTERNATIVES | One | Few | Many |

Frequently purchased, low-cost goods and services are generally associated with routine response behavior. These goods and services can also be called low-involvement products because consumers spend little time on search and decision before making the purchase. Usually, buyers are familiar with several different brands in the product category but stick with one brand. Consumer engaged in routine response behavior normally don't experience problem recognition until they are exposed to advertising or see the product displayed on a store shelf. Consumer buy first and evaluate later, whereas the reverse is true for extensive decision making. A parent, for example, will not stand at the cereal shelf in the grocery store for 20 minutes thinking about which brand of cereal to buy for the children. Instead, he or she will walk by the shelf, find the family's usual brand, and put it into the cart.

Goods and services that are purchased regularly and that are not considered expensive are generally associated with limited decision making. These are also associated with low levels of involvement (although higher than routine decisions) because consumers do expend moderate effort in searching for information or in considering various alternatives. Suppose the children's usual brand of cereal, Kellogg's Corn Flakes, is unavailable in the grocery store. Completely out of cereal at home, the parent now must select another brand. Before making a final selection, he or she may pull from the shelf several brands similar to Kellogg's Corn Flakes,

such as Corn Chex and Cheerios, to compare their nutritional value and calories and to decide whether the children will like the new cereal.

Consumers practice extensive decision making when buying an unfamiliar, expensive product or an infrequently bought item. This process is the most complex type of consumer buying decision and is associated with high involvement on the part of the consumer. This process resembles the modeloutlined. These consumers want to make the right decision, so they want to know as much as they can about the product category and available brands. People usually experience cognitive dissonance only when buying high-involvement products. Buyers use several criteria for evaluating their options and spend much time seeking information. Buying a home or a car, for example, requires extensive decision making.

**High-involvement purchases**

Complex buying behavior occurs when the consumer is highly involved with the purchase and when there are significant differences between brands. This behavior can be associated with the purchase of a new home or of an advanced computer. Such tasks are complex because the risk is high (significant financial commitment), and the large differences among brands or products require gathering a substantial amount of information prior to purchase. Marketers who wish to influence this buying task must help the consumer process the information as readily as possible. This may include informing the consumer about the product category and its important attributes, providing detailed information about product benefits, and motivating sales personnel to influence final brand choice. For instance, realtors may offer consumers a book or a video featuring photographs and descriptions of each available home. And a computer salesperson is likely to spend time in the retail store providing information to customes who have questions.

Dissonance-reducing buying behavior occurs when the consumer is highly involved but sees little difference between brands. This is likely to be the case with the purchase of a lawn mower or a diamond ring. After making purchase under such circumstances, a consumer is likely to experience the dissonance that comes from noticing that other brand would have been just as good, if not slightly better, in some

dimensions. A consumer in such a buying situation will seek information or ideas that justify the original purchase.

**Low-involvement purchases**

There are two types of low-involvement purchases. Habitual buying behavior occurs when involvement is low and differences between brands are small. Consumers in this case usually do not form a strong attitude toward a brand but select it because it is familiar. In these markets, promotions tend to be simple and repetitive so that the consumer can, without much effort, learn the association between a brand and a product class. Marketers may also try to make their product more involving. For instance, toothpaste was at on time purchased primarily out of habit, but Proctor and Gamble Co. introduced a brand, Crest toothpaste, that increased consumer involvement by raising awareness about the importance of good dental hygiene. (www.ncat.edu)

## 2.6 FACTORS DETERMINING THE LEVEL OF CONSUME INVOLVEMENT

The level of involvement in the purchase depends on five factors: previous experience, interest, perceived risk, situation, and social visibility.

- ***Previous experience:*** When consumers have had previous experience with a good or service, the level of involvement typically decreases. After repeated product trials, consumers learn to make quick choices. Because consumers are familiar with the product and know whether it will satisfy their needs, they become less involved in the purchase. For example, consumers with pollen allergies typically buy the sinus medicine that has relieved their symptoms in the past.

- ***Interest:*** Involvement is directly related to consumer interests, as in cars, music, movies, bicycling, or electronics. Naturally, these areas of interest vary from one individual to another. Although some people have little interest in

nursing homes, a person with elderly parents in poor health may be highly interested.

- ***Perceived risk of negative consequences:*** As the perceived risk in purchasing a product increases, so does a consumer's level of involvement. The types of risks that concern consumers include financial risk, social risk, and psychological risk. First, financial risk is exposure to loss of wealth or purchasing power. Because high risk is associated with high-priced purchases, consumers tend to become extremely involved. Therefore, price and involvement are usually directly related: As price increases, so does the level of involvement.

- ***Situation:*** The circumstances of a purchase may temporarily transform a low-involvement decision into a high-involvement one. For example, an individual might routinely buy low-priced brands of liquor and wine. However, when the boss visits, the consumer might make a high-involvement decision and buy more prestigious brands.

- ***Social visibility:*** Involvement also increases as the social visibility of a product increases. Products often on social display include clothing (especially designer labels), jewelry, cars, and furniture. All these items make a statement about the purchaser and, therefore, carry a social risk. (McDaniel,1998)

## 2.7 SOCIAL FACTORS INFLUENCING CONSUMER BUYING DECISIONS

The second major group of factors that influence consumer decision making are social factors, which include all effects on buyer behavior that result from interactions between a consumer and the external environment. Social factors include culture and subcultures, reference groups, opinion leaders, family, life cycle, and social class.

## Culture

**Culture** is the set of values, norms, attitudes, and other meaningful symbols that shape human behavior, as well as the artifacts, or products, of that behavior as they are transmitted from one generation to the next.

Culture is dynamic. It adapts to changing needs and an evolving environment. The rapid growth of technology in this century has accelerated the rate of cultural change. Automation has increased the amount of leisure time we have and, in some ways, has changed the traditional work ethic. Cultural norms will continue to evolve because of our need for social patterns that solve problems.

## Subculture

A culture can be divided into subcultures on the basis of demographic characteristics, geographic regions, political beliefs, religious beliefs, national and ethnic background, and the like. A **subculture** is a homogeneous group of people who share elements of the overall culture as well as cultural elements unique to their own group. Within subcultures, people's attitudes, values, and purchase decisions are even more similar than they are within the broader culture. Subcultural differences may result in considerable variation within a culture in what, how, when, and where people buy goods and services.

If marketers can identify subcultures, they can then design special marketing programs to serve their needs.

## Reference Groups

All the formal and informal groups that influence the buying behavior of an individual are that person's **reference groups**. Consumers may use products or brands to identify with or become a member of a group. They learn from observing how members of their reference groups consume, and they use the same criteria to make their own consumer decisions.

Reference groups can be categorized very broadly as either direct or indirect. Direct reference groups are face-to-face membership groups that touch people's lives directly. They can be either primary or secondary. **Primary membership groups** include all groups with which people interact regularly in an informal, face-to-face manner, such as family, friends, and coworkers. In contrast, people associate with

**secondary membership groups** less consistently and more formally. These groups might include clubs, professional groups, and religious groups.

Consumers also are influenced by many indirect, nonmenbership reference groups that they do not belong to. **Aspirational reference groups** are those that a person would like to join. To join an aspirational group, a person must at least conform to the norms of that group. (**Norms** are the values and attitudes deemed acceptable by the group) Thus, a person who wants to be elected to public office may begin to dress more conservatively, a other politicians do. He or she may go to many of the restaurants and social engagements that city and business leaders attend and try to play a role that is acceptable to voters and other influential people. A teenager, on the other hand, may dye his hair, experiment with body piercing and tattoos, and listen to alternative music to fit in with the "in" group.

**Nonaspirational reference groups,** or dissociative groups, influence our behavior when we try to maintain distance from them. A consumer may avoid buying some types of clothing or cars, going to certain restaurants or stores, or even buying a home in a certain neighborhood in order to avoid being associated with a particular group.

The activities. Values and goals of reference groups directly influence consumer behavior. For marketers, reference groups have three important implications: They serve as information sources and influence perceptions; they affect an individual's aspiration levels; and their norms either constrain or stimulate consumer behavior.



## Opinion Leaders

Reference groups frequently include individuals known as group leaders or **opinion leaders**, those who influence others. Obviously, it is important for marketing managers to persuade such people to purchase their goods or services. For example, VCRs were embraced by opinion leaders well ahead of the general public. Opinion leaders were also among the first to turn sport-utility vehicles and light trucks into the "family vehicle" of the 1990s.

Opinion leaders are often the first to try new products and services out of purecuriosity.

Opinion leadership is a casual, face-to-face phenomenon and is usually very inconspicuous, so locating opinion leaders can be a challenge. They may use high school cheerleaders to model new fall fashions or civic leaders to promote insurance, new cars, and other merchandise.

**Table 2.2: Worlds of Wisdom: Opinion Leaders' Consumer Clout Extends Far Beyond Their Own Purchases**

| **Average number of people to whom opinion leaders recommended products* in the past year, and millions of recommendations made, 1995** | | |
|---|---|---|
| | **Average Number of Recommendations** | **Millions of Recommendations Made** |
| Restaurant | 5.0 | 70 |
| Vacation destination | 5.1 | 44 |
| TV show | 4.9 | 45 |
| Car | 4.1 | 29 |
| Retail store | 4.7 | 29 |
| Clothing | 4.5 | 24 |
| Consumer electronics | 4.5 | 16 |
| Office equipment | 5.8 | 12 |
| Stock, mutual fund, CD, etc. | 3.4 | 12 |

* Among those who recommended the product at all.

Source: Roper Starch Worldwide, Inc., New York, NY. Adapted from "Maximizing the Market with Influential, *American Demographics*, July 1995, p. 42.

## Family

The family is the most important social institution for many consumers, strongly influencing values, attitudes, self-concept-and-buying behavior. The family is responsible for the **socialization process**, the passing down of cultural values and norms to children. Children learn by observing their parents' consumption patterns, and so they will tend to shop in a similar pattern.

Decision-making roles among family members tend to vary significantly, depending on the type of item purchased. Family members assume a variety of roles in the purchase process. *Initiators* are the ones who suggest, initiate, or plant the seed for the purchase process. The initiator can be any member of the family. *Influencers* are those members of the family whose opinions are valued. *The decision maker* is the member of the family who actually makes the decision to buy or not to buy. The purchaser is the one who actually exchanges money for the product. Finally, the consumer is the actual user.

**Family Life Cycle**

The life-cycle stage of a family can also have a significant impact on consumer behavior. The family life cycle is an orderly series of stages through which consumers' attitudes and behavioral tendencies evolve, through maturity, experience, and changing income and status.

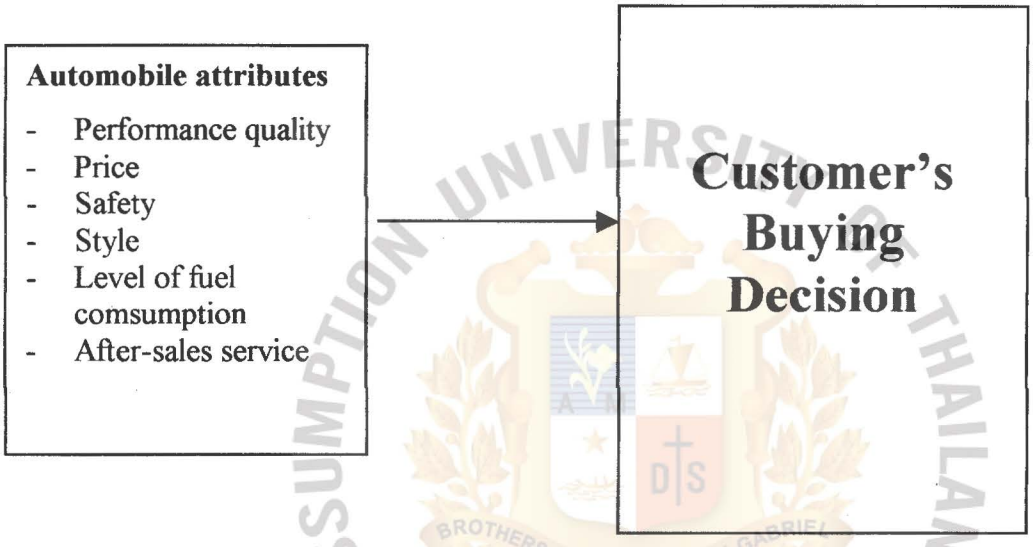
New parents typically increase their spending on health care, clothing, housing, and food, while they decrease their spending on alcohol, education, and transportation. Households with older children spend more on food, entertainment, personal car products, and education, as well as cars and gasoline. After their children leave home, spending by older couples on vehicles, women's clothing, healthcare, and long-distance calls typically increases.

# CHAPTER THREE

# RESEARCH FRAMEWORK

## 3.1 Conceptual Framework

**Figure 3.1 : Framework of the study**




Boon and Kurtz's (1998) well-established multi-attribute consumer decision model serves as the foundation of the adapted customer's buying decision model in this framework. Buying decisions are formed as the sum of the evaluations of relevant attributes of each attribute. The product attributes are adapted from the study of automobile replacement buyer to examine consumer product evaluation. In addition, product characteristics can be divided into 6 group (performance quality, price, safety, style,level of fuel consumption and after-sales service) and demographic characteristics are categorized as age, sex, income and education. This study focuses on which factors concerning Thai consumer's buying decision from two attributes are demographic characteristics and product attributes. That means if these characteristics are favorable, it is indicated that customers will buy the products.

A cantles model can explain different forms of consumer behavior. This existence framework is constructed to create a better understanding on consumer behavior in automobile buying decision. In this model, there is a relationship between customer's buying decision and product attributes. The framework suggests that consumers' different demographic characteristic affect consumers' buying behavior, then the product attributes are also the key factors to motivate consumer to make decision to purchase.

## 3.2 Hypothesis Statements

Previous findings suggest that product attributes are correlated with buying decision behaviors (Sanyanusin, 1994 and Prasertwiriyakul, 1997). In the study involving demand for passenger car in Bangkok, Sanyanusin (1994) found that income is correlated with demand for car in 4 groups such as no change in car holding, new purchase, replacement and additional purchasing. In the Prasertwiriyakul (1997) study, "Exposure to economic crisis, perception of its severity and consumption behavioral change among Bangkok residents".

Recent findings suggest that the influencing factors of the passenger car supply (both domestic production and import) are currency exchange and domestic economic growth. On demand side, it depends on the car price and credit interest rate of commercial banks. (Denbuangboripant, 1998). Manpakdi (1995) stated in the study of "Factors influencing purchasing decision an analysis of marketing communication of Mitsubishi Lancer" that product and price are main factors influencing consumers' and prospect's purchasing decision and the most important factor is its user. Though previous studies have not addressed the consumers' buying decision behavior, the results provide a basis for some initial hypothesis. These findings lead to the following hypothesis.

**Hypothesis**

Ho: Product attributes can not explain the variation of the Toyota car purchasing of the Thai consumers.

Ha: Product attributes can explain the variation of the Toyota car purchasing of the Thai consumers.

## 3.3 The Operational Definitions of InfluencingVariables are as follows:

### Table 3-1: Operational Definition of Influencing Varibles

| Conceptual label | Concept Definition | Operational Components | Level of measurement |
|---|---|---|---|
| **1. Performance quality** | The level at which the primary characteristics of the product operate | - Acceleration<br>- Driving system | Interval |
| **2. Price** | Amount of money paid in order to buy goods or service | - Retail price of car<br>- Interest rate financing<br>- Repair and Maintenance cost<br>- Spare parts cost | Interval |
| **3. After-sales service** | All assistance that marketer can provide to maintain the product use-ready | - Warranty fulfillment<br>- Availability of spare parts<br>- Reliable and fast maintenance and repair service. | Interval |
| **4. Style** | Describe product looks and feel to buyer | - Luxury<br>- Interior design and decoration<br>- Beauty and shape | Interval |
| **5.Level of fuel Consumption** | Ratio of distance per unit of fuel | - Number of distance measure by kilometer per litre | Interval |
| **6. Safety** | A device designed to prevent or save from accidents | - Equipment for *preventive safety*<br>- Equipment for *crisis safety* | Interval |
| **7. Purchase Evaluation (at purchase stage)** | Focus at brand decision: Evaluation brand selection criteria at purchase stage | - Brand Familiar | Interval |

# CHAPTER FOUR

# RESEARCH METHODOLOGY

In research methodology, it provides a step-by-step procedure in order to understand how study can be conducted. First, research design explains techniques and method used of data collection. This chapter includes sample section, sample size and construction of the instrument. Finally, research procedure, sampling techniques and procedure of gathering information. Are stated in this section.

## 4.1 METHOD OF RESEARCH USED

**Sample survey** using ***questionnaire*** will be used in this research in order to gather primary data and recording people responses for analysis. Survey is defined as a research technique in which information is gathered from a sample of people by use of questionnaire, a method of data collection based on communication with a representative sample of the target population (Zikmund, 1997). The questions are **structured-undisguised questionnaire**. We use this fixed alternative questions to ensure that all respondents answered to the same type of questions. It will be easier for us to analyze the data and the cost will not be high.

Survey also allows researchers to study and describe massive population in both efficient and economical fashion, meaning that the survey provides relatively low costs, minimal time and accurate means of assessing information about the population.

In this research study, the researcher makes use of **descriptive, inferential statistical methods** in describing information and analyzing data. *Descriptive method* is used to describe primary data of respondents particularly demographic profile and perceptions toward independent and dependent variables. The *inferential method* is used to measure the relationship and the difference between data of the two variables to find their relationships which is the ultimate objective of this study. After collecting the data from the target respondents, they will be coded into the symbolic form that is used in **SPSS software**.

## 4.2 RESPONDENTS AND SAMPLING PROCEDURES

### 4.2.1 Respondent of the study

In order to investigate this study, the target population is Thai people who bought Toyota cars. Although Toyota has lost its market share to the rivals, the strategy is still competitive especially when the new products launched. In addition, Bangkokians have played important role as then setters. The finding of this study should be used to predict overall factor influencing buying decision. Plus, this population is large enough for the specific sample. Therefore, these respondents must be able to state their demographic characteristics and explain their attitudes toward product characteristics (Toyota passenger cars).

Obtaining large population of actual buyers that contain enough detail is generally complex and expensive. Hence, focus group interview is used in data collecting during November 1-30, 2001 from Toyota cars' owners living in Bangkok, Thailand. These data provide a ride and unique opportunity to examine the passenger cars' buying decision of respondents' behaviors.

**Target population**

The whole population is the Toyota car owners in Thailand. And then select the target population who is the specific complete group relevant to the research study as the Toyota passenger car owners as following

| | | |
|---|---|---|
| Element | - | Thai Toyota passenger car owners (all models since 1998), age between 15-54 years and live in Bangkok. |
| Sampling unit | - | Thai Toyota passenger car owners (all models since 1998), and live in Bangkok. |
| Time | - | November 15 - December 15, 2001. |

### 4.2.2 Unit of Analysis

The sampling unit that is deemed most appropriated is the individual Thai Toyota passenger car owners (all models since 1998), and live in Bangkok

### 4.2.3 Sampling Flame

According to the difficulty to exactly number of Thai Toyota passenger car owners (all models since 1998), and live in Bangkok at the point of time, so in the research study will have ***no sampling frame***, and resulted to ***nonrandomly selected***.

### 4.2.4 Sampling Mode

The researcher will use **non-probability sampling** in the form of convenience technique. The questionnaires will be distributed equally. Using ***convenience samples*** can obtain a large number of completed questionnaires quickly and economically.

## 4.3 DETERMINING THE SAMPLE SIZE

This study calculate number of sample size from estimate number of car registered in Bangkok compared with the table of Anderson based on the expected rate of 95 percent confidence level and 5 percent sampling error.

According to the table 1-1, the number of Toyota car sales between 1998-2001, is around 188,580 cars. Therefore, after comparing with the table of Anderson (Table 4-1), the sampling respondents are **382.**

**Table 4-1: Theoretical Sample Sizes for Different Sizes of Population and a 95 Percent Level of Certainty**

| Population | Required sample for tolerable error | | | |
|---|---|---|---|---|
| | 5% | 4% | 3% | 2% |
| 100 | 79 | 85 | 91 | 96 |
| 500 | 217 | 272 | 340 | 413 |
| 1,000 | 277 | 375 | 516 | 705 |
| 5,000 | 356 | 535 | 897 | 1,622 |
| 50,000 | 381 | 593 | 1,044 | 2,290 |
| 100,000 | **382** | 596 | 1,055 | 2,344 |
| 1,000,000 | 384 | 599 | 1,065 | 2,344 |
| 25,000,000 | 384 | 600 | 1,067 | 2,400 |

*Source: Anderson, G., Fundamentals of Education Research, 1996, pp. 202.*

## 4.4 RESEARCH INSTRUMENTATION

**Self-administered questionnaire** is used in this study in order to gather information from samples. The data is needed for testing each hypothesis. The construction provides how each variable is formed.

Each questionnaire consists of a set of question presented to respondents for their answers because of its flexibility. For testing the hypothesis, following importance scale will be used.

Self-administered questionnaire is a questionnaire that is filled in by the respondent rather than an interviewer. It can be distributed to respondent in many ways such as insert in packages and magazines or locate questionnaires at points of purchase or high-traffic location. (Zikmund, 1997)

## 4.5 COLLECTION OF DATA

According to this study, the researcher employs non-probability-sampling design because the elements in the population do not have any probabilities of being

chosen as sample subjects. Furthermore, the method of judgmental sampling is also utilized. This method helps obtaining information from specific targets. The respondents for this study are those who in the best position to provide the information required.

In the field, the interviewers would approach the respondents, request for cooperation and inspect about all kinds of purchase. Participants were individuals who were considering to buy a car and interesting in Toyota passenger cars. Furthermore, respondents who have a car or have experience in driving cars were interviewed.

## 4.6 PRETESTS

In order to detect weaknesses in the instruments, pretesting must be processed before the actual testing is arisen. The procedure is involved in order to investigate the respondent interest, meaning of the language, question transformation, continuity and flow, question sequence and etc. Thirty actual respondents are tested to evaluate and refine a measuring instrument. Friends, colleagues and associates cannot be included in the preliminary testing because they might introduce more bias than strangers, argue more about wording, and generally make it more difficult to accomplish other goals of pretesting.

## 4.7 STATISTICAL TREATMENT OF DATA

Data will be analyzed and summarized in a readable and easily interpretable form. ***The Statistical Package for Social Sciences (SPSS)*** will be utilized to summarize the data where needed. All statistical manipulations of the data will follow commonly accepted research practices. The form of data presentation from these procedures would also be presented in an easily interpreted format. The computer to ensure accuracy and to minimize costs will perform all statistical procedures.

***Descriptive statistical method*** is used to explain respondents in term of demographic profiles, the mean of age is also included into 2 groups of both sexes. Income is divided into 4 groups and so as education. ***Inferential statistical method*** is used to measure the association of independent and dependent variables for both

hypotheses, content analysis is used to interpret and analyze the factors related to consumer buying behavior and respondents' satisfactory to buy or recommend the products to their friends, colleagues or acquaintances.

# CHAPTERFIVE

## DATA ANALYSIS

### 5.1 Descriptive Statistics

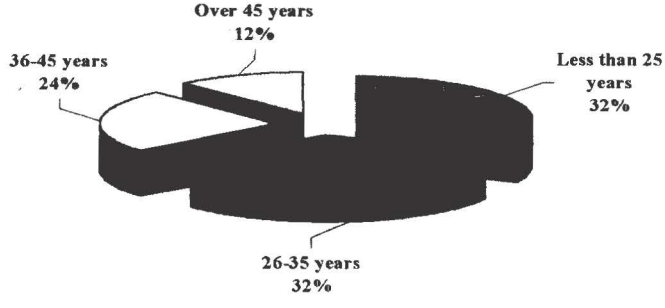
Descriptive statistics is used to describe or summarize information about a population or sample (Zigmand, 1997). It is a branch of statistics that provides researches with summary measures for data in their samples. The objective of descriptive statistics is to provide summary measures of data contained in all elements of a sample. The measure of central tendency and measures of description are usually concerned. (Kinnear, 1991)

Major types of descriptive statistics are measures of central tendency, measures of variability, measures of relationship, and measures of relative position. Measures of central tendency are used to determine the typical or average score of a group of figures; measures of variability indicate how spread out a group of figures are; measures of relationship indicate to what degree two sets of figures are related; and measures of relative position describe a subject's performance compared to the performance of all other subjects. (Gay and Diehl, 1996)

In this research study descriptive statistics is used to summarize the demographic characteristics of respondents and automobile attributes as performance quality, price, style, level of fuel consumption, after-sale service and safety.

**Figure 5.1 Age**

**AGE**

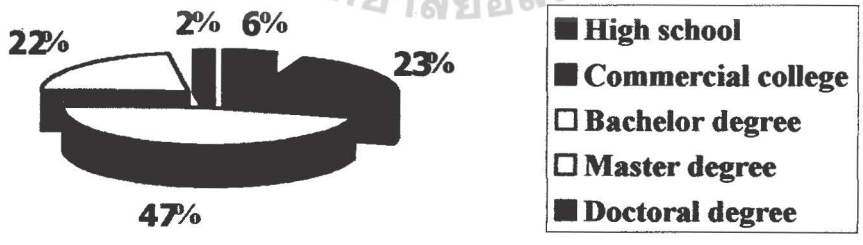


From figure 5.1, the percentage of respondents aged 25 years old and less is 32%, aged between 26-35 is 32%, age between 36-45 is 24%, and the respondents age more than 45 is 12%.

**Figure 5.2: Gender**


From figure 5.2, most of the respondents are female, 59 percents of respondents and male computed as 41 percents of respondents respectively.

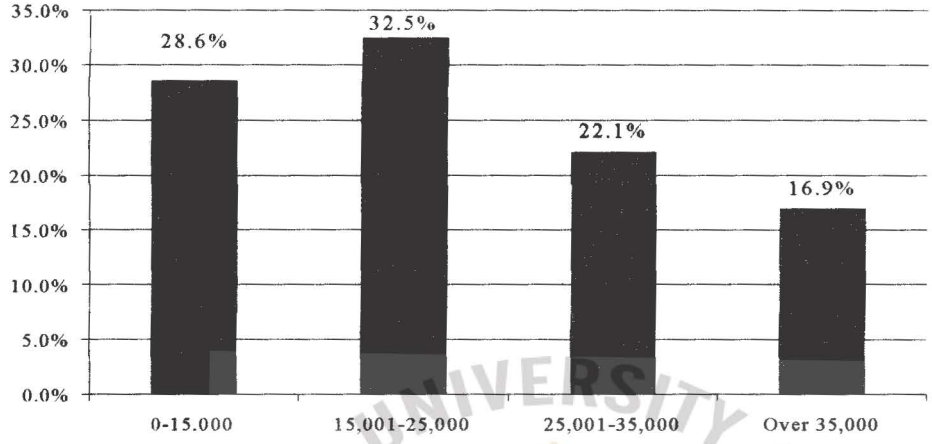
**Figure 5.3 Education**




From the figure 5.3, the most respondents are bachelor degree graduated which counted for 47%, the commercial college 23%, master degree graduated counted for 22%, and the percent of doctorate degree graduates are 2%.

**Table 5.4 Income**

**Income**




From the figure 5.4, the majority of respondents' average income per month is between 15,001-25,000 Baht, counted for 32.5%, 15,000 Baht and lower counted for 28.6%, 25,001- 35,000 Baht counted for 22.1%, and respondents whose income per month is higher than counted for 16.9%.

**Independent, Dependent and Moderating Variables**

For this part, independent, dependent and moderating variables, measures of central tendency is to show the value of mean, median and mode. In addition, measures of dispersion are represented by the standard deviation, skewness, and kurtosis. For example, the first independent variable, which is "Performance Quality" has mean value of 3.85, the median is 3.75, the mode is 4.00 And the standard deviation is 0.5095 For more detail, please have a look at appendices.

**5.2 Inferential Statistics**

Inferential statistics is used to make inferences or judgements about a population on the basis of a sample. (Zigmund, 1997) Davis (1996) suggested that inferential statistics is the method of data analysis that goes beyond the descriptive analysis; it involves verifying specific statements or hypothesis statements about

population. It is based on the theory of probability and logic; these are used to make inferences about the characteristics of a population from the characteristics of random samples drawn from the population.

**Significant Test**

The test of significance helps deciding whether the null hypothesis will be rejected or accepted and infer that the difference is significantly greater than a chance difference. If the difference is too large to attribute to chance, the null hypothesis will be rejected; if not it will be accepted.

**Reliability Test**

Reliability means consistency, dependability, or trustworthiness. Basically, reliability is the degree to which a test consistently measures whatever it measures. Reliability is expressed numerically, usually as a coefficient; a high coefficient indicates high reliability. If a test were perfectly reliable, the coefficient would be 1.00. (Gay and Diehl, 1996)

Reliability testing is of significance and will be required only in case of the independent variables are interdependent and contain linkages in operationalization process. Since the concepts of independent variables are composite measures, an index measure technique is used. Reliability test of such concepts by "Cornbach alpha" value indicates the certain acceptance of whether such particular concepts are statistically applicable for further test with the dependent variables. Table 5.1 provides a result of test reliability of the scale used in the study calculating by the Cornbach's alpha. Cornbach's alpha is utilized to assess the internal consistency of the measurement. Each scale is tested by SPSS to compute the alpha value. If alpha is greater than or equal to 0.6, it indicates a strong measure of reliability. Reliability of the behavioral responses of consumers were assessed by the internal consistency (Cornbach alpha) method.

**Table 5.1: Reliability Test of Index Scale**

| Determinants | Independent Variable | Item-Total Correlation | Cronbach's α |
|---|---|---|---|
| 1.Performance Quality | - Acceleration | .4863 | .6469 |
| | - Driving system | .4863 | |
| 2. Price | - Price of car | .5471 | .7071 |
| | - Interest rate financing | .4888 | |
| | - Repair and maintenance cost | .4278 | |
| | - Spare parts cost | .5286 | |
| 3. After-sale Service | - Warranty fulfillment | .3813 | .7539 |
| | - Ease in finding spare parts | .7115 | |
| | - Rapidity of repair and maintenance | .6871 | |
| 4. Style | - Luxurious | .5431 | .7753 |
| | - Interior design and decoration | .6762 | |
| | - Beauty and attractiveness of exterior design | .6386 | |
| 5. Safety | - Equipment for preventive safety | .5185 | .6812 |
| | - Equipment for crisis safety | .5185 | |

From the results of index scale reliability test as appear in Table 5.1, Cronbach's alpha value for all five concepts are greater than 0.6. It means that all measurement scales are relatively reliable.

**The hypothesis-testing procedure**

According to Davis (1996), there are 9 steps in scientific hypothesis testing in business research:

1. Formulate a research hypothesis to solve a specific problem.

2. Develop some of the decision consequences, in operational terms, from the possible results of testing the research hypothesis.

3. Collect the data of interest.

4. Determine if the data generally supports the research hypothesis.

5. If so, and the hypothesis is to be tested statistically, state the null and alternative hypotheses.

6. Select a test procedure that is appropriate for the collected data and will yield evidence regarding the truth of the null hypothesis.

7. Conduct the test on the data.

8. Make a decision about the veracity of the null hypothesis – the significance criterion.

9. Statistical significance may enable you to substantiate your research hypothesis and implement your decision.

For this research study, the data are analyzed and summarized in a readable and easily interpretable form after the required data are collected. The statistical Package for Social Science (SPSS) is utilized to summarize the data where needed.

There are one main dependent variable, Toyota car purchasing, used for testing independence with 2 groups of independent variables, product attributes and the demographic profile.

The statistical model used for this research study is the Multiple Linear Regression. This model suits for the study that more than one variable affect changes in another variable is assumed. (Davis, 1996)

## 5.3 Assumption Required in Multiple Regression Analysis

**Basic assumption required in multiple regression analysis:**

### 1. Test of Normality

Goodness of fit tests can be used for examining the normality of the error terms. (Neter et.al., 1996)

To test for the normality of error terms, the standardized residuals of each dependent variable has to be analyzed if it is greater than .05, it can be determined that the test for normality of standardized residual is accepted.

### 2. Levene Test for Constancy of Variance

Levene's test (Levene, 1960) is used to test if k samples have equal variances. Equal variances across samples is called homogeneity of variances. Some statistical tests, for example the analysis of variance, assume that variances are equal across groups or samples. The Levene's test can be used to verify that assumption. Levene's test is employed for the test of consistency of variance. Null hypothesis will be rejected when significant level is less than alpha.

### 3. Multicollinearity

Multicollinearity exists when pairs or combination of the independent variables are highly correlated with one another. When highly correlated variables are used together, these pairs may result in multicollinearity (but not perfectly) and thus tend to weaken the individual impact of these variables on the response return variables. There are many methods to detect the presence of multicollinearity. The Variance Inflation Factor (VIF) is applied for detecting the presence of approximately linear relationships among the columns of the X matrix. If one or more of these VIF is large, it can be concluded that nearly linear relationship exists among the columns X matrix. (Graybill and Iyer, 1994)

4. **Test of Independence of Error**

Autocorrelation may be defined as correlation between members of observation ordered in time. The most common test for detecting autocorrelation is developed by Durbin and Watson, commonly known as Durbin-Watson test statistics. The Dubin-Watson test for autocorrelation assumes the first-order autoregressive error models with the value of predictor variables fixed. (Neter et.al., 1996) This research used the Durbin-Watson statistical test to detect auto-correlation. It can be considered from Durbin-Watson value that:

- If Durbin-Watson value is near 2, it can be concluded to have a high degree of independency of error (no-autocorrelation).
- If Durbin-Watson value is near 0, it can be concluded to have high degree of dependency of error in the possitive direction.
- If Durbin-Watson value is near 4, it can be concluded to have a high degree of dependency of error in the negative direction. (Durbin-Watson, 1951)

**Hypothesis Testing**

**Multiple Regression Analysis**

Multiple regression analysis is an analysis of association that simultaneously investigates the effect of two or more independent variables on a single, interval-scaled or ratio-scaled dependent variable. (Zigmund, 1997)

McDaniel, C. and Gates R. (1996) has suggested that multiple regression is a procedure for predicting the level magnitude of a dependent variable based on the levels of more than one independent variable. Multiple regression predicts values for single dependent from measurement values of more independent variables. The general equation for multiple linear regression is as follows:

$$Y_i = \beta_0 + \beta_i X_i + \varepsilon_i \,, i = 1, 2, 3, \ldots n$$

Where

$Y_i$ = the value of Y that is estimated from the regression equation, in which Y is the criterion variable and $X_i$ are the predictor variables.

$\beta_0$ = the intercept parameter in the multiple-regression equation, in which Y is the criterion and $X_i$ are the predictor variables.

$\beta_i$ = the coefficient of $X_i$ in the regression equation, in which Y is the criterion and $X_i$ are the predictor variables. It is called the coefficient of partial or net regression.

$\varepsilon_i$ = the error associated with the prediction of Y when $X_i$ are the predictor variables.

The estimated equation for multiple linear regression is shown as follows

$$Y = b_0 + b_i X_i \,, i = 1, 2, 3, \ldots n$$

Where:

Y = estimated value of dependent or criterion variable

$b_0$ = estimated constant

$b_i$ = coefficients associated with the predictor variables so that a change of $b_i$ units in Y; the values for the coefficients are estimated from the regression analysis

$X_i$ = predictor (independent) variables that influence the dependent Variable

**Hypothesis testing for multiple regression analysis**

**1. Linear regression analysis**

**Hypothesis test:**

$H_0$: $\beta_1 = \beta_2 = \ldots = \beta_k = 0$

$H_a$: $\beta i$ at least 1 value $\neq 0$; $i = 1, 2, 3, \ldots k$

**Test statistic: F-test**

$$F = MSR / MSE$$

Reject $H_0$ when: Significance of $F < \alpha$

2. **Partial Regression Coefficient**

**Hypothesis test:**

$H_0$: $\beta i = 0$

$H_0$: $\beta_1 \neq 0$ ; I = 1, 2, 3, ... k

**Test statistic: t-test**

$$T = \frac{b_i - 0}{S_{bi}}$$

Reject $H_0$ when: significance of $t < \alpha$

**Coefficient of determination**

The coefficient of determination, denoted by $R^2$ is the measure of the percentage of the variation in the dependent variable explained by variations in the independent variables. This statistic can assume values from 0 to 1. If there is a perfect linear relationship between X and Y, all the variation in Y is explained by the variation in X, then $R^2$ equals 1. At the other extreme, if there is no relationship between X and Y, then none of the variation in Y is explained by the variation in X and $R^2$ equals 0. The analyst would prefer to have a calculated $R^2$ of close to 1. Frequently, variables are added to a regression model to see what effect they have on the $R^2$ value. (McDaniel, C. and Gates R., 1996)

**Coefficients of partial correlation**

Coefficient of partial correlation is the values to show the relationship between dependent variable and one independent variable given that other independent variables stay constant.

## 1. Test of normality

To test for the normality of error terms, the researcher has analyzed the standardized residuals of each dependent variable. The result is shown in table 5.2

**Table 5.2 Test of normality for MLR Model**

| Model | Significant Level |
|---|---|
| Standardized Residual [a] | .200 |
| Standardized Residual [b] | .200 |

a. MLR model for automobile attribute

b. MLR model for demography profiles

From table 5.2, the significant levels of both models are .200, which are greater than .05. It can be determined that the test for normality of standardized residual is accepted.

## 2. Test for constancy of variances

Levene test is used to test for the constancy of variances. The result is shown in the following table:

**Table 5.3: Test of homogeneity of variances for MLR Model**

| Levene Statistics | df1 | df2 | Sig. |
|---|---|---|---|
| 1.691 [a] | 15 | 346 | .051 |
| 1.379 [b] | 17 | 272 | .146 |

a. MLR model for automobile attribute.

b. MLR model for demography profiles

From table5.3, significant levels of both models are .051 and .146 respectively. All values are greater than .05, therefore Levene test for constancy of variance is accepted.

## 3. Multicollinearity

VIF value is applied for detecting the multicollinearity. Table 5.4 showed the VIF value of independent variables in this research study. All VIF values are ranged between 1 - 3. It is determined that the value of VIF is not large enough to suspect multicollinearity.

**Table 5.4: VIF value of co linearity statistics**

| Model | VIF | | | | | |
|---|---|---|---|---|---|---|
| | A | B | C | D | E | F |
| Product Attributes | 2.143 | 2.204 | 3.249 | 1.487 | 1.383 | 2.755 |
| Demographic | 1.999 | 1.697 | 1.412 | 2.213 | - | - |

A. VIF value of MLR model for performance
B. VIF value of MLR model for the price
C. VIF value of MLR model for the after sales service
D. VIF value of MLR model for the style
E. VIF value of MLR model for the fuel consumption
F. VIF value of MLR model for the safety

## 4. Test of independence of error

This research study will operate Durbin -Watson test to detect auto-correlation. From table 5.5, the Durbin -Watson value of all models are close to 2. It means that there is no auto - correlation.

**Table 5.5 : Durbin -Watson test value**

| Model | Durbin –Watson |
|---|---|
| A | 1.803 |
| B | 1.597 |

A. Durbin-Watson test value of MLR model for Product attributes
B. Durbin-Watson test value of MLR model for Demographic factors

**Hypothesis Testing**

Summary of hypothesis testing (level of significance 95%)

**Hypothesis 1**

$Ho_1$: Product attributes can not explain the variation of the Toyota car purchasing of the Thai consumers..

$Ha_1$: Product attributes can explain the variation of the Toyota car purchasing of the Thai consumers

The Multiple Regression model for female customer's attitude towards the store is shown as follow:

$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6$

$Y$ = Estimated value of Product attributes.

$b_0$ = Estimated constant

$b_1$ = Coefficient for $X_1$

$b_2$ = Coefficient for $X_2$

$b_3$ = Coefficient for $X_3$

$b_4$ = Coefficient for $X_4$

$b_5$ = Coefficient for $X_5$

$b_6$ = Coefficient for $X_6$

$X_1$ = Performance

$X_2$ = Price

$X_3$ = After sales service

$X_4$ = Style

$X_5$ = Consumption

$X_6$ = Safety

**Table 5.6: MLR model of Product attributes**

| R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|
| .607 | .368 | .353 | .20 |

**Table 5.7: Summary of ANOVA test for MLR model of Product Attribute**

| Model | Sum of Square | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 5.848 | 6 | .975 | 24.558 | .000 |
| Residual | 10.041 | 253 | 3.969 | | |
| Total | 15.888 | 259 | | | |

**Table 5.8: Coefficient summary of MLR model of Product Attribute**

| Model | Unstandardized Coefficient | | Standardized coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| Constant | 1.937 | .162 | - | 11.981 | .000 |
| Performance | -5.422 | .019 | -.211 | -2.878 | .004 |
| Price | .205 | .027 | .565 | 7.615 | .000 |
| After sales service | -.121 | .030 | -.363 | -4.028 | .000 |
| Style | 2.081 | .017 | .076 | 1.241 | .216 |
| Consumption | -.208 | .022 | -.547 | -9.315 | .000 |
| Safety | -4.678 | .023 | -.172 | -2.075 | .039 |

**Hypothesis testing Summary:**

1. From table 5.7, the result showed that significant value of F statistics is .000, which is less than .05. Therefore the null hypothesis $Ho_1$: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = \beta_6 = 0$ is rejected. Therefore, it can be concluded that at least one component of product attributes can explain the variation of Toyota purchasing of Thai consumers.

2. From table 5.8, t-test is conducted to test which component of store's environments influence the attitude of female customers. If significant value of t statistics is < .05, the null hypothesis $Ho_1$: $\beta_i = 0$ is rejected. The summary of hypothesis testing is shown in table 5.9

**Table 5.9: Summary of hypothesis testing of each independent variable for MLR model of Product Attribute**

| Hypothesis | Statistics Test | Significant Level | Result | Meaning |
|---|---|---|---|---|
| $Ho_1$: $\beta_1 = 0$ | -2.878 | .004 | Reject Ho | Performance quality can explain the variation of Toyota car purchasing. |
| $Ho_2$: $\beta_2 = 0$ | 7.615 | .000 | Reject Ho | Price can explain the variation of Toyota car purchasing. |
| $Ho_3$: $\beta_3 = 0$ | -4.028 | .000 | Reject Ho | After-sales service can explain the variation of Toyota car purchasing. |
| $Ho_4$: $\beta_4 = 0$ | 1.241 | .216 | Accept Ho | Style can not explain the variation of Toyota car purchasing. |
| $Ho_5$: $\beta_5 = 0$ | -9.315 | .000 | Reject Ho | Level of fuel consumption can explain the variation of Toyota car purchasing. |

| | | | | |
|---|---|---|---|---|
| $Ho_6$: $\beta_6 = 0$ | -2.075 | .039 | Reject Ho | Safety can explain the variation of Toyota car purchasing. |

**Summary of hypothesis test:**

1. From the table 5.6, $R^2$ = .368 this indicates that 37% of criterion variance can be explained by its linear relationship with the predictor variables.

2 Multiple Regression Model for the variation of the Toyota purchasing of Thai consumers explained by the automobile attribute is as following:

$$Y = 1.937 - 5.422X_1 + .205X_2 - .121X_3 - .208X_4 - 4.678X_5$$

Y = The estimated value of variation of Toyota purchasing.
$X_1$ = Performance quality
$X_2$ = Price
$X_3$ = After-sales service
$X_4$ = Fuel Consumption
$X_5$ = Safety

# CHAPTERSIX

## Research Results and Discussion

This chapter provides the conclusion of the research results along with the discussion for this study. Section one will include the summary of the results from hypothesis testing. Section two will be the conclusion drawn against the research objectives.

### 6.1 Summary of the Results

**The objective 1** : To study the consumer buying decision of Thai people concerning Toyota cars purchasing.

**Table 6.1: Summary of hypothesis testing for Hypothesis 1and 2**

| Hypothesis | Test Statistics | Level of significant | Results |
|---|---|---|---|
| $H1_0$: Product attributes can not explained the variation of the Toyota car purchasing of the Thai consumers. | F- Statistics | .000 | Reject $H_0$ |

From table 6.1, it is indicated that all two hypotheses are rejected. So it is concluded that the Product attributes can explain the variation of the Toyota car purchasing of the Thai consumers.

**Table 6.2: Illustration of model fit for Thai consumer buying behavior toward Toyota cars in Bangkok.**

| Hypothesis | Test Statistics | Level of significant | Results |
|---|---|---|---|
| $H_0$1: Product attribute can not explained the variation of the Toyota car purchasing of The Thai consumers. | T – Statistics | | |
| Performance | | .004 | Reject $H_0$ |
| Price | | .000 | Reject $H_0$ |
| After sale service | | .000 | Reject $H_0$ |
| Style | | .216 | Accept Ho |
| Consumption | | .000 | Reject $H_0$ |
| Safety | | .039 | Reject $H_0$ |

From table 6.2, it is indicated that only two hypotheses are rejected. It can be concluded that Performance, After sale service is not Reject the given hypotheses, but overall Product attributes can not explained the variation of the Toyota car Purchasing of the Thai consumers.

**The objective 2**: To explain the buying behavior of Thai consumers based on product attributes.

From the result of this research study, the product attributes can explain the variation of the Toyota car purchasing of the Thai consumer as price, performance quality, after-sale service, level of fuel consumption and safety, but only style of automobile can not effect the Toyota car purchasing of the Thai consumer.

## 6.2 Recommendation

The evaluation stage basically is a frame between the choice set of the previous stage of information search to one brand selection. However, there are certain basic concepts that a consumer takes into consideration in general with most

products in the evaluation stage. First consumer wants to satisfy a need. In order to satisfy the need he/she will look for certain benefit from the product solution. Third, the consumer sees each product as a bundle of *attributes* with varying capacity to satisfy their needs. Various consumers would weight each attribute according to their needs. Consumer develops a set of brand belief about where each brand stands in terms of attributes (Evans & Berman, 1992).

In general, attributes relate to product performance. They can be further divided into product related and non-product related attributes. Product related attributes are connected to the product category. They are familiarly called features. As an example, *performance of engine, is a product related attribute of a car.* Non-product related attributes are defined as external aspects, which relate to product purchase or consumption. They include four types of information: price, packaging, the identity of typical consumer and where in what situation the product is used (Pitta & Katsanis, 1995).

For the automobile attributes could classify into 7 groups which are economy, comfort, appearance, safety, performance, service and brand name reputation. Form the result of this study could show that the Toyota car purchasing could be effected by product attributes which are performance quality, after-sales service, level of fuel consumption, price and safety. However, there is high brand loyalty for Toyota brand so Thai consumers don't concern much on the style of Toyota car.

From the research analysis, the major recommendations regarding to study's finding suggest that when automobile company creates marketing strategy which emphasizes on these four following factors; price, brand, style and safety, they should continually improve these factors. Because of the affected customers' buying decision-making. For example, in case of Toyota and Lexus, Toyota develop technology from Japan, which normally emphasize on economy in both operation and spare part cost. However, the weakness of this brand is brand image because we found many taxi operators are using Toyota. Once Toyota company plans to launch new product to fight in premium market. They create new company, new brand named "Lexus" and use new logo, which total different from Toyota. Lexus aims at upper income level customer. They promote technology and style to compete directly with

BMW or Mercedes Benz in premium market without referring to original country of Lexus.

In addition, the research analysis shows respondents weight attributes; performance quality, price, level of fuel consumption and after-sales service as top three important attributes they consider when buying a car. Therefore, we recommend the automobile companies do not overlook these factors. Nowadays, automobile is being the fifth necessities of life. People pay money to exchange for convenience and comfort. They expect to get the comfortable equipment within the car that is worth for what they pay. Therefore, automobile company should continue develop technology to add more equipment and system help in driving comfort. Company should develop engine in order to prolong the operation life usage and fit with the structure & condition of road in Thailand.

In addition, respondents care more about after-sales service (96.4%). Nowadays, time is money. Many people may have a little knowledge about technical, so they look forward to find good and fast after-sales service. Automobile Company should emphasize on fast repair and maintenance service with full of service satisfaction. As the automobile is a product that technology always rapidly changes all the time. Salesperson should have well knowledge of company's products in order to provide good advice and service to customers and help them making decision easier. The reputation about company's after-sales service can enhance company image and also stimulate sales volume.

During this economic downturn, many automobile companies try to use lower interest rate financing or other promotions to attract customer to buy new car instead of used car, which is booming now. However, from the result shows that respondents do not care much on interest rate financing (66.1%). They pay more attention on expense after buying a car such as spare part cost (85.9%) and repair & maintenance cost (87.5%) instead. Therefore, automobile company should adapt themselves match with this change such as try to reduce maintenance cost and price of spare parts cost to attract customers.

Successful implementation of these implications depends on the effectiveness of the company itself and understanding of the firm over these results. Technology always rapidly changes. The winner may not last long forever. Therefore, this market still challenges the company in the world of global competition.

**Further Research**

As the objective of this research is to investigate the relationship between various automobile attributes and demographic profile on Toyota car purchasing, we study on purchase evaluation at purchase stage and focus on brand decision only. However, there are many interesting points to evaluate under purchase stage such as vendor decision, time decision, quantity decision and payment method decision. Therefore, further research should study more on these decisions.

Finally, This research studies only the Toyota car brand and demographic profiles which focus only Thai people who live in Bangkok. Therefore, future research should be base on other car brands such as Honda, Mitsubishi, Volvo etc. Moreover, the researchers should investigate on people all around the country.

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## APPENDIX A

## Questionnaire

Dear Madam/Sir,

I am Mr. **Saethkarn Nimmanpatcharin**, the MBA student of Assumption University, Bangkok. I am doing this research is a part of my management program. The following questionnaire was design to obtain the information on "***Thai consumer buying behavior toward Toyota cars in Bangkok***". This questionnaire, was developed to collect the information to prove the hypothesis of the research study, I request you to extend your full cooperation in responding to all items in this questionnaire.

Thank you very much

**PART I**

Q1: Have you ever bought Toyota car (all models since 1998 – 2001)?

____ Yes ____ No

Q2: Please write the model and year of Toyota car that you have bought (for people who have bought more than in one Toyota car, please select only one model that you usually use at present)

Model of Toyota car_____

Year of Toyota car_____

**PART II**

Please rate your feeling toward these automobile attributes to what extent it is relevant to attract you for buying Toyota car. (by write 4 in the rating box)

**(1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree)**

| **1. Performance quality** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| 1.1 **Acceleration** is one important factor that you consider when buying a car. | | | | | |
| 1.2 **Driving system** is one important factor that you consider when buying a car. | | | | | |
| **2. Price** | **1** | **2** | **3** | **4** | **5** |
| 2.1 You consider **price of Toyota car** as an important factor when deciding to buy a car. | | | | | |
| 2.2 You consider **interest rate financing** as an important factor when deciding to buy a car. | | | | | |
| 2.3 You think about the importance of **repair and maintenance cost** when considering buying a car. | | | | | |
| 2.4 You think about the importance of **spare parts cost** when considering buying a car. | | | | | |

| **3. After-sales service** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|
| 3.1 It is important for you to buy a car that has reliable **warranty fulfillment.** | | | | | |
| 3.2 **The ease in finding spare parts** is one factor that you consider when buying a car. | | | | | |
| 3.3 **The rapidity of repair and maintenance service** is an important factor for you deciding to buy a car. | | | | | |
| **4. Style** | **1** | **2** | **3** | **4** | **5** |
| 4.1 You prefer to buy a car that looks **luxurious.** | | | | | |
| 4.2 You think about the importance of **interior design and decoration** combined with other factors when you decide to buy a car. | | | | | |
| 4.3 You think about the importance of **beauty and attractiveness of exterior design** combined with other factors when you decide to buy a car. | | | | | |
| 5. **Level of fuel consumption** | **1** | **2** | **3** | **4** | **5** |
| 5.1 It is important for you that the car you buy should have **less level of fuel consumption** (high ratio of kilometer per litre). | | | | | |
| **6. Safety** | **1** | **2** | **3** | **4** | **5** |
| 6.1 **The equipment for preventive safety**, (increase driver ability to avoid an accident) such as anti-lock brakes, important for you when considering buying a car. | | | | | |
| 6.2 **The equipment for crisis safety**, (protection against injury or death) such as front/side airbags or safety belt, important for you when considering buying a car. | | | | | |

**PART III**

**Before you bought a Toyota car (refer to question number 1, part 1), Have you been familiar with its brand?**

| Not familiar at all | Slightly familiar | Somewhat familiar | Very familiar | Extremely familiar |
|---|---|---|---|---|
| [1] | [2] | [3] | [4] | [5] |

**PART IV Personal Profiles**

**Age** ( ) Less than 25 ( ) 26 – 35 ( ) 36 – 45 ( ) Over 45

**Gender** ( ) Male ( ) Female

**Income** ( ) Less than 15,000 Baht ( ) 25,001 - 35,000 Baht
( ) 15,001 - 25,000 Baht ( ) Higher than 35,000 Baht

**Education** ( ) High School ( ) Commercial college
( ) Bachelor degree ( ) Master degree ( ) Doctorate degree

**แบบสอบถาม**

สวัสดีครับท่านผู้กรอกแบบสอบถาม

ผมนายเศรษฐกาล นิมมานพัชรินทร์เป็นนักศึกษาปริญญาโท ภาควิชาบริหารธุรกิจ มหาวิทยาลัยอัสสัมชัญ (ABAC)กำลังทำวิทยานิพนธ์ก่อนจบการศึกษาและแบบสอบถามฉบับนี้ได้จัดทำขึ้นเพื่อใช้เป็นส่วนประกอบในการ ทำวิทยานิพนธ์หัวข้อ "การศึกษาปัจจัยที่ส่งผลกระทบต่อการตัดสินใจ การเลือกซื้อรถโตโยต้าในกรุงเทพฯ" ขอความกรุณาท่านช่วยสละเวลาตอบแบบสอบถามฉบับนี้
ข้อมูลที่ได้จะนำไปใช้เพื่อการศึกษาเท่านั้น

กระผมหวังเป็นอย่างยิ่งว่าจะได้รับความร่วมมือจากท่านทั้งหลายในการทำแบบสอบถามฉบับนี้

ขอบพระคุณเป็นอย่างสูง
เศรษฐกาล นิมมานพัชรินทร์

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**กรุณาตอบคำถามข้อ 1 และ 2 ก่อน และโปรดอ่านคำแนะนำข้างล่างนี้ด้วยครับ**

คำถาม 1: คุณได้ซื้อรถยนต์โตโยต้าในช่วงตั้งแต่ปีพ.ศ. 2541- ปัจจุบันหรือไม่

____ซื้อ ____ไม่ซื้อ

คำถาม 2: โปรดเขียนรุ่น และ ปีของรถยนต์โตโยต้าที่คุณซื้อ
สำหรับผู้ที่ซื้อรถยนต์โตโยต้ามากกว่าหนึ่งคัน โปรดช่วย เลือกเพียงคันที่ใช้ในปัจจุบันเท่านั้น

รุ่น_____

ปี_____

**ส่วนที่2**

**คำถามข้อ 1-6 เป็นคำถามเกี่ยวกับคุณสมบัติของรถยนต์ส่วนบุคคล กรุณาทำเครื่องหมาย "x"**

**บนคำตอบที่เหมาะสมในแต่ละข้อ**

1. **สมรรถนะของเครื่องยนต์**

1.1 คุณพิจารณาอัตราการเร่งของเครื่องยนต์เป็นส่วนประกอบสำคัญในการตัดสินใจเลือกซื้อรถยนต์

| ไม่เห็นด้วยเป็นอย่างยิ่ง | ไม่เห็นด้วย | เฉยๆ | เห็นด้วย | เห็นด้วยเป็นอย่างยิ่ |
|---|---|---|---|---|
| [1] | [2] | [3] | [4] | [5] |

1.2 คุณพิจารณาระบบการขับเคลื่อนเป็นส่วนประกอบสำคัญในการตัดสินใจเลือกซื้อรถยนต์

| ไม่เห็นด้วยเป็นอย่างยิ่ง | ไม่เห็นด้วย | เฉยๆ | เห็นด้วย | เห็นด้วยเป็นอย่างยิ่ |
|---|---|---|---|---|
| [1] | [2] | [3] | [4] | [5] |

**2. ราคา**

2.1 คุณคิดว่าราคารถยนต์เป็นส่วนประกอบที่สำคัญในการเลือกซื้อรถแค่ไหน

ไม่เห็นด้วยเป็นอย่างยิ่ง ไม่เห็นด้วย เฉยๆ เห็นด้วย เห็นด้วยเป็นอย่างยิ่

[1] [2] [3] [4] [5]

2.2 คุณพิจารณาให้ความสำคัญต่ออัตราดอกเบี้ยเงินผ่อนมากแค่ไหนในการประกอบการตัดสินใจเลือกซื้อรถยนต์

ไม่เห็นด้วยเป็นอย่างยิ่ง ไม่เห็นด้วย เฉยๆ เห็นด้วย เห็นด้วยเป็นอย่างยิ่ง

[1] [2] [3] [4] [5]

2.3 คุณพิจารณาให้ความสำคัญต่อราคาค่าซ่อมและบำรุงรักษารถยนต์มากแค่ไหนในการประกอบการตัดสินใจเลือก ซื้อรถยนต์

ไม่เห็นด้วยเป็นอย่างยิ่ง ไม่เห็นด้วย เฉยๆ เห็นด้วย เห็นด้วยเป็นอย่างยิ่ง

[1] [2] [3] [4] [5]

2.4 คุณพิจารณาให้ความสำคัญต่อราคาอะไหล่มากแค่ไหนในการประกอบการตัดสินใจเลือกซื้อรถยนต์

ไม่เห็นด้วยเป็นอย่างยิ่ง ไม่เห็นด้วย เฉยๆ เห็นด้วย เห็นด้วยเป็นอย่างยิ่

[1] [2] [3] [4] [5]

**3. บริการหลังการขาย**

3.1 คุณพิจารณาให้ความสำคัญต่อความน่าเชื่อถือในการรับประกัน ตัวถัง, อะไหล่ มากแค่ไหนในการประกอบการตัดสินใจเลือกซื้อรถยนต์

ไม่เห็นด้วยเป็นอย่างยิ่ง ไม่เห็นด้วย เฉยๆ เห็นด้วย เห็นด้วยเป็นอย่างยิ่

[1] [2] [3] [4] [5]

3.2 ความยาก/ง่ายในการหาซื้ออะไหล่ เป็นส่วนหนึ่งที่คุณพิจารณาประกอบการซื้อรถยนต์

ไม่เห็นด้วยเป็นอย่างยิ่ง ไม่เห็นด้วย เฉยๆ เห็นด้วย เห็นด้วยเป็นอย่างยิ่

[1] [2] [3] [4] [5]

3.3 คุณให้ความสำคัญต่อความสะดวกรวดเร็วในการซ่อมและบำรุงรักษา มากแค่ไหนในการเป็นส่วนประกอบในการเลือกซื้อรถยนต์

ไม่เห็นด้วยเป็นอย่างยิ่ง ไม่เห็นด้วย เฉยๆ เห็นด้วย เห็นด้วยเป็นอย่างยิ่

[1] [2] [3] [4] [5]

**4. รูปลักษณ์**

4.1 คุณพิจารณาเลือกซื้อรถโดยดูจากความภูมิฐาน/ความหรูหราเป็นส่วนประกอบในการตัดสินใจเลือกซื้อรถยนต์

ไม่เห็นด้วยเป็นอย่างยิ่ง ไม่เห็นด้วย เฉยๆ เห็นด้วย เห็นด้วยเป็นอย่างยิ่

[1] [2] [3] [4] [5]

4.2 การออกแบบ/ตกแต่งรูปลักษณ์ภายใน มีความสำคัญมาก/น้อยแค่ไหน ในการเป็นส่วนประกอบในการตัดสินใจเลือกซื้อรถของคุณ

ไม่เห็นด้วยเป็นอย่างยิ่ง ไม่เห็นด้วย เฉยๆ เห็นด้วย เห็นด้วยเป็นอย่างยิ่

[1] [2] [3] [4] [5]

4.3 การออกแบบ/ตกแต่งรูปลักษณ์ภายนอก มีความสำคัญมาก/น้อยแค่ไหน
ในการเป็นส่วนประกอบในการตัดสินใจเลือกซื้อรถของคุณ

| ไม่เห็นด้วยเป็นอย่างยิ่ง | ไม่เห็นด้วย | เฉยๆ | เห็นด้วย | เห็นด้วยเป็นอย่างยิ่ |
|---|---|---|---|---|
| [1] | [2] | [3] | [4] | [5] |

**5. อัตราการสิ้นเปลืองน้ำมันเชื้อเพลิง**

5.1 อัตราการสิ้นเปลืองน้ำมันเชื้อเพลิง/การประหยัดน้ำมัน มีความสำคัญมาก/น้อยแค่ไหน
ในการเป็นส่วนประกอบในการตัดสินใจเลือกซื้อรถยนต์ของคุณ

| ไม่เห็นด้วยเป็นอย่างยิ่ง | ไม่เห็นด้วย | เฉยๆ | เห็นด้วย | เห็นด้วยเป็นอย่างยิ่ |
|---|---|---|---|---|
| [1] | [2] | [3] | [4] | [5] |

6. ความปลอดภัย

6.1 อุปกรณ์ที่เพิ่มความสามารถของผู้ขับขี่ในการป้องกันอุบัติเหตุ เช่น ระบบป้องกันล้อล็อค, ระบบควบคุมความเร็วอัตโนมัติ มีความสำคัญมาก/น้อยแค่ไหน
ในการเป็นส่วนประกอบในการตัดสินใจเลือกซื้อรถของคุณ

| ไม่เห็นด้วยเป็นอย่างยิ่ง | ไม่เห็นด้วย | เฉยๆ | เห็นด้วย | เห็นด้วยเป็นอย่างยิ่ |
|---|---|---|---|---|
| [1] | [2] | [3] | [4] | [5] |

6.2 อุปกรณ์ที่ป้องกันอันตรายจากการบาดเจ็บหรือตายเนื่องจากอุบัติเหตุ
เช่นถุงลมนิรภัยด้านหน้าและด้านข้าง, เข็มขัดนิรภัย มีความสำคัญมาก/น้อยแค่ไหน
ในการเป็นส่วนประกอบในการตัดสินใจเลือกซื้อรถยนต์ของคุณ

| ไม่เห็นด้วยเป็นอย่างยิ่ง | ไม่เห็นด้วย | เฉยๆ | เห็นด้วย | เห็นด้วยเป็นอย่างยิ่ |
|---|---|---|---|---|
| [1] | [2] | [3] | [4] | [5] |

**<u>ส่วนที่3</u>**

**ก่อนที่คุณจะซื้อ/มีส่วนร่วมในการตัดสินใจซื้อรถยนต์ (อ้างอิงคำตอบในข้อ 1)**
**คุณมีความคุ้นเคยกับยี่ห้อนี้มาก่อนมากแค่ไหน**

| ไม่คุ้นเคยเลย | ไม่ค่อยคุ้นเคย | ปานกลาง | คุ้นเคยมาก | คุ้นเคยเป็นอย่างยิ่ง |
|---|---|---|---|---|
| [1] | [2] | [3] | [4] | [5] |

**<u>ส่วนที่4 ข้อมูลส่วนบุคคล</u>**

อายุ [ ]20-25ปี [ ]26-35ปี [ ]36-45ปี [ ]ตั้งแต่ 45 ปีขึ้นไป

เพศ [ ]ชาย [ ]หญิง

รายได้ต่อเดือน [ ]น้อยกว่า 15,000บาท [ ]25,001-35,000บาท
[ ]15,001-25,000บาท [ ]มากกว่า 35,000บาท

ระดับการศึกษา [ ]มัธยมปลาย [ ]วิทยาลัยหรืออาชีวศึกษา
[ ]ปริญญาตรี [ ]ปริญญาโท [ ]ปริญญาเอก

# APPENDIX B

**Gender**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Male | 159 | 41.4 | 41.4 | 41.4 |
| | Female | 223 | 58.6 | 58.6 | 100.0 |
| | Total | 382 | 100.0 | 100.0 | |

**Age**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Lower than 25 years old | 123 | 31.9 | 31.9 | 31.9 |
| | 26-35 years old | 124 | 32.2 | 32.2 | 64.2 |
| | 36-45 years old | 93 | 24.2 | 24.2 | 88.3 |
| | 45 or above | 42 | 11.7 | 11.7 | 100.0 |
| | Total | 382 | 100.0 | 100.0 | |

**Educational background**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | High school | 22 | 5.7 | 5.7 | 5.7 |
| | Commercial college | 90 | 23.4 | 23.4 | 29.1 |
| | Bachelor degree | 180 | 46.8 | 46.8 | 75.8 |
| | Master degree | 84 | 21.8 | 21.8 | 97.7 |
| | Doctorate degree | 6 | 2.3 | 2.3 | 100.0 |
| | Total | 382 | 100.0 | 100.0 | |

**Monthly salary**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 0-15,000 baht | 110 | 28.6 | 28.6 | 28.6 |
| | 15,001-25,000 baht | 125 | 32.6 | 32.6 | 61.0 |
| | 25,001-35,000 baht | 85 | 22.1 | 22.1 | 83.1 |
| | Over 35,000 baht | 62 | 16.9 | 16.9 | 100.0 |
| | Total | 382 | 100.0 | 100.0 | |

## RELIABILITYANALYSIS-SCALE(ALPHA)

1. Q3.1 Acceleration
2. Q3.2 Driving system

Correlation Matrix

| | Q3.1 | Q3.2 |
|---|---|---|
| Q3.1 | 1.0000 | |
| Q3.2 | .4863 | 1.0000 |

N of Cases = 382.0

Item-total Statistics

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Alpha if Item Deleted |
|---|---|---|---|---|---|
| Q3.1 | 4.1719 | .5030 | .4863 | .2365 | . |
| Q3.2 | 4.4115 | .3472 | .4863 | .2365 | . |

Reliability Coefficients 2 items

Alpha = .6469 Standardized item alpha = .6544

1. Q4.1 Price
2. Q4.2 Interest
3. Q4.3 Repair
4. Q4.4 Spare

Correlation Matrix

| | Q4.1 | Q4.2 | Q4.3 | Q4.4 |
|---|---|---|---|---|
| Q4.1 | 1.0000 | | | |
| Q4.2 | .4440 | 1.0000 | | |
| Q4.3 | .3761 | .2662 | 1.0000 | |
| Q4.4 | .4106 | .4109 | .3817 | 1.0000 |

N of Cases = 382.0

Item-total Statistics

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Alpha if Item Deleted |
|---|---|---|---|---|---|
| Q4.1 | 11.4583 | 2.4421 | .5471 | .2997 | .6096 |
| Q4.2 | 11.8516 | 2.2886 | .4888 | .2616 | .6553 |
| Q4.3 | 11.4974 | 2.8564 | .4278 | .2054 | .6814 |
| Q4.4 | 11.3490 | 2.6716 | .5286 | .2804 | .6267 |

Reliability Coefficients 4 items

Alpha = .7071 Standardized item alpha = .7117

1. Q5.1 Warranty
2. Q5.2 Ease finding
3. Q5.3 Service

Correlation Matrix

| | Q5.1 | Q5.2 | Q5.3 |
|---|---|---|---|
| Q5.1 | 1.0000 | | |
| Q5.2 | .3746 | 1.0000 | |
| Q5.3 | .3448 | .7802 | 1.0000 |

N of Cases = 382.0

Item-total Statistics

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Alpha if Item Deleted |
|---|---|---|---|---|---|
| Q5.1 | 8.4688 | 1.7640 | .3813 | .1474 | .8765 |
| Q5.2 | 8.5677 | 1.2487 | .7115 | .6214 | .5121 |
| Q5.3 | 8.6771 | 1.2845 | .6871 | .6120 | .5442 |

Reliability Coefficients 3 items

Alpha = .7539 Standardized item alpha = .7499

1. Q6.1 Luxurious
2. Q6.2 Interior design and decoration
3. Q6.3 Beauty and attractiveness of exterior de

Correlation Matrix

| | Q6.1 | Q6.2 | Q6.3 |
|---|---|---|---|
| Q6.1 | 1.0000 | | |
| Q6.2 | .5181 | 1.0000 | |
| Q6.3 | .4702 | .6602 | 1.0000 |

N of Cases = 382.0

Item-total Statistics

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Alpha if Item Deleted |
|---|---|---|---|---|---|
| Q6.1 | 8.0573 | 1.5424 | .5431 | .2976 | .7946 |
| Q6.2 | 7.6641 | 1.6493 | .6762 | .4913 | .6286 |
| Q6.3 | 7.4974 | 1.7859 | .6386 | .4583 | .6760 |

Reliability Coefficients 3 items

Alpha = .7753 Standardized item alpha = .7854

1. Q8.1 Equipment for preventive safety
2. Q8.2 Equipment for crisis safety

Correlation Matrix

| | Q8.1 | Q8.2 |
|---|---|---|

| | | |
|---|---|---|
| Q8.1 | 1.0000 | |
| Q8.2 | .5185 | 1.0000 |
| N of Cases = | 382.0 | |

**Item-total Statistics**

| | Scale Mean if Item Deleted | Scale Variance if Item Deleted | Corrected Item-Total Correlation | Squared Multiple Correlation | Alpha if Item Deleted |
|---|---|---|---|---|---|
| Q8.1 | 4.3021 | .4829 | .5185 | .2688 | . |
| Q8.2 | 4.1849 | .5741 | .5185 | .2688 | . |

**Reliability Coefficients** 2 items

**Alpha = .6812** **Standardized item alpha = .6829**

## EXPLORE

Case Processing Summary

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| Standardized Residual a. | 382 | 100.0% | 0 | .0% | 382 | 100.0% |
| Standardized Residual b. | 382 | 100.0% | 0 | .0% | 382 | 100.0% |

Tests of Normality

| | Kolmogorov-Smirnov[a] | | |
|---|---|---|---|
| | Statistic | df | Sig. |
| Standardized Residual a. | .043 | 382 | .200 |
| Standardized Residual b. | .053 | 382 | .200 |

a. Lilliefors Significance Correction

**Test of Homogeneity of Variance**

| Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|
| 1.691 | 15 | 346 | .051 |

| Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|
| 1.379 | 17 | 272 | .146 |

**Variable Entered/Removed[b]**

| Model | VIF | | | | | |
|---|---|---|---|---|---|---|
| | A | B | C | D | E | F |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Product Attributes** | **2.143** | **2.204** | **3.249** | **1.487** | **1.383** | **2.755** |
| **Demographic** | **1.999** | **1.697** | **1.412** | **2.213** | - | - |

## Hypothesis Testing

**Variables Entered/Removed** [b]

| Model | Variables Entered | Variables Removed | Method |
|---|---|---|---|
| 1 | Performance, Price, After-sale, Style, Consumption, Safety [a] | . | Enter |

a. All requested variables entered.

b. Dependent Variable: Car

Model Summary

| Model | R | R | Adjusted R | Std. Error of Estimat |
|---|---|---|---|---|
| 1 | .60 [a] | .36 | .35 | .2 |

**Model Summary** [b]

| **Model** | **Change Statistics** | | | | | **Durbin-Watson** |
|---|---|---|---|---|---|---|
| | **R Square Change** | **F Change** | **Df1** | **Df2** | **Sig. F Change** | |
| **1** | **.368** | **24.558** | **6** | **253** | **.000** | **.448** |

ANOVA[b]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 5.848 | 6 | .975 | 24.558 | .000[a] |
| | Residual | 10.041 | 253 | 3.969E-02 | | |
| | Total | 15.888 | 259 | | | |

a. Predictors: (Constant), Performance, Price, After-sale, Style, Comsumption, Safety

b. Dependent Variable: Car

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.937 | .162 | | 11.981 | .000 |
| | Performance | -5.422E-02 | .019 | -.211 | -2.878 | .004 |
| | Price | .205 | .027 | .565 | 7.615 | .000 |
| | After | -.121 | .030 | -.363 | -4.028 | .000 |
| | Style | 2.081E-02 | .017 | .076 | 1.241 | .216 |
| | Consumption | -.208 | .022 | -.547 | -9.315 | .000 |
| | Safety | -4.678E-02 | .023 | -.172 | -2.075 | .039 |

a. Dependent Variable:Car

**Collinearity Diagnostics [a]**

| Model | Dimension | Eigenvalue | Condition Index |
|---|---|---|---|
| 1 | 1 | 6.820 | 1.000 |
| | 2 | 7.975E-02 | 9.247 |
| | 3 | 5.397E-02 | 11.241 |
| | 4 | 2.059E-02 | 18.199 |
| | 5 | 1.272E-02 | 23.154 |
| | 6 | 9.735E-03 | 26.468 |
| | 7 | 3.370E-03 | 44.984 |

| | Minimum | Maximum | Mean | Std. Deviation | N |
|---|---|---|---|---|---|
| Predicted Value | .76 | 1.61 | 1.07 | .15 | 382 |
| Residual | -.50 | .79 | 1.03E-20 | .20 | 382 |
| Std. Predicted Valued | -2.032 | 3.59 | .000 | 1.000 | 382 |
| Std. Residual | -2.530 | 3.973 | .000 | .988 | 382 |

**Variables Entered/Removed[b]**

| Model | Variables Entered | Variables Removed | Method |
|---|---|---|---|
| 1 | Age, Gender, Income,Education[a] | . | Enter |

a. All requested variables entered.

b. Dependent Variable: Car

**Variables Entered/Removed[b]**

| Model | Variables Entered | Variables Removed | Method |
|---|---|---|---|
| 1 | Age, Gender, Income,Education[a] | . | Enter |

a. All requested variables entered.

b. Dependent Variable: Car

**Model Summary [b]**

| Model | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|
| | R Square Change | F Change | Df1 | Df2 | Sig. F Change | |
| 1 | .098 | 6.941 | 4 | 255 | .000 | .175 |

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .313[a] | .098 | .084 | .24 |

a.

**ANOVA[b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1.560 | 4 | .390 | 6.941 | .000[a] |
| | Residual | 14.328 | 255 | 5.619E-02 | | |
| | Total | 15.888 | 259 | | | |

a. Predictors: (Constant), Age, Gender, Income, Education

b. Dependent Variable: Car

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | .911 | .154 | | 5.895 | .000 |
| | Age | -1.417E-02 | .025 | -.048 | -.568 | .570 |
| | Gender | -4.562E-02 | .040 | -.089 | -1.144 | .253 |
| | Income | 7.759E-02 | .017 | .315 | 4.456 | .000 |
| | Education | 1.768E-02 | .029 | .054 | .605 | .545 |

a. Dependent Variable: Car

**Collinearity Diagnostics [a]**

| Model | Dimension | Eigenvalue | Condition Index |
|---|---|---|---|
| 1 | 1 | 4.664 | 1.000 |
| | 2 | .171 | 5.216 |
| | 3 | .118 | 6.290 |
| | 4 | 3.960E-02 | 10.853 |
| | 5 | 6.609E-03 | 26.567 |

| | Minimum | Maximum | Mean | Std. Deviation | N |
|---|---|---|---|---|---|
| Predicted Value | .92 | 1.20 | 1.07 | 7.76E-02 | 382 |
| Residual | -.20 | .92 | 8.92E-20 | .24 | 382 |
| Std. Predicted Valued | -1.896 | 1.736 | .000 | 1.000 | 382 |
| Std. Residual | -.844 | 3.894 | .000 | .992 | 382 |