FACTORS AFFECTING PEOPLE'S BEHAVIORS IN GARBAGE DISPOSAL IN MUANG DISTRICT RATCHABURI PROVINCE

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It might be difficult for local government officials to use this English version of my thesis due to the language barrier. However, I’ll be happy to provide detail information on the results of this thesis in Thai.

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FACTORS AFFECTING PEOPLE'S BEHAVIORS IN GARBAGE DISPOSAL IN MUANG DISTRICT, RATCHABURI PROVINCE

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ABSTRACT

This study was a survey research aimed to study people's behaviors in garbage disposal, factors affecting people's behaviors on garbage disposal, and problems and suggestions about garbage disposal in Ratchaburi Town Municipality. This survey research used a questionnaire for data collection from 375 people who live in Ratchaburi Town Municipality. Data analysis was done by using chi-square analysis.

Research results revealed that most of the sample group received information at the low level, had a high level of knowledge, a positive attitude, and a moderate level of behavior on garbage separation and disposal. The factors related to the behavior on garbage separation and disposal were occupation at a statistical significance of .05, and roles as member of certain groups, or organizations, knowledge, and attitude at statistical significance of .01.

Problems revealed from the study were that the garbage accumulated at rubbish bins so the garbage would produce a bad smell which annoyed people. Recommendations from the study are that there should be an increased number of garbage collectors and rubbish bins in order to get rid of the accumulated garbage. Moreover, the Ratchaburi Town Municipality should provide sufficient bags and bins, both for dry and wet garbage so that households are supported to properly separate and dispose of the garbage.

KEY WORDS: FACTORS / PEOPLE'S BEHAVIORS / GARBAGE DISPOSAL / MUANG DISTRICT / RATCHABURI PROVINCE

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ปัจจัยที่มีผลต่อพฤติกรรมการแยกทิ้งมูลฝอยของประชาชนในเขตเทศบาลเมืองราชบุรี อำเภอเมือง จังหวัดราชบุรี (FACTORS AFFECTING PEOPLE'S BEHAVIORS IN GARBAGE DISPOSAL IN MUANG DISTRICT, RATCHABURI PROVINCE)

ฐิราภรณ์ จันทรศิริ 4336974 SHED/M

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คณะกรรมการควบคุมวิทยานิพนธ์ : ดลพัฒน์ ยศธร, ค.ด. (พัฒนศึกษา), ทิพย์พรรณ นพวงศ์ ณ อยุธยา, M.A., C.A.S., สมศักดิ์ ส่งสัมพันธ์, M.P.A.

บทคัดย่อ

การวิจัยครั้งนี้ มีวัตถุประสงค์เพื่อศึกษาพฤติกรรมการแยกทิ้งมูลฝอยของประชาชนในเขตเทศบาลเมืองราชบุรี และศึกษาถึงปัจจัยที่มีผลต่อพฤติกรรมการแยกทิ้งมูลฝอยของประชาชนในเขตเทศบาลเมืองราชบุรี รวมทั้งศึกษาปัญหาและข้อเสนอแนะเกี่ยวกับการแยกทิ้งมูลฝอยของประชาชนในเขตเทศบาลเมืองราชบุรี อำเภอเมือง จังหวัดราชบุรี โดยใช้แบบสอบถามเป็นเครื่องมือในการเก็บรวบรวมข้อมูล จากประชาชนที่พักอาศัยในเขตเทศบาลเมืองราชบุรี จำนวน 375 คน วิเคราะห์ข้อมูลโดยใช้ค่าสถิติไค – สแควร์

ผลการวิจัยพบว่า ประชาชนส่วนใหญ่มีการรับรู้ข้อมูลข่าวสารในระดับต่ำ มีความรู้ในระดับสูง มีทัศนคติเชิงบวกต่อการแยกทิ้งมูลฝอยและมีพฤติกรรมการแยกทิ้งมูลฝอยในระดับปานกลาง ตัวแปรอาชีพ มีความสัมพันธ์กับพฤติกรรมการแยกทิ้งมูลฝอยของประชาชน อย่างมีนัยสำคัญทางสถิติที่ระดับ .05 และ บทบาทการเป็นสมาชิกกลุ่ม หรือ องค์กร ความรู้ และทัศนคติ มีความสัมพันธ์กับพฤติกรรมการแยกทิ้งมูลฝอยของประชาชน อย่างมีนัยสำคัญทางสถิติที่ระดับ .01

ปัญหาที่พบจากการวิจัยคือ มีมูลฝอยตกค้างตามจุดรองรับต่างๆ ทำให้เกิดกลิ่นเหม็นรบกวน และพบว่าถังรองรับมูลฝอยยังมีปริมาณไม่เพียงพอ จึงมีข้อเสนอแนะคือควรเพิ่มจำนวนเจ้าหน้าที่เก็บขนมูลฝอย และเทศบาลเมืองราชบุรีควรให้ความสำคัญในการจัดภาชนะสำหรับรองรับการคัดแยกมูลฝอย โดยจัดเตรียมให้เพียงพอกับครัวเรือนในเขตเทศบาลเมืองราชบุรี เช่น ถุงแยกประเภทขยะ ถังขยะ เพื่อให้ประชาชนแยกทิ้งมูลฝอยได้ถูกต้องเหมาะสมต่อไป

คำสำคัญ : ปัจจัย / พฤติกรรมของประชาชน / การแยกทิ้งมูลฝอย / เขตเทศบาลเมืองราชบุรี

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CHAPTER 1
INTRODUCTION

1.1 Rationale and Justification

At present in Thailand, the environmental problem has been an important problem. One of the major causes is the result of rapid population growth so it needs to unavoidably consume more natural resources in parallel with accepting the different foreign cultures and development of technologies for agricultural and industrial productions increasingly. These are the cause of materialism, subsequent behavior of over consumption more than their real needs, therefore it is followed by the increased amount of waste. Finally, the environmental problem has occurred continuously. As Preeda Yamcharoenwong (1989: 46-50) mentioned that if the waste was improperly collected and transported, it would cause the dirty and untidy, including the negative impact to ground and water resources.

Besides solving the problem of increased waste by improving the effectiveness of collecting, transporting and disposing; separating is an essential practical way to perform before disposal. The separation is the process of taking some part of waste to be reused, some to recycle for new production. Furthermore, the waste would decrease but it is minimized using the natural resources at the same time.

From the forecasting, it is expected that in the year 2007 and 2017, Thailand will have the potential waste to be brought to reuse about 25,490 and 32,395 tons/day respectively or about 43 percent of the total waste generation in those mentioned two years as presented in table 1 (Department of Pollution Control, 1998: 11).

Table 1 Amount of Potential Waste Generation Forecasting of Whole Country to be Brought to Reuse During 20 years (1997-2017)

Year (B.E.)	Amount of Waste (Tons/Days)	Amount of Potential Waste to Recycle (Tons/Days)
2545	50,817	21,971
2550	59,149	25,490
2555	67,306	28,942
2560	75,481	32,395

Sources: Department of Pollution Control, 1998.

Ratchaburi Province is a province that is a conjunction door of Bangkok to open to the south and the west part of the country. It is an area that has an expansion of industrial and economic aspects average of 7.96 percent/year. The industrial settlement has been established. It caused the expanding of communities in the Ratchaburi Town Municipality with total number of 44,281 people (Registrar Work, Ratchaburi Town Municipality, May 2002). The nature of town community, result of causing environmental problem, predominantly, the waste problem. The waste is generated 170.56 million tons / day of the total amount of waste in Ratchaburi Province (Report of Situation of Environmental Quality in the responsible area of Office of Hygiene and Environment Region 4, 1999: 58). Muang District was the area of the highest amount of waste generation. The majority of people came to town community because it was central business district; therefore the waste was about 58.2-60 tons per day (Cleanness Maintenance Work of business, May 2002). The Faculty of Environment and Natural Resources Studies, Mahidol University had forecasted the amount of waste based on the number of population in Ratchaburi Province that there is a rate of waste generation 0.6-0.8 kilogram/people (Report for the arrangement of the action plan and prioritization of invest for environmental problem solving, in Ratchaburi Province, 1996: 1-4), and based on the aforementioned data, the amount of forecasting waste in the Town Municipality, Ratchaburi Province during the B.E. 2538-2557 was as presented in table 2.

Table 2 Amount of Waste Forecasting in Town Municipality, Ratchaburi Province

Year (B.E.)	Amount of Waste (Tons/Days)	Amount of Waste (Tons/Year)
2538	39.86	14,547
2547	41.93	15,205
2557	44.06	16,083

Sources: Report for the arrangement of the action plan and prioritization of invest for environmental problem solving, in Ratchaburi Province, 1996: 93-109.

At present, the amount of waste in the municipal boundary is about 58.2- 60 tons/day that is extremely higher than the forecasting amount, and the municipality can not collect the whole waste so the certain amount of waste has been accumulated in various places. For the waste management of municipality, there were 25 trucks for waste collection and disposal, and 178 collectors and cleaners. The landfill method has been used for waste disposal. One unavoidable problem of waste management of municipality is landfill because other municipalities also disposed the waste, and garbage at the same landfill. In the future, the municipality will have no place for waste dumping. Therefore, every people must assist to solve this problem by participation in the campaign of decreasing the amount of waste, and searching the mean to bring the waste to be reused, including looking for the mean to dispose the waste safely because the municipal unit would not be able to operate effectively without people participation in the communities. They should separate the waste before throwing into the bins provided by the municipality. The waste problem has been occurred and affected the people directly. So the sustainable waste management would not be searching and using the new and modern technology. One of the best mean of management should start with the people themselves because each of them was the waste generator. For that reason, it is the responsibility of every one to solve this problem by trying to decrease the amount of waste. Selecting the products that generated the minimized waste is an effective way of decreasing the amount of waste,

including searching for the mean to recycle the waste, it can be done by separating the waste inside their houses before disposing to the municipal receptacle.

From all mentioned above, the researcher wanted to study factors that affected people behaviors on garbage separating in Muang District, Ratchaburi Province, as a case study since within the boundary of town municipality there has been waste generated at the most. The problem of garbage management will still be existed if the people in the area would not change their behaviors on garbage disposal by starting to separate waste in the household. In the future, garbage problem will be more serious certainly.

1.2 Research Objectives

In this research, the researcher set the objectives to study the following:

2.1 People's behaviors on garbage disposal in Ratchaburi Town Municipality, Muang District, Ratchaburi Province.

2.2 Factors affecting people's behaviors on garbage disposal in Ratchaburi Town Municipality, Muang District, Ratchaburi Province.

2.3 Problems and Recommendations about garbage disposal in Ratchaburi Town Municipality, Muang District, Ratchaburi Province.

1.3 Scope of the Research

This research aimed to study only behaviors of heads of household or spouse or any residents who were older than 15 years old and literate in the household in Ratchaburi Town Municipality, Muang District, Ratchaburi Province.

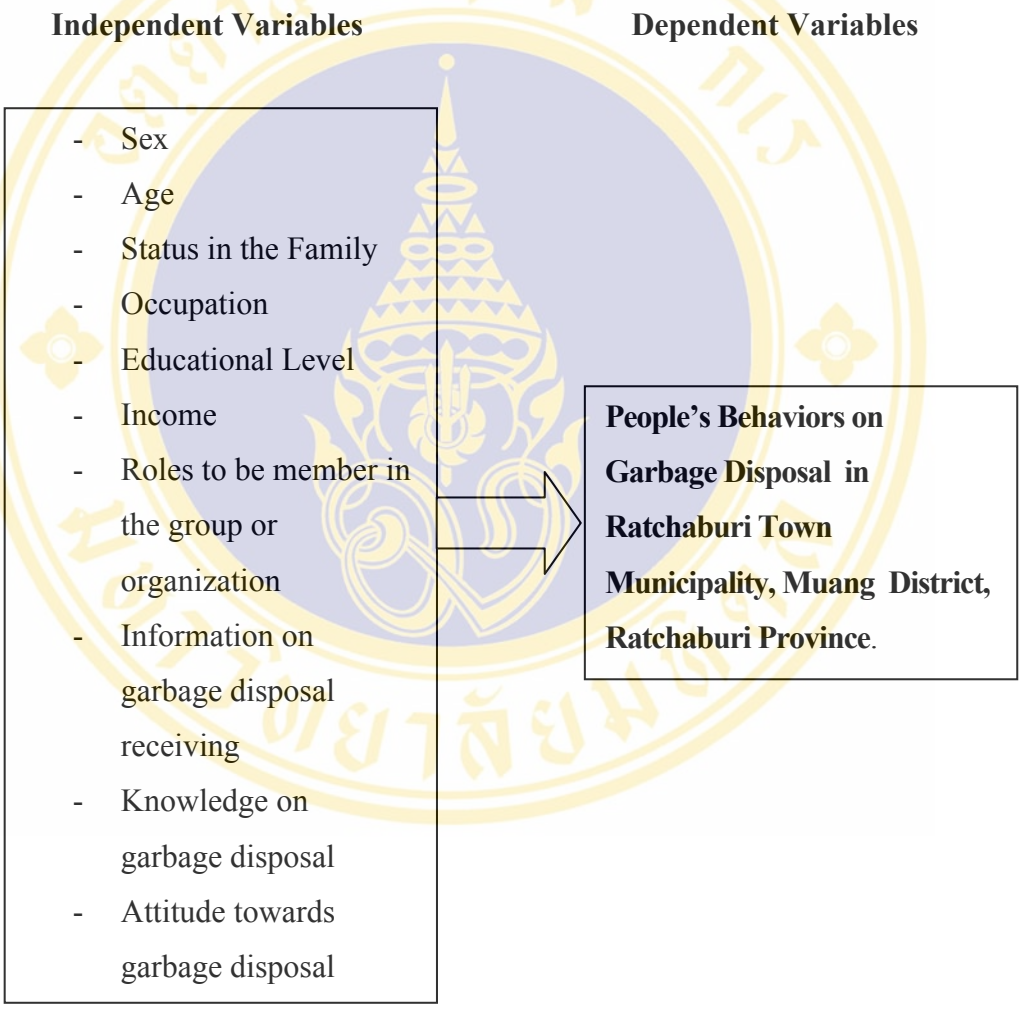
1.4 Research Problems

4.1 Which factors affected people's behaviors on garbage disposal in Ratchaburi Town Municipality, Muang District, Ratchaburi Province?

4.2 What were the people's behaviors on garbage disposal in Ratchaburi Town Municipality, Muang District, Ratchaburi Province ?

4.3 What were the problems on garbage disposal of people in Ratchaburi Town Municipality, Muang District, Ratchaburi Province?

1.5 Conceptual Framework



1.6 Research Hypothesis

The garbage disposal behaviors of people in Ratchburi Town Municipality, Muang District, Ratchaburi Province had association to the studied variables at 0.05 level of significance.

1.7 Research Operational Definitions

1.7.1 Behavior meant the expressions of feeling, thinking, and decision making of a person to act on any activities.

1.7.2 Garbage disposal separation meant to classify or categorize the waste into different types as wet waste, dried waste, and hazardous waste before throwing into the respective garbage bins.

1.7.3 Garbage disposal separation behavior meant an action or expression of feeling, thinking and decision of person to classify or group the waste into different type before throwing an appropriate bin.

1.7.4 People meant the persons who lived in Ratchaburi Town Municipality, Muang District, Ratchaburi Province whose houses were located on the first and the third route of garbage collection and each person was drawn as a sample for data collection. He or she could be a head of household or one's couples who was a resident in the household in Ratchaburi Town Municipality, Muang District, Ratchaburi Province, older than 15 years old, and able to read/write for the purpose of giving right information.

1.7.5 Information on garbage disposal receiving meant to get the information on garbage separation before disposal either by suggestion of people, governmental agencies, document distributions, or mass communication such as television, radio, and newspapers, including the frequency of having access to such sources.

1.7.6 Attitude towards garbage separation and disposal meant the feeling or opinion of people towards garbage separation and disposal.

1.8 Research Contributions

1.8.1 To reveal the people behaviors on garbage separation and disposal in Ratchaburi Town Municipality, Muang District, Ratchaburi Province.

1.8.2 To know factors affected people's behaviors on garbage disposal in Ratchaburi Town Municipality, Muang District, Ratchaburi Province.

1.8.3 To offer some suggestions to the involved officials for consideration as guidelines to promote proper behaviors on garbage separation and disposal.

CHAPTER 2
LITERATURE REVIEW

This research was to study about the behavior and factors affecting people's behaviors on garbage disposal in Muang District, Ratchaburi Province. The researcher had studied the concepts, theories, and related research to be the fundament and guideline for research implementation. The content was divided into as follows:

2.1 Concepts of Behavior
2.2 Concepts of Solid Waste Separation and Disposal
2.3 Basic Information of Muang Municipality, Ratchaburi Province
2.4 Related Literatures

2.1 Concepts of Behavior

2.1.1 Meaning of Behavior

Longman dictionary (Longman 1984: 90) gave the definition of behavior that was an action or response to the action of individual psychology and it was reaction to response to the stimulants both internal and external stimulant. Moreover, it was activities and actions with observable aims or was different activities that were considered or were without consciousness.

The Dictionary of Royal Academy Institute, (1981: 33), gave the definition of behavior that meant an action that obtained after birth. The person would have such behavior because he has ever associated or interacted with other humans before. Therefore, the human beings behavior differed from the innate behavior. Inborn trait is common in the other living creatures, it was relevant to Chuda Jitpitak (1983: 2), believed that behaviors or personal action, it did not meant only the things that appeared external but it included the thing in mind that outside people could not

directly notice such as value that used to evaluate things, attitude towards different things, opinion, belief, taste, and situation of mind that was accepted as personality of that person.

The researcher thought that the behavior meant the expression of feeling, and decision making of people to do any thing.

2.1.2 Type of Behavior

Aree Panmanee (1991: 15-16), divided type of behavior into as follows:

1. Overt Behavior is an external obvious and observed behavior. There are two types as naked eye observed behavior such as walking, moving, and behavior needed tool for observation such as heart beating, and blood pressures.

2. Covert Behavior is unable to see with naked eye but it needed tools to examine the behavior, such as internal feeling, perception, memory, and thinking.

2.1.3 Components of Behavior

Prapapen Suwan (1983: 15-17) mentioned theories of Benjamin S. Bloom, that behavior had 3 components as follows:

1) Cognitive domain, this behavior related to perception, knowing and memory of facts, including, development of capability and intellectual skill, intell, judgement for decision making. The behavior in this aspect composed of ability in different levels that were knowledge, comprehension, knowledge application, analysis, synthesis and evaluation.

2) Affective Domain, this behavior related to attitude, value, and likeness that meant interest, opinion, feeling, paying attention, value added, accepted to improve or change the value held. This behavior is occurred in mind, and it is difficult to explain. The behavior in this aspect composed of 5 steps as follows: receiving or attending, responding, valuing, organizing, and expressing character by a value.

3) Psychomotor Domain is behavior that uses the physical ability to express, including the practices or expressive behavior and observed behavior in each

situation. This expressive behavior is the last step that is the target of education, and it needs the different levels of behavior mentioned above to be complements (cognitive domain and affective domain). This behavioral aspect needs time and different steps of decision making.

From the aforementioned studies, it can be summarized that the main component of behavior that affected to human being to have different expression of each individual that are knowledge, attitude, and practices. The part concerned knowledge, there are different components for decision making before acting any action. To have knowledge, it needs to have understanding to bring knowledge to use, analyze, synthesize, and in parallel with evaluation. In the part that connected to attitude, and value, the perceiving, responding, valuing, regulating, and value held expression as a main component when there are knowledge and attitude to be conducted for practices to show to other people to perceive and observe. These knowledge and attitude need not to have relationship to each other, and it still to practices as well.

2.1.4 Influence on Behaviors

Prapapen Suwan (1983:6) defined behavior or action of human is resulted from attitude, social norm and expected results to be obtained after behavior.

Chuda Jitpitak (1983: 58-59), stated that the things define behaviors of human being can be divided into two types as follows:

1) Characteristics of personal habits that are belief, value, attitude, and personality.

2) Other social processes that are stimulus object, and situations, such as information, an urge or suggestion from informant.

From the mentioned above, the research concluded that factors effecting human behavior that was used in this research, were knowledge from education, information receiving, and attitude towards the waste separation and disposal.

2.1.5 Measurement of Behavior

Somchit Supantut (cited in Mancharat Wiratchawong, 1999: 31) stated two the methods of behavioral study that are as follows:

1) To study the behavior directly, it can be divided into two means that are overt observation and natural observation or disguised observation. Making the observation whether it was overt observation or disguised observation, the observer must be exhaustive, and it must be done systemically, and recorded the observed behavior. Moreover, the observer must not have an inclination to observed person so the results would be valid and reliable.

2) To study the behavior indirectly, it can be divided into different means as follows:

2.1) Interviewing is a method of study that the learner must question the person or group of persons; it can be done by direct facing asking or having the middleman to ask for.

2.2) Using the questionnaire, it is a method that is proper to study a large amount of people and use for the literate people or asking the people who was in remote area and high distribution.

2.3) Experimentation is a behavioral study, the studied people will be in the controlled situation according to the requirement of scholar. This method is very useful in the aspect of medical behavioral study.

2.4) Recording or noting by oneself, it may be daily memo or study each type of behavior.

From the above studies, it can be concluded that human behavior have both internal and external behaviors. For the internal behavior, it is unable to observe but it must be measured indirectly such as interviewing, using the questionnaire, testing, and recording. For the external behavior, it can be directly observed such as overt observation and natural observation.

For this study, the researcher studied how the behavior of garbage disposal was and what factors affecting to this behavior by using questionnaire and observation together as the tools for this study.

2.2 Concepts of Solid Waste Separation and Disposal

2.2.1 Meaning of Solid Waste

According to Act of Public Health B.E. 2535, on solid waste or garbage disposal, gave the meaning of solid waste meant paper scrap, cloth scrap, food scrap, product scrap ashes, dung, dead animal, and other material scrap wiped from the household, building, streets, sidewalk, alleys, market, pet feeding place, industrial factory, and others.

Jamroon Pasamuth (1994: 137) gave meaning of solid waste as follows: Solid waste meant the hard object that may be decomposed or not, such as wet waste, dried waste, ashes, dead animal, other material scrap wiped from the household, building, streets, sidewalk, alleys, market, pet feeding place, industrial factory, and others , but the human beings secretion and excretion were not included.

Homer A. Neal and Schubel, J.R. (1987: 218) gave the meaning of solid waste as objects that were thrown out from household, work place, and industry, such as food scrap, remnants, materials, utilized thing, debris from construction , demolished building, unwanted cars, and wastewater sediment for instance.

Besides, Office of the National Environment Board (1981: 136-137) gave the meaning of various waste as follows:

Solid waste meant everything that the people did not want and threw away. Most of them were the hard object that may be decomposed or not, including ashes, dead animal, dust, food scrap, cloth scrap, paper scrap, and material scrap wiped from the household, building, streets, sidewalk, alleys, market, pet feeding place, industrial factory, and others.

Wet waste meant the food, scrap, vegetable scrap, and fruit scrap, meat scraps, discard remained food from cooking or eating. Most of them came from household, cafeteria, food shop, restaurants, and fresh markets. Organic material easily decomposed Therefore if it was left for long time, so it caused bad smell annoyance. Generally, the wet waste had the moisture about 40-70% of total waste.

Dried waste meant the solid waste could not be easily fermented but it may be flammable or inflammable materials such as paper scrap, cloth scrap, glass scrap, tin, bottle, glass, lumber, rubbers, metals, and dust.

Hazardous waste meant the wastes that cause the harmful to human hygiene, animals, and the environmental impacts They are waste from industrial factories such as toxic waste, infectious waste from hospital such as infected waste from patients, injection needle, cotton, radioactive waste, and corrosive waste. and the waste from household and different places such as a dry cell for a flashlight, battery, lamps, sprayed container, insecticide tin, lubricant oil, and sharp objects. This type of waste needs the special care for disposal. Most of these wastes are from industries, hospitals, and others institutes, and some from residential source.

Decomposable waste meant the organic compound that was able to decompose by microorganism through the biochemical reaction such as food scrap, and fruit scraps.

Non-Decomposable Waste meant the inorganic or organic compound that was unable to decompose by microorganism with the biochemical reaction such as metal scrap, plastic bag etc.

Burnable Waste meant the waste that was able to be burned such as paper scrap, and lumbers.

From aforementioned above, the researcher concluded the meaning of solid waste was employed in this study that were garbage or materials that people did not want and threw away from houses, school, work places, market, and other sources such as paper scrap, and material scrap from wrapping, It can be divided into wet waste, dried waste, and hazardous waste.

2.2.2 Factors Affecting the Amount and Characteristic of Solid Waste.

Suthin U-Suk (1988: 56) explained that generally, the amount and components of waste would be much or less, it would depend on the followings:

1. Geographic location or local characteristics such as the rural area the fresh waste that composed of food scrap, and plant scrap may be lesser because it was used for feeding the animal.

2. Season of the year, for instance, the season with the high produces of fruits, there would be a lot of fruit peels in the waste so the waste would be high moistures as well.

3. Economic situation and income, in the country with good economic situation, it would have wastes from wrapping, as well as the population who had the high income often produce the large amount of waste due to their potential of higher purchasing power than the general population.

4. The population trait in the community such as consumed trait, if they consumed more vegetables and fruit than meats, the waste would produce more. The trait of purchasing the products with the modern packaging such as using foam or plastic so the waste would compose of foam and plastic more as well.

5. The density of population, if there was high density of population, therefore, the amount of waste would be high, as well as the solid waste of old furniture .

6. Life style and attitude of living, it depended on level of people's awareness or common sense of about the natural resources conservation.

7. Law or regulation issued, such as setting the boundary of service of waste management, setting the service charge, enforcing the law, and serious punishment for the violation, and setting the regulation of practice for waste management in household and community.

2.2.3 Problem Occurred from Garbage

Pichit Sakulpram, (1983: 197-198) proposed the problems occurred in the community that was no proper and corrected garbage disposal and transportation. They were as follows:

1. Situation of pollution, the garbage was an important cause of Polluted soil, water, and air pollution. Several diseases and toxic substances could contaminate the soil and water.

2. Breeding place, the garbage with high moisture and organic compound as microorganism food, it would be the good sources of breeding germ and disease carrier.

3. Health risk, it caused by the accumulation of garbage in the community, so it became the sources of breeding place for microorganism, therefore the people had high risk of illness.

4. Economic loss, when the people were sick, so they could not work and they must pay more for curing.

5. Non-esthetics, if the garbage could not be collected completely, the problem of dirty and others would occur. It implied that there was less development and lack of community culture. The most importance was the community was non-esthetics and untidy.

6. Nuisances, the garbage might cause the different nuisances, particularly, bad smell and heavy dust.

2.2.4 Separation and Disposal of Garbage

Waste separating meant to separate and classify the waste into groups so that some were able to reuse, or recycle and the other might be easily managed or disposed.

Supanee Thongchai (2000: 8) explained the meaning of waste separating as follows:

The waste separating meant to collect the same type of waste together, and to classify by grouping in order to be convenient management and collection.

In this study, the meanings of separation and disposal were concluded as follows:

Waste separation meant to separate each type of waste into group in order to be convenient for reuse or disposal.

Separate waste disposal meant to separate and classify each type of waste to different groups, such as wet waste, dried waste, and hazardous waste before dispose it into the bin.

The feature of waste separation in Thailand at the moment, there has not been implemented systematically. Majority was done through sequential transferring of waste purchase by starting at the sources of waste generation to the last step of disposal. Nevertheless, the waste separating in this step was separation of

some type of waste that was able to use for sale only. Therefore, the majority of waste separated was the good quality.

Waste separation might be classified in to 6 types as follows (U.S.EPA,1989 : 62):

1) Paper such as old newspaper, pasteboard paper, and good quality paper (Computer printing paper), other papers such as pulpboard paper, and pasteboard paper for instance.

2) Aluminum such as aluminum tin, aluminum window frame

3) Glass such as clear bottle, brown bottle, and green bottle for instance.

4) Iron and metals such as thick iron, thin iron, abandoned vehicles, and car engine for instance.

5) Plastic such as bottle for soft drink (Polyethylene , PET).

6) Battery such as car and motor cycle battery, and a dry cell for a flashlight.

Besides, the Department of Pollution Control (1996: 2-63) summarized the type of materials that can be reused and recycled from survey as follows:

1) Paper type

2) Glass type

3) Iron type that were able to reuse were piece of iron thread, an iron of joint of sugarcane styles, pipe iron, iron ware, and iron package, industrial iron scraps, car body, and the house-hold usages.

4) Aluminum type composed of aluminum scrap from

construction, electrical equipment, electrical wire, scrap of aluminum from the household ware, aluminum tin, aluminum equipment, industrial aluminum used.

5) Plastic type, often in form of water bottle, lubricant oil bottle, and vegetable oil for instance.

The initial phase of waste separation, it may be started easily by letting the community separate the old newspaper only from other wastes or let them use two bin for separation. One for waste of scrap of paper, glass, metals, and others that can be reused, and the other for the waste that was unable to reuse such as food scrap, and scrap of materials (U.S. EPA ,1989 : 66).

Homer A. Neal and Schubel, J.R. (1987: 131) mentioned to the mean of having cooperation from community, it must composed of 3 components as follows:

1. Cause the less complexity of implementation or practice to community.
2. Try to convince and persuade the community with different mean to cooperate with project.
3. Explain declare to community to understand about what benefit that household and community would receive.

Therefore, the step of implementation for practice to get cooperation from community on waste separation, it composed of as follows:

1. Let the community (household) be the responsible person or have the feeling of project owner that they must care for success or failure of the projects.
2. Arrange the proper collecting and transporting system, in particular waste collection from household.
3. Provide sufficient bins or waste receptacle for separation to service to household and community thoroughly.
4. Collect the separated waste everyday, the same as other general waste.
5. Use different methods of public relations to make the community understand the project and its results.

Summarization, garbage disposal separation behavior in this research, it meant an action or expression of feeling, thinking, and decision of person to classify or group the waste into different type before throwing into an appropriate bin.

2.3 Basic Information of Muang Municipality, Ratchaburi Province

2.3.1 Boundary of Ratchaburi Town Municipality (Development plan of Ratchaburi Town Municipality, Medium- Range of 5 years, 2000: 95).

Ratchaburi Town Municipality with the area of about 8.7 kilometer square, covers the Nha-Muang District, and it is about 100 kilometers from Bangkok by the car trail. The connected boundary was as follows:

North connects to Mae-Klong River, Lumdin District
South connects to Don-Tako District
East connects to Ban-Rai District
West connects to Jedeehuk District

2.3.2 Land use, at present it can be divided into 7 areas as follows:

1. Commercial area, the important business area of the city, most of them would be crowded at the river bank, Ammarin road, and Kraipetch road, besides it appears at the both sides of Srisuriwong road, Montreesuriwong road, Kathathorn road, and Ratyindee road. It is in the styles of commercial block building, and the service areas.

2) Residential areas, it generally distributes in every area of city. The high density will be located at Mae-klong River bank, and continuous expanding along the various roads within the community such as railway road, Srisuriwong road, Montreesuriwong road, Kathathorn road, and Ratyindee road.

3) Industrial area, it is widely distributed. Mainly, it is a small industrial such as lathe house, car repair, and engine fitting, and metal repair, and located at the high way number 4, and at the north of community that started at the southern railway and southern area of the Kaengchan foot hill on the way to Pak-To District. The big industry such as earthen jar and earthenware located at Petchakasem road to Khao-Ngu hill.

4) Governmental Offices, the various important places such as Provincial Town Hall, Ratchaburi District Hall, Central Stadium Region 7, Office of

Education Region 5, and Center of Public Health Office at the Region level, and different work units. Most of these located on main street such as Somboomkul street, Saupa street, and Srisuriwong street.

5) Religion places, composed of Buddhist temples, Christ church, Islamic mosque, Chinese shrine, and city shrine. These buildings distribute at the communities.

6) Educational institute, composed of kindergarten school, primary school, secondary school of both government and private, including, college. These institutes distribute at the Srisuriwong road, Montreesuriwong road, and Kathathorn road.

7) Agricultural area, most of them distribute surrounding the community. There are planting, and livestock such as cow, pig, and chicken but it is not much.

2.3.3 Amount of Population in Town Municipality, Ratchaburi Province

The amount of the population in Town Municipality, Ratchaburi Province shows in table 3.

Table 3 Number of Population Registration and Household in Town Municipality, Ratchaburi Province

Year (B.E.)	Number of Population	Number of Household
2539	47,415	14,353
2540	47,137	14.7652
2542	46,094	12,810
2543	44,385	15,231
2544	44,302	14,531
2545	44281	13,059

Sources: Registration Work, Town Municipality, Ratchaburi Province.

2.3.4 Situation of Solid Waste Problem in Ratchaburi Town Municipality

Ratchaburi Province has different important natural resources in term of important minerals and economic value. There are different water resources for consumption of people, thoroughly, agricultural use. At present, there are the expansion of economic aspect and shelter of population rapidly so it has caused city lack of scenic beauty and it is facing with pollution problem, particularly, in the aspect of solid waste, and wastewater drainage to Mae-Klong River. The waste is generated about 500 cubic meters/day but the municipality is able to collect 450 cubic meters/day so it left 50 cubic meters/day to accumulate, besides it was found that some part of waste was dumped into the river, and sewage pipe. These cause the bad smell, and breeding place of various diseases vectors. The place has been used for waste disposal covers about 10 rais, and it belonged to private sector. The distance from municipality about 15 kilometers, it locates at Hin-kong Subdistrict, Muang District, Ratchaburi Province. This are shared with other work units so it is not enough for waste generation. Landfill was used for waste disposal.

Ratchaburi Town Municipality is planning to buy the land not less than 150 rais for waste dumping by using the municipal budget, and there are 178 workers for waste collection, and 25 waste tucks. Nevertheless, the economic expansion, there is increasing of consumption so the waste will increase as well. Moreover, the people are still lack of awareness since it lacks of campaign for awareness raising.

2.4 Related Literatures

Wipapen Jiasakul (1993: 121-122) on “Solid Waste Management Behavior of Population in the Middle Zone of Bangkok Metropolis,” with the objectives to study the behavior of solid waste management of population living in the middle zone of Bangkok Metropolis and to study the relationship between variables of education, income, type of accommodations, occupation, knowledge about solid waste, perception on solution of solid waste problem and behavior on solid waste management. The results showed that the different income, occupation, type of accommodation, the behavior on solid waste littering, population with high level of

education had a better behavior on solid waste littering, than those of lower level of education at the level of statistical significance of 0.05. The different income, occupation had no significant level in better behavior on solid waste littering.

Pawee Jampathong (1995 : 53-56) studied on topic of "Socio-Psychological Factors Affecting to Behaviors of People on Solid Waste Separation in Bangkok Metropolis" by having the objectives of the study to find out the socio-psychological factors affecting to behaviors of people on solid waste separation in Bangkok Metropolis. The populations in this research were people who work in Dusit and Pratoomwan Districts. Sample group of 400 people was drawn by simple random. The finding reveal that the sample group had improper behaviors in separating solid waste, due to the influence of what they perceived from Bangkok Metropolitan officers who did not separate the solid waste properly. It was also found that the purchasing behavior, the professional worker and the news perception from television had statistically significant affected to behavior of solid waste separation at the level 0.05. The recommendations from the research shows that the Bangkok Municipality should improve solid waste collecting service by giving the Bangkok Metropolitan officers knowledge on solid waste separation. In additions, the public relation, campaign, and continuous evaluation must be made by appropriate strategy and psychological approach to help people develop right behavior for solid waste separation

Mancharat Wiratchwong (1999: 112-136) studied on the topic of "Evaluation of the Waste Separation and Recycling Project of Phanatnikhom Municipality, Chonburi Province". The objectives of this study were to assess the local population's knowledge, attitude, and behavior concerning waste separation for recycling and identify the quality of waste, which was recycled for monetary gain in project. The research also aimed to study the context, input factors and operating process of this project. Factors affecting to knowledge, attitude, and behavior of population samples in the project area were also studied by using CIPP (Context, Input, Process, Product) Model for overall project evaluation. Research methodology employed both qualitative and quantitative approaches covering 4 groups 248

residents of number 1 to number 6 community sections under the project area in psychological, 6 project officers, 12 community leaders, and 2 Sarleng-the tricycle street venders who specifically buy waste. The findings were as follows: 1) the existing situation (context) of Phanatnikhom Municipality area provided favorable potential for the project; 2) the input factors, particularly the budget and equipment required improvement; 3) the operating procedure were up to the standard of administrative criteria; 4) the product or output of the project as presented by knowledge, attitude and behavior of the studied community people under the project area indicated waste separation knowledge at middle level, attitude at good level, and behavior at middle level. From the statistical test, it showed that the information receiving had statistically significant affected to knowledge on solid waste separation, information receiving and knowledge affected to attitude and behavior of solid waste separation at the level 0.05, including the occupation, net income, information receiving and knowledge also affected to behavior at the same significant level. Recommendation from the study indicated that Phanatnikhom Municipality should make continuously public relation. There was inadequate number of receptacle for waste separation so the Municipality should increase the budget to support for solving this problem.

Rabiab Chanchang (1997: Abstract), researched on the topic of “Factor Related to Waste Disposal Behaviors of Mathayomsuksa Three Students in Expanding Basic Education School of Region 1” with the objective to discover out some factors related to students’ waste disposal behaviors. The sample group consisted of 373 Mathayomsuksa three students. The findings showed that the factors that related to their waste disposal behaviors were attitude toward waste disposal behaviors in the public place by dropping out the waste bin at home and school at statistically significant level of 0.05. The frequency of information receiving, area of residence, and sex were cooperated to explain the behavior change with 31.4 percent at statistically significant level of 0.001. Based on the findings, it was recommended that the education agencies should promote environmental education programmes to help develop proper waste disposal behaviors among Mathayomsuksa Three students. Particularly, the male students who lived in the municipal area should be emphasized.

Moreover, the improper or unhygienic waste disposal behaviors in school should have the surveillance and prohibition the behavior of disposal waste out of the bin. In addition, cooperation between students' parents and teachers should be undertaken to improve the waste disposal behaviors of students.

Nantawan Intachat (2000: Abstract), studied on "Factors Relating to the Decision of Urban Residents to Purchase "Green Product": A Case study of an urban Community, Muang District, Nakon Ratchasima Province with the objectives to examine some factors in consumers' decisions regarding the purchasing of green products. The results of the research revealed that the factor influencing the purchase of green products were sex, marital status, occupation, education, and income.

Supanee Thongchai (2000: 108-127), researched on "Study and Evaluation of Municipal Solid Waste Separation Promotion Program by Using Co-operation between Students and Solid Waste Buy-Back Center in the School of Chonburi Municipality" with purpose to evaluate the knowledge of four groups of household solid waste separation: glass, paper, plastic and metal, by using co-operation between students and the solid waste buy-back center in school. The target population of study was all primary education level, Prathom 6, of Intapanya Municipal School in Chonburi Province. Pretest was done with 125 students and a brochure was issued for student to use in the Solid Waste Separation Promotion; it was found that 21.54 percent of student had knowledge on waste separation. Then the posttest was done, the 120 sample was returned it was found that 21.22 percent of student had knowledge on waste separation, which was decreased when, compare to the pretest. The sample group that deposit the waste at the buy-back center in the school were able to separate 4 group of solid waste into 4 types as glass, paper, plastic and metal correctly. So it resulted to reduce the waste accumulation in the municipality. The recommendation from the study were : it should hold the promotion program on solid waste separation knowledge, support establishing the buy-back center in the school permanently, and the municipality should allocate some budget for running of school buy-back center.

Ubol Chanpet (2000: 114-115), studied on "Readiness of the Tambon Administrative Organizational Members to Access the Environmental Aspects of The Healthy Cities Project In Ratchaburi Province," with the objectives to study the preparedness of the TAO's to develop the environmental aspects of the Healthy Cities project, considering the readiness of members of the TAO's with respect to knowledge, attitude and public action, compare the knowledge, attitude and public action of members of the TAO's in continuing work on the environmental aspects of the Healthy Cities project in Ratchaburi Province, and accompanying this further variation are age, marital status, education, occupation, monthly family income, the length of time living in the local area and membership of groups or organizations in the local organizations., study the relations between knowledge, attitude and public action of TAO members in work on the environmental aspects of the Healthy Cities project in Ratchaburi Province, the results reveal that Differing levels of education have an effect, producing a difference in knowledge. It has a statistical significance of 0.05. However it does not have an effect on attitude or public action. This may result form members of the TAO's with higher education levels acquiring information more easily. However members of the TAO's have a love and attachment to the local area, want to give the local area good environmental conditions and this combines with the similarity of their role in a position of authority with in the local area. The variation in income produces a difference in knowledge and attitude with a statistical significance of 0.05. However it does not create a variation in public action. This may result from people with high income having the opportunity to search for knowledge and consider various information to a greater degree, hence the difference in knowledge and attitude, but members duty in the performance of public responsibilities is not different.

Em-On Kittironakornkul (2000: Abstract), studied on the topic "Knowledge and Practices on How to Separte Solid Waste among Prathomsuksa Six Students in School in the Bangkok Metropolis: Bangkapi District" with the purpose to study the level of Prathomsuksa Six students' knowledge and practices on the separation of solid waste. The relationship between selected variable factors and knowledge and practices, as well as the correlation between Prathomsuksa Six students were

investigated. The subject of this study were 320 students who studied at Prathomsuksa Six grade from 10 primary schools in Bangkapi District. Results of the study were as follows: Most of the student had moderate level of knowledge on waste separation of solid waste, and the level of knowledge of student on the separation of solid waste was related to father's occupation, mother's occupation, grade point average and participation in environmental activities at 0.05 level of significance; most of these students had some practical knowledge on the separation of solid waste at moderate level, and their practical knowledge was related to participation in environmental activities at 0.05 level of significance; the correlation between knowledge and practices were statistically significant at 0.01 level. The recommendation of this study were that the schools or related work units should promote the students to participate in environmental conservation activities, and it should improve the knowledge content about waste disposal and waste problems in the existing curriculum, moreover, the related media production, public relation, and campaign should be provided for the student in order to accelerate the students' participation among sixth grade students.

Gochakorn Anucha, (1997: Abstract), researched on "Study on Survey of Knowledge and Attitude Pertaining to Domestic Waste Separation before Disposal: Case Study of Tambon Administrative Organization (TAO) Member in Nakhon Pathom Province," the results found that 52.50% of TAO members had knowledge concerning the material sciences lower than the criteria, but 79.25% of them had attitude pertaining to domestic waste separation before disposal higher than the criteria. The results indicated that the relationship between knowledge concerning the material sciences and attitude pertaining to domestic waste separation before disposal at the level of statistical significance of 0.05.

Jitti Rodbangyang, (1997: Abstract) studied on "The Acceptance of Solid Waste Separation by Wives of Police Officers in Bangkok Metropolis: A Case Study of the Central Police Flats," with the purpose to explore the levels of adoption of solid waste separation and the factors which affected to the separation of solid waste by wives of police officers in Bangkok Metropolis. The research results indicated that the adoption of solid waste separation was at the moderate level. The factors affected to

acceptance of solid waste separation by wives of police officers in Bangkok Metropolis at the level of statistical significance of 0.05, Occupation, educational level, knowledge of solid waste problem and solid waste separation, belief and values of solid waste disposal affected on the acceptance of sample group at the level of statistical significance of 0.001. The results of Multiple Classification Analysis showed that the sample group members consisting of those who were civil service officers who graduated upper secondary education or vocational education level, and high vocational education level whose cooking 4 times or more, had experience on solid waste problem at low level, had a high level of information reclining on solid waste separation, had a low level of knowledge of solid waste problem and solid waste separation, and awareness on problem of environment at high level was the group with more acceptance more than other groups.

Chalida Thanomwong, (1994: Abstract) studied on "A study of Garbage and Nightsoil Disposal Behavior of Raft Proprietor and Tourists in Amphur Muang Kanchanaburi Province," with the objectives to study behavior and factors influencing actual garbage and night soils disposal behavior of raft proprietor and tourists staying on the raft moored on the Mae Khlong River in Raft Proprietor and Tourists and suggest solutions encouraging them to correct garbage and night soils disposal behavior. The results of researches indicated that the variables which most influenced the waste disposal behavior was knowledge on garbage and night soils disposal.

The results of study of above concepts, theories, and related researches about the factors affecting to the waste separation behavior of people in town municipality, Ratchaburi Province, it was found that there were some factors such as educational level, information receiving, and knowledge concerning waste separation, for instance had effected on waste separation and disposal behavior. The researcher had brought aforementioned concepts, theories, and related researches to be a guideline for questionnaire construction.

CHAPTER 3
RESEARCH METHODOLOGY

The research entitled factors affecting people's behaviors on garbage disposal in Ratchaburi Town Municipality, Muang District, Ratchaburi Province. It was a survey research aimed at the people's behaviors on garbage disposal in Ratchaburi Town Municipality, Muang District, Ratchaburi Province; and factors affected people behaviors on garbage disposal in Ratchaburi Town Municipality, Muang District, Ratchaburi Province.

The researcher used a survey research collected the data by using the questionnaire as an instrument. Topics were presented as follows:

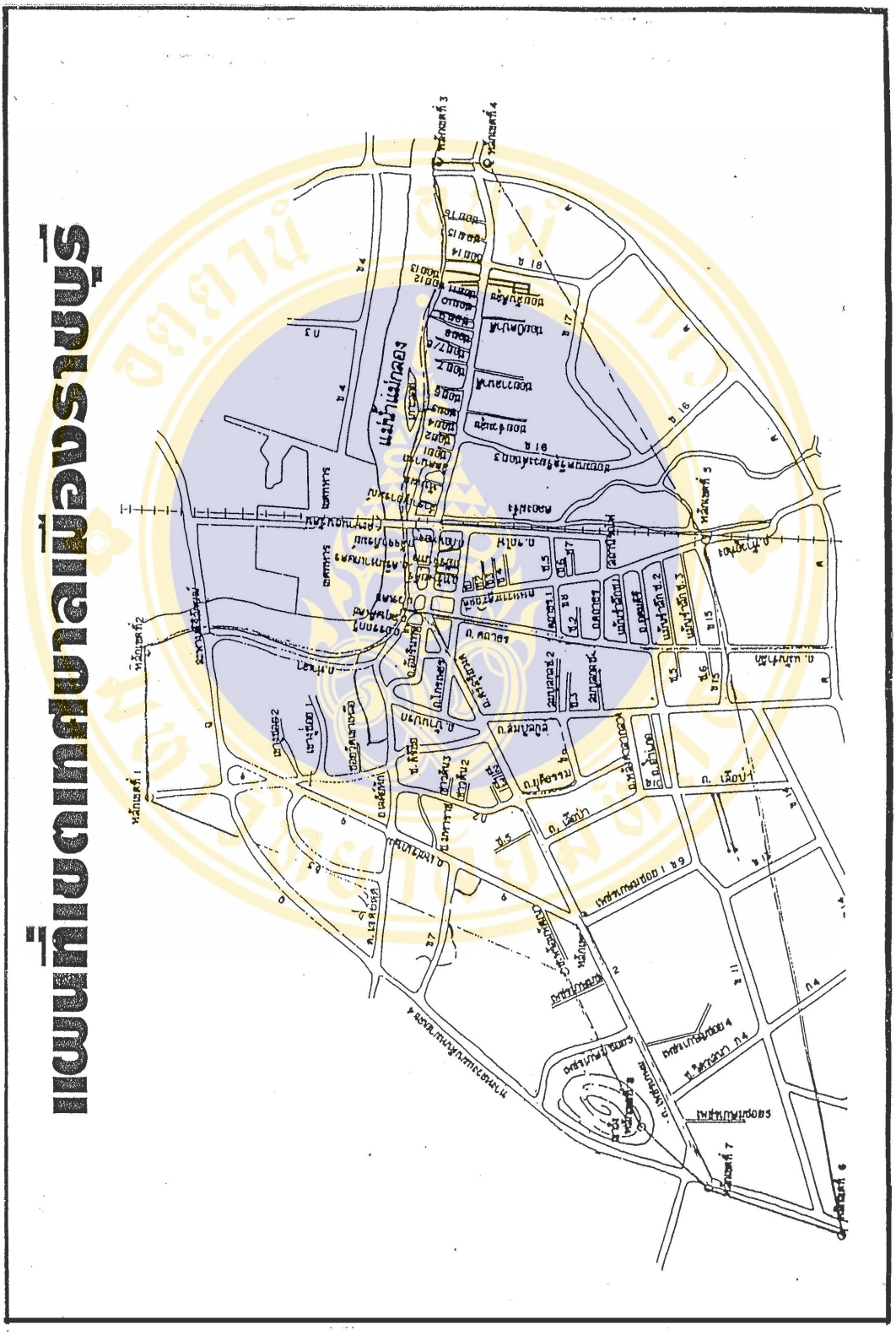
3.1 Population and Sample
3.2 Research Tools and Quality of tools
3.3 Data Collection
3.4 Data Analysis and Statistics used for the Analysis

3.1 Population and Sample

1. Population

The populations for this research were people who lived in Ratchaburi Town Municipality, Muang District, Ratchaburi Province. They were heads of households or spouse or resident who were older than 15 years old, with literacy. The Ratchaburi Town Municipality had managed by dividing the route into 9 routes for garbage collection, (the summarized plan was shown on the next page) as follows:

The first route: The truck with registered number R.B. 2543, collected the garbage on Montreesuriwong Road covered 16 lanes where 2,814 households were located.



The second route: The truck with registered number R. B. 2946, collected the garbage on Railway Road, Road near railway station, and Manrunreuk Road covered 1-3 lanes, Thao-U-Thong Road, and Udonsiri Road, where 1,655 households were located.

The third route: The truck with registered number R. B. 3687, collected the garbage on Konthong Road, Kraipetch Road, Kathathorn Road, with 1-3 lanes, Ratyindee Road, Voradej Road, Sujjapirom Road, Sritdej Road, Ammarin Road, Orachantr Road, UAtthakawee Road covered 16 lanes where 3,195 households were located.

The forth route: The truck with registered number R. B .2945 collected the garbage on Kathathorn Road at the back side of Ratchaburi hospital, Yuttitham Road, Somboonkul Road covered 1-6 lanes, Saupa Road, and Lung-Anphur Road where 762 households were located.

The fifth route: The truck with registered number R. B.2535 collected the garbage at khao-Ngu Road covered 1-2 lanes, Jadeehak Road with 1-3 Chaodin lane, Tha-Sao Road, Ban-Prok Road, Petchkasem Road covered Sirichai lane where 1,873 households were located.

The sixth route: The truck with registered number R. B. 520 collected the garbage on Petchkasem Road covered 1, 4-5 Visavasena, and srisuriwong Road where 1,549 households were located.

The seventh route: The truck with registered number R. B. 3101 collected the garbage at the connected point to Montreesuriwong Lane 3, Khao-Ngu Community, Tha-Sao, Community, Petchkasem Road covered 2-3 Lane, and Prompatana Lane, and Sirichai Lane where 1,211 households were located.

The eighth route: The truck with registered number R. B. 2018 collected the garbage at 8 points of receptacle places that distributed around Ratchaburi Town Municipality at the east side.

The ninth route: The truck with registered number R. B. 7478 collected the garbage at 9 points of receptacle places that distributed around Ratchaburi Town Municipality at the west side.

Since the Ratchaburi Town Municipality covers the wide area, and the population distributed at many aforementioned roads, the researcher defined the population area for the study only the routes that passing the business areas, and governmental offices. These areas had high density of population. These were the route number1 and 3, there were 6,009 households located (Registered office, Ratchaburi Town Municipality, 2002). The researcher used household random sampling. Subjects were either heads of households or spouses or residents in the households in town municipality, Muang District, Ratchaburi Province who were older than 15 years old and literate. The total population were 6,009 persons.

2. Sample Group

To define the sample group, the sample size was determined by calculating from 6009 persons of target population with Taro Yamane Formula (Taro Yamane, 1973: 729 cited in Puangrat Thaweerat, 1995: 284) as follows:

$$n = \frac{N}{1 + Ne^2}$$

When n = Sample size was randomized
N = Number of population
e = Error of sampling

Calculating with value in the formula as following:

$$n = \frac{6{,}009}{1 + 6{,}009X(0.05)^2}$$

$$= 375 \text{ persons}$$

The calculated sample size was 375 persons

3.1.1 Method of Sampling

The sample group for this study, the random sampling was employed for sampling in order to let the equaled chance to collect the data. There were two routes that were number 1 and 3. The data were collected from 1 person from each household. According to the calculation, the 375 persons of sample group that was proportion to the size of population were collected. The details were shown in table 4.

Table 4 Population and Sample Used in the Research

Route of waste Collection	Population (number)	Sample group (number)
The First Route	2,814	175
The third Route	3,195	200
Total	6,009	375

3.2 Research Tools and Quality Check

3.2.1 Research Tools

In this study, the questionnaire was used as a tool for data collection in order to study factors affected people's behaviors on garbage disposal in town municipality, Muang District, Ratchaburi Province. The questionnaire was constructed based on the concept, theories, and different researches and studies, including studying from the other research questionnaires constructed to apply properly within the scope of this study. The structure of the questionnaire composed of 4 parts as follows:

Section 1: It composed of the basic information on the demographic characteristics of population, information receiving on garbage separation, knowledge on garbage separation, and attitude toward garbage separation. The evaluation criteria were as follows:

1) The basic information of the demographic characteristics of population composed of sex, age, status in the family, occupation, educational level, income, and status in the society.

2) The questionnaire about the information receiving on garbage separation had 2 sections as follows:

Sub-Section 1: Level of information receiving on garbage separation, it was rating scale type of 6 items with 6 levels that were never receiving, occasionally, 1-2 times / month, 1 – 2 times / week, and daily by grading as follows:

Never	1	points
occasionally	2	points
1-2 times / month	3	points
1 – 2 times / week	4	points
3 – 4 times / week	5	points
Daily	6	points

For evaluating the level of perception of information on garbage separation, the researcher divided into 3 levels as follows:

6-16 points perception of information level was at the low level
17-26 points sperception of information level was at the moderate level
27-36 points perception of information level was at the high level

Sub-Section 2: Questionnaire about the needs for additional information receiving on waste separation and the sources of information, the questions consisted of 2 choices.

3) The questionnaire about knowledge on garbage separation, the statements composed of both positive and negative statements mixed together. The content of the statement would be about opinions of respondents to be responded as “Yes” or “No”. There were 20 questions, with the grading criteria that the right answer would get 1 point and wrong answer or no answer would get 0 point.

For evaluating level of knowledge on garbage separation, the researcher divided into 3 levels as follows:

0-6.66 points = low level of knowledge
6.67-13.33 points = moderate level of knowledge
13.34-20 points = high level of knowledge

4) The questionnaire about attitude towards garbage separation, the statements composed of both positive and negative statements mixed together using the Likerts 5 rating scales that were Strongly Agree, Agree, Uncertain, Disagree, and Strongly Disagree with 12 items. The scoring was as follows:

Positive Statements	**Points**
Strongly Agree	5
Agree	4
Uncertain	3
Disagree	2
Strongly Disagree	1

Negative Statements	**Points**
Strongly Agree	1
Agree	2
Uncertain	3
Disagree	4
Strongly Disagree	5

For evaluating directions of attitude towards garbage separation, the researcher divided into 3 items as follows:

12-28 points = negative attitude
29-44 points = neutral attitude
45-60 points = positive attitude

Section 2: The questionnaire about behavioral performance on garbage separation composed of both positive and negative statements mixed together using the Likerts 3 rating scales that were Perform Every Time, Perform Sometimes, and Never Perform with 15 items. The scoring was as follows:

Positive Statements	**Points**
Perform Every Time	3
Perform Sometimes	2
Never Perform	1
Negative Statements	**Points**
Never Perform	3
Perform Sometimes	2
Perform Every Time	1

For evaluating level of performance on garbage separation, the researcher divided into 3 levels as follows:

15-25 points = low performance
26-35 points = moderate performance
36-45 points = high performance

Section 3: The questionnaire about problems and suggestions of people on garbage separation in Ratchaburi Town Municipality, was open-ended..

Section 4: The observation form for recording behavioral performance of people on waste separation in Ratchaburi Town Municipality, was check list items. It was constructed for data collector or interviewer to observe the garbage bin place in the household of sample group during the interview.

3.1.2 Development of Tool Quality or Quality Check

In order to obtain the tool with validity and reliability, the researcher determined the quality of the tool before using for data collection as follows:

1. The constructed questionnaire was brought to consult with thesis advisory committee to examine the clarity, correctness of language, content validity, and structure validity.

2. The questionnaire was revised according to the recommendations of the thesis committee.

3. The corrected questionnaire was tried out with 30 persons who had similar characteristics with the population in the study lived in Ratchaburi Town Municipality but they did not live in the area that was defined as sample site selected for study. The reliability was checked as follows:

3.1 Analyzing the reliability of questionnaire about knowledge on garbage separation by using the Kuder-Richardson 20 (KR-20), with the formula as follows (Boontam Kijpreedeeborisut, 1999: 208):

$$r_{tt} = \frac{k}{k-1}\left[\frac{s^2{}_x - \sum pq}{s^2{}_x}\right]$$

Where r_{tt} = Reliability coefficient of questionnaire

k = Number of questions

p = Proportion of respondents who answered the question correctly

q = Proportion of respondents who answered the question incorrectly (1-p)

s^2_x = Variances of the total score

3.2 To analyze the reliability of the questionnaire about attitude on garbage separation and behavior of garbage separation and disposal. It was determined by using the Alpha Coefficient formula of Cronbach, as follows (cited in Puangrat Thaweerat, 2000: 126) with defining the reliability ≥ 0.75. The formula was as follows:

$$\alpha = \frac{n}{n-1}\left[1 - \frac{\sum s^2{}_i}{s^2{}_t}\right]$$

Where α = Reliability coefficient

n = Total number of questions

s^2_i = Variance of a single item

s^2_t = Variance of total items

3.3 Data Collection

In this research, the researcher started collecting the data on 15-31 August, 2003 by collecting data from the 375 persons who were people living in the house located on the route number 1 and 3. The researcher collected it by herself with 5 research assistants who had been trained and understood the questionnaire quite well. The steps of data collection were as follows:

The first route was divided into 6 sections. Each section had the equal distance. Each distance was under the responsibility of one person. One research assistants would collect 29 questionnaires and the researcher would collect 30 questionnaires. The 175 questionnaires were collected by accidental sampling method when found the sample who met the set criteria. The researcher and research assistants introduced themselves to the sample group and explained the research objectives and the questions that the sample group did not understand in order to have the same understanding and examined for the completeness of answered questionnaires.

The third route was divided into 6 sections. Each section had equal distance. Each distance was responsible by one person. One research assistant would collect 33 questionnaires and the researcher would collect 35 questionnaires. The 200 questionnaires were collected by accidental sampling method when researcher met the sample who had met the set criteria. The researcher and research assistant introduced themselves to the sample group and explained the research objectives and the

questions that the sample group did not understand in order to have the same understanding and examined for the completeness of answered questionnaires.

After collection, the questionnaire was examined for the completeness. It was found that 375 questionnaires were completely answered, then it was analyzed.

3.4 Data Analysis and Statistics used for the Analysis

The researcher examined the completeness of the questionnaire before coding into the coding form, then it was recorded into diskette for calculation with computer program of SPSS (Statistical Package for the Social Science). The data was divided into 2 parts as follows:

1. Descriptive statistics was used for explanation of basic information of the sample group, studied factors, and behaviors on garbage separation and disposal in Ratchaburi Town Municipality. The statistical values used were percentage, mean, and standard deviation.

2. Analytical statistics was used to determine the factors affected to people's behaviors on garbage disposal in town municipality, Muang District, Ratchaburi Province. To determine which of the following variables caused statistical difference performance of people: sex, status in the family, occupation, educational level, roles to be member in the group or organization, information receiving on garbage disposal, knowledge on garbage disposal, and attitude towards garbage disposal and behaviors on garbage separation and disposal in Ratchaburi Town Municipality. Since the different factors were nominal scale, therefore, the researcher determined the association by using with Chi-square statistics.

CHAPTER 4
RESULTS

This was the survey research aimed at studying people behaviors on garbage disposal in town municipality, Muang District, Ratchaburi Province, and factors affected people behaviors. The questionnaire was used for data collection by interviewing as well as observing their behaviors in the environment. The 375 completed questionnaires were obtained so it was 100 percent of data collection, then it was processed with computer program SPSS Version 10.01. The results were shown in tables with description as follows:

4.1 The Demographic Characteristics of the Sample Group classified by sex, age, status in family, occupation, educational level, income, and status in the society were presented in Frequency, Percent, Mean, and Standard Deviation.

4.2 Information receiving, knowledge, attitude, and behaviors on garbage separation, and disposal of people in Ratchaburi Town Municipality were presented in frequency, percentage, mean, and standard deviation.

4.3 The Analysis of the Associations between Factors Related and Behaviors of Garbage Disposal of the Sample Group with Chi-square test was presented.

4.4 The results about problems and Suggestions of People on garbage separation in Ratchaburi Town Municipality, were presented in terms of frequency.

4.1 The Demographic Characteristics of Sample Group by sex, age, status in family, occupation, educational level, income, and status in the society were presented in Frequency, Percent, Mean, and Standard Deviation. (Table 5).

Sex

Table 5 showed that most of the sample group of people in Ratchaburi Town Municipality, were female more than male. There were 59.5% female and 40.5% male.

Age

Table 5 showed that most of the sample group of people in Ratchaburi Town Municipality (30.1%) were in age group of 26-35 years followed by 25.1% in age group of less than or equivalence to 25 year, 23.2% in age group of 36-45 years, and the rest were 6.9% in age group of older than 55 years respectively. The average age was 35.29 years, the youngest was 15 years old, and the oldest was 73 years old.

Table 5 Numbers and Percentage of Sample Group classified by Sex and Age

Studied Characteristics	Number	Percent
Female	223	59.5
Male	152	40.5
Total	375	100.0
Mean = 35.29 years, Standard deviation = 11.88		
Youngest = 15 years oldest = 73 years		
less than or equivalence to 25 years	94	25.1
26-35 years	113	30.1
35-45 years	87	23.2
46-55 years	55	14.7
More than 55 years	26	6.9
Total	375	100.0
The average age =35.29 years, standard deviation =11.88.		
The youngest =15 years, the oldest = 73 years.		

Status in the Family

Table 6 showed that most of the sample group of people in Ratchaburi Town Municipality (51.5 %) were members of the family, followed by 25.6% head of household, and 22.9% were spouses respectively.

Occupation

Table 6 showed that most of the sample group of people in Ratchaburi Town Municipality (32.8%) were merchants, followed by house keepers (19.7%), business owners (14.7%), and the least were tourist guides (1.3%).

Table 6 Numbers and Percentage of the Sample Group classified by Status in the Family and Occupation

Studied Characteristics	Number	Percent
Status in the Family		
Heads of the Household	96	25.6
Spouses	86	22.9
Members of the Household	193	51.5
Total	375	100.0
Occupation		
General employees	19	5.1
Employees of private and Government agencies	50	13.3
Government Officers/ State enterprise personnel	14	3.7
Merchants	123	32.8
Business owners	55	14.7
House keepers	74	19.7
Unemployed	21	5.6
Tourist guides	5	1.3
Musicians	6	1.6
Gardeners	8	2.2
Total	375	100.0

Educational Level

Table 7 showed that most of the sample group of people in Ratchaburi Town Municipality, were Diploma / Certificate / Advance Certificate (55.2 %) followed by secondary school level (16.5%), and the least were high school level (12.3%).

Income

Table 7 showed that less than half of the sample group of people in Ratchaburi Town Municipality, had income less than or equivalent to 10,000 baht (42.9 %), followed by 10,001-20,000 baht/month (36.5%), and the least had income more than 30,000 baht per month (8.3%).

Table 7 Numbers and Percentage of the Sample Group classified by Educational Level and Income

Studied Characteristics	Number	Percent
Education level		
Primary School Level	60	16.0
Secondary School Level	62	16.5
High School level	46	12.3
Diploma / Certificate / Advance Certificate	207	55.2
Total	375	100.0
Income		
less than or equivalence to 10,000 baht	161	42.9
10,001 – 20,000 baht	137	36.5
20,001 – 30,000 baht	46	12.3
More than 30,000 baht	31	8.3
Total	375	100.0
Average income 16,224.27 baht, standard deviation11,564.97 baht, minimum income no income and the highest 67,000 baht		

Role of Members of Groups and Organizations

Table 8 showed that most of the sample group of people in Ratchaburi Town Municipality, were not member of any group or organization (98.4 %), followed by members of village fund (0.5%), and the least were honorary scout and senior citizen club members (0.3%).

Table 8 Numbers and Percentage of the Sample Group classified by Role of Members of Groups and Organizations

Studied Characteristics	Number	Percent
Role of Members of Groups and Organizations	1	0.3
Honorary Scout	1	0.3
Senior Citizen Club Members	2	0.5
Members of Village Fund	2	0.5
Members of Other groups or Organizations	369	98.4
None of any Groups	375	100.0
Total		

4.2 Information Receiving, Knowledge, Attitude, and Behaviors on Garbage Separation and Disposal of people in Ratchaburi Town Municipality

1) Information receiving on garbage separation, and disposal of people in Ratchaburi Town Municipality

The results of the study on information receiving from radio media on garbage disposal of people in Ratchaburi Town Municipality were classified by item according to the types of media as follows:

Radio

Most of the sample group (65.9%) never received information on garbage disposal from radio, followed by 30.1% occasionally received.

Television

A little over half of the sample group (54.4%) had occasionally received the information on garbage disposal from television, followed by 22.4% daily received, and the rest received 1-2 times/week (4.0%).

Newspaper

A little over half of the sample group (54.4%) had never read any information on garbage disposal from newspaper, followed by daily received (20.3%), and the rest received 1-2 times/week (1.1%).

Magazine / Journal

Most of the sample group (77.9%) had never read any information on garbage disposal from magazine/journal, followed by occasionally received (21.1%), and the rest daily received (0.3%).

Conversation with friends/ relatives

Most of the sample group (68.8%) occasionally received the information on garbage disposal by having the conservation with friends/relatives, followed by had never received, and the least daily received (0.3%).

From the Government

Most of the sample group (96.8%) had never received the information on garbage disposal from the government, followed by 2.7% occasionally received, and the least received 1-2 times/month (0.5%).

Table 9 Number and Percentage of the Sample Group classified by Types of Media

Media	Ever Received Information					Never Received	Total
	Daily	3-4 times /week	1-2 times /week	1-2 times /month	Occasionally		
1. Radio	7 (1.9)	-	1 (0.3)	7 (1.9)	113 (30.1)	247 (25.9)	375 (100)
2. Television	84 (22.4)	25 (6.7)	15 (4.0)	31 (8.3)	204 (54.4)	16 (4.3)	375 (100)
3. Newspaper	76 (20.3)	18 (4.8)	4 (1.1)	15 (4.0)	204 (54.4)	58 (15.5)	375 (100)
4. Magazine / Journal	1 (0.3)	-	-	3 (0.8)	79 (21.1)	292 (77.9)	375 (100)
5. Conversation with friends/ relatives	1 (0.3)	-	-	7 (1.9)	258 (68.8)	109 (29.1)	375 (100)
6. From Government	-	-	-	2 (0.5)	10 (2.7)	363 (96.8)	375 (100)
7. Others (Identified)	-	-	-	-	-	-	-

The findings showed that the sample group of people in Ratchaburi Town Municipality, most of them (83.7%) received the information at low level, followed by 16.3% received the information at moderate level. The mean score was 11.53 of the total scores 36, the minimum score was 6 points, and the maximum was 23 points. A little under half of the sample group (40.8%) needed to receive more information on garbage disposal, and signed for public relation (56.8 %), and documentation distribution (41.2%).

Table 10 Numbers and Percentage of the Sample Group classified by Scores of Information Receiving

Information Receiving	Number	Percent
Information Receiving (6 items)		
Mean scores 11.53 , standard deviation 3.66		
Minimum scores = 6 Maximum scores = 23		
Low Receiving (6 – 16 scores)	314	83.7
Moderate Receiving g (17 – 26 scores)	61	16.3
Total	375	100.0
Needs for additional information		
No Needs	222	59.2
Needs	153	40.8
Total	375	100.0
Information sources		
Sign for Public Relations	219	58.4
Distributed Document	153	40.8
Municipal Officers	1	0.3
Neighbors	2	0.5
Total	375	100.0

2) Knowledge on garbage separation, and disposal of people in Ratchaburi Town Municipality

Results of the study on knowledge on garbage disposal of people in Ratchaburi Town Municipality, it was found that the 100% of sample group had knowledge on the garbage separation with the understanding that garbage from household had 3 types that were wet waste, dry waste, and hazardous waste (item 1); and the wet waste was easily decomposable(item 2), and fermented if it was left. Insecticide bottle, razor, used battery, and hazardous waste (item 5), glass scrap, and ceramic scrap should be separated before disposal (item 14), and tin with gas pressure such as spray tin, and, if it was disposed by burning, it would be exploded. Therefore, it should be separated from other garbage (item 17).

For the item that the people in Ratchaburi Town Municipality lacked of knowledge on garbage separation before disposal that 97.9% understood that the dry solid waste meant the inflammable only (item 3), and 96.3% understood that the dry lumbers can be threw away together with the plant and vegetable scraps because it came from the plant as well (item 11). Little of sample group (34.1 %) understood that burning the dry waste such as paper scrap, and leaf scrap can cause the global warming (item 15). Almost 70% of sample group understood that the people who took responsibility of garbage disposal was Ratchaburi Town Municipality only (item 19).

Table 11 Number and Percentage of the Sample Group in Ratchaburi Town Municipality classified by Level Knowledge on Garbage Disposal

No.	Statements	Right Answer		Wrong Answer	
		Number	%	Number	%
1	Waste from household had 3 types that were wet waste, dry waste, and hazardous waste	375	100.0	-	-
2	Wet waste was easily decomposable, and fermented if it was left.	375	100.0	-	-
3	The dry waste meant the inflammable only.	8	2.1	367	97.9
4	Waste that was harmful to human life, animal, ad environment was hazardous waste.	374	99.7	1	0.3
5	Glass scrap, and ceramic scrap which was hazardous waste should be separated before disposal.	375	100.0	-	-
6	Food scraps, vegetable scraps was classified as wet waste,	374	99.7	1	0.3

Table 11 Number and Percentage of the Sample Group in Ratchaburi Town Municipality classified by Level Knowledge on Garbage Disposal (cont.)

No.	Statements	Right Answer		Wrong Answer	
		Number	%	Number	%
7	Dry waste were lumber scraps, metal scraps, plastic scraps, bottle, and clothes scraps.	370	98.7	5	1.3
8	Waste separation can not resolve the waste problem	362	96.5	13	3.5
9	Plastic bags for food container, after the food was taken, should be thrown in the dry bin.	359	95.7	16	4.3
10	Used light bulbs and neon tubes can be disposed with other solid waste.	348	92.8	27	7.2
11	The dry lumbers can be thrown away together with the plant and vegetable scraps because it came from the plant as well.	14	3.7	361	96.3
12	Wet waste must be thrown in the bin with cover.	373	99.5	2	0.5
13	Chemical waste such as insecticide bottle, fertilizer, and color tin can be thrown with the wet or dry wastes because it did not cause chemical reaction.	366	97.6	9	2.4
14	Glass scraps, and tin scraps should be separated from other waste before disposal.	375	100.0	-	-

Table 11 Number and Percentage of the Sample Group in Ratchaburi Town Municipality classified by Level Knowledge on Garbage Disposal (cont.)

No.	Statements	Right Answer		Wrong Answer	
		Number	%	Number	%
15	Burning the dry waste such as paper scrap, and leaf scrap can cause the global warming	247	65.9	128	34.1
16	All types of waste, particularly, food, fruit, and vegetable scraps or dead animal can be dumped into the water resources, canal because it was not harmful to human and animals.	372	99.2	3	0.8
17	Gas pressure such as spray tin to be disposed by burning, it would be exploded. Therefore, should be separated from other waste before disposal.	375	100.0	-	-
18	Dry waste such as paper, plastic bottle, metal scrap, and glass bottle, can be used as the raw material for recycle.	371	98.9	4	1.1
19	The people who took responsibility of waste disposal was Ratchaburi Town Municipality only.	118	31.5	257	68.5
20	To separate types of bin into wet waste bin, dry waste bin, and hazardous waste bin can solve the waste problem because it would be convenient for collection and transportation.	373	99.5	2	0.5

3) Attitude towards Garbage Disposal of People in Ratchaburi Town Municipality,

Results of the study on attitude towards garbage disposal of people in Ratchaburi Town Municipality, revealed that the 86.1% of the sample group strongly agreed that the garbage should be separated every time before disposal. Almost 65% of the sample agreed that waste separation each day would help the waste generation to decrease. Approximately seventy- eight percent of the sample group did not agree that to separate or not separate the used insecticide tin would be no differences because the other people did not separate. Any way 47.7 % of sample did not agree strongly on the used of insecticide tin, then no need to separate before disposal because it was small amount.

Table 12 Number and Percentage of the Sample Group in Ratchaburi Town Municipality classified by their Attitudes toward Garbage Disposal

No.	Attitude towards to Garbage Disposal	Level of Opinion				
		Strongly Agree	Agree	Un-certain	Not Agree	Strongly disagree
1	We must separate the garbage before disposal.	323 (86.1)	50 (13.3)	2 (0.5)	-	-
2	To separate the garbage before disposal, it did not help to decrease pollution.	11 (2.9)	23 (3.2)	1 (0.3)	205 (54.7)	146 (38.9)
3	Waste separation was a waste of time.	-	21 (5.6)	2 (0.5)	251 (66.9)	101 (26.9)
4	To separate garbage before disposal, it was a part to participate for socials responsibility.	151 (40.3)	210 (56.0)	5 (1.3)	8 (2.1)	2 (0.3)
5	You are willing to separate the garbage regularly.	20 (5.3)	349 (93.1)	3 (0.8)	3 (0.8)	-

Table 12 Number and Percentage of the Sample Group in Ratchaburi Town Municipality classified by their Attitudes toward Garbage Disposal (cont.)

No.	Attitude towards to Waste Disposal	Level of Opinion				
		Strongly Agree	Agree	Un-certain	Not Agree	Strongly disagree
6	To dispose all types of waste together, whether it was food scraps, glass scraps, or dry cell for a flashlight, it would not cause harmful effect to health and environment.	-	-	2 (0.5)	201 (53.6)	172 (45.9)
7	To separate waste bin, it was just a waste of place.	-	35 (9.3)	11 (2.9)	249 (66.4)	80 (21.3)
8	The waste should not be separated because at present there was not much unit for purchasing separated wasted.	-	2 (0.5)	25 (6.7)	268 (71.5)	80 (21.3)
9	The waste separation will help to decrease the waste generation each day.	100 (26.7)	245 (65.3)	22 (5.9)	7 (1.9)	1 (0.3)
10	To separate or not separate the used insecticide tin was no differences because the other people did not separate.	-	2 (0.5)	15 (4.0)	293 (78.1)	65 (17.3)
11	Paper, iron, and glass scraps was refused, it would be less quality than before recycle.	2 (0.5)	15 (4.0)	44 (11.3)	210 (56.0)	104 (27.7)
12	It was no need to separate the used insecticide tin, before disposal because just only small amount.	-	-	2 (1.1)	192 (51.2)	179 (47.7)

4) Behaviors on garbage separation, and disposal of people in Ratchaburi Town Municipality

Results of the study on attitude towards garbage disposal of people in Ratchaburi Town Municipality, revealed that 63.7% of the sample group separated the food scrap, vegetable, and plastic bottle from each other after eating every time. The garbage should be separated every time before disposal. Approximately fifty-six percent of the sample group separated the drinking bottle of water or other soft drink from other types of waste. About ninety-five percent of the sample group had the behavior to persuade other members in the family to separate the waste before disposal sometime. There was 92.8% of the sample group threw the foam with other waste without separating. About ninety-four percent of sample group did not drop the food scraps on the cover of the bin without opening the cover of the bin before throwing out. Nearly eighty-five percent of the sample group did not separate the dead dog, cat, rat or other animals from other waste before disposal by grading under the ground or separate.

The sample group ‘s behaviors were consistent with the observation of the researcher and research assistants that every household had a bin to collect the garbage before throwing out into the bin provided by Town Municipality

Table 13 Number and Percentage of the Sample Group in Ratchaburi Town Municipality classified by Garbage Disposal Behaviors

No.	Behaviors of Separation before Disposal	Level of Performance		
		Every time	Some time	Never
1	After eating, you separated the food scrap, vegetable, and plastic bottle from each other.	239 (63.7)	135 (36.0)	1 (0.3)
2	Peels or scraps of fruit that left after eating, you would throw away with the general garbage.	170 (45.3)	195 (52.0)	10 (2.7)
3	Food scraps, you would throw away with vegetable and plant scraps.	117 (31.2)	246 (65.6)	12 (3.2)

Table 13 Number and Percentage of the Sample Group in Ratchaburi Town Municipality classified by Garbage Disposal Behaviors (cont.)

No.	Behaviors of Separation before Disposal	Level of Performance		
		Every time	Some time	Never
4	If dog, cat, rat or other animal were dead, you would dig the hole to grave it under the ground or separate from other waste to dispose.	9 (2.4)	47 (12.5)	319 (85.1)
5	Plastic bottle (shampoo bottle, liquid soap), after using you threw into the bin without separation	21 (5.6)	176 (46.9)	178 (47.5)
6	You separated the paper such as newspapers, paper boxes, from other garbage.	187 (49.9)	183 (48.8)	5 (1.3)
7	You separated the drinking bottle of water or other soft drink containers from other types of garbage.	211 (56.3)	162 (43.2)	2 (0.5)
8	You separated metal scraps, and aluminum scraps from other garbage	198 (52.8)	175 (46.7)	2 (0.5)
9	You threw the used insecticide tins and bottles away with other garbage	109 (29.1)	232 (61.9)	34 (9.1)
10	When you used up the dry cell for a flashlight, and battery, you threw them together with other garbage.	60 (16.0)	288 (76.8)	27 (7.2)
11	You separated the used razor, glass scrap, ceramic scrap or fluorescent lamp from other garbage before disposal.	34 (9.1)	328 (87.5)	13 (3.5)
12	After using the foam, you threw it with other garbage immediately.	13 (3.5)	348 (92.8)	14 (3.7)
13	You persuaded members in the family to separate the garbage before disposal.	10 (2.3)	358 (95.5)	7 (1.9)
14	If the bin had cover, you would dropped the food scraps on the cover of bins by do not open the cover before dropping.	-	19 (5.1)	356 (94.9)
15	You dropped the garbage into the bin without separating because you thought that you had already thrown it in the proper way.	28 (7.5)	148 (39.5)	199 (53.1)

5) The observation on behavioral performance of people on garbage separation in Ratchaburi Town Municipality

The observation on behavioral performance of people on garbage separation in Ratchaburi Town Municipality was presented in frequencies and percentages (table 14).

From the observation on people's separation in Ratchaburi Town Municipality, it was found that 100% of the households had their own waste bins for collection before disposal at the provided bins of Town Municipality. Approximately fifty-two percent of the sample group did not separate into different types that were wet waste, dry waste, and hazardous waste. There was 56.5% of the sample group managed the garbage by disposal into the same bin. About eighty percent of the sample group had separated the waste as paper type, glass type, metal type, and plastic type for sale, and 92.0% provided the bin for food scrap.

Table 14 Number and Percentage of People in Ratchaburi Town Municipality classified by Observed Information

Information	Have		Do not Have	
	Number	Percent	Number	Percent
1. There was the bin in the household before dispose to the provided bin.	375	100.0	-	-
2. Inside the household, there was separating waste into different types that were wet waste, dry waste, and hazardous waste.	177	47.2	198	52.8
	212	56.5	163	43.5
3. Inside the household, there was waste management by throwing it in the same bin.	299	79.7	76	20.3
4. There was waste separating into paper, glass, metal, and plastic scraps for sale	345	92.0	30	8.0
5. There was bin for separating food scrap from other wastes.				

6) Number and Percentage of the Sample Group classified by the Level of Knowledge, Attitude and Behavior on Garbage Disposal

From table 16, people in Ratchaburi Town Municipality had knowledge on garbage separation at the high level. The mean score was 16.81 of the full score 36, the minimum score 14, and maximum 19. For the attitude towards garbage disposal, most of sample group 96.8% had positively attitude with the mean score 51.01 of the full score 60, the minimum score 42, and maximum 58. The Behavior of garbage separation before disposal, it was found that most of them 92.0% had the behavior of garbage separation before disposal at moderate level with the mean score 32.83 of the full scores 60, the minimum score 27, and maximum 45.

Table 15 Numbers and Percentage of the Sample Group classified by Level of Knowledge, Attitude, and Garbage Separation Behavior

Level of Knowledge	Number	Percent
Knowledge (20 items) Mean score 16.81 scores, Standard deviation 0.82 Minimum scores = 14 scores, Maximum = 19 scores	363	96.8
High level (13.34 – 20 scores)	12	3.2
Moderate level (13.34 – 20 scores)	0	0.0
Low level (13.34 – 20 scores)	375	100.0
Attitude (12 items) Mean scores 51.01 scores, Standard deviation 2.91, Minimum scores were 42 scores, Maximum were 58 scores.		
Positive (45 – 60 scores)	363	96.8
Neutral (29 – 44 scores)	12	3.2
Negative (15 – 25 scores)	0	0.0
Total	375	100.0

Table 15 Numbers and Percentage of the Sample Group classified by Level of Knowledge, Attitude, and Garbage Separation Behavior (cont.)

Level of Knowledge	Number	Percent
Behavior (15 items) Mean scores 32.83, Standard deviation 2.11, Minimum scores = 27 scores, and Maximum = 45 scores.		
High Performance	30	8.0
Moderate Performance	345	92.0
Low Performance	0	0.0
Total	375	100.0

4.3 The Analysis of the Associations between Factors Related and Behaviors of Garbage Disposal of the Sample Group by testing with Chi-square

1) The Association between Sex and Garbage Disposal Behavior

Results from Chi-Square test, revealed that sex had no association with behaviors of waste separation so it did not follow the set hypothesis that the sex had any association with garbage disposal behaviors at statistical significance of 0.05 level (table 16).

Table 16 Number of the Sample Group classified by Sex and Garbage Disposal Behavior

Sex	Garbage Disposal Behavior		
	Moderate Level	High Level	Total
Female	203 (54.1)	20 (5.3)	223 (59.5)
Male	142 (37.9)	20 (2.7)	263 (40.5)
Total	345 (92.0)	30 (8.0)	375 (100.0)
χ^2 = 0.701	df = 1	p = 0.402	

2) The Association between Age and Garbage Disposal Behavior

It was found that most of the sample group was 25 years old or younger (93.6%), 26-35 years (93.8%), 36-45 years (92.0%), and older than 46 years (87.7%) respectively had the behavior of garbage separation before disposal at the moderate level, but there were small number had the behavior of garbage separation before disposal at the high level, these were 25 years old or younger (6.4%), 26-35 years (6.2%), 36-45 years (8.0%), and older than 46 years (12.3%) had the behavior of garbage separation before disposal at the moderate level (table 17).

From Chi-Square value, it revealed that the status in family had no association with garbage disposal behavior at statistical significance of 0.05 level, so it did not follow the set hypothesis that the age had association to behavior on garbage disposal at statistical significance of 0.05 level (table 17).

Table 17 Number of the Sample Group classified by Age and Garbage Disposal Behavior

Age	Garbage Disposal Behavior		
	Moderate Level	**High Level**	**Total**
25 year or younger	88 (93.6)	6 (6.4)	94 (100.0)
26 - 35 years	106 (93.8)	7 (6.2)	113 (100.0)
36 - 45 years	80 (92.0)	7 (8.0)	87 (100.0)
Older than 46 years	71 (87.7)	10 (12.3)	81 (100.0)
Total	345 (92.0)	30 (8.0)	375 (100.0)
χ^2 = 2.913	df = 3	p = 0.405	

3) The Association between Status in the Family and Garbage Disposal Behavior

It was found that the sample group had the status as heads of household (88.5%), spouse (96.5%), and members in family (91.7%) had the behavior of garbage separation before disposal at the moderate level, but there were few number had the behavior of garbage separation before disposal at the high level, these were (11.5%) heads of household, spouses (3.5%), and members in the family (8.3%) (table 18).

From Chi-Square value, it was found that the status in family had no association with garbage disposal behavior at statistical significance 0.05 level, so it did not follow the set hypothesis that the status in the family had association to behavior on garbage disposal at statistical significance 0.05 level (table 18).

Table 18 Number of the Sample Group classified by Status in Family and Garbage Disposal Behavior

Status in Family	Garbage Disposal Behavior		
	Moderate Level	High Level	Total
Head of Household	85 (88.5)	11 (11.5)	96 (100.0)
Spouse	83 (96.5)	3 (3.5)	86 (100.0)
Member in Family	177 (91.7)	16 (8.3)	193 (100.0)
Total	345 (92.0)	30 (8.0)	375 (100.0)
χ^2 = 3.960	df = 2	p = 0.138	

4) The Association between Occupation and Garbage Disposal Behavior

It was found that the sample group had the various occupation, the majority had behaviors of garbage separation before disposal at the moderate level, with general employees (73.7%), employees of private and government agencies (94.0%), government officers/ state enterprise personnel (85.7%), merchants (94.3%), business owners (87.3%), house wives or house husbands (93.2%), and unemployed and others (97.5%) was at moderate level (table 19).

From Chi-Square value, it revealed that the occupation had association with behavior of waste disposal at the level of statistical significance of 0.05. It followed the setting hypothesis that occupation correlated to behavior of waste disposal at statistical significance of 0.05 level (table 19).

Table 19 Number of the Sample Group classified by Occupation and Garbage Disposal Behavior

Occupation	Garbage Disposal Behavior		
	Moderate Level	High Level	Total
General employees	14 (73.7)	5 (26.3)	19 (100.0)
Employees of private and government agencies	47 (94.0)	3 (6.0)	50 (100.0)
Government officers/ State enterprise personnel	12 (85.7)	2 (14.3)	14 (100.0)
Merchants	116 (94.3)	7 (5.7)	123 (100.0)
Business owners	48 (87.3)	7 (12.7)	55 (100.0)
House wives/ house husbands	69 (93.2)	5 (6.8)	74 (100.0)
Unemployment and others	39 (97.5)	1 (2.5)	40 (100.0)
Total	345 (92.0)	30 (8.0)	375 (100.0)
χ^2 = 14.044	df = 6		p = 0.029

5) The Association between Educational Level and Garbage Disposal Behaviors

It was found that most of the sample group had the behavior of garbage separation before disposal at moderate level, with primary school level (87.9%), secondary school level (95.2%), high school level (87.0%), and diploma/ Certificates/Advance Certificates (93.3%) had the behavior of garbage separation before disposal, besides they were at the high level (table 20).

From Chi-Square value, revealed that the educational level had no association with behavior of waste disposal at the statistical significance of 0.05 level, so it did not follow the set hypothesis that the sex had association with behavior on garbage disposal at statistical significance of 0.05 level (table 20).

Table 20 Number of the Sample Group classified by Educational Level and Garbage Disposal Behavior

Educational Level	Garbage Disposal Behavior		
	Moderate Level	High Level	Total
Primary School Level	51 (87.9)	7 (12.1)	58 (100.0)
Secondary School Level	59 (95.2)	3 (4.8)	62 (100.0)
High School Level	40 (87.0)	6 (13.0)	46 (100.0)
Diploma/Certificates/ Advance Certificates	195 (93.3)	14 (6.7)	209 (100.0)
Total	345 (92.0)	30 (8.0)	375 (100.0)
χ^2 = 4.217	df = 3		p = 0.239

6) The Association between Income and Garbage Disposal Behaviors

It was found that 90.1% of the sample group had income less or equal to10,000 Baht, income 10,000 –20,000 Baht (93.4%), and income more than 20,000 Baht (93.5%) had the behavior of garbage separation before disposal at moderate level, besides they were at the high level (table 21).

From Chi-Square value, it was found that the income of groups or organizations had not associated with behavior of garbage disposal at the statistical significance of 0.05 levels so it did not follow the set hypothesis that the roles as member of group or organization, had association with garbage disposal at the statistical significance of 0.05 level (table 21).

Table 21 Number of Sample Group classified by Income and Garbage Disposal Behavior

Income	Garbage Disposal Behavior		
	Moderate Level	High Level	Total
Lesser or Equal 10,000 Baht	145 (90.1)	16 (9.9)	161 (100.0)
10,000 –20,000 Baht	128 (93.4)	9 (6.6)	137 (100.0)
More than 20,000 Baht	72 (93.5)	5 (6.5)	77 (100.0)
Total	345 (92.0)	30 (8.0)	375 (100.0)
χ^2 = 1.440	df = 2	p = 0.487	

7) The Association between Roles as Members of Groups or Organizations and Garbage Disposal Behavior

It was found that 92.4% of the sample group was not members of the group or organization, and had the behaviors of garbage separation before disposal at the moderate level, and 7.6% of sample were not members of the groups or organizations, had the behavior of garbage separation before disposal at the high level (table 22).

From Chi-Square value, it revealed that the roles as members of groups or organizations had associated to behavior of garbage disposal at the statistical significance of 0.05 level so it followed the set hypothesis that the roles as member of group or organization, had associated on garbage disposal at the statistical significance of 0.05 level (table22).

Table 22 Number of the Sample Group classified by Roles as Members of Groups or Organizations and Garbage Disposal Behavior

Roles as Member of Group or Organization	Garbage Disposal Behavior		
	Moderate Level	High Level	Total
Honorary Scout	-	1 (100.0)	1 (100.0)
Old People Club	1 (100.0)	-	1 (100.0)
Member of Village Fund	2 (100.0)	-	2 (100.0)
Other	1 (50.0)	1 (50.0)	2 (100.0)
Not be a Member	341 (92.4)	28 (7.6)	369 (100.0)
Total	345 (92.0)	30 (8.0)	375 (100.0)
χ^2 = 16.639	df = 4	p = 0.002	

8) The Association between Information Receiving and Behavior

It was found that most of the sample group (91.4%), received information at low level, and 95.1% of the sample received information at moderate level, had the behavior of garbage separation before disposal at the moderate level of behavior. Few of the sample group (8.6%), received information at low level, and 4.9% of the sample received information at moderate level, had the behavior of garbage separation before disposal at the high level (table 23).

From Chi-Square value, it was found that information receiving had no association with garbage disposal behavior at the statistical significance of 0.05 level, so it did not follow the set hypothesis that the information receiving had associated with garbage disposal behavior (table 23).

Table 23 Number of the Sample Group classified by Information Receiving and Garbage Disposal Behavior

Information Receiving	Garbage Disposal Behavior		
	Moderate Level	High Level	Total
Receiving at Low Level	287 (91.4)	27 (8.6)	314 (100.0)
Receiving at Moderate Level	58 (95.1)	3 (4.9)	61 (100.0)
Total	345 (92.0)	30 (30.0)	375 (100.0)
χ^2 = 0.940	df = 1	p = 0.332	

9) The Association between Knowledge and Garbage Disposal Behavior

It was found that most of the sample group (66.7%), had knowledge at moderate level, and 92.8% of sample had knowledge at high level, had the behavior of garbage separation before disposal at the moderate level. The sample group of 33.3%, had knowledge at moderate level, and 7.2 % of the sample group had

knowledge at high level, would have the behavior of garbage separation before disposal at the high level (table 24).

From Chi-Square value, it was found that knowledge had association with garbage disposal behavior at the statistical significance of 0.05 level, so it followed the set hypothesis that the knowledge had associated with garbage disposal behavior (table 24).

Table 24 Number of the Sample Group classified by Level of Knowledge and Garbage Disposal Behavior

Knowledge	Behavior on Waste Disposal		
	Moderate Level	High Level	Total
Knowledge at moderate level	8 (66.7)	4 (33.3)	12 (100.0)
Knowledge at high level	337 (92.8)	26 (7.2)	363 (100.0)
Total	345 (92.0)	30 (8.0)	375 (100.0)
χ^2 = 10.810	df = 1	p = 0.001	

10) The Association between Attitude and Garbage Disposal Behavior

It was found that half of the sample group (50.0%), had neutral attitude, and 92.8% of sample with positive attitude had the behavior of garbage separation before disposal at moderate level. The sample group 50.0% with neutral attitude, and 7.2 % of the sample group with positive attitude had the behavior of garbage separation before disposal at high level (table 25).

From Chi-Square value, it revealed that attitude had association with garbage disposal behavior at the statistical significance of 0.05 level, so it followed the set hypothesis that the attitude had association with garbage disposal behavior (table 25).

Table 25 Number of the Sample Group classified by Attitude and Garbage Disposal Behavior

Attitude	Behavior on Waste Disposal		
	Moderate Level	High Level	Total
Neutral Attitude	6 (50.0)	6 (50.0)	12 (100.0)
Positive Attitude	339 (92.8)	24 (7.2)	363 (100.0)
Total	345 (92.0)	30 (8.0)	375 (100.0)
χ^2 = 29.712	df = 1	p = 0.000	

4.4 Problems and Suggestions of People on Waste Separation

The sample group expressed their opinions on garbage separation and disposal as very good idea (33.6%). They agreed that it would be faster to do (8.0%) and they also had opinion that it would help to decrease the microorganism spreading (2.7%).

The sample group expressed their opinions on problems and obstacles about no bin for garbage separation (24.53%), too few point of bin placed, and waste separation consumed time (16.53%).

The sample group expressed their opinions on toward the cooperation with the municipal project as giving the cooperation (37.9%), uncertain (1.3%), giving the cooperation by separating the garbage before dispose (3.5%), giving the cooperation to separate the wet waste (5.3%), giving the cooperation to every project of municipality (2.1%).

The sample group gave the recommendations that the municipal officers collected too late so it produced the bad smell to annoy people (8.53%), and too few municipal officers (2.13%).

Table 26 Number and Percentage classified by their Opinions

Information	Number	Percent
The garbage separation		
- It was a good idea, agree, and be convenient to practice.	126	33.6
- It would be faster for further step of separation	30	8.0
- To decrease the spreading of germ	10	2.7
Problems and obstacles		
- No bin for garbage separation	92	24.5
- Too few point of bin placed	62	16.5
- Waste separation consumed time	6	1.6
The cooperation with the municipal project		
- Giving the cooperation	142	37.9
- Uncertain	5	1.3
- Giving the cooperation by separating the garbage before dispose	130	3.5
- Giving the cooperation to separate the wet waste	20	5.3
- Giving the cooperation to every project of municipality	8	2.1
Other Recommendations		
- Municipal officers collected too late so it produced the bad smell to annoy people	32	8.5
- Too few municipal officers	8	2.1

CHAPTER 5
DISCUSSION

Results from the data analysis on this study "Factors Affecting People's Behaviors on Garbage Disposal in Muang District, Ratchaburi Province," can be discussed as follows:

5.1 Behaviors on Garbage Disposal of People in Ratchaburi Town Municipality

The study on factors affecting people's behaviors on garbage disposal in Ratchaburi Town Municipality revealed that 92% of sample group had the appropriate garbage disposal behavior at moderate level. This meant most of people had the proper behavior in separating garbage in the issues of separating the food scraps and vegetable from plastic bottle every time; and separating plastic bottle contained water and soft drinks from other waste since the people in the boundary of Ratchaburi Town Municipality may receive the information on garbage separation fast and thoroughly. This obviously seen from this research results which showed that people received the information on garbage separation and disposal from television, and newspaper everyday. These were 84% and 76% respectively. It results caused the people to separate before disposal properly.

However, all people did not have the right and proper behavior, but there was a certain amount of 92.8%. There was a behavior of foam containing food dropped with the general garbage promptly, which caused impact to environment due to the accumulation of unable to decompose and difficult to decompose. Therefore, it is the urgent problem that everyone must cooperate to solve it. This lead to the issue that which factors took place to promote and push the people to have improper garbage disposal behavior.

5.2 Factors Affecting Behaviors on Garbage Disposal of People in Ratchaburi Town Municipality

5.2.1 Sex

The research results showed that the sex did not associate with the garbage separation behavior before disposal so it did not follow the set hypothesis since the results revealed that most of males and females had the garbage separation behavior at the moderate level, and almost equal number because they equally had a chance to receive the information. This result was congruent with the study of Patana Sujumnong (1979: 80-82) who stated that the group in society affected human behavior, because the group of neighbors that closed together would have the similar behavior that congruent with Bandura's theory, 1977: 17-27) having the belief that the human behavior obtained by learning to imitate the others. Accordingly, human could learn different things widely by observing the model or the other people's actions. This model might be real model or model in the term of media. Therefore the person would build the new behaviors. In this study revealed that sex had no effect on behavior of waste separation and disposal because people learnt the behavior by imitating from the media or neighbors' behaviors so they had similar garbage disposal behavior.

5.2.2 Age

The findings revealed that age was related to the garbage separation behavior before disposal which did not follow the set hypothesis at statistical significance at level of 0.05. This illustrated that the younger people had the low level of garbage separation behavior, meanwhile the older people would have behavior at high level or more proper that was congruent with Chalida Thanomwong (1994: 119-120) who studied on "A study of Garbage and Nightsoil Disposal Behavior of Raft Proprietor and Tourists in Amphur Muang Kanchanaburi Province". She found that the age cause the difference on the behavior of garbage and litter waste disposal on the raft, i.e., the person who was 31 years old or older had more proper behavior than other groups. The reason might be a chance to meet different people so they had an

opportunity to exchange their experiences with each others. Therefore their behavior on waste separation was more proper than other groups.

5.2.3 Status in the Family

The research results revealed that the status in the family was no related with the garbage separation behavior before disposal. It did not follow the set hypothesis that people who were the heads of households, or spouses, or members in the family had the similar garbage separation behaviors which was at moderate level. This was congruent with the study of Jitti Rodbangyang, (1997: Abstract) who studied on the acceptance of Solid Waste Separation by Wives of Police Officers in Bangkok Metropolis: A Case Study of the Central Police Flats. The researcher concluded that the police's housewife had the garbage separation behavior at moderate level, and the status in the family did not affect the acceptance of garbage separation. This research showed that most of the sample group also had garbage separation behavior at the moderate level because they had chances to receive the information from television and newspaper or saw the other people is performance of garbage separation. They would perform similar behavior so it did not affect garbage separation behaviors of the family members.

5.2.4 Occupation

The findings revealed that occupation was related to the garbage separation behavior before disposal which followed the set hypothesis. This illustrated that people had different occupation would cause the dissimilar garbage separation behavior. The finding revealed that the group of general hire had higher performance than other groups that was congruent with to study of Nantawan Intachat (2000: Abstract), who studied on "Factors relating to the Decision of Urban Residents to Purchase "Green Product": A Case study of an urban Community, Muang District, Nakon Ratchasima Province. The found that occupation was related to the decision to purchase green products since the person who had different occupation would have the different personality due to their duties of work and responsibilities, Different persons with different belief, concept, attitude, value and personality might transfer these to them (Jersile. 1968: 575). Moreover, the researcher identified that people who

had the general employees occupation had the garbage separation behavior at the higher level than other groups,; it might be its small number so it resulted of difference behavior from other groups at the high level since the people in this group. Therefore, the research results showed that that occupation was associated with the garbage separation behavior before disposal.

5.2.5 Educational Level

The research results revealed that the educational level was not related to the garbage separation behavior before disposal. This illustrated even though, people had different educational level, but had similar garbage separation behavior. Most of them had garbage separation behavior at the moderate level. The majority graduated in the diploma/ Advance certificate. The knowledge congruent with to study of Wipapen Jiasakul (1993: 121-122) on "Solid Waste Management Behavior of Population in the Middle Zone of Bangkok Metropolis.". She found that educational level was related to the garbage disposal behavior at statistical significance of .05 level.

5.2.6 Income

The research findings revealed that income did not associate with the garbage separation behavior before disposal of people in Ratchaburi Town Municipality so it did not follow the set hypothesis. This illustrated that people with various income who had similar garbage separation behaviors at the moderate level. Since most of them who lived in the municipal area had the income not more than 10,000 baht because they were the government officers, including the various government work units' implementation the project of healthy cities in the aspect of environment. Therefore, it might make people in the municipality had similar garbage management behaviors. That was congruent with the study of Gochakorn Anucha, (1997: Abstract), "Study on Survey of Knowledge and Attitude Pertaining to Domestic Waste Separation before Disposal: Case Study of Tambon Administrative Organization (TAO) Members in Nakhon Pathom Province". This study revealed that the TAO members with different income had no different attitude towards the waste separation before disposal; it also consistent with the study of Ubol Chanpet (2000:

114-115), on “Readiness of The Tambon Administrative Organizational Members To Access The Environmental Aspects of The Healthy Cities Project In Ratchaburi Province”. The results showed that the variation in income linked to difference in knowledge and attitude with a statistical significance of 0.05 level. However it did not create a variation in public action, and it also consistent with the study of Wipapen Jiasakul (1993: 121-122) that income did not relate to behavior on solid waste littering.

5.2.7 Roles as Members of Groups or Organizations

The findings revealed that roles as members of groups or organizations were related to the management before disposal that it followed the set hypothesis. This illustrated that most people who had that roles as members of groups or organizations in Ratchaburi Town Municipality would have management at the higher level than people who had no roles in any groups or any organizations. This result consistent with the concept that the group of society affected human behaviors, because the group of neighbors that closed together would have similar behaviors; and that was also congruent with Chalida Thanomwong (1994: 119-120) on behaviors of garbage and litter waste disposal on the raft, Muang District, Kanchanaburi Province which revealed that the business owners who were members of the association of Boat and raft owners would have the garbage disposal behavior more proper than the group who were not the association members.

5.2.8 Information Receiving

The research findings revealed that information receiving did not relate to the management before disposal of people in Ratchaburi Town Municipality that it did not follow the set hypothesis. Even though the study indicated that most people had received information about garbage separation from television and newspaper media but it could not cause them to have different behaviors on waste separation and disposal since the information from the media might be least, particularly by the information from the governmental agencies. This was harmonious with the study of Chuda Jitpituk (1983: 58-59) about the importance to define the behavior of human beings such as personnel characteristics of human being that were

belief, value, attitude, and personality. These had influences on behaviors but the behavior still not being performed if there was no stimulation, which was the internal factors that were accumulation of knowledge, and experiences received from external issues such as information, and personal telling for instance. Therefore, reception of information was an important factor that made the person to express corrected and proper behavior. In this study, people received the information at low level so it did not affect to the garbage separation behavior, and the results indicated that the information receiving had no association with garbage separation and disposal behavior of people in the Ratchaburi Town Municipality.

5.2.9 Knowledge on Garbage Separation and Disposal

The research findings revealed that knowledge was associate to the garbage separation behavior before disposal of people in Ratchaburi Town Municipality that it did follow the set hypothesis. It demonstrated that people in Ratchaburi Town Municipality, no matter how much knowledge they had which level, it would have no affect on the behavior before disposal. It is obviously seen that the sample group of 375 people or 100% of the sample group had knowledge on garbage disposal and most of them had behaviors at moderate level but their knowledge had no association with garbage disposal behavior of people in Ratchaburi Town Municipality. It might be the reason that a certain number of people received knowledge from different sources such as television watching, newspaper or magazine or journal reading. This was congruent with Mancharat Wiratchwong (1999: 112-136) on the topic of "Evaluation of the Waste Separation and Recycling Project of Phanatnikhom Municipality, Chonburi Province", which revealed that the information receiving had statistically significant affected to knowledge on solid waste separation, information receiving and knowledge affected to attitude and behavior of solid waste separation at statistical significance at level of 0.05.

5.2.10 Attitudes toward garbage Separation

The research findings revealed attitudes toward garbage separation had association to the garbage separation behavior before disposal of people in Ratchaburi Town Municipality in the positive attitude that it followed the set

hypothesis that the attitude associated the garbage disposal behavior. This was not congruent the concept suggested by Sucha Chan-Em (1988: 250), that what behaviors that people expressed based on their attitudes. Therefore, any attitude or tendency of feeling of person would lead to perform behavior in the same direction but in this study, it might be the majority of people (96.8%) who had positive thinking that the proper garbage disposal behavior would be appropriate to conserve environment and they were willing to separate garbage before disposal which indicated a participation of social responsibility. Moreover, it was also congruent with Mancharat Wiratchwong (1999: 112-136) on the topic of "Evaluation of the Waste Separation and Recycling Project of Phanatnikhom Municipality, Chonburi Province", which revealed that the information receiving had statistically significant affected to knowledge on solid waste separation, information receiving and knowledge affected to attitude and behavior of solid waste separation at statistical significance at level of 0.05. Nevertheless, some of them were still have improper garbage disposal behavior due to inadequate receptacle or waste bins for each type of waste. This caused problems and obstacles for garbage separation.

CHAPTER 6
CONCLUSIONS AND RECOMMENDATIONS

The objectives of the study were to study the garbage disposal behaviors of people in Ratchaburi Town Municipality, to study factors affected people behaviors on garbage disposal in Ratchaburi Town Municipality, Muang District, Ratchaburi Province, and to study problems and recommendations about garbage disposal in Ratchaburi Town Municipality, Muang District, Ratchaburi Province. Results would be used as basic information for promotion campaign for people in Ratchaburi Town Municipality to have the proper behaviors on separation and disposal.

This was a survey research and the populations were 6,009 people who lived in the Ratchaburi Town Municipality, Muang District, Ratchaburi Province. The sample group of 375 people was obtained by using the method of purposive sampling by selecting the route 1 and 3 of trucks running for garbage collection. Afterwards, the accidental sampling technique was used for data collection from people who lived in the areas of the two routes of garbage collection. The total amount of sample group was 375 persons.

Questionnaire was used as a tool for data collection. It consisted of the questions in different categories that were basic information of the demographic characteristics of population, information receiving on waste separation, knowledge on waste separation, and attitude on waste separation, including problems and suggestions of people on waste separation in Ratchaburi Town Municipality. It was determined the tool quality by thesis committee to examine the content validity and language used, then it was tried out with the 30 persons to determine the reliability. The reliability value was 0.76-0.93, subsequently it was used with the 375 people of the sample group. The data were collected by the researcher and 5 research assistants. The questionnaires were checked for the completeness. It was 375 questionnaires completed that was 100 percentages.

The computer program, SPSS Version 10.01 for window, was employed for data analysis by calculating the primary data in terms of frequency, percentage, mean, and standard deviation, in addition to the analysis of the association between the affected factors and the behaviors on waste separation and disposal by testing with Chi-Square (χ^2- test). The data were presented in tables and description that can be concluded as follows:

6.1 Conclusions

6.1.1 General Characteristics of the Sample Group

It was found that most of the sample group of people in Ratchaburi Town Municipality, were female (59.5%), in age group between 26-35 years with the mean of 35.29 years (30.1%), were members status in family, most of their occupation had as merchants (32.8 %). Most of the sample group had the educational level were diploma / certificates / advance certificate (55.2%), had income less than or equivalence to 10,000 baht (42.9 %), and most of the sample group were not member of any group or organization (98.4%).

6.1.2 Information Receiving, Knowledge, Attitude, and Behavior on Garbage Disposal of People in Ratchaburi Town Municipality

1) Information Receiving

The findings showed that most of the sample group of people in Ratchaburi Town Municipality received the information at the low level (83.7%). The 22.4% and 20.3% of people often received information from television and newspaper every day, and the 96.8 % of the sample group received the information at the low level from government.

2) Knowledge on Garbage Disposal

It was found that people in Ratchaburi Town Municipality had moderate knowledge on garbage separation and disposal. Most of the sample group were able to give the right answer but some items that they gave the wrong answer were questions about dry waste, 97.9% understood that dry waste meant the inflammable only, 96.3% understood that the dry lumbers can be thrown away together with the plant and vegetable scraps because they came from the plant as well, and people who took responsibility of waste disposal was Ratchaburi Town Municipality only.

3) Attitudes toward Garbage Disposal

It was found that 96.8% of people in Ratchaburi Town Municipality had positive attitude towards the garbage disposal behavior, and 3.2% of the sample group had neutral attitude. Most of the sample group (86.1%) had opinions as strongly agree that the garbage should be separated before disposal. 65.3% of sample group agreed that the garbage separation would help the waste generation to decrease each day. The sample group (78.4%) did not agree that to separate or not separate the used insecticide tin would be no differences because the other people did not separate, and 47.2% of the sample group also did not agree that the used insecticide tins. No need to separate before disposal because it was small amount.

4) Behavior on Garbage Disposal

It was found that 92.0% of people in Ratchaburi Town Municipality had moderate level of behaviors on waste separation and disposal. Little of the sample group (8.0%) had the high level behavior on waste separation and disposal. Almost 64% of the sample group had the behavior to separate the food scrap, vegetable, and plastic bottle from each other after eating every time. The garbage should be separated every time before disposal. More than half of the sample group (56.3%) had the behaviors to separate the drinking bottles of water or other soft drink from other types of waste. Most of the sample group (95.5%) had the behaviors to persuade the members in the family to separate the waste before disposal. Most of the sample group (92.8%) had behavior to throw the foams contained food with other waste immediately. Most of the sample group (94.5 %) did not drop the food scraps on the cover of bin by do not open the cover before throw in.

6.1.3 Factors Affecting the Garbage Disposal Behaviors of People in Ratchaburi Town Municipality

From the data analysis, it can be concluded that the factors affecting the garbage disposal behaviors of people in Ratchaburi Town Municipality were as the following. The occupation had association with garbage disposal behavior at statistical significant level of 0.05. The status in the society had association with garbage disposal behavior at statistical significant level of 0.01. Knowledge had association with garbage disposal behavior at statistical significant level of 0.001, and attitude had association with garbage disposal behavior at statistical significant level of 0.001.

6.1.4 Problems and Suggestions of people on Garbage Separation

The opinions of people on the waste separation and disposal were expressed as it was very good idea. They agreed that it's convenient to do so; it would support the further step to separate faster and help to decrease the microorganism spreading.

The opinions about the problems and obstacles of waste separation, people had opinions that there were not enough providing bins for separation by the municipality, and there were few people had pinions that it consumed more time for waste separation, and most of them thought that they would cooperate with every project of municipality.

The recommendations were as follows: People gave the opinions that the municipality had collected lately, the waste would produce bad smell to annoy people, and suggested that there were few municipal officers so there should be increasing member the officers.

6.1.5 Observations on Garbage Disposal Behavior of People in Ratchaburi Town Municipality

From the observations of the people on garbage separation in Ratchaburi Town Municipality, it was found that 100% of households had their own waste receptacles before disposing at the provided bin. Little over half of the sample group (52.8%) did not separate into different types that were wet waste, dry waste, and

hazardous waste. Little over half of the sample group (56.5%) had the waste management by disposal into the same bin. Almost 80.0% of the sample group had separated the waste as paper type, glass type, metal type, and plastic type for sale. and 92.0% had the bin for food scrap separated from the other type of wastes.

6.2 Recommendation from the Research

From the study on factors affecting garbage disposal behavior of people in Ratchaburi Town Municipality, Muang District, Ratchaburi Province, the researcher had the suggestions as follows:

1) Because of the low level of people's receiving information, so there should be more campaign on television, and newspaper, and the other media, particularly, media from the governmental sectors. Therefore, the related and responsible work units of government such as Ratchaburi Town Municipality, and Office of Public Health of Ratchaburi Province should have the policy to provide the information on garbage separation and disposal increasingly by promoting the behaviors on garbage separation and disposal at the appropriate level further through the different media such as radio, documents, journal, and poster seriously.

2) The behaviors on garbage separation and disposal of most people were at moderate level. The majority suggested that the garbage separation could not be done because of inadequate waste bin. Therefore, the responsible units, particularly, Ratchaburi Town Municipality should be aware of this problem by providing adequate amount of waste bins, and provided more waste collectors in order to be able to collect garbage everyday so the waste would not be left over in the bin to cause impact on the environment and to annoy people with bad smell, including being sources of breeding germs, places of insects and animals disease carriers.

6.3 Recommendation for the further Research

1) In this study, it was found that the of occupation, and status in the families had association with behaviors on garbage separation and disposal of people in Ratchaburi Town Municipality. Therefore, there should be more studies on other factors that expected to be affected the behavior on waste separation and disposal of people in Ratchaburi Town Municipality such as belief, and value in order to be a guideline to promote campaign for people to have proper behaviors on waste separation further.

2) There should be studies on topics of introducing different waste generating, separating and reducing at present to recycle in order to promote campaign for general people to realize the value, understanding, and cooperating with Ratchaburi Town Municipality in garbage separation. This would be safe for the natural resources and decrease the amount of garbage to be disposed.

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APPENDIX

ชุดที่.....

แบบสอบถาม

เรื่อง

ปัจจัยที่มีผลต่อพฤติกรรมการแยกทิ้งมูลฝอยของประชาชนในเขตเทศบาลเมืองราชบุรี

อำเภอเมือง จังหวัดราชบุรี

โดย

THIRAPORN CHANDRASIRI

นักศึกษาปริญญาโท สาขาสิ่งแวดล้อมศึกษา

คณะสังคมศาสตร์และมนุษยศาสตร์ มหาวิทยาลัยมหิดล

คำชี้แจง

1. แบบสอบถามนี้ใช้สัมภาษณ์เฉพาะผู้ที่พักอาศัยอยู่ในเขตเทศบาลเมืองราชบุรี ซึ่งเป็นหัวหน้าครัวเรือน หรือคู่สมรส หรือสมาชิกภายในครัวเรือน ที่มีอายุตั้งแต่ 15 ปีขึ้นไป จำนวนครัวเรือนละ 1 คน

2. แบบสอบถามแบ่งออกเป็น 4 ส่วน ดังนี้

ส่วนที่ 1 ข้อมูลพื้นฐานส่วนบุคคล

ส่วนที่ 2 พฤติกรรมการแยกทิ้งมูลฝอย

ส่วนที่ 3 ปัญหาและข้อเสนอแนะของประชาชนเกี่ยวกับการแยกทิ้งมูลฝอย

ส่วนที่ 4 แบบสังเกตพฤติกรรมการแยกทิ้งมูลฝอยภายในครัวเรือน

บ้านเลขที่……ถนน……..เทศบาลเมืองราชบุรี อำเภอเมือง จังหวัดราชบุรี……
……

สำหรับผู้วิจัย

เส้นทางการปฏิบัติงานของรถเก็บขนมูลฝอยเส้นที่……..

<u>ส่วนที่ 1</u> ก. ข้อมูลพื้นฐานส่วนบุคคล

กรุณาเขียนเครื่องหมาย / หน้าข้อความหรือเติมข้อความที่เกี่ยวข้องกับตัวท่านลงในช่องว่าง

1. เพศ ❍ 1. หญิง ❍ 2. ชาย

2. อายุ ..... ปี

3. สถานภาพในครอบครัว

❍ 1. หัวหน้าครัวเรือน ❍ 2. คู่สมรส
❍ 3. สมาชิกในครอบครัว

3. อาชีพ

❍ 1. รับจ้างทั่วไป ❍ 2. ลูกจ้างเอกชน / ลูกจ้างประจำ
❍ 3. เกษตรกรรม ❍ 4. รับราชการ / พนักงานรัฐวิสาหกิจ
❍ 5. ค้าขาย ❍ 6. ธุรกิจส่วนตัว
❍ 7. แม่บ้าน / พ่อบ้าน ❍ 8. ว่างงาน
❍ 9. อื่น ๆ ระบุ .....

4. ระดับการศึกษาชั้นสูงสุด

❍ 1. ประถมศึกษา ❍ 2. มัธยมศึกษาตอนต้น
❍ 3. มัธยมศึกษาตอนปลาย / ปวช./ ปวท. ❍ 4. อนุปริญญา / ปวส.
❍ 5. ปริญญาตรี ❍ 6. สูงกว่าปริญญาตรี

5. รายได้เฉลี่ยต่อเดือนของครอบครัว โดยประมาณ ..... บาท / เดือน

6. ท่านมีบทบาทหรือเป็นสมาชิกกลุ่ม องค์กร หรือชมรมใดบ้าง ที่จัดตั้งภายในเขตเทศบาลเมืองราชบุรี (เลือกตอบได้มากกว่า 1 คำตอบ)

❍ 1. ผู้นำชุมชน ❍ 2. อาสาสมัครสาธารณสุข
❍ 3. ลูกเสือชาวบ้าน ❍ 4. ชมรมผู้สูงอายุ
❍ 5. กลุ่มแม่บ้าน ❍ 6. สมาชิกกลุ่มสหกรณ์
❍ 7. สมาชิกกองทุนหมู่บ้าน ❍ 8. อื่นๆ (ระบุ).....
❍ 9. ไม่ได้เป็นสมาชิกกลุ่มใดเลย

ข. การรับรู้ข้อมูลข่าวสารเรื่องการแยกทิ้งมูลฝอย

1. ท่านได้รับข้อมูลข่าวสารเรื่องการแยกทิ้งมูลฝอยจากแหล่งต่างๆมากน้อยเพียงใด โปรดเขียนเครื่องหมาย / ในช่องที่ตรงกับความถี่ที่ได้รับข่าวสารจากแหล่งต่างๆ

สื่อที่ได้รับ	เคยได้รับข่าวสาร					
	ทุกวัน	3-4 ครั้ง /สัปดาห์	1 – 2 ครั้ง / สัปดาห์	1 – 2 ครั้ง / เดือน	นานๆครั้ง	ไม่เคยได้รับ
1. วิทยุ						
2. โทรทัศน์						
3. หนังสือพิมพ์						
4. นิตยสาร / วารสาร						
5. สนทนาพูดคุยกับเพื่อน /ญาติ						
6. จากทางราชการ						
7.อื่นๆระบุ.....						

2. ท่านต้องการได้รับข่าวสารเกี่ยวกับการแยกทิ้งมูลฝอยเพิ่มเติมหรือไม่

❍ ไม่ต้องการ (ข้ามไปตอบหน้าถัดไป) ❍ ต้องการ เรื่อง .....

3. ถ้าต้องการรับข่าวสารเกี่ยวกับการแยกทิ้งมูลฝอยเพิ่มเติม ท่านต้องการทราบจากแหล่งใดมากที่สุด

❍ 1. ป้ายประชาสัมพันธ์ ❍ 2. เอกสารเผยแพร่

❍ 3. เจ้าหน้าที่ของเทศบาล ❍ 4. บุคคลในครัวเรือน

❍ 5. เพื่อนบ้าน ❍ 6. อื่น ๆ ระบุ .....

ค. ความรู้เรื่องการแยกทิ้งมูลฝอย

ความรู้เรื่องการแยกทิ้งมูลฝอย	ใช่	ไม่ใช่
1. มูลฝอยจากครัวเรือนมี 3 ประเภทคือ มูลฝอยเปียก มูลฝอยแห้ง และมูลฝอยอันตราย		
2. มูลฝอยเปียกคือมูลฝอยที่ย่อยสลายได้ง่ายและบูดเน่าได้หากปล่อยทิ้งไว้		
3. มูลฝอยแห้งหมายถึงมูลฝอยที่เผาไหม้ได้เท่านั้น		
4. มูลฝอยที่เป็นอันตรายต่อชีวิตมนุษย์ สัตว์ และสิ่งแวดล้อม คือมูลฝอยอันตราย		
5. ขวดยาฆ่าแมลง ใบมีดโกน แบตเตอรี่ที่ใช้หมดแล้ว เป็นมูลฝอยอันตราย		
6. เศษอาหาร เศษผักผลไม้ ซากสัตว์จัดเป็นมูลฝอยเปียก		
7. มูลฝอยแห้งได้แก่เศษไม้ เศษโลหะ เศษพลาสติก ขวด และเศษผ้า		
8. การแยกมูลฝอยก่อนทิ้งไม่ช่วยแก้ปัญหามูลฝอย		
9. ถุงพลาสติกที่ใช้ใส่อาหาร เมื่อนำอาหารออกจากถุงแล้ว ควรทิ้งลงในถังรองรับมูลฝอยแห้ง		

ค. ความรู้เรื่องการแยกทิ้งมูลฝอย (ต่อ)

ความรู้เรื่องการแยกทิ้งมูลฝอย	ใช่	ไม่ใช่
10.หลอดไฟนีออนที่เสื่อมสภาพแล้วสามารถทิ้งรวมกับมูลฝอยอื่นได้		
11.เศษไม้แห้งทิ้งรวมกับเศษพืชผักได้เลย เพราะเป็นส่วนที่มาจากพืชเหมือนกัน		
12.มูลฝอยเปียกต้องทิ้งลงในถังรองรับที่มีฝาปิดมิดชิด		
13. มูลฝอยประเภทเคมีภัณฑ์ เช่น ขวดยาฆ่าแมลง ขวดใส่ปุ๋ย กระป๋องสี สามารถทิ้งรวมกับมูลฝอยแห้งหรือเปียกก็ได้ เพราะไม่ทำให้เกิดปฏิกิริยาทางเคมี		
14. เศษแก้วแตก เศษกระเบื้อง ควรแยกออกจากมูลฝอยอื่นก่อนทิ้ง		
15. การเผามูลฝอยแห้ง เช่น เศษกระดาษ เศษใบไม้ ทำให้โลกร้อนกว่าปกติ		
16. มูลฝอยทุกประเภท โดยเฉพาะเศษอาหาร ผัก ผลไม้หรือซากสัตว์ สามารถทิ้งลงในแหล่งน้ำลำคลองได้ เพราะไม่ก่อให้เกิดอันตรายต่อมนุษย์และสัตว์ที่ใช้น้ำนั้น		
17. มูลฝอยประเภทกระป๋องที่มีการอัดลม เช่น กระป๋องสเปรย์ กระป๋องยาฆ่าแมลง ถ้านำไปกำจัดโดยวิธีเผาจะระเบิดได้ ดังนั้นจึงควรแยกออกจากมูลฝอยประเภทอื่น		
18. มูลฝอยแห้ง เช่น กระดาษ ขวดพลาสติก เศษโลหะ ขวดแก้ว สามารถนำไปเป็นวัตถุดิบในการนำกลับมาใช้ใหม่ (Recycle)		
19. การกำจัดมูลฝอย ท่านคิดว่าผู้ที่ต้องรับผิดชอบคือเทศบาลเมืองราชบุรีเท่านั้น		
20. การแยกถังรองรับออกเป็นประเภทต่างๆ เช่น ถังรองรับมูลฝอยเปียก ถังรองรับมูลฝอยแห้ง และถังรองรับมูลฝอยอันตราย สามารถแก้ปัญหาเกี่ยวกับการจัดการมูลฝอยได้ดี เพราะทำให้สะดวกต่อการเก็บขน		

ง. ทัศนคติที่มีต่อการแยกทิ้งมูลฝอย

โปรดเขียนเครื่องหมาย / ลงในช่องที่ตรงกับความคิดเห็นของท่านมากที่สุดเพียงข้อเดียว

ทัศนคติที่มีต่อการแยกทิ้งมูลฝอย	เห็นด้วยอย่างยิ่ง	เห็นด้วย	ไม่แน่ใจ	ไม่เห็นด้วย	ไม่เห็นด้วยอย่างยิ่ง
1. เราต้องแยกมูลฝอยก่อนทิ้งทุกครั้ง					
2. การแยกมูลฝอยก่อนทิ้งไม่ช่วยลดปัญหามลภาวะที่เกิดขึ้นแต่อย่างใด					
3. การแยกทิ้งมูลฝอยเป็นการเสียเวลา					
4. การแยกมูลฝอยก่อนทิ้งเป็นการมีส่วนร่วมในการรับผิดชอบต่อสังคม					
5. ท่านมีความยินดีที่จะช่วยแยกทิ้งมูลฝอยอย่างสม่ำเสมอ					
6. การทิ้งมูลฝอยทุกประเภทรวมกัน ไม่ว่าจะเป็นเศษอาหาร เศษแก้ว ถ่านไฟฉายที่เสื่อมสภาพ ไม่ก่อให้เกิดอันตรายต่อสุขภาพและสิ่งแวดล้อม					
7. การแยกถังรองรับมูลฝอยทำให้สิ้นเปลืองพื้นที่					
8. ไม่ควรแยกประเภทมูลฝอยเพราะปัจจุบันหน่วยงานรับซื้อมูลฝอยที่แยกประเภทแล้วมีไม่มากนัก					
9. การแยกประเภทมูลฝอยจะช่วยให้มูลฝอยที่เกิดขึ้นในแต่ละ วันมีปริมาณลดลงได้					
10.การแยกประเภทมูลฝอยหรือไม่แยกมีค่าเท่ากัน เพราะคนอื่นๆก็ยังไม่แยก					
11. เศษกระดาษ เศษเหล็ก แก้วที่นำไปหลอมใช้ใหม่มีคุณภาพด้อยกว่าเดิม					
12. กระป๋องยาฆ่าแมลงที่ใช้หมดแล้ว ไม่จำเป็นต้องแยกทิ้งเพราะมีจำนวนน้อย					

<u>ส่วนที่ 2</u> พฤติกรรมการแยกทิ้งมูลฝอย

พฤติกรรมการแยกทิ้งมูลฝอย	การปฏิบัติ		
	ทุกครั้ง	บางครั้ง	ไม่เคย
1. เมื่อทานอาหารเสร็จแล้ว ท่านแยกเศษอาหาร เศษผัก ผลไม้ และขวดพลาสติกออกจากกัน			
2. เปลือกและเศษของผลไม้ที่เหลือจากการรับประทาน ท่านทิ้งรวมกับมูลฝอยทั่วไป			
3. เศษอาหาร ท่านทิ้งรวมกับเศษพืชผักที่ใช้ในการประกอบอาหาร			
4. เมื่อมีสุนัข แมว หนู หรือสัตว์อื่น ตายในบริเวณบ้าน ท่านจะแยกสัตว์ที่ตายเหล่านั้นออกไปฝังดินหรือแยกทิ้งจากมูลฝอยอื่นๆ			
5. ขวดแชมพู ขวดสบู่เหลว ที่เป็นพลาสติก เมื่อใช้หมดแล้วท่านทิ้งในถังรองรับมูลฝอยโดยไม่ได้แยก			
6. ท่านแยกมูลฝอยประเภทกระดาษ เช่น กระดาษหนังสือพิมพ์ กล่อง ลังกระดาษ แยกออกจากมูลฝอยประเภทอื่น			
7. ท่านแยกขวดที่บรรจุน้ำดื่ม หรือเครื่องดื่มที่หมดแล้ว ออกจากมูลฝอยประเภทอื่น			
8. เศษเหล็ก เศษอลูมิเนียมที่ใช้การไม่ได้แล้ว ท่านคัดแยกออกจากมูลฝอยประเภทอื่นๆ			
9. กระป๋องยาฆ่าแมลง ขวดยาฆ่าแมลงที่ใช้หมดแล้วท่านทิ้งรวมไปกับมูลฝอยอื่น			
10. ถ่านไฟฉาย แบตเตอรี่ ที่หมดอายุการใช้งานแล้วท่านทิ้งรวมกับมูลฝอยอื่นๆ			
11. ท่านแยกใบมีดโกนที่ใช้แล้ว เศษแก้วแตก เศษกระเบื้องแตกหรือหลอดไฟฟ้าออกจากมูลฝอยประเภทอื่นก่อนนำไปทิ้ง			
12. กล่องโฟมบรรจุอาหารเมื่อใช้แล้ว ท่านทิ้งรวมกับมูลฝอยทั่วไปทันที			
13. ท่านชักชวนสมาชิกในครอบครัว ให้แยกมูลฝอยก่อนทิ้ง			
14. หากฝาถังรองรับมูลฝอยของเทศบาลปิดอยู่ ท่านจะทิ้งเศษอาหารไว้บนฝาถัง หรือกองไว้บนฝาถังเลย โดยไม่เปิดฝาถังก่อนทิ้ง			
15. ท่านทิ้งมูลฝอยลงถังรองรับ โดยไม่แยกประเภท เพราะถือว่าได้ทิ้งมูลฝอยลงถังแล้ว			

<u>ส่วนที่ 3</u> ปัญหาและข้อเสนอแนะของประชาชนเกี่ยวกับการแยกทิ้งมูลฝอย

1. ท่านมีความคิดเห็นอย่างไรเกี่ยวกับการให้ประชาชนในเขตเทศบาลเมืองราชบุรี คัดแยกมูลฝอยภายในครัวเรือนก่อนนำมาทิ้งที่จุดรองรับ

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2. หากต้องแยกมูลฝอยภายในครัวเรือนก่อนทิ้ง ท่านคิดว่าปัญหา และอุปสรรคคืออะไร

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3. หากภายในเขตเทศบาล มีโครงการสนับสนุนให้มีการคัดแยกมูลฝอยในครัวเรือนก่อนทำการทิ้ง ท่านจะ ให้ความร่วมมือหรือไม่

   ❍ ไม่ร่วมมือ ❍ ร่วมมือ ❍ ไม่แน่ใจ

   กรณีร่วมมือ ท่านจะให้ความร่วมมืออย่างไรบ้าง

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4. ข้อเสนอแนะอื่นๆ

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ขอบพระคุณทุกท่านที่ให้ความร่วมมือเป็นอย่างดี

เฉพาะผู้วิจัย

<u>ส่วนที่ 4</u> แบบตรวจสอบรายการ (Check list) พฤติกรรมการแยกทิ้งมูลฝอยของประชาชนภายในครัวเรือน

บ้านเลขที่.....ถนน.....เส้นทางการปฏิบัติงานของรถเก็บขนมูลฝอยเส้นที่.....

รายการ	มี	ไม่มี
1. มีจุดรองรับมูลฝอยภายในครัวเรือน ก่อนนำไปทิ้งรวมกับถังรองรับที่ ทางเทศบาลจัดไว้		
3. ภายในครัวเรือนมีการแยกทิ้งมูลฝอย ออกเป็นประเภทต่างๆคือ มูลฝอยเปียก มูลฝอยแห้ง และมูลฝอยอันตราย		
3. ภายในครัวเรือนมีการจัดการกับมูลฝอยโดยทิ้งมูลฝอยทุกประเภทรวมลงในถังเดียวกัน		
4. มีการคัดแยกมูลฝอยประเภทเศษกระดาษ แก้ว เศษโลหะ และเศษพลาสติกออกเพื่อรวบรวมไว้ขาย		
5. มีถังรองรับมูลฝอยประเภทเศษอาหารแยกออกจากมูลฝอยประเภทอื่นๆ		

BIOGRAPHY

NAME	Miss Thiraporn Chandrasiri
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PLACE OF BIRTH	Ratchaburi, Thailand
INSTITUTION ATTENDED	Boromrachachonnee Nurse College, 1990-1994 Bachelor of Nurse Mahidol University, 2000-2004 Master of Education (Environmental Education)
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