

FACTORS INFLUENCING THE SUCCESS OF WASTE MANAGEMENT IN COMMUNITY

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ABSTRACT

Abstract—The purpose of this research was to study the process innovation, community participation and community leadership roles that affect the success of waste management in communities located in Bangkok. The research approach uses quantitative research. The sample group was people who have lived in communities located in Bangkok, comprising 300 people, using a simple random sampling method. The statistics used in the analysis were frequency, percentage, mean, standard deviation, and multiple regression analysis. The results revealed that the level of process innovation, community participation, community leadership roles and the success of waste management in the community were at a high level. The analysis of the influence of process innovation, community participation and community leadership roles that affected the success of waste management in communities located in Bangkok was found that all factors can together predict the success of waste management which all variables could account for the variance of waste management success in community at 54.76 percent. The factors that affect the success of waste management the most was community leadership roles, followed by process innovation and community participation, respectively.

Keywords— Community Leadership, Community Participation, Process Innovation, Waste Management

INTRODUCTION

At present, Thailand has undergone rapid economic, social, demographic, and environmental changes that have led Thailand to face more serious waste and environmental problems than in the past. Including the rate of land utilization is increasing for the production of food and consumer goods that directly and indirectly affects the quality of life of the population. Including there are various environmental conditions in Thailand such as PM 2.5 dust, solid waste from the source and sewage. Most of the problems are caused by various human activities that lack scientifically correct management and are not properly managed according to the context of each area, causing an increase in the amount of solid waste. The amount of solid waste generated throughout the country in 2020 is approximately 27.35 million tons which decrease from 2019. Part of the reason for the decrease in the amount of solid waste is due to the situation of the spread of the Coronavirus disease 2019, which has reduced the amount of municipal solid waste. because there is a control over the travel of foreign tourists to Thailand. At the same time, there are measures requiring Work From Home to increase the amount of single use plastic, especially in urban areas where using the service buying goods and food online has increased (Pollution Control Department, 2021), which has caused environmental problems and affect public health.

The current solid waste problem has intensified and has a greater impact due to a variety of factors, including a growing population, materialistic prosperity, and the productivity of new technologies that generate more waste materials and turn them into solid waste as well. At present, solid waste management is a problem that needs to be addressed and resolved quickly. This is because the amount of solid waste will increase in proportion to the growing population and economic growth of developing countries. While agencies that have to be responsible or come to manage waste problems still have limitations in terms of budget and management that lacks personnel with knowledge and ability to manage properly or specialized skills. Including the intensity of the use of regulations, measures, controls and penalties that are still unclear (Jeamponk, 2011). Therefore, it is an obstacle to the practice of managing solid waste problems and the current major problem that is an international problem is the waste problem caused by the covid-19 phenomenon which forces to change our way of life together around the world and have to turn to do everything at home. If it is necessary to leave the house must wear a mask to prevent disease or waste from ordering food to eat at home. These behaviors result in the creation of plastic and paper waste that has a negative impact on the environment. Most of them increased by more than 60% in Bangkok. (Thailand Environment Institute, 2021).

The current concept of waste management is to minimize waste and treat the rest with effective technology. In the area of Dusit Bangkok have economic growth and has a large latent population causing the amount of waste to increase rapidly current waste management unable to support the rapidly increasing amount of waste, resulting in the problem of odor pollution, which is a carrier of communicable diseases and affects public health. Therefore, it is necessary for people to take part in solid waste management, encouraging people to have the correct knowledge and understanding of solid waste management. This will reduce the amount of solid waste that must be disposed of to a minimum. Solid waste can be used for both reuse and reuse. People can reduce the amount of solid waste, resulting in a good environment. The landscape is beautiful as well as benefiting from waste separation sold to increase family income and recycling, this makes it possible to save costs as well. People are aware of the problems and solutions for solving solid waste, recycling waste for new uses, as well as supporting people's participation in reducing and separating waste concretely.

From such a problem, therefore, the researcher is interested in studying the factors influencing the success of waste management in community which emphasize on the factor of process innovation, community participation and community leadership roles that affect the success of waste management in the community of Dusit district located in Bangkok. The results of the study for use as a guideline for planning development of solid waste management to have more efficient which will have a positive effect on the quality of life of the people in community and can continue to be a source of learning for other communities.

LITERATURE REVIEWS

Utterback & Abernathy (1975) defined that Process innovation refers to new tools, an intermediary transfer of information between import and export processes. Process innovation is the basis for improving the efficiency of creating products and services that often involve adding value to customers. Yusoonthorn (2014) gave the meaning and steps of process innovation which consists of 4 important steps as follows. *Study and find problems (Define)* means using any method or action to find problems that occur in the organization and the members of the organization agree that what is happening is a problem that happened in real organizations. *Problem analysis (Discover)* means that the organization takes an action to bring problems in the community to analyze the cause of the problem and those involved. Including identifying various factors involved that cause those problems and those involved, including identifying various factors involved that cause those problems. *Design solutions (Develop)* means that the organization proceeds to determine guidelines or methods used to solve problems that occur according to the causes of problems and various factors associated that cause those problems. The responsible person or person involved in resolving the problem is clearly and practicable. *Presentation and feedback (Demonstrate)* means presenting problems, causes of problems, and approaches or methods for solving problems that arise to members of the organization. So that members of the organization are aware and understand what those involved will do in solving the problem. Members of the organization are involved in the implementation and evaluation of solutions including giving suggestions and comments for effective problem solving and effective as defined.

Erwin (1976) gave the concept of participatory development as a process in which people are involved in the development process, collective thinking, collective decision-making, solving their own problems, using creativity and people's skills together with the use of appropriate technology to solve problems. Keith (1971) defines participation as the mental and emotional involvement of a person in a group situation in which the effect of such involvement motivates action to achieve the group's goals and creates a sense of self-confidence and feel a sense of responsibility for the group. Duang-in. (2020) summarized the process of participation as having 5 steps as follows. *Participation in community* refers to encourage people to join together to learn about the conditions of the community, lifestyle, resources and environment to be used as basic information to work and jointly search for problems and causes of problems, as well as prioritizing problems. *Participation in planning* involves discussion and opinion groups to determine the policy, objectives, methods, approaches and resources to be used. *Participation in development* refers to provide support in terms of materials, labor, capital or participate in the management of resource utilization, coordination and assistance operations. *Participation in the development benefits* is the application of activities for material and spiritual benefits based on equality of individuals and society. *Participation in monitoring and evaluating* refers an inspection to know whether the results of operations have achieved the objectives. The evaluation can be scheduled for continuous periods or for the entire project at

one time. However, it is caused by the fact that people of all groups, genders, and ages are involved in setting rules of living together, creative activities together, take care and benefit from the resources available in the community together.

Leader is defined as a person who is recognized and admired by others and is an appointed person or be regarded as a leader in various operations in an organization. An organization relies on a person who leads leadership and will enable the organization to achieve its goals. Leadership means a person who has the ability to command other people by being recognized and praised by other people. Leadership is the responsibility of governing, directing or ordering, commanding, coordinating by virtue of authority in order to achieve business results for accomplished the objectives and goals that require leadership in order to achieve business results for achieving objectives and goals requiring leadership (Meesiri, 2016). Blake and Mouton, 1964 divided leadership behavior into 2 Dimensions include the 1st dimension: Concern for Production means emphasizing on the achievement of work, such as the number of work pieces, the time it takes to complete the work as scheduled. Get people to work on their responsibilities. based on mutual trust not by coercion Focus on creating and maintaining good working conditions. Fair salary and remuneration provide stability in work as well as building good working relationships is developed in order to promptly resolve any problems that arise.

METHODS

The target population used in this research were people in community in Dusit distinct, Bangkok. The sample size was determined in the event that the population size was known, calculated using Taro Yamane's formula (Yamane, 1967), where a 5% error was determined. A sample size of 240 people was obtained and the samples were selected using a simple sampling method. The tool used to collect data is a questionnaire which is divided into 3 parts as follows: Part 1, Demographic data consisted of 1) gender 2) age 3) educational level 4) length of stay in the community. Part 2, a questionnaire about the level of community participation, community leadership, and process innovation of the community in Dusit District, Bangkok. Part 3, a questionnaire on the level of waste management quality of communities in Dusit District, Bangkok in 5 aspects, consisting of reduction of waste generation and waste separation at the point of origin, resting and waiting for collection, collection and transportation unloading of solid waste and waste disposal. Statistics used in data analysis, the researcher used descriptive statistics to describe the demographic characteristics such as frequency, percentage, mean and standard deviation. As well as the inferential statistical analysis was used to test research hypotheses by using Multiple regression analysis.

RESULTS

The results of the research concluded that demographic characteristics of the sample mostly female 56.78% were in the age range between 41 - 50 years, the most 26.69% had the highest level of education in the bachelor's degree, accounted for 55.51% and had a period of stay in the Dusit District, the period of 11-15 years, the most, accounting for 27.54%.

The level of community participation process innovation service innovation and quality of waste management, overall, it was at a high level in all factors. It was found that the respondents gave their opinions the most about process innovation, followed by service innovation, community participation, and a quality of waste management, respectively.

The results of the analysis of the community participation model process innovation service innovation affecting the quality of residual waste management in communities, Dusit District, Bangkok, it found that the predictors with the highest multiple regression coefficients were community leadership ($\beta=0.258$), followed by process innovation ($\beta=0.179$), and community participation ($\beta= 0.208$), respectively, with statistical significance at $F = 38.95$, and all variables could explain the variability of residual waste management quality in communities in Dusit District by 54.76 percent.

CONCLUSION AND FUTURE WORK

Conclusion and discussion

The results showed that the role of community leaders influenced the success of community waste management. In Bangkok most consistent with the research hypothesis. This is in line with the study of Duang-in (2020) to study the approaches for hazardous waste management from the household sector. The results of the management study revealed that the community has a strong point in having a community leader with leadership that causes the community to have less waste management problems which villagers respect and obey the leader. As a result, the community has a mechanism to drive operations and organize activities with external organizations efficiently and continually. There are disadvantages in the lack of policies and plans, monitoring, auditing and evaluating concrete results. Including in accordance with the study of Sumitsawan et al. (2021) studying e-waste management guidelines: a case study of Nong Tok Paen Subdistrict, Yang Talat District, Kalasin Province, found that the leadership style of change (transformational leadership), product innovation and process innovation are very important to the management of e-waste problems. This is because transformational leaders are more likely to change or reshape their subordinate offerings and re-engineer those offerings rather than believing that they are working to meet their subordinate expectations. They will be able to guide the vision of the future that will happen when waste is properly managed. There is intellectual stimulation by organizing training to educate knowledge and problems as well as the future implications of e-waste. There is a study to find ways to solve problems together in the community. by accepting opinions on how to manage e-waste problems from residents in the community and realize the maximum benefit of living together in the community without affecting the way of life both in health, tradition, culture and economy.

Moreover, the results showed that community participation had the least influence on the success of waste management. It consists of participating in the planning of waste management in the community, participation in the administration and management of waste in the community, and participation in the evaluation of waste management practices in the community. This is in line with the study of Plaikaew & Aksornpan (2019). The research results indicated that the development of a solid waste management model with community participation encourages the community to raise awareness of solid waste management, give the community the opportunity to participate in the development of solid waste management in every step, able to solve problems and manage solid waste efficiently and sustainably, promote quality of life and the well-being of the people in the community to improve. However, participation was found to influence the success of waste management less than a community leader role and process innovation and it was found that community members gave the most importance to their participation in community waste management planning, followed by participation in the administration and management of waste in the community and the least participation in the evaluation of waste management in the community. This indicates that the community still lacks the opportunity to participate in the evaluation, commenting and discussion of performance which is the final stage showing that the results of participation of community members must be useful and must be integrated in the final decision appropriately and valuable to community members (Plaikaew & Aksornpan, 2019).

Recommendations and future work

Relevant government agencies or community leaders should create opportunities for community members to participate in community waste management both in planning about waste management in the community, community waste management and evaluating the performance of waste management in the community. Members should be encouraged to actively participate in waste management activities and has applied information and communication technology to facilitate receiving information and communication. Everyone can discuss and provide information on how to solve waste management problems in the community together through various channels such as video conferences and mobile applications to help reduce the time of traveling to meet. In addition, an application should be developed to store a database on community waste management. Community members can quickly access information and participation activities and also used to store waste management data efficiently. In addition, community leaders should act as role models for waste management to build confidence and faith in the community including showing the role and duty of the group leader in acting as a good coordinator. Including leaders should be representatives of the community to communicate with the outside, taking good care of the relationship of community members and being a mediator when there is a conflict within the community in order for the members of the group to work together to achieve objectives and work efficiency.

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