Interdisciplinary Research Review
Volume 19, Number 5, Pages 39-47

Factors Influencing the Success of ISO 14001 Implementation in Honda Automotive Service Center, Thailand

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Abstract

The objective of this research is to find out the factors influencing ISO 14001 implementation in Honda automotive service center, Thailand by using Grounded Theory. The data of the study is collected by using mixed research method, that is, in-depth interviews, observation, and notes, as well as document studies after the in-depth interviews with key informants. In-depth interviews were conducted with managers of Honda Automotive Service Center with ISO 14001 certification. The result found out the success factors for ISO 14001 implementation as follows:1) Knowledge and understanding of ISO 14001; 2) Training of related staff before implementing ISO 14001; 3) A unique environmental policy; 4) The implementation as planned 5) Adequacy of related staff 6) Staff participation 7) The intention of management level; 8) Attractive payment to good supporter; 9) Implementation of appropriate technology 10) Monitoring and evaluation activities 11) Reviewing of Management 12) Continual improvement. The result concluded that the success of Honda automotive service centers in the implementation of the ISO 14001 system requires input factors, operational procedures factors, and supporting factors.

Keywords: Grounded theory, ISO 14001, Honda automotive service center

Article history: Received 07 January 2024, Revised 10 February 2024, Accepted 02 August 2024

1. Introduction

At present, Thai society has many activities in daily life. It has a car to help with transportation. The number of cars is increasing every year and tends to increase too. The total number of registered vehicles is totaled 44,716,614 units on July 31, 2024 [1]. Also, the car is a transportation facility, but the car must be maintained and repaired to extend the service life, reduce energy used, and reduce air pollution such as PM2.5 [2] by bringing the car to the service center for automotive technicians who have experience in engine maintenance.

Automotive service centers in Thailand are continually expanding and can be categorized into two types: 1) standard service centers, which are part of the car manufacturers' network, such as Honda, Toyota, Nissan, Isuzu, etc., and 2) independent service centers, which are not affiliated with carmakers. These independent centers may specialize in repairing a single brand or multiple brands, offering services such as engine repair, body paintwork, or undercarriage maintenance. Automotive service centers have various production and service activities that can impact the environment both directly and indirectly, contributing to water pollution, air pollution, and noise pollution [3], [4]. Additionally, factors such as customer demand, environmental image, and a good working environment play an essential role in encouraging the industrial and service sectors to focus on environmental management [5]. Honda Co., Ltd. has become a leader in integrated vehicle production and is recognized as the 6th largest manufacturing facility among Honda factories worldwide, excelling in both production technology and environmental

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standards. One of Honda's main global policies is to maintain a strong environmental management system, efficient energy use, and responsible resource management. Consequently, the company has adhered to the concept of environmentally friendly business operations with its dealers through the Green Factory Program, which encompasses energy management, pollution control, waste management, and hazardous waste handling in compliance with the principles and specifications of the ISO 14001 environmental standard. These activities result in Honda Automotive Service Center being certified ISO 14001, which is an environmental management standard that can confirm the leadership in the automotive industry in Thailand, along with being a leader in environmental quality, which is a standard set up to be used voluntarily but is considered a practice by the workplace and partners voluntarily [6].

In this study, the researcher aims to study the factors that affect the success and awareness of the staff in implementing the ISO 14001 system of the automotive service center as a case study because it causes water pollution, air pollution, noise pollution, waste management and hazardous waste that is not suitable as a guideline for other organizations or organizations who are interested in environmental management to be able to apply more efficiently.

1. Objective

To establish the Grounded Theory Study of factors affecting the success of the ISO 14001 system operation of Honda Automotive Service Center in Thailand.

3. Scope of the Study

1. Scope of content: the study of factors affecting the successful implementation of the ISO 14001 system of the Honda Automotive Service Center.

4. Research methodology

4.1 Study area and key informants

The selection of research areas and key informants for the Grounded Theory Study of the factors that contribute to the successful implementation of the ISO 14001 system of the Honda Automotive Service Center, Thailand that has received the ISO 14001 certification. The researcher has chosen the theoretical sample under the important principle that the informants are consistent and meet the objectives of the research. Therefore, employees with work experience in environmental management systems then it is a theoretical sample group because those people have the knowledge, understanding, and expertise in operations clearly to use in creating the theories that need to be studied.

4.2 Research tools

The important research tool is the researcher, in order to obtain complete and detailed information. Therefore, the researcher must be of theoretical sensitivity. The researcher has prepared the knowledge section by studying the documents and related research in order to establish the Grounded Theory Study of factors affecting the success of the ISO 14001 system operation of the Honda Automotive Service Center. The researcher has prepared the research questions based on the conceptual framework and theories by using open-ended questions. In addition, proceed to prepare a voice recorder, video record, notebook, and pen recorder for field data recording.

4.3 Ethics and code of conduct

This qualitative research is to establish the Grounded Theory Study of factors affecting the success of the ISO 14001 system operation of Honda Automotive Service Center. The researcher is aware of ethics. Therefore, attach importance to the research process by informing the key informants of the objectives before data collection as well as making appointments in advance before the interview by requesting the affiliation of the Faculty of Environment and Resource Studies, Mahidol University is the issuer of the interview request. However, the key informant is an employee at the Honda Automotive Service Center, may be affected by the information provided. The researcher did not reveal the names of key informants.

4.4 Data collection

Data collection methods in the field. The interview method, which is an important part of data collection, is flexible and can be changed while studying but requires observation, documents, and audio recording during the interview. Therefore, to obtain complete and detailed information according to research objectives, the researcher used 3 methods of data collection, in-depth interview, observation and note, and study documents as follows;

4.4.1 In-depth interview

The in-depth interview used open ended-questions. It uses to be a guideline for informal discussions with key informants, without attaching to any concepts that the researcher had in advance. Therefore, the question in the interview is real practice. Collecting data with key informants including executives, environmental management representative and employees with work experience in environmental management systems. For example, asking about knowledge, understanding, experience, to find out the facts. The interviewer must also be able to observe various behaviors such as facial expressions, eyes, voice, and feelings of the interviewee. It takes about 30-60 minutes while interviewing. The researcher checked the understanding to match the key informants and periodically summarize issues along the way as well as observe behavior at the same time stop the interview when getting saturated data.

4.4.2 Observe and take notes

Data collection by observing what is happening as intended for this qualitative research, use Non-Participant Observation. Which is an observation of the real practice. In terms of the dealer environment, environmental management representative and employee performance according to ISO 14001 requirements. Observation data will be combined with data collected through in-depth interviews and document studies. The researchers recorded data from observations using the notes and interview recordings.

4.4.3 Documentary research

The main methods for collecting data in qualitative research are in-depth interviews and observations, but there is another type of information used in qualitative research, is documentary research. The data from the document gives a visual view of the study and the environment of the Honda Automotive Service Center, as preparation before and during data collection, it is the analysis of documents related to research from many sources.

4.5 Reliability test

The importance of data checking and analysis in qualitative research is to examine the data sources. Sources to be considered in the audit are;

- Time

It means in each period; the information will be the same or not. For example, if the researcher interviewed of environmental operations are continual improvement and consistent with ISO 14001 reequipment such as training plans, environmental objective and management review.

- Place

It means if the locations are different, the information will be the same or not. For example, considering Honda Thailand automotive service centers that have received ISO 14001 certification, is the implementation of the ISO 14001 system consistent across all branches, or does it differ from one branch to another?

- People

It means if changing the key informant, the information will be the same or not. For example, ask questions from the manager of dealer, change to the question of the environmental management representative or employee or change from individual to a group or social group [7].

4.6. Data analysis

In this research, the researcher periodically analyzed the data both during data collection and after data collection was completed by analyzing the data obtained from in-depth

interviews, observation, and notes, and document studies after the in-depth interviews with key informants. The researcher will transcribe from the voice recorder and record the details that occurred during the interview which the interview results will be the guideline for the next interview, with the data from the document study to be analyzed together with the triangular inspection The data analysis of the researcher uses the systematic model of Strauss and Corbin (1990) [8] as the basis. It is divided into 4 steps: open coding, axial coding, selective coding and development of a theory with details as follows;

- Step 1 Open coding

It is the taking of data collected from various sources such as in-depth interviews, observation and taking notes, and document studies, to analyze thoroughly to find the essence in the data and then define it as a concept. When obtaining sufficient codes, it is classified by categories which can be considered as closing the code to reduce the data with clear principles.

- Step 2 Axial coding

To select the main category from one category to analyze the relationship between large categories and sub-categories by focusing on relevant conditions, the researcher will continuously alternate between data collection and data analysis, including classification and correlating data to summarize concepts.

- Step 3 Selective coding

The researchers will combine data types and data relationships to create a "chapter" which will explain that "what happened" in the research phenomenon

- Step 4 Development of a theory

The theory that occurs to describe the studied phenomena which may be in the form of language or pictures, which the theory will indicate the nature of the phenomenon. The theory and explanation of the rational relationship between various factors are obtained from data collected from the phenomenon.

5. Results

The results of the Grounded Theory Study are the factors that contribute to the success of the ISO 14001 system of Honda Automotive Service Center, consisting of 12 factors.

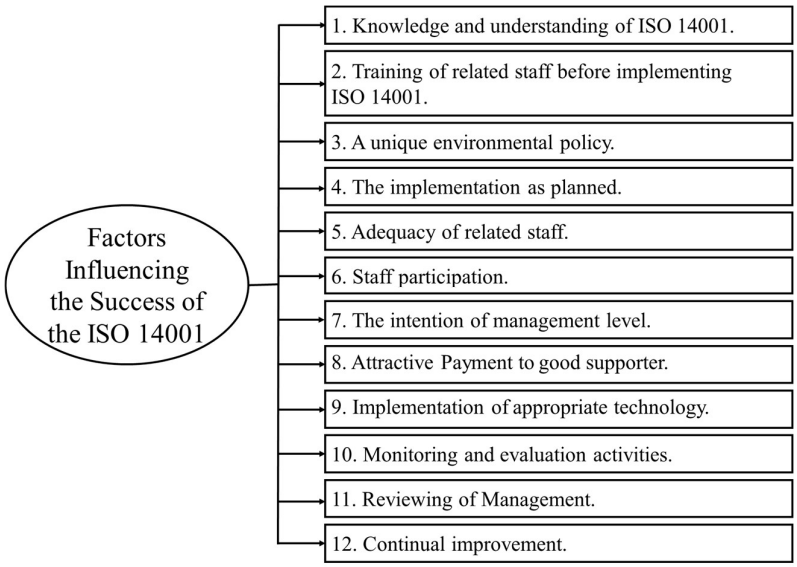

Figure 1. Factors affecting the success of the implementation of the ISO 14001 system obtained from the Grounded Theory Study

1. Knowledge and understanding of ISO 14001.

It is the basic information that every employee must know that ISO 14001 is what, from where, where to do it, what the steps are, what to do, and how to do it. If all employees know and understand the ISO system it will help to proceed with the next step more easily and conveniently.

2. Training of related staff before implementing ISO 14001.

Environmental training courses will be available at the consulting company or the Headquarter of Honda Company who will come to train in various courses such as environmental awareness, system requirements of ISO 14001 system, internal audit, including the identification of environmental issues, etc. Before employees operate the ISO 14001 system, they must train environmental courses to achieve system efficiency and there will be tests before-after training that employee know, understanding that they can be implemented or not.

3. A unique environmental policy.

It is the main goal of the organization that announced to all employees that asked the direction of the organization concerning the environment. The management has set guidelines for the environmental policy, which must be concise, easy to understand, and must cover 3 principles; pollution prevention, law compliance and continuously updated, to serve as a reminder before every operation and the environmental policy must be consistent with our culture and organization size.

4. The implementation as planned.

The ISO 14001 implementation plan is planned year by year for the correct implementation and at the end of the project will be assessed that how successful was the plan, such as waste separation, grease trap system management, maintenance, and inspection of tools, overseeing the transportation of used oil, etc. Each item must have a weekly, monthly, and yearly summary form for use in the examination and evaluation. Each item must have a weekly, monthly, and yearly summary form for use in auditing and evaluation.

5. Adequacy of related staff.

There will be a supervisor from various departments representing the staff. Joining the organization's environmental management committee and able to communicate with staff in the department themselves. There will be activities such as the administrative department will design the data record and then the technician department will take it to check the tools, chemicals, or the service department and pick up the car have to communicate with customers that our organization has environmental operations, considered external communication. In addition to regular duties, it must perform environmental concurrently. Therefore, the number of employees is necessary for operation ISO 14001 system.

6. Staff participation.

Require cooperation and participation of all employees in all departments in the Honda Automotive Service Center because environmental management is considered the responsibility of everyone to help each other to enable the ISO 14001 system to proceed completely. Each department has different environmental problems such as the paint and tank repair department that will control the noise, odor from the paint, and thinner by working in each room of work. The office department will use 2-sided paper and separate the waste into the correct type.

7. The intention of the management level.

Now, the green trend is trending in every business circle and the automotive business has an impact on various pollution problems. Other companies in the automotive business industry have already cared for the environment. Therefore, executives who have absolute power to make decisions in the organization must pay attention to the environment so that the business of the organization can be comparable with international because the ISO 14001 is the international standard for an effective environmental management system.

8. Attractive payment to good supporters.

Environmental problems in the water, air, or noise in the organization all-cause annoyance both within the organization itself and the surrounding communities, such as the paint and body repair department making noise when scrubbing or having a foul odor from the paint room. If there is support from the management to solve various environmental problems, decreasing the operation of environmental activities tend to be costly and there is no monetary return but will get back in the corporate image

9. Implementation of appropriate technology.

To solve environmental problems, modern technology must be applied in the organization to achieve good efficiency and help reduce environmental problems such as creating a grease trap to help reduce wastewater that has high BOD, COD, oil &grease, will not be exceeded the standards that set by law or using a pump with a meter to fill the oil to reduce problems of spills or overflows that may be caused by the carelessness of employees. Install the sensor lights for bathrooms, it will save when there is no one using this service. It will help to reduce environmental problems.

10. Monitoring and evaluation activities.

The ISO 14001 certificate will be valid for 3 years but it will be audited annually by Auditor to monitor the organization's system to maintain the standard or not. The environmental management system representative will have to monitor the organizations overall and have an internal audit every year to be able to assess the expected environmental problems. The third thing is to check the authenticity of the documents, to inquire and order of the area of operations. This may be a way of helping to manage environmental monitoring as well as to the ISO 14001 system operating smoothly.

11. Reviewing of Management.

In weekly or monthly company meeting, the environmental management committee should propose environmental problems or audit results to the management to acknowledge and comment on the environment to see whether each year, the organization has any environmental problems and is ready to approve the implementation of an urgent project. The review depends on the suitability of each organization. Every time a review is signed, a memorandum is required to attend the meeting and listen to various problems in the organization, including environmental management.

12. Continual improvement.

After receiving the ISO 14001 certification, the system should be continuously improved. For the system to maintain the standards, such as legal conformity assessment, internal auditing, etc., for the system to be able to proceed successfully.

6. Conclusion

1. The Honda automotive service center has the main components of all 12 factors will successfully achieve ISO 14001 system management. These factors include: knowledge and understanding of ISO 14001, training of related staff before implementing ISO 14001, a unique environmental policy, the implementation as planned, adequacy of related staff, staff participation, the intention of management level, attractive payment to a good supporter, implementation of appropriate technology, monitoring and evaluation activities, reviewing of management and continual improvement.

2. The Honda environmental management committee consists of management representatives, staff representatives from various departments, which is the input that factor in operating the ISO 14001 system. If the inputs factor, have knowledge, understanding and have received training, as well as having appropriate qualifications and seniority, would result in the Honda automotive service center being successful which is consistent with the research of Tanacharoenpisarn (2011) found that the factors related to the adoption of the ISO 14001 environmental management system were three factors: age, knowledge and understanding of the ISO 14001 environmental management system and awareness of environmental management system ISO 14001 [9]. Khaophong (2008) studied the Knowledge, Participation and Awareness on Environmental

Management System of the Environmental Management System (ISO 14001) Accredited Organization Personnel: A Case study of Chantaburi Sea Food Co., Ltd., and Chantaburi Frozen Food Co., Ltd. found that there are 6 factors related to the awareness of the environmental management standard system: education level, perception of information, receiving training in the environmental management system, having a model for environmental management and participation in the environmental management system [10].

3. Operating process factors have a unique environmental policy, the implementation as planned, implementation of appropriate technology, monitoring, and evaluation activities, reviewing of Management and continual improvement, which the operational procedures are considered important in operating the ISO 14001 system because the system must start from setting up the policy to continuous examination and improvement, there is no shortage of steps, this is consistent with the results of the Suttprasert (2012) study on Climate Change Management of Local Authorities in Samutsakhon Province, it was found that both local government organizations have designated responsible agencies and have policies, plans and projects, allocating budgets, with comprehensive performance monitoring [11]. Hongchinda and Chompunth (2014) has studied the implementation of the Environmental Management System (ISO 14001) that can achieve the specified objectives and goals, and the performance results must be monitored in accordance with the environmental policy, objectives, goals and plans [12].

4. Supporting factors consist of the adequacy of related staff, the intention of management level, attractive payment to a good supporter, which helps to improve the ISO 14001 system, such as budgets for environmental activities which is consistent with the study of Pinaksornskul (2001), factors affecting the success of the ISO 14001 environmental management system in Kawila Wittayalai School, Muang District, Chiang Mai Province, which found that the success of the application of the ISO 14001 environmental management system in schools by two factors: commitment of the management and the cooperation of the personnel within the school [13]. Tepkaew (2002) has studied A study on ISO 14000 environmental system in printed circuit industry: a case study of PCTT company limited, it was found that establishing an ISO 14001 Environmental Management System to be successful, it should start from senior management, must have a clear policy and drive it to be part of the organizational culture, creating support from all parties involved, as well as providing knowledge and training to employees in order to continue effective system development [14].

5. The success of Honda automotive service centers in the implementation of the ISO 14001 system requires input factors, operational procedures factors, and supporting factors, to be successful in operating the ISO 14001 system this is consistent with the results of the Intaratoot and Chompunth (2015) study of Factors affecting the implementation of Environmental Management System (ISO 14001) of Petrochemical industry: A Case study of IRPC Public Company Limited, there are 3 major influencing factors as follows: 1) Context (Political, Economic and Social and Environmental) 2) Input (human resources, budget, technology, management and working method) 3) Process (planning, program implementation, monitoring and evaluation, review and improvement, and personnel participation) 4) Product (achievement of environmental objectives and targets, and the environment within the area) 5) Impact (social and environmental, and development) [15].

6. Customers receive the service from the Honda automotive service center that is certified with the ISO 14001 Environmental Management System, which ensures that when entering the service, there will be no impact on the environment. The pride and loyalty to our service center and they will come back to use the service again this is consistent with a Castka and Prajogo (2012) study, that found that when receiving ISO 14001 certification, the company is recognized by its stakeholders. Therefore, the implementation of a good environmental management system will benefit both the environment and the image of the organization [16].

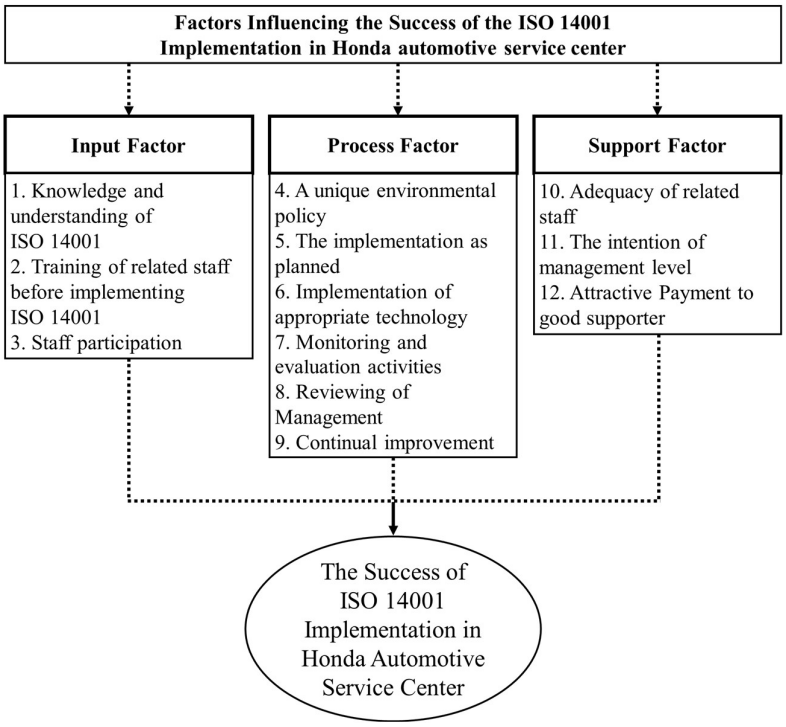

Figure 2. The relationship of factors affecting the success of the ISO 14001 system of Honda Automobile Service Center

7. Suggestions

1. The management must be committed to solving environmental problems by leading to ISO 14001 immediately.

2. Employees in the organization must help verify the effectiveness of ISO 14001 to prevent environmental problems.

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