



V. H. N. SENTHIKUMARA NADAR COLLEGE (AUTONOMOUS)
VIRUDHUNAGAR – 626 001, TAMILNADU
RESEARCH CENTRE IN COMMERCE

Ph.D PUBLIC VIVA VOCE

As per the regulations of Madurai Kamaraj University, Madurai, **Mr. P. RAJMOHAN**, (Reg. No. F9454), Full Time Research Scholar, Research Centre in Commerce, V.H.N. Senthikumara Nadar College (Autonomous), Virudhunagar, will defend his thesis at a Public Viva-Voce examination through Video Conference mode using Google Meet Platform.

Title of the Thesis

SUSTAINABLE PRACTICES OF INDUSTRIAL UNITS IN VIRUDHUNAGAR DISTRICT

Date & Time

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Virudhunagar.**

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Google Meet

Meeting ID

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The Synopsis of the thesis is available in the College Website and a copy of the thesis is available in the Department Library, for reference. Faculty members, Scholars and Students are most welcome to attend the Viva-Voce.

ALL ARE CORDIALLY INVITED

Place : Virudhunagar

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SUSTAINABLE PRACTICES OF INDUSTRIAL UNITS IN VIRUDHUNAGAR DISTRICT

**SYNOPSIS SUBMITTED TO MADURAI KAMARAJ UNIVERSITY
IN PARTIAL FULFILLMENT OF THE DEGREE OF
DOCTOR OF PHILOSOPHY IN COMMERCE**

BY
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SYNOPSIS

SUSTAINABLE PRACTICES OF INDUSTRIAL UNITS IN

VIRUDHUNAGAR DISTRICT

1. INTRODUCTION AND DESIGN OF THE STUDY

Men-Environment relationship has undergone series of changes through different time frames. With growth of civilization of human race that lives in social groups in the past centuries, the biotic and abiotic dimension of environment witness numerous wonderful changes that challenged the smooth and hassle-free life on earth. Man plays an important role in the management of natural environmental system in different capacities such as biological man, social man, economical man and technological man.

India witnesses the fastest and sustainable growth than any other countries in the world. India is a vast country with diverse mix of resources and economic activities. The varying sectoral growth rates, consumption patterns and resource endowments have led to widely different regional and sectoral emission distributions. Sustainability has been applied to many fields, including engineering, marketing, manufacturing, production and design.

The Virudhunagar district, covered under this study, has good number of industries like Fireworks, Match, Printing, Oil Extraction, ready-made garments, Brick Making, Surgical cotton, textile products, cotton industry, cement industry, lime based products, rice mill, paper products, food industries, tin containers and gold jewellery making. Hence a formal study of this district is appropriate and representative to analyze the sustainable practices of industrial units.

The industrial units faced many problems in developing new sustainable practices, unaware of waste reduction technology, recycling technology, and safe disposal of waste. Adoption of new technology is the major problem in the industrial units. One of the major handicaps of industrial units has been the absence of latest technology. The employees are not having adequate knowledge about adoption of new technology.

The present study examines the adoption of sustainable practices of industrial units in Virudhunagar district. The specific objectives of the study are (1) To analyze the awareness and acceptance for sustainable practices by the industrial units in Virudhunagar district, (2) To identify the extent of sustainable practices adopted by industrial units in the Virudhunagar district, (3) to find out important factors influencing the adoption of sustainable practices by industrial units in Virudhunagar district, (4) To identify the problems faced in adopting sustainable practices by the industrial units in Virudhunagar district and (5) To offer suitable suggestions for improving the sustainable practices of industrial units in Virudhunagar district.

The present study is a descriptive one based on the analysis of secondary data and primary data obtained from extensive survey of 375 sample industrial units functioning in Virudhunagar district using a structured interview schedule.

2. REVIEW OF RELATED LITERATURE

Many studies were made in the areas of sustainable practices in manufacturing, sustainable practices in marketing and sustainable practices in management. There is a research gap, namely, the lack of studies on sustainable practices of all industrial units. This formal study is a new venture to fill this gap.

3. PROFILE OF STUDY

The analysis of profile information of industrial units shows that a great majority 99.20 per cent of the industrial units in the Virudhunagar district are private enterprises that manufacture and market different kinds of goods with profit objective. The study unfolds that the majority of 52.50 per cent of the industrial units are located at village area which requires support by Government and promotional agencies. The research finds out that the majority of 72 per cent (34.40+37.60) of the industrial units invest an amount of less than Rs. 30 lakhs. The study unfolds that the majority of 78.50 per cent (7.70+39.70+31.20) of industrial units annual turnover is less than Rs. 60 lakhs. The study discloses that the important categories of industrial units are micro (54.40%) and small scale industrial units (36.80%).

4. AWARENESS AND ACCEPTANCE OF SUSTAINABLE PRACTICES

The study showed that a great majority of 95.70 per cent of the respondents are having awareness about sustainable practices. The Mean value is (3.08, 3.05, 3.24), which is more than 3 points the level, the awareness among most of the respondents is above the 'Normal level' with regard to dimensions of sustainable practices.

The testing of null hypothesis, "there is no significant relationship between level of awareness about environmental practices and profile variables" with Mann-Whitney 'U' test and Kruskal Wallis test shows that there is no significant relationship between the level of awareness about environmental practices and profile variables like nature of units and location. And also there is a significant relationship between the level of awareness about environmental practices and profile variables like membership in association and category of industry.

The Mean value is (3.10, 3.06, 3.28), which is more than 3 points the level, the acceptance among most of the respondents is above the 'Normal level' with regard to dimensions of sustainable practices. The study reveals that most preferred dimension of 'Environmental practices' has highest Garrett mean score is 54.76.

5. ADOPTION OF SUSTAINABLE PRACTICES

The study discloses that the most preferred environmental practice in manufacturing adopted by the industrial units is 'Consumption of resource' has highest Garrett mean score of (58.17). The analysis makes it clear that the important sustainable environmental practices in manufacturing relating to use of specific material by the industrial units are 'Use of virgin material' (4.03).

The research shows that the most preferred economic practice is 'Improving quality of products and processes' has highest Garrett mean score of (51.62). The survey reveals that the prominent practice relating to 'Improving quality of products and processes' by the industrial units is 'Production of reliable products for consumption' (4.26). The study shows that the major practices relating to 'Enhancing customer convenience' by the industrial units are 'Increased public health and safety' (4.01).

The survey reveals that the most preferred environmental practice in management adopted by the industrial units is 'Electricity savings' has highest Garrett mean score of (52.82). The analysis makes it clear that two significant practices relating to 'Green activities' by the industrial units are 'Information sharing through Mobile / Computers' (4.54) and 'Compost dust bins' (4.41). The research shows that three important practices relating to 'Social practices' by the industrial units are 'Providing drinking water facility' (4.33), 'Providing bonus' (4.26) and 'Providing ESI and PF facility' (4.26).

In Exploratory Factor Analysis (EFA), the high loaded factor is sustainable practices in management (37.620), followed by sustainable practices in manufacturing (24.103) and sustainable practices in marketing (12.86) Therefore, the industrial units should concentrate more on sustainable marketing practices.

Based on the analysis, the sustainable practices model for the industrial units in Virudhunagar district, tested and found fit, is found in two angles, namely, three functions of industrial units, consisting of manufacturing, marketing and management each of them further subdivided into three dimensions of sustainability, called, environment, economic and social.

The study examined the various factors influencing sustainable practices under 34 heads. The examination of the extent of influence of these factors reveals that the important factors influencing sustainable practices by industrial units are 'Implementation of new legal provisions' (4.04), 'Environmental standard for products' (4.03), 'Government assistance' (4.02), and 'Environment preservation' (3.97).

6. PROBLEMS OF THE STUDY

The survey reveals that majority of 94.66 per cent of respondents faced 'Economic problems' in adoption of sustainable practices in manufacturing, 94.13 per cent of respondents faced 'Environmental problems' in adoption of sustainable practices in management and 92 per cent of respondents faced 'Economic problems' in adoption of sustainable practices in marketing.

The analysis makes it lucid that 'Lack of information on sustainable materials' (3.92), and 'Lack of workers with knowledge on sustainability' (3.78). The study reveals that the 'Lack of reworking technique to make scrap usable' (3.89) is the major economic

problem faced by the industrial units. The survey reveals that 'Non-availability of sustainable knowledge workers' (3.94) is a major type of economic problems faced by the industrial units.

7. SUGGESTIONS OF THE STUDY AND CONCLUSION

The researcher come out with the following suggestions for effective adoption of sustainable practices by the industrial units in Virudhunagar district. The industrial units should concentrate and adopt the practice of using recycled material, reused material, and remanufactured material in an effective manner to minimize the consumption of scarce raw material. Development of innovative products, and reengineering of production process that consumes materials of longer life make durable products, using lesser energy with minimum wastages shall be pioneering initiative towards sustainability of an industrial unit.

The industrial units should effectively use the government grants to support environment activities in treatment of waste, improving production process and greening their environment. The industrial units should educate the customers about sustainable products by using impressive and innovative advertisements and bring a change in the attitude and preference towards need based consumption. The industrial units conduct more workshop, seminars and exhibitions to improve the knowledge on sustainability among the workers, dealers and consumers.

Installing and use of solar energy devices like lights, heaters and conveyers shall reduce the consumption of non-renewable energy sources and make the industrial activities sustainable. Arrangement of Annual health checkup, employee counseling on health matters and conducting the health camps at least once in a month shall enable the poor employees to get immunized and be fit enough to work in changing physical environment. Provision of such complete medical and the first aid facilities ensure continued contributions by the employees in all the industrial units and keep them fit for continued employment.

The company has to reward the efficient workers, based on their performance, by offering them more gifts and prizes during celebrations on notable occasions. This practice will not only improve productivity of employees but also bring more attachments towards the company and retain them continuously for more number of years. Providing adequate training to employees on effective performance of the job responsibilities using computer based technology shall increase productivity as well as enable the performance of day to day activities by workers sustainably.

7.1. CONCLUSION

The environmental effects, resulted due to high level of production and consumption activities has alerted the manufacturers and consumers about the manufacture and consumption of products and services that care for human health and environment. The industrial units in Virudhunagar district, formed as proprietorship and partnership concerns has investment of less than Rs. 30 lakhs, belong to micro or small scale industrial units. The level of awareness and acceptance for the sustainable practices is at above normal level. The important sustainable practices by the industrial units are use of virgin material, conservative use of fuels, provide workers with a safe work environment, proper maintenance of vehicles, use of bio-degradable packaging material, eliminating water leaks, establishing a total waste management plant. Sustainable practices model for the industrial units in Virudhunagar district, tested and found fit. The important factors influencing sustainable practices by industrial units are Implementation of new legal provisions, environmentally standard for products and Government assistance. The major problems faced by industries are lack of workers with knowledge on sustainability, high cost for installing new machine, lack of reworking technique to make scrap usable. The study commute with notable suggestions like reduction, reuse and

recycling of raw materials, reducing the consumption of energy and use of renewable energy, creation of biotic environment in industrial campus, use of Government grants for improving production process and effective treatment of waste, making innovative advertisements through green medias for bringing changes in the attitude of consumers and rewarding, recognition and promoting of employees for their whole hearted support in sustainable way of doing business. ***The adoption of suggested model for sustainable practices by every industrial undertaking, based on the nature of industrial unit and amount of investment, shall overcome the challenges they face and enable continued growth of their business in a sustainable way for the benefit of future generation.***