SOMPONG HANVAJANAWONG: THE EFFECTS OF INSTITUTIONAL FACTORS, ORGANIZATIONAL CAPABILITIES, AND PERCEIVED ADVANTAGES TO THE ADOPTION OF CLEANER TECHNOLOGY BY MANUFACTURING FIRMS IN THAILAND. THESIS ADVISOR: ASSOC. PROF. ACHARA CHANDRACHAI, Ph.D. THESIS CO-ADVISOR: ASST. PROF. PAKPACHONG VADHANASINDHU, DBA. 140 pp. ISBN 974-17-0589-1

Clean technology concept has been widely used since the late eighties in influencing the behavior of firms concerning production activities in a more environmentally friendly direction. As a consequence, many clean technology projects have rapidly diffused and widely been carried out in various countries due to the findings that clean technology is a potential mechanism for creating competitive advantage. Therefore, this technology has been integrated into the strategic plans of various leading firms around the world including the ones in Thailand. Thai government, with the support from both Thai and foreign organizations that promote the practice of clean technology, campaigned for the adoption of clean technology among firms in Thailand at large in order to preserve the natural environmental and crate advantage for competing with the foreign rivals who use the environmental issues as the trade barriers. However, the diffusion rate of clean technology adoption in Thailand remains frustratingly slow and originate the questions of what are the factors that promote the multiplication of clean technology adoption in Thailand at the satisfactory rate.

This research aims to study the effects of institutional factors, organizational factors, and management factors on the adoption of clean technology by manufacturing firms in Thailand. The conceptual framework of the study is developed from the institutional theory, the resource-based theory, and the diffusion of innovation theory. The sample of this study includes firms in the electrical / electronics industry and food processing industry, which are the major Thai industries with the highest and the second highest export values respectively. Data collection of this study comprises of plant manager interviews, pilot study, and mail survey. There were 190 usable questionnaires. Response rate was 13 percent. Data analyses include descriptive statistics, factor analysis, analysis of variance, bivariate correlation, and stepwise multiple regression analysis.

The results of this study supported all hypotheses that institutional factors: regulatory pressures, stakeholder demands, incentives for clean technology adopters, and widespread of clean technology; organizational factors: firm size, firm capabilities, and clean technology knowledge; and management factors: perceived competitive advantage, perceived economic advantage, perceived social advantage, and management's willingness to adopt and develop clean technology, were significantly and positively correlated with the adoption of clean technology. The levels of those correlations, however, were statistically low because of the limited diffusion of clean technology in Thailand. In addition, it was found that the order of variables in terms of their most significant effects on the adoption of clean technology were stakeholders, incentives provided for clean technology adopters, firm size, regulatory pressures, firm capabilities, and management's willingness, respectively.

The results of this study provided the understanding that three factors: institutional factor, organizational factors, and management factors, should be effectively used in order to achieve the higher multiplication of clean technology adoption by manufacturing firms in Thailand. Moreover, the results also revealed that manufacturing firms in Thailand should adopt clean technology to increase competitive edge and lead to the continuous improvements in production processes. Government sector should intensively increase its effort of widely dissipating information about incentives available for clean technology adopters, provide training for the environmental protection agencies to be able to convince manufacturing firms to the direction of clean technology adoption, and improve frequency of environmental audit. For the stakeholders, e.g., customers, employees, shareholders, etc., should be approached and informed by government agencies and clean technology organizations so that they can effectively demand clean technology from manufacturing firms.

Department	Commerce	Student's signature	Sompong Hanvajanawong
Field of Study	International Business	Advisor's signature	
Academic year	2001	Co-advisor's signature	P. Vad