

1. Introduction

This chapter introduces the concept lean manufacturing and the problem statement of this study. Thereafter follows the significance of the study and research question, and the chapter ends with organisation of the study.

1.1 Background

In the aftermath of World War II, the customer base in Japan was small with a high variety of demands (Liker, 2004). Toyota Motor Company needed to create a way to catch up with Western automotive industries without much capital, and their goal was to increase the productivity and reduce the costs (Monden, 1983). The Toyota production system (TPS) was developed during decades as a continuous learning cycle, and it was formally transferred to the United States in the 1980s via a joint venture that was created by Toyota and GM. The term “lean manufacturing” was introduced in the book “the machine that changed the world” by James P. Womack et al. in 1990 (Holweg, 2007).

Evidence from Toyota and other case studies as well as the operations management literature suggests that the implementation of lean manufacturing leads to reduced costs, increased productivity and improved quality (Cooper, 1995; Karlsson & Åhlström, 1996; Liker, 2004; Monden, 1983). There is however a mixed result in the empirical evidence of lean manufacturing’s relationship with performance (Ahmad, Mera & Pletcher,

2004; Boyd, Kronk & Skinner, 2002; Claycomb, Dröge & Germain, 1999; Cua, McKone & Schroeder, 2001; 2006; Fullerton, McWatters & Fawson, 2003; Inman & Mehra, 1993; Kinney & Wempe, 2002; Olsen, 2004; Sakakibara, Flynn, Schroeder & Morris, 1997; Shah & Ward, 2003). Several reasons are given to explain the mixed result. Firstly, the lack of a common definition in literature implies that only partly and different concepts of lean manufacturing are measured. Secondly, interactional variables and different contextual elements might affect the result, and thirdly, it may take a long time before results are shown after implementation (Fullerton & Wempe, 2008; Shah & Ward, 2007).

One of the success stories is given by Liker (2004), where lean resulted in 93 percent reduction in lead-time, 83 percent improvement in productivity, 91 percent reduction in finished goods inventory, 83 percent reduction in work-in-process inventory and 50 percent reduction in employee over-time. However, Liker states that outside Toyota, only less than one percent of the companies that are working with lean actually would get “an A or even a B+” (p.10) on their lean implementation. Even though TPS has been known more than two decades, it is still common to implement only some of the tools or techniques and not use it as a holistic system.

TPS was developed in an industry landscape where mass-production was not suitable. In current globalised competitive markets it is of highest importance to use resources efficiently, customise products and offer products and

services of high quality to satisfy the customers, which makes lean manufacturing of utmost importance.

1.2 Problem Statement

TPS, or lean manufacturing, was developed to increase productivity and reduce costs, by removing all unnecessary activities and processes that do not add value to the product or to the customer. The concept lean manufacturing has been used for a long time, but there is no clear definition of the term, which is one reason why the empirical evidence of the relationship to firm performance has mixed result (see for example Shah & Ward, 2003; Ahmad et al., 2004). The decision to implement lean manufacturing will lead to initial implementation and learning costs (Schonberger, 1996). It is therefore important for managers to know the impact on firm performance, when taking the decision to implement lean manufacturing.

This study aims to contribute to current literature by using a validated comprehensive measure of lean manufacturing, which will assess the actual level of implementation and investigate its impact on firm performance. It may serve as a basis when it comes to decisions about implementing lean manufacturing. The purpose and objectives of the study are (1) to examine and evaluate the extent of current implementation of lean practices in Swedish manufacturing firms and (2) investigate its relation to firm performance.

1.3 Importance of the Study

This research will contribute to the literature by assessing the adoption of lean manufacturing in Swedish manufacturing companies, an area where some case studies, but no similar earlier research, have been found. It will add valuable insights into the status of implementation of lean manufacturing in Sweden, which can be used by researchers and managers who are interested in the field of lean manufacturing and its current trends.

The study will also add empirical evidence to the existing body of knowledge when it comes to lean manufacturing and its impact on firm performance. The study is based on an instrument which is recommended for future studies (Shah & Ward, 2007), which will create a common view of assessing a lean manufacturer and thus remove one of the factors which are suggested to result in a mixed result in earlier studies.

1.4 Research Question

Some of the implementations of lean manufacturing leads to success, while other fail. Wafa and Yasin (1998) found that out of 130 manufacturers in the United States, 65 percent recommended implementation of just in time, which is a concept of lean manufacturing, while 35 percent would not recommend other to use it. It is possible to gain advantage from using parts of lean manufacturing, but the real advantage, enhanced competitiveness, will be gained by using lean as a holistic system (Liker, 2004; Shah & Ward, 2007).

Reduction in machine downtime, inventory and workspace reduction, increased quality, higher utilisation of labour and equipment and increased inventory turns are some of the outcomes of a successful implementation, which should be seen in the financial figures. This leads to the research question:

Will implementation of lean manufacturing lead to improved firm performance?

1.5 Organisation of the Study

Chapter 2 begins with a literature review of lean manufacturing, its connection to firm performance, and difficulties and benefits of implementation. The chapter ends with earlier studies carried out in Sweden within related areas. Chapter 3 develops the hypotheses and presents the research methodology. The findings of the study are presented in chapter 4 and the following conclusions are presented in chapter 5. Chapter 5 also contains limitations of the study and suggestions for future research. For a list of key terms, please refer to appendix A.