

*The Hong Kong Polytechnic University  
Department of Logistics and Maritime Studies  
Research Seminar*

## **The Relationship between Servitization and Firm Performance in Manufacturing Firms: An Empirical Study based on Panel Data**

by

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**(Conducted in English)**

### **Abstract:**

In recent decades, with the development of globalization and information technology, the academic and business worlds have realized that manufacturing firms are faced with the increasing commoditization, convergence and homogenization of goods' characteristics and attributes, such that differentiation is severely diminished or even vanishes. In order to acquire competitive advantage amid such fierce competition, manufacturing firms have gradually shifted from the manufacture of physical products to service offering, which is termed as "servitization". Since servitization can create differentiation and boost customer satisfaction and loyalty, it is often regarded as an effective means for manufacturing firms to obtain greater competitive edge than with physical goods alone.

However, the relationship between servitization and firm performance in manufacturing firms is still ambiguous. Prior research on the servitization-firm performance link has shown that the effect of servitization on firm performance is positive, negative, non-linear and even insignificant. Therefore, more empirical research on the relationship between servitization and firm performance is needed. Since firm performance is a multi-dimensional construct and the extant literature focuses on the relationship between servitization and firms' profitability indicators concerning financial performance, Study 1 of this thesis extends the performance dimensions and explores the relationship between servitization and multiple performance indicators (namely, operating margin, sales growth, operating efficiency and the asset-liability ratio). The regression results of this thesis show that there is a U-shaped curvilinear relationship between servitization and two performance indicators (namely, operating margin and operating efficiency), while there is a negative linear relationship between servitization and sales growth, and no significant relationship between servitization and the asset-liability ratio.

Due to the fact that the research findings on the servitization-firm performance relationship in different research contexts are inconsistent and even contradictory, there could be some external and internal contingency factors affecting this relationship. Extant studies categorize these contingency factors into environmental and firm-specific variables, while the majority of the relevant research concentrates on the moderating effect of firm-specific variables such as organizational design factors and organizational capabilities. However, the limited research explores the moderating effect of environmental variables on the servitization-firm performance relationship. In order to narrow this gap, Study 2 of this thesis examines how industry characteristics (namely, industry clockspeed, industry concentration and industry maturity) moderate the performance effect of servitization. Based on the regression results, this thesis presents some significant findings: industry clockspeed significantly moderates the U-shaped relationship between servitization and operating margin, industry maturity moderates the U-shaped relationship between servitization and operating efficiency and the negative relationship between servitization and sales growth, whereas industry concentration has no significant moderating effect on the servitization-firm performance relationship.

Moreover, despite the fact that the extant literature has proposed some important firm-specific factors (including organizational design factors and capabilities) moderating the servitization-firm performance relationship, these firm-specific moderators are scattered and less systematic. This in turn calls for a clear and systematic theoretical framework to articulate the moderating effect of firm-specific factors on this relationship. Therefore, Study 3 of this thesis investigates how some firm-specific variables moderate the relationship between servitization and firm performance in terms of strategic coherence and resource allocation. Specifically, strategic coherence is demonstrated in terms of service relatedness and research and development (R&D) intensity, while resource allocation mode is constructed in relation to marketing resources, absorbed resource slack and unabsorbed resource slack. Based on an empirical analysis, this thesis presents some conclusions from the perspectives of strategic coherence and resource allocation. On the one hand, this thesis finds that service relatedness significantly moderates the U-shaped relationship between servitization and operating efficiency, while R&D intensity significantly moderates the U-shaped relationship between servitization and operating margin; on the other, marketing intensity has no impact on the performance effect of servitization and absorbed resource slack significantly moderates the U-shaped relationship between servitization and operating efficiency, while unabsorbed resource slack moderates the U-shaped relationships between the servitization-operating margin and servitization-operating efficiency.

Overall, this thesis enriches and extends the research theories on the relationship between servitization and firm performance and the moderating factors affecting this relationship, as well as provides some significant theoretical and managerial implications. First, this thesis offers a clear and intensive research framework on the relationship between servitization and firm performance, explores the specific effect of servitization on multiple firm performance indicators (namely, operating margin, sales growth, operating efficiency and the asset-liability ratio), and provides great theoretical significance by answering the question as to whether it is worth making huge investments when implementing servitization. Second, this thesis examines the moderating effect of industry characteristics (namely, industry clockspeed, industry concentration and industry maturity) on the performance effect of servitization, which offers a better and deeper understanding of the industry environment, where it is more suitable for manufacturing enterprises to implement servitization. In addition, this thesis discusses the moderating effect of strategic coherence on the relationship between servitization and firm performance in terms of two strategic supporting activities (namely, service relatedness and R&D intensity), which answers the question as to how manufacturing firms acquire great success in servitization through strategic supporting activities. In addition, this thesis investigates the impact of resource allocation on the relationship between servitization and firm performance, based on three categories of resources (namely, marketing resources, absorbed resource slack and unabsorbed resource slack), which confirms the importance of resource allocation and provides effective guidance for the selection of resource allocation mode by which manufacturing firms can readily achieve successful servitization.

### **Bio:**

Mr Weijiao Wang is a PhD candidate in the Department of Logistics and Maritime Studies, The Hong Kong Polytechnic University under the supervision of Prof. Kee-hung Lai, and a PhD candidate in School of Management, Zhejiang University under the supervision of Prof. Yongyi Shou. My research interest is empirical research in the area of operations management, especially servitization in manufacturing firms. I obtained my bachelor in Electronic Commerce from Central South University in 2012.

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**All are welcome!**