

Jakob Jin Schlichter

Department of Entrepreneurship
and Relationship Management
University of Southern Denmark
Universitetsparken 1
DK-6000 Kolding

E-mail: jsch@sam.sdu.dk

Jakob Jin Schlichter is a researcher
in the fields of entrepreneurship and
IT business value.

He is affiliated with the research
group "Entrepreneurship" at the
department of Entrepreneurship
and Relationship Management at
the University of Southern Denmark.
He obtained a MSc in Economics
and Business Administration 2003,
Management and Leadership in
2005 from the University of South-
ern Denmark.

Before starting his PhD, Jakob
worked for several years in different
business contexts - mainly in bank-
ing and accounting areas which
inspired him to look at how compa-
nies can benefit from the use of IT
systems especially ERP systems.



PhD Dissertation of

Jakob Jin Schlichter

at the Department of Entrepreneurship
and Relationship Management,
University of Southern Denmark

ERP systems and performance in SMEs

1 June 2018

ERP systems and performance in SMEs

The importance of IT systems for SMEs cannot be overstated, as IT development continuously advances and transitions further and further into the SME sector. This transition has occurred at an extremely fast pace and the knowledge of how these systems provide improved performance has somewhat lagged behind (Koh & Simpson 1996; Petroni & Rizzi 2005). This dissertation focuses on what is perhaps the most important IT system that has moved into the SME sector, namely Enterprise Resource Planning (ERP) systems. ERP systems play a central role in most companies and are one of the most common IT systems to have transitioned into the SME sector in recent years. ERP systems alter the way that most companies do their business, and greatly affect the performance of the companies using the systems. The problem with this type of system in the SME sector, however, is that many of the key advantages it provides for large companies are very much downscaled for SMEs. Furthermore, studies show that, although many SMEs successfully implement ERP systems, many others fail to achieve the desired benefits. It is therefore important to

create a deeper understanding of the effects of using these systems in SMEs in different contexts. This leads to the following research question:

Under what conditions do ERP systems lead to improved performance in SMEs?

This research question is answered through quantitative analyses of a dataset consisting of survey data from 604 SMEs, together with registry data. The study is limited to young SMEs (2-12 years), because ERP implementation would typically be more recent here and thus easier to account for. The research question in this thesis is addressed through three papers, which test different hypotheses by linear regression analysis. The three papers investigate three different conditions, in order to shed light on the conditions that influence performance within SMEs.

Paper 1 focuses on how the use of unique resources and market positioning are affected by the use of ERP systems, and how simple ERP systems can be enablers for performance in con-

ditions of growth. The paper shows that the use of ERP systems will enhance the benefits in both perspectives, due to the lower cost of building up organizational knowledge and better information for determining the right position in the market. For companies applying a growth strategy, it is important to have simple ERP systems, because the problems of scaling will decrease performance significantly when scaling up the internal resources and putting the organization under stress.

Paper 2 focuses on how mechanistic and organic ways of organizing the company leads to increases in firm growth within SMEs using ERP systems. At the same time, the paper discusses how the characteristics of organic and mechanistic organizations are related to the ERP system logics and entrepreneurial orientation of SMEs. The paper shows that increased benefits are gained by applying a system with the same kind of logic as the organization. Organic organizations do not need to focus on process improvement to the same degree as their mechanistic counterparts, because the level of entrepreneurial orientation can support their performance in the absence of process improvement.

Paper 3 focuses on the effect of the role of ERP systems in SMEs under different degrees of entrepreneurial orientation. The paper shows that highly entrepreneurial SMEs have less use of ERP systems than low entrepreneurial firms. It also shows how the level of ERP complexity is related to different levels of entrepreneurial orientation. Whilst highly entrepreneurial companies can work-around the complexity of the systems, it seems that low entrepreneurial companies will suffer more from ERP complexity.

The results of the three papers are summarized in Table 1 — i.e., the conditions under which ERP systems are likely to provide improved performance in SMEs.

This thesis advances our knowledge about the use of ERP systems in SMEs by providing solid empirical evidence that SMEs under different conditions will be affected in highly different ways by the use of ERP systems. Under certain conditions ERP systems will be a clear advantage

Department of Entrepreneurship and Relationship Management

The Department of Entrepreneurship and Relationship Management is located at the University of Southern Denmark, campus Kolding, and employs approximately 85 people. This location is central to the growth centres within the Triangle Region and offers a unique opportunity to close cooperation with the companies and public authorities in the region in respect to research and educational projects.

For several years the research of the department has been based on learning networks with companies and trade promotion institutions. In addition to this, the department has a long tradition of problem-based cooperation across traditional business research areas and very often by means of external funding. The research of the department concentrates on two key areas: entrepreneurship and relationship management and originates from traditional research areas such as marketing, applied economics, accounting, operation management and organization.

sdu.dk/ier

Table 1. Conditions under which ERP systems provide improved performance in SMEs

	ERP systemer	
	Er gode for virksomheden	Er dårlige for virksomheden
Forhold		
Strategisk fokus		
Unikke resurser	Kan være begge dele	
Markeds position	Kan være begge dele	
Vækst		
Høj vækst	Lav ERP-kompleksitet	Høj ERP-kompleksitet
Lav vækst	Ligegyldig	Ligegyldig
Måder at organisere sig på		
Organisk	Høje procesforbedringer	Procesforbedringer har lav betyd-
Mekanisk	Høje procesforbedringer	Lave procesforbedringer
Entreprenant Orientering		
Lav Entreprenant Orientering	Høj ERP-kompleksitet	Lav ERP-kompleksitet
Lav Entreprenant Orientering	Høj ERP-intensitet	Lav ERP-intensitet
Høj Entreprenant Orientering	Høj ERP-kompleksitet	Lav ERP-kompleksitet
Høj Entreprenant Orientering	Lav ERP-intensitet	Høj ERP-intensitet