



UNIVERSITI PUTRA MALAYSIA

**IMPACT OF INFORMATION TECHNOLOGY ON SMEs SURVIVAL
RATE IN THE MALAYSIAN MANUFACTURING INDUSTRY**

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By

MOHAMMAD ALI JAMALI

Thesis submitted to School of Graduate Studies, Universiti Putra Malaysia, in
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September 2010



DEDICATION

To my dear Wife, Hatra Voghouei, I wish to thank her for the constant support and encouragement that she has so patiently given throughout the course of the research. Moreover, to my dear Artina who get along with situations which difficult for a kid and to my parents, who have endlessly loved and supported me.



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for degree of Doctor of Philosophy

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Faculty: Faculty of Economics and management

This study focuses on the impact of information technology on the survival rate of small and medium enterprises (SMEs) in the manufacturing sector in Malaysia. It analyses the effects of information technology on survival of SMEs in 2000 and 2005, based on two separate groups of closed firms. The study attempts to present a rational relationship between theories of firm survival and information technology. It sets out to show that while factors such as minimum efficient size, market and firms attributes, transaction cost, uncertainty, opportunism, information asymmetry and atmosphere, profitability and learning have an impact on the survival of SMEs, the effect of information technology is also significant.



The Cox Proportional Hazard Regression Model is used for estimation of coefficients and survival functions. Evidence suggests that factors such as minimum economies of scale, productivity, technology usage, profits, R&D, location and capital-labor ratio affect the survival of SMEs. Of equal importance is the expenditure on information technology, which is said to have an impact on the viability of firms. By employing the model this study presents that information technology expenditure has positive effect on survival of SMEs in Malaysian manufacturing sector in this period. The model further shows that information technology plays a bigger role among the larger SMEs than the smaller ones. Thus, policy maker with regard to main finding of this study should consider some policy for promoting the IT among SMEs, especially larger ones in Malaysian manufacturing sector. Moreover, for increasing survival of SMEs, policy maker should encourage R&D among SMEs and concentrate on some sector, which have high entry rate.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**IMPAK TECHNOLOGY MAKLUMAT KE ATAS TAHAP
KELANGSUNGAN HIDUP INDUSTRI KECIL DAN SEDERHANA DALAM
INDUSTRI PERKILANGAN DI MALAYSIA**

Oleh

MOHAMMAD ALI JAMALI

September 2010

Pengerusi: Zakariah Abdul Rashid, PhD

Fakulti: Fakulti Ekonomi dan Pengurusan

Kajian ini tertumpu pada kesan teknologi maklumat pada tahap kelangsungan hidup Industri Kecil Sederhana (IKS) dalam sektor perkilangan di Malaysia. Justeru, analisis ini melihat kesan teknologi maklumat terhadap kelangsungan hidup (IKS) dari tahun 2000 hingga 2005 berdasarkan kepada dua kumpulan yang berasingan daripada syarikat yang berdekatan. Oleh itu, kajian ini cuba untuk mewujudkan hubungan yang rasional antara teori kelangsungan hidup syarikat dan teknologi maklumat. Hal ini bertujuan untuk menunjukkan faktor-faktor sementara seperti kadar kecekapan minimum, sifat syarikat, kos transaksi, ketidakpastian, peluang, maklumat asymmetry dan suasana, keuntungan dan pembelajaran yang mempunyai

kesan terhadap kelangsungan hidup IKS. Selain itu, kesan terhadap teknologi maklumat juga diambil kira.

Cox Proportional Hazard Regression Model digunakan untuk penafsiran angkali dan fungsi kelangsungan hidup. Bukti menunjukkan bahawa faktor-faktor seperti skala ekonomi minimum, produktiviti, penggunaan teknologi, keuntungan, R&D, kawasan dan nisbah modal-tenaga kerja mempengaruhi kelangsungan hidup IKS. Hal yang sama pentingnya adalah pengeluaran teknologi maklumat yang dikatakan mempunyai kesan kepada kelangsungan hidup syarikat. Justeru, dengan menggunakan model kajian ini maklumat teknologi pengeluaran sebagai kesan positif terhadap kelangsungan hidup IKS dalam faktor pembuatan Malaysia pada tempoh yang dikaji dapat dikesan. Model ini seterusnya akan memperlihatkan teknologi maklumat memainkan peranan lebih besar di antara IKS yang besar daripada IKS yang mempunyai pasaran yang kecil. Oleh yang demikian, pembuat dasar mengenai penemuan utama kajian ini haruslah mempertimbangkan beberapa dasar untuk mempromosikan teknologi dalam kalangan IKS, terutamanya yang lebih besar dalam sektor perkilangan Malaysia. Selain itu, untuk meningkatkan kelangsungan hidup IKS, pembuat dasar harus menggalakkan R&D dalam kalangan IKS dan menumpukan pada beberapa sektor yang mempunyai kadar pulangan yang tinggi.

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I certify that a Thesis Examination Committee has met on 6 September 2010 to conduct the final examination of Mohammad Ali Jamali on his PhD thesis entitled " Impact of information technology on SMEs survival rate in Malaysian manufacturing industry" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the degree of Doctor of Philosophy.

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DECLARATION

I declare that the thesis is my original work except for quotations and citations, which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently, submitted for any other degree at Universiti Putra Malaysia or at any other institution.

MOHAMMAD ALI JAMALI

Date: 6 September 2010



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