

**TECHNOLOGICAL ENTREPRENEURSHIP
IN AN EMERGING ECONOMIC REGION:
A MODEL DEVELOPED FROM A
MULTI-CULTURAL PROVINCIAL STUDY**

by

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'The most valuable 100 people to bring into a deteriorating society would not be chemists, or politicians, or engineers, but rather 100 entrepreneurs'.

Abraham Maslow (1965:42).

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THESIS DEDICATION

This thesis is dedicated to the very special people in my life:

- My wife Sonja, affectionately referred to as 'et al' during these study years, for her unwavering love and support throughout the often difficult times;
- My mother Martha, whose continuous prayers and encouragements were always pillars to lean on;
- My late father Professor Jan Lotz, whose own research excursions were etched in my early childhood memories;
- My children Heloise, Jan and Frans to whom I hope this result will be a source of inspiration for their own dreams and goals.

DECLARATION

I declare that the thesis '*Technological Entrepreneurship in an Economic Emerging Region: A Model Developed from a Multi-cultural Provincial Study*' is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

Frans J. Lotz

Date

ABSTRACT

TECHNOLOGICAL ENTREPRENEURSHIP IN AN EMERGING ECONOMIC REGION: A MODEL DEVELOPED FROM A MULTI-CULTURAL PROVINCIAL STUDY

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In developed regions, the body of knowledge of general entrepreneurship in the sales, services and technology-based business domains, is well researched and established. This is not the case with technological entrepreneurship in developing regions. Little is known about the entrepreneur, new venture creation and growth processes of technology-based enterprises in emerging regions.

This research project studied a sample frame of practising technological entrepreneurs in a multi-cultural province within an emerging economic region. Data was collected from 210 entrepreneurs who have founded and still manage a technology-based enterprise in the province of KwaZulu-Natal, South Africa. Over 25,000 data points were collected through questionnaires and were statistically analysed, using multiple regression and model building analysis techniques. A control study of 167 post-graduate students at the University of Pretoria was also done.

A representative profile was developed from a frequency distribution analysis of the survey sample. This profile was compared with that of a similar survey sample

of entrepreneurs in high-technology spin-off companies in a developed region. The results culminated in a three-part model that identifies the most prominent external influences on the technological entrepreneur, the new venture creation process and the mature enterprise.

Inferences of hypotheses, as well as several conclusions, were made from the results on the following contemporary issues: 1) cultural heritage; 2) the first-born debate; 3) the self-employed status of parents; 4) financing of the new technological enterprise and 5) training in entrepreneurship. Policy makers could use these results to develop technological entrepreneurship in emerging regions.

SAMEVATTING

TEGNOLOGIESE ENTREPRENEURSKAP IN 'N ONTLUIKENDE EKONOMIESE STREEK: 'N MODEL ONTWIKKEL UIT 'N MULTI-KULTURELE PROVINSIALE STUDIE

deur

FRANS JACOBUS LOTZ

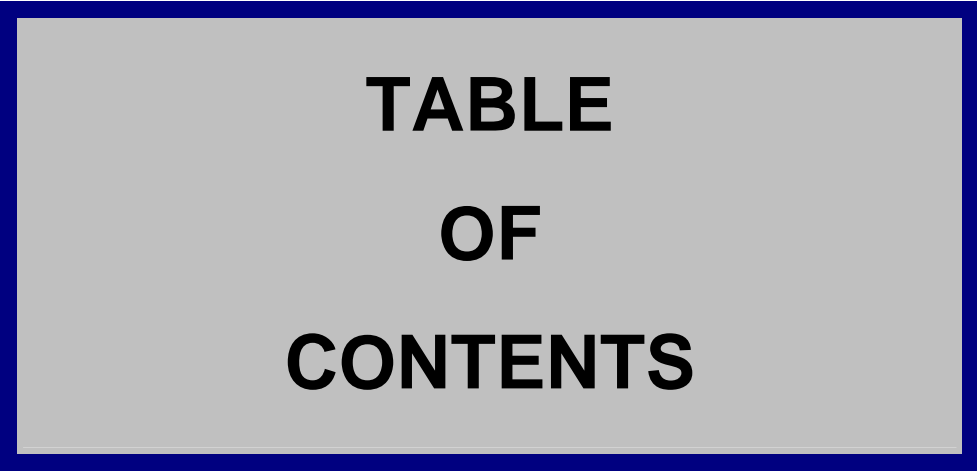
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In ontwikkelde streke is die bestaande kennis van algemene entrepreneurskap in die verkope-, dienste- en tegnologiese besigheidsektore deeglik nagevors en in die teorie gevestig. Dieselfde vlak van kennis bestaan egter nie oor tegnologiese entrepreneurskap in ontwikkelende streke nie. Min teorie is beskikbaar oor die entrepreneur, of die vestigings- en groeiprosesse van tegnologie-gebaseerde ondernemings in ontwikkelende streke.

Hierdie navorsingsprojek het 'n steekproef van praktiserende tegnologiese entrepreneurs in 'n multi-kulturele provinsie van 'n ekonomies-ontluikende streek bestudeer. Inligting is versamel van 210 entrepreneurs wat tegnologiese ondernemings in die provinsie van KwaZulu-Natal, Suid Afrika, gestig het en nog steeds bedryf. Meer as 25,000 datapunte is ingesamel deur middel van vraelyste en hulle is statisties ontleed deur gebruik te maak van veelvoudige regressie- en modelbou-tegnieke. 'n Kontrole-studie op 167 nagraadse studente aan die Universiteit van Pretoria is ook uitgevoer.

'n Verteenwoordigende profiel van die steekproef is ontwikkel vanaf die frekwensie-verspreidingsontleding. Hierdie profiel is vergelyk met dié van 'n soortgelyke steekproef nuwe hoë-tegnologie ondernemings in 'n ontwikkelde streek. Die resultate wat hieruit voortspruit word weergegee in die vorm van 'n drie-ledige model. Hierdie model identifiseer die mees prominente invloede op die tegnologiese entrepreneur, die vestigingsproses en die volwasse onderneming.

Verkeie hipoteses en gevolgtrekkings is uit die resultate afgelei oor die volgende eietydse aangeleenthede: 1) kulturele nalatenskap; 2) die debat oor eersgeborenes; 3) self-indiensnemingstatus van ouers; 4) finansiering van nuwe tegnologiese ondernemings en 5) opleiding in entrepreneurskap. Hierdie gevolgtrekkings kan deur beleidmakers gebruik word om tegnologiese entrepreneurskap in onluikende streke te bevorder.



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ABBREVIATIONS

CED	Centres for entrepreneurship development
DFI	Direct foreign investment
EDP	Entrepreneurship development programmes
FEA	Firm entrepreneurial activity
GEM	Global Entrepreneurship Monitor programme
GDP	Gross domestic product
HTSF	High technology small firms
IT	Information technology
ITC	Indigenous technological capability
ITI	Institute of technological Innovation
JSE	Johannesburg Stock Exchange
KZN	Province of KwaZulu-Natal in the Republic of South Africa
ME	Mature enterprise
MEM	Masters degree in Engineering Management
MIT	Massachusetts Institute of Technology
MOT	Masters degree in Technology Management
MPM	Masters degree in Project Management
NGO	Non-government organisations
NVCP	New venture creation process
OECD	Organization for Economic Cooperation and Development
P1-P3	Proposition 1 to 3
R & D	Research and development
RSA	Republic of South Africa
SMB	Small and medium businesses
SME	Small and medium enterprises
SMME	Small, medium and micro enterprises
STBF	Small technology-based firms
TE	Technological entrepreneur
TEA	Total entrepreneurial activity
TI	Technological innovation
UK	United Kingdom
USA	United States of America
VC	Venture capital

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