

# University of Wollongong - Research Online

## Thesis Collection

Title: Organisational structure and the locational behaviour of small and medium scale firms in metropolitan Colombo, Sri Lanka

Author: N Al Dias

Year: 1988

Repository DOI:

### Copyright Warning

You may print or download ONE copy of this document for the purpose of your own research or study. The University does not authorise you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site.

You are reminded of the following: This work is copyright. Apart from any use permitted under the Copyright Act 1968, no part of this work may be reproduced by any process, nor may any other exclusive right be exercised, without the permission of the author. Copyright owners are entitled to take legal action against persons who infringe their copyright. A reproduction of material that is protected by copyright may be a copyright infringement. A court may impose penalties and award damages in relation to offences and infringements relating to copyright material.

Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.

**Unless otherwise indicated, the views expressed in this thesis are those of the author and do not necessarily represent the views of the University of Wollongong.**

Research Online is the open access repository for the University of Wollongong. For further information contact the UOW Library: [research-pubs@uow.edu.au](mailto:research-pubs@uow.edu.au)

1988

## Organisational structure and the locational behaviour of small and medium scale firms in metropolitan Colombo, Sri Lanka

N. A.I. Dias  
*University of Wollongong*

Follow this and additional works at: <https://ro.uow.edu.au/theses>

### University of Wollongong

#### Copyright Warning

You may print or download ONE copy of this document for the purpose of your own research or study. The University does not authorise you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site.

You are reminded of the following: This work is copyright. Apart from any use permitted under the Copyright Act 1968, no part of this work may be reproduced by any process, nor may any other exclusive right be exercised, without the permission of the author. Copyright owners are entitled to take legal action against persons who infringe their copyright. A reproduction of material that is protected by copyright may be a copyright infringement. A court may impose penalties and award damages in relation to offences and infringements relating to copyright material.

Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.

Unless otherwise indicated, the views expressed in this thesis are those of the author and do not necessarily represent the views of the University of Wollongong.

### Recommended Citation

Dias, N. A.I., Organisational structure and the locational behaviour of small and medium scale firms in metropolitan Colombo, Sri Lanka, Doctor of Philosophy thesis, Department of Geography, University of Wollongong, 1988. <https://ro.uow.edu.au/theses/1386>

## **NOTE**

This online version of the thesis may have different page formatting and pagination from the paper copy held in the University of Wollongong Library.

## **UNIVERSITY OF WOLLONGONG**

### **COPYRIGHT WARNING**

You may print or download ONE copy of this document for the purpose of your own research or study. The University does not authorise you to copy, communicate or otherwise make available electronically to any other person any copyright material contained on this site. You are reminded of the following:

Copyright owners are entitled to take legal action against persons who infringe their copyright. A reproduction of material that is protected by copyright may be a copyright infringement. A court may impose penalties and award damages in relation to offences and infringements relating to copyright material. Higher penalties may apply, and higher damages may be awarded, for offences and infringements involving the conversion of material into digital or electronic form.

ORGANISATIONAL STRUCTURE AND THE LOCATIONAL BEHAVIOUR OF  
SMALL AND MEDIUM SCALE FIRMS IN METROPOLITAN COLOMBO,  
SRI LANKA

A thesis submitted in fulfilment of the  
requirements for the award of the  
degree of

DOCTOR OF PHILOSOPHY

from

THE UNIVERSITY OF WOLLONGONG

by

N.A.I. SRIYANI DIAS

B.A.(Hons.), M.A., Dip.Stats. (Sri Lanka)

DEPARTMENT OF GEOGRAPHY

1988

## ABSTRACT

### Organisational structure and the locational behaviour of small and medium scale firms in Metropolitan Colombo, Sri Lanka

This research focusses on the behaviour of small and medium scale firms in Metropolitan Colombo, Sri Lanka. It argues that the more recent emphasis on organisational structure offers an appropriate conceptual and methodological frame for studying the locational behaviour of small manufacturing firms in Sri Lanka.

In firms in developing countries family ownership, small size, labour intensive technologies and lack of organisation are main characteristics of small and medium scale industries. However, it has been recognised that there exist fundamental structural differences among the firms in this sector in Sri Lanka. Small and medium scale industrial sector consisting of so-called registered and unregistered firms, different structural features reflect differences in size, capital investment, ownership pattern, family participation, raw material utilisation, export orientation and the relationships with government organisations. These structural differences go some considerable way towards explaining the behaviour of small and medium scale manufacturing firms in

Colombo, and the general hypothesis is that the nature of the interactions of small enterprises depend upon their internal organisational structure.

The study focussed on three types of industries (textile, rubber and metal) in identifying the organisational structure of firms and in analysing the relationships between organisational structure and functional linkages, attitudes of entrepreneurs, patterns and degree of locational adjustments and the different responses of small firms to change in government policy. The study uses a sample of 136 firms and data and information were based on a questionnaire survey and extensive fieldwork in Sri Lanka, conducted during the period from January to July, 1984.

Principal components analysis has been used to define the structure of firms and to identify the significant characteristics of industries. The extent to which the organisational structure of firms is reflected in their behaviour was investigated by means of correlation and stepwise multiple regression analyses. The study also recognises the importance of government policies which are important in terms of spatial pattern and structure of small and medium scale industries in Colombo and the way in which industries have perceived these policies and responded to them.

TABLE OF CONTENTS

TABLE OF CONTENTS	i
LIST OF TABLES	vi
LIST OF FIGURES	xi
ABBREVIATIONS	xiv
ACKNOWLEDGEMENTS	xv
 CHAPTER 1	 
INTRODUCTION	1
Organisational structure: An appropriate frame for the analysis of locational behaviour of small scale manufacturing in developing countries	6
The structural contingency model of organisations	21
The objectives of the study	26
Some working hypotheses	35
Study methodology	37
Outline of the thesis	40
 CHAPTER 2	 
MANUFACTURING IN SRI LANKA: SOME BACKGROUND COMMENTS	
Recent developments in manufacturing: From import substitution to export- oriented industrialisation	43
The structural characteristics of Sri Lankan manufacturing activities	54
The locational pattern of manufacturing activity in Sri Lanka	66
The sampling frame for the study	90

CHAPTER 3	DEFINING THE ORGANISATIONAL STRUCTURE OF MANUFACTURING FIRMS IN THE COLOMBO METROPOLITAN AREA: A FACTOR ANALYTIC APPROACH	100
	The specification of variables	105
	Mixed metrics in Principal Components Analysis: Some problems	115
	The organisational structure of manufacturing firms in the Colombo Metropolitan Area: The results of Principal Components Analysis	119
	General comments	119
	Organisational structure of all firms	121
	Organisational structure of textile firms	128
	Organisational structure of rubber firms	130
	Organisational structure of metal firms	132
	The pattern of component scores	134
CHAPTER 4	ORGANISATIONAL STRUCTURE AND MATERIAL LINKAGES: LOCALISATION AS A FUNDAMENTAL PROPERTY FOR SMALL AND MEDIUM SIZED FIRMS	144
	The structural pattern of material linkages for small and medium scale firms in the Colombo Metropolitan Area	152
	The relationship between organisational structure and the spatial patterns of material linkages	164



	The relationships between organisational structure and raw material purchasing linkages	168
	The relationships between organisational structure and sales linkages	182
	The relationship between organisational structure and labour input linkages	193
	The relationship between organisational structure and capital availability	195
	Summary	197
CHAPTER 5	THE RELATIONSHIPS BETWEEN THE ORGANISATIONAL STRUCTURE OF SMALL AND MEDIUM SCALE MANUFACTURING FIRMS AND THEIR SERVICE AND COMMUNICATION LINKAGES: A PATTERN OF EXTERNALISATION	200
	Service linkages for small and medium scale manufacturing firms in the Colombo Metropolitan Area	208
	Communication linkages for small and medium scale manufacturing firms in the Colombo Metropolitan Area	220
	Organisational structure and the pattern of service linkages	226
	Organisational structure and the pattern of communication linkages	235
	Summary	245
CHAPTER 6	ENTREPRENURIAL ATTITUDES AND LOCATIONAL DECISION-MAKING FOR SMALL AND MEDIUM SCALE FIRMS IN THE COLOMBO METROPOLITAN AREA	247

	Measurement procedures: a note on scaling methods	251
	Attitudes of entrepreneurs of the Colombo Metropolitan Area	255
	The relationship between organisational structure and the attitudes of entrepreneurs	271
	Summary	281
CHAPTER 7	LOCATIONAL ADJUSTMENTS AND ORGANISATIONAL STRUCTURE: RECENT CHANGES AMONG SMALL AND MEDIUM SCALE MANUFACTURING FIRMS IN THE COLOMBO METROPOLITAN AREA	283
	Locational adjustment: some previous approaches	283
	The data base of the present study	292
	The spatial and structural aspects of manufacturing changes in the Colombo Metropolitan Area	295
	Manufacturing changes and the organisational structure of firms	303
	Summary	312
CHAPTER 8	POLICY AND CHANGE: THE IMPACT OF GOVERNMENT POLICY ON RECENT MANUFACTURING CHANGES IN SRI LANKA	313
	Policies on the decentralisation of manufacturing industries	315
	Export promotion policies	321
	Policies on fiscal and tariff concessions	333

	Policies on financial assistance	340
	Summary	353
CHAPTER 9	CONCLUSIONS	355
APPENDIX I		372
APPENDIX II		387
REFERENCES		388

LIST OF TABLES

2.1	Percentage of manufacturing establishments by type of industry	56
2.2	The value of industrial production by type of industry in Sri Lanka	57
2.3	Distribution of registered and unregistered establishments by type of industry in Sri Lanka	60
2.4	Percentage of out-put value (ex factory) by type of industry	63
2.5	Percentage of all raw materials imported by value	65
2.6	Number of manufacturing firms in the study region by sector location and type of industry	91
2.7	Distribution of approached, surveyed and non responded firms by type of industry	96
2.8	Distribution of approached, surveyed and non responded firms by type and sector	97
2.9	Size distribution of manufacturing firms	98
3.1	Variables employed in the analysis of organisational structure	106
3.2	Size distribution of firms by type of industry	109
3.3	Capital investment of firms by type of industry	110
3.4	Foreign raw material utilisation by type of industry	114

3.5	Export share of firms by type of industry	114
3.6	Organisational structure: rotated components for all sampled firms	122
3.7	Organisational structure: rotated components for textile firms	123
3.8	Organisational structure: rotated components for rubber firms	124
3.9	Organisational structure: rotated components for metal firms	125
3.10	Dimensions of the organisational structure for textile, rubber and metal industries	141
4.1	The purchasing and sales linkage characteristics of surveyed firms	159
4.2	The structure of local labour input linkages of surveyed firms	162
4.3	Capital investment from individual or family savings in surveyed firms	163
4.4	Relationship between local purchasing links and organisational structure in all sampled firms	174
4.5	Relationship between local purchasing links with wholesalers, retailers and organisational structure	177
4.6	Relationship between local purchasing links with private manufacturers/ subcontractors, government industries and organisational structure	180
4.7	Relationship between sales links and organisational structure in all sampled firms	189

4.8	Relationship between local sales links with wholesalers, retailers and direct customers and organisational structure	191
4.9	Relationship between sales links with private manufacturers, subcontractors, government industries and organisational structure	192
4.10	Relationship between local labour input linkages and organisational structure	194
4.11	Relationship between capital suppliers (Family and own savings) and organisational structure	196
5.1	Structure of the service linkages by type of industry	215
5.2	Structure of contacts by type of contactee and the type of industry	225
5.3	Correlation of transport services (raw material purchasing and distribution of output) with organisational structure	229
5.4	Correlation of plant services (maintenance and repair) and consultancy services with organisational structure	231
5.5	Correlation of financial (banking, auditing and insurance) and legal services with organisational structure	234
5.6	Relationship between face to face contacts with raw material suppliers and organisational structure	239
5.7	Relationship between face to face contacts with customers and organisational structure	240

5.8	Relationship between telephone contacts and the organisational structure in the rubber industry	243
5.9	Relationships between postal contacts and organisational structure	244
6.1	Locational factors presented to the entrepreneurs in measuring attitudes	256
6.2	Mean attitude scores for entrepreneur in the Colombo Metropolitan Area	258
6.3	Relationship between attitudes of entrepreneurs and organisational structure of textile firms	274
6.4	Relationship between attitudes of entrepreneurs and organisational structure of rubber firms	275
6.5	Relationship between attitudes of entrepreneurs and organisational structure of metal firms	276
7.1	Frequency of manufacturing changes in surveyed firms	299
7.2	Reasons given by entrepreneurs for staying at the original locations in order of importance	301
7.3	Relationship between employment changes and the organisational structure	306
7.4	Relationship between the site changes and the organisational structure	307
7.5	Relationship between the change of production (volume and value) and the organisational structure	309

7.6	Relationship between the product additions, losses and the organisational structure	311
8.1	Sectoral distribution of financial assistance under small and medium industries project (as at 31st December, 1982)	350
8.2	Districtwise distribution of financial assistance under small and medium industries project	351



LIST OF FIGURES

1.1	Organisation - environment inter-relationships Source: McDermott and Taylor (1982)	22
1.2	Administrative divisions in Sri Lanka and sub divisions in the study region: Colombo Metropolitan Area (Colombo and Gampaha districts)	30
2.1	Distribution of private manufacturing establishments	67
2.2	Manufacturing magnitude and intensity in the Districts of Sri Lanka	69
2.3	Diversification of industries in Sri Lanka	72
2.4	Distribution of manufacturing establishments in Colombo and Gampaha districts	74
2.5	Municipal wards in the Colombo city	76
2.6	Distribution of manufacturing establishments in Municipal wards	77
2.7	Distribution of manufacturing establishments in electoral districts by ISIC categories	78
2.8(a)	Distribution pattern of textile, wearing apparel and leather plants	79
2.8(b)	Distribution pattern of chemical, petroleum, rubber and plastic plants	80
2.8(c)	Distribution pattern of fabricated metal industries	81

2.9	Location of Industrial estates in Sri Lanka	85
3.1	Scores for textile firms on components I. to III	135
3.2	Scores for rubber firms on components I to III	138
3.3	Scores for metal firms on components I to III	140
4.1	Local authorities in the Colombo Urban area	154
4.2	Relationship between organisational structure and purchasing links with wholesalers	169
4.3	Relationship between organisational structure and purchasing links with retailers	172
4.4	Relationship between organisational structure and sales links with wholesalers	183
4.5	Relationship between organisational structure and sales links with customers	185
4.6	Relationship between organisational structure and sales links with retailers	187
5.1	Relationship between organisational structure and face to face contacts with suppliers	237
5.2	Relationship between organisational structure and telephone contacts in rubber firms	242

6.1	Mean attitude scores for entrepreneurs in the Colombo Metropolitan Area	259
6.2	Attitude scores for entrepreneurs in the three types of industries	268
8.1	Urban Development Area: guide lines for industrial location	319

ABBREVIATIONS

BTT	Business Turnover Tax
CISIR	Ceylon Institute of Scientific and Industrial Research
CMPP	Colombo Master Plan Project
DCS	Department of Census and Statistics
DDC	Divisional Development Council
DFC	Development Finance Corporation
DFCC	Development Finance Credit Corporation
DRS	Duty Rebate Scheme
ECIS	Export Credit Insurance Corporation
EDB	Export Development Board
EEGS	Export Expansion Grant Scheme
EPZ	Export Promotion Zone
FEECS	Foreign Exchange Entitlement Certificate Scheme
FIAC	Foreign Investment Advisory Committee
GCEC	Greater Colombo Economic Commission
GNP	Gross National Product
IDB	Industrial Development Board of Sri Lanka
ILO	International Labour Organisation
IMF	International Monetary Fund
IPZ	Investment Processing Zone
ISIC	International Standard Industrial Classification
NDB	National Development Bank of Sri Lanka
NIBM	National Institute of Business Management
OGLS	Open General License System
SLECIC	Sri Lanka Export Credit Insurance Corporation
UDA	Urban Development Authority
UNCTAD	United Nations Conference on Trade and Development

### ACKNOWLEDGEMENTS

I am very appreciative to the Commonwealth Authorities in Australia for awarding me a Post Graduate Scholarship to undertake this study. I am grateful to the University of Sri Jayewardenepura, Sri Lanka for granting me the required study leave.

I am particularly grateful to my thesis supervisor, Dr. Ross Robinson for his constructive advice, valuable guidance and helpful comments. I am thankful to Dr. Michael Taylor of Australian National University for his inciting comments and assistance. I also thank Professor Murray Wilson for his valuable comments and guidance given to me throughout this study programme.

Although I am unable to mention each person individually, I thank all the entrepreneurs and related organisations in Sri Lanka, who supported me during my field survey providing necessary data and information for the thesis.

I am grateful to members of the Department of Geography of Wollongong University for their support in many ways throughout my stay at the University. In

particular I am grateful to Ethel Lee for helping me through the computing work, to Hilde Shaw for the assistance with typing my questionnaire and to Richard Miller and Robyn Johnstone for photographic reproduction of diagrams.

I am thankful to Gamini Alwis of University of Sri Jayewardenepura, Sri Lanka for his assistance in the preparation of maps and diagrams.

I am extremely thankful to my husband, Patrick for his continuous support throughout this period and last but not least to my daughter, Ruwanie, for enduring many difficult situations over this period.