

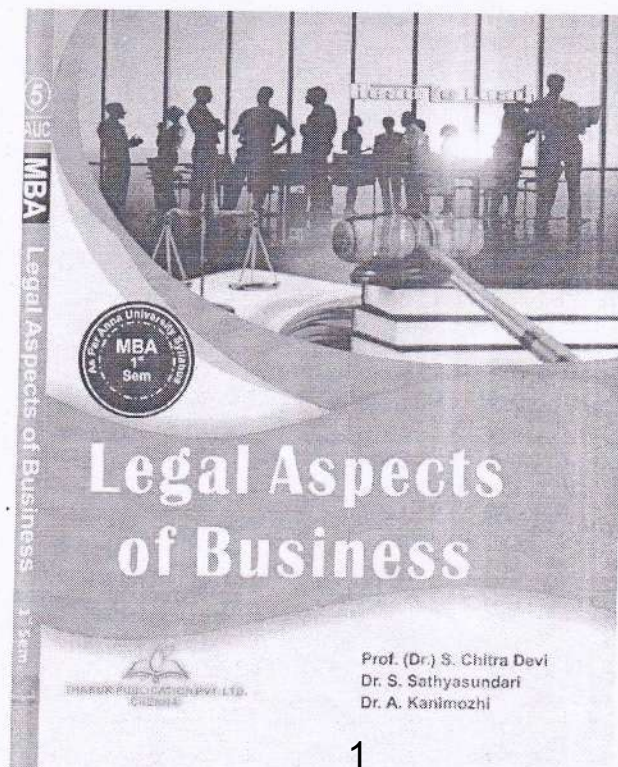
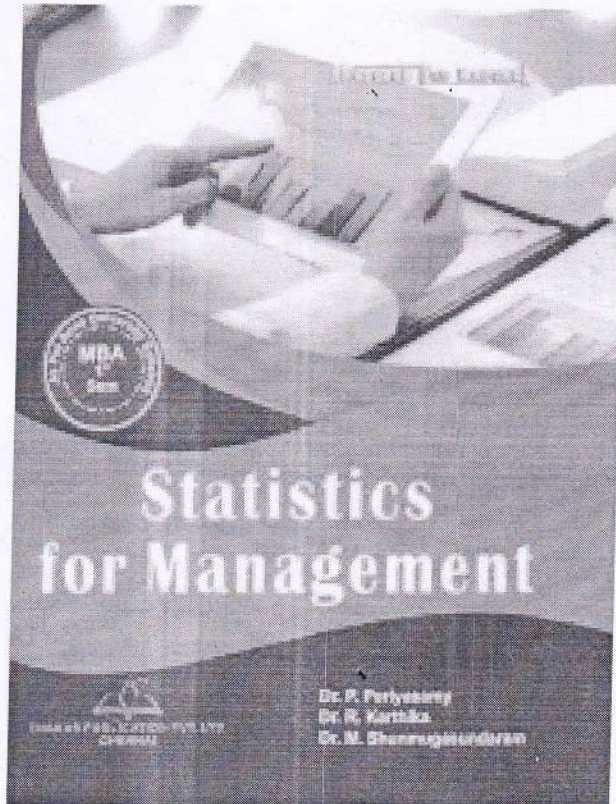
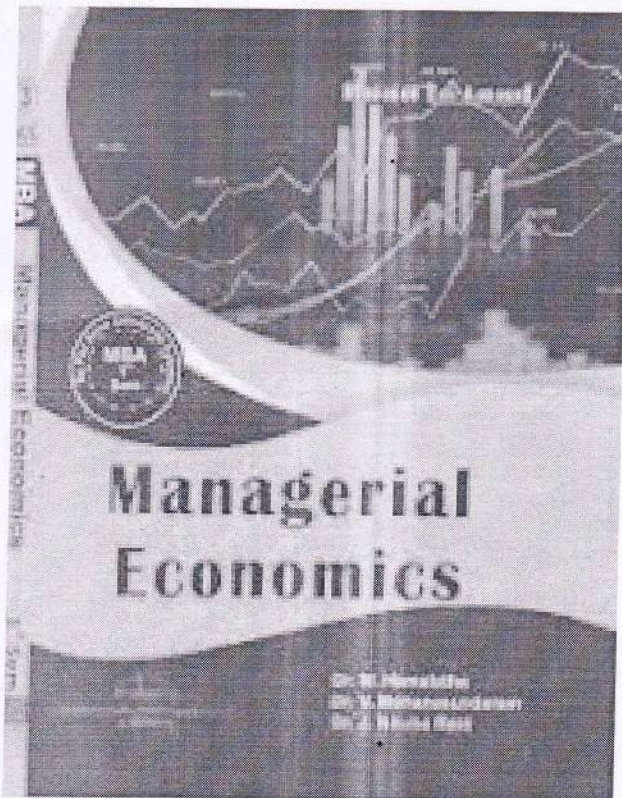
2021-2022

1. Professors of M.A.M.B-School published books for MBA students

Dr.M.Hemalatha – Managerial Economics

Dr.R.Karthika - Statistics for Management

Dr.A.Kanimozhi - Legal Aspects of Business



3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/international conference proceedings per teacher during last five year

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Year of publication	ISBN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	Dr. M.Hemalatha	Managerial Economics					2022	978-93-5480-114-3	M.A.M.B-School	Thakur Publications
2	Dr. M.Hemalatha	Strategic Management					2022	978-93-5480-498-4	M.A.M.B-School	Thakur Publications
3	Dr.R.Karthika	Statistics For Management					2022	978-93-5480-122-8	M.A.M.B-School	Thakur Publications
4	Dr.A.Kanimozhi	Legal Aspects of Business					2022	978-93-5480-106-8	M.A.M.B-School	Thakur Publications
5	Prof. S.Senthikumar	Security Analysis and Portfolio Management					2022	978-93-5480-532-5	M.A.M.B-School	Thakur Publications
6	Dr. M.Hemalatha		Modelling Women Entrepreneurs Business Success Using Business Intelligence Tools	Modelling Women Entrepreneurs Business Success Using Business Intelligence Tools	International Conference on Newer Engineering Concepts and Technology 2K22	AICTE SPONSORED International Conference on Newer Concepts in Engineering and Technology (ICONNECT 2K22) K.Ramakrishnan College of Technology	2022			
7	Ms. N. Kayalvizhi		Modelling Women Entrepreneurs Business Success Using Business Intelligence Tools	Modelling Women Entrepreneurs Business Success Using Business Intelligence Tools	International Conference on Newer Engineering Concepts and Technology 2K22	AICTE SPONSORED International Conference on Newer Concepts in Engineering and Technology (ICONNECT 2K22) K.Ramakrishnan College Of Technology	2022			



Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Year of publication	ISBN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
8	Ms. M.Akila		Modelling Women Entrepreneurs Business Success Using Business Intelligence Tools	Modelling Women Entrepreneurs Business Success Using Business Intelligence Tools	International Conference on Newer Engineering Concepts and Technology 2K22	AICTE SPONSORED International Conference on Newer Concepts in Engineering and Technology (ICONNECT 2K22) K Ramakrishnan College Of Technology	2022			
			Business Intelligence Modelling for Measuring the Women Entrepreneurs Business Success	Business Intelligence Modelling for Measuring the Women Entrepreneurs Business Success	International Study on EDGE COMPUTING	AICTE SPONSORED International Conference on EDGE COMPUTING - MAM College Of Engineering	2022			
9	Dr. M.Hemalatha		Business Intelligence Conceptual Model for customer perspective on SWIGGY	Business Intelligence Conceptual Model for customer perspective on SWIGGY	International Conference on Newer Engineering Concepts and Technology 2K22	AICTE SPONSORED International Conference on Newer Concepts in Engineering and Technology (ICONNECT 2K22) K Ramakrishnan College of Technology	2022			
10	Dr. M.Hemalatha		Business Intelligence Conceptual Model for customer perspective on SWIGGY	Business Intelligence Conceptual Model for customer perspective on SWIGGY	International Conference on Newer Engineering Concepts and Technology 2K22	AICTE SPONSORED International Conference on Newer Concepts in Engineering and Technology (ICONNECT 2K22) K Ramakrishnan College Of Technology	2022			
11	Ms. M.Akila		Business Intelligence Conceptual Model for customer perspective on SWIGGY	Business Intelligence Conceptual Model for customer perspective on SWIGGY	International Conference on Newer Engineering Concepts and Technology 2K22	AICTE SPONSORED International Conference on Newer Concepts in Engineering and Technology (ICONNECT 2K22) K Ramakrishnan College Of Technology	2022			



Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Year of publication	ISBN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
12	Ms. N. Kayalvizhi		Business Intelligence Conceptual Model for customer perspective on SWIGGY	Business Intelligence Conceptual Model for customer perspective on SWIGGY	International Conference on Newer Engineering Concepts and Technology 2K22	AICTE SPONSORED International Conference on Newer Concepts in Engineering and Technology (ICONNECT 2K22) K.RAMAKRISHNAN COLLEGE OF TECHNOLOGY	2022			
13	Prof.M.Surya		A Panoramic Study On Neuro Marketing	A Panoramic Study On Neuro Marketing	Entrepreneurship, Innovations and Startups ICEIS-22 on Peryar University	International Conference on Entrepreneurship, Innovations and Startups ICEIS-22	2022	ISBN No: 978-81-951140-0-9		
14	Dr.R.Karthika		A Panoramic Study On Neuro Marketing	A Panoramic Study On Neuro Marketing	Entrepreneurship, Innovations and Startups ICEIS-22 Peryar University	International Conference on Entrepreneurship, Innovations and Startups ICEIS-22	2022	ISBN No: 978-81-951140-0-9		4
15	Dr.R.Karthika		A Panoramic Study On Neuro Marketing	A Panoramic Study On Neuro Marketing	International Study on EDGE COMPUTING	AICTE SPONSORED International Conference on Edge computing - MAM College Of Engineering	2022			
16	Dr. R.Jeevarakha		Scheduling & Resource Management for EDGE Infrastructure	Scheduling & Resource Management for EDGE Infrastructure	International Study on EDGE COMPUTING	AICTE SPONSORED International Conference on EDGE Computing - MAM College Of Engineering	2022			



Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Year of publication	ISBN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
17	Prof. S. Kiruthika		Scheduling & Resource Management for EDGE Infrastructure	Scheduling & Resource Management for EDGE Infrastructure	International Study on EDGE COMPUTING	AICTE SPONSORED International Conference on Edge computing - MAM College of Engineering	2022			
18	Prof.S.Senthilkumar		A Panoramic Study On Neuro Marketing	A Panoramic Study On Neuro Marketing	International Study on EDGE COMPUTING	AICTE SPONSORED International Conference on EDGE COMPUTING (ICEC -2022) MAM College Of Engineering	2022			
19	Prof.M.Surya		A Panoramic Study On Neuro Marketing	A Panoramic Study On Neuro Marketing	International Study on EDGE COMPUTING	AICTE SPONSORED International Conference on EDGE COMPUTING (ICEC -2022) MAM College Of Engineering	2022			

YEAR	2022-2021	2020-2021	2019-2020	2018-2019	2017-2018
NUMBER	19	-	-	-	-

Total number books and chapters in edited volumes/book published and paper International conference proceedings

Number of full time teachers during the last five years (without repeat count)

$$\frac{19}{15} = 1.266$$



DIRECTOR
M.A.M. B-SCHOOL
 Siruganur, Trichy-621105

Read To Lead



Statistics for Management



THAKUR PUBLICATION PVT. LTD.
CHENNAI

Dr. P. Periyasamy
Dr. R. Karthika
Dr. M. Shunmugasundaram

STATISTICS FOR MANAGEMENT

MBA, FIRST SEMESTER

According to the new syllabus of 'Anna University, Chennai'

Dr. M. Shunmugasundaram

Ph.D., PGDPM & IR, MISTE, M.Phill, MBA

Professor & HOD

Scad College of Engineering and Technology

Dr. P. Periyasamy

Ph.D., PGDEAS, M.Phill, M.Ed, M.Sc

Head of Department

Selvam College of Technology, Namakkal

Dr. R. Karthika

Ph.D., M.Phill, MBA

Associate Professor

M. A. M. B School



THAKUR PUBLICATION PVT. LTD., CHENNAI

* Ahmedabad * Bhopal * Bhubaneswar * Bengaluru * Dehradun * Ernakulam * Hyderabad *
* Jaipur * Jalandhar * Kolkata * Lucknow * Nagpur * Patna * Pune * Raipur * Ranchi * Rohtak *

Statistics for Management

- Dr. M. Shunmugasundaram
- Dr. P. Periyasamy
- Dr. R. Karthika

Published by:

Thakur Publication Pvt. Ltd.

HO: Abhishekpuram, 60 Feet Road, Jankipuram, Lucknow-226021
Mob.: 9235318597/96/95/94/91/22/17, 9335318517

Branch Office:

House No. 28/1, Thiruvallur Street, Rajbai Nagar, Avadi, Chennai-600054.
Mob.: 9543605656, 8144126950, 9543247241, 9543247130

Website: www.tppl.org.in

Email: thakurpublication@gmail.com

Books are Available for Online Purchase at: tppl.org.in
Download old Question papers from: www.questionpaper.org.in

ISBN No. 978-93-5480-122-8

First Edition 2022

Printed at:

Savera Printing Press

Tirupatipuram, Jankipuram Extension, Near AKTU, Lucknow-226031
E-mail: lkospp@gmail.com Mobile No. 9235318506/07



Copyright © All Rights Reserved

This book is sole subject to the condition that it shall not, by way of trade or otherwise, be lent, resold, hired out, or otherwise circulated without the publisher's prior written consent, in any form of binding or cover, other than that in which it is published and without including a similar condition. This condition being imposed on the subsequent purchaser and without limiting the rights under copyright reserved above, no part of this publication may be reproduced, stored in or transmitted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise), without the prior written permission of both the copyright owner and the below mentioned publisher of this book.

*“Dedicated
to
my Parent’s, Wife Mrs. M. Mirimol,
daughter’s S. Mahesh Swaathi
&
S. Mahesh Swethaa*

- Dr. M. Shunmugasundaram


*“Dedicated
to
my Family, Friends and Students*

- Dr. P. Periyasamy

*Dedicated
to
With Love and Affection to my
Family Members & my Students*

- Dr. R. Karthika




DIRECTOR
M.A.M. B-SCHOOL
Siruganur, Trichy-621105

Acknowledgement

The publication of this book is possible due to encouragement and motivation of **my Family**. I am thankful for their blessings and kind cooperation they have showered on me.

I am thankful to **God**, for his grace which encouraged me to write this book.

Words are inadequate in offering thanks to my **Teachers Colleagues** and **students**, for their encouragement and valuable assistance.

- Dr. M. Shunmugasundaram

I wish to express my deep sense of gratitude and respect to our Chairman **Dr. P. Selvaraj**, Secretary **Dr. B. Kaviethra Nandhini** and Principal **Dr. A. Natarajan**, Selvam College of Technology, Namakkal for their continuous encouragement and support.

I express my sincere thanks to my Guide **Dr. V. Chandrasekar**, Professor and Head (Retd.), Kandaswami Kandar's College, Paramathi Velur, Namakkal(Dt.)

I would also like to thank my department staff members and colleagues from Selvam College of Technology, Namakkal.

I express my heartfelt thanks to my **Family Members** and **Friends** as they are the motivating force behind me.

- Dr. P. Periyasamy

It is my duty to thank CEO, Chairman and Management of M.A.M.B-SCHOOL, Siruganur, Trichy, for their consent motivation towards my effort. My heartfelt thank goes to **Thakur Publication Pvt. Ltd.**, for extending concern to me for initiating this effort and constant support and encouragement.

It is my duty to thank my beloved colleagues of M.A.M.B-SCHOOL, Siruganur, Trichy, for their support and cooperation extended at every stage of my career.

Last but not the least, I would like to thank **Thakur Publication Pvt. Ltd.** and its whole team, for facilitating the work and providing me an opportunity to be a part of their organisation.

- Dr. R. Karthika



Contents

Unit I: Probability and Probability Distributions

1.1.	Probability	11
1.1.1.	Concept	11
1.1.2.	Meaning and Definition of Probability	11
1.1.3.	Characteristics of Probability Function P(A)	12
1.1.4.	Applications of Probability	12
1.1.5.	Uses of Probability in Decision-Making	12
1.1.6.	Rules for Probability	12
1.2.	Probability Theory	13
1.2.1.	Introduction	13
1.2.2.	Objective Probability	13
1.2.2.1.	Classical Probability	13
1.2.2.2.	Relative Frequency Approach/ Empirical Probability	14
1.2.3.	Subjective Approach to Probability	15
1.3.	Fundamental Rules of Counting	15
1.3.1.	Introduction	15
1.3.2.	Counting Rules for Permutations	16
1.3.3.	Counting Rules for Combination	16
1.4.	Basic Concepts	16
1.4.1.	Experiment	16
1.4.2.	Sample Space	17
1.4.3.	Events	17
1.4.4.	Union and Intersection of Two or More Events	18
1.5.	Theorems of Probability	18
1.5.1.	Addition Theorem of Probability	20
1.5.2.	Multiplication Theorem of Probability	22
1.6.	Conditional Probability	23
1.7.	Baye's Theorem	24
1.7.1.	Need of Baye's Theorem	24
1.7.2.	Applications of Baye's Theorem	26
1.8.	Business Application of Probability	36
1.9.	Probability Distributions	36
1.9.1.	Concept	36
1.9.2.	Applications of Probability Distribution	37
1.10.	Important Terms	37
1.10.1.	Random Variable	37
1.10.2.	Discrete Random Variables	37
1.10.3.	Continuous Random Variables	37
1.10.4.	Expected Value Concept	38
1.10.5.	Probability Mass Function	38
1.10.6.	Probability Density Function	38
1.11.	Types of Probability Distribution	38
1.11.1.	Binomial Distribution	40
1.11.1.1.	Definition and Probability Function	40
1.11.1.2.	Assumptions of Binomial Distribution	41
1.11.1.3.	Characteristics of Binomial Distribution	41
1.11.1.4.	Applications of Binomial Distribution	41
1.11.1.5.	Fitting a Binomial Distribution	43
1.11.2.	Poisson Distribution	44
1.11.2.1.	Definition and Probability Function	45
1.11.2.2.	Assumptions of Poisson Distribution	45
1.11.2.3.	Characteristics of Poisson Distribution	45
1.11.2.4.	Applications of Poisson Distribution	45
1.11.2.5.	Fitting a Poisson Distribution	45
1.11.3.	Normal Probability Distribution	50
1.11.3.1.	Definition and Probability Function	50
1.11.3.2.	Assumptions of Normal Distribution	51
1.11.3.3.	Characteristics of Standard Normal Distribution	51
1.11.3.4.	Standard Normal Distribution	51
1.11.3.5.	Normal Curve	51



1.11.3.6.	Normal Approximation of Binomial Probabilities	57
1.11.3.7.	Normal Approximation of Poisson Distribution	58
1.11.4.	Uniform Distribution	58
1.11.4.1.	Mean and Standard Deviation of a Uniform Distribution	58
1.11.4.2.	Probabilities in a Uniform Distribution	58
1.12.	Miscellaneous Examples	60
1.13.	Exercise	68

Unit II: Sampling Distribution and Estimation

2.1.	Sampling	71
2.1.1.	Introduction	71
2.1.2.	Practical Sampling Concepts	71
2.1.3.	Characteristics of a Good Sample Design	73
2.1.4.	Sampling Distribution	73
2.1.4.1.	Properties of Sampling Distribution	74
2.1.4.2.	Sampling Distribution of Mean \bar{X}	74
2.1.4.3.	Sampling Distribution of Sample Proportion \bar{p}	74
2.1.5.	Sample Size	75
2.1.5.1.	Factors Influencing Sample Size	75
2.1.5.2.	Determination and Selection of Sample Member	76
2.1.6.	Central Limit Theorem	79
2.1.7.	Sampling Process	84
2.1.8.	Advantages of Sampling	84
2.1.9.	Disadvantages of Sampling	85
2.2.	Sampling Designs/Sampling Techniques	85
2.2.1.	Introduction	85
2.2.2.	Probability Sampling	85
2.2.2.1.	Simple Random Sampling	86
2.2.2.2.	Systematic Sampling	87
2.2.2.3.	Stratified Random Sampling	87
2.2.2.4.	Cluster Sampling	88
2.2.2.5.	Multi-Stage Sampling	89
2.2.2.6.	Area Sampling	89
2.2.2.7.	Advantages of Probability Sampling	90
2.2.2.8.	Disadvantages of Probability Sampling	90
2.2.3.	Non-Probability Sampling	90
2.2.3.1.	Convenience Sampling	91
2.2.3.2.	Purposive Sampling	91
2.2.3.3.	Panel Sampling	92
2.2.3.4.	Snowball Sampling	93
2.2.3.5.	Advantages of Non-Probability Sampling	93
2.2.3.6.	Disadvantages of Non-Probability Sampling	93
2.2.4.	Difference between Probability and Non-Probability Sampling	94
2.3.	Estimation Theory	94
2.3.1.	Estimator and Estimate	94
2.3.2.	Types of Estimation	95
2.3.3.	Point Estimation	95
2.3.3.1.	Properties of Point Estimation	95
2.3.3.2.	Point Estimation of Population Mean (\bar{X})	96
2.3.3.3.	Point Estimation of Population Proportion (π)	96
2.3.3.4.	Point Estimation of Population Variance (σ^2)	96
2.3.4.	Interval Estimation	96
2.3.4.1.	Confidence Interval	97
2.3.4.2.	Confidence Interval for Population Mean (Small Sample)	97
2.3.4.3.	Confidence Interval for Population Mean (Large Sample)	98
2.3.4.4.	Confidence Interval for Population Mean (σ Known)	99
2.3.4.5.	Confidence Interval for Population Mean (σ Unknown)	99
2.4.	Exercise	100
		102

Unit III: Testing of Hypothesis - Parametric Tests

3.1.	Hypothesis	103
3.1.1.	Introduction	103
3.1.2.	Formulation of Hypothesis	103



3.2.	Hypothesis Testing	104
3.2.1.	Introduction	104
3.2.2.	Hypothesis Decision Table	104
3.2.3.	Element of Hypothesis Testing	104
3.2.4.	Advantages of the Tests of Hypothesis	105
3.2.5.	Disadvantages of the Tests of Hypothesis	105
3.3.	Important Terms	105
3.3.1.	Null Hypothesis	105
3.3.2.	Alternative Hypothesis	105
3.3.3.	Errors in Hypothesis Testing	106
3.3.3.1.	Type I Error	106
3.3.3.2.	Type II Error	106
3.3.4.	Level of Significance	106
3.3.5.	Degree of Freedom	106
3.3.6.	One Tailed and Two Tailed Tests	107
3.3.7.	Measuring the Power of Hypothesis Test	107
3.3.8.	Types of Hypothesis Test	107
3.3.8.1.	On the Basis of Size of Sample	107
3.3.8.2.	On the Basis of Parameter Used	108
3.4.	Small Sample test	108
3.4.1.	Introduction	108
3.4.2.	Z-test	108
3.4.2.1.	Applications of Z Test	110
3.4.2.2.	Hypothesis Testing for One Mean of One Sample	110
3.4.2.3.	Two-tailed Test for Difference between Means of Two Samples	111
3.4.2.4.	Hypothesis Testing for One Proportion (π) of One Sample	112
3.4.2.5.	Hypothesis Testing for Two Proportions (π_1 versus π_2) of Two Samples	113
3.4.2.6.	Hypothesis Testing for Two Standard Deviations of Two Samples	113
3.4.2.7.	Standard Error of the Difference between Two Standard Deviation	114
3.4.3.	t - Test	116
3.4.3.1.	Properties of t - Distribution	116
3.4.3.2.	Assumptions for Student's t-Test	117
3.4.3.3.	Applications of t- Distribution	117
3.4.3.4.	Testing Significance of Single Mean of One Sample	117
3.4.3.5.	Testing Difference Between Means of Two Samples (Independent Samples)	119
3.4.3.6.	Testing Difference between Means of Two Samples (Dependent Samples or Matched Paired Observations)	121
3.4.4.	F-Test	124
3.4.4.1.	Assumptions of F-test	124
3.4.4.2.	Applications of F-Test	124
3.5.	Analysis of Variance (ANOVA)	128
3.5.1.	Introduction	128
3.5.2.	Characteristics of ANOVA	128
3.5.3.	Assumptions of ANOVA	128
3.5.4.	Applications of ANOVA	128
3.5.5.	Basic Principle of ANOVA	128
3.5.6.	ANOVA Techniques	129
3.5.7.	Analysis of Variance for One-way Classification	130
3.5.8.	Analysis of Variance for Two-way Classification	134
3.6.	Exercise	140

Unit IV: Non-Parametric Tests

4.1.	Non-Parametric Tests for Hypothesis Testing	143
4.1.1.	Introduction	143
4.1.2.	Assumptions about Non-Parametric Test	143
4.1.3.	Difference between Parametric & Non-Parametric Tests	143
4.1.4.	Important Non-Parametric Tests	144
4.1.5.	Chi-Square Test (χ^2)	144
4.1.5.1.	Definition of Chi-Square Test	144
4.1.5.2.	Steps of Chi-Square Test	144
4.1.5.3.	Conditions for Applying Chi-Square Test	145
4.1.5.4.	Applications of the Chi-Square Test	145
4.1.5.5.	Chi-Square Test for Goodness of Fit of Data	148
4.1.6.	Run Test for Randomness	152



4.1.7.	Sign Test for Paired Data	154
4.1.7.1.	One-Sample Sign Test	154
4.1.7.2.	Two-Sample Sign Test	155
4.1.8.	Mann-Whitney U Test-Comparing Two Populations	156
4.1.9.	Rank Sum Test / Wilcoxon Signed-Rank Test	161
4.1.10.	Kruskal-Wallis Test (H-Test)	162
4.1.11.	Kolmogorov-Smirnov Test for Goodness of Fit (K-S Test)	168
4.2.	Exercise	170

Unit V: Correlation and Regression

5.1.	Correlation Analysis	172
5.1.1.	Meaning and Definition	172
5.1.2.	Types of Correlation	172
5.1.2.1.	Positive Correlation and Negative Correlation	172
5.1.2.2.	Linear Correlation & Non-linear (Curvilinear) Correlation	173
5.1.2.3.	Simple, Partial and Multiple Correlation	173
5.1.3.	Degree of Correlation	173
5.1.4.	Correlation Coefficient	174
5.1.5.	Advantage of Correlation Analysis	174
5.1.6.	Applications of Correlation	174
5.2.	Methods of Computing Correlation	174
5.2.1.	Scatter Diagram	174
5.2.1.1.	Advantages of Scatter Diagram	175
5.2.1.2.	Disadvantages of Scatter Diagram	175
5.2.2.	Karl Pearson's Coefficient of Correlation	175
5.2.2.1.	Properties of Karl Pearson's Coefficient of Correlation	175
5.2.2.2.	Advantage of Karl Pearson's Coefficient of Correlation	175
5.2.2.3.	Disadvantage of Karl Pearson's Coefficient of Correlation	176
5.2.2.4.	Calculation of Karl Pearson Coefficient of Correlation	176
5.2.2.5.	When Deviations are Taken from Arithmetic Mean	177
5.2.2.6.	When Deviations are Taken from Assumed Mean	182
5.2.3.	Spearman's Rank Correlation	182
5.2.3.1.	Advantages of Spearman's Rank Method	183
5.2.3.2.	Disadvantages of Spearman's Rank Method	183
5.2.3.3.	Calculation of Rank Correlation	186
5.3.	Miscellaneous Examples	203
5.4.	Regression Analysis	203
5.4.1.	Meaning and Definition of Regression	204
5.4.2.	Application of Regression Analysis	204
5.4.3.	Difference between Correlation and Regression Analysis	204
5.4.4.	Regression Lines	204
5.4.5.	Regression Equations	205
5.4.6.	Regression Coefficient	205
5.4.7.	Properties of Regression Coefficients	205
5.4.8.	Determination of Linear Regression Equation	205
5.4.8.1.	Method of Least Squares Method	208
5.4.8.2.	Regression Equations when Deviation Taken from Actual Mean	209
5.4.8.3.	Regression Equations when Deviation Taken from the Assumed Mean	211
5.5.	Coefficient of Determination	212
5.6.	Relationship Between Correlation & Regression Coefficients	214
5.7.	Probable and Standard Error of Estimate	214
5.7.1.	Probable Error of the Coefficient of Correlation	215
5.7.2.	Standard Error of the Coefficient of Correlation	216
5.8.	Miscellaneous Examples	232
5.9.	Exercise	236

Solved Paper (2017)	239
Solved Paper (2018)	242
Question Paper (2019)	



About the Book

This book of **Statistics for Management** provides an overview of the fundamental aspects related to business Statistics. In this book, every effort has been made to make the text easy to understand while keeping the material according to syllabus. Exercises are also provided in this book which will help students to prepare for the examination. This book is useful not only for students who are pursuing their studies but also for those working in the educational institutions and corporate world.

About the Author



Dr. P. Periyasamy is working as an **Professor** and Head in the Department of Mathematics, **Selvam College of Technology, Namakkal**. He is teaching Mathematics at various levels for Undergraduate and Postgraduate Students with a credit about **17 years** of teaching experience. He is awarded with the degree of **Ph.D.** by Periyar University, Salem. He is completed **M.Sc.**, Psychology and Post Graduate Diploma in Educational Administration and Supervision. He has published nine research papers in National and International journals.



Dr. R. Karthika is currently working with **M.A.M.B- SCHOOL, Trichy** as **Associate Professor**. She obtained **MBA** Degree from Bharathidasan University, Trichy, **M.Phil** from Alagappa University, Karaikudi and **Ph.D.** from Bharathiyar University, Coimbatore. She is having **14 years** teaching experience in academics. She has published 12 articles in International and National Journal and more than 15 papers in National and International conferences. Her area of interest is Statistics for Management, Accounting for Management, Organisational Behaviour, Business Research Methods, Security Analysis and Portfolio Management and International Trade Finance.



Dr. M. Shunmugasundaram has obtained his **MBA, M.Phil., Ph.D., MBA (IBM), PGDPM&IR., MISTE**. He have around **12.9 years** of experience, including industrial and research experience. He is presently working as **Professor and Head** at **Scad College of Engineering and Technology** teaching subjects at Master's level. His areas of interest are **Strategic Management, Human Resource Management, Statistics for Management** and **Operations Management**. His Journals published in International level and presented papers in National and Conferences.

Anna University, MBA 1st Semester

Subject Name	Author Name
Statistics for Management	Dr. P. Periyasamy, Dr. R. Karthika, Dr. M. Shunmugasundaram
Management Concepts and Organisational Behaviour	Dr. G. Pandi Selvi, Dr. R. Florence Bharathi, Dr. M. Indhumathi
Managerial Economics	Dr. M. Hemalatha, Dr. V. Mohanasundaram, Dr. J. Niruba Rani
Accounting for Decision Making	Dr. P. Megaladevi, Dr. S. Shanthi, Mr. S. Merlin
Legal Aspects of Business	Prof. (Dr.) S. Chitra Devi, Dr. S. Sathyasundari, Dr. A. Kanimozhi
Information Management	Dr. V. Ravikumar, Dr. A. Manikandan
Entrepreneurship Development	Prof. Dr. J. Mohanraj, Dr. S. Kanda Prasath
Event Management	



₹225

www.tppl.org.in
www.questionpaper.org.in



Scan QR Code



Also Book Available on:



ISBN: 978-93-5480-122-8




Ready to Lead



Legal Aspects of Business

Prof. (Dr.) S. Chitra Devi
Dr. S. Sathyasundari
Dr. A. Kanimozhi




DIRECTOR
M.A.M. B-SCHOOL
Siruganur, Trichy-621105

LEGAL ASPECTS OF BUSINESS

MBA, FIRST SEMESTER

According to the new syllabus of 'Anna University, Chennai'

Dr. S. Chitra Devi

Ph.D., M.Phil, MBA

Professor

SRI Muthukumaran Institute of Technology

Dr. S. Sathyasundari

Ph.D., PGDCA, M.Phil, MBA

Professor

Shree Venkateshwara HI-Tech Engineering College

Dr. A. Kanimozhi

Ph.D., MBA, B.Com

Assistant Professor

M.A.M.B School




DIRECTOR
M.A.M. B-SCHOOL
Siruganur, Trichy-621105

THAKUR PUBLICATION PVT. LTD., CHENNAI

* Ahmedabad * Bhopal * Bhubaneswar * Bengaluru * Dehradun * Ernakulam * Hyderabad *
* Jaipur * Jalandhar * Kolkata * Lucknow * Nagpur * Patna * Pune * Raipur * Ranchi * Rohtak *

Legal Aspects of Business

- Dr. S. Chitra Devi
- Dr. S. Sathyasundari
- Dr. A. Kanimozhi

Published by:

Thakur Publication Pvt. Ltd.

HO: Abhishekpuram, 60 Feet Road, Jankipuram, Lucknow 226021

Mob.: 9235318597/96/95/94/91/22/17, 9335318517

Branch Office:

House No. 8, Ambu Nagar, Main Road, Goverthanagiri, Avadi, Chennai 600071.

Mob.: 9543605656, 8144126950, 9543247241, 9543247130

Website: www.tppl.org.in

Email: thakurpublication@gmail.com

Books are Available for Online Purchase at: tppl.org.in

Download old Question papers from: www.questionpaper.org.in

ISBN No. 978-93-5480-106-8

First Edition 2022

Printed at:

Savera Printing Press

Tirupatipuram, Jankipuram Extension, Near AKTU, Lucknow-226031

E-mail: lkospp@gmail.com Mobile No. 9235318506/07

₹300/-



Copyright © All Rights Reserved

This book is sole subject to the condition that it shall not, by way of trade or otherwise, be lent, resold, hired out, or otherwise circulated without the publisher's prior written consent, in any form of binding or cover, other than that in which it is published and without including a similar condition. This condition being imposed on the subsequent purchaser and without limiting the rights under copyright reserved above, no part of this publication may be reproduced, stored in or transmitted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise) without the prior written permission of both the copyright owner and the

*“Dedicated
to
my Husband, Parents & Sons.*

- Dr. S. Chitra Devi

*“Dedicated
to
Almighty & my Family”*

- Dr. S. Sathyasundari

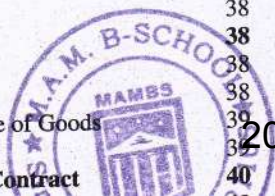
*“Dedicated
to
my Parents, my Husband &
my Family*

- Dr. A. Kanimozhi



Contents

UNIT-I		
Chapter 1: Commercial Law & Indian Contract Act 1872		
1.1. Commercial Law	11	
1.1.1. Meaning and Definition of Commercial Laws	11	
1.1.2. Scope of Commercial Law	11	
1.1.3. Sources of Commercial Law	11	
1.1.4. Importance of Commercial Law	12	
1.2. Indian Contract Act, 1872	12	
1.2.1. Introduction to the Act	12	
1.2.2. Application of the Act [Section 1]	12	
1.2.3. Important Definitions [Section 2]	12	
1.3. Law of Contract	13	
1.3.1. Meaning and Definitions of a Contract	13	
1.3.2. Essential Elements of a Valid Contract	13	
1.3.3. Types of a Contracts	14	
1.4. Formation of a Contract	17	
1.4.1. Introduction	17	
1.4.2. Essentials for Formation of Contract	18	
1.4.3. Agreement and Contract	18	
1.4.4. Distinguish between Agreement and Contract	18	
1.5. Offer and Acceptance	19	
1.5.1. Offer	19	
1.5.2. Acceptance [Section 2(b)]	22	
1.6. Performance of Contracts	23	
1.6.1. Meaning of Performance of Contract [Section 37]	23	
1.6.2. Types of Performance of Contract	23	
1.6.3. Who may perform a Contract?	23	
1.6.4. Who may Demand Performance?	24	
1.7. Discharge of Contract	24	
1.7.1. Meaning of Discharge of Contract	24	
1.7.2. Modes of Discharge of Contract	24	
1.8. Breach of Contract	27	
1.8.1. Meaning of Breach of Contract	27	
1.8.2. Types of Breach of Contract	27	
1.8.3. Remedies for Breach of Contract	27	
1.9. Quasi-Contract	28	
1.9.1. Meaning of Quasi-Contract	28	
1.9.2. Features of Quasi-Contract	28	
1.9.3. Types of Quasi-Contract	28	
1.10. Contract of Agency	29	
1.10.1. Nature of Agency	29	
1.10.2. Meaning and Definition of Contract of Agency	29	
1.10.3. Essentials of Contract of Agency	29	
1.10.4. Creation of Agency	30	
1.10.5. Agent [Section 182]	31	
1.10.6. Authority and Liability of Agent and Principal	31	
1.10.7. Relations of Principal and Agent	34	
1.10.8. Termination of Agency	36	
1.11. Exercise	36	
Chapter 2: The Sale of Goods Act 1930		
2.1. Sale of Goods Act, 1930	37	
2.1.1. Introduction	37	
2.1.2. Scope of the Act	37	
2.1.3. Short Title, Extent and Commencement	37	
2.1.4. Salient Features of the Act	37	
2.1.5. Definitions [Section 2]	38	
2.2. Contract of Sale of Goods	38	
2.2.1. Concept of Contract of Sale	38	
2.2.2. Nature of a Sales Contract	38	
2.2.3. Formation of Contract of Sale of Goods	39	
2.2.4. Sale and Agreement to Sell	39	
2.3. Goods: Subject-Matter of Contract	40	
2.3.2. Classification of Goods	40	
2.3.3. Document of Title to Goods [Section 2(4)]	41	
2.3.4. Risk of Loss	42	
2.4. Guarantees	42	
2.4.1. Types of Guarantee	42	
2.4.2. Variations in the Form of Guarantee	43	
2.4.3. Parties Involved in a Guarantees	43	
2.5. Conditions and Warranties [Sec 12-17]	43	
2.5.1. Introduction	43	
2.5.2. Condition [Section 12(2)]	43	
2.5.3. Warranty [Section 12(3)]	43	
2.5.4. Condition v/s Warranties	44	
2.5.5. Importance of Condition and Warranties in Sale of Goods Act	44	
2.5.6. When a Condition may be Treated as a Warranty	44	
2.5.7. Express and Implied Conditions and Warranties	44	
2.6. Performance of Contract of Sale	46	
2.6.1. Meaning of Performance of Contract of Sale	46	
2.6.2. Meaning of Delivery [Section 2(2)]	46	
2.6.3. Modes of Delivery [Section 33]	46	
2.6.4. Rules of Delivery of Goods	47	
2.7. Conditional Sale	48	
2.8. Unpaid Seller [Sec 45-58]	48	
2.8.1. Meaning and Definition of Unpaid Seller	48	
2.8.2. Rights of Unpaid Seller	48	
2.8.3. Rights and Duties of Buyer and Seller	50	
2.9. Exercise	51	
Chapter 3: Negotiable Instrument Act		
Negotiable Instruments Act, 1881		52
3.1. Introduction	52	
3.1.1. Objective of the Act	52	
3.1.2. Commencement of the Act	52	
3.1.3. Commencement of the Act	52	
3.2. Negotiable Instruments	52	
3.2.1. Meaning & Definition of Negotiable Instruments	52	
3.2.2. Nature and Requisites of Negotiable Instruments	53	
3.2.3. Types of Negotiable Instruments	54	
3.3. Promissory Note	54	
3.3.1. Definition of Promissory Note [Section 4]	54	
3.3.2. Essential Elements of a Promissory Note	54	
3.3.3. Parties to a Promissory Note	55	
3.4. Bills of Exchange	55	
3.4.1. Definition of Bill of Exchange [Section 5]	55	
3.4.2. Characteristics of Bill of Exchange	55	
3.4.3. Parties to Bill of Exchange	56	
3.5. Cheques	56	
3.5.1. Meaning & Definition of Cheque [Section 6]	56	
3.5.2. Characteristics of Cheque	56	
3.5.3. Special Rules for Cheque	56	
3.5.4. Difference between Cheque and Bill of Exchange	56	
3.6. Dishonour of Cheque	57	
3.6.1. Obligations of Drawee on Dishonour of a Cheque	57	
3.6.2. Obligations of Banker for Dishonour of Cheque	57	
3.6.3. Legal Procedure to be Followed in Case of Dishonour of Cheque	58	
3.7. Demand Draft	58	
3.7.1. Meaning and Definition of demand draft	58	
3.7.2. Characteristics of Demand Draft	58	
3.7.3. Special Rules for Drafts	58	
3.8. Parties to a Negotiable Instruments	59	
3.8.1. Introduction	59	
3.8.2. Holder or Indorser [Section 8]	59	
3.8.3. Holder in Due Course [Section 9]	59	
3.8.4. Liabilities of Parties to a Negotiable Instrument	60	
3.8.5. Difference between a Holder and a Holder in Due	61	



3.9.	Discharge of Negotiable Instruments	61
3.9.1.	Introduction	61
3.9.2.	Discharge of an Instrument	61
3.9.3.	Mode of Discharge of an Instrument	61
3.9.4.	Discharge of Parties from Liability	62
3.9.5.	Mode of Discharge of Parties from Liabilities	62
3.10.	Exercise	62

UNIT-II

Chapter 4: Company Act 1956 & 2013

4.1.	Companies Act, 1956	63
4.1.1.	Introduction	63
4.1.2.	Objectives of the Act	63
4.1.3.	Salient Features of the Act	63
4.1.4.	Scheme of the Act	63
4.1.5.	Extent & Application of the Act	64
4.2.	Companies Act, 2013	65
4.2.1.	Background of Companies Act, 2013	65
4.2.2.	Salient Features of the Companies Act 2013	65
4.2.3.	Short Title, Extent, Commencement and Application (Section 1)	66
4.2.4.	Definitions under Companies Act, 2013	66
4.3.	Company	67
4.3.1.	Meaning and Definition of Company	67
4.3.2.	Nature of Company	67
4.3.3.	Types of Companies	67
4.3.4.	Merits of Companies	70
4.3.5.	Demerits of Companies	71
4.4.	Formation of a Company [Section 3]	71
4.4.1.	Steps in Formation of a Company	72
4.4.2.	Promotion Stage	72
4.4.3.	Incorporation of a Company (Section 7)	73
4.4.4.	Subscription/Floatation Stage	74
4.4.5.	Commencement of Business (Section 11)	74
4.5.	Memorandum of Association (MOA)	75
4.5.1.	Meaning & Definition of Memorandum of Association	75
4.5.2.	Importance of Memorandum of Association	76
4.5.3.	Purpose of Memorandum of Association	76
4.5.4.	Clauses of Memorandum of Association	76
4.5.5.	Alteration of Memorandum (Section 13)	77
4.5.6.	Doctrine of <i>Ultra Vires</i>	78
4.6.	Articles of Association (AOA)	78
4.6.1.	Meaning of Articles of Association	78
4.6.2.	Provision with Respect to Content of Articles	79
4.6.3.	Content of Articles of Association	79
4.6.4.	Alteration of Articles (Section 14)	80
4.6.5.	Procedure for Alteration of AOA	80
4.6.6.	Effect of Memorandum and Articles (Section 10)	81
4.6.7.	Doctrine of Constructive Notice	81
4.6.8.	Doctrine of Indoor Management	81
4.6.9.	Distinction between Memorandum of Association & Articles of Association	82
4.7.	Prospectus	82
4.7.1.	Meaning and Definition of Prospectus	82
4.7.2.	Objective of Prospectus	82
4.7.3.	Document Containing Offer of Securities for Sale to be Deemed Prospectus (Section 25)	83
4.7.4.	Contents of a Prospectus	83
4.7.5.	Variation in Terms of Contract or Objects in Prospectus (Section 27)	83
4.7.6.	Advertisement of Prospectus (Section 30)	84
4.7.7.	Shelf Prospectus (Section 31)	84
4.7.8.	Red Herring Prospectus (Section 32)	84
4.7.9.	Issue of Application forms for Securities	85
4.7.10.	Misstatements in Prospectus	85
4.7.11.	Remedies for Misstatements in Prospectus	86

4.8.	Exercise	86
-------------	-----------------	-----------

Chapter 5: Directors, Winding-up & Corporate Governance

5.1.	Directors	87
5.1.1.	Meaning & Definition of Directors	87
5.1.2.	Number of Directors	87
5.1.3.	Types of Directors	87
5.1.4.	Legal Position of Directors	88
5.1.5.	Qualifications of Directors	88
5.1.6.	Disqualification of Directors [Section 164]	88
5.1.7.	Appointment of Directors	89
5.1.8.	Powers of Directors	90
5.1.9.	Duties of Directors	90
5.1.10.	Liabilities of Directors	91
5.2.	Winding-Up of Companies	92
5.2.1.	Meaning of 'Winding Up'	92
5.2.2.	Modes of Winding Up	92
5.2.3.	Voluntary Winding-Up [Section 484-521]	93
5.2.4.	Winding-Up Under the Supervision of the Court	95
5.3.	Corporate Governance	96
5.3.1.	Meaning & Definition of Corporate Governance	96
5.3.2.	Features of Corporate Governance	96
5.3.3.	Objectives of Corporate Governance	97
5.3.4.	Constituents of Corporate Governance	97
5.3.5.	Structure of Corporate Governance	97
5.3.6.	Essentials of Corporate Governance	98
5.3.7.	Significance/Benefits of Corporate Governance	100
5.5.	Exercise	101

Chapter 6: Competition Act, 2002

6.1.	Competition Act, 2002	102
6.1.1.	Introduction	102
6.1.2.	Definitions [Section 2]	102
6.1.3.	Objectives of Competition Act	104
6.1.4.	Features of Competition Act	104
6.1.5.	Major Provisions of Competition Act, 2002	104
6.1.6.	Powers of Central Government under the Competition Act, 2002	106
6.1.7.	Competition Commission of India	107
6.1.8.	Offences and Penalties under the Act	114
6.2.	Exercise	115

UNIT-III

Chapter 7: An Overview of Factories Act

7.1.	Overview of Factories Act 1948	116
7.1.1.	Introduction	116
7.1.2.	Short Title, Extent and Commencement	116
7.1.3.	Objectives of the Act	116
7.1.4.	Definitions [Section 2]	116
7.1.5.	Occupier [Section 2(n)]	117
7.1.6.	Factory [Section 2(m)]	118
7.1.7.	Inspectors [Section 8]	118
7.1.8.	Certifying Surgeons [Section 10]	118
7.1.9.	Provisions under Factories Act, 1948	119
7.2.	Exercise	128

Chapter 8: Payment of Wages Act

8.1.	The Payment of Wages Act, 1936	129
8.1.1.	Introduction	129
8.1.2.	Objectives of the Act	129
8.1.3.	Short Title, Extent, Commencement and Application	129
8.1.4.	Definitions [Section 2]	130
8.1.5.	Rules for Payment of Wages	130
8.1.6.	Deduction from Wages [Section 7]	131
8.1.7.	Fines [Section 8]	133
8.1.8.	Deductions for Absence from Duty [Section 9]	133
8.1.9.	Deductions for Damage or Loss [Section 10]	133

8.1.10.	Deductions for Services Rendered [Section 11]	134	12.1.	GST	173
8.1.11.	Deductions for Recovery of Advances	134	12.1.1.	Overview of Latest Developments in Indirect Tax	173
8.1.12.	Deductions for Recovery of Loans [Section 12-A]	134		Laws Relating to GST	
8.1.13.	Deductions for Payments to Co-operative Societies and Insurance Schemes [Section 13]	134	12.1.2.	An Introduction to GST	174
8.1.14.	Maintenance of Registers and Records	134	12.1.3.	Constitutional Aspects of GST	174
8.1.15.	Enforcement of the Act	134	12.1.4.	Meaning of Goods and Service Tax (GST)	175
8.2.	Exercise	140	12.1.5.	Features of GST	176
			12.1.6.	Objectives of GST	176
			12.1.7.	Rates of GST in India	176
			12.1.8.	Subsuming of Taxes under GST	177
			12.1.9.	Principles of GST	177
			12.1.10.	Benefits of GST	177
			12.1.11.	Limitations of GST	178
			12.1.12.	Structure of GST	178
			12.2.	Levy and Collection of GST	180
			12.2.1.	Levy and Collection Under CGST Act, 2017	180
			12.2.2.	Levy and Collection Under IGST, Act 2017	181
			12.2.3.	Levy and Collection Under UTGST Act, 2017	181
			12.3.	Time of Supply	181
			12.3.1.	Concept of Time of Supply	181
			12.3.2.	Time of Supply of Goods (Default Rule)	182
			12.3.3.	Time of Supply of Services (Default Rule)	182
			12.3.4.	Time of Supply in Case of Change in Rate of Tax in Respect of Supply of Goods or Services	184
			12.4.	Value of Supply (Section 15)	185
			12.4.1.	Concept of Value of Supply	185
			12.4.2.	Transaction Value [Section 15(1)]	185
			12.4.3.	Items includes in Transaction Value	186
			12.4.4.	Discount Before or at or After the Time of Supply	186
			12.4.5.	Residual [Sec. 15(4)]	187
			12.4.6.	Value of Supply Notified by Government	187
			12.5.	Input Tax Credit (ITC)	188
			12.5.1.	Meaning of Input Tax Credit	188
			12.5.2.	Eligibility to Avail Input Tax Credit under GST	188
			12.5.3.	Apportionment of ITC and Blocked Credits	189
			12.5.4.	Availability of Credit in Special Circumstances	190
			12.5.5.	Input Service Distributor (ISD) [Section 20]	191
			12.6.	Registration under GST (Section 22 to 28)	198
			12.6.1.	Introduction	198
			12.6.2.	Persons Liable to Get Registered (Section 22)	198
			12.6.3.	Persons Not Liable for Registration (Section 23)	198
			12.6.4.	Compulsory Registration in Certain Cases	199
			12.6.5.	Types of GST Registration	199
			12.6.6.	Registration Procedure (Section 25)	200
			12.7.	Various Documents under GST / Types of Invoices	202
			12.7.1.	Tax Invoice (Section 31)	202
			12.7.2.	Credit Note	205
			12.7.3.	Debit Note	206
			12.8.	Electronic Way Bill	206
			12.8.1.	Meaning of Electronic Way Bill (E-Way Bill)	206
			12.8.2.	Issue of E-Way Bill	206
			12.8.3.	Persons who can Generate an E-Way Bill	207
			12.8.4.	Validity of E-Way Bill	207
			12.8.5.	Documents Required to Generate an E-Way Bill	207
			12.8.6.	Cancellation of E-Way Bill	207
			12.9.	Return (Section 37 to 48)	207
			12.9.1.	Meaning and Definition of Return	207
			12.9.2.	Types of GST Returns	207
			12.9.3.	Return Filing Process	209
			12.9.4.	Provisions Regarding Filing of Return	209
			12.9.5.	Furnishing Details of Outward Supply	209
			12.9.6.	Furnishing Details of Inward Supplies	210
			12.9.7.	Furnishing of Returns (Section 39)	210
			12.9.8.	First Return (Section 40)	210
			12.9.9.	Claim of Input Tax Credit and Provisional Acceptance (Section 41)	210
8.1.10.	Deductions for Services Rendered [Section 11]	134			
8.1.11.	Deductions for Recovery of Advances	134			
8.1.12.	Deductions for Recovery of Loans [Section 12-A]	134			
8.1.13.	Deductions for Payments to Co-operative Societies and Insurance Schemes [Section 13]	134			
8.1.14.	Maintenance of Registers and Records	134			
8.1.15.	Enforcement of the Act	134			
8.2.	Exercise	140			
	Chapter 9: Payment of Bonus Act				
9.1.	Payment of Bonus Act, 1965	141			
9.1.1.	Introduction	141			
9.1.2.	Objectives of the Act	141			
9.1.3.	Short Title, Extent and Application [Section 1]	141			
9.1.4.	Definitions [Section 2]	141			
9.1.5.	Computation of Gross Profits [Section 4]	143			
9.1.6.	Computation of Available Surplus [Section 5]	144			
9.1.7.	Sum Deductible from Gross Profits [Section 6]	144			
9.1.8.	Calculation of Direct Tax Payable by the Employer [Section 7]	144			
9.1.9.	Eligibility and Disqualification for Bonus	145			
9.1.10.	Amount of Bonus	145			
9.2.	Exercise	147			
	Chapter 10: Industrial Disputes Act				
10.1.	Industrial Disputes Act, 1947	148			
10.1.1.	Concept of Industrial Dispute Act, 1947	148			
10.1.2.	Short Title, Extent and Commencement	148			
10.1.3.	Objectives of the Act	148			
10.1.4.	Definitions [Section 2]	148			
10.1.5.	Industry [Section 2(j)]	151			
10.1.6.	Methods for Settlement of Industrial Disputes	151			
10.1.7.	Authorities under the Act	152			
10.1.8.	Provisions under Chapter V- Strikes and Lock-Outs	154			
10.1.9.	Provisions under Chapter V-A - Lay-Off and Retrenchment	155			
10.1.10.	Procedure of Settlement and Award	158			
10.2.	Exercise	159			
	UNIT-IV				
	Chapter 11: Corporate Tax Planning				
11.1.	Corporate Tax Planning	160			
11.1.1.	Meaning of Tax Planning	160			
11.1.2.	Scope of Tax Planning	160			
11.1.3.	Meaning of Corporate Tax Planning	160			
11.1.4.	Objectives of Corporate Tax Planning	160			
11.1.5.	Issues in Corporate Tax Planning	161			
11.1.6.	Areas of Corporate Tax Planning	161			
11.1.7.	Tax Planning with Respect to Setting up New Business	161			
11.1.8.	Tax Planning with Reference/Respect to Financial Managerial Decisions	162			
11.1.9.	Capital Structure Decisions	162			
11.1.10.	Tax Planning for Amalgamations	163			
11.1.11.	Tax Planning for Demerger of Companies	163			
11.2.	Corporate Taxes	163			
11.2.1.	Meaning of Corporate Taxes	163			
11.2.2.	Features of Corporate Tax	163			
11.2.3.	Residential Status of a Company [Section 6(3)]	163			
11.2.4.	Incidence of Tax for Companies	164			
11.2.5.	Types of Income in a Company	165			
11.2.6.	Computation of Taxable Income and Tax Liability of Companies	165			
11.2.7.	Minimum Alternative Tax (MAT)	168			
11.2.8.	Deductions u/s 80 for Companies	170			
11.3.	Exercise	172			
	Chapter 12: Goods And Service Tax (Set				

12.9.10.	Matching, Reversal and Reclaim of Input Tax Credit	210	14.2.5.	Prevention of Cyber Crime	235
12.9.11.	Matching, Reversal and Reclaim of Reduction in Output Tax Liability (Section 43)	211	14.3. Information Technology Act, 2000	236	
12.9.12.	Annual Return (Section 44)	211	14.3.1.	Salient Features of the Information Technology Act, 2000	237
12.9.13.	Final Return (Section 45)	211	14.3.2.	Objectives of the IT Act	237
12.9.14.	Notice to Return Defaulters (Section 46)	211	14.3.3.	Scope and Application of the IT Act, 2000	238
12.9.15.	Late Fees (Section 47)	211	14.3.4.	Definitions [Section 2]	238
12.10. Payment of Taxes (Section 49 to 53)		211	14.3.5.	IT Act 2002	239
12.10.1.	Introduction	211	14.4. Electronic Governance (E-Governance)	239	
12.10.2.	Payment of Tax, Interest, Penalty and Other Amounts	212	14.4.1.	Meaning of E-Governance	239
12.10.3.	Utilisation of Input Tax Credit Subject to Certain Conditions	213	14.4.2.	Objectives of E-Governance	240
12.10.4.	Powers Assumed by the Government to Notify Order of Utilisation of Input Tax Credit	213	14.4.3.	Evolution of E-governance	240
12.10.5.	Interest on Delayed Payment of Tax (Section 50)	213	14.4.4.	Importance of E-Governance	242
12.10.6.	Tax Deduction at Source (TDS) (Section 51)	214	14.5. Electronic Records	243	
12.10.7.	Tax Collection at Source (TCS) by an E-Commerce Operator (Section 52)	214	14.5.1.	Meaning & Definition of Electronic Record	243
12.11. Reverse Charge Mechanism in GST		215	14.5.2.	Attribution, Acknowledgment and Dispatch of Electronic Records	243
12.11.1.	Concept of Reverse Charge	215	14.5.3.	Legal Recognition of Electronic Records	244
12.11.2.	Provision of Reverse Charge Mechanism	215	14.5.4.	Authentication of Electronic Records	244
12.11.3.	Time of Supply for Goods Under Reverse Charge	215	14.6. Intellectual Property Rights	244	
12.11.4.	Time of Supply for Services Under Reverse Charge	216	14.6.1.	Introduction	244
12.12. Exercise		216	14.6.2.	Salient Features of Intellectual Property Rights	245

UNIT-V

Chapter 13: Consumer Protection Act

13.1. Consumer Protection Act, 1986	217	
13.1.1.	Introduction	217
13.1.2.	Salient Features of the Act	217
13.1.3.	Objectives of Consumer Protection	218
13.1.4.	Definitions	218
13.2. Consumer	219	
13.2.1.	Meaning and Definition of Consumer	219
13.2.2.	Consumers Rights	220
13.2.3.	Duties of Consumer	221
13.3. Consumer Dispute	221	
13.3.1.	Unfair Trade Practices [Section 2 (1)(r)]	221
13.3.2.	Restrictive Trade Practices [Section 2 (1)(nnn)]	222
13.3.3.	Difference between RTPs and UTPs	223
13.4. Consumer Protection Councils	223	
13.4.1.	Central Consumer Protection Council	223
13.4.2.	State Consumer Protection Councils	224
13.4.3.	District Consumer Protection Council	224
13.5. Consumer Disputes Redressal Agencies	224	
13.5.1.	Introduction	224
13.5.2.	Types of Consumer Redressal Machineries and Forums	224
13.5.3.	District Forums	225
13.5.4.	State Commission	226
13.5.5.	National Commission	227
13.6. Exercise	230	

Chapter 14: Introduction to Cyber Crimes & IT Act 2000

14.1. Cyber Laws	231	
14.1.1. Introduction	231	
14.1.2.	Aims of Cyber Laws	231
14.1.3.	Provisions of Cyber Laws	231
14.1.4.	Advantages of Cyber Laws	232
14.1.5.	Disadvantages of Cyber Laws	232
14.2. Cyber Crimes	233	
14.2.1.	Meaning of Cyber Crime	233
14.2.2.	Concept of 'Cyber Crime' and the IT Act, 2000	233
14.2.3.	Acts which are Considered as a Cyber Crime	233

14.2.5.	Prevention of Cyber Crime	235
14.3. Information Technology Act, 2000	236	
14.3.1.	Salient Features of the Information Technology Act, 2000	237
14.3.2.	Objectives of the IT Act	237
14.3.3.	Scope and Application of the IT Act, 2000	238
14.3.4.	Definitions [Section 2]	238
14.3.5.	IT Act 2002	239
14.4. Electronic Governance (E-Governance)	239	
14.4.1.	Meaning of E-Governance	239
14.4.2.	Objectives of E-Governance	240
14.4.3.	Evolution of E-governance	240
14.4.4.	Importance of E-Governance	242
14.5. Electronic Records	243	
14.5.1.	Meaning & Definition of Electronic Record	243
14.5.2.	Attribution, Acknowledgment and Dispatch of Electronic Records	243
14.5.3.	Legal Recognition of Electronic Records	244
14.5.4.	Authentication of Electronic Records	244
14.6. Intellectual Property Rights	244	
14.6.1.	Introduction	244
14.6.2.	Salient Features of Intellectual Property Rights	245
14.6.3.	Importance of Intellectual Property Rights	245
14.6.4.	Forms of IPRs	246
14.7. Legal Aspects of Patents	247	
14.7.1.	Introduction	247
14.7.2.	Importance of Patent	247
14.7.3.	Filing of Patent Application	248
14.7.4.	Rights from Patent	248
14.7.5.	Indian Patent Act, 1970	249
14.7.5.1.	Invention	249
14.7.5.2.	Non-Patentable Inventions	249
14.7.5.3.	Registration of Patents	250
14.7.5.4.	Infringement of Patent	250
14.8. Copyright and its Ownership	251	
14.8.1.	Meaning of Copyright	251
14.8.2.	Object of Copyright	251
14.8.3.	Rights of Copyright Owner	251
14.8.4.	Importance of Copyright	252
14.8.5.	Indian Copyright Act, 1957	252
14.8.5.1.	Classes of Works for which Copyrights Protection is Available in India	252
14.8.5.2.	Term/Duration of Copyright	253
14.8.5.3.	Ownership and Assignment	253
14.8.5.4.	Licences	255
14.8.5.5.	Registration of Copyright	260
14.8.5.6.	Infringement of Copyright	260
14.9. Trademarks	261	
14.9.1.	Meaning and Definition of Trademarks	261
14.9.2.	Types of Trademarks	261
14.9.3.	Trademarks Act, 1999	262
14.9.3.1.	Trademarks not Registerable	262
14.9.3.2.	Procedure for Registration	262
14.9.3.3.	Essentials for Filing an Application	262
14.9.3.4.	Infringement of Trademarks	262
14.10. Right to Information Act, 2005	264	
14.10.1.	Introduction	264
14.10.2.	Salient Features of RTI Act	264
14.10.3.	Definitions	264
14.10.4.	Objective of RTI Act	265
14.10.5.	Right to Information [Section 2(i)]	265
14.11. Exercise	267	
Solved Paper (2016)	268	
Solved Paper (Nov. Dec. 2018)	270	
Solved Paper (Jan. 2018)	271	
Solved Paper (2019)	273	



About the Book

This book of “**Legal Aspects of Business**” covers the various provisions of Acts related to business. An attempt has been made to bring up-to-date information regarding latest Amendments of various Acts. The content of the book is written in a simple language with detailed information. The text is supported with numerous illustrations to enable practical understanding. This book also contains exercise and solved papers to assist the students in preparing for examination.

About the Author



Prof. (Dr.) S. Chitra Devi presently working in **Sri Muthukumaran Institute of Technology**, Chennai department of Management Studies with the qualification of **MBA., M.Phil., Ph.D.** She has completed her doctorate in entrepreneurship development with **22 years** of teaching experience in various institutions and 10 years research experience. She has published 22 research papers in various international journals and attend more than 20 national and international conferences. She was keynote speaker in conference and chief guest for various events. She has produced doctorate candidate under Bharathiyar University in management.



Dr. S. Sathyasundari is working as a **Professor & Head** of MBA Department at **Shree Venkateshw Hi-Tech Engineering College, Gobi, Erode District**. She has completed **MBA, M.Phil, PGDCA, P** and is having **21 Years** of teaching Experience and **1 Year** of Industrial experience. She has participated and presented several papers at State, National and International conferences and has published several articles in leading academic National and International journals. She has attended various FDPs sponsored by UGC and AICTE. She is lifetime members in **ISTE** and **IACM**.



Dr. A. Kanimozhi has over **7 years** experience in teaching and Research field. She is able to handle multiple tasks on a daily basis and dependable person when comes to time management. She uses creative approach for problem solving and always be energetic & eager to learn new skills. She is able to work as a team and as an individual able to work in evenings and weekends. She is a workaholic, ambitious hardworking individual, with broad skills and experience in Lectures, Digital designing and strength is Communication and Building strong relationships with people in order to deliver the results when comes to Marketing, Lectures and can mentor the students very well. She is currently working as an **Assistant Professor in M.A.M B-SCHOOL** always committed to learn more in her Profession from Head & Management for consistent achievement in career and engaged as a Active member of Mamcet Toastmasters Club and wrote article for Toastmasters International Journals on the topic “Regale”, and learning event managing skill as a Yi – Coordinator.

Anna University, MBA 1st Semester

Subject Name	Author Name
Statistics for Management	Dr. P. Periyasamy, Dr. R. Karthika, Dr. M. Shunmugasundaram
Management Concepts and Organisational Behaviour	Dr. G. Pandi Selvi, Dr. R. Florence Bharathi, Dr. M. Indhumathi
Managerial Economics	Dr. M. Hemalatha, Dr. V. Mohanasundaram, Dr. J. Niruba Rani
Accounting for Decision Making	Dr. P. Megaladevi, Dr. S. Shanthy, Mr. S. Merlin
Legal Aspects of Business	Prof. (Dr.) S. Chitra Devi, Dr. S. Sathyasundari, Dr. A. Kanimozhi
Information Management	Dr. V. Ravikumar, Dr. A. Manikandan
Entrepreneurship Development	Prof. Dr. J. Mohanraj, Dr. S. Kanda Prasath
Event Management	



Scan QR Code



Also Book Available on:

Flipkart amazon
 kindle tppl.org.in
www.questionpaper.org.in

ISBN: 978-93-5480-106-



9 789354 801068


Read to Lead

As Per Anna University Syllabus
MBA
1st
Sem

Managerial Economics



Dr. M. Hemalatha
Dr. V. Mohanasundaram
Dr. J. Niruba Rani


THAKUR PUBLICATION PVT. LTD.
CHENNAI

Free
2021-23
Amburaj . B
AP. 1 mams

MANAGERIAL ECONOMICS

MBA, FIRST SEMESTER

According to the new syllabus of 'Anna University, Chennai'

Dr. M. Hemalatha

Ph.D., MBA
Director and Professor
M.A.M.B. School

Dr. V. Mohanasundaram

Ph.D., M.Phil, MBA
Director
Vivekanandha Institute of Information and Management Studies

Dr. J. Niruba Rani

Ph.D., MBA
Professor and Head of Department
RVS Institute of Management Studies, Coimbatore



(Signature)
DIRECTOR
M.A.M. B-SCHOOL
Siruganur, Trichy-621105

THAKUR PUBLICATION PVT. LTD., CHENNAI

* Ahmedabad * Bhopal * Bhubaneswar * Bengaluru * Dehradun * Ernakulam * Hyderabad *
* Jaipur * Jalandhar * Kolkata * Lucknow * Nagpur * Patna * Pune * Raipur * Ranchi * Rohtak *

Preface

We feel very happy in bringing this book “**Managerial Economics**” for the students of **MBA, First Semester, ANNA UNIVERSITY**. This book is specially designed to cover the New syllabus of the University.

This book results from a long-standing classroom notes for the graduate courses offering Managerial economics. We have taken a lot of efforts to make the subject more interesting by arranging the units logically. We are sure that students using this book will be able to acquire knowledge in economics concepts very quickly. The exercise questions are set considering the importance for the examinations of the University.

The salient features of this book are:

- The text has been written in a very simple and clear language.
- The text has been presented in an interesting way to enhance reading experience.

While writing the book, we referred many books on the subject and we are grateful to all those authors for the influence. We hope both the students and teachers will be able to use this book effectively. Constructive suggestions for improvement of the text will be gratefully appreciated.

Please e-mail us at, thakurpublication@gmail.com

Website, www.tppl.org.in



Acknowledgement

I am thankful to my **Family** for their support and encouragement throughout the preparation of this book.

Thanks to my **Students** and galaxy of learned teachers, who have taken time to provide feedback with their learning experience.

I am thankful to **Friends and Colleagues**, to bring out the mistakes and also suggestions given by them for the improvement of this book.

I extend special thanks to **Thakur Publication Pvt. Ltd.** especially respected **Mr. Vipin Singh** (Assistant Editor) for the spirit of cooperation shown to achieve perfection.

- Dr. M. Hemalatha

It is my privilege and pleasure in publishing the book titled "**Managerial Economics**, a unique contribution to the sphere of Management and also involves in decision-making with both short-term business goals and long-term economic growth in mind.

I wish to express my sincere and deepest gratitude to my parents **P. Venkatachalam** and **S.Saraswathi** for their love and support.

I would like to thank our beloved Chairman Vidya Rathna **Prof. Dr. M.Karunanithi.**, Vivekanandha Group of Educational Institutions for his valuable guidance and support and encouragement in publishing this book.

My gratitude and special thanks to my beloved wife **Dr. S.Yesodha** and my loving children **M.Y. Janushya** and **M. Y. Chatresh** for their encouragement.

My sincere thanks to **Thakur Publication Pvt. Ltd.** for enabling me to present this book to the students pursuing management studies.

- Dr. V. Mohanasundaram

First and foremost I would like to express my sincere gratitude to the authorities of my esteemed Institute for their positive comment.

I would like to thank my Management and my Director **Dr. P. V. Prabha**, RVS Institute of Management Studies, Kanampalayam, Coimbatore, who constantly trusted and mentored me to become what I am today.

I am thankful to my husband **Mr. S. Ramanujam**, he deserves to be complimented for his constant and unconditional support and my Princess Dakshana Ram for her tolerance and patience to have allowed me to work and not giving time to her while writing this book.

I want to extend my gratitude towards my colleagues and all my friends for encouraging me to write a book.

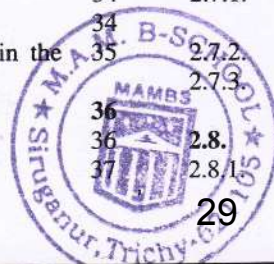
Last but not the least; I would like to thank a lot to my Publisher and the whole team, especially Editorial team, for facilitating the work and providing an opportunity to be part of their organization.

- Dr. J. Niruba Rani

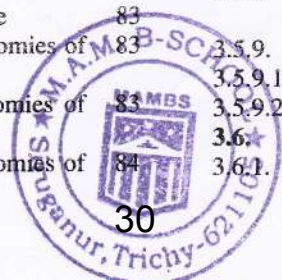


Contents

Unit 1: Introduction to Economics		1.5.3.	Negative Externalities	38
1.1. Economics	11	1.5.4.	Positive <i>versus</i> Negative Externalities	39
1.1.1. Introduction	11	1.6. Exercise		39
1.1.2. Meaning and Definition of Economics	11	Unit 2: Consumer and Producer Behaviour		
1.1.3. Themes of Economics	12	2.1. Market		40
1.1.1. Scarcity	12	2.1.1. Meaning and Definition of Market		40
1.1.2. Efficiency	13	2.1.2. Nature of Market		40
1.1.2.1. Types of Efficiency	13	2.1.3. Determinants/Factors of Market Structure		40
1.1.2.2. Productive Efficiency Vs Economic Efficiency	15	2.1.4. Basis of Market Classification		41
1.1.3. Nature of Economics	16	2.2. Demand		41
1.1.4. Scope of Economics	17	2.2.1. Meaning and Definition of Demand		41
1.1.5. Branches of Economics	18	2.2.2. Types of Demand		42
1.1.6. Micro-Economics	18	2.2.3. Determinants of Demand		43
1.1.6.1. Nature of Micro Economics	19	2.2.4. Demand Function		44
1.1.6.2. Scope of Micro Economics	19	2.3. Law of Demand		44
1.1.6.3. Importance of Micro Economics	19	2.3.1. Meaning and Definition of Law of Demand		44
1.1.6.4. Limitations of Micro Economics	20	2.3.2. Assumptions of Law of Demand		44
1.1.7. Macro-Economics	20	2.3.3. Demand Schedule		45
1.1.8. Economic Problems	21	2.3.4. Demand Curve		45
1.1.8.1. Reasons Behind Economic Problems	21	2.3.5. Why does Demand Curve Slope Downwards?		46
1.1.8.2. Three Fundamental Economic Problems	21	2.3.6. Exceptions to Law of Demand		47
1.1.8.3. Market Forces in Solving Economic Problem	22	2.3.7. Change in Demand		48
1.1.8.4. Solution of Basic Economic Problems by Price Mechanism	23	2.4. Elasticity of Demand		50
1.1.8.5. Society's Capability	24	2.4.1. Meaning of Elasticity of Demand		50
1.2. Production Possibility Frontier (PPF)	25	2.4.2. Importance of Elasticity of Demand		51
1.2.1. Meaning of Production Possibility Frontier (PPF)	25	2.4.3. Types of Elasticity of Demand		51
1.2.2. Assumptions of Production Possibility Curve	25	2.4.4. Price Elasticity of Demand		51
1.2.3. Diagrammatic Representation of Production Possibility Curve	25	2.4.4.1. Types/Degrees of Price Elasticity		52
1.3. Economic Growth And Stability	27	2.4.4.2. Determinants of Price Elasticity of Demand		53
1.3.1. Economic Growth	27	2.4.4.3. Role of Price Elasticity of Demand in Managerial Decision Making Process		54
1.3.1.1. Elements of Economic Growth	27	2.4.5. Income Elasticity of Demand		55
1.3.1.2. Importance of Economic Growth	28	2.4.5.1. Types of Income Elasticity of Demand		55
1.3.2. Economic Stability	28	2.4.5.2. Difference between Price Elasticity and Income Elasticity		56
1.3.2.1. Stabilisation Policy	29	2.4.6. Cross Elasticity of Demand		56
1.3.2.2. Objectives of Stabilisation Policy	29	2.5. Supply		57
1.3.3. Tools for Ensuring Economic Growth and Stability	30	2.5.1. Meaning and Definition of Supply		57
1.3.3.1. Monetary Policy Tools	30	2.5.2. Types of Supply		57
1.3.3.2. Fiscal Policy Tools	31	2.5.3. Determinants of Supply		58
1.3.4. Suggestion for Stabilising the Indian Economy after Demonetisation	32	2.5.4. Supply Function		58
1.3.5. Indian Economic Scenario after GST Implementation	33	2.6. Law of Supply		59
1.4. Role of Market and Government	33	2.6.1. Meaning of Law of Supply		59
1.4.1. Introduction	33	2.6.2. Assumptions of the Law of Supply		59
1.4.2. Role of Markets and Government in India (Developing Country)	34	2.6.3. Supply Schedule		59
1.4.2.1. Role of Markets	34	2.6.4. Supply Curve		60
1.4.2.2. Role of Government	34	2.6.5. Why does the Supply Curve Slopes upwards to the Right?		60
1.4.3. Role of Government and Markets in the Present Economy Scenario	35	2.7. Elasticity of Supply		61
1.5. Externalities	36	2.7.1. Meaning and Definition of Elasticity of Supply		61
1.5.1. Introduction	36	2.7.2. Importance of Elasticity of Supply		61
1.5.2. Positive Externalities	37	2.7.3. Types/Degrees of Price Elasticity of Supply		62
		2.8. Equilibrium Analysis		63
		2.8.1. Meaning and Definition of Equilibrium		63



2.8.2.	Market Equilibrium: Competitive Equilibrium	63	2.14.5.	Economies Vs Diseconomies of Scale	85
2.8.2.1.	Changes in Market Equilibrium	65	2.15.	Analysis of Cost	85
2.8.2.2.	Simultaneous Shifts of Supply and Demand	65	2.15.1.	Meaning and Definition of Cost	85
2.8.3.	Uses of Equilibrium	65	2.15.2.	Types of Costs	86
2.9.	Consumer Behaviour	66	2.15.3.	Determinants of Cost	87
2.9.1.	Introduction	66	2.15.4.	Cost Function	87
2.9.2.	Utility	66	2.15.5.	Costs Curve and Cost-Output Relationship	87
2.9.3.	Measurement of Utility	66	2.15.6.	Short Run Cost Function: Cost-Output Relationship in the Short-Run	88
2.9.4.	Relationship between Total Utility and Marginal Utility	67	2.15.6.1.	Short-Run Total Costs	88
2.9.5.	Diagrammatic Representation of Total Utility and Marginal Utility	67	2.15.6.2.	Short-Run Average Costs	90
2.9.6.	Consumer Equilibrium	67	2.15.6.3.	Short-Run Marginal Cost	91
2.9.7.	Approaches to Consumer Behaviour	68	2.15.6.4.	Relationship between Average Cost and Marginal Cost	92
2.9.8.	Law of Diminishing Marginal Utility (LDMU)	68	2.15.7.	Long-Run Cost Function: Cost-Output Relationship in the Long-Run	93
2.9.9.	Indifference Curve Analysis	70	2.15.7.1.	Long-Run Total Cost Curve	93
2.9.9.1.	Assumptions of Indifference Curve	70	2.15.7.2.	Long-Run Average Cost Curve	95
2.9.9.2.	Indifference Curve and Indifference Schedule	70	2.15.7.3.	Long-Run Marginal Cost Curve	96
2.9.9.3.	Properties of Indifference Curve	71	2.15.8.	Relation Between Production and Cost Function	97
2.10.	Production Analysis	73	2.16.	Exercise	99
2.10.1.	Meaning and Definition of Production	73	Unit 3: Product and Factor Market		
2.10.2.	Factors of Production	73	3.1.	Product Market	100
2.10.3.	Production Function	73	3.1.1.	Introduction	100
2.10.4.	Types of Production Function	74	3.1.2.	Nature of Product Market	100
2.11.	Short-Run Production Function - Law of Variable Proportions	75	3.1.3.	Circular Flow of Money in Product Market	100
2.11.1.	Meaning and Definition of Law of Variable Proportions	75	3.2.	Different Market Structures	101
2.11.2.	Assumptions of Law of Variable Proportions	75	3.2.1.	Introduction	101
2.11.3.	Total, Average and Marginal Product	75	3.2.2.	Types of Market Structures	101
2.11.4.	Stages of Law of Variable Proportions	76	3.3.	Perfect Market	102
2.11.4.1.	Law of Increasing Returns	76	3.3.1.	Meaning and Definition of Perfect Market/ Perfect Competitive Market	102
2.11.4.2.	Law of Diminishing Returns	76	3.3.2.	Features of Perfect Market	102
2.11.4.3.	Law of Negative Returns	77	3.3.3.	Pros/Advantages of Perfect Market	103
2.12.	Long Run Production Function - Isoquants	79	3.3.4.	Cons/Disadvantages of Perfect Market	103
2.12.1.	Meaning and Definition of Isoquants	79	3.3.5.	Price Determination and Firm Equilibrium	103
2.12.2.	Assumptions of Isoquants	79	3.3.5.1.	Conditions for Firm Equilibrium	104
2.12.3.	Properties of Isoquants	80	3.3.5.2.	Assumptions for Firm Equilibrium	104
2.13.	Long-Run Production Function - Returns To Scale	81	3.3.5.3.	Firm Equilibrium in Short Run	104
2.13.1.	Meaning and Definition of Returns to Scale	81	3.3.5.4.	Firm Equilibrium in the Long Run	105
2.13.2.	Assumptions of Returns to Scale	81	3.3.6.	Supply Curve of a Firm	105
2.13.3.	Types of Returns to Scale	81	3.3.6.1.	Firm Supply Curve in Short Run	105
2.13.4.	Difference between Law of Variable Proportions and Returns to Scale	82	3.3.6.2.	Firm Supply Curve in Long Run	106
2.14.	Economies and Diseconomies of Scale	82	3.4.	Imperfect Market	106
2.14.1.	Introduction	82	3.5.	Monopoly	107
2.14.2.	Meaning and Definition of Economies of Scale	83	3.5.1.	Meaning and Definition of Monopoly	107
2.14.3.	Meaning of Diseconomies of Scale	83	3.5.2.	Features of Monopoly Market	107
2.14.4.	Kinds of Economies and Diseconomies of Scale	83	3.5.3.	Assumptions of Monopoly	108
2.14.4.1.	Internal Economies and Diseconomies of Scale	83	3.5.4.	Pros/Advantages of Monopoly	108
2.14.4.2.	External Economies and Diseconomies of Scale	84	3.5.5.	Cons/Disadvantages of Monopoly	109
			3.5.6.	Equilibrium of a Firm under Monopoly	109
			3.5.7.	Price Determination Under Monopoly	110
			3.5.8.	Difference between Monopoly & Perfect Competition	111
			3.5.9.	Price Discrimination	111
			3.5.9.1.	Conditions for Price Discrimination	111
			3.5.9.2.	Tools of Price Discrimination	112
			3.6.	Monopolistic Competition	113
			3.6.1.	Meaning and Definition of Monopolistic Competition	113



3.6.2.	Features of Monopolistic Competition	113	3.10.10.2.	Factor and Product Markets and Resource Reallocation	137
3.6.3.	Pros/Advantages of Monopolistic Competition	113	3.11.	General Equilibrium & Efficiency of Competitive Market	137
3.6.4.	Cons/Disadvantages of Monopolistic Competition	114	3.11.1.	Introduction	137
3.6.5.	Pricing and Output Decisions under Monopolistic Competition	114	3.11.2.	Properties of a Competitive General Equilibrium	138
3.7.	Oligopoly	116	3.11.3.	Detailed Analysis of General Equilibrium	138
3.7.1.	Meaning of Oligopoly	116	3.11.4.	Methods of Improving Efficiency of Competitive Markets	139
3.7.2.	Features of Oligopoly	116	3.12.	Exercise	140
3.7.3.	Pros/Advantages of Oligopoly	117	Unit 4: Performance of an Economy-Macro Economics		
3.7.4.	Cons/Disadvantages of Oligopoly	117	4.1.	Macro Economics	141
3.7.5.	Price Determination under Oligopoly	117	4.1.1.	Meaning and Definition of Macro Economics	141
3.7.6.	Kinked Demand Curve	118	4.1.2.	Nature of Macro Economics	141
3.7.7.	Collusive Oligopoly	119	4.1.3.	Scope of Macro Economics	142
3.7.8.	Difference between Monopoly and Oligopoly	120	4.1.4.	Importance of Macro Economics	143
3.7.9.	Difference between Monopolistic Competition & Oligopoly	121	4.1.5.	Limitations of Macro Economics	144
3.7.10.	Dependability of Market Structure on Relative Cost and Demand Factor	121	4.1.6.	Macro-Economic Aggregates	144
3.8.	Market Efficiency	122	4.2.	Circular Flow of Macro economic Activity	146
3.8.1.	Meaning of Market Efficiency	122	4.2.1.	Introduction	146
3.8.2.	Benevolent Social Planner	122	4.2.2.	Types of Circular Flow	147
3.8.3.	Efficiency Pinnacle	122	4.2.3.	Circular Flow of Macro Economic Activity in Two Sector Economy	147
3.8.4.	Evaluating the Market Equilibrium	123	4.2.4.	Circular Flow of Macro Economic Activity in Three Sector Economy	148
3.8.5.	Market Efficiency and Market Failure	123	4.2.5.	Circular Flow of Macro Economic Activity in a Four-Sector Economy	149
3.9.	Economic Costs of Imperfect Competition	124	4.2.6.	Circular Flow of Macro Economic Activity in a Five-Sector Economy	150
3.9.1.	Cost of Inflated Prices and Insufficient Output	124	4.2.7.	Significance of Circular Flow of Macro Economic Activity	153
3.9.2.	Measuring the Waste from Imperfect Competition	125	4.3.	National Income	153
3.10.	Factor Market	125	4.3.1.	Meaning & Definition of National Income	153
3.10.1.	Introduction	125	4.3.2.	Features of National Income	154
3.10.2.	Factors of Production	126	4.3.3.	Terms of National Income	154
3.10.3.	Land	126	4.3.4.	Formulas and Relationship between the Terms	157
3.10.4.	Labour	127	4.3.5.	Component of National Income	158
3.10.4.1.	Features of Labour	127	4.3.6.	Factors Determining Size of National Income	159
3.10.4.2.	Functions of Labour	127	4.3.7.	Determination/Methods of National Income	159
3.10.4.3.	Labour Market	127	4.3.8.	Difficulties in Measuring National Income	161
3.10.4.4.	Monopsony in the Labour Market	128	4.4.	Aggregate Demand and Supply	162
3.10.4.5.	Equilibrium of Labour Market	128	4.4.1.	Introduction	162
3.10.5.	Capital	129	4.4.2.	Aggregate Demand	163
3.10.6.	Entrepreneur	130	4.4.2.1.	Components of Aggregate-Demand	163
3.10.7.	Demand of Factors	131	4.4.2.2.	Aggregate-Demand Curve	164
3.10.7.1.	Features of Demand Factor	131	4.4.2.3.	Aggregate Demand Curve Slope	164
3.10.7.2.	Marginal Productivity (MP) for Demand Factor	132	4.4.2.4.	Downwards	165
3.10.7.3.	Firm's Demand Curve for One Variable Factor 'a' (or Short-Run Firm's Demand Curve for a Factor	133	4.4.3.	Shifts in Aggregate Demand Curve	165
3.10.8.	Supply of Factor	134	4.4.4.	Aggregate Supply	166
3.10.8.1.	Supply of Factors to the Whole Economy	134	4.5.	Macroeconomic Equilibrium	166
3.10.8.2.	Supply of Factors to a Particular Use	135	4.5.1.	Multiplier Effect	166
3.10.9.	Determination of Factor Price	135	4.5.2.	Meaning and Definition of Multiplier	166
3.10.9.1.	Modern Theory of Factor Pricing	136	4.5.3.	Assumptions of Multiplier	167
3.10.9.2.	Market Equilibrium and Factor Price Determination	136	4.5.4.	Diagrammatic Representation of Multiplier	167
3.10.9.3.	Factor Price Differentials	136			
3.10.10.	Interaction of Product and Factor Markets	136			
3.10.10.1.	Product and Factor Markets and within Firm Growth	137			



4.5.4.	Importance of Multiplier	168	5.5.2.	Features of Inflation	192
4.5.5.	Limitations of Multiplier	169	5.5.3.	Types of Inflation	192
4.6.	Demand Side Policy and Management	170	5.5.4.	Impacts of Inflation	195
4.6.1.	Introduction	170	5.5.5.	Reasons for Inflation -Demand Vs Supply Factors	197
4.6.2.	Monetary Policy Influences Aggregate Demand	170	5.5.6.	Measures to Check Inflation	198
4.6.2.1.	Theory of Liquidity Preference	171	5.5.7.	Difference between Inflation and Deflation	199
4.6.2.2.	Money Market and the Slope of the Aggregate-Demand Curve	171	5.6.	Phillips Curve	200
4.6.2.3.	Role of Interest-Rate Targets in Fed Policy	172	5.6.1.	Meaning of Phillip Curve	200
4.6.3.	Fiscal Policy Influences Aggregate Demand	173	5.6.2.	Inflation Vs Unemployment Trade-off	200
4.6.3.1.	Changes in Government Purchases	174	5.6.2.1.	Short-Run Phillip Curve/Trade-off between Inflation and Unemployment	201
4.6.3.2.	Changes in Taxes	175	5.6.2.2.	Long-Run Phillip Curve/Trade-off between Inflation and Unemployment	201
4.7.	Fiscal Policy	176	5.6.3.	Importance of the Phillips Curve	202
4.7.1.	Meaning and Definition of Fiscal Policy	176	5.6.4.	Disadvantages of the Phillips Curve	202
4.7.1.	Features of Fiscal Policy	176	5.7.	Money Market	203
4.7.2.	Objectives of Fiscal Policy	177	5.7.1.	Meaning and Definition of Money Market	203
4.7.3.	Types of Fiscal Policy	177	5.7.2.	Functions of Money Market	203
4.7.4.	Tools of Fiscal Policy	178	5.7.3.	Importance of Money Market	204
4.7.5.	Significance of Fiscal Policy	178	5.7.4.	Money Market Instruments	204
4.7.6.	Limitations of Fiscal Policy	178	5.7.5.	Demand of Money	205
4.8.	Exercise	179	5.7.5.1.	Interest Rates and the Demand for Money	205
Unit 5: Aggregate Supply and the Role of Money			5.7.5.2.	Demand Curve for Money	205
5.1.	Aggregate Supply	180	5.7.5.3.	Factor Affecting the Demand for Money	206
5.1.1.	Meaning of Aggregate Supply	180	5.7.6.	Supply of Money	206
5.1.2.	Aggregate Supply Curve	180	5.7.6.1.	Factors Affecting Money Supply	206
5.1.2.1.	Short Run Supply Curve	181	5.7.6.2.	Measures of Money Supply in India (Monetary Aggregates)	207
5.1.2.2.	Shift in Short-Run Aggregate Supply Curve	181	5.7.6.3.	Need to Regulate the Money Supply	208
5.1.2.3.	Long-Run Supply Curve	182	5.7.6.4.	Impact of Inflation on Supply of Money	208
5.1.2.4.	Shift in Long-Run Aggregate Supply Curve	182	5.7.7.	Money Market Equilibrium	209
5.2.	Macroeconomic Equilibrium	183	5.7.7.1.	Changes in Demand of Money	210
5.2.1.	Meaning of Macroeconomic Equilibrium	183	5.7.7.2.	Changes in the Supply of Money	211
5.2.2.	Macroeconomic Equilibrium-Model of Aggregate Demand and Aggregate Supply	184	5.7.8.	Money Market Equilibrium and National Income (LM Curve)	211
5.3.	Supply Side Policy And Management	184	5.7.8.1.	Features of LM Curve	212
5.3.1.	Introduction	184	5.7.8.2.	Derivation of LM Curve	213
5.3.2.	Free-Market Supply-Side Policies	185	5.7.8.3.	Derivation of LM Function (Algebraic Method)	214
5.3.3.	Interventionist Supply-Side Policies	186	5.7.8.4.	Shifts in the LM curve	215
5.3.4.	Use of Supply Side Policy in Management	186	5.7.9.	Money Multiplier	215
5.3.5.	Importance of Supply-Side Policy	187	5.7.9.1.	Credit Creation in a Single Bank Model	216
5.3.6.	Limitations of Supply-Side Policy & Management	187	5.7.9.2.	Credit Creation in a Multiple Bank Model	216
5.4.	Unemployment	187	5.8.	Monetary Policy	218
5.4.1.	Meaning and Definition of Unemployment	187	5.8.1.	Meaning & Definition of Monetary Policy	218
5.4.2.	Types of Unemployment	188	5.8.2.	Targets/Objectives of Monetary Policy	218
5.4.3.	Causes of Unemployment in India	189	5.8.3.	Roles of Monetary Policy	219
5.4.4.	Impact of Unemployment	189	5.8.4.	Tools of Monetary Policy	220
5.4.5.	Measures to Reduce Unemployment	190	5.8.5.	Significance of Monetary Policy	220
5.4.6.	Okun's Law	190	5.8.6.	Limitations of Monetary Policy	221
5.4.6.1.	Relationship Between Change in Unemployment Rate and Growth Rate	191	5.8.7.	Difference between Monetary Policy and Fiscal Policy	222
5.4.6.2.	Uses of Okun's Law	191	5.9.	Exercise	223
5.4.6.3.	Criticisms of Okun's Law	191	Solved Paper (2018)		224
5.5.	Inflation	191	Solved Paper (2019)		226
5.5.1.	Meaning and Definition of Inflation	191	Classification		230



About the Book

The objective of this book “**Managerial Economics**” is to introduce the principles of micro economics to managing an organisation and principles of macro economics to have an understanding of economic environment of business. This book covers the concepts of scarcity, efficiency, consumer behaviour, demand, supply, production, cost, market structure, national income, money, fiscal & monetary policy, etc.

About the Author



Dr. M. Hemalatha, Director and Professor of M.A.M B-School Trichy, hold Doctorate program from the Country’s finest Prestigious Institute, NIT, Trichy in the field of Retailing and Data Analytics and have contributed her work in 23 international journals in Marketing and Finance in 18 National Conferences and in 15 International Conferences. She had contributed 2 Book Chapters on Data Mining and Business Intelligence. Won the Young Scientist Award for the year 2017 funded by TNSTSC and worked on joined research with IIM-B in the area of Multiple Intelligence. Under her dynamic leadership B school has been evolving as a leading premium institute with best of class amenities like smart classrooms, skill development and placements. In a span of two years, she has reached a milestone of 100% students with 400+ placements and 30 plus India’s leading companies and Industries visiting B-School campus every year.

Graduates brag about by leaving the institute with multiple offers. Under her guidance she has trained almost 2000+ Entrepreneurs with the support of DST and EDII programs. She has bragged 24 sponsored research funds from various funding agencies like DST, AICTE, TNSTSC, EDI Chennai etc.



Dr. V. Mohanasundaram is the Director in the Department of Management Studies, **Vivekanandha Institute of Information and Management Studies, Tirchengode, Namakkal**. His educational qualification is **M.B.A., M.Phil., DPMIR., Ph.D**. He has **20 years** of teaching experience and guided nearly 300 M.B.A projects. He is a recognized Ph.D supervisor of Anna University, Bharathiar University and Periyar University. He has published a Text Book on “Strategic Management”. He has received fund for his researches from various funding agencies like ICTACT, EDI and AICTE. His other professional activities include Ph.D research guidance for many scholars and being the Editorial Advisory Board member for nearly twelve journals and Member of Editor Review committee for two journals. He is a

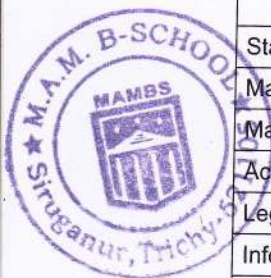
life member of ISTE. He has attended and published papers in twenty five International and National Conferences & Seminars and attended eight Faculty Development Programmes organized by various colleges and published thirty articles in reputed journals. He has organized various programmes, has given many guest lectures in many colleges and been the guest and the resource person for various programmes. His area of focus is on teaching design, implement and evaluate the students based learning.



Dr. J. Niruba Rani has done BA in Economics, MBA (HR and Marketing) and Ph.D in Management-HR from Bharathiar University. Her area of interest is HR, Economics, Marketing and General Management. She has published and presented several papers at State, National and International Conferences and has also organized State, National and International Conferences. She has attended FDPs sponsored by AICTE and IIM-K. She has chalked up experience of **8 years** in industry and 20 years in Academics. She has served as NSS Program Officer during the year 2003-2008. Her interests include reading, art & craft. She is an active social worker and is currently involved in Community Development Program.

Anna University, MBA 1st Semester

Subject Name	Author Name
Statistics for Management	Dr. P. Periyasamy, Dr. R. Karthika, Dr. M. Shunmugasundaram
Management Concepts and Organisational Behaviour	Dr. G. Pandi Selvi, Dr. R. Florence Bharathi, Dr. M. Indhumathi
Managerial Economics	Dr. M. Hemalatha, Dr. V. Mohanasundaram, Dr. J. Niruba Rani
Accounting for Decision Making	Dr. P. Megaladevi, Dr. S. Shanthi, Mr. S. Merlin
Legal Aspects of Business	Prof. (Dr.) S. Chitra Devi, Dr. S. Sathyasundari, Dr. A. Kanimozhi
Information Management	Dr. V. Ravikumar, Dr. A. Manikandan
Entrepreneurship Development	Prof. Dr. J. Mohanraj, Dr. S. Kanda Prasath
Event Management	



₹215

www.tppl.org.in
www.questionpaper.org.in



Scan QR Code



Also Book Available on:



ISBN: 978-93-5480-114-3



Read To Lead

Strategic Management



As Per Anna University Syllabus
MBA
3rd
Sem



THAKUR PUBLICATION PVT. LTD.
CHENNAI



Dr. G. Pandi Selvi
Dr. M. Hemalatha

Strategic Management

- Dr. G. Pandi Selvi

- Dr. M. Hemalatha

Published by:

Thakur Publication Pvt. Ltd.

HO: Abhishekpuram, 60 Feet Road, Jankipuram, Lucknow-226021

Mob.: 9235318591/95/94/97/22, 9335318517

Branch Office:

House No.: 8, Ambu Nagar, Main Road, Goverthanagiri, Avadi, Chennai-600071.

Mob.: 9543605656, 8144126950, 9543247241, 9543247130

Website: www.tppl.org.in

Email: thakurpublication@gmail.com

ISBN No. 978-93-5480-498-4

First Edition 2018

Second Edition 2022

₹265/-



Printed at:

Savera Printing Press

Tirupatipuram, Jankipuram Extension, Near AKTU, Lucknow-226031

E-mail: lkosp@gmail.com Mobile No. 9235318506/07

Copyright © All Rights Reserved

This book is sole subject to the condition that it shall not, by way of trade or otherwise, be lent, resold, hired out, or otherwise circulated without the publisher's prior written consent, in any form of binding or cover, other than that in which it is published and without including a similar condition. This condition being imposed on the subsequent purchaser and without limiting the rights under copyright reserved above, no part of this publication may be reproduced, stored in or transmitted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise), without the prior written permission of both the copyright owner and the

*“Dedicated
to*


*my Family Members,
Students and Friends”*

-Dr. G. Pandi Selvi

*“Dedicated
to
Almighty
&
my Father”*

- Dr. M. Hemalatha




DIRECTOR
M.A.M. B-SCHOOL
Siruganur, Trichy-621105

Acknowledgement

I would like to express my sincere thanks to the respected **Secretary Sir**, Dhanalakshmi Srinivasan College of Engineering, Coimbatore provided opportunity to work under this reputed Institutions to do service for the students community.

My heartfelt thanks to the beloved **Principal** and **Dean- Academic** of my Institution for their excellent support and guidance.

I wish to express my gratitude to my **Parents**, my **Sister** and my **Brother** for their continuous encouragement, and my beloved Son **A. Ashok Kumar**, who has given great support and enough idea.

Last but not least my sincere thanks to my **Colleagues, Friends** and **Well-wishers** for their valuable support. Honestly I will thank who are all going read this book over the course of the year ahead.

-Dr. G. Pandi Selvi

I am thankful to my **Family** for their support and encouragement throughout the preparation of this book.

Thanks to my **Students** and galaxy of learned **Teachers**, who have taken time to provide feedback with their learning experience.

I am thankful to my **Friends** and **Colleagues**, to bring out the mistakes and also suggestions given by them for the improvement of this book.

I extend special thanks to **Thakur Publication Pvt. Ltd.** especially respected **Ms. Namrata Dubey** (Copy Editor) and its whole team for the spirit of cooperation shown to achieve perfection.

- Dr. M. Hemalatha




DIRECTOR
M.A.M. B-SCHOOL
Siruganur, Trichy-621105

Contents

Unit 1: Strategy and Process

1.1. Strategy	11
1.1.1. Concept of Strategy	11
1.1.2. Nature of Strategy	11
1.1.3. Levels of Strategy	12
1.1.3.1. Corporate Strategy	12
1.1.3.2. Business Strategy	12
1.1.3.3. Functional Strategy	12
1.1.4. Strategy Formation Process	12
1.1.5. Roles of Strategies	13
1.1.6. Approaches to Strategy Making	14
1.1.7. Importance of Strategy	15
1.2. Strategic Management	15
1.2.1. Meaning and Definition of Strategic Management	15
1.2.2. Characteristics of Strategic Management	15
1.2.3. Conceptual Framework for Strategic Management	16
1.2.4. Importance of Strategic Management	18
1.2.5. Limitations of Strategic Management	19
1.2.6. Difference between Strategy and Policy	20
1.3. Stakeholders in Business	20
1.3.1. Introduction	20
1.3.2. Roles of Stakeholders in Strategic Management	21
1.3.3. Classification of Stakeholders	21
1.3.3.1. Internal Stakeholders	21
1.3.3.2. External Stakeholders	22
1.3.4. Stakeholder's Power in Business	22
1.3.5. Stakeholder Interest-Influence Grid	23
1.3.6. Issues in Stakeholder Management	23
1.4. Strategic Intent	24
1.4.1. Meaning and Definition of Strategic Intent	24
1.4.2. Hierarchy of Strategic Intent	25
1.5. Vision	25
1.5.1. Meaning & Definition of Vision	25
1.5.2. Features of Vision	26
1.5.3. Process of Envisioning	26
1.5.4. Significance of Vision	27
1.5.5. Limitations of Vision	27
1.5.6. Guidelines for Developing a Vision	27
1.6. Mission	28
1.6.1. Meaning and Definition of Mission	28
1.6.2. Characteristics of Good Mission Statements	28
1.6.3. Components of Mission Statement	29
1.6.4. Benefits of Mission	29
1.6.5. Guidelines for Effective Mission Statements	30
1.6.6. Difference between Vision and Mission	31
1.7. Purpose	31
1.7.1. Introduction	31
1.7.2. Factors Affecting Purpose	31
1.7.3. Significance of Purpose	31
1.7.4. Mission <i>versus</i> Purpose	31

1.8.1. Introduction	32
1.8.2. Abell's Three-Dimensional Model of Business Definition	33
1.8.3. Vital Aspects in Defining Business	33
1.9. Goals	34
1.9.1. Introduction	34
1.9.2. Features of Goals	34
1.9.3. Types of Goals	35
1.10. Objectives	35
1.10.1. Meaning and Definition of Objectives	35
1.10.2. Features of Objectives	35
1.10.3. Classification of Objectives	36
1.10.4. Setting of Objectives	37
1.10.5. Importance of Objectives	38
1.10.6. Difference between Goals and Objectives	38
1.11. Corporate Governance	38
1.11.1. Meaning and Definition of Corporate Governance	38
1.11.2. Nature of Corporate Governance	39
1.11.3. Objectives and Goals of Corporate Governance	39
1.11.4. Constituents of Corporate Governance	40
1.11.5. Mechanisms of Corporate Governance	40
1.11.6. Benefits of Corporate Governance	42
1.11.7. Limitations/Issues of Corporate Governance	42
1.12. Corporate Social Responsibility (CSR)	44
1.12.1. Meaning & Definition of CSR	44
1.12.2. Nature of CSR	44
1.12.3. Objectives and Goals of CSR	45
1.12.4. Types of CSR	46
1.12.5. Social Responsibility of Business with Respect to Different Stakeholders	46
1.12.6. Arguments for CSR	49
1.12.7. Arguments against CSR	49
1.13. Exercise	50

Unit 2: Environmental Analysis and Competitive Advantage

2.1. Business Environment	51
2.1.1. Meaning and Definition of Business Environment	51
2.1.2. Nature of Business Environment	51
2.1.3. Components of Business Environment	52
2.1.3.1. External Environment	52
2.1.3.2. Internal Environment	54
2.2. External Analysis	55
2.2.1. Introduction	55
2.2.2. Procedure of External Analysis	55
2.2.3. Factors Affecting External Analysis	55
2.2.4. Levels of External Analysis	56
2.2.5. Significance of External Analysis	56
2.2.6. Techniques of Environmental Analysis	57
2.3. Analysing Industry: Industry Analysis	58
2.3.1. Introduction	58



2.3.2.	Competitive Changes during Industry Evolution	58	2.10.2.1.	Characteristics of Core Competencies	89
2.3.3.	Dominant Economic Features	59	2.10.2.2.	Building Core Competence	89
2.3.4.	Industry Life Cycle Stages	60	2.10.3.	Distinctive Competencies/ Competitiveness	90
2.3.5.	Factors Analysed in Industry Analysis	61	2.10.3.1.	Elements of Distinctive Competence	90
2.3.6.	Porter's Five Forces Model	61	2.10.3.2.	Methods of Building Distinctive Competence	91
2.3.6.1.	Components of Porter's Five Forces Model	62	2.11.	Competitive Advantage	92
2.3.6.2.	Utility of Porter's Five Forces Model	65	2.11.1.	Introduction	92
2.3.6.3.	Limitations of Porter's Five Forces Model	65	2.11.2.	Competitive Advantage through Business Strategies	92
2.3.7.	Globalisation and Industry Structure	66	2.11.2.1.	Low Cost	92
2.3.8.	Significance of Industry Analysis	67	2.11.2.2.	Differentiation	93
2.4.	Analysing Competition: Competition Analysis	68	2.11.2.3.	Focus	93
2.4.1.	Introduction	68	2.11.3.	Sources of Competitive Advantage	93
2.4.2.	Sources of Information for Competition Analysis	68	2.11.4.	Generic Building Blocks of Competitive Advantage	95
2.4.3.	Factors Affecting Competition Analysis	69	2.11.5.	Factors Influencing Competitive Advantages	95
2.4.4.	Strategy Framework for Analysing Competition	69	2.11.6.	Durability of Competitive Advantage	96
2.4.5.	Steps in Competition Analysis	71	2.11.7.	Avoiding Failures and Sustaining Competitive Advantage	97
2.4.6.	Importance of Competition Analysis	72	2.11.8.	Importance of Competitive Advantage	98
2.5.	National Context and Competitive Advantage: Porter's Diamond Model	72	2.12.	Exercise	99
2.5.1.	Introduction	72	Unit 3: Strategies and Strategic Choice		
2.5.2.	Components of Porter's Diamond Model	73	3.1.	Corporate Strategies	100
2.5.3.	Porter's Stages of National Competitive Development	74	3.1.1.	Introduction	100
2.5.4.	Limitations of the Porter's Diamond Model	75	3.1.2.	Importance of Corporate Strategies	100
2.6.	Strategic Group	75	3.1.3.	Limitations of Corporate Strategies	101
2.6.1.	Introduction	75	3.1.4.	Generic Strategic Alternatives: Types of Strategies at Corporate Level	101
2.6.2.	Characteristics of Strategic Group	76	3.2.	Stability Strategies	101
2.6.3.	Types of Strategic Groups	76	3.2.1.	Introduction	101
2.6.4.	Strategic Groups as an Analytical Tool	76	3.2.2.	Reasons to Pursue Stability Strategy	101
2.7.	Internal Appraisal	77	3.2.3.	Types of Stability Strategy	102
2.7.1.	Introduction	77	3.3.	Expansion/Managing Growth: Growth Strategy	102
2.7.2.	Internal Appraisal Framework	77	3.3.1.	Introduction	102
2.7.3.	Procedure of Internal Appraisal	79	3.3.2.	Reasons to Pursue Growth Strategy	102
2.7.4.	Techniques Used for Internal Appraisal	79	3.3.3.	Issues Involved in Growth Strategy	103
2.7.5.	Factors Affecting Internal Appraisal	80	3.3.4.	Types of Growth Strategy	103
2.7.6.	Structuring Internal Appraisal	81	3.3.5.	Concentration Strategies	103
2.7.6.1.	OCP: Organisational Capability Profile	81	3.3.6.	Diversification Strategies	104
2.7.6.2.	SAP: Strategic Advantages Profile	82	3.3.6.1.	Related/Concentric Diversification	104
2.8.	Resources	83	3.3.6.2.	Unrelated/Conglomerate Diversification	104
2.8.1.	Introduction	83	3.3.7.	Integration Strategies	106
2.8.2.	Types of Resources	83	3.3.7.1.	Vertical Integration	106
2.8.3.	VRIO Framework: Competitive Advantage, Competitive Parity & Competitive Disadvantage	84	3.3.7.2.	Horizontal Integration	107
2.9.	Capabilities	85	3.3.8.	Strategy in the Global Environment	109
2.9.1.	Introduction	85	3.3.9.	Co-operative Strategy	110
2.9.2.	Types of Capabilities in Various Functional Areas	86	3.3.9.1.	Mergers	110
2.9.3.	Relationship between Resources and Capability	87	3.3.9.2.	Acquisition/Takeover Strategies	112
2.10.	Competencies	88	3.3.9.3.	Joint Ventures	114
2.10.1.	Introduction	88	3.3.9.4.	Strategic Alliances	115
			3.4.	Retrenchment Strategy	118
			3.4.1.	Introduction	118
			3.4.2.	Reasons for Retrenchment	118
			3.4.3.	Types of Retrenchment Strategy	118



3.4.5.	Divestment	120	4.1.7.	Difference between Strategy Implementation & Strategy Formulation	155
3.4.6.	Liquidation	121	4.2.	Resource Allocation	155
3.5.	Combination Strategy	122	4.2.1.	Introduction	155
3.5.1.	Introduction	122	4.2.2.	Factors Influencing Resource Allocation	155
3.5.2.	Reasons to Adopt Combination Strategy	122	4.2.3.	Approaches to Resource Allocation	155
3.5.3.	Types of Combination Strategy	122	4.3.	Strategy Implementation through Structure	156
3.6.	Business Level Strategy	123	4.3.1.	Introduction	156
3.6.1.	Introduction	123	4.3.2.	Role of Organisation Structure	156
3.6.2.	Types of Business Level Strategy	123	4.3.3.	Types of Organisational Structure	156
3.6.3.	Significance of Business Level Strategy	125	4.3.3.1.	Basic Organisational Structures	156
3.6.4.	Limitations of Business Level Strategy	126	4.3.3.2.	Advanced Types of Organisational Structures	158
3.7.	Building and Re-structuring the Corporation	126	4.3.4.	Designing Organisational Structure	160
3.7.1.	Introduction	126	4.3.4.1.	Objectives of Organisational Design Structure	160
3.7.2.	Reasons of Corporate Restructuring	127	4.3.4.2.	Determinants of Organisation Design	161
3.7.3.	Process of Corporate Restructuring	127	4.3.4.3.	Steps in Designing Organisational Structure	162
3.7.4.	Strategies of Building Corporations	129	4.3.4.4.	Approaches for Designing Organisational Structure	162
3.7.5.	Methods of Corporate Restructuring	129	4.3.5.	Structure and Strategy	163
3.8.	Corporate Portfolio Analysis	131	4.3.5.1.	Maintaining the Organisational Structure	163
3.8.1.	Introduction	131	4.3.5.2.	Change in Organisational Structure	164
3.8.2.	Portfolio Analysis Techniques	131	4.3.5.3.	Difficulties in Matching Organisational Structure with Strategy	164
3.8.2.1.	Corporate Parenting Analysis	131	4.4.	Matching Structure and Control to Strategy	164
3.8.2.2.	BCG model	132	4.4.1.	Introduction	164
3.8.2.3.	GE 9 Cell Matrix	134	4.4.2.	Structure and Control at the Functional Level	165
3.8.3.	Advantages of Portfolio Analysis	135	4.4.3.	Structure and Control at Business Level	165
3.8.4.	Disadvantages of Portfolio Analysis	136	4.4.4.	Structure and Control at Corporate Level	166
3.9.	Strategic Analysis and Choice (SAC)	137	4.5.	Implementing Strategic Change	167
3.9.1.	Introduction	137	4.5.1.	Introduction	167
3.9.2.	Strategic Analysis	137	4.5.2.	Dimensions of Strategic Change	167
3.9.2.1.	Process of Strategic Analysis	137	4.5.3.	Types of Strategic Change	168
3.9.2.2.	Benefits of Strategic Analysis	138	4.5.4.	Process for Implementing Strategic Change	168
3.9.3.	Strategic Choice	139	4.5.5.	Approaches for Implementing Strategic Change	169
3.9.3.1.	Process of Strategic Choice	139	4.5.6.	Issues in Implementing Strategic Change	169
3.9.3.2.	Criteria for Strategic Choice	140	4.5.7.	Politics	169
3.9.3.3.	GAP Analysis: Strategic Choice Approach	140	4.5.7.1.	Nature of Politics	170
3.9.4.	Tools and Techniques of Strategic Analysis and Choice	142	4.5.7.2.	Change and Politics	170
3.9.4.1.	ETOP Study	142	4.5.8.	Power	171
3.9.4.2.	SWOT Analysis	143	4.5.8.1.	Sources of Power	171
3.9.4.3.	McKinsey's 7S Framework	145	4.5.8.2.	Change and Power	173
3.9.4.4.	Comparative Cost Analysis	146	4.5.9.	Conflict	174
3.9.4.5.	Operating Analysis	146	4.5.9.1.	Types/Levels of Conflict	174
3.9.4.6.	Financial Analysis	147	4.5.9.2.	Change and Conflict	175
3.9.4.7.	Balanced Scorecard	147	4.6.	Strategic Evaluation and Control	175
3.9.4.8.	Selection of Matrix	149	4.6.1.	Introduction	175
3.10.	Exercise	150	4.6.2.	Nature of Strategic Evaluation & Control	176

Unit 4: Strategy Implementation and Evaluation

4.1.	Strategy Implementation	151	4.6.3.	Measures for Strategic Evaluation and Control	177
4.1.1.	Meaning and Definition of Strategy Implementation	151	4.6.4.	Designing Strategic Control Systems	178
4.1.2.	Nature of Strategy Implementation	151			
4.1.3.	Strategy Implementation Process	152			
4.1.4.	Aspects in Strategy Implementation	153			
4.1.5.	Barriers to Implementation of Strategy	153			
4.1.6.	Guidelines for Overcoming Barriers in Strategy Implementation	154			



4.6.6.	Techniques of Strategic Evaluation and Control	179	5.4.2.1.	Key Challenges	201
4.6.7.	Importance of Strategic Evaluation and Control	181	5.4.2.2.	Global Competitiveness	201
4.6.8.	Guidelines for Strategic Evaluation and Control	182	5.4.3.	Dealing with Strategic Management in Various Situations	202
4.7.	Exercise	182	5.4.3.1.	Strategic Change and Flexibility	202
			5.4.3.2.	Uncertainty	203
			5.4.3.3.	Crises and Chaos	204
			5.4.3.4.	Economic Cycles	204
			5.4.3.5.	Ethics and Social Welfare	204
			5.4.3.6.	Environmental Issues	204
			5.4.4.	Strategic Management Implications and Challenges	205

Unit 5: Issues and Challenges and Recent Trends in Strategic Management

5.1.	Managing Technology & Innovation	183	5.4.4.1.	Liberalisation, Privatisation, Globalisation, (LPG)	205
5.1.1.	Introduction	183	5.4.4.2.	E-commerce and E-business	205
5.1.2.	Technology	183	5.4.4.3.	Information Management and Knowledge Driven Strategy	206
5.1.2.1.	Nature of Technology	184	5.5.	Recent Trends in Strategic Management	206
5.1.2.2.	Components of Technology	184	5.5.1.	Introduction	206
5.1.3.	Innovation	185	5.5.2.	New Directions in Strategic Thinking	206
5.1.3.1.	Types of Innovation	185	5.5.2.1.	Back to Basics	207
5.1.3.2.	Innovation Process	185	5.5.2.2.	Seeking more Complex Sources of Competitive Advantage	207
5.1.3.3.	Need for Innovation	186	5.5.2.3.	Quest for a New Model of the Corporation	207
5.1.4.	Strategic Issues in Managing Technology and Innovation	187	5.5.2.4.	Complementarity in Management Practices	207
5.2.	Non-Profit Organisations	188	5.5.3.	Organisational Culture and Its Significance	208
5.2.1.	Introduction	188	5.5.3.1.	Elements of Organisational Culture	208
5.2.2.	Types of Non-Profit Organisations	189	5.5.3.2.	Organisational Culture & Strategy	208
5.2.3.	Strategies of Non-Profit Organisations	189	5.5.4.	Organisational Development and Change	209
5.2.4.	Strategic Issues for Non-Profit Organisations	190	5.5.4.1.	Sustainable Competitive Advantages	209
5.2.4.1.	Mission, Goals & Objectives in Non-Profit Organisations	190	5.5.4.2.	Paradigm Shift from Shareholder to Stakeholder Concept	209
5.2.4.2.	Strategy Formulation and Implementation in Non-Profit Organisations	191	5.5.5.	Change Management	209
5.2.4.3.	Strategy Evaluation and Control in Non-Profit Organisations	191	5.5.5.1.	Managing Planned Change	210
5.3.	Use of Computers to Evaluate Strategies	192	5.5.5.2.	Strategies of Change Management	211
5.3.1.	Introduction	192	5.5.5.3.	Importance of Change Management	212
5.3.2.	Characteristics of Internet Market Structure	193	5.5.5.4.	Guidelines for Managing Change	212
5.3.3.	Strategy Shaping Characteristics of E-Commerce Environment	194	5.5.6.	Strategic Management in a New Globalised Economy	213
5.3.4.	Internet Strategies for Traditional Business	195	5.5.6.1.	Aspects of Globalised Economy	213
5.3.5.	Key Success Factors in E-Commerce	196	5.5.6.2.	Dimensions of Strategic Management in Globalised Economy	214
5.3.6.	Internet & Competitive Advantage	196	5.6.	Exercise	214
5.3.7.	New Business Models and Strategies for Internet Economy	197	Case Studies		215
5.3.8.	Impact of Internet on Strategies of Business Organisations	199	Solved Paper (2016)		225
5.4.	Challenges in Strategic Management	201	Solved Paper (2017)		230
5.4.1.	Introduction	201	Solved Paper (2018)		233
5.4.2.	Strategic Management as an Organisational Force	201	Solved Paper (2019)		234



About the Book

This book of *“Strategic Management”* provides a refreshing insight to basic aspects of business strategies, threats and opportunities. The material in this book is designed to provide maximum flexibility of use for teachers and students alike. Each topic has been started with fundamental introduction and developed steadily up to the standard form. Case study, exercises and solved paper is also provided in this book. This book is useful not only for students who are pursuing their studies but also for those working in the educational institutions and corporate world.

About the Author



Dr. G. Pandi Selvi working as a Dean – MBA Dhanalakshmi Srinivasan College of Engineering, Coimbatore. She has qualified M.Com., MBA., M.Phil., Ph.D., ICS., PGDCA. She has 25 years of experience in Teaching and Administration in India as well as Abroad. She worked as a Professor in Assosa University, Ethiopia. She has published 5 books and 11 reputed International Journal. She has guided many Ph.D and M.Phil Research Scholars and has been Project Guide for more than 600 Post Graduate students. She has conducted various Programme like FDP, MDP and Student Development Program in many Colleges and Universities in India as well Abroad. She has contributed to Conduct more social service activities to the society in great extent.

She has received awards for Best Faculty in Assosa University and Best community service Co-ordinator in ICFAI National College and Assosa University, Ethiopia.



Dr. M. Hemalatha, Director and Professor of M.A.M B-School Trichy, hold Doctorate program from the Country’s finest Prestigious Institute, NIT, Trichy in the field of Retailing and Data Analytics and have contributed her work in 23 International Journals in Marketing and Finance in 18 National Conferences and in 15 International Conferences. She had contributed 2 Book Chapters on Data Mining and Business Intelligence. She has won the Young Scientist Award for the year 2017 funded by TNSTSC and worked on joined research with IIM-B in the area of Multiple Intelligence. Under her dynamic leadership B school has been evolving as a leading premium institute with best of class amenities like smart classrooms, skill development and placements. In a span of two years, she has

reached a milestone of 100% students with 400+ placements and 30 plus India's leading companies and Industries visiting B-School campus every year. Under her guidance she has trained almost 2000+ Entrepreneurs with the support of DST and EDII programs. She has bragged 24 sponsored research funds from various funding agencies like DST, AICTE, TNSTSC, EDI Chennai etc.

Anna University, MBA 3rd Semester

Subject Name	Author Name
Strategic Management	Dr. G. Pandi Selvi, Dr. M. Hemalatha
International Business	S. Jebastine Suthan Raja, A Manikandan
Security Analysis and Portfolio Management	Dr. G. A Amutha, Dr. Senthilkumar U S, S. Senthilkumar
Banking and Financial Services	Dr. R. Murugesan, Dr. M. Indhumathi, R Mohan Raj
Financial Derivatives	Dr. N. Mohan, Dr. G. Arumugasamy, N Nithya
International Finance	
Retail Marketing	Dr. Balaji Vignesh R, Dr. M. Naveen Kumar, Dr. R. Karthika
Services Marketing	Dr. P. T. Vijaya Rajkumar, Dr. V. Mohanasundaram, Dr. S. Ravi Shankar
Product and Brand Management	Dr. S.V.Saravanan, Dr. Kadhivel. R, T. Krishnakumar
Consumer Behaviour	
Integrated Marketing Communication	
Strategic Human Resource Management	Dr. J. Kavitha, Dr. R. Florence Bharathi, Dr. P. Ganapathi
Industrial Relations and Labour Legislations	Dr. K. Karthikeyam, Dr. V. Mahalaxmi, S. Jebastine Suthan Raja
Organizational, Design, Change and Development	Dr. A Jayaseelan, Dr. B. Sasikala, Dr. J. Niruba Rani



Scan QR Code



Also Book Available on:

Flipkart amazon
kindle tppl.org.in
www.questionpaper.org.in

ISBN: 978-93-5480-498-4



Printed at: SOVERA PRINTING PRESS, JAIKUPURU I, LUCKY W., MOU. 720001000000

Read to Lead

Security Analysis and Portfolio Management



THAKUR PUBLICATION PVT. LTD.
CHENNAI



Dr. G. Amutha
Dr. Senthilkumar U S
S. Senthilkumar

Security Analysis and Portfolio Management

- Dr. G. Amutha
- Dr. Senthilkumar U S
- S. Senthilkumar

Published by:

Thakur Publication Pvt. Ltd.

HO: Abhishekpuram, 60 Feet Road, Jankipuram, Lucknow-226021

Mob.: 9235318591/95/94/97/22, 9335318517

Branch Office:

House No.: 8, Ambu Nagar, Main Road, Goverthanagiri, Avadi, Chennai-600071.

Mob.: 9543605656, 8144126950, 9543247241, 9543247130

Website: www.tppl.org.in

Email: thakurpublication@gmail.com

ISBN No. 978-93-5480-532-5

First Edition 2018

Second Edition 2022

₹200/-



Printed at:

Savera Printing Press

Thrupatipuram, Jankipuram Extension, Near AKTU, Lucknow-226031

W mail: lkosp@gmail.com Mobile No. 9235318506/07

Copyright © All Rights Reserved

This book is sole subject to the condition that it shall not, by way of trade or otherwise, be lent, resold, hired out, or otherwise circulated without the publisher's prior written consent, in any form of binding or cover, other than that in which it is published and without including a similar condition. This condition being imposed on the subsequent purchaser and without limiting the rights under copyright reserved above, no part of this publication may be reproduced, stored in or transmitted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise), without the prior written permission of both the copyright owner and the below mentioned publisher of this book.

*“Dedicated
to
the Universe.”*

- Dr. G. Amutha


*“Dedicated
to
my Father Mr. S. Santhakumar,
my Mother Mrs. S. Geethalakshmi,
my Wife Mrs. K. R. S. Anusaranya,
my Son & Daughter, Master S. A. Rudresh & Miss S. A. Nethra.”*

- Dr. Senthilkumar U S

*“Dedicated
to
“The Student’s Community
&
Family Members.”*

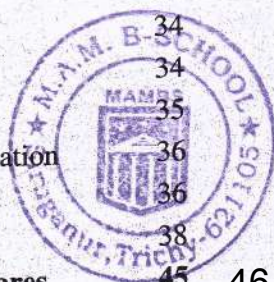
- S. Senthilkumar




DIRECTOR
M.A.M. B-SCHOOL
Siruganur, Trichy-621105

Contents

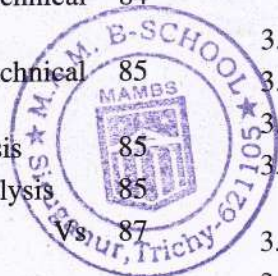
Unit 1: Investment Setting					
1.1.	Investment	11		1.4.1.	Introduction
1.1.1.	Meaning and Definition of Investment	11		1.5.	Preference Shares
1.1.2.	Financial and Economic Meaning of Investment	11		1.5.1.	Concept of Preference Shares
1.1.3.	Characteristics of Investment	12		1.5.2.	Valuation of Preference Shares
1.1.4.	Objectives of Investment	13		1.5.3.	Yields on Preference Shares
1.1.5.	Investment Process	13		1.6.	Equity Shares
1.1.6.	Importance of Investment	13		1.6.1.	Concept of Equity Shares
1.1.7.	Constraints of Investment	14		1.6.2.	Valuation of Equity Shares
1.1.8.	Risks Involved in Investment	14		1.6.3.	Discounted Cash-flow Technique
1.1.9.	Investment Vs Speculation	15		1.6.4.	Balance Sheet Analysis
1.1.10.	Investment Vs Gambling	15		1.6.5.	Dividend Valuation Method/Dividend Discount Models
1.1.11.	Types of Investment/Investment Alternatives	15		1.6.5.1.	Single-Period Valuation Model
1.1.11.1.	Financial Forms of Investment/Financial Assets	16		1.6.5.2.	Multi-Period Valuation Model
1.1.11.2.	Non-Financial Forms of Investment/Real Assets	19		1.6.5.3.	Zero Growth Model
1.1.12.	Choice of Investment	20		1.6.5.4.	Constant Growth Model (Gordon Model)
1.1.13.	Evaluation of Investments	22		1.6.5.5.	Multistage Growth Models
1.2.	Risk and Return Concepts	23		1.6.6.	Earnings Multiplier Approach
1.2.1.	Concept of Risk	23		1.6.7.	Intrinsic Value Approach
1.2.2.	Types of Risk	24		1.6.8.	Other Comparative Valuation Ratios
1.2.2.1.	Systematic Risk	24		1.7.	Exercise
1.2.2.2.	Unsystematic Risk	25		Unit 2: Fundamental Analysis	
1.2.3.	Measurement of Risk	28		2.1.	Fundamental Analysis
1.2.4.	Concept of Returns	30		2.1.1.	Concept of Fundamental Analysis
1.2.5.	Components of Return	30		2.1.2.	Objectives of Fundamental Analysis
1.2.6.	Types of Return	30		2.1.3.	Strengths of Fundamental Analysis
1.2.7.	Measurement of Returns	31		2.1.4.	Weaknesses of Fundamental Analysis
1.2.8.	Relationship between Risk and Return	33		2.1.5.	Tools and Techniques of Fundamental Analysis
1.2.9.	Risk-Return Trade-off	33		2.1.6.	EIC-Economy-Industry-Company Framework
1.3.	Valuation of Bond	34		2.2.	Economic Analysis
1.3.1.	Meaning of Bond	34		2.2.1.	Introduction
1.3.2.	Features of Bond	34		2.2.2.	Concept of Environment
1.3.3.	Types of Bonds	35		2.2.3.	Economic Forecasting
1.3.4.	Necessity of Bond Valuation	36		2.2.4.	Types of Economic Forecasting
1.3.5.	Present Value of Bond	36		2.2.5.	Importance of Economic Analysis
1.3.6.	Bond Yield	38			
1.4.	Valuation of Stock/Shares	45	46		



2.2.6.	Factors Affecting Economic Analysis	63	3.3.	Price Indicators	88
2.2.7.	Stock Investment Decision	65	3.3.1.	Dow Theory	88
2.2.8.	Forecasting Techniques or Economic Indicators	65	3.3.2.	Elliot Wave Theory	90
2.3.	Industry Analysis	68	3.3.3.	Charting Methods	91
2.3.1.	Introduction	68	3.3.4.	Chart Patterns	93
2.3.2.	Industry Classification	68	3.3.5.	Trend and Trend Reversals	95
2.3.3.	Industry Life Cycle	69	3.3.6.	New Highs and New Lows	95
2.3.4.	Importance of Industry Analysis	70	3.3.7.	Oscillators	96
2.3.5.	Factors Affecting Industry Analysis	70	3.3.7.1.	Types of Oscillators	96
2.3.6.	Industry Forecasting Techniques	71	3.3.7.2.	RSI (Relative Strength Index)	96
2.4.	Company Analysis	72	3.3.7.3.	ROC (Rate-of-Change Oscillators)	96
2.4.1.	Introduction	72	3.3.7.4.	MACD (Moving Average Convergence Divergence)	97
2.4.2.	Measuring Earnings	72	3.3.7.5.	MAO (Moving Average Oscillators)	97
2.4.3.	Financial Indicators	73	3.3.7.6.	MO (Momentum Oscillators)	97
2.4.3.1.	Financial Statement Analysis	73	3.3.7.7.	Stochastic Oscillators	97
2.4.3.2.	Ratio Analysis	74	3.4.	Volume Indicators	98
2.4.4.	Non-Financial Indicators	76	3.4.1.	Support and Resistance Charts	98
2.4.5.	Importance of Company Analysis	77	3.4.2.	Short-Selling Theory	99
2.4.6.	Factors Affecting Company Analysis	77	3.4.3.	Odd-Lot Theory	99
2.4.7.	Forecasting Earnings	78	3.5.	Market Indicators	99
2.4.8.	Applied Valuation Techniques/ Tools Used in Company Analysis	79	3.5.1.	Moving Average Analysis (MAA)	99
2.4.8.1.	Regression Analysis	79	3.5.1.1.	Types of Moving Average	99
2.4.8.2.	Correlation Analysis	80	3.5.1.2.	Simple Moving Average (SMA)	100
2.4.8.3.	Trend Analysis	81	3.5.1.3.	Exponential Moving Average (EMA)	100
2.4.8.4.	Decision Trees	81	3.5.2.	Breadth of Market	101
2.4.9.	Graham and Dodd's Investor Ratios	82	3.5.3.	Market Sentiment Indicators	101
2.5.	Exercise	84	3.6.	Efficient Market Theory	101

Unit 3: Technical Analysis

3.1.	Technical Analysis	84	3.6.1.	Introduction	101
3.1.1.	Concept of Technical Analysis	84	3.6.2.	Meaning of Efficient Market Hypothesis	102
3.1.2.	Assumptions of Technical Analysis	84	3.6.3.	Assumptions of Efficient Market Theory	102
3.1.3.	Factors Considered in Technical Analysis	85	3.6.4.	Forms of Market Efficiency or Efficient Markets	102
3.1.4.	Merits of Technical Analysis	85	3.6.5.	Weak Form	102
3.1.5.	Demerits of Technical Analysis	85	3.6.6.	Semi-Strong Form	102
3.1.6.	Fundamental Analysis	87	3.6.7.	Strong Form	102
3.2.	Tools and Techniques of Technical Analysis	87	3.6.8.	Empirical Tests of Market Efficiency	103
		47	3.6.8.1.	Empirical Tests of Weak Form	103
			3.6.8.2.	Empirical Tests of Semi-Strong Form	104



3.6.8.3.	Empirical Tests of Strong Form	104	4.4.5.	Efficient Set of Portfolios	122
3.6.9.	Application of Efficient Market Hypothesis	104	4.4.6.	Efficient Frontier and Investor Utility	122
3.6.10.	Random Walk Hypothesis/Theory	105	4.4.7.	Constructing/Selection of Optimal Portfolio using Utility Concept	123
3.6.10.1.	Implications of Random Walk Theory	106	4.4.8.	Diversification-Portfolio Selection	124
3.6.10.2.	Limitations of Random Walk Theory	106	4.5.	Single Index Model	125
3.7.	Exercise	106	4.5.1.	Introduction	125
			4.5.2.	Assumptions of Sharpe Single Index Model	125
			4.5.3.	Computation of Risk and Return on Sharpe's Portfolio	125
			4.5.4.	Interpretation of Portfolio - Alpha	126
			4.5.5.	Interpretation of Portfolio - Beta	126
			4.5.6.	Uses of Single Index Model	128

Unit 4: Portfolio Construction and Selection

4.1.	Portfolio Construction	107	4.6.	Multi Index Model	128
4.1.1.	Meaning of Portfolio Construction	107	4.6.1.	Introduction	128
4.1.2.	Considerations in Portfolio Construction	107	4.6.2.	Uses of Multi-Index Model	129
4.1.3.	Process of Portfolio Construction	107	4.6.3.	Limitations of Multi-Index Model	130
4.2.	Portfolio Analysis	108	4.7.	Exercise	130
4.2.1.	Concept of Portfolio	108			
4.2.2.	Concept of Portfolio Analysis	109			
4.2.3.	Portfolio Risk and Return	109			
4.2.4.	Expected Returns of a Portfolio/Portfolio Return	109			
4.2.5.	Portfolio Risk	110			
4.2.6.	Portfolio Risk in One Asset Model	110			
4.2.7.	Portfolio Risk in Two Asset Model	111			
4.2.8.	Portfolio Risk in n-Asset Model	113			
4.2.9.	Reduction of Portfolio Risk Through Diversification	115			
4.2.9.1.	Covariance	115			
4.2.9.2.	Correlation Coefficient	116			
4.3.	Portfolio Selection	118			
4.3.1.	Meaning of Portfolio Selection	118			
4.3.2.	Advantages of Portfolio Selection	118			
4.3.3.	Issues in Portfolio Selection	118			
4.3.4.	Estimation of Fischer in Portfolio Selection	118			
4.3.5.	Portfolio Models	119			
4.4.	Markowitz Model	119			
4.4.1.	Introduction	119			
4.4.2.	Assumptions of Markowitz Model	119			
4.4.3.	Feasible Set of Portfolios	119			
4.4.4.	Efficient Frontier	121			
			Unit 5: Portfolio Evaluation		
			5.1.	Capital Asset Pricing Model (CAPM)	132
			5.1.1.	Concept of Capital Asset Pricing Model (CAPM)	132
			5.1.2.	Assumptions of CAPM	132
			5.1.3.	Applications of CAPM	133
			5.1.4.	Advantages of CAPM	133
			5.1.5.	Shortcomings of CAPM	133
			5.1.6.	Equation of CAPM	134
			5.1.7.	Beta of CAPM	135
			5.1.8.	Lending and Borrowing	138
			5.1.9.	CML (Capital Market Line)	140
			5.1.10.	SML (Security Market Line)	140
			5.1.11.	Difference between CML and SML	142
			5.1.12.	Pricing with CAPM	142
			5.2.	Arbitrage Pricing Theory (APT)	143
			5.2.1.	Introduction	143
			5.2.2.	Assumptions of APT	144
			5.2.3.	Equation of APT	144
			5.2.4.	Advantages of APT	144



5.2.5.	Factor Model	145	5.5.	Portfolio Revision	154
5.2.5.1.	One-Factor Model	145	5.5.1.	Meaning of Portfolio Revision	154
5.2.5.2.	Two-Factor Model	145	5.5.2.	Need for Portfolio Revision	154
5.3.	Portfolio Evaluation	146	5.5.3.	Constraints in Portfolio Revision	155
5.3.1.	Objectives of Portfolio Evaluation	146	5.5.4.	Portfolio Revision Strategies	155
5.3.2.	Measures of Portfolio Evaluation	147	5.5.5.	Formula Plan (Portfolio Revision Method)	156
5.3.2.1.	Sharpe's Index/Ratio	147	5.5.5.1.	Types of Formula Plan	156
5.3.2.2.	Treynor's Index/Ratio	148	5.5.5.2.	Advantages of Formula Plan	157
5.3.2.3.	Jensen's Index/Ratio	148	5.5.5.3.	Disadvantages of Formula Plan	157
5.4.	Mutual Funds	150	5.6.	Exercise	157
5.4.1.	Concept of Mutual Funds	150			
5.4.2.	Participants in Mutual Funds	150	Case Studies	160	
5.4.3.	Types of Mutual Fund Schemes	151	Solved Paper (2016)	168	
5.4.3.1.	General Classification	151	Solved Paper (2017)	169	
5.4.3.2.	Broad Classification	152	Solved Paper (2018)	170	
5.4.4.	Advantages of Investment in Mutual Fund	153	Solved Paper (2019)	171	



About the Book

The objective of this book is to provide knowledge and skill in identifying various investment alternatives and choosing the suitable one. It orients on the procedures and formalities involved in investing. This book provides essential for finance professional to have knowledge on the process of making and managing investments.

About the Author



Dr. G. Amutha is a Doctorate in Management Studies from Jawaharlal Nehru Technological University, Hyderabad. She is having more than **18 years** of teaching experience. She has been designated as **Professor** and **Head** in the Department of Management Studies at **Dhanalakshmi Srinivasan College of Engineering and Technology, Mamallapuram, Chennai**. She is working with the present college from 2007. She has published papers in National and International journals. She has also participated and presented 12 papers in National and International Conferences in India. She has guided more than 200 students in their project work. She has organised various workshops, guest lectures, seminars and entrepreneurship programs in the department.



Dr. Senthilkumar U S presently working as **Associate Professor** in **Akshaya Institute of Management Studies, Coimbatore**. His qualifications are B.E., MBA., MHRM., M.Sc., PGDMM., PGDPMIR., PGDPR., PGDHR., PGDE., Ph.D. He has completed his doctorate in Management with **14 years** of teaching experience. He has specialized in the area of Finance and Human Resource Management. He has published many research papers in Annexure, Scopus, National and International reputed Indexed journals. He has attended various FDPs and PDPs sponsored by NIT, UGC and AICTE. His area of interest are Financial Management, Portfolio Management, Human Resource Management, Psychology, Entrepreneurship, Organizational Behaviour.



Mr. S. Senthilkumar is an **Assistant Professor** Department of Management Studies at **M.A.M.B-School, Trichy**. He has **13 years** of experience in teaching. He completed **MBA, M.Phil., M.Com, B.L.I.Sc.** His areas of interest include Finance, Marketing and Entrepreneurship. He is a dedicated, goal-oriented person towards the profession. He received NPTEL Certification in the area of Marketing. He has actively participated and presented more than 20 papers in various National and International Conferences, Seminars and published papers in Scopus indexed journals, also got 02 patents in the area of Big Data Analysis. He has strong inquisitive pertinent to abreast the business environment. He is a member in various professional body memberships.

Anna University, MBA 3rd Semester

Subject Name	Author Name
Strategic Management	Dr. G. Pandi Selvi, Dr. M. Hemalatha
International Business	S. Jebastine Suthan Raja, A Manikandan
Security Analysis and Portfolio Management	Dr. G. Amutha, Dr. Senthilkumar U S, S. Senthilkumar
Banking and Financial Services	Dr. R. Murugesan, Dr. M. Indhumathi, R Mohan Raj
Financial Derivatives	Dr. N. Mohan, Dr. G. Arumugasamy, N Nithya
International Finance	
Retail Marketing	Dr. A. Murugan
Services Marketing	Dr. P. T. Vijaya Rajakumar, Dr. V. Mohanasundaram, Dr. S. Ravi Shankar
Product and Brand Management	Dr. S.V.Saravanan, Dr. Kadirvel. R, T. Krishnakumar
Consumer Behaviour	
Integrated Marketing Communication	
Strategic Human Resource Management	Dr. J. Kavitha, Dr. R. Florence Bharathi, Dr. P. Ganapathi
Industrial Relations and Labour Legislations	Dr. K. Karthikeyan, Dr. V. Mahalakshmi, S. Jebastine Suthan Raja
Organisational Design, Change and Development	Dr. J. Niruba Rani, Dr. A Jayaseelan, Dr. B. Sasikala



Scan QR Code



Also Book Available on:



ISBN: 978-93-5480-532-5



Printed at: Saveria Printing Press, Janakipuram, Lucknow, INDIA. Y200310000/01

ISBN No: 978-81-951140-0-9

In commemoration of Silver Jubilee celebration

3-3-2

**CONFERENCE PROCEEDINGS OF THE
5TH INTERNATIONAL CONFERENCE ON
ENTREPRENEURSHIP, INNOVATION AND STARTUP-ICEIS'22
06th & 07th September 2022**



Dr. V.R. PALANIVELU

ISBN No: 978-81-951140-0-9

In commemoration of Silver Jubilee celebration

CONFERENCE PROCEEDINGS OF THE
5TH INTERNATIONAL CONFERENCE ON
ENTREPRENEURSHIP, INNOVATION AND STARTUP-ICEIS'22
06th & 07th September 2022



Dr. V.R. PALANIVELU

**CONFERENCE PROCEEDINGS OF THE
5TH INTERNATIONAL CONFERENCE ON
ENTREPRENEURSHIP, INNOVATION AND STARTUP-ICEIS'22
06th & 07th September 2022**

Dr. V. R. PALANIVELU
Convenor & Organising Secretary
Professor & Head - DOMS
Periyar University, Salem

Published by

PERIYAR UNIVERSITY

(NAAC A++ Grade - State University - NIRF Rank - 63, ARIIA Rank - 10)

DEPARTMENT OF MANAGEMENT STUDIES

Salem – 636011, Tamil Nadu, India



75	A Comparative Analysis On Knowledge Management Practices Of Public And Private Sector Banks In Coimbatore SujithaPaul.H, Dr. R.Murugesan	58
76	Impact Of Training And Development Of Employees Efficiency And Effectiveness – Empirical Evidence Dr.M.Ganesan Alias Kanagaraj, Dr.S.Raja	59
77	Occupational Stress Of College Teachers With Special Reference To Sriperumpathur M. Venkatesan, Dr. R. Venkatesan	59
78	Work-Life Balance Of Women Teaching Fraternity In Bangalore City D.Bhuvaneswari, Dr.P.Thirumoorthi	60
79	A Panoramic Study On Neuro Marketing Dr.R. Karthika, Prof.M. Surya, Dr. E. Saranya	61
80	A Study On Consumers' Attitude Towards Organic Food Products In Salem District K.Prabha, Dr.T.A.Tamilselvi	61
81	A Study On Customer Gratification Towards Service Quality Of Low Cost Airlines In India Dr. S.P. Deepeka, Dr. N. Madhumithaa	62
82	A Study On Factors Affecting The Consumer Intention Towards Online Food Delivery Services Dr. K. Vijayakumar, Mr.R. Padmanaban	63
83	A Study On Impact Of Celebrity Endorsement On Purchase Intention Of Fmcg Products Through E-Commerce S.Elango, Dr.M.Suryakumar	64
84	The Impact Of Gender Towards Consumer Preference & Satisfaction With Special Reference To Instamart S. Sairam, S. Vidhya	64
85	A Case Study Analysis On The Digital Nudging Of A Family-Owned Business In Pathanamthitta District. Merliyn Anna Thomas, Justin P. James, Dr. Leena K Cherian	65
86	A Study On consumers Perception And Attitude towards The Usage Of Organic Products In ThiruvallurDist Mr.B.Ravikumar, Dr.P.Raja	66
87	Guerrilla Marketing And Identifying The Factors That Influence Brand Image Namira P N, Dr. M. Kavitha	67
88	Effect Of Advertisement On Children On Their Parents A Study With Special Reference To Confectionary Product In Tirupur City Mrs.B.Jayanthi, Mr. Dr. D. Balamurugan	67
89	Influence Of Perceived Social Media Information Credibility On Online Purchase Decision AswathySadasivan	68





K. RAMAKRISHNAN COLLEGE OF TECHNOLOGY

AN AUTONOMOUS INSTITUTION

Approved by AICTE, New Delhi & Affiliated to Anna University Chennai
Accredited with 'A+' grade by NAAC, ISO 9001:2015 Certified institution
Samayapuram, Trichy - 621 112



3-3-2

**AICTE SPONSORED
INTERNATIONAL CONFERENCE ON
NEWER ENGINEERING CONCEPTS
AND TECHNOLOGY - 2K22**

28 & 29 April 2022





PAPER ID: CSE0058

BUSINESS INTELLIGENCE CONCEPTUAL MODEL FOR CUSTOMER PERSPECTIVE ON SWIGGY

¹Dr. M. Hemalatha, ²Meha Jabeen Syed Mohamed Batcha, ³S. Surya, ⁴R. Naga Jothi

¹M.A.M Business School, Siruganur, Trichy

²M.A.M Business School, Siruganur, Trichy

³M.A.M Business School, Siruganur, Trichy

⁴M.A.M Business School, Siruganur, Trichy

Mail ID: hemaconsultant@yahoo.com

Abstract

Business intelligence is the right solution to help make more effective business decisions based on facts. The custom reports can be generated through BI. Online food delivery platform is a trending business model in the e-commerce platform and it opens us scope for several online business. The main purpose of this study is to understand the origin, evolution, competitive scenario of Swiggy, an online food ordering and delivery business in the Indian market. The study focuses on consumer's perception and satisfaction level towards the services offered by Swiggy. The concern focuses on developing relation between restaurants and retail stores. The consumer behaviour is highly dynamic and is influenced by various factors. Business intelligence in the food industry assists in analyzing data and to take advantage of the opportunities and trends prevailing in the market.



DIRECTOR
M.A.M. B-SCHOOL
Siruganur, Trichy-621105



PAPER ID: CSE0016

MODELLING WOMEN ENTREPRENEURS BUSINESS SUCCESS USING BUSINESS INTELLIGENCE TOOLS

¹Dr. M. Hemalatha, ²N. Kayalvizhi, ³M. Akila, ⁴Infantena lourdes mary. D

M.A.M. B – School Siruganur, Trichy – 621105

M.A.M. B – School Siruganur, Trichy – 621105

M.A.M. B – School Siruganur, Trichy – 621105

Maild iD: hemaconsultant@yahoo.com

Abstract

Business intelligence (BI) is a readily available tool that easily enables the gathering, storing and processing of information. The women entrepreneur needs to be considered in the economic development of the nation for various reasons. It is important to identify factors contributing to the success which may vary from person to person and country to country. This research is addressed the success drivers of rural women entrepreneur. It is very important because the finding of such research is useful to economic development planners as well as to women entrepreneurs. The Existing literatures have not covered the success factors of rural women entrepreneurs in India. So we fill this gap through this research. A Total of 681 rural women entrepreneurs were surveyed. The data mining and business intelligence technique multiple regression analysis is applied in the research analysis phase. The multiple regression model on rural women entrepreneur business success is significant with R square value 0.718. We have used 22 factors in the Multiple Regression analysis, these factors are subjected to multiple regression analysis to construct a model for the rural women entrepreneur business success measurement. The result of multiple regression analysis of the rural women entrepreneur business success depicts that tax concession, availability of utilities at a nominal rates, network selling at colleges and adaptability have the greatest impact on business success of rural women entrepreneur. The implications of this research expose the areas of women entrepreneurs as well as policy makers.





A PANORAMIC STUDY ON NEURO MARKETING

Dr.R.Karthika, Associate Professor, M.A.M.B-SCHOOL
karthika@mambs.com

Dr.Saraswathy, Head SDP, M.A.M.College of Engineering and Technology

Prof.S.Senthilkumar, Assistant Professor, M.A.M.B-School
Senthilkumar@mambs.com

Prof.M.Surya, Assistant Professor, M.A.M.B SCHOOL
surya@mambs.com

ABSTRACT

In recent years, the rising field of neuromarketing, which makes use of brain explore during a managerial context, has gained growing recognition within the academic literature also because the practical world. Therefore, the aim of this paper is to measure the influence of neuro marketing tools on traditional marketing inputs so as to finish the understanding of consumer behavior. After an assessment of out of doors reflexes, and Inside reflexes to research brain activities, the present paper appraise upon the influence of neuromarketing on different relevant marketing inputs. The results indicate that neuro marketing is associated to possess a high influence on consumer buying behavior as marketing inputs. Therefore, neuromarketing could also be considered to be an interesting extension within the research of human behavior and therefore the brain because of its practical applicableness.

INTRODUCTION

The knowledge is active in nature and due to this, fashionable marketing is frequently subject to challenges that market relations progress brings about. This new field is an outcome of joining neuroscience with marketing, neuro marketing ascends as a comparatively new research discipline. Taking advantage of advances in technology, this emerging field goes beyond traditional tools of quantitative and qualitative research, that specialize in consumer's brain reactions ahead of selling stimuli. Since the appearance of the sector of Neuromarketing in 2002, its importance is constantly growing and its fame is scattering over companies, marketers and advertisers. Although the subject gains increasing attention within the medical industry and psychology, this paper will deliberate the explanation of human behaviour by the use of neuromarketing and its benefits and disadvantages within the economic sector (Sanfey, Loewenstein, McClure, & Cohen, 2006; Khushaba, Wise, Kodagoda, Louviere, Kahn & Townsend, 2013; Hubert, 2010) With the help of the scientific knowledge, Neuromarketing combines the fields of neuroscience





psychology and marketing. In order to gather knowledge in various areas such as learning, memory, impact of internal and external environment in brain's activities, information processing etc. Neuroscience can disclose the interdisciplinary side of the marketing tactics and consumer behavior. Neuroscience gives deep understanding about the composite information processing and thought process such as selection, decision making, reasoning, attitude, emotion and memory which has a great impact on marketing management. It has a great impression on various topics such as segmentation, targeting, positioning, brand equity, brand loyalty etc. Consumer perception and selection is also influenced by the above mentioned factors.(Prof. Aradhita Deb-2021)

Keywords: Neuromarketing, Marketing research, Consumer behavior, fMRI, EEG,

REVIEW OF LITERATURE:

Cognitive process and unconscious emotional characteristics can affect consumer thoughts and actions. Natures of emotional replies differ and vary from consumer to consumer; as they are having specific behavioral selections and preferences. Interaction with several actions

and inducement can impact the consumer selection and preference. Different consumption pattern and effect between inducement types can be the important factors in case of defining the cognitive load. By identifying different cognitive and general emotions between the channels through which subjects are presented to the consumers, it can be observed that in some cases words can generate higher cognitive load and companion than images and videos can create higher emotional responses. Various emotions such as memory, attention, perception and physical actions (either physiologically or linguistically). An assumption can also be formed that there might be a preferential link exist between the creation of mental imagery and memory (Michael et al., 2019) Even a question can also ascend that whether Neuroscience has impact on various factors on the industry, as it has been predictable. A matter of concern over the application of neuroscience in markets is the time and cost. To get an answer of a specific instance after the application of neuroscience, is quite time consuming and the cost of the application of neuroscience might not appear as viable in most of the cases (McDowell & Dick, 2013). Even determining the complex situations and application of neuroscience in day to day conditions and situations in a market might not be viable and cost advantageous from the commercial market viewpoint. Therefore it can come





up as a concern that if neuromarketing has to strive with the traditional marketing tactics from the commercial market prospective, it should be more viable by reducing the labor and overhead cost (Spence, 2019)

Advertisement is one of the most operative mediums through which the marketers can communicate the message about the subject to the target customer. But the essentials of the advertisements that is content, linguistic should be systematized and presented in the most effective way in order to the effective and efficient transmission of the message. It can be observed that psychological elements, linguistic elements and most importantly the application of the neuroscience in the advertisement can make the storytelling more effective and efficient. In order to create a long lasting impact on the target customer base, the marketers need to enhance the effectiveness of the content of the advertisement by applying the neuroscience elements effectively and efficiently (Kılıç & Yolbulan Okan, 2020).

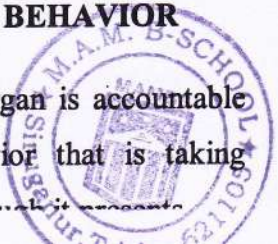
APPROACHES TO MEASURE BRAIN ACTIONS IN REGARD TO CONSUMER BUYING BEHAVIOR

The brain itself as an organ is accountable for all consumer behavior that is taking place. Interestingly, although it represents

only 2% of the entire body, it stings approximately 20% of humans' energy. Another important point is that about 80% of the human's brain activity is taking place unintentionally in order to sustain the tranquility state, leaving only 20% of the brain activity for conscious purposes (Morin, 2011).

Due to the origin of a human as a predator and collector who is striving for survival, the brain was and still is used to scan the environment for possible dangers, which is mainly done by the part called reptilian brain'. This part is capable of processing all visual stimuli by not making use of the visual cortex, which is the biological argumentation for the fact that human beings in general have a general preference for images over words, or comparably experiences over explanations (Morin, 2011). So, knowing that the brain is one of the most complexes and interwoven biological organs existing, including numerous interconnected cells, it should be obvious that the translation and interpretation of its activity is a highly complex procedure (Purves, Fitzpatrick, Augustine, & Katz, 2008).

Although it is accustomed that the purchasing decision does not represent a binary social response, meaning that one cannot predict that with using a certain advertisement one will make the purchase for sure, there are still high expectations in the ability of neuromarketing observing and analyzing the entire brain in order to find out new, unpredictable results that give new insights into the field of neuroscience (Dee, & Kacen, 2008; Hubert, & Kenning, 2008).





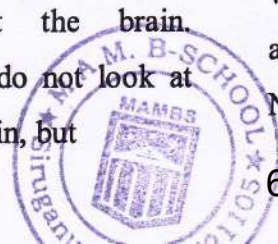
PRACTICES OF NEURO MARKETING

The overall goal of using neuromarketing practices is to understand the interconnection between marketing happenings and the response upon that from consumers (Kumlehn, 2011). It is expected that by doing so, next to the subjective self valuation methods, an objective perspective of brain activity can be evaluated (Hubert, & Kenning, 2008). The various methods available in this arena range from Body Language, Facial Coding, Empathic design, Eye tracking, over FMRI, EEG, MEG to galvanic skin conductance and heart rate (Calvert, & Brammer, 2012), with the most advanced being EEG (Electroencephalography) and FMRI (functional Magnetic Resonance Imaging) brain imaging (Kumlehn, 2011).

The collection of different methods which already occur for a longer time period, namely body language, empathic design, facial coding and eye tracking, all together fall under the topic of outside reactions. Since the technology was not that advanced earlier, these methods were the most appropriate in former times in order to collect information about the brain. Specifically, these methods do not look at the inside activities of the brain, but

perceive the outside reactions which have their origin in the brain, without considering the statements of the observed people about certain things. These so called "outside reflexes" are simply observable when one concentrates on them. Put differently, it can be described as a method, which, on basis of biological reactions, can determine what the brain of a person actually thinks, feels or does, without considering what the person says, or even when the person does not say anything. A famous example of a quantity of outside reflexes is a lie detector. This machine reacts upon sweat glands at the inside of the hand, which normally gives a biological reaction of sweating upon an emotional stimulus. However, since the reason for the emotional stimulus can also stem from something else than lying, this method cannot be considered as totally reliable (Postma, 2012).

The "Inside reflexes" approach drags in technological advanced methods originally developed for the medical area. By making use of this approach, one is looking inside the brain self. This is done properly by using EEG or fMRI-scans, which will be explained in the following sections. One significant difference between the input-/output model and the inside reflexes is the applicability: Neuromarketing in inside reflexes is about advertising, packaging, and association with brands. No one is being asked to actually make a purchase, but you can determine what a person experiences during an advertisement and if the desire can be determined neurologically. Neuromarketing in the input-/output model is more

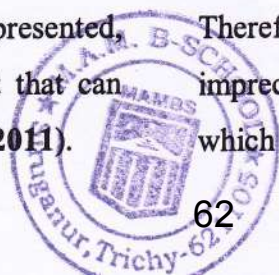


about the buying processes themselves (Postma, 2012).

EEG

EEG is the abbreviation for Electroencephalography, which means an electrical reproduction of brain activity (Postma, 2012). Although the technique of EEG is a relatively old method, it is still considered to be an appropriate way to measure changes in the electrical field in certain brain regions (Ariely, & Berns, 2010; Morin, 2011; Camerer, Loewenstein, & Prelec, 2004; Madan, 2010). It makes use of numerous electrodes attached to the skull that recognize electronic signals which represent current brain activity (Postma, 2012; Morin, 2012; Ariely, & Berns, 2010; Madan, 2010). Usually a short period recording of approximately 20 to 40 minutes can be made. The responsible cells for all our cognitive responses are called neurons. There from, every human being has more than 100 billion at its command, which are interconnected with trillions of synapses (Morin, 2011). These neurons have relatively long extensions where electricity runs through. Therefore, if a certain stimulus like advertising is presented, neurons fire some electric current that can be perceived by the EEG (Morin, 2011).

Put differently, if multiple neurons are "communicating" to a certain spot, more electricity is produced than normal, which can ultimately be measured with the EEG on the scalp. If upon that, neurological knowledge is applied, the recognized electricity can be attached to certain function areas in the brain, which in turn can provide relevant insights to marketing (Postma, 2012). In practical terms, a researcher can simply put on the electrodes attached to a helmet or cap on a person's head, and then present certain products or services from which the attractiveness in form of brain activity can ultimately be measured and recorded (Morin, 2011; Postma, 2012). An advantage of the method is that EEG is very precise in regard to timing since its temporal resolution is in milliseconds. Therewith, short neural activity can be easily detected (Ariely, & Berns, 2010; Camerer, Loewenstein, & Prelec, 2004). Additionally, one should keep in mind that the equipment necessary to carry out an EEG measurement is relatively light and portable, which facilitates the act of measurement (Madan, 2010). Thus, the person being studied is not being stressed during the measurement since he/she can move freely, although the measurement will mostly take place in a laboratory (Postma, 2012). A drawback of this method is that with using EEG, undesired electronic activities in the brain, which one does not want to measure, will be recorded (Postma, 2012). Therefore, the spatial resolution is relatively imprecise (approximately precise to one centimeter), which can be increased by the number of electrodes





attached to the skull (Ariely, & Berns, 2010; Camerer, Loewenstein, & Prelec, 2004; Morin, 2011). These disturbances have to be filtered out at the end. An effective method can be also to combine the EEG method with the eye tracking method, since then brain activities can be recorded more specifically (Postma, 2012).

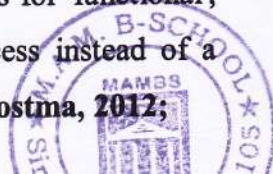
FMRI

The term MRI stands for 'magnetic resonance imaging' and basically describes a tool, which makes an anatomic representation of the brain by making use of magnets (Postma, 2012). An MRI scanner is used to measure the blood oxygen level, which can give an indication of increased brain activity in certain regions (Ariely, & Berns, 2010). The measurement works as follows: The magnetic field is able to recognize the blood oxygen content in the brain. Therefore, if neural activity in a certain brain area is increasing, the oxygen-rich blood increases too because oxygen is required by the brain to work. A sub area of MRI, and also the latest and most popular brain imaging method in the field of neuromarketing used for investigation of brain activation differences is the so called —fMRI, where the f stands for 'functional', indicating that it is a process instead of a snapshot being observed (Postma, 2012;

Dimoka et al., 2012; Madan, 2010; Vecchiato et al., 2011). The method became practicable during the 1990's and enabled scientists' insights into the human brain, which was until then some kind of a black box (Kumlehn, 2011). Simply speaking, it displays the blood flow of oxygen-rich blood to different regions in the brain in order to explore human behavior (Eser, Isin, & Tolon, 2011). FMRI is a form of non-invasive neuroimaging technology that is primarily used for marketing purposes. The interest in it has increased enormously during the past years since it makes it possible to isolate certain systems of neurons that are connected with specific functions of the brain (Postma, 2012; Wilson, Gaines, & Hill, 2008). This isolation of the neural system is a highly complex task and is only facilitated by today's advanced technology (Kumlehn, 2011).

Therefore, during an fMRI experiment, there is first a brain scan made at a person's —rest condition or when there is no stimulus being presented (Raichle, & Mintun, 2006). Afterwards, a stimulus is presented for instance in form of an advertisement which in turn activates certain brain areas and increases the oxygen-rich blood flow to certain regions being recognized by the fMRI (Wilson, Gaines, & Hill, 2008; Morin, 2011).

A famous example where this method was used is —The Pepsi Paradox, where participants were initially presented with the blind taste test, where two glasses were offered without knowing if Coke or Pepsi is inside. Within this blind taste test, the





majority of participants decided that the Pepsi drink is the more delicious one. Afterwards, participants were informed about the contents brand, and then activation in the —thinking part of the brain is recognized since the participant remembers the attractive Coke advertisements, which finally drives him to choose for the Coke drink as the more delicious drink (Gang, Lin, Qi, & Yan, 2012, May).

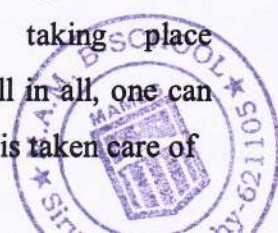
CONCLUSION:

Neuromarketing itself is frequently described as a tool to determine internal unknown —secrets of the human brain by making use of imaging technology (Kampakoglou, 2012). This can be influenced by the fact that researchers increasingly pay attention to emotions and unconscious processes that influence human behavior, and that argumentations and ways of reasoning cannot be regarded as rational anymore (Bechara, & Damasio, 2005; Camerer, Loewenstein, & Prelec, 2005; Oehler, & Reisch, 2008). Additionally, the prefrontal cortex has been established to be the most important region in the brain in regard to the research of neuromarketing since in that area, conscious processes as well as emotions are taking place (Vecchiato et al., 2011). All in all, one can say that if the ethical aspect is taken care of

by executing neuromarketing activities in an ethically correct way, it can be argued that the emergence of neuromarketing creates a win-win situation for marketers and consumers at the same time. Marketers can gain internal information which leads to better product commercialization and customers are provided with more customized products (Kenning, & Linzmajer, 2011; Ariely, & Berns, 2010; Lee, Broderick, & Chamberlain, 2007; Madan, 2010). The method combines the commercial part of economics with the psychological part of neuroscience (Madan, 2010).

REFERENCES:

Aradhita Deb (2021)A Systematic Literature Review on Neuromarketing- A new Horizon of Marketing Volume 6 Issue 3.
Ariely, D., & Berns, G. S. (2010). Neuromarketing: the hope and hype of neuroimaging in business. Nature Reviews Neuroscience, 11(4), 284-292.
Anil Kumar(2019) Neuromarketing: The Future of Advertising?
Bechara A., Damasio A.R. (2005). The somatic marker hypothesis: a neural theory of economic decision. Games and Economic Behavior 52: 336–372.
Eser, Z., Isin, F. B., & Tolon, M. (2011). Perceptions of marketing academics, neurologists, and marketing professionals about neuromarketing. Journal of Marketing Management, 27(7-8), 854-868.
Gang, D. J., Lin, W., Qi, Z., & Yan, L. L. (2012, May). Neuromarketing: Marketing through Science. In Service Sciences (IJCSS), 2012 International Joint Conference on (pp. 285-289). IEEE.
Kampakoglou, K. (2012). Neuromarketing: Validity and Morality.





- Kenning, P., & Linzmajer, M. (2011). Consumer neuroscience: an overview of an emerging discipline with implications for consumer policy. *Journal für Verbraucherschutz und Lebensmittelsicherheit*, 6(1), 111-125.
- Kılıç, F., & Yolbulan Okan, E. (2020). Storytelling and narrative tools in award-winning advertisements in Turkey: an interdisciplinary approach. *Journal of Marketing Communications*, 00(00), 1-16. <https://doi.org/10.1080/13527266.2020.1780466>
- Kumlehn, M. (2011). Consumer Neuroscience: Pricing research to gain and sustain a cutting edge competitive advantage by improving customer value and profitability.
- Lee, J. A., & Kacen, J. J. (2008). Cultural influences on consumer satisfaction with impulse and planned purchase decisions. *Journal of Business Research*, 61(3), 265-272.
- Madan, C. R. (2010). Neuromarketing: the next step in market research?. *Eureka*, 1(1), 34-42.
- Morin, C. (2011). Neuromarketing: the new science of consumer behavior. *Society*, 48(2), 131-135.
- Michael, I., Ramsoy, T., Stephens, M., & Kotsi, F. (2019). A study of unconscious emotional and cognitive responses to tourism images using a neuroscience method. *Journal of Islamic Marketing*, 10(2), 543-564. <https://doi.org/10.1108/JIMA-09-2017-0098>
- McDowell, W. S., & Dick, S. J. (2013). The marketing of neuromarketing: Brand differentiation strategies employed by prominent neuromarketing firms to attract media clients. *Journal of Media Business Studies*, 10(1), 25-40. <https://doi.org/10.1080/16522354.2013.11073558>
- Postma (2012). Anatomie van de Verleiding. *Neuromarketing - Neuromarketing success vol toegepast*
- Purves D, Fitzpatrick D, Augustine GJ, Katz LC. (2008). *Neuroscience*, 4th edn. Sinauer: Sunderland, MA.
- Sanfey, A. G., Loewenstein, G., McClure, S. M., & Cohen, J. D. (2006). Neuroeconomics: cross-currents in research on decision-making. *Trends in cognitive sciences*, 10(3), 108-116
- Spence, C. (2019). Neuroscience-Inspired Design: From Academic Neuromarketing to Commercially Relevant Research. *Organizational Research Methods*, 22(1), 275-298. <https://doi.org/10.1177/1094428116672003>
- Vivian Alexandra Roth (2013) *The Potential of Neuromarketing as a Marketing Tool University of Twente*
- Vecchiato, G., Astolfi, L., De Vico Fallani, F., Toppi, J., Aloise, F., Bez, F., & Babiloni, F. (2011). On the use of EEG or MEG brain imaging tools in neuromarketing research. *Computational intelligence and neuroscience*, 2011, 3.
- Wilson, R., Gaines, J., & Hill, R. P. (2008). Neuromarketing and consumer free will. *Journal of consumer affairs*, 42(3), 389-410.





Business Intelligence Modelling for Measuring the Women Entrepreneurs Business Success

Dr. M. Hemalatha M.B.A, Ph.D. (NITT)

Professor and Director

Email Id: director@mambs.com / hemaconsultant@yahoo.com

N. Kayalvizhi

Assistant Professor

Email Id: kayalvizhi@mambs.com

Ms. M. Akila

Assistant Professor

Email Id: akila@mambs.com

Infantena lourdes mary. D

Student1-MBA

Email – infantenadevadass@gmail.com

1. Business intelligence

The large variety of BI solutions on the market makes it very difficult for organizations to select one and evaluate the impact of the selected solution to the organization. The need of a strategy to help organization chose the best solution for investment emerges. In the past, BI market was dominated by closed source and commercial tools, but in the last years open source solutions developed everywhere. An open source business intelligence solution can be an option due to time-sensitive, sprawling requirements and tightening budgets (Tarnaveanu, 2012).

Women entrepreneurs starting and operating a business involves considerable risks and difficulties because the Indian social environment women has always lived as subordinate to men. There has been a noticeable change in the socio-psycho cultural and economic norms of our society due to liberalized policy of the government of India

It has now been recognized that to promote self-employment and to reduce the incidence of poverty, some drastic efforts have to be made to accelerate self employment of women in various sectors.

The entrepreneurial problems faced by the women range from mobilizing various resources including problem of capital, marketing, raw material, sales, labour, technical, competition, new technology, problem of land/ Shed/ water/ power/ taxes, lack of family support as well as lack of government support and the like. Hence their problems arise both from within and outside and also differ from enterprise to enterprise. Some of these problems are many and similar to all, where as for some others it is more specific and related to the line of activity of the enterprise. Some have the problem of the external environment; whatever be the problem there is no prescribed formula to deal with them. The problems have to be dealt with them by the entrepreneurs themselves otherwise it would affect the working of the enterprise itself. Efficient and timely handling of the problems leads to their success.





Therefore it is important to identify factors contributing to the success which may vary from person to person and country to country, depending on their marketing strategies and on economies, geographical and cultural differences. Therefore, they should explore the prospects and strategies of starting new enterprise; undertake risks, introduction of new innovations, coordination administration and control of business and providing effective leadership in all aspects of business. So this research is planning to address the success drivers of rural women entrepreneur. It is very important because the finding of such research is useful to economic development planners as well as to women entrepreneurs.

2. Research Gap

In the recent years, Entrepreneurship and Innovation have taken new dimension due to increase in the globalization and liberalization. Archana et al. (2022) identified the three major factors that are playing important role in women entrepreneurship are : Firstly, internal factors such as individual's attitude towards risk taking or family encouragement, secondly external factors such as government support or reward system and finally the third factor is education and

competencies. Noor et al. (2022) reviewed literature related to the success model of women entrepreneurs, particularly in developing Asian countries. Highlighted the clear picture of women's entrepreneurial success models comprised of controllable and uncontrollable issues and challenges that can be classified under several factors, such as socio-cultural, environmental and individual.

Entrepreneurship has been pointed out by researchers as well as policymakers as one of the main drivers of economic growth and development. Guelich *et al.* (2021) empirically studied framework for women's entrepreneurship and culture research to organize the empirical research herein into three interconnected themes: gender role expectations and identities, societal cultural dimensions, and the entrepreneurial environment. Saraswat and Lathabahvan (2020) has attempted to generate awareness and to understand the meaning of what women entrepreneurship is and how important it is or the development of the world rationally, economically and in all spheres. At the end some major problems faced by Indian women entrepreneurs, success stories of Indian women entrepreneurs, factors influencing women entrepreneurship and the perspective of different sections of the society about women entrepreneurship have been noted. Cardella and Hernandez Sanchez (2020) reviewed 2,848 peer-reviewed articles published between 1950 and 2019, using the Scopus database. The analysis of the clusters allowed to isolate 6 different lines of research in which emerged, on the one hand, the importance of

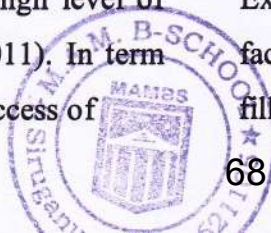


entrepreneurial education, social entrepreneurship and the socio-cultural context of reference as tools to overcome the gender gap, on the other, the importance that women entrepreneurship assumes in the economic growth of the country, promoting social inclusion and combating poverty and discrimination. Jackulin Ancy (2019) found that Career challenge, Entrepreneurial opportunities and Ideas for business venture are the important factors influencing success of women entrepreneurs. Meyer (2018) investigated about Females encounter different challenges and barriers. The findings further indicate that, although research on female entrepreneurship as a focussed study field has slightly increased over the decades, there is still room for improvement.

Business success has been attributed to many factors. A few of them stand out and are more often cited by researchers. Studies conducted among small business owners in developing countries suggested managerial skills, personal qualities, and the ability to secure funding the most critical ingredients. Finally a low level of competition was also regarded as condition for the high level of business performance (Chu, 2011). In term of the factors contributing to success of

entrepreneurs in small business are varied (Alam et al., 2011). An extensive field survey was undertaken to identify the main background factors which influence the success or failure of migrant entrepreneurs. It turns out that personality, work discipline and business ambition is the critical success factors for a good business performance on the part of migrant entrepreneurs (Sahin et al., 2009).

Much of the research on entrepreneurial activity indicates that many female encounter barriers because they lack the requisite skills, training, and background. These barriers are, for example, socialization practices, educational experiences, family roles, lack of a network of business contacts. Success factors and the causes and effects as related to female owned business remain a key area of emphasis. Exploring structural relationships such as motivations of female business owners, success factors of their business and business performance is important (Lee and Stearns, 2012). In this study, the conceptual framework of the success drivers of women entrepreneurs in rural areas in India is designed. The literatures have covered only about the challenges and problems of women entrepreneurs. Only few studies are talking about the success of women entrepreneur in western countries. So the Existing literatures have not covered the success factors of rural women entrepreneurs in India. So we fill this gap through this research.





3. Modelling the Success Drivers of Women Entrepreneurs in Rural Areas

Finally a total of 681 rural women entrepreneurs were surveyed. First, we have checked the missing values prior to data analysis. Normality was tested based on the skewness and kurtosis of the observed variables. Finally, we tested for the existence of univariate and multivariate outliers. We have used a combination of multivariate analysis techniques. The statistical software such as Statistical Package for Social Sciences (SPSS) was used for the analysis. The data mining technique multiple regression analysis is applied in the research analysis phase

The multiple regression model on rural women entrepreneur business success is significant with R square value 0.718 ($F=11.812$ and $p < 0.01$). The result of F-test signifies that the explained variation was statistically significant at one per cent level. So the proposed model explained a significant percentage of variance in rural women entrepreneur business success. We have used 22 factors in the Multiple Regression analysis These factors are subjected to multiple regression analysis to construct a model for the rural women entrepreneur business success measurement.

Independent Variables	Unstandardized Multiple Regression Coefficients	Standard Error	Standardized Multiple Regression Coefficients	t-Value	Sig.
Constant	0.537	0.337		1.594	0.000
Network selling at colleges	0.182	0.046	0.153	3.953	0.000
Trade fairs and exhibitions	0.085	0.044	0.072	1.945	0.050
I sell cluster member products	-0.027	0.044	-0.023	-0.601	0.548
Cluster members sell my products	0.102	0.042	0.092	2.458	0.014
Variety of products	0.097	0.043	0.087	2.244	0.025
Supplier Relation and Credit Policy	0.003	0.041	0.003	0.065	0.948
Employee managing skill	0.071	0.044	0.062	1.607	0.109
Marketing skill	0.117	0.043	0.106	2.707	0.007
Financial analysis skill	0.080	0.043	0.068	1.840	0.066
Technical skill	0.034	0.041	0.032	0.829	0.408
Family members support	0.062	0.042	0.058	1.487	0.137
Hard Work and Commitment	0.105	0.036	0.113	2.944	0.003
Experience	0.107	0.045	0.084	2.357	0.019
Confidence and motivation	0.115	0.042	0.098	2.710	0.007
Adaptability	0.132	0.041	0.124	3.248	0.001
Training programme	0.068	0.038	0.068	1.789	0.074
Machinery and Infrastructure	0.018	0.039	0.017	0.463	0.644
Availability of utilities at a nominal rates	0.174	0.043	0.162	4.054	0.000
Tax concession	0.275	0.045	0.239	6.089	0.000
Better control on my business	0.097	0.043	0.095	2.238	0.026
Always Take Risk in The Business	0.046	0.039	0.042	1.182	0.237
Business / service idea	0.073	0.040	0.068	1.812	0.070

Dependent Variable = Rural Women Entrepreneur's Business Success

It is observed from the multiple regression model that the overall rural women entrepreneur business success = 0.537 + 0.182 (Network Selling at Colleges) + 0.085 (Trade Fairs and Exhibitions) - 0.027 (I Sell Cluster Member) + 0.102 (Cluster Members Sell My Products) + 0.097 (Variety of Products) + 0.003 (Supplier Relation and Credit Policy) + 0.071 (Employee Managing Skill) + 0.117





(Marketing Skill) + 0.080 (Financial Analysis Skill) + 0.034 (Technical Skill) + 0.062 (Family Members Support) + 0.105 (Hard Work and Commitment) + 0.107 (Experience) + 0.115 (Confidence and Motivation) + 0.132 (Adaptability) + 0.068 (Training Programme) + 0.018 (Machinery and Infrastructure) + 0.174 (Availability Of Utilities At A Nominal Rates) + 0.275 (Tax Concession) + 0.097 (Better Control on Business) + 0.046 (Always Take Risk in the Business) + 0.073 (Business/Service Idea)

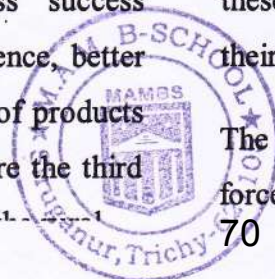
The result of multiple regression analysis of the rural women entrepreneur business success depicts that tax concession, availability of utilities at a nominal rates, network selling at colleges and adaptability have the greatest impact on business success of rural women entrepreneur. Our rural women entrepreneurs' business success model also confirms that hard work and commitment, confidence and motivation, marketing skill and cluster members sell my products are the second most important elements driving the rural women entrepreneurs business success. Our rural women entrepreneurs' business success model also confirms that experience, better control on my business, variety of products and trade fairs and exhibitions are the third most important elements driving the

women entrepreneurs business success. Finally the supplier relation and credit policy, machinery and infrastructure, I sell cluster member products, technical skill, always take risk in the business, family members support, employee managing skill, training programme, business/service idea and financial analysis skill are insignificant to the rural women entrepreneurs business success.

4. Contributions in Rural Women Entrepreneurship Theory building

The implications of this research expose the areas of women entrepreneurs as well as policy makers. Although this study is not expected to be generalized; nonetheless, the findings reveal that tax concession, availability of utilities at nominal rates, network selling at colleges, adaptability, hard work and commitment, confidence and motivation, marketing skill, cluster members selling their products, experience, better control on business, variety of products and trade fairs and exhibitions have impact on business success to the rural women entrepreneurs. The implications of policy makers are therefore they should concentrate on above factors to make rural women as successful entrepreneurs. In addition, by identifying these characteristics, the government can encourage those women who have these kinds of characteristics to establish or grow their businesses.

The tremendous growth in women entrepreneurs forced an overall emphasis on the occurrence and a





need to understand the multitude of factors that impact this extraordinary group. There is increased inspiration abounding that calls for an understanding of the drivers' leads to the success of the rural women entrepreneurs. Most studies focus on the challenges and problems faced by the women entrepreneurs. By engaging in this current study, the deficiency that has persisted in the literature due to a lack of focus on success factors has been covered. The purpose of this investigation was to build a model of factors determining the successful rural women entrepreneur in an Indian context. This model can act as a confidence builder to remind women that they have the necessary characteristics to be successful. Considering the role of women in economy, studying the factors leading to the success of the rural women's businesses increase the development process in developing countries.

References:

Alam, K., Qureshi, S., & Blaschke, T. (2011). Monitoring spatio-temporal aerosol patterns over Pakistan based on MODIS, TOMS and MISR satellite data and a HYSPLIT model. *Atmospheric environment*, 45(27), 4641-4651.

Bullough, A., Guelich, U., Manolova, T. S., & Schjoedt, L. (2022). Women's entrepreneurship and culture: gender role expectations and identities, societal culture, and the entrepreneurial environment. *Small Business Economics*, 58(2), 985-996.

Cardella, G. M., Hernández-Sánchez, B. R., & Sánchez-García, J. C. (2020). Women entrepreneurship: A systematic review to outline the boundaries of scientific literature. *Frontiers in psychology*, 11, 1557.

Chun, J., Oren, A., Ventosa, A., Christensen, H., Arahall, D. R., da Costa, M. S., ... & Trujillo, M. E. (2018). Proposed minimal standards for the use of genome data for the taxonomy of prokaryotes. *International journal of systematic and evolutionary microbiology*, 68(1), 461-466.

Chu, S. C., & Kim, Y. (2011). Determinants of consumer engagement in electronic word-of-mouth (eWOM) in social networking sites. *International journal of Advertising*, 30(1), 47-75.

Eichengreen, B. (2019). *Globalizing capital*. Princeton University Press.

Lau, L., Lee, Y. L., Sahl, S. J., Stearns, T., & Moerner, W. (2012). STED microscopy with optimized labeling density reveals 9-fold arrangement of a centriole protein. *Biophysical journal*, 102(12), 2926-2935.

Liu, P., Khan, M. B., Noor, M. A., & Noor, K. I. (2022). New Hermite-Hadamard and Jensen inequalities for log- s s -convex fuzzy-interval-valued functions in the second sense. *Complex & Intelligent Systems*, 8(1), 413-427.

Manikandan, V. S., Harish, S., Archana, J., & Navaneethan, M. (2022). Fabrication of novel hybrid Z-Scheme WO₃@ g-C₃N₄@ MWCNT nanostructure for photocatalytic degradation of tetracycline and the evaluation of antimicrobial activity. *Chemosphere*, 287, 132050.

Saraswat, R., & Lathabahvan, R. A study on Women Entrepreneurship in India.

Sahin, N. T., Pinker, S., Cash, S. S., Schomer, D., & Halgren, E. (2009). Sequential processing of lexical, grammatical, and phonological information within Broca's area. *Science*, 326(5951), 445-449.

TARNAVEANU, D. (2012). Pentaho business analytics: a business intelligence open source alternative. *Database Systems Journal*, 3(3), 23-





SCHEDULING & RESOURCE MANAGEMENT FOR EDGE INFRASTRUCTURE

Dr.R.JEEVAREKHA
ASST. PROFESSOR
MAMBSCHOOL
SIRUGANUR,TRICHY
Tamilnadu,india
Contact no:8778115898 mail id :jeevarekha@mambs.com

Mrs. SEETHALAKSHMI
ASST. PROFESSOR
MAM B.SCHOOL
SIRUGANUR,TRICHY
Tamilnadu,india
Contact no: 6379078642 mail id: seethlakshmi@mambs.com

Miss K.MEENAKSHI
1st Year Student
MAM B.SCHOOL
SIRUGANUR,TRICHY

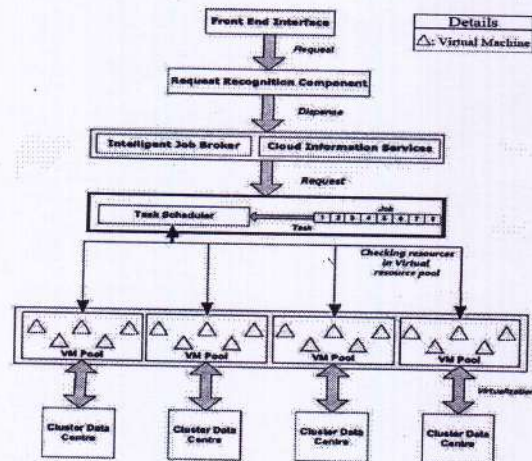
Miss S.KIRUTHIKA
ASST. PROFESSOR
MAM B.SCHOOL
SIRUGANUR,TRICHY
Tamilnadu,india
Contact no: 8438734801 mail id: kirithiga@mambs.com

Abstract— In this paper, we present the scheduling & resource management for edge infrastructure, under which different collaborative manners for resource scheduling are discussed. An on-demand computing resource allocation can be achieved by adjusting the task schedule of the edge gateway via the lightweight virtualization technology. The resource scheduling in edge infrastructure, which is the key to the success of edge infrastructure, has attracted increasing research interests. Based on two modes of operation, i.e., centralized and distributed modes, different techniques for resource scheduling are discussed and compared. To shed light on the significance of resource scheduling in real-world scenarios, we discuss several typical application scenarios involved in the research of resource scheduling in edge Infrastructure. Recently, significant research is carried out on Resource Management (RM) techniques that focus on the efficient sharing of cloud resources among multiple users.

Keywords—component, formatting, style, styling, insert **Resource Management in Edge Infrastructure**

Resource management is acquiring, allocating and managing the resources, such as individuals and their skills, finances, technology, materials, machinery and natural resources required for a project. Resource management ensures that internal and external

resources are used effectively on time and to budget. The



surging demand for data communications and computing calls for the emerging edge computing paradigm. By moving the services and functions located in the cloud to the proximity of users, edge computing can provide powerful communication, storage, networking, and communication capacity. The resource scheduling in edge computing, which is the key to the success of edge computing systems, has attracted increasing research interests. Particularly, we introduce a unified model before summarizing the current works on resource scheduling from the paper.





SCHEDULING & RESOURCE MANAGEMENT FOR EDGE INFRASTRUCTURE

Dr. JEEVAREKHA
ASST. PROFESSOR
MAMBSCHOOL
SIRUGANUR, TRICHY
Tamilnadu, india
Contact no: 8778115898 mail id
: jeevarekha@mambs.com

Mrs. SEETHALAKSHMI
ASST. PROFESSOR
MAM B.SCHOOL
SIRUGANUR, TRICHY
Tamilnadu, india
Contact no: 6379078642 mail
id: seethlakshmi@mambs.com

Miss K.MEENAKSHI
1st Year Student
MAM B.SCHOOL
SIRUGANUR, TRICHY

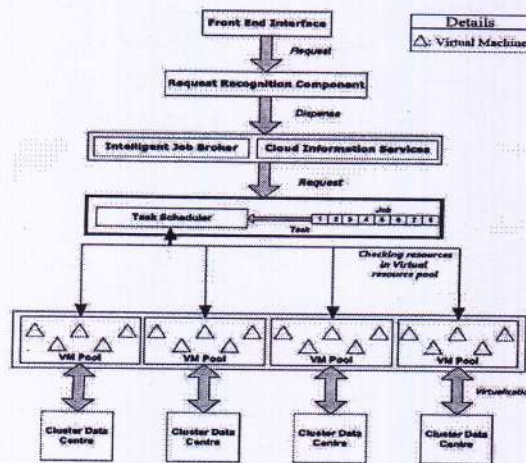
Miss S. KIRUTHIKA
ASST. PROFESSOR
MAM B.SCHOOL
SIRUGANUR, TRICHY
Tamilnadu, india
Contact no: 8438734801 mail
id: kirithiga@mambs.com

Abstract— In this paper, we present the scheduling & resource management for edge infrastructure, under which different collaborative manners for resource scheduling are discussed. An on-demand computing resource allocation can be achieved by adjusting the task schedule of the edge gateway via the lightweight virtualization technology. The resource scheduling in edge infrastructure, which is the key to the success of edge infrastructure, has attracted increasing research interests. Based on two modes of operation, i.e., centralized and distributed modes, different techniques for resource scheduling are discussed and compared. To shed light on the significance of resource scheduling in real-world scenarios, we discuss several typical application scenarios involved in the research of resource scheduling in edge Infrastructure. Recently, significant research is carried out on Resource Management (RM) techniques that focus on the efficient sharing of cloud resources among multiple users.

Keywords—component, formatting, style, styling, insert **Resource Management in Edge Infrastructure**

Resource management is acquiring, allocating and managing the resources, such as individuals and their skills, finances, technology, materials, machinery and natural resources required for a project. Resource management ensures that internal and external

resources are used effectively on time and to budget. The



surging demand for data communications and computing calls for the emerging edge computing paradigm. By moving the services and functions located in the cloud to the proximity of users, edge computing can provide powerful communication, storage, networking, and communication capacity. The resource scheduling in edge computing, which is the key to the success of edge computing systems, has attracted increasing research interests. Particularly, we introduce a unified model before summarizing the current works on resource scheduling from the paper.

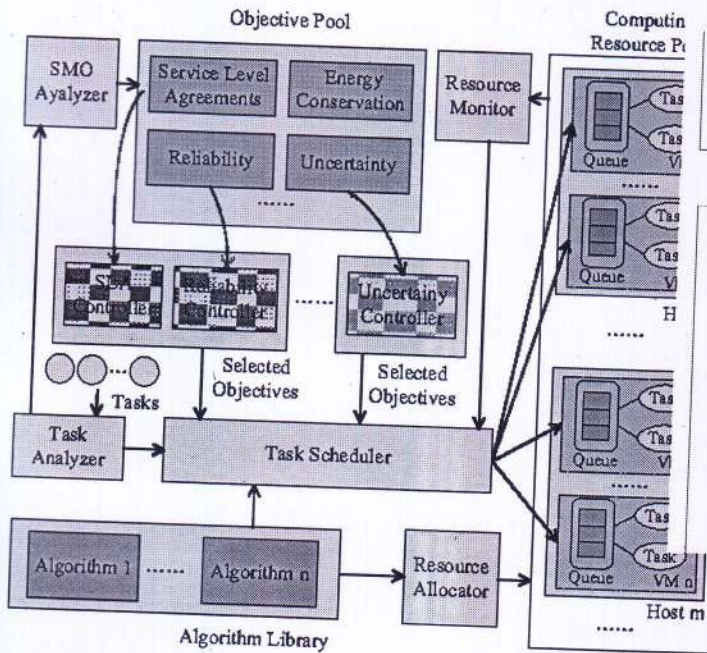


Do not number text heads-the template will do that for you.

Scheduling in EDGE infrastructure

Edge infrastructure refers to small data center sites located near the populations they serve that deliver cloud computing and cached content to end users. Typically, edge infrastructure is connected to a large central data center or multiple data centers.

the paper. Do not number text heads-the template will do that for you.



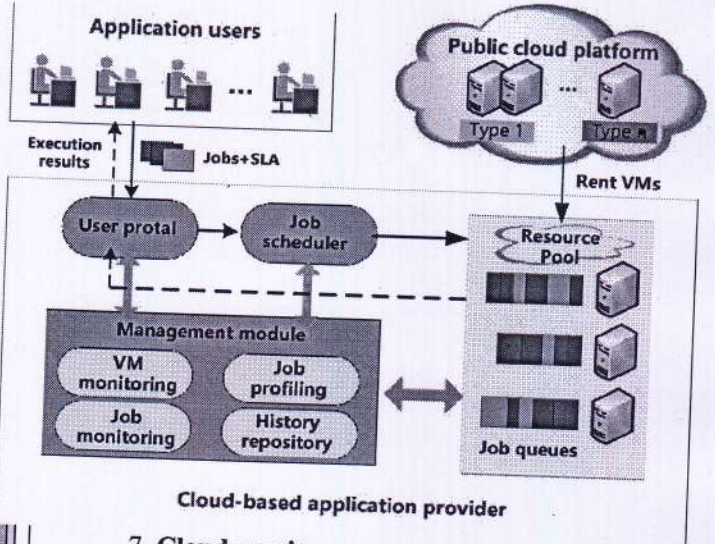
Manufacturers want to be able to analyse and detect changes in their production lines before a failure occurs.

5. In-hospital patient monitoring

Healthcare contains several edge opportunities. Currently, monitoring devices (e.g. glucose monitors, health tools and other sensors) are either not connected. This presents security concerns for healthcare providers.

6. Virtualized radio networks and 5G (v RAN)

Operators are increasingly looking to virtualize parts of their mobile networks (v RAN). This has both cost and flexibility benefits.



7. Cloud gaming

Cloud gaming companies are looking to build edge servers as close to gamers as possible in order to reduce latency and provide a fully responsive and immersive gaming experience.

8. Content delivery

By caching content – e.g. music, video stream, web pages – at the edge, improvements to content delivery can be greatly improved.

9. Traffic management

Edge computing can enable more effective city traffic management. Examples of this include optimizing bus frequency given fluctuations in demand, managing the opening and closing of extra lanes, and, in future, managing autonomous car flows.

10. Smart homes

By using edge compute and bringing the processing and storage closer to the smart home, backhaul and roundtrip time is reduced, and sensitive information can be processed at the edge.

Usages of Edge Infrastructure

1) 1. Autonomous vehicles

Autonomous platooning of truck convoys will likely be one of the first use cases for autonomous vehicles. Here, a group of truck travel close behind one another in a convoy, saving fuel costs and decreasing congestion.

2) 2. Remote monitoring of assets in the oil and gas industry

However, oil and gas plants are often in remote locations. Edge computing enables real-time analytics with processing much closer to the asset.

3) 3. Smart grid

Edge computing will be a core technology in more widespread adoption of smart grids and can help allow enterprises to better manage their energy consumption.

4. Predictive maintenance

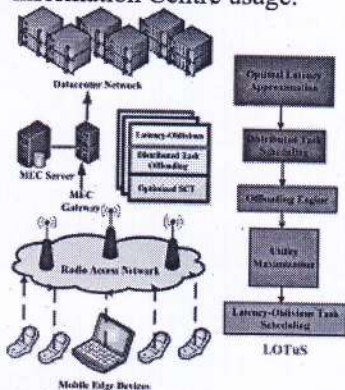
Key elements of an edge infrastructure:



- Hardware and software standards that enable seamless integration.
- Security embedded at the lowest levels of both hardware and software.
- A deep ecosystem that adheres to these standards and fully utilizes such security capabilities, enabling deployment at scale.

Scheduling & Resource Management in Edge Infra

Edge computing comprises of **compute, storage, data management, data analysis and networking** among others. Depending on the complexity of analytics needed, the computing infrastructure might range from a simple MCU to a high end GPU. Scheduling & resource edge infrastructure be used to improve Edge Computing reduces community visitors and information Centre usage.



With Edge Computing the quantity of information traversing the community may be decreased greatly, releasing up bandwidth. ... Edge infrastructure allows through bringing the processing and garage of information in the direction of the equipment.

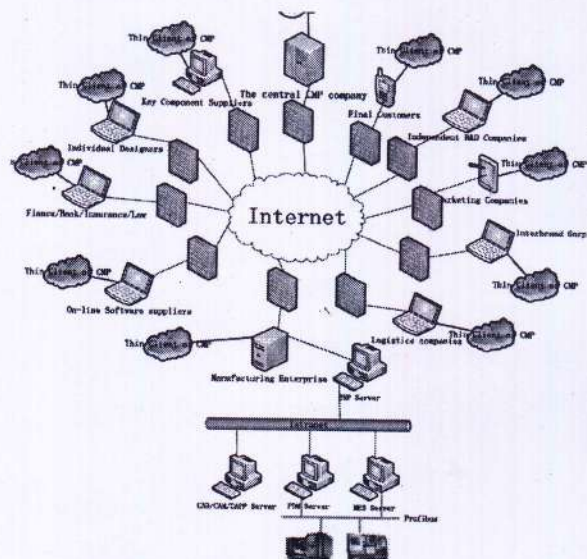
B. Selecting a Template (Heading 2)

First, confirm that you have the correct template for your paper size. This template has been tailored for output on the A4 paper size. If you are using US letter-sized paper, please close this file and download the Microsoft Word, Letter file.

C. Maintaining the Integrity of the Specifications

The template is used to format your paper and style the text. All margins, column widths, line spaces, and text fonts are prescribed; please do not alter them. You may note peculiarities. For example, the head margin in this template measures proportionately more than is customary. This measurement and others are deliberate, using specifications that anticipate your paper as one part of the entire proceedings, and not as an independent document. Please do not revise any of the current designations.

Scheduling & Resource Management in Edge Infra Companies



- **Edge computing value proposition:** The emerging concept of “observability,” which refers to the ability to closely monitor a far-flung platform, is quickly becoming a must-have for enterprise customers.

Microsoft Azure

- Microsoft is focused on winning big market share in edge, and is investing accordingly.

MobileEdge

- Edge is an environment that prizes managing and monitoring application workloads across regions.
- secondary units (in parentheses). An exception would be the use of English units as identifiers in trade, such as “3.5-inch disk drive”.
- Avoid combining SI and CGS units, such as current in amperes and magnetic field in oersteds. This often leads to confusion because equations do not balance dimensionally. If you must use mixed units, clearly state the units for each quantity that you use in an equation.
- Do not mix complete spellings and abbreviations of units: “Wb/m²” or “webers per square meter”, not “webers/m²”. Spell out units when they appear in text: “. . . a few henries”, not “. . . a few H”.

Use a zero before decimal points: “0.25”, not “.25”.
Use “cm³”, not “cc”. (bullet list) **ADLINK**



Identify applicable funding agency here. If



Edge computing value proposition: ADLINK's core focus is embedded computing; this and its international presence make it ideal for an edge project that spans global borders.

D. Equinix EQUINIX

Equinix is the largest American data center provider, as well as the largest around the world.

E. Mutable mutable the public edge cloud

Edge computing value proposition: Mutable's mission is to get edge computing infrastructure close to remote processors – very close. It uses "micro" data centers to support applications on its platform.



F. AWS Edge

Edge computing value proposition: As the leader in cloud computing, AWS is investing heavily in edge computing as well, which means they offer an extensive toolset.



G. Vapor IO

strategy in the edge world, in which cooperative networking is so essential.



Schneider Electric

Edge computing value proposition: A large player with the expertise and personnel for heavy duty edge computing projects, Schneider offers an extensive menu of enterprise IT services to support edge deployments.



We Connect the Things.

Clear Blade is another company purely focused on IoT and the edge. Clear Blade Edge allows customers to develop compute services and solve business problems from a single platform.



Challenges in scheduling & resource management for Edge Infrastructures.

1) **1. Network bandwidth**

Network bandwidth shifts as enterprises move compute and data to the edge.

2) **2. Distributed computing**

3) *Distributed compute in a remote micro data center can be just as resource-intensive as in a centralized data center*

4) **3. Latency**

By locating compute at the edge -- where compute is closer to the data that is collected -- application latency is reduced along with decision-making latency.

5) **4. Security and accessibility**

With compute and applications centralized in a data center, enterprises can standardize both technical security and physical security, building a virtual wall around the resources.

6) **5. Backup**

Network bandwidth requirements will be just as critical as storage media considerations when deciding how to protect these assets because backup over the network may not make sense

7) **6. Data accumulation**

Data is a key business asset, and collecting it at the edge brings new challenges and can create liabilities if it's not handled in accordance with existing data handling rules.



8) **Control and management**

Ideally, enterprises will use newer orchestration tools to help manage and control applications consistently, regardless of location.

9) **Scale**



Adding more connected devices at the edge increases the overall scale for everything IT teams work with. Edge infrastructure isn't simply about more servers at the edge, but an increase in scale across all IT disciplines.

CONCLUSION

In this survey, we conduct a systematic and comprehensive review of scheduling and resource management in edge infrastructure. First, we lay the groundwork for the entire overview by elaborating on two fundamental questions of why resource scheduling is needed and what exactly resource scheduling refers to edge infrastructure. Second, we present the architecture and different collaborative manners for resource scheduling. Third, an in-depth overview of research issues and research techniques in resource scheduling is presented, which is the prominent effort of this survey. In this survey, we conduct a systematic and comprehensive review of resource scheduling in edge infrastructure. Regarding the key research issues, we first introduce a unified offloading model for edge infrastructure. Then we summarize the current works from three research aspects including computation offloading, resource allocation, and resource provisioning. Regarding the key techniques, based on two operation modes, namely, centralized and distributed modes, the state-of-art works are investigated and explicitly categorized.

Citation

Vasileios Karagiannis, Stefan Schulte, undefined, 2020 IEEE 4th International Conference on Edge infrastructure. 10.1109/CCGrid51090.2021.00078, (649-659), (2021).

C.-H. Hong and B. Varghese, "Resource management in fog/edge computing: A survey on architectures infrastructure and algorithms", *ACM Comput. Surveys*, vol. 52, no. 5, pp. 1-37, 2019..

REFERENCE

1. Mohammad Aazam and Eui-Nam Huh. 2014. Fog computing and smart gateway based communication for cloud things
Parosh Aziz Abdulla and Richard Mayr. 2009. Minimal cost reachability/coverability in priced timed petri nets. In Proceedings of the International Conference on Foundations of Software Science and Computations.
- Mohammad Aazam and Eui-Nam Huh. 2015. Fog computing micro datacenter based dynamic resource estimation and pricing model for IoT. In Proceedings of the IEEE 29th International Conference on Advanced Information Networking and Applications.
Saumitra Aditya and Renato J. Figueiredo. 2017. Frugal: Building degree-constrained overlay topology from social graphs. In Proceedings of the IEEE 1st International Conference on Fog and Edge Computing





Raja Wasim Ahmad, Abdullah Gani, Siti Hafizah Ab Hamid, Muhammad Shiraz, Abdullah Yousafzai, and Feng Xia. 2015. A survey on virtual machine migration and server consolidation frameworks for cloud data centers Saúl Alonso-Monsalve, Félix García-Carballeira,

Alejandro Calderón. 2018. A heterogeneous mobile cloud computing model for hybrid clouds. Fut. Gen. Brian Amento, Bharath Balasubramanian, Robert J. Hall, Kaustubh Joshi, Gueyoung Jung, and K. Hal Purdy. 2016. FocusStack: Orchestrating edge clouds using location-based focus of attention.

Christos Anagnostopoulos. 2014. Time-optimized contextual information forwarding in mobile sensor networks. J. Parallel and Distrib.

Miguel Báguena, George Samaras, Andreas Pamboris, Mihail L. Sichitiu, Peter Pietzuch, and Pietro Manzoni. 2016. Towards enabling hyper-responsive mobile apps through network edge assistance. In Proceedings of the 13th IEEE Consumer Communications & Networking

David H. Bailey, Eric Barszcz, John T. Barton, David S. Browning, Robert L. Carter, Leonardo Dagum, Rod A. Fatoohi, Paul O. Frederickson, Thomas A. Lasinski, Rob S. Schreiber, et al. 1991. The NAS parallel benchmarks summary and preliminary results. In Proceedings of the 1991 Paul Barham, Boris Dragovic, Keir Fraser, Steven Hand, Tim Harris, Alex Ho, Rolf Neugebauer, Ian Pratt, and Andrew Warfield.

Luca Becchetti, Alberto Marchetti-Spaccamela, Andrea Vitaletti, Peter Kortweg, Martin Skutella, and Leen Stougie. 2009. Latency-constrained aggregation in sensor networks.

