

Agile Business Leadership Methods for Industry 4.0

This page intentionally left blank

Agile Business Leadership Methods for Industry 4.0

EDITED BY

DR BULENT AKKAYA

Manisa Celal Bayar University, Turkey



United Kingdom – North America – Japan – India – Malaysia – China

Emerald Publishing Limited
Howard House, Wagon Lane, Bingley BD16 1WA, UK

First edition 2020

Copyright © 2020 Emerald Publishing Limited

Reprints and permissions service

Contact: permissions@emeraldinsight.com

No part of this book may be reproduced, stored in a retrieval system, transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise without either the prior written permission of the publisher or a licence permitting restricted copying issued in the UK by The Copyright Licensing Agency and in the USA by The Copyright Clearance Center. Any opinions expressed in the chapters are those of the authors. Whilst Emerald makes every effort to ensure the quality and accuracy of its content, Emerald makes no representation implied or otherwise, as to the chapters' suitability and application and disclaims any warranties, express or implied, to their use.

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

ISBN: 978-1-80043-381-6 (Print)

ISBN: 978-1-80043-380-9 (Online)

ISBN: 978-1-80043-382-3 (Epub)



ISOQAR certified
Management System,
awarded to Emerald
for adherence to
Environmental
standard
ISO 14001:2004.

Certificate Number 1985
ISO 14001



INVESTOR IN PEOPLE

Acknowledgements

I would like to express my gratitude to Emerald Publishing and its publishing team for all their help and support.

I would also like to thank all the contributing authors and reviewers for their time and effort.

My gratitude also goes to my family for their encouragement and support.

Special thanks to Mr Andrew Peart, Ms Fiona Allison and Mr David Jak Mulvaney for helping with the process.

This page intentionally left blank

List of Contents

List of Tables	<i>ix</i>
List of Figures	<i>xi</i>
List of Contributors	<i>xiii</i>
About the Authors	<i>xv</i>
Chapter 1 A Review of Modern Leadership Styles in Perspective of Industry 4.0 <i>Hasan Cinnioğlu</i>	<i>1</i>
Chapter 2 Industry 4.0 and Marketing 4.0: In Perspective of Digitalization and E-Commerce <i>Huseyin Guven</i>	<i>25</i>
Chapter 3 Agile Leadership Model in Health Care: Organizational and Individual Antecedents and Outcomes <i>Safiye Şahin and Furkan Alp</i>	<i>47</i>
Chapter 4 Industry 4.0 and International Trade: The Case of Turkey <i>Deniz Erer and Elif Erer</i>	<i>69</i>
Chapter 5 Industry 4.0 and its Role on Labour Market: A Comparative Analysis of Turkey and European Countries <i>Elif Erer and Deniz Erer</i>	<i>85</i>
Chapter 6 Digital Taylorism as an Answer to the Requirements of the New Era <i>Ayşe Günsel and Mesut Yamen</i>	<i>103</i>

Chapter 7 Leadership Styles and Female Managers in Perspective of Agile Leadership <i>Bulent Akkaya and Sema Üstgörül</i>	121
Chapter 8 The Effect of Industry 4.0 On Accounting In Terms of Business Management <i>Ece Çevik Özcan and Bulent Akkaya</i>	139
Chapter 9 Biomimicry and Agile Leadership in Industry 4.0 <i>Ayşe Meriç Yazıcı</i>	155
Chapter 10 The Role of Agile Leadership in Organisational Agility <i>Melis Attar and Aleem Abdul-Kareem</i>	171
Chapter 11 Strategic Leadership In Perspective of Industry 4.0 <i>Semra Tetik</i>	193
Chapter 12 Industry 4.0 and Agile Firms <i>Erdal Şen and Necmiye Tülin Irge</i>	209
Chapter 13 Leadership and Industry 4.0 as a Tool to Enhance Organization Performance: Direct and Indirect Role of Job Satisfaction, Competitive Advantage and Business Sustainability <i>Kittisak Jermsittiparsert</i>	233
Chapter 14 Factors of Successful Women Leadership in Asian: Moderating Role of Political Differences and Organization Culture <i>Kittisak Jermsittiparsert</i>	259
Chapter 15 Era of Industry 4.0 Technologies and Environmental Performance of Thailand's Garment Industry: Role of Lean Manufacturing and Green Supply Chain Management Practices <i>Kittisak Jermsittiparsert, Sudawan Somjai and Krisada Chienwattanasook</i>	285
Chapter 16 The Interaction among Organizational Flexibility, Competitive Strategy and Competitive Advantage: A Path Analytic Study <i>Yeşim Koçyiğit and Akif Tabak</i>	303
Index	327

List of Tables

Chapter 2

Table 1.	Differences Between Digital Marketing and Traditional Marketing.	35
----------	--	----

Chapter 3

Table 1.	Definitions and Sub-dimensions of Agile Leadership.	49
----------	---	----

Chapter 5

Table 1.	Stable, New and Redundant Roles.	95
----------	----------------------------------	----

Chapter 12

Table 1.	Industry 4.0 Applications in Pilot Sectors.	216
Table 2.	Agility Capabilities.	221

Chapter 13

Table 1.	Data Screening.	246
Table 2.	Factor Loadings.	247
Table 3.	Construct Reliability and Validity.	248
Table 4.	Cross-loadings.	248
Table 5.	Direct Effect.	250
Table 6.	In-direct Effect.	250

Chapter 14

Table 1.	Construct Reliability and Validity (Thailand).	272
Table 2.	Construct Reliability and Validity (Malaysia).	272
Table 3.	AVE Square Root (Thailand).	272
Table 4.	AVE Square Root (Malaysia).	273
Table 5.	Results (Thailand).	274
Table 6.	Results (Malaysia).	275
Table A1.	Data Screening (Thailand).	281

Table A2.	Data Screening (Malaysia).	282
Table A3.	Cross-loadings (Thailand).	283
Table A4.	Cross-loadings (Malaysia).	284

Chapter 15

Table 1.	Number of Production Factories, Trading Companies and Retailers.	287
Table 2.	Descriptive Statistics.	294
Table 3.	Factor Loading and Convergent Validity.	295
Table 4.	Discriminant Validity.	296
Table 5.	Confirmatory Factors Analysis and KMO.	296
Table 6.	Structural Equation Modeling.	296

Chapter 16

Table 1.	Factor Analysis for Organizational Flexibility Dimension.	310
Table 2.	Compliance Indicators of Organizational Flexibility Model.	311
Table 3.	Factor Analysis for Competition Strategies.	312
Table 4.	Coincident Indicators of Factor Model Used in Competitive Strategies.	315
Table 5.	Factor Analysis for Perceived Competitive Advantage.	316
Table 6.	Coincident Indicators of Perceived Competitive Advantage Factor Model.	317
Table 7.	The Descriptive Statistics Related to Variables.	318
Table 8.	Impact Way Coincident Indicators of Organizational Flexibility on Perceived Competitive Advantages.	320
Table 9.	Regression Weights for the First Model.	321
Table 10.	Regression Weights Related to Significant Relations.	322
Table 11.	The Consequences of Goodness of Fit of Significant Relationship Model.	323

List of Figures

Chapter 3

Fig. 1. Agile Leadership Model in Health Care Services.	54
---	----

Chapter 4

Fig. 1. Total Export and Export in Manufacturing Sector (Thousand US Dollar).	71
Fig. 2. Export of Manufacturing Products in Terms of Technology Density (Thousand US Dollar).	72

Chapter 5

Fig. 1. Jobs at Risk Automation in Turkey and European Countries.	95
Fig. 2. Unemployment Rate, Aged 15 and Over, in Turkey and European Countries.	97
Fig. 3. Population by Educational Attainment Level, From 15 to 64 years, %, for Turkey and European Countries.	98

Chapter 12

Fig. 1. The Conceptual Model for Implementing Agility.	219
Fig. 2. Agile Wheel Reference Model (AWRM).	222
Fig. 3. Analyzing the Need of a Company to be Agile.	225

Chapter 13

Fig. 1. Contribution of Thai SMEs.	234
Fig. 2. Issues in Thai SMEs.	235
Fig. 3. Theoretical Framework of the Study Showing the Relationship Between Leadership Style, Industry 4.0, Job Satisfaction, Competitive Advantage, Business Sustainability and Organization Performance.	236
Fig. 4. Leadership Styles.	237
Fig. 5. Emergence of Industry 4.0.	242
Fig. 6. Structural Model.	245
Fig. 7. Measurement Model.	249

Chapter 14

Fig. 1. Theoretical Framework of the Study Showing the Relationship Between Learning Autonomy, Emotional Intelligence, Political Differences, OC and Successful Women Leadership.	261
Fig. 2. Measurement Model (Thailand).	271
Fig. 3. Measurement Model (Malaysia).	271
Fig. 4. Structural Model (Thailand).	273
Fig. 5. Structural Model (Malaysia).	274
Fig. 6. Moderation Effect of OC Strengthen the Positive Relationship Between Emotional Intelligence and Successful Women Leadership (Thailand).	276
Fig. 7. Moderation Effect of Political Differences Weaken the Positive Relationship Between Emotional Intelligence and Successful Women Leadership (Malaysia).	276

Chapter 15

Fig. 1. Apparel Industry Retail Value in Thailand.	286
Fig. 2. Research Model.	292
Fig. 3. CFA.	297
Fig. 4. SEM.	297

Chapter 16

Fig. 1. Research Hypotheses.	307
Fig. 2. Confirmatory Factor Model for Organizational Flexibility.	311
Fig. 3. First Level Confirmatory Factor Model for Competitive Strategies Used.	313
Fig. 4. Second Level Confirmatory Factor Model for Competitive Strategies Used.	314
Fig. 5. Confirmatory Factor Model for Perceived Competitive Advantage.	317
Fig. 6. Model of Impact on Perceived Competitive Advantages of Organizational Flexibility.	319
Fig. 7. Relations Between Variables in the Detailed Model.	320
Fig. 8. Model Showing Significant Relations.	322

List of Contributors

Bulent Akkaya, Manisa Celal Bayar University, Turkey

Aleem Abdul-Kareem, Selcuk University, Konya, Turkey

Furkan Alp, İstanbul Aydın University, Turkey

Melis Attar, Selçuk University, Turkey

Krisada Chienwattanasook, Rajamangala University of Technology Thanyaburi, Thailand

Hasan Cinnioğlu, İskenderun Technical University, Turkey

Deniz Erer, Independent Researcher

Elif Erer, Independent Researcher, Turkey

Ayşe Günsel, Kocaeli University, Turkey

Huseyin Guven, Karabaglar Guidance and Research Center, Turkey

Necmiye Tülin İrge, İstanbul Aydın University, Turkey.

Kittisak Jermsttiparsert, Chulalongkorn University, Thailand

Yeşim Koçyiğit, Istanbul Gelisim University, Turkey

Ece Çevik Özcan, Manisa Celal Bayar University, Turkey

Safiye Şahin, Istanbul Medeniyet University, Turkey

Erdal Şen, İstanbul Aydın University, Turkey

Sudawan Somjai, Suan Sunandha Rajabhat University, Thailand

xiv List of Contributors

Akif Tabak, Izmir Katip Celebi University, Turkey

Semra Tetik, Manisa Celal Bayar University, Turkey

Sema Üstgörül, Manisa Celal Bayar University, Turkey

Mesut Yamen, Kocaeli University, Turkey

Ayşe Meriç Yazıcı, Istanbul Aydın University, Turkey

About the Authors

Bulent Akkaya is from Manisa Celal Bayar University, Manisa. He received his Bachelor's degree in Teaching English Department in 2006 in Kocaeli University and received his Master's degree in 2013 in Business Administration Department in Celal Bayar University. In 2018, he obtained his PhD in Business Administration Management with a specialisation in Management from İzmir Katip Çelebi University. He works as Dr Lecturer in the Department of Office Management-Executive Assistant of the Manisa Celal Bayar University in Turkey. His research interests comprise networks and partnerships in diverse disciplines. He has been working on dynamic capabilities, agile leadership, Industry 4.0 and quality of management in contemporary enterprises. He worked as a researcher in four projects and as an executive in a project. He published many articles and book chapters both in Turkish and English.

Aleem Abdul-Kareem is a PhD student in Business Administration at Institute of Social Sciences of Selçuk University, Konya, Turkey. He holds BSc in Management Education and Master of Business Administration from the University of Education, Winneba, Ghana and Jimma University, Ethiopia, respectively. He is a Ghanaian by birth. His research interests focus on innovation, organisational behaviour, human resources management and leadership styles. He worked as a Research Assistant at the University of Education, Winneba, and published articles relating to talent management practices, organisational climate, organisation-based self-esteem and corporate social responsibility.

Furkan Alp is from Istanbul Aydın University, Turkey. He graduated from Healthcare Management at Kırklareli University. Now, he continues his Master's degree at Istanbul Medeniyet University. Meanwhile, he works as a Research Assistant at Istanbul Aydın University.

Melis Attar is an Assistant Professor in International Management division in the Department of International Trade at Selçuk University, Konya, Turkey. She received her BSc degree in Economics at Koç University, Istanbul, Turkey and has an MSc in International Management from Essex University, Essex, UK. She completed her PhD in Business Management at Selçuk University, Turkey. Her doctoral thesis is about leadership styles and organisational ambidexterity in Turkish banking sector. Her research interests are on the field of contemporary leadership theories, organisational behaviour, international management,

innovation, sustainability, strategic management and agility. She has also successfully completed a course of study offered by USMx, an online learning initiative of University System of Maryland on Agile Leadership Principles on 15 October 2019.

Krisada Chienwattanasook is from Faculty of Business Administration, Rajamangala University of Technology Thanyaburi, Thailand. He holds a Doctor of Business Administration from Burapha University, Thailand. He is a Lecturer at the Department of Management and the Associate Dean for Research and Development Services of Faculty of Business Administration, Rajamangala University of Technology Thanyaburi. His research areas are statistical analysis, business research, organisational behaviour, strategic management and innovation management.

Hasan Cinnioğlu is from İskenderun Technical University, Faculty of Tourism, Hatay/Turkey. He is graduated from Akçakoca School of Tourism and Hotel Management, Abant İzzet Baysal University. He completed his Anadolu University Tourism Management Master's Program in 2006 and got his PhD from Çanakkale Onsekiz Mart University, Department of Tourism Management in 2018. He works in Faculty of Tourism Management of Iskenderun Technical University as an Assistant Professor. His research activities focus on leadership, organisational behaviour and tourism management.

Deniz Erer, PhD, is an Independent Researcher. She graduated from the Ege University Doctorate Program in Economics in 2018. Her PhD thesis is relating to the determinants and of carry trade activities and effects of it in Turkey, BRICS, USA and England economies. She is an Economist having the technical skills on econometric modelling and applied econometrics. Her research areas are exchange rates, international trade, international financial markets and monetary policy.

Elif Erer, PhD, is an Independent Researcher. She is an Economist with technical skills on the econometric modelling of the economy through time series models. Her current research agenda is focussed on using these skills to construct models of macroeconomic subjects such as inflation, growth, unemployment, exchange rate and financial markets. She is graduated from the Ege University Doctorate Program in Economics in 2018. Her PhD thesis is relating to public debt management in terms of micro and macro perspectives.

Ayşe Günsel is an Associate Professor at Management Department in Kocaeli University. She attended her PhD at Gebze Institute of Technology, specialised in technology and innovation management. She has worked as a Postdoctoral Researcher at Sabancı University and she has been a Visiting Scholar at the University of Hertfordshire. She has published papers in journals such as *Journal of Product Innovation Management*, *Group Decision and Negotiation*, *European Planning Studies*, among other journals.

Huseyin Guven is from Karabağlar Guidance and Research Center, Turkey. He holds a PhD and is a Teacher at the Karabağlar Guidance and Research Center, Turkey. He also worked as a Lecturer at Manisa Celal Bayar University, Turkey. His fields of teaching and resource are related to Experiential Marketing, Sensory Marketing, Social Media Marketing and Digital Marketing. He holds his PhD in Marketing at Manisa Celal Bayar University (2019). He has published in various journals in Turkey and in abroad and also has participated in some projects and conferences. He is married and has two children.

Necmiye Tülin İrge is an Assistant Professor in Faculty of Economics and Administrative Sciences. She studies in management and marketing disciplines. Her PhD study is titled as: 'The role of leader-member interaction regarding the effect of trust in manager on motivation of the staff'. She worked in part-time at İstanbul University, Bahçeşehir University, Okan University and İstanbul Aydın University from 2005 to 2016 and in full-time at Yeni Yüzyıl University from 2010 to 2013. She started her career as an Assistant Professor in Faculty of Economics and Administrative Sciences, Department of Business Administration at İstanbul Aydın University in 2016. Prior her duties at the universities, she worked professionally in private companies. She teaches in the fields of management and marketing and has researched in these fields. She has recently focussed on leadership activities. Some of her studies in 2020 are: 'The effect of digital self abilities on innovation', 'Leadership in digital transformation: E-leadership and digital leadership' and 'Impact of empowering leadership on innovation'.

Kittisak Jermstiparsert is a Full Professor of Public Administration at School of Business Administration, Henan University of Economics and Law, China. He holds Ph.D. in Social Sciences (Political Science) from Kasetsart University, Thailand. He also is currently the Secretary General of Political Science Association of Kasetsart University and a part-time Researcher at Department for Management of Science and Technology Development, Ton Duc Thang University, Vietnam. His areas of expertise are political science, public and private management, international political economy and social research.

Yeşim Koçyiğit is from İstanbul Gelisim University. She graduated from Dumlupınar University, Faculty of Economics and Administrative Sciences, Department of Business Administration. Afterwards, she started to study for a Master's degree at Dumlupınar University, Institute of Social Sciences, Department of Management and Organisation. After graduating with a Master's degree in 2010, she was assigned as an Instructor to Dumlupınar University Hisarcık Vocational School. She started the Doctorate in 2013 and graduated from İzmir Kâtip Çelebi Çelebi University, Department of Business Administration in 2018. She has worked at İstanbul Gelisim Üniversitesi for three academic terms as an Assistant Professor. Her studies are in the fields of organisational behaviour, human resource management and strategic management. She has chapters on two books. First of all is about 'Organisational Behaviour' in a book which is named *Introduction to Business*. This book has been published by Gazi, which is an international

publishing firm in Turkey. Second is about ‘Building and Maintaining a Competitive Advantage in the Age of Industry 4.0’, which has been sent to Peter Lang to be published in September 2020.

Ece Çevik Özcan is from Manisa Celal Bayar University, Manisa. She is a PhD student in the Business Administration Department at Manisa Celal Bayar University. She holds a Master’s degree in Business Administration with a specialisation accounting from the Dokuz Eylül University of Izmir, Turkey, in which she explored value flow costing with lean production. She co-authored the article ‘Forensic Accounting: Competencies and Importance of Forensic Accounting Profession and Position in Turkey’ that deals with the features of fraud researcher. Her research interests centre around the investigation of applying international financial reporting standards, progress of accounting profession and fraud of accounting.

Safiye Şahin is from Istanbul Medeniyet University, Turkey. She completed her Master Degree in Istanbul University at the Department of Hospital and Health Institutions Management in 2010. From 2011 to 2017, she worked as a Lecturer at Kırklareli University. Meanwhile, she completed her PhD at the Department of Management and Organisation in Marmara University in 2016. She has been working at the Department of Health Management in Medeniyet University Health Sciences Faculty since 2017. Her research areas are health management and organisational behaviour, especially agile leadership, work–family issues, work engagement, mindfulness, thriving and job performance.

Erdal Şen is an Associate Professor in İstanbul Aydın University. He is a Teaching Professor in Faculty of Economics and Administrative Sciences, Department of Business Administration (Eng.) at İstanbul Aydın University in Turkey. He has worked extensively on the contemporary issues of Management and Strategy, Institutionalisation, Corporate Governance and Leadership and Entrepreneurship. His latest two publications are based on the conceptual contribution on the possible effects of the pandemic COVID-19 on social sciences field. He has been publishing books, articles and research papers about his own theory ‘Senism’ starting from year 2000 till today. He has been a teaching professor for more than 15 years within six different universities. These universities are: İstanbul Kültür University, İstanbul Arel University, İstanbul Gelişim University, Doğuş University, İstanbul Rumeli University and İstanbul Aydın University. However, he has worked within different sectors as a consultant and realised various social responsibility projects as a society volunteer.

Sudawan Somjai is an Assistant Professor and the Director of Doctor of Philosophy Program in Development Administration, Graduate School, Suan Sunandha Rajabhat University, Thailand, where she got her PhD in 2009. Her research areas are development administration, public and private administration, leadership and logistic & supply chain management.

Akif Tabak graduated from Gazi University MBA Program in 1997 and obtained his Ph.D. degree from the same branch at Karadeniz Technical University in 2004. He gave lectures on management, organizational behavior, and leadership in the Turkish Military Academy between 1998 and 2013. He has been a Prof. at the Department of Public Administration at Izmir Katip Çelebi University since 2013. He has many articles, books, and book chapters published.

Semra Tetik is an Associate Professor in Manisa Celal Bayar University, Turkey. She studied Business in Anadolu University and graduated from there in 1996. She obtained her Master's degree in Dumlupınar University on Human Resources in 2000 and her PhD in Manisa Celal Bayar University on Transformational Leadership in 2008. Since 1999, she has been working as a lecturer in Manisa Celal Bayar University Salihli Vocational School. She published about 35 scientific publications and about 40 presentations at scientific conferences. Her research interests include organisational behaviour, organisational psychology, leadership, emotional intelligence, mobbing, communication, stress management, organisational cynicism, organisational justice and entrepreneurship.

Sema Üstgörül is from Manisa Celal Bayar University, Faculty of Health Sciences. She graduated from Hacettepe University in 2007. She worked as a Nurse between 2007 and 2012. She received her Master's degree in 2012 from the Manisa Celal Bayar University. She has been working as a Lecturer of Department of Gynecology and Obstetrics Nursing at Manisa Celal Bayar University since 2012. Her fields of work are obstetrics and gynecology, gender equality and women's health.

Mesut Yamen is a PhD student at Kocaeli University's Management and Organisation Department. He completed his Master's degree in Science and Technology Policies in Gebze Institute of Technology Strategy Science Program. He has published articles on organisational learning and organisational change and leadership.

Ayşe Meriç Yazıcı is from Istanbul Aydın University, Post Graduate Education Institute, Istanbul. She completed her Master's degree at Istanbul Aydın University between 2013 and 2016. She continues her PhD in Business Administration at the same university. She works in the fields of space economy, astropolitics and biomimics. Her articles are published in international journals in the same fields. She is doing futuristic studies in many areas such as digitalisation and artificial intelligence. She is fluent in English and Russian.