

Table of Contents

Foreword	xiv
Preface.....	xv
Acknowledgment	xxi
Section 1 Sociotechnical Systems	
Chapter 1 A Metalearning Approach on Sociotechnical Systems Toward Improving Organizational Effectiveness	1
<i>Carlos Raul Navarro Gonzalez, Universidad Autónoma de Baja California, Mexico</i>	
<i>Mildrend Ivett Montoya Reyes, Universidad Autónoma de Baja California, Mexico</i>	
<i>Gabriela Jacobo Galicia, Universidad Autónoma de Baja California, Mexico</i>	
<i>Ismael Mendoza Muñoz, Universidad Autónoma de Baja California, Mexico</i>	
Chapter 2 Evaluation of Sociotechnical Systems in Managing Corporate Social Responsibility and Stakeholders' Engagement.....	15
<i>Toivo Niskanen, Ministry of Social Affairs and Health, Finland</i>	
Chapter 3 Socio-Technical Approaches for Optimal Organizational Performance: Air Navigation Systems as Sociotechnical Systems.....	39
<i>Tetiana Shmelova, National Aviation University, Ukraine</i>	
<i>Yuliya Sikirda, Flight Academy of National Aviation University, Ukraine</i>	
Chapter 4 A Sociotechnical Systems Approach Applying a Novel Taxonomy to a Survey for the Assessment of Safety Performance.....	71
<i>Toivo Niskanen, Ministry of Social Affairs and Health, Finland</i>	

Chapter 5	
Considerations of the Mental Workload in Socio-Technical Systems in the Manufacturing Industry: A Literature Review	99
<i>Manuel Alejandro Barajas Bustillos, Autonomous University of Ciudad Juárez, Mexico</i>	
<i>Aide Aracely Maldonado-Macías, Autonomous University of Ciudad Juárez, Mexico</i>	
<i>Jorge Luis García-Alcaraz, Autonomous University of Ciudad Juárez, Mexico</i>	
<i>Juan Luis Hernández Arellano, Autonomous University of Ciudad Juárez, Mexico</i>	
<i>Liliana Avelar Sosa, Autonomous University of Ciudad Juárez, Mexico</i>	
 Section 2	
Macroergonomic Assessments	
Chapter 6	
Lean Production and Its Impact on Worker Health: Force and Fatigue-Based Evaluation Approaches.....	118
<i>Murray Gibson, Auburn University, USA</i>	
<i>Beata Mrugalska, Poznan University of Technology, Poland</i>	
Chapter 7	
Exceeding the Recommended Energy Limits Due to Age and Gender in Occupational Aerobic Workloads	128
<i>Cesar Omar Balderrama Armendariz, Universidad Autónoma de Ciudad Juarez, Mexico</i>	
<i>Jose de Jesus Flores Figueroa, Universidad Autónoma de Ciudad Juarez, Mexico</i>	
<i>Judith Lara Reyes, University of Texas at El Paso, USA</i>	
<i>Ludovico Soto Nogueira, Universidad Autónoma de Ciudad Juarez, Mexico</i>	
Chapter 8	
Burnout and Obesity in Middle and Upper Management in the Manufacturing Industry of Baja California	143
<i>Sharon Idali Macias Velasquez, Universidad Autónoma de Baja California, Mexico</i>	
<i>Yolanda Angelica Baez-Lopez, Universidad Autónoma De Baja California, Mexico</i>	
<i>Aidé Aracely Maldonado-Macías, Universidad Autónoma de Ciudad Juárez, Mexico</i>	
<i>Jorge Limon-Romero, Universidad Autónoma de Baja California, Mexico</i>	
<i>Diego Tlapa, Universidad Autónoma de Baja California, Mexico</i>	
Chapter 9	
A Framework Designed for Macro-Ergonomical Analysis of Indian Farmers: Assessment and Analysis of Occupational Injuries of Agricultural Farmers of South Odisha in India	162
<i>Debesh Mishra, KIIT University, India</i>	
<i>Suchismita Satapathy, KIIT University, India</i>	
Chapter 10	
The Contribution of Neuroscience and Health Psychology to Macroergonomics: Focusing on Workers as Active Agents	184
<i>Miguel Angel Serrano-Rosa, Universidad de Valencia, Spain</i>	
<i>Francisco Molins, Universidad de Valencia, Spain</i>	

Section 3

Macroergonomic Applications

Chapter 11

Organizational Development in Improving Operations of a Language Center: Impact on Development of Students	203
--	-----

Luz Elena Tarango, Instituto Tecnológico de Ciudad Juarez, Mexico

Manuel Alonso Rodriguez-Morachis, Instituto Tecnológico de Ciudad Juárez, Mexico

Yolanda Frausto, Instituto Tecnológico de Ciudad Juárez, Mexico

Edgardo de Jesus Rojas, Instituto Tecnológico de Ciudad Juarez, Mexico

Marisela Lucero Gaytán, Instituto Tecnológico de Ciudad Juarez, Mexico

Chapter 12

Distribution of Food in a Specialized Hospital Using Ambient Intelligence to Improve a Model of Macroergonomics.....	231
--	-----

Alberto Ochoa Zeddatti, Universidad Autónoma de Ciudad Juárez, Mexico

Juan Luis Hernandez Arellano, Universidad Autónoma de Ciudad Juárez, Mexico

Gilberto Rivera, Universidad Autónoma de Ciudad Juárez, Mexico

Daniel Azpeitia, Universidad Autónoma de Ciudad Juárez, Mexico

Luis Fernando Maldonado, Universidad Autónoma de Querétaro, Mexico

Chapter 13

Trends in Macroergonomics Applications for Improved Work Systems	242
--	-----

Karina Cecilia Arredondo, Universidad Autónoma de Baja California, Mexico

Arturo Realyvásquez, Instituto Tecnológico de Tijuana, Mexico

Guadalupe Hernández-Escobedo, Instituto Tecnológico de Tijuana, Mexico

Chapter 14

Implementation of an Intelligent Model Based on Machine Learning in the Application of Macro-Ergonomic Methods in a Human Resources Process Based on ISO 12207	261
--	-----

Edgar Cossio Franco, Universidad Enrique Díaz de León, Mexico

Jorge Alberto Delgado Cazarez, Universidad de Guadalajara, Mexico

Carlos Alberto Ochoa Ortiz Zeddatti, Universidad Autónoma de Ciudad Juárez, Mexico

Compilation of References	286
--	-----

About the Contributors	320
-------------------------------------	-----

Index.....	326
-------------------	-----