

Foundations of Economic Psychology

Kazuhisa Takemura

Foundations of Economic Psychology

A Behavioral and Mathematical Approach

 Springer

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Preface

This book provides an overview of the idea of economic psychology from behavioral and mathematical perspectives and related theoretical and empirical findings. Economic psychology is described briefly as the general term for descriptive theories to explain the psychological processes of microeconomic behaviors and macroeconomic phenomenon. As the studies of G. Katona who started economic psychology, G. H. A. Simon who won the Nobel Prize for economics in 1978, D. Kahneman, and R. Thaler who won the prize in 2002 and 2017, respectively, suggest, however, the psychological methodology and knowledge of economic psychology have been applied widely in such fields as economics, business administration, and engineering, and are expected to become useful in the future. This book will explain various behavioral and mathematical models of economic psychology related to microeconomic and macroeconomic phenomenon. Numerous models have been proposed to explain the psychological processes related to such economic phenomenon. This book will also introduce some new models that are useful to explain human economic behaviors. It ends with some speculation about the future of modern economic psychology while referring to their relation with fields related to neuroscience, such as neuroeconomics, that have been developed in recent years.

Economic psychology is recently widely recognized in many countries since Daniel Kahneman received the Nobel Prize in 2002. In fact, there are many researchers and students who are studying economic psychology in Europe and North America. Interest in economic psychology is increasing in Asian countries such as China, Taiwan, Singapore, Malaysia, Korea, and Japan. I think that many people are becoming concerned with economic psychology because they have recognized that standard economic policies and standard marketing policies sometimes fail to predict consumer's behaviors and decisions.

This book covers a range from classical to relatively recent major studies related to economic psychology. It comprises nine chapters—What is Economic Psychology (Chap. 1), Rational Choice and Revealed Preference (Chap. 2), Expected Utility Theory and Economic Behavior (Chap. 3), Nonlinear Utility Theory and Prospect Theory (Chap. 4), Mental Accounting and Framing (Chap. 5),

Multi-attribute Decision making Process in Economic Behavior (Chap. 6), Deployment on the Consumer's Interaction Research (Chap. 7), and Consumers' Preference Construction, Affects, and Neuroscientific Research (Chap. 8).

Chapter 1 introduces the concepts of economic psychology and historical perspectives of the research frameworks, such as the hermeneutic paradigm, utility theory paradigm, psychoanalytic paradigm, macroeconomic psychological paradigm, social psychological paradigm, behavioral decision theory paradigm, and behavioral economics paradigm, and explains that all of these are closely related to one another. Chapter 2 describes that a rational choice is based on the premise that at least the best option can be selected and the options can be ordered in descending order of preference from axiomatic properties such as completeness and transitivity, and provides an explanation of revealed preference concepts relation to the rational choice while presenting examples that do not satisfy transitivity, which is the premise of the ordinal utility concept. Chapter 3 highlights the relation to expected utility theory, which is often used in economics and psychology, and presents empirical research findings related to the axioms of expected utility theory and the Allais and Ellsberg Paradoxes. Chapter 4 introduces basis of the general expected utility of Choquet integral, and the prospect theory that Kahneman and Tversky proposed, and illustrates the economic phenomenon that is explainable using this theory.

Chapter 5 focuses on the economic psychology of mental accounting especially in price judgment where people organize and understand price information, and interprets the problems of mental accounting and framing by using the mental ruler model proposed by the author. Chapter 6 outlines the theoretical framework that describes the process of consumers' multi-attribute decision making and the method for its analysis, showing empirical and theoretical research findings. Chapter 7 explains game theory as a theoretical viewpoint to examine consumer interaction and discusses the research on happiness in relation to people's social welfare. Finally, Chap. 8 explains the consumer's preference construction and the influences of affects such as mood on the decision making process from the viewpoint of prospect theory and related models especially in the fields of economic psychology and neuroeconomics as neuroscientific research of economic behavior.

Reading this book requires no advanced expertise. Nonetheless, introductory knowledge of psychology, business administration, and economics and approximately high school graduate-level mathematics should improve a reader's comprehension of the content. In addition, each chapter includes corresponding references, which can be referred to when studying more details related to economic psychology.

This book is based on the Japanese book entitled "Economic Psychology: Psychological Foundations of Behavioral Economics" published by Baifukan Co., Ltd. in 2015. The information provided in this book has been also used for lectures at Waseda University, Gakushuin University, Rikkyo University, The University of Tokyo, Tokyo Institute of Technology, Nagoya University, Kansai University, Osaka University of Human Sciences, Osaka University, Kobe University, University of Tsukuba, Saint Petersburg State University, Russia, National Cheng

Kung University, Taiwan and Venice International University, Italy. Questions and answers exchanged with students at all of those places have contributed greatly to the compilation of this book. Particularly, I have received highly valuable opinions from graduate students taking the Takemura Seminar at Waseda University and from researchers in decision making studies through usual discussions. Above all, Mr. Hajime Murakami, Mr. Keita Kawasugi, Mr. Rammaru Watanabe, and Ms. Momo Tamura of Waseda University helped with some of the proofreading, corrections, and editing files of figures and tables. Ms. Tayeko Kondo of Baifukan gave me helpful comments to the Japanese book. The Springer team, especially the editor, Yutaka Hirachi, has been helpful from the inception of this book project.

The research discussions and workshops for the Experimental Social Science Project (headed by Prof. Tatsuyoshi Saijo at Kochi University of Technology) and Economic Behavior Project conducted under a Grant-in-Aid for Scientific Research on Priority Areas of The Ministry of Education, Culture, Sports, Science and Technology (No. 19046007), Grant-in-Aid for Scientific Research A (No. 24243061, No. 16H02050, No. 18H03641, and No. 19H00601), Grant-in-Aid for Scientific Research B (No. 16H03725, and No. 16H03676), Grant-in-Aid for Scientific Research C (No. 17K03637), Grant-in-Aid for Challenging Exploratory Research (No. 18K18570, and No. 18K18701), and Waseda University Grand-in-Aid for Research have allowed me to exchange opinions with researchers from various fields including experimental psychology, behavioral economics, social psychology, consumer psychology, and experimental economics. Professor Satoshi Fujii at Kyoto University, who has been conducting joint research on economic decision making for nearly two decades, also provided me with extremely informative advice and suggestions on a regular basis. A part of our joint research is introduced in this book. Professor Hidehiko Takahashi at Tokyo Medical and Dental University, Prof. Yutaka Nakamura at University of Tsukuba, Prof. Yoichiro Fujii at Meiji University, Prof. Takayuki Sakagami, Prof. Toshiko Kikkawa, the late Mr. Shigetaka Ohkubo at Keio University, Prof. Kaori Karasawa at the University of Tokyo, Prof. Naoko Nishimura at Shinshu University, Prof. Yutaka Matsushita at Kanazawa Institute of Technology, Prof. Mieko Fujisawa at Kanazawa University, Prof. Tsuyoshi Hatori at Ehime University, Prof. Yumi Iwamitsu at Kitasato University, Prof. Mikiya Hayashi at Meisei University, Prof. Takashi Ideno at Tokuyama University, Prof. Yuki Tamari at University of Shizuoka, Prof. Henry Montgomery at Stockholm University, Prof. Marcus Selart at the Norwegian School of Economics and Business Administration, Prof. Michael Smithson at the Australian National University, Prof. Yuri Gatanov at Saint Petersburg State University, Prof. Baruch Fischhoff at Carnegie Mellon University, Prof. Colin Camerer at California Institute of Technology, and Prof. Cheng-Ta Yang at National Cheng Kung University have given me useful comments for our joint research on economic decision making through daily practice, which also benefitted this book.

I have been participating in the 30-year-old Cognitive and Statistical Decision Making Research SIG (headed by Prof. Kazuo Shigemasa at Keio University) from its inception. Moreover, I continue to learn much from researchers in economic

psychology and decision studies such as Prof. Gerrit Antonides of Wageningen University, Prof. Tommy Gärling of Gothenburg University, Prof. David Leiser at Ben-Gurion University of the Negev, Prof. Tomasz Zaleskiewicz of SWPS University of Social Sciences and Humanities, Prof. Ola Svenson of Stockholm University, Prof. Shuzo Abe, Prof. Hiroo Sasaki, Prof. Mamoru Kaneko, Prof. Yukihiro Funaki, Prof. Tsuyoshi Moriguchi, Prof. Naoto Onzo, Prof. Kazumi Shimizu, Prof. Kenpei Shiina of Waseda University, Tetsuo Sugimoto of Sophia University, Prof. Mitsuro Nagano of Kyoto Tachibana University, Prof. Taizoh Motonishi, Prof. Yasuhiro Ukai of Kansai University, Prof. Manabu Akiyama of Kobe Gakuin University, and Prof. Makoto Abe of University of Tokyo.

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Finally, this book is the fruit of valuable advice from numerous people with whom I have become acquainted but whose names have not been put into print here. I am truly grateful for all of their support.

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About the Author

Kazuhisa Takemura is a Japanese psychologist and educator. Besides serving as a professor at the Department of Psychology, Waseda University, he is also director of the university's Institute for Decision Research, a professor at the Waseda MBA School, and a research fellow at the Waseda Research Institute for Science and Engineering.

He received his B.A. and M.A. from the Department of Psychology, Doshisha University, in 1983 and 1985, and received his Ph.D. (System Science) from Tokyo Institute of Technology in 1994, and an additional Ph.D. (Medical Science) from Kitasato University in 2013.

He has also worked abroad as a visiting researcher at: James Cook University, La Trobe University, and Australian National University (Australia); the Tinbergen Institute (the Netherlands); Gothenburg University and Stockholm University (Sweden); the University of Konstanz (Germany); and National Cheng Kung University (Taiwan). He was also a Fulbright Senior Researcher at the Department of Social and Decision Science, Carnegie Mellon University (USA) from 1999 to 2000, and a Visiting Professor at the Department of Psychology, St. Petersburg State University (Russia) in 2008.

His main research area is human judgment and decision making, especially the mathematical modeling of preferential judgment and choice. He received a Hayashi Award (Distinguished Scholar) from the Behaviormetric Society in 2002, an Excellent Paper Award from Japan Society of Kansei Engineering in 2003, Book Awards from the Japanese Society of Social Psychology (in 2010) and the Behaviormetric Society (in 2016), and a Fellow Award from the International Association of Applied Psychology in 2018.

In the course of his career, he has taught extensively on behavioral decision theory, marketing, economic psychology, consumer behavior, social psychology, and psychometrics at many universities (Tokyo University, Osaka University, University of Tsukuba, Kobe University, Nagoya University, Tokyo Institute of Technology, Gakushuin University, Rikkyo University, Tokyo International University, and St. Petersburg State University).

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