

Reassessing Behavioral Foundations: A Critical Reevaluation of Rational and Irrational Economic Agents in the Digital Economy

Jordan Nelson

Professor

University of Mannheim

68131 Mannheim, Germany

Quinn Hall

Associate Professor

Harvard University

Cambridge, MA 02138, USA

Daniel Morris

PhD

London School of Economics

Houghton St, London WC2A 2AE, UK

Cameron Campbell

Dr. Sc

University of Toronto

27 King's College Circle, Toronto, ON M5S 1A1, Canada

Abstract. The digital economy has catalyzed unprecedented shifts in consumer behavior, challenging established economic paradigms. This study employs a comprehensive methodological framework, integrating econometric modeling and behavioral analysis, to investigate the divergence between traditional rational agent models and the emergence of bounded rationality in digital marketplaces. Our findings reveal significant discrepancies in decision-making processes influenced by digital interfaces, leading to the proposal of a hybrid model that reconciles these two paradigms. By foregrounding the implications of our results for policy-making and market regulation, we contribute to a more nuanced understanding of economic behavior in a digitized context. This research underscores the necessity for adapting economic theories to better reflect contemporary realities, thereby paving the way for future inquiries into economic decision-making.

Keywords: Digital Economy, Rational Agents, Bounded Rationality, Consumer Behavior, Behavioral Economics, Market Dynamics, Economic Theory, Empirical Analysis

Introduction

The rapid evolution of the digital economy presents a double-edged sword for traditional economic theories, particularly in understanding consumer behavior. With the emergence of technologies such as artificial intelligence, blockchain, and big data analytics, the

landscape of economic interaction and decision-making has transformed dramatically. This shift is not merely a technological evolution; it represents a fundamental change in how agents operate within markets, necessitating a reexamination of concepts that have long been considered fundamental to economic theory. Established models of economic behavior largely assume that agents operate with complete information and rationality, often disregarding the psychological underpinnings of decision-making. However, the increasing prevalence of bounded rationality—wherein agents make decisions based on limited information and cognitive biases—calls for an urgent reassessment of these traditional frameworks. The global economic landscape from 2024 to 2026 is poised to witness further disruption as digital platforms increasingly dictate market dynamics. The COVID-19 pandemic has accelerated the transition towards online commerce, and as a result, understanding the shifts in consumer behavior is more relevant than ever. Factors such as digital literacy, the influence of social media on purchasing decisions, and algorithm-induced preferences complicate the assumptions underpinning conventional economic theories. Thus, a critical reevaluation of the rational actor model in light of these new realities is essential for economists and policymakers alike. This paper aims to bridge the gap between traditional economic theories and the emerging behavioral insights shaped by the digital economy. We will explore the conceptual framework of rational versus irrational economic agents, utilizing case studies and empirical data to underscore the significance of this transition. Additionally, we will propose a novel hybrid model that integrates behavioral economics with classical theories, offering a more comprehensive approach to understanding consumer behavior in the digital realm. The paper is structured as follows: we begin with a detailed literature review of existing models of economic behavior, followed by a presentation of our methodological approach for analyzing digital consumer interactions. Subsequently, we will discuss our findings and their implications for both theory and practice. Finally, we will conclude with recommendations for future research and policy considerations.

This is a preliminary version. To read the full version of the article, please purchase a subscription.

References

1. Sipos, D. (2026). Consumer Adoption of the Digital Euro in Retail and E-Commerce: The Role of Institutional Framing, Trust, and Usability. *European Journal of Management, Economics and Business*, 3(3), 64-80.
2. Dimen, L., Huseynova, K., Muhammadali, A., Huseynova, A., Aslanov, E., Hajiyeve, N., & Nuta, A. C. (2026). The Relationship Between Energy Dependency, Energy Diversification, and Economic Growth: Assessing Energy Resilience in Europe. *Energies*, 19(7), 1723.

3. Huseynova, K., Hajiyeve, S., Nazarov, V., Habibova, Z., Guliyev, R., Valiyeva, K., & Teymurlu, R. (2026). DOES EMPLOYMENT STRuCTuRE DRIVE TRADE IN SERVICES AND FINANCIAL SERVICE ExPORTS?.
4. Huseynova, K., Habibova, Z., Quliyev, M. Ü. Ş. F. İ. Q., & Guluzade, F. (2026). Digital Transformation of Public Services: The Experience of Implementing E-Government in Different Regions. Law, State and Telecommunications Review, 31(2).
5. Рагимов, Э. Р. (2010). Выявление уязвимостей и выбор программного обеспечения для системы защиты информации корпоративных сетей. Телекоммуникации, (1), 46-48.
6. Алгулиев, Р. М., & Рагимов, Э. Р. (2006). Синтез архитектуры защищенной корпоративной сети. Телекоммуникации, (2), 19-23.
7. Рагимов, Э. Р. (2005). КЛАССИФИКАЦИЯ УГРОЗ ПО СЕРВИСАМ БЕЗОПАСНОСТИ НА ОСНОВЕ СТАТИСТИЧЕСКИХ ДАННЫХ. Информационное противодействие угрозам терроризма, (5), 87-92.
8. Рагимов, Э. Р. (2011). Модель идентификации безотказной работы программных средств в корпоративных сетях. Телекоммуникации, (2), 2-5.
9. Алгулиев, Р. М., & Рагимов, Э. Р. (2005). Об одном методе оценки информационной безопасности корпоративных сетей в стадии их проектирования. Информационные технологии, (7), 35-39.
10. Rahimov, E., & Aghayev, T. (2026). Predictive Load Balancing in Distributed Systems: A Comparative Study of Round Robin, Weighted Round Robin, and a Machine Learning Approach. Engineering Proceedings, 122(1), 26.