



ISSN: 3032-596X

# PROCEEDINGS

## THE 2<sup>ND</sup> INTERNATIONAL

CONFERENCE ON ECONOMICS, BUSINESS AND MANAGEMENT RESEARCH (ICEBMR)

**"Shaping the Sustainable Future: Trends and Insights in Economics, Business, Management, and Information Technology"**

**Vol 2, 2023**



**FACULTY OF ECONOMICS,  
SANATA DHARMA UNIVERSITY**

**PROCEEDINGS**  
**THE 2<sup>ND</sup> INTERNATIONAL CONFERENCE ON**  
**ECONOMICS, BUSINESS, AND MANAGEMENT**  
**RESEARCH (ICEBMR)**



**“Shaping the Sustainable Future: Trends and Insights in  
Economics, Business, Management, and Information  
Technology”**

December 2, 2023



Faculty of Economics  
Sanata Dharma University  
Yogyakarta

THE 2ND INTERNATIONAL CONFERENCE ON ECONOMICS, BUSINESS, AND  
MANAGEMENT RESEARCH (ICEBMR) “Shaping the Sustainable Future: Trends and  
Insights in Economics, Business, Management, and Information Technology”

Copyright © 2023

Faculty of Economics, Sanata Dharma University, Yogyakarta

---

REVIEWER:

Barli Bram, M.Ed., Ph.D

Maryness Patrick

Nickson Nazarenu Mwinuka

Michael T.S. Lee, Ph.D

Prof. Sudi Mungkasi, Ph.D

Dr. James J Spillane, SJ

Agapito C. Rubio Jr., DBA

T Handono Eko Prabowo, MBA, Ph.D.

Dr. Dick Sibbernsen

Prof. Jaihak Chung, Ph.D.

EDITOR IN CHIEF:

T. Handono Eko Prabowo, MBA, Ph.D.

EDITORIAL BOARD:

T. Handono Eko Prabowo, MBA, Ph.D.

Dr. Titus Odong Kusumajati, M.A.

Antonius Sumarwan, S.J., S.S., M.M., Ph.D.

Drs. Gregorius Hendra Poerwanto, M.Si.

Albertus Yudi Yuniarto, S.E., M.B.A.

Aprilla Suriesto Madaun, S.S., M.M.

KEYNOTE SPEAKER

Prof. (H.C.) Djauhari Oratmangun,

M.Ec., M.A.Com

Maria Rosaline Nindita Radyati, Ph.D.

Drs. Hari Suparwito, S.J., M.App.IT

Tamako Watanabe, M.A.

Prof. Jaihak Chung, Ph.D.

CONFERENCE DATE

December 2, 2023

e-PROCEEDINGS BOOK:

ISSN: 3032-596X

PUBLISHED BY



FACULTY OF ECONOMICS,

SANATA DHARMA UNIVERSITY

Jalan Affandi (Gejayan) Mrican, Yogyakarta

55281

Telp. (0274) 513301, 515253; Ext. 51513

## PREFACE

In the realm of academic and professional discourse, the International Conference on Economics, Business, and Management Research (ICEBMR) has emerged as a pivotal platform for the exchange of ideas, insights, and research findings. This preface welcomes participants to the eagerly anticipated 2nd edition of ICEBMR, an event that encapsulates the essence of collaboration, innovation, and intellectual exploration in the fields of economics, business, and management.

As we embark on the journey of the 2nd ICEBMR, it is with a sense of anticipation and excitement that we witness the conference's evolution as a dynamic space for scholars and practitioners alike. This edition aspires to build upon the success of its predecessor, offering an enriched program featuring distinguished keynote speakers, thought-provoking paper presentations, and interactive sessions that delve into the latest advancements and challenges shaping the global economic landscape. With a commitment to fostering interdisciplinary dialogues and fostering international connections, the conference stands poised to be a catalyst for transformative ideas and pragmatic solutions. In these rapidly changing times, the 2nd ICEBMR serves not only as a showcase of scholarly achievements but also as a nexus for forging connections that transcend borders. As we come together to explore the frontiers of economics, business, and management research, this conference invites participants to engage in meaningful conversations, share their expertise, and contribute to the collective pursuit of knowledge that holds the potential to shape the future of these crucial disciplines.

"May the second International Conference on Economics, Business, and Management Research (ICEBMR) be a crucible of inspiration and collaboration. In the spirit of Steve Jobs, let us 'innovate and push the boundaries of conventional thinking.' As we converge to share insights and engage in meaningful discussions, may these moments spark transformative ideas that contribute to the advancement of our disciplines. Remember, it is through the collective brilliance of this community that we can catalyze positive change and leave an indelible mark on the landscape of economics, business, and management."

T. Handono Eko Prabowo, MBA, Ph.D  
Organizing Committee

## TABLE OF CONTENTS

PREFACE .....	iii
TABLE OF CONTENTS .....	iv
IMPLEMENTATION OF CAPITAL MARKET SUPERVISION BY OTORITAS JASA KEUANGAN (OJK) TO ENHANCE INVESTOR PROTECTION AND PRINCIPLES OF JUSTICE.....	1
Diana Wiyanti <sup>1*</sup> , Ghina Aghina <sup>2</sup> , Dian Suryani <sup>3</sup>	
THE ROLE OF MEDIA ADVERTISING AND WORD OF MOUTH ON THE PURCHASE DECISION OF MINISO PRODUCTS IN PALEMBANG CITY .....	13
Christabel Michelle	
THE INFLUENCE OF BIG DATA ANALYTICS ON HUMAN RESOURCE MANAGEMENT STRATEGIES FOR COMPANY SUSTAINABILITY .....	25
Albin Moniago Simanjuntak <sup>1</sup> , Suyono Thamrin <sup>2</sup> , Sri Sundari <sup>3</sup>	
A THIRD WORLD PERSPECTIVE ON WORK IN HOSPITALITY .....	34
Professor James J. Spillane, S.J.	
ANALYSIS OF THE EFFECT OF ECONOMIC GROWTH AND FOREIGN DIRECT INVESTMENT ON ENVIRONMENTAL DEGRADATION IN ASEAN CASE STUDY 2016 – 2022.....	48
Yemima Septi Nugraheni <sup>1</sup> , Laurentius Bambang Harnoto <sup>2</sup>	
DEVELOPMENT OF CORPORATE VALUE CONCEPTS THROUGH ETHICAL BUSINESS ACCORDING TO CHRISTIAN LEGAL PRINCIPLES .....	56
Vicky Martinus Widjojo	
THE INFLUENCE OF RISK AVERSION ON BRAND LOYALTY WITH BRAND TRUST AND BRAND AFFECT AS MEDIATING VARIABLES.....	65
L. I Gusti Ayu Carla Tiffany <sup>1</sup> , Natasya Sharla Kirana <sup>2</sup> , Timotius FCW Sutrisno <sup>3</sup>	
HUMAN-CENTERED ECONOMICS: BRIDGING THE GAP BETWEEN ECONOMIC THEORY AND HUMAN WELL-BEING .....	73
Shibli Jamal Shariff Asad <sup>1*</sup> , Silvia Annisa <sup>2</sup>	
MAPPING THE PROCESS OF DEVELOPING PRIEST CANDIDATES AT THE ANGING MAMMIRI MAJOR SEMINARY YOGYAKARTA BASED ON THE BUSINESS MODEL CANVAS .....	99
Aprilla Suriesto Madaun <sup>1</sup> , T. Handono Eko Prabowo <sup>2</sup>	
OPTIMIZING EMPLOYEE SCHEDULING: IMPACTS ON PRODUCTIVITY, SATISFACTION, AND WORK LIFE BALANCE IN THE HOTEL INDUSTRY .....	110
Maryness Patrick	

JOB DESIGN DURING AND REDESIGNING AFTER COVID-19 IN HOSPITALITY INDUSTRY: A CRITICAL REVIEW.....	120
Edward Phabiano	
THE IMPACT OF WAITING LINES ON CUSTOMER SATISFACTION IN TOURISM COMPANIES.....	130
Nickson Nazarenus Mwinuka	
LAW AS A DRIVING TOOL IN ADVANCING INTERNATIONAL BUSINESS.....	139
Ousu Mendy	
THE ROLE OF SIX SIGMA IN HOSPITALITY INDUSTRY .....	147
William Paulo Msilu	
SOCIAL IMPACT STRATEGIES IN FAMILY-OWNED VENTURES: PATH TO SUSTAINABLE ENTREPRENEURSHIP .....	156
Shibli Jamal Shariff Asad	
THE EFFECT OF SERVICE CONVENIENCE AND SERVICE QUALITY ON CUSTOMER LOYALTY THROUGH CUSTOMER SATISFACTION .....	172
Bilqis Putri Azizah <sup>1</sup> , Ida Bagus Nyoman Udayana <sup>2</sup> , Agus Dwi Cahya <sup>3</sup>	
ANALYSIS OF SPILLOVER EFFECT ON GREEN STOCK, COMMODITY AND CRYPTOCURRENCY MARKETS DURING COVID-19 PANDEMIC AND RUSSIAN-UKRAINE WAR.....	184
Nico Alexander Handoyo <sup>1</sup> , Nuning Trihadmini <sup>2</sup>	
WEALTH AND VALUES: EXPLORING MONEY BELIEFS IN THE ARLONG PARK ARC OF ONE PIECE .....	195
Bara Satrio <sup>1</sup> , Ilsa haruti Suryandari <sup>2</sup> , Agustinus Tri Kristanto <sup>3</sup>	
IMPLEMENTATION OF INDUSTRIAL RELATIONS DISPUTE RESOLUTION IN THE INDUSTRIAL RELATIONS COURT IN REALIZING JUSTICE AND LEGAL CERTAINTY .....	205
Sri Nurcahyani	
ANALYSIS OF SDGs IMPLEMENTATION IN PROVINCIAL REGIONAL GOVERNMENT ORGANIZATIONS IN INDONESIA.....	215
Fransiskus Randa <sup>1</sup> , Jeane Lelyana Sereh <sup>2</sup>	
THE INFLUENCE OF FINANCIAL LITERACY, MATERIALISM, AND ALLOWANCE ON SAVING DECISION AND CONSUMPTIVE BEHAVIOR IN GENERATION Z .....	228
Lina Permatasari <sup>1</sup> , Wida Purwidiandi <sup>2</sup> , Erna Handayani <sup>3</sup> , Yudhistira Pradhipta Aryoko <sup>4</sup>	
PIONEERING SUSTAINABLE CAREERS: STUDENT PARTICIPATION, UNIVERSITY IMAGE, AND INSTITUTIONAL SUPPORT AT SANATA DHARMA UNIVERSITY ....	244
Sthefi Hasanudin <sup>1</sup> , Gregorius Cesario <sup>2</sup> , Januari Ayu Fridayani <sup>3</sup>	

THE DYNAMICS OF STUDENT ENGAGEMENT, UNIVERSITY IMAGE, AND INSTITUTIONAL SUPPORT IN FOSTERING PRO-ENVIRONMENTAL BEHAVIOR AMONG SANATA DHARMA UNIVERSITY STUDENTS ..... 255

Bryant Dwi Sutanto<sup>1</sup>, Marcella Renjana Wulandani<sup>2</sup>, Januari Ayu Fridayani<sup>3\*</sup>

THE BODY SHOP'S SUSTAINABLE INNOVATION: GREEN BUSINESS FOR SUSTAINABLE FUTURE..... 265

Jessica Kristanti Santoso<sup>1</sup>, Jeslyn Alvina Sarumaha<sup>2</sup>, Alexandra Vonda Patricia Sirait<sup>3</sup>, Vincent Cedric Cahyo Santoso<sup>4</sup>, Firma Sulistiyowati<sup>5</sup>

THE ROLE OF CUSTOMER SATISFACTION IN MEDIATING DISCOUNTS AND SERVICE QUALITY ON CUSTOMER INTENTIONS FOR WORD OF MOUTH: STUDY ON ENGLISH COURSE CUSTOMERS DISCOVERY ENGLISH JOGJA ..... 272

Rini Julia Agnes<sup>1</sup>, Brigitta Gaby Kumaralita<sup>2</sup>, Gloria Vanessa<sup>3</sup>, Luh Gita hari Dewi<sup>4</sup>

TRANSPARENCY AND ACCOUNTABILITY OF SCHOOL OPERATIONAL ASSISTANCE FUND MANAGEMENT IN SMK N 2 DEPOK YOGYAKARTA..... 285

Vincencia Eka Riyani<sup>1</sup>, Maria Goldensia Pawang<sup>2</sup>, Ignasia Lusiana Ambu Ate<sup>3</sup>, Fransiska Rahmayanti Kam<sup>4</sup>, Petrus Christoffer Anggelo Silalahi<sup>5</sup>, Yohanes Yuniur Erikson<sup>6</sup>, Anastasia Sophie Ayu Wulandari<sup>7</sup>, Regina Dentisia Deanetranderu<sup>8</sup>, Jessica Christanti Nata Ruron<sup>9</sup>, Aurelia Melinda Nisita Wardhani<sup>10</sup>

THE ROLE OF OPERATIONS CONSULTING IN ADDRESSING CHALLENGES FACING TOURISM AND HOSPITALITY INDUSTRY IN TANZANIA ..... 291

Prosper Wilson Mmari

PENTINGSARI TOURISM VILLAGE AS A TOURISM SOCIAL ENTERPRISE: EMBARKING ON THE PATH TO SUCCESSFUL TOURISM SOCIAL ENTREPRENEURIAL ACTIVITIES ..... 302

Prosper Wilson Mmari

FINANCIAL DECISION MAKING IN THE VIRTUAL WORLD OF MASSIVELY MULTIPLAYER ONLINE ROLE-PLAYING GAMES..... 318

Ilsa Haruti Suryandari

FINANCIAL ATTITUDE, BEHAVIORAL CONTROL, SELF-EFFICACY, AND FINANCIAL BEHAVIOR TOWARDS PAY LATER SERVICE USERS..... 333

Gracia Margaretha Meisya Carvallo<sup>1</sup>, Wisanggalih<sup>2</sup>, Suryaning Perwita Mandiri Putri<sup>3</sup>, Lidia Ratna Salwati<sup>4</sup>, Jerry Christofer<sup>5</sup>, Putu Bagus Dipa Andiniko<sup>6</sup>, Ester Marcelina Bau<sup>7</sup>, Fellicia Ravena<sup>8</sup>, Afriana Marselo<sup>9</sup>, Aurelia Melinda Nisita Wardhani<sup>10</sup>, Maria Bura<sup>11</sup>

THE MAPPING OF IFRS S1 AND S2 WITH SEOJK-16-2021 ..... 343

Amelia Setiawan<sup>1</sup>, Agung Nugroho Soedibyo<sup>2</sup>, Samuel Wirawan<sup>3</sup>, Hamfri Djajadikerta<sup>4</sup>, Haryanto Haryanto<sup>5</sup>, Sandra Faninda<sup>6</sup>

INTENTION TO REPORT VIOLATIONS THAT ARE INFLUENCED BY PERSONAL COST, PROTECTION TO WHISTLEBLOWERS, AND THE MATERIALITY LEVEL OF VIOLATIONS..... 354

Vincentius Hans Kristian<sup>1</sup>, Vincentius Seto Wicaksono<sup>2</sup>, Brina Andrianti<sup>3</sup>, Vanes Suta Magih<sup>4</sup>, Dominikus Raymond Soetedjo<sup>5</sup>, Firma Sulistiyowati<sup>6</sup>

FOSTERING SUSTAINABILITY AWARENESS AMONG SANATA DHARMA UNIVERSITY STUDENTS: THE ROLE OF PARTICIPATION, UNIVERSITY IMAGE, AND INSTITUTIONAL SUPPORT .....	362
Gary Stevevai <sup>1</sup> , Marcelina Estuningrum <sup>2</sup> , Januari Ayu Fridayani <sup>3</sup>	
ANALYSIS OF EXTERNAL AND INTERNAL FACTORS AS DETERMINANTS OF INDONESIAN LOAN DISBURSEMENT IN COMERCIAL BANKS FROM 2017 TO 2022 .....	373
Yoga A. Pongtuluran	
THE INFLUENCE OF TRAINING AND JOB SATISFACTION ON EMPLOYEE PERFORMANCE WITH SELF-EFFICACY AS A MEDIATION VARIABLE IN PDAM BANTUL.....	384
Erwin Kurniawan <sup>1</sup> , Kusuma Chandra Kirana <sup>2</sup> , Tri Ratna Purnamarini <sup>3</sup>	
THE IMPACT OF INDIVIDUAL CHARACTER, JOB STRESS AND JOBINSECURITY, ON TURNOVER INTENTION: LITERATURE REVIEW .....	391
Rayna Aisah Anami <sup>1</sup> , Kusuma Chandra Kirana <sup>2</sup> , Syamsul Hadi <sup>3</sup>	
DETERMINANTS OF FINANCIAL LITERACY OF MSME OWNER IN INDONESIA	400
Cristalia Briliana Saliem <sup>1</sup> , Romauli Nainggolan <sup>2</sup>	
THE PHENOMENON OF THE CONSUMPTIVE CULTURE OF GENERATION Z IN CILANDAK SUB DISTRICT IN THE PERSPECTIVE OF BEHAVIORAL ECONOMICS IN THE NEW NORMAL ORDER.....	411
Natalia Enestasia Dasilva <sup>1</sup> , Yuliana Rini Hardanti <sup>2</sup> , Laurentius Bambang Harnoto <sup>3</sup>	
THE EFFECT OF SALES PROMOTION AND HEDONIC SHOPPING VALUE ON IMPULSE BUYING WITH POSITIVE EMOTION AS A MEDIATION VARIABLE ON VINCT STUFF PRODUCTS .....	422
Joan Setianie <sup>1</sup> , Azzahra Riastuti <sup>2</sup> , Patricia Lintang Ayu C <sup>3</sup> , Joseph Lay Amatya W <sup>4</sup>	
THE IMPLEMENTATION OF GOOD CORPORATE GOVERNANCE PRINCIPLES IN BANK NTT .....	436
Orenda Atira Maria Ladapase <sup>1</sup> , Eufrosina Sovia Halim <sup>2</sup> , Maria Quinatera Felisia <sup>3</sup> , Laura Rika Cantika <sup>4</sup> , Firma Sulistiyowati <sup>5</sup>	
THE EFFECT OF DISTINCTIVE CAPABILITY AND CONSUMER REQUIREMENT ON VALUE CREATION .....	444
Nurkardina Novalia <sup>1</sup> , Alhadi Yan Putra <sup>2</sup> , Ahmad Maulana <sup>3</sup> , Zahrudin Hodzay <sup>4</sup>	
THE ROLE OF SOCIAL MEDIA MARKETING AND PRIVACY CONCERN ON PERCEIVED RISK AND ONLINE PURCHASE BEHAVIOR IN FRESH MEAT PRODUCTS .....	453
Natasya Sharla Kirana <sup>1</sup> , L. I Gusti Ayu Carla Tiffany <sup>2</sup> , Timotius FCW Sutrisno <sup>3</sup>	
EFFECTS OF SUSTAINABLE AWARENESS TOWARDS SUSTAINABLE PRODUCT PURCHASE DECISION .....	462
Agatha Cintyalaras <sup>1</sup> , Maria Giannina <sup>2</sup> , Fania Setia <sup>3</sup> , Maria Angela Diva <sup>4</sup>	



INSURANCE COMPANY PERFORMANCE ANALYSIS BEFORE AND DURING THE COVID-19 PANDEMIC (STUDY OF GENERAL INSURANCE COMPANIES LISTED ON THE IDX IN 2018-2022) .....	473
Cindy Octavia Gunawan <sup>1</sup> , Nuning Trihadmini <sup>2</sup>	
INSTITUTIONAL CHANGE AND SUSTAINABLE TOURISM DESTINATION: THE STUDY OF LEDOK SAMBI TOURISM VILLAGE, PAKEMBINANGUN, SLEMAN, YOGYAKARTA .....	483
Yakobus Timur Setiyo Nugroho <sup>1</sup> , Antonius Budisusila <sup>2</sup>	
THE INFLUENCE OF FASHION INVOLVEMENT, POSITIVE EMOTIONS AND AFFILIATE MARKETING ON IMPULSE BUYING GENERATION Z .....	492
Maria Retno Utami <sup>1</sup> , Ferrynela Purbo Laksono <sup>2</sup> , Caecilia Wahyu Estining Rahayu <sup>3</sup>	
THE INFLUENCE OF CHANGES IN TECHNOLOGY AND ORGANIZATIONAL CULTURE ON INNOVATION PERFORMANCE THROUGH ORGANIZATIONAL .....	501
Ratri Wisnu Pertiwi <sup>1</sup> , Kusuma Chandra Kirana <sup>2</sup> , Eko Yulianto <sup>3</sup>	
THE IMPACT OF THE COVID-19 PANDEMIC ON THE LABOR SECTOR IN INDONESIA: A MULTIVARIATE ANALYSIS OF VARIANCE APPROACH.....	505
Florentinus Nugro Hardianto <sup>1</sup> , Shendy Ferika <sup>2</sup> , Media Putri Baroto <sup>3</sup>	
DIGITAL ANALYSIS OF TRENDS IN SUSTAINABLE DEVELOPMENT ISSUES.....	513
Florentinus Nugro Hardianto <sup>1</sup> , Veronica Karmelia <sup>2</sup>	
THE DEVELOPMENT OF THE CREATIVE ECONOMY IN INDONESIA BEFORE AND DURING THE COVID-19 PANDEMIC: A COMPARATIVE ANALYSIS .....	525
Florentinus Nugro Hardianto <sup>1</sup> , Helesa Yuliana A.S. <sup>2</sup> , Vincensius Nito Aji Prasetya <sup>3</sup>	
THE FINANCIAL PERFORMANCE OF TELECOMMUNICATIONS COMPANIES BEFORE AND DURING THE COVID-19 PANDEMIC: A MANOVA APPROACH .....	535
Florentinus Nugro Hardianto <sup>1</sup> , Christine Handayani Simanjuntak <sup>2</sup> , Elysabeth Sintya Armenita <sup>3</sup>	
PRODUCT DEVELOPMENT CAPABILITY AND MARKETING INNOVATIVENESS: EVIDENCE FROM INDONESIAN SMALL LOCAL FOOD PRODUCT .....	547
Berta Bekt Retnawati <sup>1</sup> , Okti Ruenda <sup>2</sup> , Bernadeta Irmawati <sup>3</sup> , Christiana Retnaningsih <sup>4</sup>	
DETERMINANTS OF FINANCIAL BEHAVIOUR OF MICRO, SMALL AND MEDIUM-SIZE ENTERPRISES OWNER IN INDONESIA .....	556
Nanda Catur Rochidayanti <sup>1</sup> , Romauli Nainggolan <sup>2</sup>	



# FINANCIAL DECISION MAKING IN THE VIRTUAL WORLD OF MASSIVELY MULTIPLAYER ONLINE ROLE-PLAYING GAMES

**Ilsa Haruti Suryandari**

*Sanata Dharma University*

Email: [ilsa.haruti@usd.ac.id](mailto:ilsa.haruti@usd.ac.id)

## **ABSTRACT**

*Virtual worlds grow opportunities for business that involve individual financial decision making. This research aims to explore the perspective of gamers on financial decision-making in the virtual world of Massively Multiplayer Online Role-Playing Games (MMORPGs). This is a qualitative descriptive study. Data from this research were collected within Ragnarok X: Next-Generation MMORPG application through virtual ethnography and interview with players. The data was analyzed by identifying financial activities in the game, identifying the player's view of money, and identifying the financial decision making of the players in the game. The result found three categories of financial activities in the game that were income generation, spending, and conversion of real-world money to virtual purposes. The gamers in this research show strong self-control of money that prevent them from overspending real-world money for in-game purposes. Players feel a high degree of agency in MMORPGs. Social influence has little effect on financial decision making. They utilized strategies to optimize their in-game income. Their spending patterns were dominated by avatar customization and character progression. These findings contribute to understanding the intersection between the virtual world of gaming, financial decision-making, and the broader perspectives of individuals on money.*

**Keywords:** *Financial, Decision Making, Virtual World, Gamers, MMORPGs*

## **1. Introduction**

The virtual world has played an important role in the growth of the global economy (Smith, 2017). It resulted in potential disruptive impact such as remote work and virtual collaboration, e-Commerce and digital transactions, cryptocurrencies and blockchain technologies, gig economy and digital platforms, artificial intelligence and automation, augmented reality and virtual reality, as well as virtual currencies and digital assets.

Gaming industry can be mentioned as an early experience of virtual world. It was started around 2000s that online gaming was arise due to the widespread adoption of the Internet. Massively Multiplayer Online Role-Playing Games (MMORPGs) like World of Warcraft gained popularity that develop gaming business into virtual item tradings (Achterbosch et al., 2008). In South East Asia, the emerging trend of MMORPGs was shown by the popularity of Ragnarok Online, which was pioneered by South Korean game developer, Gravity (Mansoor & Ahmad, 2015). Currently, Ragnarok has been recognized in 91 countries around the world.

The game market was previously primarily aimed at young male players. It expanded the market to children, teenagers, and families. The emergence of MMORPGs brings more older players either male or female players.

MMORPGs representing a virtual second life for adult players that offer a different experience of achievement and social connections (D. Carter, 2005; M. Carter et al., 2015). Similarly with the context of Isekai in the anime and manga, the players can feel their escape

from the constraint of the body and embrace an alternate world in the fantastical realms (Berger et al., 2016). It is not just a source of entertainment but the embodiment of diverse identities that enable them to conduct self-discovery and different social interactions.

As a social game, MMORPGs create virtual economy into virtual life (Castronova, 2002). The virtual economy in the MMORPGs often mirrors the real-world economies (Smith, 2017). The dominant feature of the economy is shown by demand and supply. MMORPGs also incorporate microtransactions that allow players to spend real-world money for in-game advantages (Metasurya & Berlianto, 2022; Rahiem & Fitrananda, 2021). The decision to make these microtransactions reflects financial behavior, as players weigh the perceived value of virtual goods against real-world costs. It gave opportunities to players to trade both in the game environment and across the boundary of the real and virtual world.

Players make choices about resource allocation, risk management, and investment strategies to help them reach their goal. The decision has a strong impact on the progression, wealth, and overall experience of the game characters. Events within MMORPGs, such as in-game wars, quests, or changes in game mechanics, can influence players behavior (Worth & Book, 2014). Players may adjust their financial strategies in response to these events, demonstrating adaptability and decision-making within the virtual economy. Sometimes, the financial decision in the game that builds their in-game financial skills is transferable to real-world scenarios (Baker et al., 2009a; Vaegs et al., 2010).

This research articles aims to explore the intricate relationship between gamers, their perspectives on money, and their financial decision-making in the game. This paper attempts to answer three main questions. First, this paper attempts to notice what activities in MMORPGs are involved in financial decision making. Second, we tried to discover how gamers view money in their life. Finally, we try to understand how players view and behave in game financial activities.

## **2. Literature Review**

### *2.1 Posthumanism*

Posthumanis is a perspective that challenges the previous traditional human centrist perspective. This idea comes to facilitate the eagerness of human beings to blend in the environment of virtual world. It is a perspective beyond human. In the digital landscape, posthumanist ideas come to life as individuals try to escape from the embodiment of a physical barrier and immerse themselves in virtual experiences that redefine the boundaries of existence (Braidotti, 2019).

Posthumanism supports the evolving relationship between technology and humanity and promotes the emergence of new, digitally mediated forms of consciousness.

Virtual worlds serve as posthumanis exploration laboratories. It can not be separated from the technology. Virtual world itself is a multiuser virtual environment(Baker et al., 2009b). There are more than one person accessing a digital platform simultaneously. The users are interacting each other and their behavior can affect the environment.

In the virtual worlds, users can adopt avatars, manipulate reality, and engage in unprecedented forms of communication (Castronova, 2003). Avatar act as a digital representative of human being in the virtual world. Human being can only interact in the virtual world through their avatar.

Different with real world where people can not control something about themselves such as gender, physical traits and familial relations, avatar gives people more control about themselves. People can choose freely about their gender, appearance, and relations. Avatar facilitates people to explore new world roles and dynamics that are not available for them in the real world. It helps people to explore their deep interest and develop new skills.

Virtual world gives higher degree of agency (Popan et al., 2023). People do not have to act as their given role. Many things can be optional. Avatar give access to the community where people feel like they are belonged. This let us to connect with like-minded people who shares similar interests. For some people, avatar give more comfort when people can socialize without the obligation to make eye contact or verbal speech. It is all based on the choice. Hence it brings more comfort and deep joy.

## *2.2 Virtual Economy*

The interaction of avatars in the virtual worlds sometimes involves trading virtual items. Thus, resulting in the emergence of virtual economy. Virtual economy cannot be separated from real-world economy, but with unique features (Castronova, 2002).

In the game environment, virtual economy is posited as a microcosm of economic systems. It is mainly built on the principles of demand and supply. Consequently, the virtual economy also has currency, markets, and consumer behavior (Drennan & Keeffe, 2007; H. Guo et al., 2019; Harris & Novobilski, 2008). The value of virtual assets is related to the scarcity, demand, and the impact of player-driven activities on market dynamics (Bayliss, 2018; Cheng, 2023; Dilla et al., 2013; Montone & Zwinkels, 2021).

The virtual economy is a complex system in the virtual world. It is also a decentralized type of economy, mostly driven by player interaction. It considers the influence of game design, game mechanics, and game structure in the way it provides the economic decision-making.

The growth of virtual economy in the game industry leads to other possibilities. Those include virtual real estate, digital art markets, and the growing field of nonfungible tokens (NFTs) (Chohan, 2021). In the future, digital space will become inseparable from human daily lives, there will be more intersection between virtual transaction and traditional economic systems.

Economic cannot work without trading tools which are currencies. Every virtual worlds has its own virtual currency (Castronova, 2020). Virtual currency assists gamers in executing their financial activities. Beside in game transactions, virtual currency act as a bridge of the game and real world.

## *2.3 Financial Decision Making*

Financial decision making is a basic skill that every individual must master to ensure well-being. Financial decision making is a choice made by an individual about money, such as spending, saving, investing, or any other economic activities. Financial decision making is a complex process influenced by various factors (de Bruijn & Antonides, 2022).

Financial decision-making theory examines the concept of limited rationality, recognizing that individual processes of information have limitations, and evaluates all options available (Frydman & Camerer, 2016). It explores the impact of humanistics, or mental shortcuts, that individuals make to simplify complex decisions and sometimes lead to systemic bias.

In the virtual world, the item is virtual. Players cannot take the item outside the virtual world. Moreover, the value of the items is mostly related only to the entertainment purpose (Prakosa & Sumantika, 2022; Yulius, 2017). The items do not have any influence on the human beings' basic needs. Therefore, the financial decision making is more complex than financial decision making in real world scenario (Guo & Barnes, 2009; Stefany, 2014; Wu & Hsu, 2018).

Fear, greed, excessive confidence, and loss fear are among the emotional factors that affect investment strategies, risk tolerance, and financial planning, and affect choices. Understanding the interaction between emotions and decision making is essential for a comprehensive understanding of the dynamics of financial decision making (Frydman & Camerer, 2016; Gärling et al., 2009).

Social influences also play an important role in the theory of financial decision-making (Zopounidis & Doumpos, 2002). This theory recognizes the influence of social norms, peer pressure, and cultural expectations on individual choice. The social context shaped the perception of financial success, risk behavior, and the overall approach to money management.

Framing effects, where the way information is presented, can have a significant impact on decision-making results. It examines how individuals react to benefits and losses, the influence of reference points, and the tendency to avoid perceived losses.

#### *2.4 Money Belief*

Financial decision making is not only guided by rational considerations, but is influenced by beliefs and attitudes about wealth, success, and financial well-being.

The theory of money belief comes from psychological and sociocultural dimensions that underpin human perceptions and attitudes towards money (Furnham & Murphy, 2019; B. T. Klontz et al., 2015). It is deeply intertwined with individual beliefs, culture, value, and experiences. Cultural influences, family values, and social expectations contribute to the formation of people’s mindset. Consequently, those will have an impact on decisions about spending, saving and saving.

Money is not just a medium of exchange, but also a symbol of status, success, and security. The symbolic value of money sometimes exceeds the intrinsic value of money and is related to a person’s self-worth and perceptions of others. Understanding the psychological foundations of money beliefs can empower people not only to consider economic factors, but also to make informed and mindful financial decisions, taking into account deep-rooted beliefs that form their financial behavior.

In the virtual world where people have higher degree of freedom to choose on their identity and behavior, there are also a threat of losing control especially on money. Some research explores the gaming addiction that involving the financial decision making either in the game or in the real world (Drummond et al., 2020; Garea et al., 2021; Haagsma et al., 2013). The situation that gaming world lead to the gambling of loot boxes is closely related with money disorder (Klontz et al., 2011). Players’ view and attitude towards money have important role in protecting themselves from overspending (Slecicka et al., 2020).

### **3. Research Methods**

The research uses a qualitative descriptive research design combined with a virtual ethnographic approach and interviews to explore the complexity of participants' experiences in the virtual environment. Qualitative descriptive research focuses on a direct and detailed description of events or phenomena and aims at providing an in-depth understanding of subjective realities in selected virtual spaces. At the same time, virtual ethnography integrates the social interaction, cultural dynamics, and behavior of participants in digital landscapes and captures the subtlety of virtual communities in a context-sensitive manner.

The virtual ethnography was conducted in South East Asian server of Ragnarok X; Next Generation. The chosen subserver was Bifrost which then merge with Crystals Waterfalls. All of the participants were from the Bifrost subserver.

The study participants consist of several players who agree to participate in the research. Those players fulfill several criteria; they have played the game more than a year; therefore, they have experienced most of the features of the game. All participants are adult players over 17 years of age who have their own job and fixed income. They log in daily into the game, and have joined any of the top 5 guilds in the subserver. All of the players communicate in the game mainly in English. The data was analyzed by identifying financial activities in the game, identifying the player's view of money, and identifying the financial decision making of the players in the game.

#### 4. Research Findings and Discussion

##### 4.1 Virtual World of MMORPGs

In this research, Ragnarok X: Next Generation (ROX) application supports the virtual world of Rune Midgard. It is a continent that consists of several major areas which represent every stage of the games in correspondence with the instance dungeon. The cities are Prontera, Izlude Island, Moroc, Alberta, Payon, Geffen, Glast Heim, Al De Baran, Comodo, Umbala, and Juno.

There are three types of major currency in this game, which are zeny, crystals, and diamonds. Virtual economy in this virtual world of ROX is built by interaction between players and non-playable character (NPC). The trading activities are conducted in the exchange center, the merchant NPCs and the merchant players' stalls. In this game, only the merchants job class can make direct transactions between players.



Figure 1. Map of Rune Midgard

##### 4.2 Players Description

The players in ROX – Bifrost subserver were from five different South East Asian countries, mainly Thailand and Philippine. Participants in this research were nine players from five different countries. Those participants were Valeya from Indonesia, Timy from Singapore, Clea from Thailand, Bourne and Abandon from Malaysia, as well as Sheepy, Maevis, Zenchao, and Sourtooth from Philippine. Among those nine players, only one participant from Thailand was female gamers.

There were two playing styles for the players who play on this server which were casual players and hardcore gamers. Casual or chill gamers play mainly for relaxation purposes. On the other hand, hard-core gamers play more passionately and give more commitment to the game. They are also very knowledgeable about the game and the updates. Hard-core gamers are also more competitive. In this research, most of the participants can be categorized as hard-core gamers. They commit to the game by doing all of the daily quests and side quest. They also make regular progress and grind 24 hours a day through special devices or cloud services.

Based on spending behavior, there are two types of players, which are Free to Play (F2P) and Pay to Win (P2W). F2P gamers do not spend money on the game and simply make do with any free features of the game. However, some players who make small spending for the purpose of convenience can be regarded as F2P. P2W gamers spend a significant amount of money to obtain weapons, supporting items, and features to give advantage over F2P. Sometimes P2W

gamers are also called whales. A whale are the biggest spenders in games that try to buy the best item in the games. Most of the participants in this research regard themselves as F2P. Only two participants acknowledge themselves as P2W gamers.

#### 4.3 In-game Financial Activities

There are three activities in ROX that involve financial decision making. These activities are income generation, financial spending, and activities that intersect between the real and virtual world.

There are several ways to collect currency in the game in ROX. Some activities directly give currency to the players and some other activities need trading to convert the loots into currencies. Universal basic income in this game is the Daily Mission. Players come to the Mission Boards to get ten quests per day. The rewards for doing the quest. Every player also gets quota for daily and weekly dungeon raids. Players can go hunting the boss monster to get loots which can be sold as premium items. There are also life skill features to collect sellable materials such as mining, fishing, gardening, smelting, and cooking. A special class such as the merchant branch can do crafting, while the knight branch can craft a rune. Players can also collect zenry and materials through mob grinding. This is when players continuously kill specific regular monsters.



Figure 2. Mission Board for Daily Quest

The financial spending in this game is related to avatar customization, character growth, pet, and social activity. Avatar customization consist of equipment, costume, and appearance. Equipment consists of weapons, armor, and accessories. There are three types of basic equipment related to basic stats. From the lowest stats to the highest stats, white equipment, blue equipment, and gold equipment. There are also special types of armor equipment such as Valkyrie, Murphy, Odin, and Thanatos. To increase the effect of equipment, players need to upgrade, enchant, and refine. They also need to awaken the shadow equipment to increase the stats of certain skills.

The social activity in this game is related to the interaction between players. Players joining guild should contribute to the guild orders for the purpose of guild daily maintenance. Other activities related to the interaction of multiplayer is the wedding ceremony. Two players can get married for the purpose of costume and couple skills. They can also hold wedding celebrations and invite friends.

There was an intersection between virtual and real world. Players who want to get more currency faster can do so by buying the virtual currency diamond. Players can also get a premium subscription to get more privileges in the game such as additional quotas for quests or other activities.

#### 4.4. *Players View of Money*

Participants in this study regard money as something important and something good to have.

*“I Love Money” (Valey)*

Money is important, but it is not the most important. Life is more important than money.

*“Money is important but definitely not greater than life” (Timy)*

People cannot do anything without money. Money gives freedom to do anything and go anywhere.

*“I see people as cars, and money as gas. We can't go anywhere or do anything we like without money.” (Sheepy)*

Money can give people security, and money is a tool to solve problems.

*“Money can solve 99% problems” (Abandon)*

Not all problems can be solved with money and money is not everything. However, everything in the world costs money. People should treat money wisely to get stability.

*“Money is the source of one's stability. I treat money wisely” (Maevis)*

To ensure the stability of money, people need to invest their money.

*“I think money is very important, even people say it is not everything, but I still think it is very important. I heard someone say that money cannot buy happiness, but somehow it's more comfortable to cry in a Mercedes Benz than in a bus. I do a lot with my money, not only saving, but also trading, buying government bonds and buying gold bars. Sometime I also buy some rare toys or luxury bags and sell them out later when the price rises.” (Clea)*

Money management, such as budgeting, is also needed to avoid bankruptcy.

*“Spending on games is luxury and a choice, if i have the money or buying power, i have to consider many things. budget for the necessity, budget for the luxury. will it make a dent, will i have trouble paying for it now than paying for it later?” Sourtooth*

However, people do not have to be too tied up with money. People need to spend enough money to get the happiness they deserve.

*“Money runs the world, save it for it will save you in the future, but never cherish it, always remember to live a little. Spend it on stupid stuff that gives you happiness, but don't over do it or you will go broke. Hahaha”(Zenchaos)*



In addition to self-happiness, money can be a means to share with others by doing charity.

*“Money is just currency, however, everything in this world costs money. Very hard to get, thus i am very cautious in spending my money except charity.” (Bourne)*

#### 4.5 Degree of Agency

In this game, the players have a high degree of agency. They can choose how they want to play. They can choose whether to play casually or competitively.

The player can also choose among the activities to do. They can skip doing daily or even if they just want to play solo and do not join any guild.

Players also have full freedom to interact with who they want to interact with. They can apply to join any guild they want as long as they pass the guild requirements. Each player can also create their own economic opportunities by strategizing on the stamina allocation to gather the sellable materials.

Bourne’s character was a strong tanker Rune Knight (RK). At the beginning stage of the game, he had many opportunities to join the top guild. However, he remained to stay as a guild leader of a small and casual guild. Until the later stage when the guild was declined due to a high number of retired players, he moved to the top guild and played more competitively.

Timy was Bourne’s guildmate before. However, different from Bourne, he moved to semi competitive guild. Later he joined one of the top guilds but did not go competitive.

This degree of agency offer the freedom for the players to make financial decision making. They can manage their virtual income wisely and allocate it according to their own playing style.

#### 4.6 Spending for In-Game Identity

The interesting part of MMORPG is avatar. It is a representation that marks the digital self-representation of a user in the virtual world. (Jenson et al., 2015). MMORPGs gives freedom for the players to choose their identity. Players can choose their appearance, costume, and even gender. ROX offers the ability to change gender, therefore players can alternate between male and female characters.

Clea is the only woman to participate in this research. She loves the costume very much. She does not play competitively, and her biggest enjoyment of playing is the avatar. She loves to take pictures of her characters.

*“I play for costume.... we are happy to play with people, participate with them, enjoy the costume or even a small thing.... For me, costume is the power that drives me to play” (Clea)*

She prioritize spending her virtual money on the costume than on the character growth. Sometimes she spends some real money to get the costume she wants.

*“if not on my budget, which is around 2K-3K (THB) i do not hesitate to top up and buy BUT it is not for every costume because not every costume is nice in my opinion. ' (Clea)*

Besides Clea, Maevis and Sourtooth were the other participants who pay more attention to costume. Although Maevis and Sourtooth are male players, they have female game characters for the sake of cuter costume. Zenchaos and Sheepy also spent to get some interesting event costume.

*“i spent a few on events to get some costumes” (Maevis)*

“...topup events if i like the costume... 500 php highest.” (Sheepy)

“if the costume is worth it, I’ll spend a necessary amount, especially limited ones, but if not so rare i just play the game and complete quest that is needed to obtain the costume.” (Zenchaos)



Figure 3. Avatar

Bourne and Abandon have different approach on the customization of avatar. They will prioritize character’s growth over costume. They will choose costume that has additional stats. Whenever there is event that give costume as rewards, they prioritize selling the events materials for crystals. The crystals can help them speed up their character’s growth. They will redeem costume, only when they don’t need anymore crystals for characters’ progression.

Players can also spend some crystals to change their name. Bourne and Maevis are the two players that change frequently. Maevis sometimes use his Korean idol to name his character such as Jiso, the member of blackpink. While Bourne use some masculine name such as Blade and Rogue.

#### 4.7 Spending on Game Performance

Spending on game performance is the most common behavior among players. In addition to Clea, the primary purpose of the other players is to progress the game. They want to get stronger. They spent either to buy premium subscription (Kafra VIP) or to upgrade for equipment development.

*‘I dont spend money on this game in costume, as my goal will be more the growth of the character.’ (Bourne)*

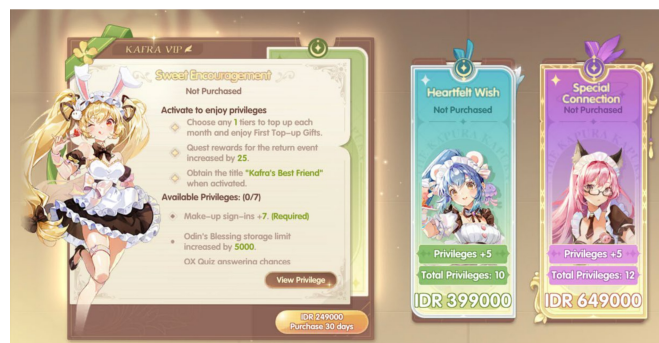


Figure 4. Premium Subscription

In related to the character progression, Bourne buy premium subscription in the game. On the other hand, Zenchaos spend either virtual or real world currency to speed up his progress. Moreover, Zenchaos sometimes take a break from playing. Therefore, whenever he returns to play he need to progress faster and keep up with the other players.

*“If I am not in a rush, I just play the game and buy the materials needed, if not, I usually spend real money to make faster progress. Usually, I spend 50% of my salary if I want to rush my progress. If I am just chilling, I usually don't spend anything.” (Zenchaos)*

#### 4.8 Spending for Couple

In-game marriage tied two players to be husband and wife and activate the couple skills feature. This married status also gives some monthly rewards. Marriage in ROX is also give costume and mount. The costume is given for the couple from the wedding ceremony or their friends from the wedding feast. Some players have commercialized the wedding feast and sold the witness suit. Most of the participants do not pay for the marriage because they only get the wedding ceremony for the couple. They can collect and save the materials needed for the wedding quest. Real money is used in this feature to make the progress of wedding quest and wedding feast faster.



Figure 5. Couple Feature

Timy is the only player in the game who has never been married. The other participants have been married in the game. Some of them have even married more than once. The motivation to get married is mostly due to the costume. Abandon got married once and divorced later. Maevis got married once to get costume and mount. Clea and Sheepy are an in-game couple. Their marriage was the second marriage since their previous partner retired.

*“I want to get the costume” (Clea)*

*“I just want the couple costume (Valeya)*

But Sheepy has different additional motives.

*“First marriage was with my friend, for convenience. We quit the game earlier and when we came back we needed to catch up with the levels. So we married for the additional experience. Second marriage, i married because i like the girl ’. (Sheepy)*

The motivation of Zen, Sourtooth, and Bourne was for couple skills. Couple skills gives players additional base and job experiences as well as zeny when they are together. This feature also give teleport service to the partner and resurrection. This skills good for group activities such as Eternal Tower (ET), Player vs Player Battle, Guild War, and Boss Monster Hunt. It is also beneficial in dungeon raid.

*'Costume and couple teleport and revive for efficient Boss Hunt.'* (Zenchaos)

*“Sarah and i decided to marry. for event and rox content like. ET (Eternal Tower), KVM (Player vs Player) and such. MVP hunt or whatnot”* (Sourtooth)

*“Marry your circle for you can help with activity. Especially ET.”*(Bourne)

Most competitive players marry for the benefit that can help them fight. Therefore, it is common for players to divorce and remarry, especially when the partners are not in the same guild anymore.

*“soo dior jokingly tells me to divorce sarah. because i don’t do boss hunt anymore, and they go boss hunt all the time together. soo he divorced me.”*(Sourtooth)

This kind of fast divorce and remarry mostly need money to do because they need to build favor fast. Therefore, they will spend more virtual money and sometimes top up with real money for unilateral divorce or to send premium gift for building favor instantly.

The less competitive players tend to build the couple feature for friendship. Bourne and his longterm in-game partner stay together eventhough they are not in the same guild anymore. They use the couple skills for other activities that are restricted by guild.

*“I am loyal. We can still play together and do couple quest eventhough we are not in the same guild anymore.”* (Bourne)

Bourne and his partner have alternate characters. They also let their alternate characters to marry each other so that they can get additional crystals and witness costume from the wedding feast. Wedding feast is a wedding feature that cost a lot of crystals. Both of the alternate characters are merchant branch that are created for the convenience purpose of the main character. Since they don’t need to achieve character progress, they can collect more crystals. Unfortunately, crystals cant be transferred between players. Hence, they use wedding feast to get the main characters and some other friends crystals and witness costume.

#### *4.9 Social Influence on Spending*

As social games, the player consequently got influence from their peers. The influence can be related to the costume.

*“Sometimes. Sometimes im jealous with other player costumes, and i want it”* (Valeya)

*'Yes, it has an effect because when i see other players wearing a nice costume i really want it and sometimes it is the way you can get it, only by paying the bill, which uses real money' (Clea)*

Social influence can also be related to character growth.

*'I enjoyed playing with my friend, which is mostly F2P, so if i spend a lot, I will not be in the same league as my friend. Will only spend a lot if I have close friends doing the same thing' (Bourne).*

However, although they got affected by other players' progress, the participant in this research will still stick to their plan and budget.

*“Yes, im pretty competitive and seeing that whales beat me like nothing makes me want to wiggle. Good thing i cannot afford or I have no budget for it.” (Sheepy)*

## 5. Conclusion

In conclusion, there were three categories of financial activities in the game. Those financial activities were income generation, spending, and conversion of real to virtual money. All of the participants in this research have a view on how important money is to them, therefore they need to have good money management. Players can have great freedom to choose their playing style and the interaction they want. Social influence has little effect on financial decision making. They utilized strategies to optimize their in-game income. Their spending patterns were dominated by avatar customization and character progression. These findings contribute to understanding the intersection between the virtual world of gaming, financial decision-making, and the broader perspectives of individuals on money.

## References

- Achterbosch, L., Pierce, R., & Simmons, G. (2008). Massively multiplayer online role-playing games: The past, present, and future. *Computers in Entertainment, Vol. 5(4)*. <https://doi.org/10.1145/1324198.1324207>
- Baker, S. C., Wentz, R. K., & Woods, M. M. (2009a). Using Virtual Worlds in Education: Second Life® as an Educational Tool. *Teaching of Psychology, Vol.36(1)*, 59–64. <https://doi.org/10.1080/00986280802529079>
- Baker, S. C., Wentz, R. K., & Woods, M. M. (2009b). Using Virtual Worlds in Education: Second Life® as an Educational Tool. *Teaching of Psychology, 36(1)*, 59–64. <https://doi.org/10.1080/00986280802529079>
- Bayliss, M. (2018). *Virtual Assets , Real Insolvency Issues*. November, 2018.
- Berger, M., Jucker, A. H., & Locher, M. A. (2016). Interaction and space in the virtual world of Second Life. *Journal of Pragmatics, Vol. 101*, 83–100. <https://doi.org/10.1016/j.pragma.2016.05.009>
- Braidotti, R. (2019). A Theoretical Framework for the Critical Posthumanism. *Theory, Culture, and Society, Vol. 36(6)*. <https://doi.org/10.1177/0263276418771486>
- Carter, D. (2005). Living in virtual communities: An ethnography of human relationships in cyberspace. *Information Communication and Society, Vol. 8(2)*, 148–167. <https://doi.org/10.1080/13691180500146235>
- Carter, M., Bergstrom, K., Webber, N., & Milik, O. (2015). EVE is real. *DiGRA 2015 - Proceedings of the 2015 DiGRA International Conference: Diversity of Play*.

- Castronova, E. (2002). On Virtual Economies. In *CESifo Working Paper No.752*.
- Castronova, E. (2003). *Theory of the Avatar* (863; CESifo Working Paper).
- Castronova, E. (2020). Wildcat Currency. *Wildcat Currency*.  
<https://doi.org/10.12987/9780300187410>
- Cheng, S. (2023). Metaverse: Concept, Content and Context. In *Metaverse: Concept, Content and Context*. <https://doi.org/10.1007/978-3-031-24359-2>
- Chohan, U. W. (2021). Non-Fungible Tokens: Blockchains, Scarcity, and Value. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3822743>
- de Bruijn, E. J., & Antonides, G. (2022). Poverty and economic decision making: a review of scarcity theory. *Theory and Decision, Vol. 92*(1), 5–37. <https://doi.org/10.1007/s11238-021-09802-7>
- Dilla, W. N., Harrison, A. J., Mennecke, B. E., & Janvrin, D. J. (2013). The Assets are Virtual but The Behavior is Real: An Analysis of Fraud in Virtual Worlds and its Implications for the Real Worlds. *Journal of Information Systems, Vol. 27*(2).
- Drennan, P., & Keffe, D. A. (2007). Virtual consumption: Using player types to explore virtual consumer behavior. *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 4740 LNCS*, 466–469. [https://doi.org/10.1007/978-3-540-74873-1\\_62](https://doi.org/10.1007/978-3-540-74873-1_62)
- Achterbosch, L., Pierce, R., & Simmons, G. (2008). Massively multiplayer online role-playing games: The past, present, and future. *Computers in Entertainment, Vol. 5*(4).  
<https://doi.org/10.1145/1324198.1324207>
- Baker, S. C., Wentz, R. K., & Woods, M. M. (2009a). Using Virtual Worlds in Education: Second Life® as an Educational Tool. *Teaching of Psychology, Vol.36*(1), 59–64.  
<https://doi.org/10.1080/00986280802529079>
- Baker, S. C., Wentz, R. K., & Woods, M. M. (2009b). Using Virtual Worlds in Education: Second Life® as an Educational Tool. *Teaching of Psychology, 36*(1), 59–64.  
<https://doi.org/10.1080/00986280802529079>
- Bayliss, M. (2018). *Virtual Assets , Real Insolvency Issues*. November, 2018.
- Berger, M., Jucker, A. H., & Locher, M. A. (2016). Interaction and space in the virtual world of Second Life. *Journal of Pragmatics, Vol. 101*, 83–100.  
<https://doi.org/10.1016/j.pragma.2016.05.009>
- Braidotti, R. (2019). A Theoretical Framework for the Critical Posthumanism. *Theory, Culture, and Society, Vol. 36*(6). <https://doi.org/10.1177/0263276418771486>
- Carter, D. (2005). Living in virtual communities: An ethnography of human relationships in cyberspace. *Information Communication and Society, Vol. 8*(2), 148–167.  
<https://doi.org/10.1080/13691180500146235>
- Carter, M., Bergstrom, K., Webber, N., & Milik, O. (2015). EVE is real. *DiGRA 2015 - Proceedings of the 2015 DiGRA International Conference: Diversity of Play*.
- Castronova, E. (2002). On Virtual Economies. In *CESifo Working Paper No.752*.
- Castronova, E. (2003). *Theory of the Avatar* (863; CESifo Working Paper).
- Castronova, E. (2020). Wildcat Currency. *Wildcat Currency*.  
<https://doi.org/10.12987/9780300187410>
- Cheng, S. (2023). Metaverse: Concept, Content and Context. In *Metaverse: Concept, Content and Context*. <https://doi.org/10.1007/978-3-031-24359-2>
- Chohan, U. W. (2021). Non-Fungible Tokens: Blockchains, Scarcity, and Value. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3822743>
- de Bruijn, E. J., & Antonides, G. (2022). Poverty and economic decision making: a review of scarcity theory. *Theory and Decision, Vol. 92*(1), 5–37. <https://doi.org/10.1007/s11238-021-09802-7>

- Dilla, W. N., Harrison, A. J., Mennecke, B. E., & Janvrin, D. J. (2013). The Assets are Virtual but The Behavior is Real: An Analysis of Fraud in Virtual Worlds and its Implications for the Real Worlds. *Journal of Information Systems, Vol. 27(2)*.
- Drennan, P., & Keeffe, D. A. (2007). Virtual consumption: Using player types to explore virtual consumer behavior. *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 4740 LNCS*, 466–469. [https://doi.org/10.1007/978-3-540-74873-1\\_62](https://doi.org/10.1007/978-3-540-74873-1_62)
- Drummond, A., Sauer, J. D., Ferguson, C. J., & Hall, L. C. (2020). The relationship between problem gambling, excessive gaming, psychological distress and spending on loot boxes in Aotearoa New Zealand, Australia, and the United States-A cross-national survey. *PLoS ONE, 15(3)*, 1–16. <https://doi.org/10.1371/journal.pone.0230378>
- Frydman, C., & Camerer, C. F. (2016). The Psychology and Neuroscience of Financial Decision Making. *Trends in Cognitive Sciences, Vol.20(9)*, 661–675. <https://doi.org/10.1016/j.tics.2016.07.003>
- Furnham, A., & Murphy, T. A. (2019). Money types, money beliefs, and financial worries: An Australian study. *Australian Journal of Psychology, Vol. 71(2)*, 193–199. <https://doi.org/10.1111/ajpy.12219>
- Garea, S. S., Drummond, A., Sauer, J. D., Hall, L. C., & Williams, M. N. (2021). Meta-analysis of the relationship between problem gambling, excessive gaming and loot box spending. *International Gambling Studies, 21(3)*, 460–479. <https://doi.org/10.1080/14459795.2021.1914705>
- Gärbling, T., Kirchler, E., Lewis, A., & van Raaij, F. (2009). Psychology, Financial Decision Making, and Financial Crises. *Psychological Science in the Public Interest, Supplement, Vol. 10(1)*, 1–47. <https://doi.org/10.1177/1529100610378437>
- Guo, H., Hao, L., Mukhopadhyay, T., & Sun, D. (2019). Selling virtual currency in digital games: Implications for gameplay and social welfare. *Information Systems Research, Vol. 30(2)*, 430–446. <https://doi.org/10.1287/isre.2018.0812>
- Guo, Y., & Barnes, S. (2009). Virtual item purchase behavior in virtual worlds: An exploratory investigation. *Electronic Commerce Research, 9(1–2)*, 77–96. <https://doi.org/10.1007/s10660-009-9032-6>
- Haagsma, M. C., Pieterse, M. E., Peters, O., & King, D. L. (2013). How Gaming May Become a Problem: A Qualitative Analysis of the Role of Gaming Related Experiences and Cognitions in the Development of Problematic Game Behavior. *International Journal of Mental Health and Addiction, 11(4)*, 441–452. <https://doi.org/10.1007/s11469-013-9427-4>
- Harris, B., & Novobilski, A. (2008). Real currency economies: Using real money in virtual worlds. *Proceedings of the 2008 International Conference on Frontiers in Education: Computer Science and Computer Engineering, FECS 2008*, 241–246.
- Jenson, J., Taylor, N., De Castell, S., & Dilouya, B. (2015). Playing with Our Selves. *Feminist Media Studies, Vol. 15(5)*, 860–879. <https://doi.org/10.1080/14680777.2015.1006652>
- Klontz, B., Britt, S. L., Mentzer, J., & Klontz, T. (2011). Money Beliefs and Financial Behaviors: Development of the Klontz Money Script Inventory. *Journal of Financial Therapy, 2(1)*. <https://doi.org/10.4148/jft.v2i1.451>
- Klontz, B. T., Sullivan, P., Seay, M. C., & Canale, A. (2015). The Wealthy: A Financial Psychological Profile. *Consulting Psychology Journal, 67(2)*, 127–143.
- Mansoor, A. Z., & Ahmad, H. A. (2015). Ragnarok Online, Reality of Virtual Phenomenon. *Wimba : Jurnal Komunikasi Visual, Vol. 1(1)*. <https://doi.org/10.5614/jkvw.2009.1.1.5>
- Metasurya, L. W. J., & Berlianto, M. P. (2022). Drivers Of Purchase Intention And Willingness To Pay Microtransactions In Mobile Legends. *Jurnal Manajemen, Vol. 26(3)*, 567–590. <https://doi.org/10.24912/jm.v26i3.1022>

- Montone, M., & Zwinkels, R. C. J. (2021). Risk, return, and sentiment in a virtual asset market. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3787339>
- Popan, C., Perez, D., & Woodcock, J. (2023). Cards against gamification: Using a role-playing game to tell alternative futures in the gig economy. *Sociological Review*, 71(5), 1058–1074. <https://doi.org/10.1177/00380261231184755>
- Prakosa, A., & Sumantika, A. (2022). Why Do People Buy Virtual Items? An Assessment Using the Theory of Functional Value. *KnE Social Sciences*, 2022, 868–879. <https://doi.org/10.18502/kss.v7i14.12038>
- Rahiem, V. A., & Fitrananda, C. A. (2021). Persepsi Gamers tentang Aktivitas Microtransactions di Virtual Goods Marketplace Itemku.com. *CoverAge: Journal of Strategic Communication*, Vol. 11(2), 103–112. <https://doi.org/10.35814/coverage.v11i2.2018>
- Sleczka, P., Braun-Michl, B., & Kraus, L. (2020). Gamblers' Attitudes Towards Money and Their Relationship to Gambling Disorder Among Young Men. *Journal of Behavioral Addictions*, Vol. 9 No. 3, pp. 744–755. <https://doi.org/10.1556/2006.2020.00042>
- Smith, C. (2017). EVE: Online as a Potential Microeconomic Model. *Oshkosh Scholar*.
- Stefany, S. (2014). the Effect of Motivation on Purchasing Intention of Online Games and Virtual Items Provided By Online Game Provider. *CommIT (Communication and Information Technology) Journal*, 8(1), 22. <https://doi.org/10.21512/commit.v8i1.592>
- Vaegs, T., Dugošija, D., Hackenbracht, S., & Hannemann, A. (2010). Learning by gaming: Facts and myths. *International Journal of Technology Enhanced Learning*, Vol. 2(1–2), 21–40. <https://doi.org/10.1504/IJTEL.2010.031258>
- Worth, N. C., & Book, A. S. (2014). Personality and behavior in a massively multiplayer online role-playing game. *Computers in Human Behavior*, Vol. 38, 322–330. <https://doi.org/10.1016/j.chb.2014.06.009>
- Wu, S. L., & Hsu, C. P. (2018). Role of authenticity in massively multiplayer online role playing games (MMORPGs): Determinants of virtual item purchase intention. *Journal of Business Research*, 92(September 2016), 242–249. <https://doi.org/10.1016/j.jbusres.2018.07.035>
- Yulius, R. (2017). Analisis Perilaku Pengguna dalam Pembelian Item Virtual pada Game Online. *Journal of Animation & Games Studies*, 3(1), 1. <https://doi.org/10.24821/jags.v3i1.1582>
- Zopounidis, C., & Doumpos, M. (2002). Multi-criteria decision aid in financial decision making: Methodologies and literature review. *Journal of Multi-Criteria Decision Analysis*, Vol. 11(4–5), 167–186. <https://doi.org/10.1002/mcda.333>