# THE EFFECT OF E-SERVICE QUALITY,

# SENSE OF BELONGING, AND

# USER SATISFACTION ON INTENTION TO USE

# (A CASE STUDY ON DISCORD)

**THESIS**

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**INFORMATION SYSTEMS STUDY PROGRAM**

**SEKOLAH TINGGI INFORMATIKA & KOMPUTER INDONESIA**

**MALANG**

**2023**

# THE EFFECT OF E-SERVICE QUALITY,

# SENSE OF BELONGING, AND USER SATISFACTION ON INTENTION TO USE (A CASE STUDY ON DISCORD)

THESIS

In partial fulfillment of the requirements

for the degree of Bachelor of Computer

in Information Systems Study Program

Written By:

Timoty Des Christian

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**INFORMATION SYSTEMS STUDY PROGRAM**

**SEKOLAH TINGGI INFORMATIKA & KOMPUTER INDONESIA**

**MALANG**

**2023**

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Malang, 14 August 2023

Writer,

Timoty Des Christian

191131005

# THESIS

THE EFFECT OF E-SERVICE QUALITY, SENSE OF BELONGING, AND USER SATISFACTION

ON INTENTION TO USE (A CASE STUDY ON DISCORD)

Written by:

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on Monday, 14 August 2023

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# ABSTRACT

Timoty Des Christian, 2023. The Effect of e-Service Quality, Sense of Belonging, and User Satisfaction on Intention to Use (A Case Study on Discord). Thesis, Information Systems Undergraduate Study Program, Sekolah Tinggi Informatika & Komputer Indonesia – MALANG, Advisor: Setiabudi Sakaria

Keyword: PLS-SEM, e-service quality, sense of belonging, user satisfaction, intention to use

Individuals worldwide increasingly recognize digital community spaces as facilities for knowledge exchange and flow, enabling collaboration across distances. Discord is an increasingly popular application that supports establishing a digital community by providing engaging features that can be customized according to users’ needs. This thesis presents a case study in an Indonesian Discord community server to examine the effect of e-service quality dimensions, sense of belonging, and user satisfaction on intention to use. Data obtained from the Discord community of 375 users were used to evaluate the model using a structural equation modelling approach with SmartPLS 4. Path coefficient results suggested that all the constructs in e-service quality and sense of belonging indicated a positive and significant relationship to user satisfaction and intention to use. This thesis provided academic and practical recommendations for future works and Discord application/community managers. This thesis is limited to Indonesian Discord users only and cannot be generalized.

# ABSTRAK

Timoty Des Christian, 2023. The Effect of e-Service Quality, Sense of Belonging, and User Satisfaction on Intention to Use (A Case Study on Discord). Skripsi, Program Studi Sistem Informasi Strata 1, Sekolah Tinggi Informatika & Komputer Indonesia – MALANG, Pembimbing: Setiabudi Sakaria

Kata kunci: PLS-SEM, e-service quality, sense of belonging, user satisfaction, intention to use

*Individu di seluruh dunia semakin mengenali ruang komunitas* digital *sebagai fasilitas untuk pertukaran dan aliran pengetahuan, yang memungkinkan kolaborasi lintas jarak.* Discord *adalah aplikasi yang semakin populer yang mendukung pembentukan komunitas* digital *dengan menyediakan fitur-fitur menarik yang dapat disesuaikan dengan kebutuhan pengguna. Tesis ini menyajikan studi kasus di* server *komunitas* Discord Indonesia *untuk menguji pengaruh dimensi* e-service quality *dan* sense of belonging *terhadap* user satisfaction *dan* intention to use*. Data yang diperoleh dari komunitas* Discord *dari* 373 *pengguna digunakan untuk mengevaluasi* model *menggunakan pendekatan* structural equation modeling *dengan* software SmartPLS 4*. Hasil koefisien jalur menunjukkan bahwa semua konstruk dalam* e-service quality *dan* sense of belonging *menunjukkan hubungan yang positif dan signifikan terhadap* user satisfaction *dan* intention to use*. Studi ini memberikan literatur tentang pengaruh* e-service quality *dan* sense of belonging *terhadap* intention to use *pada pengguna* Discord *Indonesia. Kajian ini terbatas pada pengguna* Discord *Indonesia saja dan tidak dapat digeneralisasikan.*

# DEDICATION PAGE

1. **Motto**

The writer quoted a Japanese proverb (“諺” or ”Kotowaza”), which had been emotionally supporting while preparing for this study.

“七転八起” (“Fall seven times, and stand up eight”)

“When life knocks you down, stand back up no matter how tough.”

1. **Dedication**

This thesis is dedicated to all the beloved people who have supported and prayed for the writer in completing this thesis. The writer would love to dedicate this thesis to:

* God The Almighty.
* The writer’s beloved mother, Yuanita, and late father, Yongky, sister, Tirza, brother, Adrianus, Joel, and the writer’s pet, Puppy.
* All Sekolah Tinggi Informatika & Komputer Indonesia Malang academic community, the writer’s research advisor, Mr. Setiabudi Sakaria, S.Kom., M.Kom., the Head of Information Systems Study Program, Mrs. Anita S.Kom., M.T., and all lecturers.
* All the writer’s friends from the Sekolah Tinggi Informatika & Komputer Indonesia Malang Information Systems study program, the ‘Pemuda Tidak Tersesat’ community, and all friends and families.
* ‘Perkumpulan Orang Santai’ Discord community.

# PREFACE

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The writer realizes this thesis is imperfect due to limited experience and knowledge. Therefore, the writers appreciate criticism and suggestions, which will be helpful for academic development.

Malang, 14 August 2023

Timoty Des Christian

191131005

# TABLE OF CONTENT

[TITLE i](#_Toc144312275)

[STATEMENT OF THESIS ORIGINALITY ii](#_Toc144312277)

[THESIS DEFENSE RATIFICATION iii](#_Toc144312278)

[STATEMENT OF APPROVAL FOR THESIS PUBLICATION iv](#_Toc144312279)

[ABSTRACT v](#_Toc144312281)

[ABSTRAK vi](#_Toc144312282)

[DEDICATION PAGE vii](#_Toc144312283)

[PREFACE viii](#_Toc144312284)

[TABLE OF CONTENT xi](#_Toc144312285)

[LIST OF TABLES xiv](#_Toc144312286)

[LIST OF FIGURES xv](#_Toc144312287)

[LIST OF APPENDICES xvi](#_Toc144312288)

[CHAPTER I INTRODUCTION 1](#_Toc144312289)

[1.1. Study Background 1](#_Toc144312291)

[1.2. Statement of Problems 4](#_Toc144312292)

[1.3. Study Objectives 4](#_Toc144312293)

[1.4. Advantages of the Study 5](#_Toc144312294)

[1.5. Study Limitations 5](#_Toc144312295)

[1.6. Writing Systematics 6](#_Toc144312296)

[CHAPTER II LITERATURE REVIEW 8](#_Toc144312297)

[2.1. Empirical Review 8](#_Toc144312298)

[2.2. Theoretical Review 16](#_Toc144312299)

[2.2.1. Discord 16](#_Toc144312300)

[2.2.2. e-Service Quality 18](#_Toc144312301)

[2.2.3. Sense of Belonging 21](#_Toc144312302)

[2.2.4. User Satisfaction 22](#_Toc144312303)

[2.2.5. Intention to Use 22](#_Toc144312304)

[2.2.6. Evaluation of Higher-order Constructs with PLS-SEM 23](#_Toc144312305)

[2.2.7. PLS-SEM Model Evaluation 24](#_Toc144312306)

[2.2.8. Reflective Model Evaluation 25](#_Toc144312307)

[2.2.9. Formative Model Evaluation 28](#_Toc144312308)

[2.2.10. Structural Model Evaluation 29](#_Toc144312309)

[2.2.11. SmartPLS 31](#_Toc144312310)

[CHAPTER III RESEARCH METHODOLOGY 32](#_Toc144312311)

[3.1. Research Type 32](#_Toc144312312)

[3.2. Research Framework 32](#_Toc144312313)

[3.2.1. Conceptual Model, 33](#_Toc144312314)

[3.2.2. Research Hypotheses 34](#_Toc144312315)

[3.3. Research Population and Sample 35](#_Toc144312316)

[3.3.1. Population 35](#_Toc144312317)

[3.3.2. Sample 35](#_Toc144312318)

[3.3.3. Characteristics of Respondents 36](#_Toc144312319)

[3.4. Data Collection 36](#_Toc144312320)

[3.4.1. Data Type 36](#_Toc144312321)

[3.4.2. Data Collection Model 36](#_Toc144312322)

[3.4.3. Measurement Scale 37](#_Toc144312323)

[3.5. Construct Operational Definitions 38](#_Toc144312324)

[3.5.1. Constructs 38](#_Toc144312325)

[3.5.2. Construct Operational Definitions 39](#_Toc144312326)

[3.6. Statistical Analysis Approach 42](#_Toc144312327)

[3.6.1. Validating the Reflective Measurement Model 43](#_Toc144312328)

[3.6.2. Validating the Formative Measurement Model 44](#_Toc144312329)

[3.6.3. Structural Model Evaluation 44](#_Toc144312330)

[CHAPTER IV RESULTS AND DISCUSSION 46](#_Toc144312331)

[4.1 Respondents Overview 46](#_Toc144312332)

[4.1.1 Respondents’ Demographic 47](#_Toc144312333)

[4.2 Statistical Analysis 48](#_Toc144312334)

[4.2.1 Reflective Measurement Model Assessment 49](#_Toc144312335)

[4.2.1.1 Convergent Validity and Reliability 49](#_Toc144312336)

[4.2.1.2 Discriminant Validity 51](#_Toc144312337)

[4.2.2 Formative Measurement Model Assessment 55](#_Toc144312338)

[4.2.3 Structural Model Evaluation 57](#_Toc144312339)

[4.2.3.1 Coefficient of Determination (R2) 58](#_Toc144312340)

[4.2.3.2 Cross-validated Redundancy (Q2) 58](#_Toc144312341)

[4.2.3.3 Effect Size (f2) 59](#_Toc144312342)

[4.2.3.4 Path Coefficients 60](#_Toc144312343)

[CHAPTER V CONCLUSIONS AND RECOMMENDATION 64](#_Toc144312344)

[5.1. Conclusions 64](#_Toc144312345)

[5.2. Recommendation 64](#_Toc144312346)

[BIBLIOGRAPHY 66](#_Toc144312347)

[APPENDICES 78](#_Toc144312348)

# 

# LIST OF TABLES

Table 1. Empirical Reviews 8

Table 2. Likert Scale 38

Table 3. Adopted Constructs, Attributes, and the References 39

Table 4. Respondents’ Demographic 47

Table 5. Convergent Validity Assessment Result 50

Table 6. Fornell-Larcker Criterion Matrix Table 52

Table 7. Cross-loadings 53

Table 8. Formative Constructs Evaluation 56

Table 9. Second Order Construct’s Factor Loadings 57

Table 10. Adjusted R2 Values 58

Table 11. Q2 Values 59

Table 12. f2 Values 59

Table 13. Path Coefficients, T-statistics, and p-values 61

# LIST OF FIGURES

Figure 2.1 Discord User Interface for Text Chatting 17

Figure 2.2 Discord User Interface for Voice and Video Chatting 17

Figure 2.3 Discord Community Rules 18

Figure 3.1 Proposed Inner Model 33

Figure 3.2 Proposed Outer Model 33

Figure 4.1. Graphical Output of Outer Model Measurement 55

Figure 4.2 Graphical Output of Inner Model Evaluation 63

# LIST OF APPENDICES

Appendix 1 Final Project Decree 78

Appendix 2 Writer Biography 79

Appendix 3 Plagiarism Check Result (Turnitin) 80

Appendix 4 Google Forms Questionnaire 81

# CHAPTER I

# INTRODUCTION

## Study Background

Individuals worldwide increasingly recognize digital community spaces as facilities for knowledge exchange and flow, enabling collaboration across distances (Mozaffar & Panteli, 2022). Social media as a digital public platform allows the community to share information, ask for advice or help, connect with others, and encourage a sense of mutual belonging (Schreiber, 2020). Schreiber (2020) further explained that the presence of online communities had shown considerable success, even before the COVID-19 pandemic began. Various studies on implementing digital space have been conducted for multiple types of communities; 1) the HIV disease prevention education community (Blackburn et al., 2021), 2) the South Korean international students’ community (Jang & Choi, 2020), 3) and earthquake risk reduction education for the public and students in Japan (Toyoda et al., 2021).

One platform becoming increasingly popular as a digital public space for communities is Discord, which supports the establishment of digital community spaces by providing features such as customized voice and text channels and discussion forums that can be adapted to fulfill users' needs. Discord is used by over one hundred million monthly active users to meet and talk with the community online in over 19 million weekly active servers. It is accessible via mobile, desktop, or website applications. Various activities and community types have been using Discord, including a biology learning space (Wiles & Simmons, 2022), online environment emergency training (Kruglyk et al., 2020), and French learning space (Pilanti & Dwi Sriwahyuni, 2021).

Khalid (2021) conducted a study on Indonesian users in Jambi City to measure user satisfaction using the SERVQUAL method. It suggested several user experience issues, ranging from bugs and server issues to difficulty using Discord’s features. The result indicated that overall, Discord user satisfaction in Jambi City was relatively low and had not met the desired perceptions, with only the Empathy dimension affecting the user perceptions.

The primary objective of this thesis is to present a case study in an Indonesian Discord community server to examine the effect of e-service quality dimensions and sense of belonging on user satisfaction, which later impacts the intention to use. The e-service quality dimensions (website design, security/privacy) and user satisfaction construct were adopted from Rita et al. (2019), while fulfillment measurement was adopted from Kim (2015). A sense of belonging is also examined based on the study by Sharabati et al. (2022), which suggested that a superior sense of belonging positively influences social media user satisfaction. Lastly, the relationship of user satisfaction on intention to use was also evaluated based on Hossain & Kim (2018), which suggested that user satisfaction plays an essential role in maintaining sustainable intention to use social media.

Previous studies have proven that e-service quality positively correlates with user satisfaction (Dalbehera, 2020; Demir et al., 2020; Kim, 2015; Raza et al., 2020; Rita et al., 2019; Yum & Yoo, 2023). Rita et al. (2019) suggested a positive impact of e-service on customer satisfaction and proved a significant effect on online shopping customer behavior. In the social media context, Yum & Yoo (2023) suggested that service quality improvement should be prioritized to enhance customer satisfaction as an essential management goal in social media. It can be concluded that e-service quality is vital for determining user satisfaction.

The sense of belonging or the need to belong is one of the essential factors in determining user satisfaction. It is a fundamental human need or motivation and plays a significant role in shaping individuals' cognitive processes, emotional patterns, behavioral responses, and health and well-being (Baumeister & Leary, 1995). As a part of interpersonal needs, a sense of belonging is one of the most extensive and integrative constructs currently available for understanding human nature. In social media platforms, a sense of belonging is positively related to user satisfaction (Krishen et al., 2019; Sharabati et al., 2022). Baumeister & Leary (1995) explained that people are more likely to be satisfied with their experience when they feel they belong to a particular group or community. To conclude, a sense of belonging is vital in understanding human nature to help organizations improve user satisfaction.

Intention to use is a strong predictor of actual usage behavior, and a strong relationship exists between user satisfaction and intention to use a product or service (Agarwal & Prasad, 1998). Various factors can influence this relationship, including perceived usefulness, ease of use, and enjoyment. The previous research on e-service quality and satisfaction suggested a direct or indirect relationship with intention to use (Hossain & Kim, 2018; Lien et al., 2017; Nguyen et al., 2022; Udo et al., 2010; Zhao et al., 2012). In research conducted by Hossain & Kim (2018) on the relationship between satisfaction and usage intention in a case study of Facebook social media networking services (SNS), it has been validated that satisfaction acts a vital role as a determinant in maintaining sustainable use intention. Understanding the aspects that sustainably influence customers' intention to use is essential and allows companies to improve their services.

## Statement of Problems

Based on the study background, problems can be formulated as follows:

1. How does website design affect overall e-service quality?
2. How does security/privacy affect overall e-service quality?
3. How does fulfillment affect overall e-service quality?
4. How does overall e-service quality affect user satisfaction?
5. How does the sense of belonging affect user satisfaction?
6. How does user satisfaction affect the intention to use?

## Study Objectives

The objectives of this study can be described as follows:

1. Analyzing the effect of website design on overall e-service quality.
2. Analyzing the effect of security/privacy on overall e-service quality.
3. Analyzing the effect of fulfillment on overall e-service quality.
4. Analyzing the effect of overall e-service quality on user satisfaction.
5. Analyzing the effect of a sense of belonging on user satisfaction.
6. Analyzing the effect of user satisfaction on intention to use.

## Advantages of the Study

The advantages of this study can be divided into two types: academic and practical. They are as follows:

1. **Academic Advantages**

This study can contribute to research development and complement the literature on the impact of e-service quality and sense of belonging on user satisfaction and intention to use social media services. Furthermore, this study can provide an overview of the behavior of Discord application users in Indonesia.

1. **Practical Advantages**

This research can provide information to the community managers and Discord application developers on building an excellent user experience in the community. These stakeholders may consider the result of this study to improve aspects that affect overall user behavior.

## Study Limitations

The limitations of the problem determined in this study are as follows:

1. This research was conducted on the Indonesian Discord desktop/mobile application users, specifically the ‘Perkumpulan Orang Santai’ Discord server.
2. The constructs adopted were Overall e-Service Quality dimensions (Website Design, Security/Privacy, and Fulfillment), Sense of Belonging, User Satisfaction, and Intention to Use.
3. Data were collected using Google Forms.
4. A simple random sampling technique was used in this study, using primary data from a total population of 5500 people. A minimum of 373 respondents were selected as research samples using Slovin’s equation.
5. Partial Least Squares Structural Equation Modeling (PLS-SEM) was used as the multivariate statistical test method.
6. The data analysis software used in this research was SmartPLS 4.

## Writing Systematics

This research is structured based on systematics following the principles of scientific writing, which are divided into the following chapters:

**Chapter I: INTRODUCTION**

This chapter contains the study background, problem formulation, research objectives, benefits, problem study limitations, and the writing systematics of this research.

**Chapter II: LITERATURE REVIEW**

This chapter contains concepts in the form of empirical reviews and theoretical reviews, which are used as the basis for supporting the preparation of this research.

**Chapter III: RESEARCH METHODOLOGIES**

This chapter contains the methods and work steps undertaken in writing research reports, consisting of types of research, conceptual research frameworks, conceptual models, research hypotheses, population and sample, data collection, types of data, data collection models, and measurement scale.

**Chapter IV: RESULTS AND DISCUSSION**

This chapter contains the statistical analysis results and explains the interrelationships between the constructs in this study. Descriptive analysis is used in this research, and the test results are calculated, including respondents’ demographics, validity, and reliability tests.

**Chapter V: CONCLUSION AND SUGGESTION**

This chapter presents the conclusion and suggestions that can be given for Discord development and further research.

# CHAPTER II LITERATURE REVIEW

## Empirical Review

This section presents an empirical review of prior related literature and their differences from this study, as seen in **Table 1** below.

**Table 1. Empirical Reviews**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No** | **Title** | **Researcher(s)** | **Research Objectives** | **Research Scope** | **Research Result** | **Differences with Current Research** |
| 1 | Does multidimensional service quality generate sustainable use intention for Facebook? | [Hossain & Kim (2018)](https://www.zotero.org/google-docs/?pemFJN) | This study investigates the impact of multidimensional and hierarchical service quality on continuous usage intent on Facebook. | This study uses the dimensions and attributes of service quality (Interaction Quality, Environment Quality, Social Quality, Outcome Quality) to find its relationships with Satisfaction and Word-of-mouth on Sustainable use intention. | The result suggested that all four dimensions of service quality (outcome quality, environment quality, interaction quality, and social quality) significantly impacted satisfaction. Satisfaction was established as a valid predictor of sustainable intention to use and word-of-mouth (WOM). The influence of WOM on sustainable intention to use was also identified. Outcome Quality and Interaction Quality the strongest predictors of WOM among all the dimensions. | This study was similar to the current study regarding business segmentation, which was social media. However, the current study adopted a different e-service quality model with different dimensions (website design, security/privacy, fulfillment). Besides e-service quality, the current research also aimed to assess the influence of a sense of belonging on establishing user satisfaction. Lastly, current research also aimed to assess the impact of user satisfaction on intention to use Indonesian Discord users. |
| 2 | Social media networking satisfaction in the US and Vietnam: Content versus connection | [Krishen et al. (2019)](https://www.zotero.org/google-docs/?cEXvtL) | This study explores cross-cultural differences regarding the relative emphasis of social connections versus information content to examine the determinants of satisfaction in social media networks in Vietnam and the US. | This study uses a fuzzy set qualitative comparative analysis (fsQCA) to find the two cultures' values of belonging, affinity, and interactivity. | Vietnamese people derive higher satisfaction from the quality of systems and emotional connections, and Americans show higher satisfaction from information quality. | The current study adopted a different hierarchical model of e-service quality dimensions: website design, security/privacy, and fulfillment. Furthermore, the current study also aimed to examine the relationship between a sense of belonging in building superior user satisfaction. The degree of satisfaction was then also examined to determine its impact on Indonesian users' intention to use Discord. This study’s scope was limited to Indonesia and did not aim to compare the cultural differences between two or more countries. |
| 3 | The impact of inertia and user satisfaction on the continuance intentions to use mobile communication applications: A mobile service quality perspective | [Wang et al. (2019)](https://www.zotero.org/google-docs/?cBbfQD) | This research was conducted to answer the question: What are the m-service quality factors that influence the satisfaction and inertia of m-service users and, consequently, increase their continuance intentions with respect to a specific m-service application? | This study seeks to enhance the current understanding of the sustainable use of m-services in terms of m-services quality. The research model combines the critical factors of m-service quality, user satisfaction, and inertia. | The results indicated that interaction quality, environment quality, inertia, and user satisfaction are vital determinants of continuance intention, while outcome quality is not. | This study adopted different user satisfaction measurements of interaction, environment, and outcome quality. Meanwhile, the current study adopted a hierarchical model of e-service quality dimensions (website design, security/privacy, and fulfillment) and sense of belonging as the user satisfaction predictors. The relationship of user satisfaction on intention to use was also examined to determine its impact on the usage intention of Indonesian Discord users. |
| 4 | *Analisis Tingkat Kepuasan Pengguna pada Aplikasi Discord Menggunakan Metode SERVQUAL* | [Khalid (2021)](https://www.zotero.org/google-docs/?COo3JD) | This study analyzes user satisfaction with the Discord application using the SERVQUAL method. | This study adopted the SERVQUAL method (Tangibles, Reliability, Responsiveness, Assurance, and Empathy) to measure Indonesian Discord user satisfaction. The research was conducted in Jambi City. | Out of all the SERVQUAL dimensions (Tangibles, Reliability, Responsiveness, Assurance, and Empathy), only Empathy suggested a significant impact on Perception with T-count = 5.126, which is bigger than the T-table (1.985523). | [Khalid (2021)](https://www.zotero.org/google-docs/?EKDWuO) adopted the SERVQUAL measurement model to measure Jambi City Discord user perception of using the Discord services. While the current study adopted a hierarchical model of e-service quality dimensions (consisting of website design, security/privacy, and fulfillment) and sense of belonging as the user satisfaction predictors. The relationship of user satisfaction on intention to use was also examined to determine its impact on the usage intention of Indonesian Discord users. |
| 5 | The impact of e-service quality and customer satisfaction on customer behavior in online shopping | [Rita et al. (2019)](https://www.zotero.org/google-docs/?OKvVTp) | This research aims to develop new knowledge to understanding better the most critical dimensions of e-service quality that impact customer satisfaction, customer trust, and customer behavior to build on the existing literature on e-service quality in online shopping. | This study uses e-service quality dimensions in website design, customer service, security/privacy, and fulfillment to examine the effect on overall e-service quality, customer satisfaction, customer trust, repurchase intention, word of mouth, and site revisit. This research was conducted in the domain of online shopping. | The analysis results show that the three dimensions of e-service quality, namely website design, security/privacy, and fulfillment, affect overall e-service quality. Meanwhile, customer service is not significantly related to overall e-service quality. | The current study was conducted in the context of social media, which differed from [Rita et al. (2019)](https://www.zotero.org/google-docs/?VlAvxy) in online shopping customers. The current study adopted a different hierarchical model of e-service quality dimensions (website design, security/privacy, and fulfillment) with a sense of belonging as the user satisfaction predictor to fit the research object better. The relationship of user satisfaction on intention to use was also examined to determine its impact on the usage intention of Indonesian Discord users. |
| 6 | The Impact of TikTok User Satisfaction on Continuous Intention to Use the Application | [Sharabati et al. (2022)](https://www.zotero.org/google-docs/?wka5Yv) | This research aims to determine the factors that influence the continuous intention to use TikTok in Jordan and to what extent satisfaction with TikTok influences the continuous intention to use TikTok. | This study uses a quantitative cross-sectional approach. Data is collected through online surveys and shared on social media such as WhatsApp, Instagram, and Facebook. Variables such as past time, affection, trendiness, sense of belonging, sociability, informative, and self-expression are used to find correlations with user satisfaction on continuous intention to use. | Results show that factors such as self-expression, informativeness, a sense of belonging, and trendiness significantly affects TikTok user satisfaction. However, sociability, affection, and past-time do not substantially influence TikTok user satisfaction. | Despite its similarities in a research context in social media, the current study adopted a different hierarchical model of e-service quality dimensions (website design, security/privacy, and fulfillment). The current study also examines the sense of belonging to determine its impact on building superior user satisfaction. The relationship between user satisfaction and intention to use was also examined to determine its impact on the usage intention of Indonesian Discord users. |
| 7 | Electronic service quality of Facebook social commerce and collaborative  learning | [Wu et al. (2015)](https://www.zotero.org/google-docs/?rVLxY5) | This study aims to utilize the e-SQ dimensions to measure the service quality of commercial activities on Facebook. | This study used the analytic hierarchy process (AHP) questionnaire and the fuzzy analytic hierarchy process (FAHP) to evaluate the weighting of e-SQ dimensions (Reliability, Responsiveness, Information, Security, Ease of Use, and Trust) among cross-countries participants. It also used VIKOR method to find the ideal e-SQ dimensions and ideal commercial activities on Facebook. | The result of FAHP indicated that e-SQ dimensions (Security, Trust, Reliability) have more weighting than the other dimensions. While Ease of Use, Information, and Responsiveness will influence the users’ intention to visit ads. | [Wu et al. (2015)](https://www.zotero.org/google-docs/?enrVp0) adopted decision-making methods (AHP, FAHP, and VIKOR) to weigh the importance of e-SQ dimensions. Meanwhile, the current study aims to examine the relationship between e-service quality and a sense of belonging with user satisfaction, which later impacts the usage intention of Indonesian Discord users. |
| 8 | The Impact of Service Quality on Customer Loyalty through  Customer Satisfaction in Mobile Social Media | [Yum & Yoo (2023)](https://www.zotero.org/google-docs/?TD1HCP) | [Yum & Yoo (2023)](https://www.zotero.org/google-docs/?T47vrE) aimed to identify the relationship  between service quality, customer satisfaction, and customer loyalty in mobile social media. Furthermore, it also aimed to evaluate the role of customer satisfaction as a mediator. | The proposed research  model consists of four mobile service quality dimensions (usefulness, convenience, design, and  security/privacy), customer satisfaction, and customer loyalty. The survey used the self-administrated method. | The study suggested that usefulness, convenience, design, and security/privacy significantly and positively affect customer satisfaction. It also suggested that customer satisfaction significantly and positively impacts customer loyalty. Lastly, this study proved that customer satisfaction mediates the relationship between mobile service quality and customer loyalty. | Besides the mobile service quality, the current study also measured the relationship of sense of belonging on user satisfaction to provide a more comprehensive evaluation of digital community space. The current study also aims to examine the relationship between user satisfaction and intention to use Indonesian Discord user. |
| 9 | The Applicability of E-S-QUAL for Assessing the Service Quality of Social Media Services in Academic Libraries | [Kim (2015)](https://www.zotero.org/google-docs/?C0UnUL) | This study aimed to examine the applicability of the E-S-QUAL instrument model developed by [Parasuraman et al. (2005)](https://www.zotero.org/google-docs/?aUjkWT) to measure the service quality of library social media services. | Nine hypotheses are proposed to examine E-S-QUAL applicability on library social media services. Data was collected in five academic university libraries across North America via online surveys on Twitter. The data collected from the questionnaire, based on the modified E-S-QUAL instrument, was analyzed using multivariate statistical methods, including exploratory, confirmatory factor analysis, and many more. | The study suggested that the modified E-S-QUAL instrument had good reliability and relationships within each construct to measure the service quality of library social media services. Rewording is suggested to reduce the possibility of dimensionality and validity test errors. | [Kim (2015)](https://www.zotero.org/google-docs/?bu8rV4) aimed to modify the E-S-QUAL measurement model to test its applicability in the library social media services. The current study adopted a different hierarchical model of e-service quality dimensions (website design, security/privacy, and fulfillment). In addition, the current study also examines the sense of belonging to determine its impact on building superior user satisfaction. The relationship of user satisfaction on intention to use was also examined to determine its impact on the usage intention of Indonesian Discord users. |

The empirical review concluded that e-service quality was an important predictor of user satisfaction, and user satisfaction was proven to have a positive relationship with intention to use. It can be indicated that the user perceived a higher satisfaction and usage intent to use social media services to engage with their community when there is a superior degree of e-service quality combined with a sense of belonging.

## Theoretical Review

### Discord

Discord is a VoIP, instant messaging platform created in 2015 and is widely used by gamers to communicate while playing games. Data from the official Discord website (discord.com) shows that currently, Discord has 150 million monthly active users, 19 million active servers per week, and 4 billion server conversation minutes daily. Furthermore, according to a statistical overview of Discord provided by a statistic portal named Statista, in 2023, Discord is estimated to have reached over 560 million registered users, despite the competition with other social media platforms such as Facebook, Instagram, and Twitter. As a digital community space provider platform, Discord has been used by various communities ranging from education (Wiles & Simmons, 2022) to e-sports communities (Reitman et al., 2021).

In Discord, the community space is called a server. Discord server structure gives a community an inherent hierarchy that influences how a society is organized, how rules and norms are set, and how disputes are resolved (Reitman et al., 2021). The interaction space on a Discord server is made based on separate topic-based channels, also called channels. The user interface of Discord text and voice channels are shown in Figure 2.1 and Figure 2.2.



Figure 2.1 Discord User Interface for Text Chatting

Figure 2.2 below shows the user interface example of the Discord desktop application's voice and video chat features. The user has the option to turn on their camera while joining a voice room.

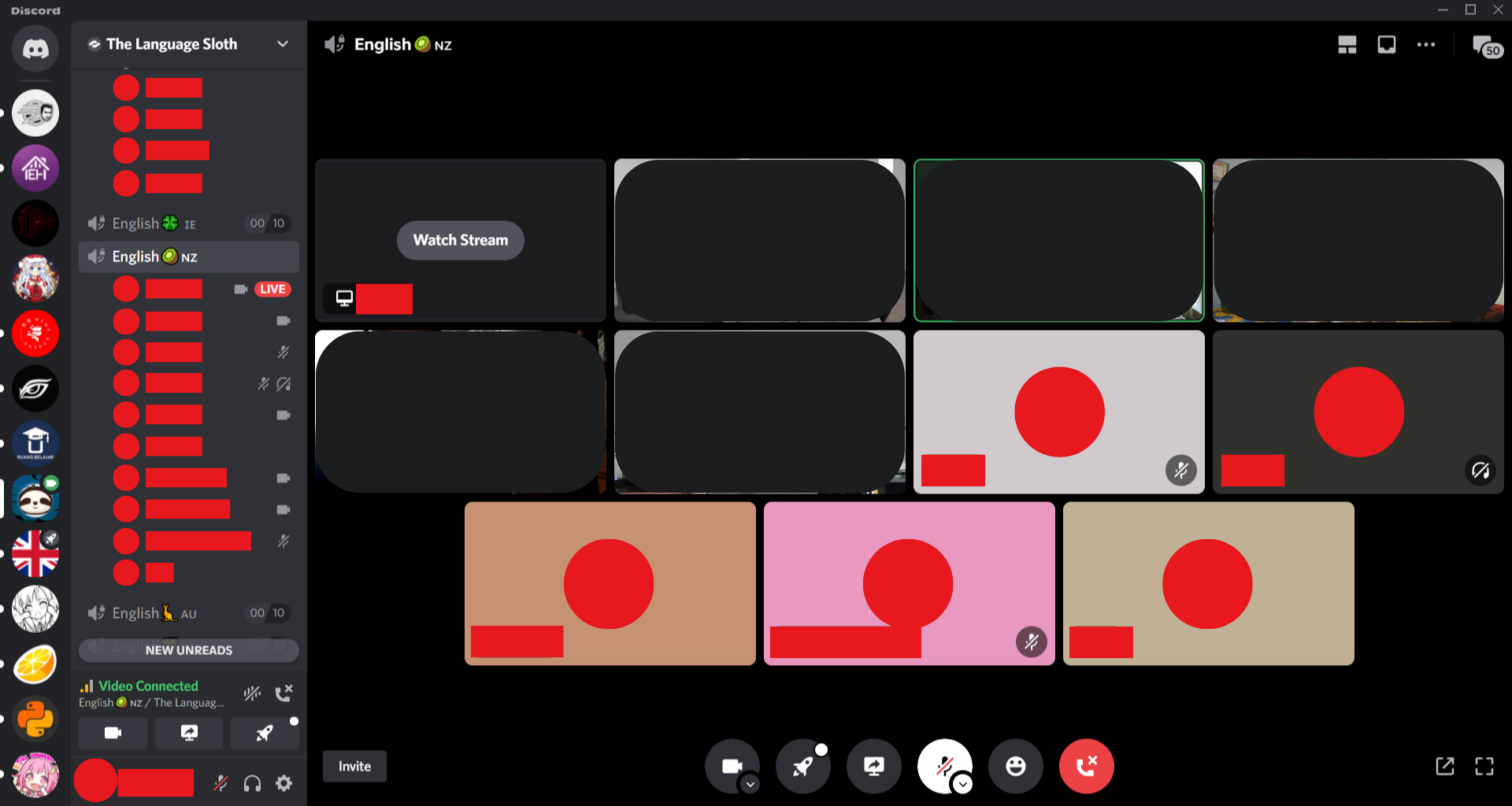


Figure 2.2 Discord User Interface for Voice and Video Chatting

Discord allows its users to customize according to the needs of their respective communities, as shown in Figure 2.3. Thus, there are no restrictions regarding the topic of a channel, hierarchical server structure, and each community can determine their own server rules. In addition to the regulations set by the community, Discord has established Terms of Service and Community Guidelines. Suppose there are indications of violations of the rules that Discord has made. In that case, users have the right to report suspected communities, and Discord has the right to act against servers or individuals indicated to have violated the rules (Jiang et al., 2019).

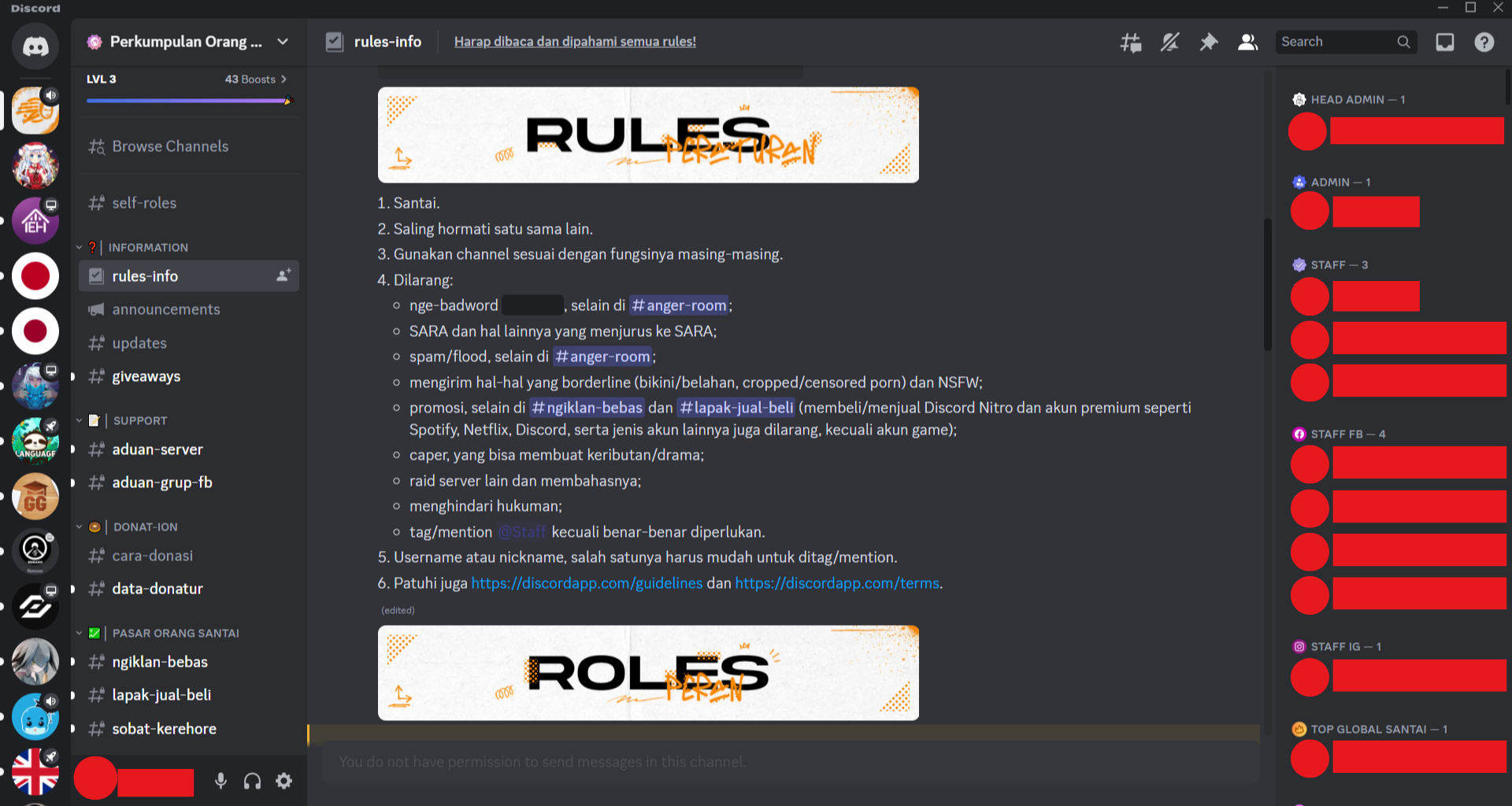


Figure 2.3 Discord Community Rules

### e-Service Quality

Parasuraman et al. (2005) defined e-service quality as the degree to which a website provides an efficient and compelling buying experience and after-purchase process. Wolfinbarger & Gilly (2003), in a study on electronic retailing quality (eTailQ), explained that e-service quality is the end-to-end transaction process which includes information research, website navigation, order, customer service interactions, delivery, and the ordered product satisfaction. Multiple studies were conducted to examine the presence of e-service quality in social media and mobile services as it suggested that service quality (and e-service quality) affects users’ overall perception towards the service given by the provider (Hossain & Kim, 2018; Kim, 2015; Lien et al., 2017; Zhao et al., 2012).

Research on the conceptual model of e-service quality shows that e-service quality is best conceptualized as a hierarchical construct with sixteen attributes in four dimensions, where these four dimensions influence the dimensions of overall service quality(Blut, 2016; Rita et al., 2019). These four dimensions are as follows: 1) website design, 2) customer service, 3) security/privacy, and 4) fulfillment. Findings by Rita et al. (2019) suggested that website design, security/privacy, and fulfillment were positively associated with developing the outstanding service quality of Indonesian customers. However, customer service did not show a statistically significant relationship with e-service quality among Indonesians.

One of the methods to measure e-service quality is by evaluating service providers' website performance (Chuang et al., 2016; Dickinger & Stangl, 2013). The common factors to measure the e-service quality consist of:

* Website Design (Blut, 2016; Dickinger & Stangl, 2013; Rita et al., 2019; Wolfinbarger & Gilly, 2003; Yum & Yoo, 2023)
* Information Quality (Blut, 2016; Dickinger & Stangl, 2013; Rita et al., 2019; Wu et al., 2015)
* Website Aesthetics (Visual Appearance) (Anindita & Perdana, 2022; Blut, 2016; Park & Gretzel, 2007; Rita et al., 2019). Anindita & Perdana (2022) suggested that maintaining the excellence of website appearance aesthetics is essential and is attributed to its role in determining user satisfaction.
* Website Convenience (Ease of Use) (Blut, 2016; Dickinger & Stangl, 2013; Rita et al., 2019; Wu et al., 2015; Yum & Yoo, 2023). Yum & Yoo (2023) referred to convenience as the degree of ease and usage simplicity regardless of the accessed time and place.
* Website Personalization (Blut, 2016; Li & Suomi, 2008; Park & Gretzel, 2007; Rita et al., 2019). Li & Suomi (2008) suggested that in e-service quality, personalized service can improve user satisfaction, and they will most likely be reluctant to try services offered by other companies.
* System Availability (Blut, 2016; Dickinger & Stangl, 2013; Parasuraman et al., 2005; Rita et al., 2019). Dickinger & Stangl (2013) referred to system availability as the degree of website technical functionality, performance, and responsiveness.
* Security/Privacy (Blut, 2016; Kaya et al., 2019; Parasuraman et al., 2005; Rita et al., 2019; Wu et al., 2015; Yum & Yoo, 2023). Yum & Yoo (2023) explained that security/privacy refers to the degree of personal data protection and usage record management.
* Fulfillment (Blut, 2016; Kaya et al., 2019; Kim, 2015; Park & Gretzel, 2007; Rita et al., 2019). Kim (2015) suggested that in social media services, fulfillment refers to the degree to which the service provider promises dependable and accurate information is fulfilled.

### Sense of Belonging

One of the early pieces of literature about Belonging in building a community can be seen in the research conducted by (Mcmillan & Chavis, 1986). A sense of Belonging acts as one of the building blocks of a Sense of Community (SOC), which is also known to impact satisfaction and commitment in the community (Burroughs & Eby, 1998). Not only affecting face-to-face communities, but SOC is also described as affecting virtual communities, similar to Discord as a virtual community provider platform. The feelings that form and become a building factor in virtual communities are known formally as a Sense of Virtual Community (SOVC) (Blanchard, 2008). Therefore, it can be concluded that Belonging is one of the important aspects of building a virtual community.

In recent studies, Belonging has been shown to positively affect satisfaction (Hung et al., 2019; Krishen et al., 2019; Sharabati et al., 2022). Furthermore, it is explained that a sense of belonging can influence individual involvement and dependence on a community or group. The study suggested that the sense of belonging has a positive effect on a person's motivation to use social media to interact with the digital community; the higher a platform and society provide an opportunity for each individual to be open and expressive, a sense of attachment from everyone involved in it will be formed (Raman, 2014).

### User Satisfaction

Oliver (1999) defined satisfaction as a customer/user’s cognitive assessment of the discrepancy between the expected performance quality and the received performance quality. Previous research has shown that e-service quality significantly impacts user satisfaction (Rita et al., 2019). This also aligns with other research that e-service quality is the primary determinant of user satisfaction (Demir et al., 2020; Irham et al., 2021; Sasono et al., 2021). In social media platforms, Sharabati et al. (2022) suggested that increasing the sense of belonging leads to the user satisfaction improvement.

Krishen et al. (2019) explained that differences in nationality affect the determinants of user satisfaction. Vietnamese people get higher satisfaction from system quality and emotional connection, while US people show higher satisfaction from information quality. Therefore, this research aims to determine the most significant determinant of Indonesian Discord user satisfaction in building digital communities.

### Intention to Use

Intention to use refers to the user's willingness to continue exploring, publishing content, and remaining loyal to the same social media platform (Sharabati et al., 2022). A superior service quality suggests a positive relationship that leads to favorable behavioral intentions for the company (Udo et al., 2010).

Udo et al. (2010) suggested that service quality was proven to impact behavioral intention directly. Besides, it also indicated that the indirect impact of web service quality on behavioral purposes (via customer satisfaction) seems slightly stronger for customers' behavioral preferences to use the e-service repeatedly. This finding is also supported by several other studies which prove that service quality and satisfaction has a positive impact on the intention to use (Lien et al., 2017; Nguyen et al., 2022; Sharabati et al., 2022; Wang et al., 2019).

Furthermore, research conducted by Lien et al. (2017) and Hossain & Kim (2018) in their case study of social media network service providers (SNS) proved that user satisfaction is positively correlated and a reasonable determinant of usage intentions. Based on the similarity of the SNS research objects, the usage intention variable can be examined to find out its relationship with Discord user satisfaction in Indonesia.

### Evaluation of Higher-order Constructs with PLS-SEM

Higher-order constructs provide researchers with a framework for modelling structures in a more abstract dimension (higher-order components) and its more distinct sub-dimensions (lower-order components). It allows researchers to reduce relationships in a path model by summarizing the independent constructs in a higher-order construct, thus achieving model parsimony (simple models with a desired explanatory predictive power) (Polites et al., 2012).

There are several approaches to estimating higher-construct order in SEM; with the repeated indicators approach and the two-stage approach being the most prominent ones (Sarstedt et al., 2019). However, it becomes problematic when estimating reflective-formative or formative-formative higher-order constructs. The reason is that PLS-SEM regresses the higher-order component on its lower-order components, resulting in the impossibility of any antecedent construct in the path model that is not part of the higher-order construct to explain any variance of the higher-order component and its path coefficient will come close to zero, or in this case is non-significant (Ringle et al., 2012; Sarstedt et al., 2019).

The embedded two-stage approach presents an alternative to evaluating the higher-order reflective-formative constructs (Ringle et al., 2012). Sarstedt et al. (2019) explained that the first stage resembles the repeated indicators approach, producing a non-significant path coefficient from the antecedent to the higher-order construct. However, the construct scores are kept as new variables instead of interpreting the model estimates. These scores will be used as indicators for the higher-order construct measurement model in the second stage.

### PLS-SEM Model Evaluation

Statistical approach with PLS-SEM depends on the nature of the construct (Sarstedt et al., 2017). A model that includes reflectively measured constructs needs to be evaluated from their indicator loadings (reliability), internal consistency reliability, convergent validity, and discriminant validity. If it includes formatively measured constructs, they are evaluated from their convergent validity, collinearity, significance and relevance of indicator weights. Lastly, the structural model is assessed by examining their collinearity, coefficient of determination (R2), predictive relevance (Q2), significance, relevance, and effect size (f2) of path coefficients.

### Reflective Model Evaluation

The first evaluation in reflective models is to assess the indicator loadings. Indicator loadings reflect how much the original construct correlates to the derived factors (Gefen et al., 2000). It is considered acceptable if indicator loadings are higher than 0.5 and should ideally be 0.7, which suggests that the construct explains more than 50% of the indicator’s variance, indicating satisfactory reliability (Hair et al., 2010; Sarstedt et al., 2014, 2017).

The next step is to assess the construct’s internal consistency reliability. Internal consistency reliability refers to the extent to which indicators measuring the same construct are related (Hair et al., 2021b). This evaluation mainly involves Jöreskog’s (1971) composite reliability, as shown in equation 1 below.

Equation 1. Jöreskog’s (1971) Composite Reliability

General guidance is that higher composite reliability values indicate higher reliability levels. Values between 0.60 and 0.70 are considered acceptable in exploratory research, whereas values between 0.70 and 0.95 indicate satisfactory reliability (Hair et al., 2017). However, noticeably higher values (e.g., more than 0.95) suggest that the item questions are nearly identical and redundant, thus indicating a reliability issue.

Cronbach’s alpha is an alternative internal consistency reliability measure, giving identical thresholds to the composite reliability (ρc). It is the lower bound of internal consistency reliability, while composite reliability acts as the upper bound (Hair et al., 2021b; Sarstedt et al., 2017). Hair et al. (2021b) suggested a minimum value of 0.70 (or 0.60 in exploratory research), a recommended value ranging from 0.80 to 0.90, with a maximum of 0.95 to avoid indicator redundancy. The standardized form of Cronbach’s alpha cited from (Sarstedt et al., 2017) can be seen in equation 2 below.

Equation 2. Cronbach’s alpha equation (Sarstedt et al., 2017)

The next measurement addressed the convergent validity of the reflective measurement models. Convergent validity refers to the extent of how closely related one measurement scale is to the other within the same construct that theoretically should be related (Krabbe, 2017). This evaluation can be conducted using average variance extracted (AVE) calculated from the mean squared loadings of each indicator affiliated with the construct. The recommended threshold for AVE is 0.50 or higher, which indicates that the construct explains 50% (or more) of the variance of its items (Hair et al., 2021b; Sarstedt et al., 2017). The equation of AVE can be seen in equation 3 below.

Equation 3. Average Variance Extracted (Sarstedt et al., 2017)

The final evaluation assesses the reflective constructs’ discriminant validity. Opposite to convergent validity, discriminant validity tests the construct measurement that theoretically should not be highly correlated from one another. This evaluation aims to prove the distinctiveness of constructs measurement items and examine whether the items from the construct correctly measure the intended construct or if they unintentionally measure the other constructs (Urbach & Ahlemann, 2010). It also examines the degree of overlapping constructs (F. Hair Jr et al., 2014). In PLS-SEM, there are two traditional and popular discriminant validity measurements, the cross-loadings and Fornell-Larcker Criterion (Alnakhli, 2019; Sarstedt et al., 2014; Urbach & Ahlemann, 2010).

The first discriminant validity evaluation, cross-loadings, is considered more liberal (Henseler et al., 2009). Cross-loadings are obtained by determining the correlations of each latent construct’s score with all the other items (Chin, 1998). A general recommendation for this approach is that a single construct indicator should have higher loadings on its construct compared to other constructs (Hair et al., 2017).

The Fornell-Larcker criterion suggests a comparison of the square root of AVE with the latent construct correlations (Fornell & Larcker, 1981). Specifically, to establish discriminant validity, the square root of each latent construct’s AVE should be higher than the squared correlations with other latent constructs (Hair et al., 2017). This will indicate that each latent construct shares more variance with their respective measurement indicators than another group of latent construct indicators.

While the Fornell-Larcker criterion typically reveals collinearity problems in the inner model earlier in the model evaluation, there is an exception when formatively measured constructs are included. In this case, the AVE scores, which establish the basis of the Fornell-Larcker evaluation, do not pose a relevant measure for formative indicators (F. Hair Jr et al., 2014). Thus, collinearity evaluation in the inner model became crucial when dealing with formatively measured constructs.

### Formative Model Evaluation

Formative constructs are evaluated differently from reflective constructs. This evaluation assessed the convergent validity, multi-collinearity, significance, and indicator weights test of formatively measured constructs.

Multi-collinearity test examines if two or more predictors are highly linearly related. Variance inflation factor (VIF) tests formative constructs' collinearity and determines if two or more indicators are too highly correlated (Hair et al., 2021a; Petter et al., 2007). A VIF value greater than five or above indicates a collinearity problem (Hair et al., 2021a; Sarstedt et al., 2017).

The next step is to evaluate the statistical significance and relevance of the formative construct’s indicator weights. This evaluation can be conducted using the bootstrapping method. Bias-corrected and accelerated (BCa) is recommended as the confidence interval method for significance evaluation if the distribution of indicator weights is skewed (Hair et al., 2017). Otherwise, the percentile method should be used as the confidence interval method (Aguirre-Urreta et al., 2018). The *t*-value and *p*-value generated from bootstrapping can be used to assess the significance of indicator weights. The *t-*value should be above 1.96 (two-tailed test) and the *p-*value below 0.05 for a 95% confidence interval (Hair et al., 2019, 2021a).

### Structural Model Evaluation

The structural model evaluation focuses on evaluating the significance and relevance of path coefficients, followed by the model’s explanatory and predictive power (Hair et al., 2021b). There are four criteria to evaluate the predictive capability of the model; 1) coefficient of determination (R2), cross-validated redundancy (Q2), effect size (f2), and path coefficients) will be used to test the structural model (Sarstedt et al., 2017).

The coefficient of determination (R2) measures how much exogenous constructs can explain endogenous constructs. A general recommendation of R2 values 0.75, 0.50, and 0.25 in marketing research can be considered substantial, moderate, and weak (Hair et al., 2011). However, the R2 values may differ depending on the research discipline. In consumer behavior research, R2 values of 0.20 are considered high, and R2 values of 0.75 are perceived as high in success driver studies.

Cross-validated Redundancy (Q2) or Q-square test was used to test the predictive relevance of the endogenous construct. As a general recommendation, Q2 values > 0 for a specific endogenous construct suggest that the path model has adequate predictive relevance to certain constructs (Sarstedt et al., 2017).

The effect size (f2) test was conducted to measure the strength of the relationship between variables. Specifically, the effect size test was used to examine the r-square changes when a specific predictor construct is removed from the model. As a general rule, ƒ2 values of 0.02, 0.15, and 0.35 can be interpreted as small, medium, and large effects, while a value below 0.02 can be considered there is no effect (Cohen, 1988; Sarstedt et al., 2017).

The last assessment is to examine the path coefficients. Path coefficients are evaluated regarding the direct effect in structural paths between the constructs based on the hypothesis made in this research. This evaluation aims to determine the significance and relevance of path coefficients.

A path coefficient can be considered significant at a 5% significant level (corresponds to a 95% confidence interval) if zero does not fall within the confidence interval. (Aguirre-Urreta et al., 2018; Hazra, 2017; Sarstedt et al., 2017). Hair et al. (2017) suggested using bias-corrected and accelerated (BCa) as the confidence interval method for significance evaluation if the distribution of indicator weights is skewed. Otherwise, it was suggested to use the percentile method to conduct bootstrap-based confidence intervals (Aguirre-Urreta et al., 2018). The bootstrapping feature in SmartPLS can be utilized to calculate the *t-*value and *p-*value of path coefficients, which indicates the path coefficient’s significance. The recommended *t-*value is above 1.96 (two-tailed test), and the *p-*value is below 0.05 for a 95% confidence interval (Hair et al., 2019, 2021a). Regarding relevance, path coefficients usually range between -1 to +1, with coefficients closer to +1 suggesting a strong positive correlation and coefficients closer to -1 representing a strong negative correlation (Sarstedt et al., 2017).

### SmartPLS

The data analysis software used in this study was SmartPLS version 4. SmartPLS is considered the most comprehensive and up-to-date software for a PLS-SEM study (Henseler, 2017; Sarstedt & Cheah, 2019). Sarstedt & Cheah (2019) further explained that it is also the most often used PLS-SEM software and has been applied across disciplines. SmartPLS’s user-friendly design allows users to perform complex statistical analyses efficiently.

# CHAPTER III RESEARCH METHODOLOGY

## Research Type

This study is categorized as an explanatory study with a quantitative approach. An explanatory study systematically explores the cause of a phenomenon when there is limited information known. This research seeks to understand and describe why a related event/phenomenon/behavior occurs (Mertler, 2018). For example, an explanatory study can be used to answer the strongest predictor of e-service quality and its effect on user satisfaction.

## Research Framework

Based on the background and literature studies conducted, this study adopted the conceptual model by Rita et al. (2019) and Kim (2015) to measure the relationship between the dimensions that influence e-service quality (website design, security/privacy, and fulfillment). Furthermore, this study measured the effect of a sense of belonging on user satisfaction with the measurement scale adopted based on Sharabati et al. (2022) and Hung et al. (2019).

The intention to use construct was adopted based on research by Hossain & Kim (2018). The variables' indicators were adjusted to Discord's online community services application based on the website performance index measurement. Further explanation of the conceptual model, inner and outer models adopted in this study will be explained in section 3.2.1 below.

### Conceptual Model

This study's inner or structural model consists of overall e-service quality dimensions (website design, security/privacy, and fulfillment), sense of belonging, user satisfaction, and intention to use. The proposed inner model used in this study can be seen in **Figure 3.1** below.

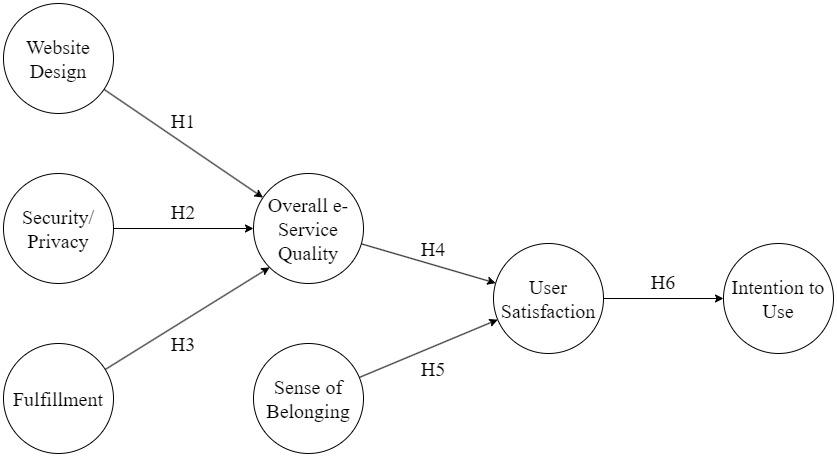


Figure 3.1 Proposed Inner Model

The proposed outer model or measurement model presents the measured constructs, as shown in **Figure 3.2** below.

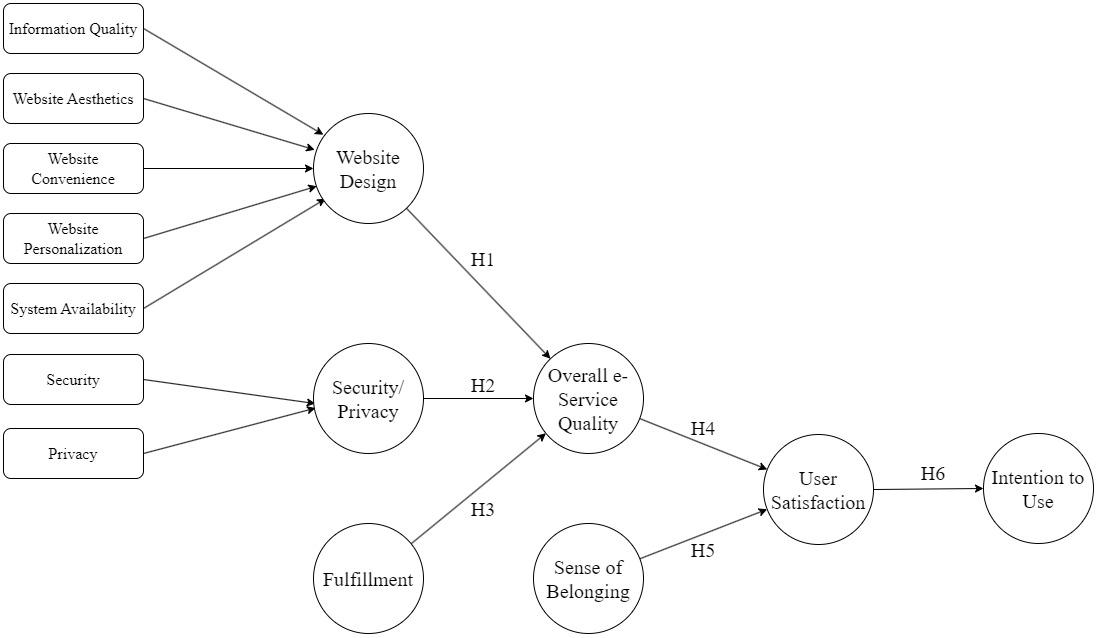


Figure 3.2 Proposed Outer Model

In this research’s proposed outer model, e-service quality dimensions (website design and security/privacy) were second-order constructs operationalized as reflective-formative types. Each e-service quality attribute was reflective, and the e-service quality dimensions were formative. Several adjustments to the measurement model were made to the proposed research model due to differences in the industrial segment of the research object in this study. The e-service quality model from Blut (2016) was simplified based on the prior related studies of measuring e-service quality focused on website performance (Chuang et al., 2016; Dickinger & Stangl, 2013; Wu et al., 2015; Yum & Yoo, 2023).

Since it suggested that fulfillment is a crucial factor in assessing e-service quality (Kaya et al., 2019; Kim, 2015; Rita et al., 2019), the indicators to measure fulfillment were instead adopted from Kim (2015), which aimed to apply the e-service quality dimension to the social media services. However, the fulfillment construct in Kim (2015) is operationalized as a first-order dimension, unlike Rita et al. (2019). Therefore, it caused an adjustment in this construct from a higher-order construct to a lower-order construct.

### Research Hypotheses

The hypotheses proposed in this study are as follows:

H1: Website Design positively affects Overall e-Service Quality.

H2: Security/Privacy positively affects Overall e-Service Quality.

H3: Fulfillment positively affects Overall e-Service Quality.

H4: Overall e-Service Quality positively affects User Satisfaction.

H5: Sense of Belongingpositively affects User Satisfaction.

H6: User Satisfactionpositively affects Intention to Use.

## Research Population and Sample

### Population

The population representing this study's target audience comprises 5500 individuals exclusively from the ‘Perkumpulan Orang Santai’ Discord community server. This community consists of members from across Indonesia, serving as a representative sample of Discord users in Indonesia with a diverse and extensive cultural background. The reasoning behind selecting this community as a research object is in accordance with familiarity and data accessibility. As a part of a community member, the researcher possessed a comprehensive understanding of its culture, as well as the ease of obtaining relevant data.

### Sample

Statistically, the larger the sample size, the better results can be expected. This study used a margin of error of 5%, which is the value most often chosen as MOE (Etikan & Babatope, 2019). Using Slovin’s formula below, the total sample of this study can be concluded as 372.8, rounded up to 373 individuals.

Equation 4. Slovin’s Equation

In this equation, **n** refers to the sample size, **N** refers to the population size (375 individuals), and **e** refers to the margin of error used in this study (5%).

### Characteristics of Respondents

Respondents from this study were divided based on age (13-17 years, 18-22 years, 23-27 years, 28 years/above), gender (Men, Women, prefer not to answer), last education (Highschool/below, Associate Degree (D1/D2/D3), Applied Bachelor/Bachelor (D4/S1), Master’s degree/above), Salary (Rp 0.00 until up to Rp 6.000.000.00), years of being a Discord application user (0-6 months, 7-12 months, more than one year), and Discord discovery source (Friends, Family, College/School, Social Media, and Broadcast/Print Media).

## Data Collection

### Data Type

The type of data collection used in this study is primary data. The data collected directly is called primary data, which has not been altered and is more reliable and objective (Kabbir, 2016). Therefore, its validity is superior to secondary data.

### Data Collection Model

The data collection method in this study was using a survey or questionnaire made in Google Forms. The survey method, generally using a questionnaire, is one of the most popular methods in the social sciences (Young, 2015). The popularity of these methods in small-scale intercultural research is linked to perceived ease of use and the access they can provide to large amounts of data that even the most inexperienced researcher can analyze.

The type of questions that were used in this study were closed-ended. Closed-ended questions are questions with some known information/variables and only have one correct answer that can be obtained due to the relationship between these variables. Thus, the answer to this type of question is clear and solved by specific rules/formulas (Agustianingsih & Mahmudi, 2019).

The sampling technique used in this study was simple random sampling. This sampling technique selects sample members randomly and purely by chance. Therefore, the quality of the sample is not affected because each member has an equal chance of being selected for the sample. The simple random sampling technique was chosen in this study because this type of sampling is best for very homogeneous populations (Bhardwaj, 2019). This study distributed the questionnaire link to a specific Discord server named ‘Perkumpulan Orang Santai’.

### Measurement Scale

The measurement scale in this study uses a Likert Scale. As a psychometric tool, this scale includes a set of research study hypothesis statements. Respondents in this study were asked to state their agreement to each statement ranging from strongly agree to strongly disagree. The defined five-point Likert Scale can be seen in Table 2 below.

**Table 2. Likert Scale**

|  |  |  |
| --- | --- | --- |
| **No** | **Answer Choices** | **Scale** |
| 1 | Strongly Agree (SA) | 5 |
| 2 | Agree (A) | 4 |
| 3 | Neutral (N) | 3 |
| 4 | Disagree (D) | 2 |
| 5 | Strongly Disagree (SD) | 1 |

## Construct Operational Definitions

The following is a description of the variables and operational definitions of the variables used in this study.

### Constructs

The exogenous and endogenous constructs adopted in this study are as follows:

1. **Exogenous Constructs**

The exogenous constructs in this study are website design, security/privacy, fulfillment, and sense of belonging.

1. **Endogenous Constructs**

The endogenous constructs in this study are overall e-service quality, user satisfaction, and intention to use.

### Construct Operational Definitions

The following table presents the constructs, attributes, and references used in this study.

**Table 3. Adopted Constructs, Attributes, and the References**

|  |  |  |  |
| --- | --- | --- | --- |
| Constructs |  | Attributes | References |
| Website Design | Information Quality | IQ1. The information provided on the Discord desktop application is sufficient to support my tasks and interact with my community.  IQ2. Discord adequately meets my information needs to interact with community members (notifications, profile status, date, etc.).  IQ3. The information provided on Discord is effective (features description, maximum size/type of file, the maximum length of text characters, new updates explanation, etc.). | (Rita et al., 2019) |
|  | Website Aesthetics | WA1. Discord's interface is visually pleasing (palette color selection, app layout, text/image size, etc.).  WA2. Discord's interface is visually appealing (it has unique app design characteristics that can distinguish it from other apps). | (Rita et al., 2019) |
|  | Website Convenience | WC1. Discord displays visually pleasing, easy-to-read content.  WC2. The text on the Discord is easy to read.  WC3. Labels on the Discord (notifications, inbox, upload files, etc.) are easy to understand. | (Rita et al., 2019) |
|  | Website Personalization | WP1. Discord provides features that allow me to personalize my experience using the desktop application (customized profile, notification preferences, organizing channel, etc.).  WP2. Discord has interactive features to support me in interacting with community members (member roles, text/voice channels, live streams, etc).  WP3. I can interact and utilize the interactive features in the Discord desktop application to get information tailored to my needs (message search, filters, mutual friend/server, etc.). | (Rita et al., 2019) |
|  | System Availability | SA1. Discord application offers very little waiting time between my actions and the app’s response (responsive).  SA2. Discord desktop application loads quickly when I run it for the first time. | (Rita et al., 2019) |
| Security/Privacy | Security | SC1. I feel safe when using Discord to interact with community members.  SC2. Discord has adequate security features.  SC3. Discord provides protection for my personal data. | (Rita et al., 2019) |
|  | Privacy | PR1. I trust Discord to keep my personal data safe.  PR2. I trust Discord will respect and not misuse my personal data.  PR3. Discord protects my privacy regarding interaction and social activity data generated while using the application. | (Dalbehera, 2020; Rita et al., 2019) |
| Fulfillment |  | FU1. Discord offers features that have been very helpful in answering my questions (Support Center, Frequently Asked Questions, Community Blog, etc.).  FU2. Getting the information I want to meet my needs in interacting with the community is not difficult.  FU3. Discord lived up to my expectations by providing excellent information and assistance in a very short timeframe. | (Kim, 2015) |
| Overall e-Service Quality |  | OSQ1. Overall, I am very comfortable interacting with the community within Discord.  OSQ2. The overall quality of the service Discord provides for interacting with the community is excellent.  OSQ3. My overall feeling for the Discord application service is delighted. | (Rita et al., 2019) |
| Sense of Belonging |  | SB1. I am proud to be a member of my Discord community.  SB2. I feel happy to be a part of my Discord community.  SB3. I feel a strong attachment to my Discord community. | (Sharabati et al., 2022; Wang et al., 2019) |
| User Satisfaction |  | US1. I am satisfied with the Discord app.  US2. Discord service is getting closer to the ideal online community space.  US3. Discord has always met my needs in the community. | (Rita et al., 2019) |
| Intention to Use |  | IU1. I am considering using Discord regularly.  IU2. I plan to use the Discord service to do community activities.  IU3. In the future, I will use Discord services whenever I need to. | (Hossain & Kim, 2018; Nguyen et al., 2022; Udo et al., 2010) |

## Statistical Analysis Approach

This research adopted higher-order constructs for two e-service quality dimensions (Website Design and Security/Privacy). Higher-order constructs were adopted because they facilitate conceptualizing a construct on a more abstract higher-level dimension and its more specific lower-order subdimensions, allowing researchers to capture the complex relationships between constructs (Sarstedt et al., 2019). The relationship between first-order constructs and their respective indicators was represented as reflective. Meanwhile, the relationship between first-order constructs to their second-order constructs was described as formative. Therefore, the multi-collinearity, significance, and the sign of weights test were also measured (Rita et al., 2019).

The evaluation criteria in the embedded-two-stage approach are separated into two main stages. In the first stage, there are two assessments to conduct. The first step is validating the reflective and formative measurement model. After these constructs are validated, the structural model is analyzed to test the collinearity, significance, and relevance of the path coefficients.

### Validating the Reflective Measurement Model

In the first step of the embedded two-stage approach, convergent validity, reliability, and discriminant validity were assessed. Convergent validity was assessed using factor loading, Composite Reliability (CR), and Average Variance Extracted (AVE). It is suggested as ideal if every indicator’s factor loading is more than 0.5 and ideally 0.7 or higher, composite reliability exceeds 0.70, and AVE exceeds 0.50 (Gefen et al., 2000; Hair et al., 2010; Kline et al., 2012). Cronbach’s alpha was also evaluated to test the consistency of the instrument’s reliability. The recommended Cronbach’s alpha value is 0.7 or higher, but 0.6 or higher is also acceptable (Hair et al., 2011).

Discriminant validity ensures that a construct’s indicator is unique and highly correlated to its respective construct. In this study, discriminant validity was assessed using the cross-loadings and Fornell-Larcker criterion. Cross-loadings were assessed based on the single construct indicator, which should have a higher loading on its own construct than on other constructs (Chin, 1998). Fornell-Larcker criterion was evaluated based on the square root of each latent construct’s AVE, which should be higher than the squared correlations with other latent constructs

### Validating the Formative Measurement Model

The second assessment validates the formative constructs, which used the latent construct scores were used as indicators for the second-order constructs. The multi-collinearity, weights, and significance of formative indicators were assessed.

Multi-collinearity tests using the variance inflation factor (VIF) were conducted to determine if two or more indicators in a formative measurement model are too highly correlated. Hair et al. (2021) stated that a VIF value greater than five or above indicates a collinearity problem.

Bootstrapping method using the bias-corrected and accelerated (BCa) confidence interval method can be used to examine the statistical significance of indicator weights if they are skewed (Hair et al., 2019). Otherwise, the percentile method should be used. The *t-*value and *p*-value generated from bootstrapping were used to evaluate indicator weights’ statistical significance. The *t-*value should be above 1.96 (two-tailed test) and the *p-*value below 0.05 for a 95% confidence interval (Hair et al., 2019, 2021a).

### Structural Model Evaluation

Four criteria to evaluate the predictive capability of the model (coefficient of determination (R2), cross-validated redundancy (Q2), effect size (f2), and path coefficients) were used to test the structural model. The recommendations to evaluate the structural model are as follows.

1) General recommendation of R2 values 0.75, 0.50, and 0.25 in marketing research can be considered substantial, moderate, and weak (Hair et al., 2011). In consumer behavior research, R2 values of 0.20 are considered high, and R2 values of 0.75 are perceived as high in success driver studies. The coefficient of determination were tested using both of these guidelines.

2) Q2 values should be more than 0 for a specific endogenous construct, suggesting that the path model has adequate predictive relevance to certain constructs (Sarstedt et al., 2017).

3) Exogenous latent construct with ƒ2 values of 0.02, 0.15, and 0.35 represent small, medium, and large effects (Cohen, 1988). Effect size values smaller than 0.02 suggest that there is no effect.

4) Path coefficients are evaluated regarding the structural paths between the constructs based on the hypothesis made in this research. This evaluation aims to determine the significance and relevance of path coefficients. The bootstrapping method in SmartPLS 4 can be used to evaluate both.

# CHAPTER IV RESULTS AND DISCUSSION

## Respondents Overview

This research was conducted on Indonesian Discord users in a server named ‘Perkumpulan Orang Santai’, with a population of 5500 people. The data collection method used was simple random sampling. Respondents filled out questionnaires via Google Forms, distributed to this community Discord server from 30 March 2023 until 6 June 2023. At least 373 participants from this community were taken as a research sample, determined using Slovin’s equation. During the data collection, 375 were collected and were taken as the research sample.

The respondents were well-diverse, including male, and female, and a "prefer not to answer" option to respect participants' privacy for those who may not be comfortable disclosing their gender. They represented a range of ages from 13 to over 28, education, salary, frequency of using Discord, and the discovery source where they were introduced to Discord.

This research’s respondents were limited to the Perkumpulan Orang Santai Discord server and may not be generalized as a representative of whole Discord users. This community represented an extensive cultural background from all around Indonesia and gave an overview of Indonesian Discord users. This respondent overview provided a glimpse of the population's characteristics in this research in a specific Discord user’s country.

### Respondents’ Demographic

The overview characteristics of the respondents can be seen in **Table 4** below.

**Table 4. Respondents’ Demographic**

|  |  |  |  |
| --- | --- | --- | --- |
| Demographic |  | Frequency | Percentage (%) |
| Gender | Male | 336 | 89.6 |
|  | Female | 35 | 9.3 |
|  | Prefer not to answer | 4 | 1.1 |
| Age | 13-17 years old | 14 | 3.7 |
|  | 18-22 years old | 237 | 63.2 |
|  | 23-27 years old | 117 | 31.2 |
|  | 28 years old/above | 7 | 1.9 |
| Education | Highschool/below | 177 | 47.2 |
|  | Associate Degree (D1/D2/D3) | 45 | 12.0 |
|  | Applied Bachelor/Bachelor (D4/S1) | 153 | 40.8 |
|  | Master’s Degree/above | 0 | 0 |
| Salary | Rp 0.00 - Rp 2,000,000.00 | 177 | 47.2 |
|  | Rp 2,000,001.00 - Rp 4,000,000.00 | 116 | 30.9 |
|  | Rp 4,000,001.00 - Rp 6,000,000.00 | 71 | 18.9 |
|  | More than Rp 6,000,000.00 | 11 | 2.9 |
| Usage Rate per Month | 1-5 times | 29 | 7.7 |
|  | 6-10 times | 66 | 17.6 |
|  | 11-15 times | 84 | 22.4 |
|  | More than 15 times | 196 | 52.3 |
| Discovery Source | Friends | 146 | 38.9 |
|  | Family | 8 | 2.1 |
|  | School/College | 24 | 6.4 |
|  | Social Media (Twitter, Facebook, Instagram, etc.) | 197 | 52.5 |
|  | Broadcast/print media (Television, Radio, Newspapers, Magazines, etc.) | 0 | 0 |

The finding suggests majority of respondents in this research are male (89.6%), followed by female (9.3%), and prefer not to answer (1.1%). Respondents’ age in this research suggested a majority of 18-22 years old (63.2%), and the least was 28 years and over (1.9%). It appeared that respondents’ socioeconomic profile ranged with a majority of the prior education level of Highschool/below (47.2%) and applied bachelor/bachelor (40.8%), however, none of the respondents’ education level was in master’s degree/above. Furthermore, most of their salary was Rp 0.00 - Rp 2,000,000.00 (47.2%), on the other hand, a salary of more than Rp 6,000,000.00 was the minor group (2.9%).

Regarding respondents’ discovery source and usage rate in Discord, it suggested that most respondents used Discord more than 15 times per month (52.3%), while on the contrary, the least number of respondents used Discord 1-5 times per month (7.7%). They were mostly introduced to Discord from social media (Twitter, Facebook, Instagram, etc.) (52.5%), while none of them was introduced from broadcast/print media (Television, Radio, Newspapers, Magazines, etc.).

## Statistical Analysis

This research adopted higher-order constructs for two e-service quality dimensions (Website Design and Security/Privacy). Higher-order constructs were adopted because it facilitates conceptualizing a construct on a more abstract higher-level dimension and its more specific lower-order subdimensions, allowing researchers to capture the complex relationships between constructs (Sarstedt et al., 2019). The relationship between first-order constructs and their respective indicators was represented as reflective. Meanwhile, the relationship between first-order constructs to their second-order constructs was described as formative. Therefore, the multi-collinearity, significance, and the sign of weights test were also measured (Rita et al., 2019).

Due to the complex nature of the model, the analysis was split into two steps using the embedded two-stage approach. The data analysis was separated into two main validation parts; 1) reflective and formative models and 2) structural models.

### Reflective Measurement Model Assessment

The first stage of the embedded two-stage approach is similar to the standard repeated indicators approach for measuring model assessment. However, latent variable scores generated from the first step are kept as a new variable in the dataset.

#### **Convergent Validity and Reliability**

Convergent validity was evaluated using factor loading, Composite Reliability (CR), and Average Variance Extracted (AVE). It is considered ideal if an individual indicator’s factor loading higher than 0.5 and ideally 0.7 or higher, composite reliability exceeds 0.70, and AVE exceeds 0.50 (Gefen et al., 2000; Hair et al., 2010; Kline et al., 2012). **Table 5** below presents the convergent validity assessment of the reflectively measured constructs.

**Table 5. Convergent Validity Assessment Result**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Construct | Item | Loading | Cronbach’s α | CR | AVE | Description |
| **Information Quality (IQ)** | IQ1 | 0.775 | 0.701 | 0.834 | 0.626 | Acceptable |
| IQ2 | 0.812 |
| IQ3 | 0.785 |
| **Website Aesthetics (WA)** | WA1 | 0.924 | 0.818 | 0.917 | 0.846 | Acceptable |
| WA2 | 0.916 |
| **Website Convenience (WC)** | WC1 | 0.820 | 0.733 | 0.849 | 0.652 | Acceptable |
| WC2 | 0.799 |
| WC3 | 0.802 |
| **Website Personalization (WP)** | WP1 | 0.826 | 0.738 | 0.852 | 0.657 | Acceptable |
| WP2 | 0.748 |
| WP3 | 0.854 |
| **System Availability (SA)** | SA1 | 0.891 | 0.718 | 0.876 | 0.78 | Acceptable |
| SA2 | 0.875 |
| **Security (SC)** | SC1 | 0.793 | 0.769 | 0.867 | 0.685 | Acceptable |
| SC2 | 0.871 |
| SC3 | 0.816 |
| **Privacy (PR)** | PR1 | 0.814 | 0.822 | 0.894 | 0.738 | Acceptable |
| PR2 | 0.892 |
| PR3 | 0.870 |
| **Fulfillment (FU)** | FU1 | 0.772 | 0.703 | 0.834 | 0.628 | Acceptable |
| FU2 | 0.874 |
| FU3 | 0.724 |
| **Overall e-Service Quality (OSQ)** | OSQ1 | 0.871 | 0.840 | 0.903 | 0.757 | Acceptable |
| OSQ2 | 0.870 |
| OSQ3 | 0.869 |
| **Sense of Belonging (SB)** | SB1 | 0.924 | 0.893 | 0.933 | 0.824 | Acceptable |
| SB2 | 0.879 |
| SB3 | 0.920 |
| **User Satisfaction (US)** | US1 | 0.851 | 0.834 | 0.90 | 0.751 | Acceptable |
| US2 | 0.886 |
| US3 | 0.862 |
| **Intention to Use (IU)** | IU1 | 0.895 | 0.857 | 0.913 | 0.777 |  |
| IU2 | 0.904 | Acceptable |
| IU3 | 0.844 |

**Table 5** shows the factor loading of all the factor loadings, ranging from 0.724 to 0.924. This suggests that all the reflective constructs have an acceptable factor loading. Furthermore, the evaluation of all the reflective construct’s CR and AVE values have met the criterion, with CR ranging from 0.703 to 0.894 and AVE ranging from 0.626 to 0.846. In addition, all the first-order constructs have met the threshold of acceptable Cronbach’s alpha values (0.70). This suggests that the measurement instruments proved reliable and consistent since all Cronbach’s alpha values ranged between 0.701 to 0.893.

#### **Discriminant Validity**

The Fornell-Larcker criterion and cross-loadings were used to test the discriminant validity. Discriminant validity is established if the square root of the AVE in its associated indicator variables should be more than any correlation with other constructs in the same model (Fornell & Larcker, 1981).

**Table 6** below shows the Fornell-Larcker criterion matrix table with the correlation of other constructs, indicating that all AVE square roots (in bold) met the criterion. The second approach to establish discriminant validity is to use cross-loadings. Each indicator loading should be greater than all cross-loadings. Furthermore, **Table 7** presents that each indicator loading (in bold) has a greater value than all its cross-loadings. Therefore, it can be concluded that discriminant validity has been established.

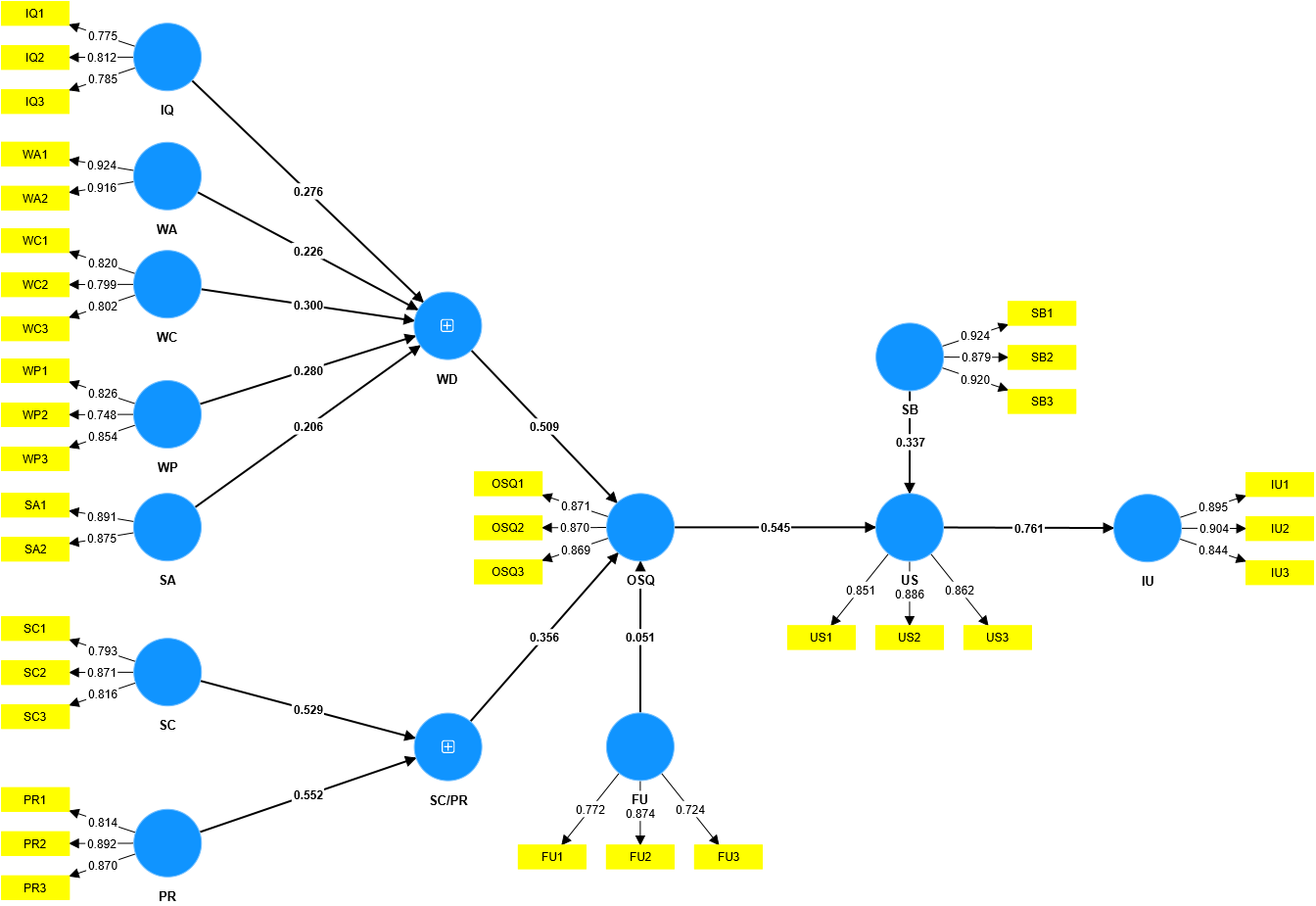
**Table 6. Fornell-Larcker Criterion Matrix Table**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | FU | IQ | IU | OSQ | PR | SA | SB | SC | US | WA | WC | WP |
| FU | **0.793** |  |  |  |  |  |  |  |  |  |  |  |
| IQ | 0.377 | **0.791** |  |  |  |  |  |  |  |  |  |  |
| IU | 0.445 | 0.526 | **0.881** |  |  |  |  |  |  |  |  |  |
| OSQ | 0.504 | 0.592 | 0.739 | **0.87** |  |  |  |  |  |  |  |  |
| PR | 0.548 | 0.375 | 0.49 | 0.586 | **0.859** |  |  |  |  |  |  |  |
| SA | 0.466 | 0.449 | 0.503 | 0.547 | 0.43 | **0.883** |  |  |  |  |  |  |
| SB | 0.468 | 0.541 | 0.717 | 0.712 | 0.518 | 0.473 | **0.908** |  |  |  |  |  |
| SC | 0.513 | 0.411 | 0.513 | 0.652 | 0.712 | 0.426 | 0.576 | **0.827** |  |  |  |  |
| US | 0.475 | 0.555 | 0.761 | 0.786 | 0.539 | 0.532 | 0.726 | 0.569 | **0.866** |  |  |  |
| WA | 0.313 | 0.469 | 0.402 | 0.485 | 0.361 | 0.359 | 0.392 | 0.337 | 0.445 | **0.92** |  |  |
| WC | 0.361 | 0.53 | 0.49 | 0.598 | 0.41 | 0.474 | 0.506 | 0.442 | 0.563 | 0.761 | **0.807** |  |
| WP | 0.397 | 0.566 | 0.508 | 0.596 | 0.38 | 0.538 | 0.593 | 0.421 | 0.579 | 0.358 | 0.446 | **0.811** |
| **Notes**: FU: Fulfillment; IQ: Information Quality; IU: Intention to Use; OSQ: Overall e-Service Quality; PR: Privacy; SA: System Availability; SB: Sense of Belonging; SC: Security; US: User Satisfaction; WA: Website Aesthetics; WC: Website Convenience; WP: Website Personalization | | | | | | | | | | | | |

**Table 7. Cross-loadings**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | FU | IQ | IU | OSQ | PR | SA | SB | SC | US | WA | WC | WP |
| FU1 | **0.772** | 0.253 | 0.372 | 0.322 | 0.385 | 0.366 | 0.322 | 0.335 | 0.282 | 0.179 | 0.263 | 0.258 |
| FU2 | **0.874** | 0.306 | 0.393 | 0.469 | 0.437 | 0.399 | 0.425 | 0.426 | 0.406 | 0.294 | 0.293 | 0.334 |
| FU3 | **0.724** | 0.334 | 0.293 | 0.387 | 0.479 | 0.344 | 0.352 | 0.452 | 0.424 | 0.256 | 0.301 | 0.344 |
| IQ1 | 0.261 | **0.775** | 0.415 | 0.443 | 0.254 | 0.364 | 0.439 | 0.287 | 0.466 | 0.366 | 0.362 | 0.407 |
| IQ2 | 0.348 | **0.812** | 0.46 | 0.511 | 0.346 | 0.328 | 0.504 | 0.384 | 0.458 | 0.413 | 0.465 | 0.486 |
| IQ3 | 0.283 | **0.785** | 0.37 | 0.447 | 0.286 | 0.376 | 0.337 | 0.301 | 0.395 | 0.331 | 0.425 | 0.447 |
| IU1 | 0.392 | 0.451 | **0.895** | 0.652 | 0.435 | 0.445 | 0.635 | 0.461 | 0.683 | 0.352 | 0.451 | 0.42 |
| IU2 | 0.370 | 0.506 | **0.904** | 0.686 | 0.407 | 0.465 | 0.663 | 0.457 | 0.745 | 0.364 | 0.451 | 0.501 |
| IU3 | 0.424 | 0.426 | **0.844** | 0.61 | 0.464 | 0.417 | 0.594 | 0.441 | 0.564 | 0.348 | 0.388 | 0.414 |
| OSQ1 | 0.423 | 0.503 | 0.619 | **0.871** | 0.517 | 0.432 | 0.593 | 0.571 | 0.66 | 0.427 | 0.497 | 0.502 |
| OSQ2 | 0.443 | 0.522 | 0.633 | **0.87** | 0.546 | 0.525 | 0.615 | 0.590 | 0.703 | 0.471 | 0.547 | 0.525 |
| OSQ3 | 0.45 | 0.518 | 0.677 | **0.869** | 0.463 | 0.467 | 0.651 | 0.539 | 0.686 | 0.364 | 0.515 | 0.529 |
| PR1 | 0.509 | 0.294 | 0.424 | 0.507 | **0.814** | 0.378 | 0.419 | 0.637 | 0.466 | 0.289 | 0.328 | 0.337 |
| PR2 | 0.442 | 0.275 | 0.400 | 0.475 | **0.892** | 0.354 | 0.427 | 0.58 | 0.427 | 0.289 | 0.338 | 0.294 |
| PR3 | 0.461 | 0.396 | 0.439 | 0.527 | **0.870** | 0.375 | 0.488 | 0.617 | 0.495 | 0.352 | 0.391 | 0.348 |
| SA1 | 0.408 | 0.406 | 0.456 | 0.507 | 0.417 | **0.891** | 0.43 | 0.407 | 0.470 | 0.354 | 0.450 | 0.466 |
| SA2 | 0.416 | 0.386 | 0.432 | 0.458 | 0.339 | **0.875** | 0.405 | 0.344 | 0.470 | 0.279 | 0.385 | 0.485 |
| SB1 | 0.408 | 0.502 | 0.648 | 0.642 | 0.444 | 0.445 | **0.924** | 0.516 | 0.653 | 0.323 | 0.464 | 0.533 |
| SB2 | 0.476 | 0.496 | 0.649 | 0.652 | 0.527 | 0.42 | **0.879** | 0.543 | 0.638 | 0.417 | 0.489 | 0.533 |
| SB3 | 0.393 | 0.475 | 0.656 | 0.646 | 0.442 | 0.423 | **0.92** | 0.511 | 0.684 | 0.330 | 0.427 | 0.549 |
| SC1 | 0.408 | 0.391 | 0.414 | 0.572 | 0.567 | 0.402 | 0.517 | **0.793** | 0.531 | 0.335 | 0.414 | 0.438 |
| SC2 | 0.409 | 0.373 | 0.451 | 0.563 | 0.579 | 0.381 | 0.457 | **0.871** | 0.502 | 0.294 | 0.395 | 0.344 |
| SC3 | 0.457 | 0.259 | 0.408 | 0.483 | 0.62 | 0.278 | 0.459 | **0.816** | 0.382 | 0.209 | 0.290 | 0.267 |
| US1 | 0.428 | 0.509 | 0.691 | 0.736 | 0.528 | 0.496 | 0.596 | 0.515 | **0.851** | 0.438 | 0.541 | 0.481 |
| US2 | 0.380 | 0.422 | 0.657 | 0.66 | 0.409 | 0.434 | 0.634 | 0.469 | **0.886** | 0.357 | 0.454 | 0.476 |
| US3 | 0.424 | 0.51 | 0.627 | 0.642 | 0.459 | 0.451 | 0.658 | 0.493 | **0.862** | 0.358 | 0.464 | 0.549 |
| WA1 | 0.297 | 0.438 | 0.40 | 0.465 | 0.327 | 0.356 | 0.394 | 0.336 | 0.467 | **0.924** | 0.716 | 0.345 |
| WA2 | 0.279 | 0.424 | 0.338 | 0.426 | 0.337 | 0.304 | 0.325 | 0.282 | 0.348 | **0.916** | 0.684 | 0.314 |
| WC1 | 0.34 | 0.452 | 0.393 | 0.518 | 0.381 | 0.37 | 0.418 | 0.336 | 0.500 | 0.793 | **0.820** | 0.338 |
| WC2 | 0.287 | 0.422 | 0.478 | 0.494 | 0.335 | 0.389 | 0.456 | 0.385 | 0.478 | 0.495 | **0.799** | 0.405 |
| WC3 | 0.241 | 0.408 | 0.315 | 0.433 | 0.273 | 0.391 | 0.349 | 0.352 | 0.379 | 0.539 | **0.802** | 0.338 |
| WP1 | 0.292 | 0.406 | 0.397 | 0.438 | 0.294 | 0.434 | 0.441 | 0.306 | 0.489 | 0.159 | 0.288 | **0.826** |
| WP2 | 0.363 | 0.487 | 0.419 | 0.545 | 0.334 | 0.429 | 0.492 | 0.359 | 0.430 | 0.419 | 0.445 | **0.748** |
| WP3 | 0.301 | 0.471 | 0.411 | 0.453 | 0.29 | 0.442 | 0.499 | 0.350 | 0.488 | 0.268 | 0.333 | **0.854** |
| **Notes: FU: Fulfillment; IQ: Information Quality; IU: Intention to Use; OSQ: Overall e-Service Quality; PR: Privacy; SA: System Availability; SB: Sense of Belonging; SC: Security; US: User Satisfaction; WA: Website Aesthetics; WC: Website Convenience; WP: Website Personalization** | | | | | | | | | | | | |

The graphical output of the outer model in **Figure 4.1** below suggested all reflective constructs have adequate factor loadings and they passed the convergent validity test. Therefore, in the first step, convergent validity and reliability were established.



**Figure 4.1. Graphical Output of Outer Model Measurement**

### Formative Measurement Model Assessment

The second assessment validates the formative constructs. The latent construct scores were used as indicators for the second-order constructs. The significance, factor weights, and multi-collinearity tests were conducted in this step. Furthermore, Hair et al. (2021) stated that a VIF value greater than five or above indicates a collinearity problem. **Table 8** shows the result of VIF values of first-order constructs ranging from 1.747 to 2.818, indicating no collinearity issue.

Furthermore, **Table 8** also shows the indicator weights of first-order constructs for significance testing. The outer weights evaluation was conducted to find the t-statistics value and p-values with bootstrap analysis using PLS-SEM guidelines with 5000 samples, 5% significance level, two-tailed type, and the bias-corrected and accelerated (BCa) method (Hair et al., 2019).

**Table 8. Formative Constructs Evaluation**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Second Order Constructs | First Order Constructs | Weights | VIF | T- stat | p-value | Significant |
| Website Design | Information Quality | 0.292 | 1.757 | 3.648 | 0.000 | Yes |
| Website Aesthetics | 0.034 | 2.416 | 0.443 | 0.658 | No |
| Website Convenience | 0.362 | 2.818 | 4.520 | 0.000 | Yes |
| Website Personalization | 0.336 | 1.747 | 5.796 | 0.000 | Yes |
| System Availability | 0.243 | 1.576 | 3.819 | 0.000 | Yes |
| Security/  Privacy | Security | 0.706 | 2.028 | 7.815 | 0.000 | Yes |
| Privacy | 0.365 | 2.028 | 3.571 | 0.000 | Yes |

To examine a construct’s significance, the general rule is to have a t-statistics value above 1.96 and a p-value < 0.05 (Hair et al., 2019, 2021a) However, one of the first-order constructs (Website Aesthetics, referred to as WA) has a t-statistics value below 1.96 (0.443) and a p-value higher than 0.05 (0.658). In this case, the absolute contribution of this formative construct indicator was determined by evaluating its indicator loading (Cenfetelli et al., 2009; Hair et al., 2021a). At a minimum, a formative indicator’s loading is at least 0.5 or more to determine if an indicator makes a sufficient absolute contribution to forming the construct, even if it lacks a relative contribution.

**Table 9** shows that the outer loadings of second-order constructs were all above 0.5, including Website Aesthetics (0.655). Therefore, this indicator was kept in as it suggests that this indicator makes an adequate contribution to its second-order construct, although it is insignificant.

**Table 9. Second Order Construct’s Factor Loadings**

|  |  |  |  |
| --- | --- | --- | --- |
| No | Construct | Factor loadings | Descriptions |
| 1 | IQ → Website Design | 0.800 | Acceptable |
| 2 | WA → Website Design | 0.655 | Acceptable |
| 3 | WC → Website Design | 0.808 | Acceptable |
| 4 | WP → Website Design | 0.806 | Acceptable |
| 5 | SA → Website Design | 0.739 | Acceptable |
| 6 | SC → Security/Privacy | 0.967 | Acceptable |
| 7 | PR → Security/Privacy | 0.868 | Acceptable |

### Structural Model Evaluation

There are four criteria to evaluate the predictive capability of the model; coefficient of determination (R2), cross-validated redundancy (Q2), effect size (f2), and path coefficients (Sarstedt et al., 2017).

#### **Coefficient of Determination (R2)**

R2 value assesses how much endogenous constructs can be explained by exogenous constructs. It ranges from 0 to 1, with higher levels suggesting more robust predictive accuracy. A general recommendation of R2 values 0.75, 0.50, and 0.25 in marketing research can be considered substantial, moderate, and weak. However, the R2 values may differ depending on the research discipline. In consumer behavior research, R2 values of 0.20 are considered high, and R2 values of 0.75 are perceived as high in success driver studies (Hair et al., 2011). All the adjusted R2 values in this research (shown in **Table 10**) were sufficient: R2 = 57.8% for IU, R2 = 64.3% for OSQ, and R2 = 67.1% for US.

**Table 10. Adjusted** **R2 Values**

|  |  |
| --- | --- |
|  | R-square adjusted |
| OSQ | 0.643 |
| US | 0.671 |
| IU | 0.578 |

#### **Cross-validated Redundancy (Q2)**

Cross-validated Redundancy (Q2) or Q-square test was conducted to test the predictive relevance of the endogenous construct. As a rule of thumb, Q2 values > 0 for a specific endogenous construct suggest that the path model has adequate predictive relevance to certain constructs (Sarstedt et al., 2017). The Q2 values were obtained using the PLSpredict function in SmartPLS 4 software. **Table 11** below shows that all of the endogenous constructs in this research have met this criterion.

**Table 11. Q2 Values**

|  |  |
| --- | --- |
|  | Q²predict |
| OSQ | 0.632 |
| US | 0.621 |
| IU | 0.513 |

#### **Effect Size (f2)**

Effect size (f2) test was conducted to measure the strength of the relationship between variables. Specifically, the effect size test was used to examine the r-square changes when a specific predictor construct is removed from the model. As a general rule, ƒ2 values of 0.02, 0.15, and 0.35 can be interpreted as small, medium, and large effects, while a value below 0.02 can be considered there is no effect (Cohen, 1988; Sarstedt et al., 2017).

All the construct predictors (shown in **Table 12**) suggested a medium to large effect size, except for Fulfillment (FU), which indicated no effect (0.004) on the Overall e-Service Quality (OSQ).

**Table 12. f2 Values**

|  |  |
| --- | --- |
|  | f-square |
| FU → OSQ | 0.004 |
| OSQ → US | 0.448 |
| SB → US | 0.172 |
| SC/PR → OSQ | 0.209 |
| US → IU | 1.376 |
| WD → OSQ | 0.475 |

#### **Path Coefficients**

The next assessment is the path coefficients. It examines the significance and strength of the relationship between latent constructs and for testing hypotheses. Path coefficients usually ranged from -1 to +1 in terms of relevance. A coefficient value closer to +1 indicates a strong positive relationship. On the contrary, the closer it is to -1, the more it indicates a strong negative relationship.

The t-statistics and p-value were also considered for testing the significance between constructs. The rule of thumb is that the t-statistics value has to be more than 1,96 and the p-value less than 0,05 to be considered statistically significant (Hair et al., 2019, 2021a). This test was conducted using bootstrap analysis using the same guideline method with 5000 samples, 5% significance level, two-tailed type, and the bias-corrected and accelerated (BCa) method (Hair et al., 2019). The path coefficients result can be seen in **Table 13** below.

**Table 13. Path Coefficients, T-statistics, and p-values**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Path coefficient | Sample mean | Standard deviation | T-stat | p-value |
| WD → OSQ | 0.515 | 0.516 | 0.045 | 11.482 | 0 |
| SC/PR → OSQ | 0.358 | 0.354 | 0.045 | 7.994 | 0 |
| FU → OSQ | 0.046 | 0.05 | 0.046 | 1.002 | 0.316 |
| OSQ → US | 0.545 | 0.544 | 0.047 | 11.585 | 0 |
| SB → US | 0.337 | 0.34 | 0.048 | 7.069 | 0 |
| US → IU | 0.761 | 0.761 | 0.027 | 27.848 | 0 |

Based on **Table 13** above, it can be concluded that:

* H1: Website Design positively affects Overall e-Service Quality.

Website Design (WD) is statistically significant (t-statistic value 11.482 and p-value 0) and indicates a positive correlation with Overall e-Service Quality by 0.515. The hypothesis was supported.

* H2: Security/Privacy positively affects Overall e-Service Quality.

Security/Privacy (SC/PR) is statistically significant (t-statistic value 7.994 and p-value 0) and indicates a positive correlation with Overall e-Service Quality by 0.358. The hypothesis is supported.

* H3: Fulfillment positively affects User Satisfaction.

Fulfillment (FU) is statistically insignificant (t-statistic value 1.002 and p-value 0.316) and indicates a small positive correlation with Overall e-Service Quality by 0.046. The hypothesis is not supported.

1. H4: Overall e-Service Quality positively affects User Satisfaction.

Overall e-Service Quality (OSQ) is statistically significant (t-statistic value 11.585 and p-value 0) and indicates a positive correlation with User Satisfaction by 0.545. The hypothesis is supported.

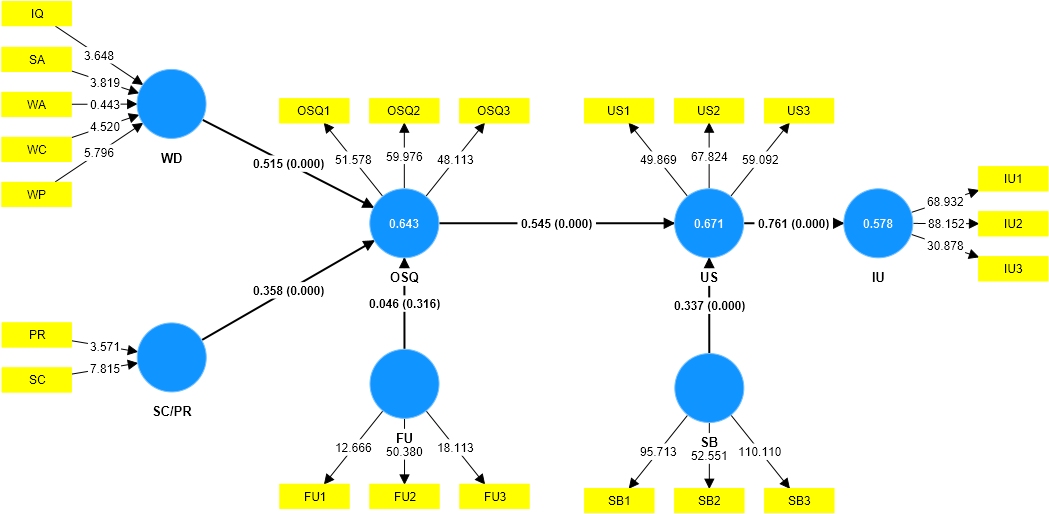
* H5: Sense of Belonging positively affects User Satisfaction.

Sense of Belonging (SB) is statistically significant (t-statistic value 7.069 and p-value 0) and indicates a positive correlation with User Satisfaction by 0.337. The hypothesis is supported.

* H6: User Satisfaction positively affects Intention to Use.

User Satisfaction (US) is statistically significant (t-statistics value 27.848 and p-value 0) and indicates a positive correlation with Intention to Use (IU) by 0.761. The hypothesis is supported.

The graphical output of the inner model’s path coefficients and p-values, t-values of the outer model, and adjusted r-square values generated using the Bootstrapping feature in SmartPLS 4 can be seen in **Figure 4.2** below.



**Figure 4.2** **Graphical Output of Structural Model Evaluation**

Based on the graphical output above, it can be concluded that all of the constructs except fulfillment have sufficient statistical significance. Unlike the related study in Discord by Khalid (2021), the evaluation suggested that each construct was positively correlated, with website design being the most powerful predictor of overall e-service quality. The website design and security/privacy evaluation were consistent with Rita et al. (2019) and Yum & Yoo (2023). However, the evaluation suggested that fulfillment did not have an impact on e-service quality, aligned with Dalbehera (2020), which suggested that fulfillment had no significant impact on e-service quality. Sense of belonging was also suggested to have a positive correlation with user satisfaction, consistent with (Sharabati et al., 2022). Lastly, user satisfaction also positively correlated with intention to use, which aligned with Hossain & Kim (2018) and Lien et al. (2017). Therefore, all of the hypotheses proposed in this study were supported, while one failed to be confirmed.

# CHAPTER V CONCLUSIONS AND RECOMMENDATION

## Conclusions

This study aims to examine the relationship between e-service quality dimensions and a sense of belonging on user satisfaction, which later impacts the intention to use Indonesian Discord application users. Based on the PLS-SEM analysis using SmartPLS 4, it can be indicated that all constructs indicated positive correlations and are statistically significant except for fulfillment. The result concluded that users perceive higher satisfaction when there is a superior e-service quality combined with a sense of belonging, ultimately determining users' intention to use the Discord application.

## Recommendation

The findings provide insight for community managers and Discord application developers to understand better how e-service quality and a sense of belonging are formed and how important they are in maintaining a superior level of user satisfaction, which will help to increase users’ intention to use the Discord desktop application. In order to provide an excellent user experience, Discord application managers should maintain a seamless interaction between users that consists of sufficient and personalized information, interactive feature to increase the sense to belong in Discord, visually appealing content and layout, and continuous monitoring of application uptime and availability. Application managers should also ensure the security and privacy of user personal information, communication data, and other privacy data. The respondents’ demographic may also be used for the application managers as a decision-making support, such as a marketing strategy related to advertisement. Community managers are advised to create interactive chat/voice channels according to members' needs, conduct regular community activities to increase engagement, and build a sense of comfort and solidarity within the server.

This study is limited in research scope, capturing only a single community of Discord users in Indonesia, which may not correctly describe the entire Discord application's users. To provide more generalizable results and implications, future research may develop a more complex research model that can more comprehensively capture the user experience and perception of social media and different approaches to statistical analysis. Lastly, researchers may expand the scope of this research by capturing a broader range of respondents with larger cultural and socioeconomic settings.

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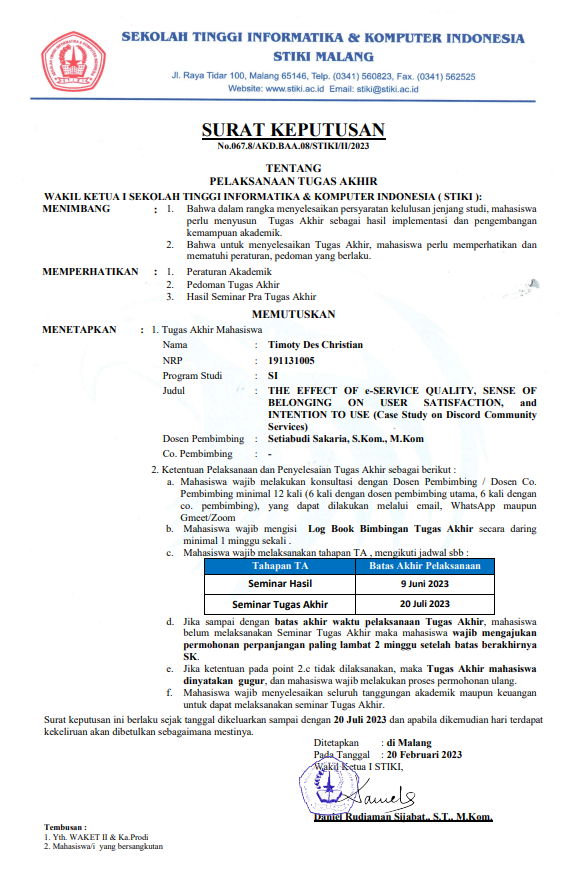
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# APPENDICES

**Appendix 1**

**Final Project Decree**



**Appendix 2**

**Writer Biography**

|  |  |  |
| --- | --- | --- |
| Name | : | Timoty Des Christian |
| Address | : | Pasuruan Regency, East Java, 67161 |
| Place/Birth Date | : | Pasuruan/18 December 2000 |
| Tel. / Email | : | +628984407684 / 191131005@mhs.stiki.ac.id |

EDUCATION

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No | Education | Place | Graduation Year | | Degree | Specialized  Area |
| Started | Graduated |
| 1 | PKBM Homeschoo-ling Primagama | Denpa-sar | 2016 | 2019 | High School | Natural Science |
| 2 | Sekolah Tinggi Informatika & Komputer Indonesia Malang | Malang | 2019 | 2023 | Bachelor’s Degree | Information Systems |

WORKING EXPERIENCE

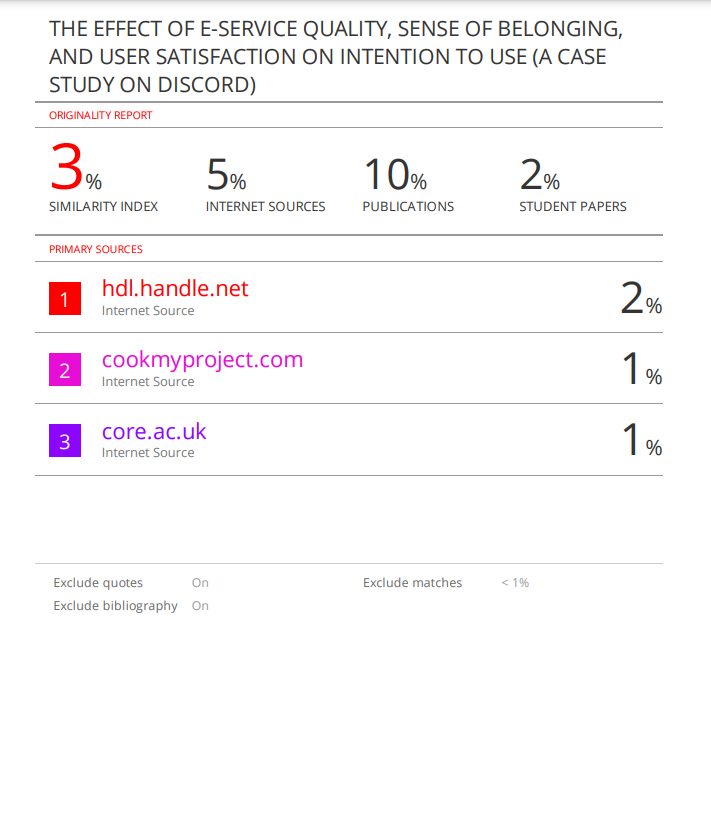
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| --- | --- | --- | --- | --- |
| No | Profession | Industry | Company | Year |
| 1 | IT Business Executive Intern | Smart City Consulting Firm | PT Citi Asia Internasional | 2021-2022 |
| 2 | Singapore ERP Consultant | IT Services and IT Consulting | PT Hashmicro Solusi Indonesia | 2023-2025 |

COMPETENCIES CERTIFICATION

|  |  |  |  |
| --- | --- | --- | --- |
| No | Certification | Organizer | Year |
| 1 | Associate Data Scientist | Direktorat Jenderal Pendidikan Tinggi, Riset, dan Teknologi | 2021 |
| 2 | BNSP Database Programming | Sekolah Tinggi Informatika & Komputer Indonesia Malang | 2023 |

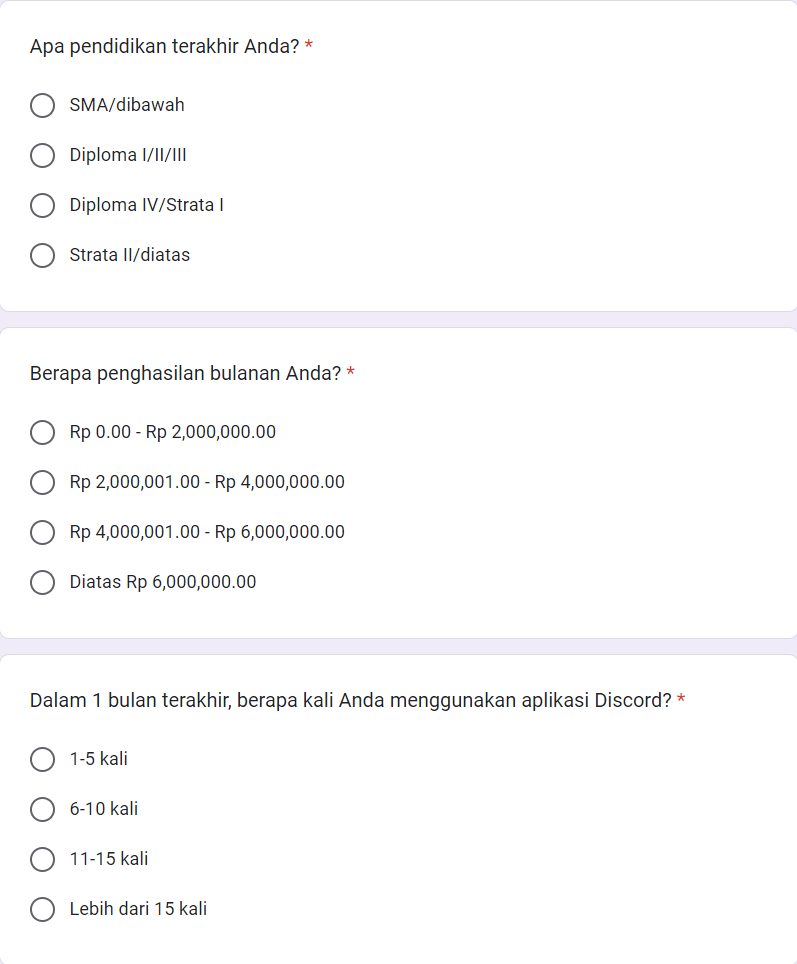
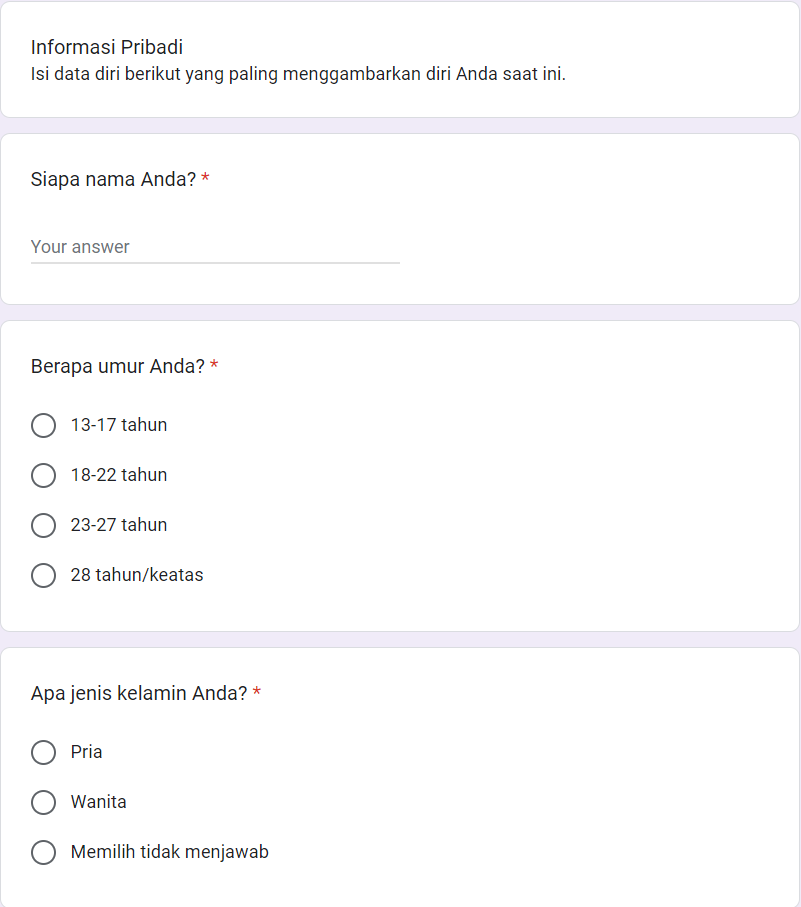
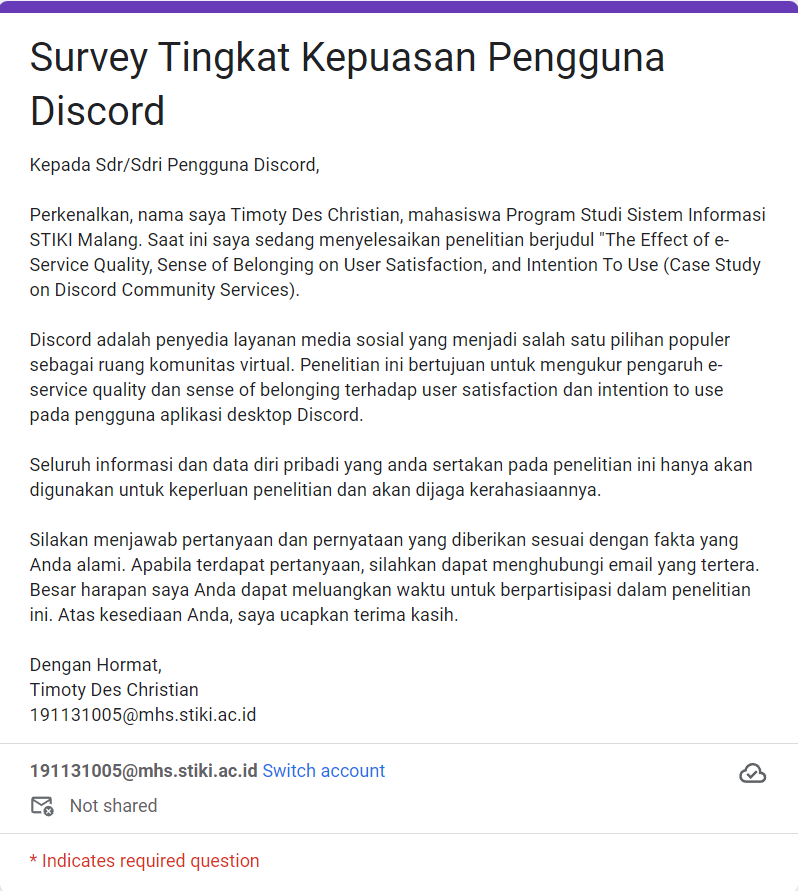
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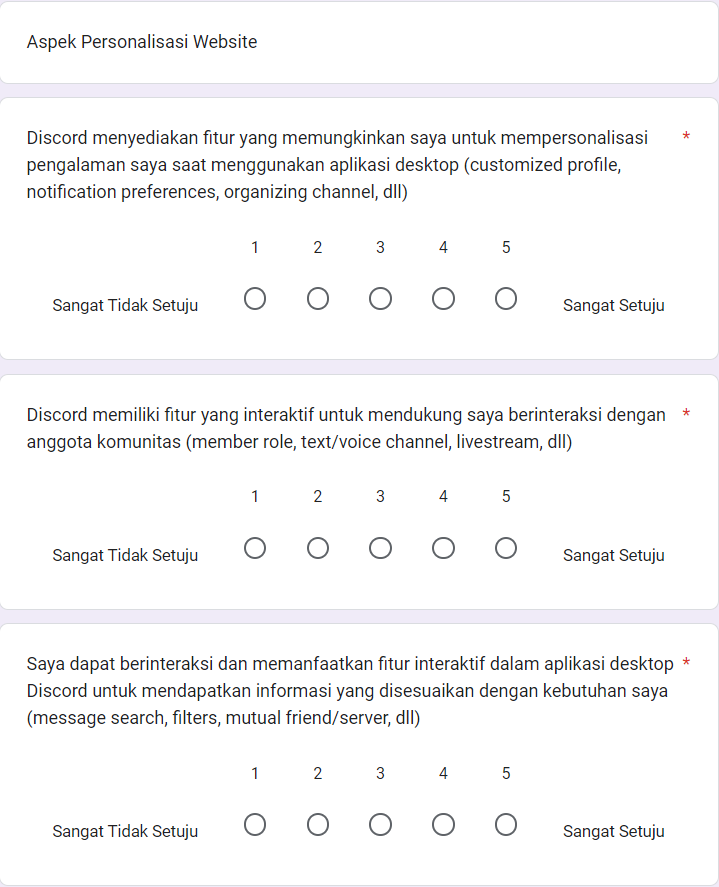
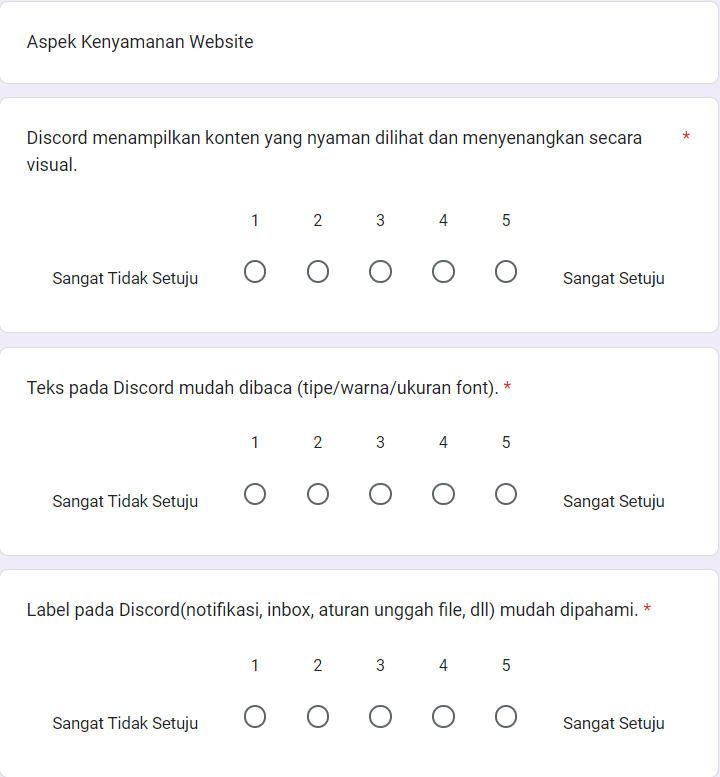
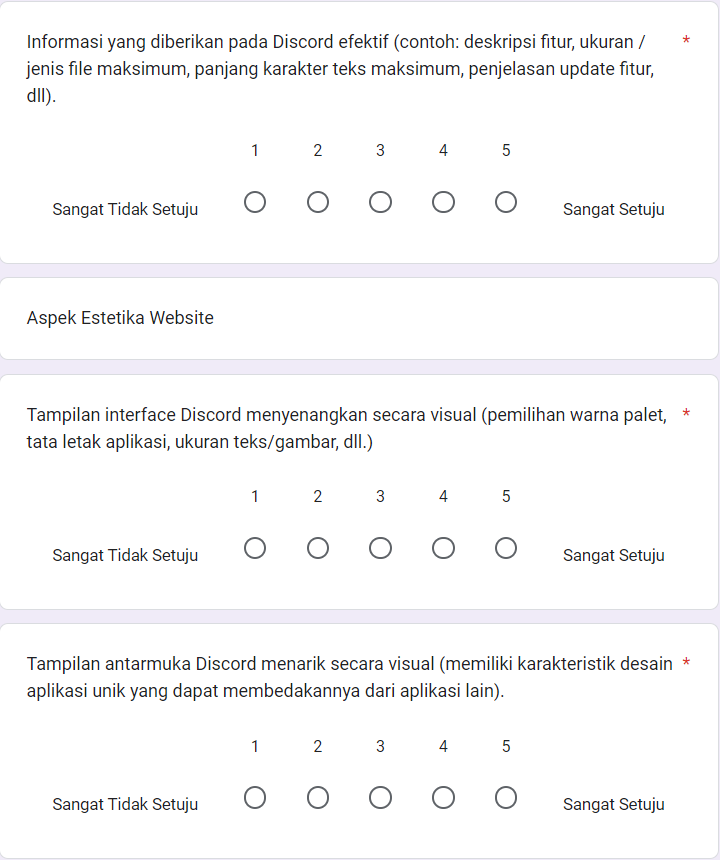
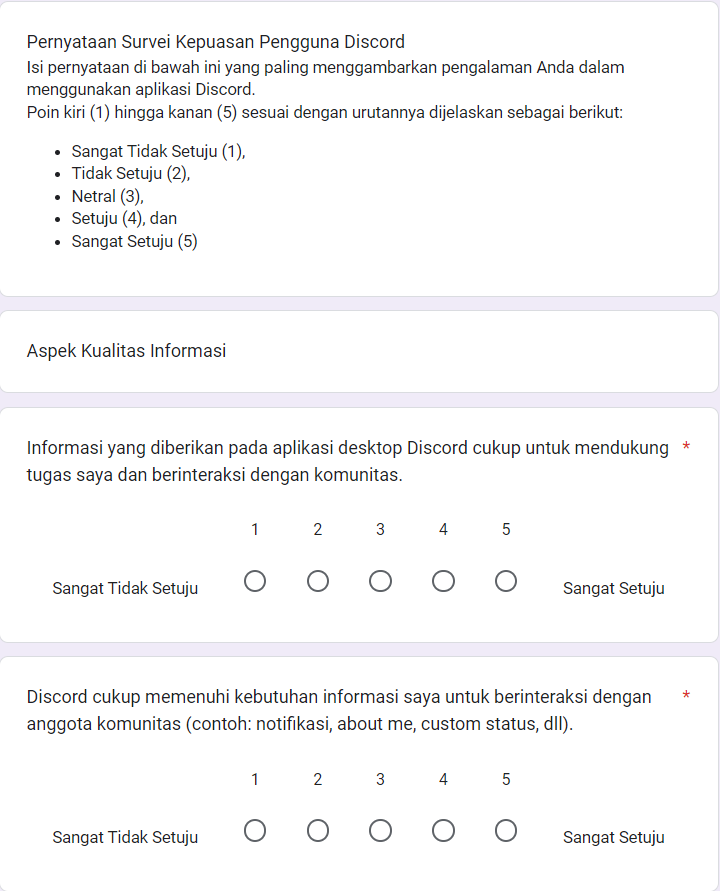
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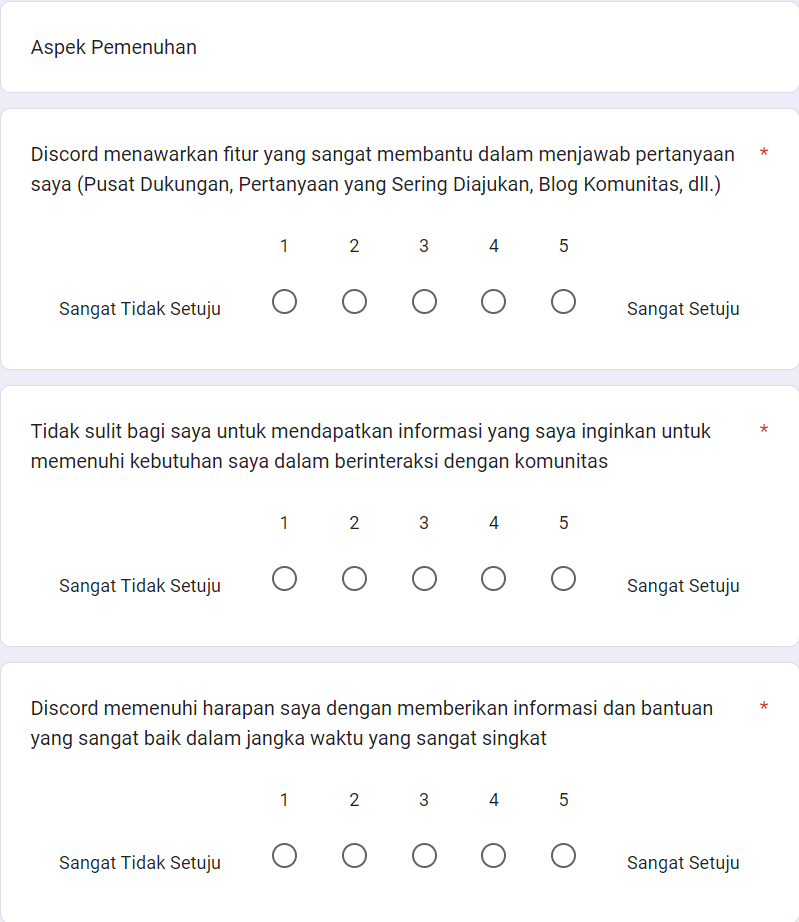
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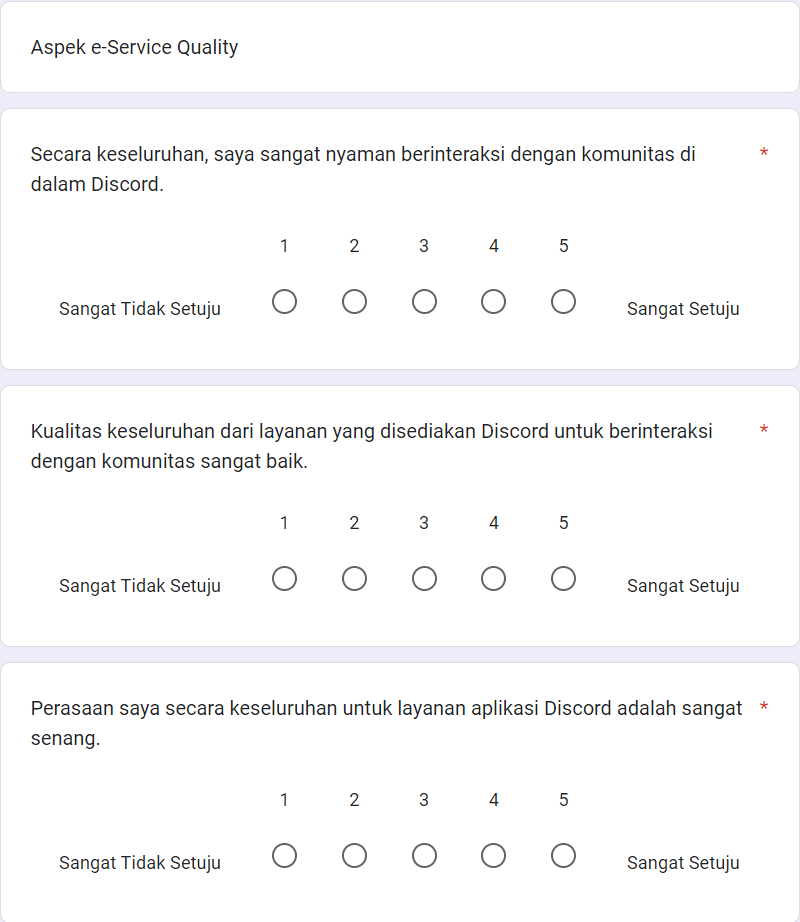
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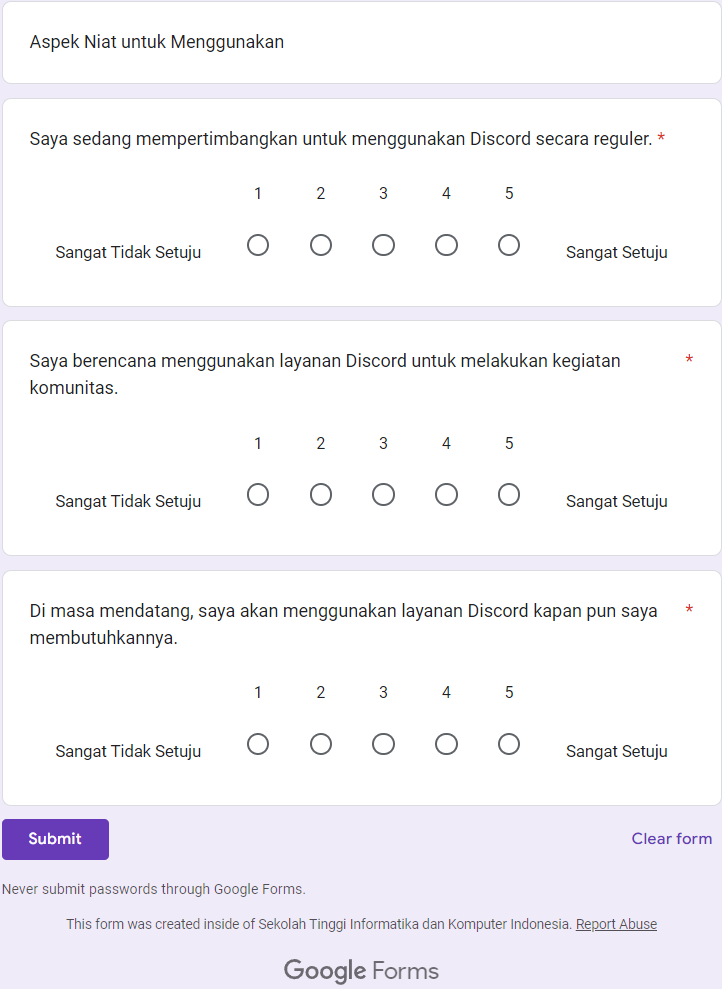
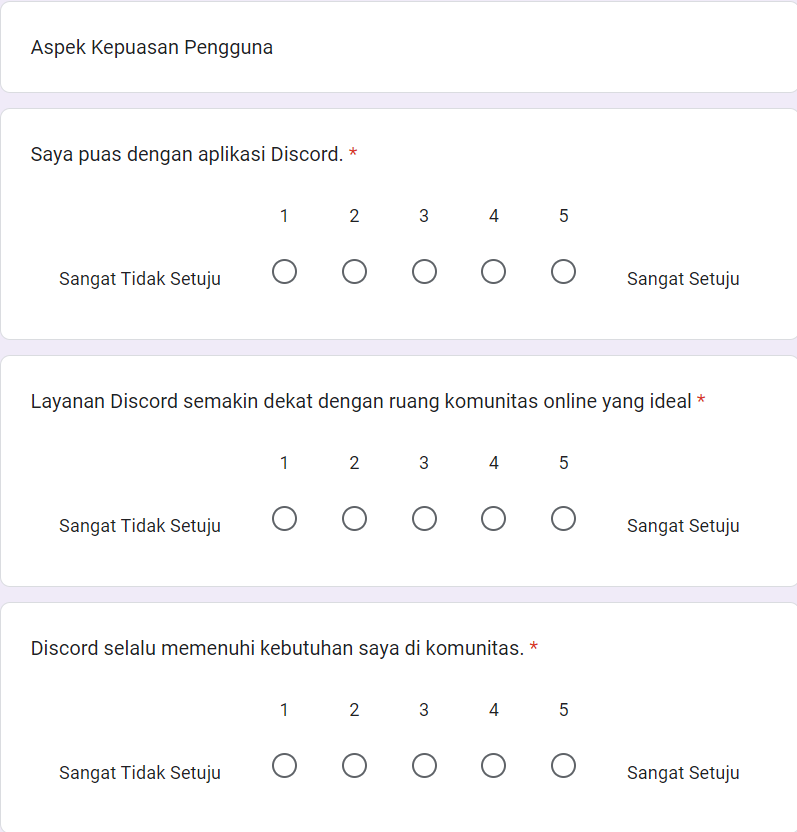
**Google Forms Questionnaire**

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