ANALYZING THE DETERMINANTS OF CUSTOMER SATISFACTION IN E-COMMERCE: A TEXT-MINING APPROACH USING ONLINE REVIEWS

OGUNPOLA, OGOOLUWA PEACE
(16CH021514)
B.Sc. Management Information System, Covenant University, Ota, Ogun state

AUGUST, 2024

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A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE STUDIES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE (M.Sc.) DEGREE IN MANAGEMENT INFORMATION SYSTEMS IN THE DEPARTMENT OF COMPUTER AND INFORMATION SCIENCES, COLLEGE OF SCIENCE AND TECHNOLOGY, COVENANT UNIVERSITY, OTA, OGUN STATE, NIGERIA AUGUST, 2023

AUGUST, 2024

ACCEPTANCE

This is to attest that this dissertation is accepted in partial fulfilment of the requirements for the award of the degree of Master of Science in Management Information System in the Department of Computer and Information Sciences, College of Science and Technology, Covenant University, Ota, Nigeria.

Miss Adefunke F. Oyinloye
(Secretary, School of Postgraduate Studies)   **Signature and Date**

Prof. Akan B. Williams
(Dean, School of Postgraduate Studies)   **Signature and Date**

DECLARATION

I, OGUNPOLA, OGOOLUWA PEACE (16CH021514), declare that this research was carried out by me under the supervision of Prof. Aderonke A. Oni of the Department of Computer and Information Sciences, College of Science and Technology, Covenant University, Ota, Ogun State, Nigeria. I attest that the dissertation has not been presented either wholly or partially for the award of any degree elsewhere. All sources of data and scholarly information used in this dissertation are duly acknowledged.

OGUNPOLA, OGOOLUWA PEACE   **Signature and Date**

CERTIFICATION

We certify that this dissertation titled **"ANALYZING THE DETERMINANTS OF CUSTOMER SATISFACTION IN E-COMMERCE: A TEXT MINING APPROACH USING ONLINE REVIEWS"** is an original research work carried out by **OGUNPOLA, OGOOLUWA PEACE (16CH021514)** in the Department of Computer and Information Sciences, College of Science and Technology, Covenant University, Ota, Ogun State, Nigeria under the supervision of Prof. Aderonke A. Oni. We have examined and found this work acceptable as part of the requirements for the award of Master of Science (M.Sc.) in Management Information System.

Prof. Aderonke A. Oni
(Supervisor)   **Signature and Date**

Prof. Olufunke O. Oladipupo
(Head of Department)   **Signature and Date**

Prof. Afolashade O. Kuyoro
(External Examiner)   **Signature and Date**

Prof. Akan B. Williams
(Dean, School of Postgraduate Studies)   **Signature and Date**

DEDICATION

This dissertation is dedicated to God, who is my helper, and knowledge. My heartfelt gratitude goes to my parents, Pastor and Pastor (Mrs.) Nike Ogunpola and my siblings; Joy and Love, for their unending support and encouragement in diverse ways possible.

ACKNOWLEDGEMENTS

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LIST OF ABBREVIATIONS

API	Application Programming Interface
BERT	Bidirectional Encoder Representations from Transformers
BERTopic	BERT Topic Modeling
EDA	Exploratory Data Analysis
eWOM	electronic Word-of-Mouth
HDBSCAN	Hierarchical Density-Based Spatial Clustering of Applications with Noise
HTTP	Hypertext Transfer Protocol
LDA	Latent Dirichlet Allocation
LSA	Latent Semantic Analysis
LSI	Latent Semantic Indexing
LSTM	Long Short-Term Memory
ME	Maximum Entropy
ML	Machine Learning
NLP	Natural Language Processing
NMF	Non-negative Matrix Factorization
NRC	National Research Council
OM	Opinion Mining
pLsa	Probabilistic Latent Semantic Analysis
SA	Sentiment Analysis
SVD	Singular Value Decomposition
SVM	Support Vector Machine
TF-IDF	Term Frequency-Inverse Document Frequency
Top2Vec	orm Resource
UGC	User-Generated Content
UMAP	Uniform Manifold Approximation and Projection
URL	Uniform Resource Locator
USB	Universal Serial Bus
SPSS	Statistical Package for the Social Sciences

ABSTRACT

The growth of e-commerce has led to a shift in the way customers shop, making online shopping more convenient and accessible for consumers worldwide. With the increasing importance of providing excellent customer experiences, customer satisfaction has become a crucial factor for businesses to consider. Online reviews and feedback have become a major outlet for customers to express their opinions on certain products and services. This study investigated the determinants of customer satisfaction in the e-commerce industry through the application of text-mining techniques to online customer reviews. The study examined the factors that affect customer satisfaction, including customer interests, product availability, product quality, payment methods, shipping services, and partnerships. The study used a text-mining approach to analyze online customer reviews and extract relevant information from them. The data collected was analyzed using statistical methods to identify the key factors that influence customer satisfaction. The findings of this study provide valuable insights for businesses to improve their customer experience and increase customer satisfaction. By understanding the factors that influence customer satisfaction, businesses can fine-tune their strategies and improve their products and services to meet the needs and expectations of customers. This study contributes by focusing on the integration of Aspect-Based Sentiment Analysis and Topic Modelling, aiming to enhance the analysis of customer satisfaction in e-commerce and improve sentiment identification.