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Customer Satisfaction Evaluation in Online Food Delivery Services: A Systematic Literature Review

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Abstract

The rapid growth of online food delivery services has heightened the need for effective customer satisfaction measurement. This systematic literature review examines 476 papers, selecting 15 key studies to identify prevailing evaluation approaches. Findings reveal that sentiment analysis and PLS-SEM are the most frequently used analytical methods, each appearing in six studies. Satisfaction measurement relies on sentiment polarity scores in five studies and SERVQUAL frameworks in three studies. Data collection primarily involves surveys in seven studies and user-generated content in six studies, but limited demographic diversity reduces generalizability. Three key future research directions emerge. Advanced analytical techniques appear in 5 of 11 future works in the analysis methods domain. Expanding evaluation metrics is mentioned in 6 of 12 proposals in the evaluation domain. Exploring demographic context is highlighted in 10 of 25 recommendations in the dataset's domain, with dataset development receiving twice the attention of methodological advancements. These results provide researchers with a structured framework for customer satisfaction evaluation while guiding food delivery platforms in refining service quality. By systematically mapping current methodologies and future priorities, this study bridges gaps between academia and industry, ensuring more effective customer satisfaction assessments.

Keywords: customer satisfaction; online food delivery; analysis methods; evaluation metrics; datasets; future directions

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1. Introduction

The rapid expansion of online food delivery services has revolutionized the food and beverage industry, emphasizing convenience and accessibility. Driven by technological advancements and the popularity of app-based services, these platforms have seen significant growth, leading to a highly competitive market. Understanding and improving customer satisfaction is essential for sustaining growth and fostering loyalty, as it directly influences retention rates, repeat purchases, and brand perception. Businesses must continuously adapt to evolving consumer preferences to maintain their competitive edge [1], [2].

Evaluating customer satisfaction in online food delivery services is crucial for identifying service gaps, improving user experience, and staying competitive. Studies have used traditional methods like surveys and interviews, as well as advanced techniques like text mining, which leverage larger datasets and gain deeper insights [3]-[7]. Frameworks such as SERVQUAL, sentiment polarity scores, and trust transfer theory are commonly applied to measure satisfaction and provide valuable insights into the factors influencing consumer perceptions [8]-[12]. Additionally, robust datasets are crucial for ensuring reliable evaluations, enabling researchers to capture the diverse and dynamic nature of customer behaviors comprehensively [13]-[16].

Despite the limited number of literature review studies on the online food delivery domain, significant gaps remain, hindering a comprehensive understanding of customer satisfaction in this sector [17]-[19]. Limited attention has been given to synthesizing commonly used methods, metrics, and datasets, resulting in a fragmented understanding of customer satisfaction evaluation. Existing studies often focus narrowly on specific themes or metrics without organizing future

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directions, making it difficult to identify emerging research trends. A comprehensive synthesis is needed to evaluate existing methods and classify future research opportunities, guiding both academic and industry practices [20]-[22].

The rapid expansion of online food delivery services has revolutionized the food and beverage industry, and this study uniquely synthesizes existing methods, metrics, and datasets while classifying emerging challenges and opportunities for customer satisfaction evaluation. This research provides a systematic literature review that reshapes understanding in this domain. The study contributes to both academic research and industry practices, responding to the growing need for data-driven solutions in a highly competitive marketplace [23], [24].

2. Research Methods

In this systematic literature review, we followed Barbara Kitchenham's methodology [25], which includes three phases: planning, conducting, and reporting. The planning phase involved defining research questions, designing the search strategy, selecting relevant studies, assessing their quality, and analyzing data. The conducting and reporting phases are detailed in Section 3.

2.1 Research Question

This systematic literature review aims to comprehensively understand customer satisfaction evaluation in online food delivery services. The research questions (RQs) guiding this review address specific aspects of the topic [26] and are as follows: *RQ1: What methods have been used to analyze customer satisfaction in food delivery apps?, RQ2: What evaluation metrics or models are commonly used to evaluate customer satisfaction in food delivery apps?, RQ3: What datasets are commonly used to evaluate customer satisfaction from online food delivery services?, RQ4: What challenges and future directions have been identified for evaluating and classifying customer satisfaction with online food delivery services?*

Several reasons were explained to determine the purpose of this review, and these had been mentioned in the previous introduction section. The point of view results from the PICOC formula presented in Table 1 were used to formulate research questions.

Table 1. PICOC Formula

Indicator	Description
Population	Online food delivery services
Intervention	Evaluation of customer satisfaction through various methods, metrics, and datasets.
Comparison	-
Outcomes	Identification and categorization of methods, metrics, and datasets; insights into challenges and future research directions.
Context	The fast-growing online food delivery sector.

2.2 Search Process

Defining the search string and obtaining satisfactory results from the selected digital libraries involved several key considerations. These included deriving terms from the research questions, identifying synonyms for key terms, and using Boolean connectors like AND and OR to link terms [27]. The search string applied across various databases is as follows: *("Food Delivery Apps" OR "Delivery Applications" OR "Food Ordering Apps") AND ("Customer Satisfaction" OR "Client Satisfaction Survey" OR "Customer Satisfaction Evaluation" OR "Customer Experience Feedback" OR "Customer Feedback Analysis" OR "User Review")*.

The digital libraries used for this research include (1) ACM Digital Library, (2) E-Journal Wiley, (3) Emerald Insight, (4) IEEE Digital Library, (5) Sage Journals, (6) ScienceDirect, (7) Scopus, (8) Springer Link, and (9) Taylor & Francis. The search strings were then tested across these libraries to ensure their effectiveness and comprehensive coverage in retrieving relevant academic resources for the study.

2.3 Selection Process

To select relevant articles, inclusion and exclusion criteria presented in Table 2 were established to assess each article's applicability.

Table 2. Inclusion and exclusion criteria

Stage	Inclusion Criteria	Exclusion Criteria
Initiation Stage	2020 – 2025 Proceeding or Journal English	Before 2020 Not in English Retracted
Stage1 (Selection of title and abstract)	The abstract is related to customer satisfaction evaluation in online food delivery services	The abstract has no relation to customer satisfaction evaluation in online food delivery services
Stage2 (Selection Full-Text)	The literature describes items related to research questions	The literature does not explain items related to the research questions

The document selection process involved searching and acquiring scientific articles from digital libraries. Articles were reviewed to remove duplicates across databases, and inclusion and exclusion criteria were applied. Table 3 displays the results.

Table 3. Inclusion and exclusion result

Source	Initiation	Stage 1	Stage 2
ACM Digital Library	5	-	-
E-Journal Wiley	17	3	3
Emerald Insight	205	32	23
IEEE Digital Library	6	6	-
Sage Journal	15	4	1
Science@Direct	124	27	19
Scopus	17	14	3
Springer Link	35	21	3
Taylor & Francis	52	17	10
Total	476	124	62

2.4 Quality Assessment

After examining each selected article, it was necessary to evaluate their quality. The articles were assessed

using eight criteria adopted from the following studies [26], [28], [29], as presented in Table 4.

Table 4. Quality assessment criteria

Code	Questions
C1	Is the research objective clearly described in the article?
C2	Does the article provide a literature review, background, and research context?
C3	Does the article include related work from previous research to highlight its main contribution?
C4	Is the proposed architecture or methodology used in the article clearly described?
C5	Are the research results presented in the article?
C6	Do the article's conclusions align with the research objectives/problems?
C7	Does the article suggest future work or improvements?
C8	Is the article indexed in Scopus (Q1/ Q2/ Q3/ Q4/ Unindexed)?

A point scale was used to evaluate each article. Fulfilled criteria scored 1, unfulfilled scored 0, Q1/Q2/Q3/Q4 indexing scored 1, and unindexed scored 0 [26]. The cutoff score for a high-quality paper is set at 7.0 [26], [29], with 15 out of 62 articles exceeding this threshold.

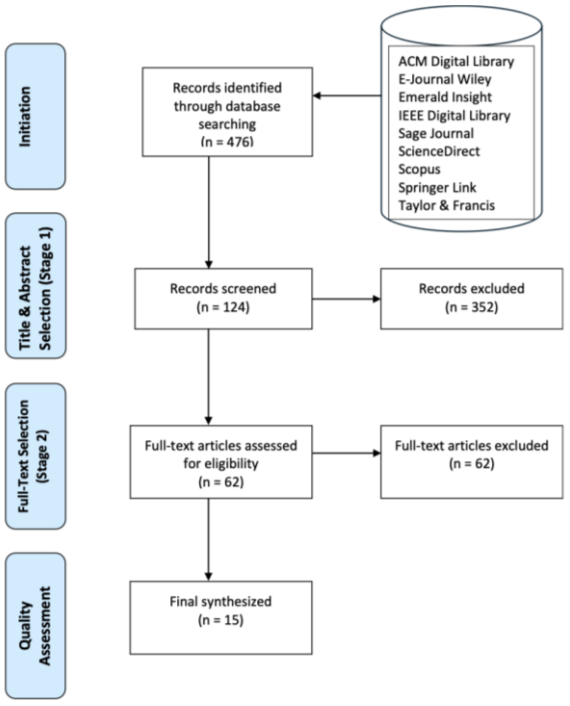

Figure 1. Final literature selection process

Figure 1 illustrates the systematic literature selection process, detailing stages from initial identification to the final synthesis of relevant articles. The process began with identifying 476 records through comprehensive database searches. These records were screened by title and abstract, narrowing the selection to 124 articles for further evaluation. After a thorough assessment of full-text articles for eligibility, 62 were excluded, leaving 62 for quality evaluation. Following a quality assessment process, 15 articles exceeded the threshold for final analysis. This rigorous selection ensured the inclusion of the most relevant and high-quality studies, providing a solid research foundation.

2.5 Data Analysis

In this section, we analyze the selected articles to explore trends and insights. The analysis covers aspects like methods, evaluation metrics, datasets, and future works. Table 5 lists the final articles included in our study.

Table 5. List of final articles

No	Title	Pub. Year	Impact Factor
1	Analysing customers' reviews and ratings for online food deliveries: A text mining approach [7]	2023	Q1
2	The Impact of SERVQUAL on Consumers' Satisfaction, Loyalty, and Intention to Use Online Food Delivery Services [8]	2024	Q2
3	Give your hunger a new option: Understanding consumers' continuous intention to use online food delivery apps using trust transfer theory [11]	2023	Q1
4	User Experience Evaluation of Cross-Channel Consumption: Based on Grounded Theory and Neural Network [30]	2021	Q2
5	Foodservice mobile application quality determinants' impact on customer satisfaction and repeat usage intentions: The role of perceived risk [31]	2023	Q1
6	Appraise the role of novelty-seeking on consumers' satisfaction using online food delivery applications [32]	2024	Q2
7	Twitter sentiment analysis of app-based online food delivery companies [12]	2021	Q2
8	Why do consumers choose online food delivery services? A meta-analytic review [19]	2024	Q1
9	Online food delivery research: a systematic literature review [18]	2022	Q1
10	Online food delivery companies' performance and consumers expectations during Covid-19: An investigation using machine learning approach [33]	2022	Q1
11	Service quality of online food delivery mobile application: an Examination of the spillover effects of mobile app satisfaction [34]	2023	Q1
12	Exploring sentiment analysis of online food delivery services post COVID-19 pandemic: grabfood and foodpanda [35]	2023	Q2
13	Investigation and prediction of users' sentiment toward food delivery apps applying machine learning approaches [14]	2023	-
14	Examining consumers' continuance and sharing intention toward food delivery apps [36]	2023	Q1
15	Customers' emotional impact on the star rating and Thumbs-up behavior towards food delivery service Apps [15]	2024	Q2

Data related to the research questions was extracted from the 15 final articles. For Research Question 1, information on the Analysis Method was collected; Research Question 2 focused on the Evaluation Model and Satisfaction Metrics; Research Question 3 addressed the Dataset(s); and Research Question 4 examined the Challenges and Future Work. A table summarizing this data will be presented in Table 6 and the result of the data extraction will be presented in Table 7.

Table 6. Data extraction mapping to research question

Property	Questions
Analysis Method	RQ1
Evaluation Model / Satisfaction Metrics	RQ2
Dataset(s)	RQ3
Challenges/Future Works	RQ4

Table 7. Data extraction

No.	Ref.	Analysis Method	Evaluation Model / Satisfaction Metrics	Dataset(s)	Challenges/Future Works
1	[7]	Text mining (Sentiment Analysis)	Polarity score, Sentiment analysis of delivery sub-themes.	2,530 reviews and ratings from Zomato.com in India	Incorporate other websites and regions (national and global)
2	[8]	This study analyzed the data using partial least squares (PLS) modeling	Extended SERVQUAL framework to the context of online food delivery with additional dependent variables.	475 survey respondents who had used online food delivery in Turkey	1) Enhance the generalizability of our approach by assembling the sample in a different manner 2) Ranking and measuring the SERVQUAL dimensions more specifically 3) Analyze differences between consumers' income levels or ages.
3	[11]	Structural equation modelling (SEM) AND perceived effectiveness of dispute resolution (PEDR).	The trust factor from a consumer perspective by trust transfer theory.	836 respondents in Pakistan	1) Investigate the impact of OFDAs in inculcating entrepreneurship and customer behaviour 2) Utilize longitudinal and experimental designs to further explore the trust transfer mechanism in the OFDA context 3) Investigate the trust transfer from the supplier side
4	[30]	User Experience Evaluation of Cross-Channel Consumption: Based on Grounded Theory and Neural Network	Evaluation Index System with Levels	In-depth interviews with 36 participants.	1)Explore other methods such as fuzzy comprehensive evaluation and deep learning neural networks 2) Use big data analysis 3)Use larger datasets from field experiments 4) Expand the scope to compare user experiences across different types of cross-channel consumption, and explore the factors and motivations behind channel switching
5	[31]	1) Descriptive analysis 2) Confirmatory factor analysis (CFA) 3) Structural equation modeling (SEM) path analysis	EC Systems Success Model	The collected total number of responses was 489 but only 439 were re- tained for the data analysis.	1) Utilizing other qualitative research methods 2) Examine additional quality factors that may influence customer satisfaction, 3) Convenience sampling limits the generalizability of the findings beyond the target population 4) Testing the model in different cultural contexts and comparing Western and Eastern cultures
6	[32]	1) Descriptive analysis. 2) Multicollinearity analysis 3) Regression analysis	1) SERVQUAL 2) EDT	250 questionnaires were submitted by respondents.	1) Use a mixed methods approach with both quantitative and qualitative techniques to explore additional factors 2) Expand beyond the COVID-19 context and limited geographic area to improve generalizability
7	[12]	Lexicon-based sentiment classification using word-emotion association & sentiment polarity	1) Competitive analysis 2) Emotions scoring 3) Polarity scoring	13,757 tweets were extracted (Related to Swiggy, Zomato and UberEats)	1) Other languages may also be considered 2) Considering opinion carriers such as emoticons, emoji and slang
8	[19]	SLR and Meta-Analytic Structural Equation Modeling (MASEM)	Integrated UTAUT, VAM, and BRQ	A total of 80 research articles were short-listed for our meta-analysis	1) Develop another meta-analytic framework to synthesise the OFD literature 2) Extend theories beyond UTAUT, VAM, and BRQ 3) Extend relevant qualitative studies and studies published in other languages 4) Use longitudinal data to understand how consumer responses to OFD services

No.	Ref.	Analysis Method	Evaluation Model / Satisfaction Metrics	Dataset(s)	Challenges/Future Works
9	[18]	1) SLR 2) Bibliometric analysis 3) Thematic content analysis	Multi-clusters & Multi-themes	43 research articles on online food delivery	1) Implement a bigger sample size 2) Article collection criteria inclusion to include more context
10	[33]	Sentiment Analysis (Gensim/VADER)	Sentiment polarity score: assessed topic-level and dimension-level sentiments using dictionaries or a pre-defined list of words approach	Tweets: 9,447 for Zomato, 13,160 for Swiggy, 12,536 for UberEats, and 1,951 for Grubhub	1) Extend data from another region 2) The inclusion of financial variables to incorporate additional context
11	[34]	1) PLS-SEM 2) one-way ANOVAs 3) chi-square test 4) linear regression analysis	m-SERVQUAL model and spillover theory	1,000 survey respondent	1) Use multi-dimensional measure 2) Examine whether the results can be generalized to other cultural contexts 3) Examine demographic characteristics and situational factors for potential moderating effects 4) Compare consumers' perceptions of mobile app service quality before, during, and after the pandemic
12	[35]	Sentiment analysis using a lexicon-based approach based on VADER	Polarity score and rely on manual content analysis for multi-themes identification.	This study gathered and analyzed 1,300 tweets for GrabFood and 1,073 tweets for Foodpanda	1)Include other key stakeholders, such as online retailers, merchants, and business partners of food delivery services. 2) Includes other data-collection sources (other than X)
13	[14]	Two unsupervised sentiment algorithms (AFINN and Valence Aware Dictionary for Sentiment Reasoning (VADER))	Sentiment polarity score	A total of 874,718 cleaned reviews and ratings (Doordash, Postmate, Grubhum, Seamless and Ubereats)	1) Use more robust deep learning models for the SA and prediction algorithms 2) Aspect level SA can increase performance 3) Collect data from multiple sources and compare the results
14	[36]	The partial least squares structural equation modelling (PLS-SEM)	An integrated framework built using trust transfer theory and a variety of constructs	A total of 476 completed questionnaires	1) Incorporating other constructs like perceived value. 2) Exploring more constructs affecting trust in the user community. 3) Exploring the relationships of distinct commitment dimensions with trust, continuance intention, and sharing intention. 4) Conducting the study outside the USA and Canada. 5) Analyzing the USA and Canada as a homogenous sample. 6) In-person or a combination of online and in-person participants.
15	[15]	Lexicon-based unsupervised machine learning approaches	The integration of systemic functional linguistics and appraisal theory	574,650 reviews for DoorDash, 180,474 for Grubhub, 66,139 for Postmates, 37,211 for Uber Eats, and 16,244 for Seamless.	1) Explore advanced NLP techniques, such as deep learning models or SA algorithms trained on domain-specific datasets. 2) Explore the impact of app developer or service provider responses on user sentiment and thumbs-up behavior. 3) Expand the scope of emotional aspects considered and explore a broader range of emotions 4)Extend the investigation to other review platforms 5)Exploring diverse user demographics 6)Incorporate contextual information, such as review timestamps or user location

3. Results and Discussions

This chapter thoroughly explores and answers the questions that emerged during this study, offering detailed responses.

3.1 RQ1: What methods have been used to analyse customer satisfaction in food delivery apps?

The selected articles describe various analysis methods, with Sentiment Analysis being the most used, present in six articles. PLS, PLS-SEM, SEM, and MASEM are collectively mentioned in a total of six articles and are

statistical techniques used for different purposes. Sentiment analysis, or opinion mining, involves identifying the emotional tone conveyed by words to comprehend the attitudes, opinions, and emotions expressed in a text. PLS focuses on linear regression models with collinear predictors, while PLS-SEM extends this to complex cause-effect relationships in models with latent variables. SEM combines factor analysis and multiple regression to analyse relationships between measured variables and latent constructs. MASEM synthesizes data from multiple studies to estimate and test complex models, summarizing research findings across different studies. Commonly used analysis methods are presented in Table 8.

Table 8. Commonly used analysis method

Analysis Method	Freq.	Article Ref
Sentiment Analysis	6	[7], [12], [33], [35], [14], [15]
Structural equation modelling (SEM), Partial least squares (PLS), PLS-SEM, Meta-Analytic Structural Equation Modelling (MASEM)	6	[8], [11], [31], [19], [34], [36]
Systematic Literature Review (SLR)	2	[19], [18]
Descriptive analysis	2	[31], [32]
Regression analysis	2	[32], [34]
Perceived effectiveness of dispute resolution (PEDR)	1	[11]
Grounded Theory & Neural Network	1	[30]
Confirmatory factor analysis (CFA)	1	[31]
Multicollinearity analysis	1	[32]
Bibliometric analysis	1	[18]
Thematic content analysis	1	[18]
One-way ANOVAs	1	[34]
Chi-square test	1	[15]

Sentiment analysis stands out as the most frequently used method, demonstrating its effectiveness in processing user-generated content to evaluate customer feedback. Statistical techniques such as SEM, PLS-SEM, and MASEM are also widely employed, reflecting a focus on uncovering complex cause-and-effect relationships. These methods provide businesses with actionable insights into the factors influencing customer satisfaction. The importance of data-centric approaches is particularly evident in scientific disciplines, given the increasing reliance on data-driven methodologies [37]. Together, these approaches underscore the growing emphasis on leveraging data to understand customer behavior and enhance service quality.

3.2 RQ2: What evaluation metrics or model are commonly used to evaluate customer satisfaction in food delivery apps?

The selected articles use various evaluation metrics or models, with sentiment polarity scores being the most common, appearing in five articles, and are a prevalent choice for gauging customer sentiments. The SERVQUAL family, including Extended SERVQUAL and M-SERVQUAL, along with multi-themes, are utilized in three studies each. Sentiment polarity scores quantify the overall emotional tone of a text by categorizing it as positive, negative, or neutral. SERVQUAL is a service quality framework that assesses customer perceptions of service quality across dimensions. Multi-themes evaluation metrics assess customer satisfaction by considering multiple thematic areas simultaneously, offering a comprehensive view of various influencing factors. Commonly used evaluation metrics or models are presented in Table 9.

Table 9. Commonly used evaluation metrics or model

Evaluation metrics or model	Freq.	Article Ref
Sentiment polarity scores	5	[7], [12], [33], [35], [14]
SERVQUAL, Extended SERVQUAL, M-SERVQUAL	3	[8], [32], [34]
Multi-themes	3	[7], [18], [35]
Trust transfer theory	2	[11], [36]
Evaluation Index System with Levels	1	[30]
EC Systems Success Model	1	[31]
Spillover theory	1	[34]
The integration of systemic functional linguistics and appraisal theory	1	[15]
Integrated UTAUT, VAM, and BRQ	1	[19]

The results also emphasize the importance of robust evaluation metrics, with sentiment polarity scores and frameworks like SERVQUAL being the most widely used. These metrics capture critical aspects of customer experience, such as emotional tone and service quality, offering businesses a foundation to measure and improve customer satisfaction. The underlying assumption is that customer satisfaction is a complex, multi-dimensional concept, and the relationship between the performance of specific attributes and overall satisfaction is often asymmetrical [38]. However, the findings indicate limited exploration of multi-dimensional and emotional aspects, suggesting that further refinement of evaluation metrics is necessary to address the diverse factors influencing satisfaction.

3.3 RQ3: What dataset(s) are commonly used to evaluate customer satisfaction from online food delivery services?

The selected articles use various datasets, with surveys topping the list, being utilized in seven studies, underscoring their prominence in capturing direct user feedback. Tweets from the X platform and web/app reviews are each referenced in three articles, highlighting the significance of social media and user-generated content (UGC) for sentiment analysis. Additionally, research articles datasets are used in two studies, indicating their value in providing comprehensive insights and contextual analysis. Commonly used datasets are presented in Table 10.

Table 10. Commonly used dataset(s)

Evaluation metrics or model	Freq.	Article Ref
Survey	7	[8], [11], [30], [31], [32] [34], [36]
Tweets - X Platform	3	[12], [33], [35]
Web/Apps - User Reviews	3	[7], [14], [15]
Research Articles	2	[19], [18]

In terms of datasets, surveys dominate the research landscape, highlighting the importance of direct feedback in understanding customer preferences. Social media data and web reviews are also widely used, offering rich insights into user sentiment and behavioral trends. However, the review identifies limitations in dataset diversity, as most studies rely on specific demographics or regions. Advanced tools such as AI and machine learning also benefit from diverse datasets to ensure robustness and generalizability across different scenarios [39]. Expanding the geographic scope and integrating more diverse data sources could provide a more holistic and representative view of customer satisfaction across varied contexts.

3.4 RQ4: What challenges and future directions have been identified for evaluating and classifying customer satisfaction with online food delivery services?

There are 15 papers that answered RQ4, addressing the challenges and future directions for evaluating and classifying customer satisfaction in online food delivery services. Table 11 highlights the challenges and future directions associated with the analysis method domain. It organizes various categories, provides references, and outlines future works needed to use advanced analytical techniques, improve research methods, and explore practical impacts. This mapping helps identify key areas for improvement and innovation in analytical approaches, fostering growth in both academic research and practical application across industries.

Table 11. Challenges and future directions related to the analysis method domain

Category	Ref.	Future works related to the analysis method
Advanced Analytical Techniques	[30]	Explore other methods such as fuzzy comprehensive evaluation and deep learning neural networks
	[30]	Use big data analysis
	[14]	Use more robust deep learning models for the SA and prediction algorithms
	[14]	Aspect level SA can increase performance
	[15]	Explore advanced NLP techniques, such as deep learning models or SA algorithms trained on domain-specific datasets.
Improving Research Methods	[8]	Enhance the generalizability of our approach by assembling the sample in a different manner
	[31]	Utilizing other qualitative research methods
	[32]	Use a mixed methods approach with both quantitative and qualitative techniques to explore additional factors
	[19]	Develop another meta-analytic framework to synthesize the OFD literature
Exploring Practical Impacts	[11]	Investigate the impact of OFDAs in inculcating entrepreneurship and customer behavior
	[15]	Explore the impact of app developer or service provider responses on user sentiment and thumbs-up behavior.

Addressing these challenges and implementing the proposed future works is crucial for advancing the field of online food delivery services. By using advanced analytical techniques and improving research methods, businesses can achieve more accurate and insightful evaluations of customer satisfaction. Additionally, exploring practical impacts enables companies to understand and respond to customer behaviour more effectively, ultimately enhancing service quality and customer loyalty. This approach ensures that the evolving needs of the industry are met with innovative and robust solutions, supporting long-term sustainability and customer retention in a competitive market.

Table 12 outlines the challenges and future directions in the evaluation metrics or model domain, essential for assessing and enhancing customer satisfaction in online food delivery services. It organizes the areas of focus into three main categories: expanding evaluation metrics, broadening constructs relationships, and improving evaluation approaches. Each category is supported by references and proposed future works, providing a comprehensive roadmap for advancing research and practical applications in this dynamic field, contributing to both academic understanding and industry practice in customer experience evaluation.

Table 12. Challenges and future directions related to evaluation metrics or model domain

Category	Ref.	Future works related to Evaluation Metrics or Model
Expanding Evaluation Metrics	[8]	Ranking and measuring the SERVQUAL dimensions more specifically
	[31]	Examine additional quality factors that may influence customer satisfaction
	[12]	Considering opinion carriers such as emoticons, emoji and slang
	[34]	Compare consumers' perceptions of mobile app service quality before, during, and after the pandemic
	[34]	Use multi-dimensional measure
	[15]	Expand the scope of emotional aspects considered and explore a broader range of emotions
Broadening Constructs Relationships	[36]	Incorporating other constructs like perceived value.
	[36]	Exploring more constructs affecting trust in the user community.
	[36]	Exploring the relationships of distinct commitment dimensions with trust, continuance intention, and sharing intention.
Improving Evaluation Approaches	[11]	Utilize longitudinal and experimental designs to further explore the trust transfer mechanism in the OFDA context
	[19]	Use longitudinal data to understand how consumer responses to OFD services
	[19]	Extend theories beyond UTAUT, VAM, and BRQ

Table 12 emphasizes the need to refine and expand current evaluation practices to better capture the nuances of customer experiences. By incorporating additional quality factors, and emotional aspects, and exploring new constructs, businesses can develop more comprehensive and accurate models. This approach

facilitates targeted improvements and innovations, ensuring that evaluation metrics evolve in line with industry demands and consumer expectations. Ultimately, this process supports long-term success by fostering deeper insights into customer preferences and behaviours, driving strategic decisions in online food delivery service management.

Table 13 focuses on the challenges and future directions related to the dataset(s) domain in online food delivery services. It categorizes various areas for improvement, such as exploring demographic contexts, diversifying data sources, and expanding geographic scope to capture broader customer experiences, preferences, and behaviours. The table helps in identifying key areas that require attention to enhance the accuracy and comprehensiveness of datasets used in research, analysis, and real-world applications across different sectors within the food delivery industry.

Table 13. Challenges and future directions related to the dataset(s) domain

Category	Ref.	Future works related to Dataset(s)
Exploring Demographics Contexts	[8]	Analyzes differences between consumers' income levels or ages.
	[11]	Investigate the trust transfer from the supplier side
	[30]	Expand the scope to compare user experiences across different types of cross-channel consumption, and explore the factors and motivations behind channel-switching
	[31]	Testing the model in different cultural contexts and comparing Western and Eastern cultures
	[18]	Article collection criteria inclusion to include more context
	[33]	The inclusion of financial variables to incorporate additional context
	[34]	Examine whether the results can be generalized to other cultural contexts
	[34]	Examine demographic characteristics and situational factors for potential moderating effects
	[36]	In-person or a combination of online and in-person participants
	[15]	Exploring diverse user demographics
Diversifying Data Sources	[30]	Use larger datasets from field experiments
	[31]	Convenience sampling limits the generalizability of the findings beyond the target population
	[18]	Implement a bigger sample size
	[35]	Include other key stakeholders, such as online retailers, merchants, and business partners of food delivery services.
	[35]	Includes other data-collection sources (other than X)
	[14]	Collect data from multiple sources and compare the results
	[15]	Extend the investigation to other review platforms
	[15]	Incorporate contextual information, such as review timestamps or user location
Expanding Geographic Scope	[7]	Incorporate other websites and regions (national and global)
	[32]	Expand beyond the COVID-19 context and limited geographic area to improve generalizability
	[12]	Other languages may also be considered
	[19]	Extend relevant qualitative studies and studies published in other languages
	[33]	Extend data from another region
	[36]	Conducting the study outside the USA and Canada.
	[36]	Analyzing the USA and Canada as a homogenous sample.

Table 13 highlights the importance of considering diverse user demographics, utilizing larger and varied data sources, and extending research to different regions to reflect global customer patterns, preferences, and trends. This approach ensures a more holistic understanding of customer behaviour and satisfaction, leading to more effective strategies and solutions in the online food delivery industry. By addressing these challenges, businesses can improve their data-driven decision-making, implement targeted improvements, and better meet the evolving needs of their customers in a competitive and rapidly changing marketplace.

Table 14 maps categories to their respective domains. Each category is assigned a unique identifier for easy reference. This helps in understanding and navigating different analytical and research areas.

Table 14. Category and domain mapping

Id	Category	Domain
A	Advanced Analytical Techniques	Analysis Methods
B	Improving Research Methods	
C	Exploring Practical Impacts	
D	Expanding Evaluation Metrics	Evaluation Metrics or Model
E	Broadening Constructs Relationships	
F	Improving Evaluation Approaches	
G	Exploring Demographics Contexts	Dataset(s)
H	Diversifying Data Sources	
I	Expanding Geographic Scope	

Table 15 provides a comprehensive overview of the challenges and future directions in the analysis methods, evaluation metrics, and dataset(s) domains, mapped against the categories identified in Table 14. This matrix helps in pinpointing specific areas where further research and innovation are needed, offering a structured approach to tackling these challenges. By categorizing various references, Table 15 highlights the challenges and future works required to advance the field, ensuring that researchers and practitioners can focus on priority areas for improvement.

In the analysis methods domain, the use of advanced analytical techniques is the most highlighted category, mentioned five times. Improving research methods and exploring practical impacts were mentioned four and two times, respectively. With a total of 11 future works in this domain, it is the least mentioned overall, suggesting comparatively less attention and resources are dedicated to advancing analytical methods, even

though they are crucial for refining approaches to customer satisfaction in the industry [40].

In the evaluation metrics or model domain, the expanding evaluation metrics category is highlighted and mentioned six times. The broadening constructs relationships and improving evaluation approaches categories were each mentioned three times. With a total of 12 future works in this domain, it emphasizes the need for further development in these areas, particularly as businesses seek to create more accurate and comprehensive models of customer behaviour and satisfaction [41].

In the dataset(s) domain, the category of exploring demographic context was mentioned 10 times, making it the most frequently discussed category in this research. Diversifying data sources was mentioned eight times while expanding geographic scope was mentioned seven times. With a total of 25 proposed future works, this domain is the most widely discussed overall, as customer satisfaction evaluation heavily depends on robust datasets [42].

Table 15. Matrix of challenges and future directions

Ref.	Analysis Methods			Evaluation Metrics			Dataset(s)		
	A	B	C	D	E	F	G	H	I
[7]	-	-	-	-	-	-	-	-	1
[8]	-	1	-	1	-	-	1	-	-
[11]	-	-	1	-	-	1	1	-	-
[30]	2	-	-	-	-	-	1	1	-
[31]	-	1	-	1	-	-	1	1	-
[32]	-	1	-	-	-	-	-	-	1
[12]	-	-	-	1	-	-	-	-	1
[19]	-	1	-	-	-	2	-	-	1
[18]	-	-	-	-	-	-	1	1	-
[33]	-	-	-	-	-	-	1	-	1
[34]	-	-	-	2	-	-	2	-	-
[35]	-	-	-	-	-	-	-	2	-
[14]	2	-	-	-	-	-	-	1	-
[36]	-	-	-	-	3	-	1	-	2
[15]	1	-	1	1	-	-	1	2	-
Sub-Total	5	4	2	6	3	3	10	8	7
Total	11			12			25		

The results highlight key challenges and future directions across analysis methods, evaluation metrics, and datasets, offering a structured approach to advancing research in customer satisfaction. The dataset domain receives the most attention, with a strong focus on exploring demographic contexts and diversifying data sources, emphasizing the importance of robust and diverse data. Evaluation metrics stress the need to expand metrics and improve models to better capture customer behavior, showing significant potential for development. In contrast, the analysis methods domain, despite its critical role in refining approaches, is the least addressed, suggesting a potential gap in research and resource allocation. This imbalance raises concerns about whether adequate attention is being directed toward enhancing analytical techniques, which are essential for advancing the field. These findings collectively provide a clear roadmap for addressing priority areas in customer satisfaction research.

The limited number of final articles analyzed in this research arises from the need for homogeneity in the studies to comprehensively address all research questions. This requirement ensures that the findings are focused, coherent, and directly relevant to the scope of the discussion. In systematic literature reviews, datasets are typically small, consisting of only a few studies, with rigorous inclusion processes that guarantee the quality and relevance of the literature reviewed [43]. While this approach helps maintain methodological rigor, it inevitably narrows the dataset and may exclude studies addressing broader or tangential aspects. Supplementing this approach with insights from diverse methodologies or perspectives could provide a more nuanced understanding of the complexities and evolving trends in the OFD industry.

4. Conclusions

This systematic literature review addresses the research questions by synthesizing current methods, metrics, and datasets used to evaluate customer satisfaction in the rapidly growing online food delivery (OFD) sector. The findings reveal that sentiment analysis and PLS/SEM are widely used for analysis, sentiment polarity scores are widely adopted as evaluation metrics, and surveys as well as user-generated content, such as reviews and tweets, are frequently employed as datasets. These insights align with the study's goal of comprehensively understanding existing practices. The study also highlights future research directions related to customer satisfaction evaluation in online food delivery services, emphasizing the need for advanced analytical techniques like deep learning and domain-specific NLP. Expanding evaluation metrics to include emotional and multi-dimensional factors is crucial for capturing the nuances of customer satisfaction. Additionally, enriching datasets with diverse demographic and geographic contexts will improve the generalizability and accuracy of findings. While this review provides a focused and detailed examination of the available literature, it is important to acknowledge its limitations, such as potential publication bias and the focus on a limited number of key studies. Future research should address these limitations and explore the broader implications of customer satisfaction evaluations, including their impact on business strategies and customer loyalty. Addressing these limitations will enhance the robustness and applicability of future studies. In conclusion, this review not only synthesizes existing practices but also organizes and classifies future directions for customer satisfaction evaluation in online food delivery services. By addressing these areas, businesses can adapt to evolving consumer expectations, improve service quality, and foster sustainable growth. This study provides a foundation for future research and offers actionable insights for both academics and industry practitioners.

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