

**“THE INFLUENCE OF PRODUCT AVAILABILITY AND
DELIVERY TIMELINESS ON CUSTOMER TRUST: THE
MEDIATING ROLE OF CUSTOMER SATISFACTION IN THE
COOKING OIL FMCG SECTOR IN GREATER JAKARTA”**



THESIS

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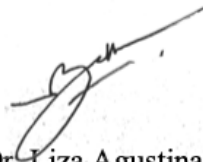
We hereby declare that this Thesis is from student's own work, has been read and presented to Institut IPMI Board of Examiners, and has been accepted as part of the requirements needed to obtain a Bachelor of Business Administration Degree and has been found to be satisfactory.

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NON-PLAGIARISM DECLARATION FORM

This Thesis is a presentation of my original research work. Wherever contributions of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions.

Also, this work is being submitted in partial fulfilment of the requirements for the Bachelor of Business Administration degree and has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Jakarta, 31st of August 2026



Rivaldean Aldrich Adrien

TABLE OF CONTENTS

CERTIFICATE OF APPROVAL.....	iii
NON PLAGIARISM DECLARATION FORM.....	iv
LIST OF FIGURES.....	vii
LIST OF TABLES.....	viii
ACKNOWLEDGEMENT	ix
ABSTRACT	x
CHAPTER I INTRODUCTION	1
1.1 Background	1
1.2 Problem Formulation	3
1.3 Research Gap	4
1.4 Research Novelty	4
1.5 Research Questions	5
1.6 Research Objectives	5
1.7 Research Significance	6
1.8 Scope and Limitations.....	6
1.9 Structure of the Thesis	7
CHAPTER II LITERATURE REVIEW	8
2.1 Underpinning Theories	8
2.2 Customer Satisfaction	9
2.3 Product Availability	10
2.4 Delivery Timeliness	10
2.5 Customer Trust.....	11
2.6 Integration of Supply Chain Performance, Satisfaction and Trust	11
2.7 Previous Research	12
2.8 Hypotheses Development	13

CHAPTER III RESEARCH METHODOLOGY	18
3.1 Research Design.....	18
3.2 Population and Sample.....	18
3.3 Data Collection Method	20
3.4 Operational Definition of Variables.....	21
3.5 Measurement Scale	22
3.6 Data Analysis Technique	22
3.7 Evaluation of the Measurement Model (Outer Model).....	23
3.8 Evaluation of the Structural Model (Inner Model)	24
3.9 Hypothesis Testing.....	25
CHAPTER IV FINDINGS, ANALYSIS AND DISCUSSION	27
4.1 Introduction	27
4.2 Respondent Profile	28
4.3 Instrument Validity and Reliability.....	32
4.4 Data Preparation.....	33
4.5 Descriptive Analysis	35
4.6 Research Model Evaluation	40
4.7 Structural Model Evaluation	46
4.8 Hypothesis Test.....	48
4.9 Discussion on Findings	51
CHAPTER V CONCLUSION AND RECOMMENDATION	55
5.1 Conclusion	55
5.2 The Implication of the Study	56
5.3 Limitation of the Study	58
5.4 Recommendation for Future Study	60
Appendices	62
REFERENCES	63

LIST OF FIGURES

Figure 2.1 Conceptual Framework.....	17
Figure 4.1 Research Model.....	42

LIST OF TABLES

Table 2.1	Summary of Previous Research	12
Table 2.2	Summary of Research Hypotheses.....	17
Table 3.1	Operational Definition of Variables	21
Table 3.2	Criteria for Model Evaluation	26
Table 4.1	Screening Criteria Result.....	28
Table 4.2	Respondent Age Distribution	28
Table 4.3	Respondent Occupation Distribution	29
Table 4.4	Respondent Monthly Personal Income.....	29
Table 4.5	Monthly Cooking Oil Purchasing Budget	30
Table 4.6	Cooking Oil Purchasing Frequency	31
Table 4.7	Quantity of Cooking Oil Purchased per Purchase.....	31
Table 4.8	Most Frequently Purchased Cooking Oil Brand	32
Table 4.9	Mean Value and Data Distribution of the Indicators	34
Table 4.10	Descriptive Analysis of the Variables	36
Table 4.11	Means of All Variables and Indicators.....	37
Table 4.12	Internal Consistency Reliability Result.....	42
Table 4.13	Convergent Validity Result	43
Table 4.14	Cross Loadings Validity Result.....	44
Table 4.15	Fornell-Larcker Validity Result	45
Table 4.16	HTMT Criteria Evaluation	45
Table 4.17	Structural Model Evaluation Result	46
Table 4.18	Hypothesis Testing of Relationships between Variables	48

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ABSTRACT

Cooking oil represents an essential staple in Indonesian households because families across income groups purchase it regularly and often in small quantities. The national cooking oil crisis during 2021 and 2022 disrupted product availability, created irregular replenishment and caused considerable price instability that weakened consumers' confidence in familiar brands and distributors across Greater Jakarta. This situation exposed the importance of supply chain performance to everyday shoppers even though consumers could not directly observe distribution activities and instead evaluated operational reliability through their experiences at the retail shelf. This study examines the influence of product availability and delivery timeliness on customer trust in the cooking oil fast-moving consumer goods sector in Greater Jakarta while assessing customer satisfaction as a mediating variable. The research collected data from 166 purposively selected respondents who personally purchase cooking oil for household consumption and measured twenty indicators representing four constructs through a five-point Likert scale. The analysis employed Partial Least Squares Structural Equation Modelling using SmartPLS 4 and demonstrated that all seven proposed hypotheses received empirical support. Product availability and delivery timeliness positively influence customer satisfaction while satisfaction produces the strongest effect on customer trust. The findings also show that satisfaction carries stronger indirect effects from both operational factors to trust than their respective direct effects. These results suggest that cooking oil producers and distributors should strengthen retail execution at the point of purchase because improvements in operational performance can build consumer trust when shoppers perceive the resulting purchase experience as satisfying.

Keywords: Product Availability, Delivery Timeliness, Customer Satisfaction, Customer Trust, Supply Chain Performance, PLS-SEM

CHAPTER I

INTRODUCTION

1.1 Background

Indonesia's Fast-Moving Consumer Goods (FMCG) sector remains one of the country's most active and competitive markets because it involves repeated purchases, rapid inventory movement, compact packaging, intensive promotional activities, and strong reliance on effective supply chain operations. Within this market, cooking oil holds an important position as a basic household necessity that people from various demographic backgrounds use almost every day (Badan Pusat Statistik [BPS], 2023). The essential role of this product makes its availability at the point of purchase an important factor that can influence how customers behave and assess their purchasing experience (Kotler & Keller, 2016).

The Indonesian cooking oil industry has experienced substantial disruption in recent years (OECD, 2022), with the most prominent disruption occurring during the national supply and price crisis in 2021–2022. During this period, limited stocks affected retailers, distribution became less balanced across sales channels, consumers increased purchases because of concerns over shortages, and reports of excessive price increases became widespread (CNN Indonesia, 2022; Kementerian Perdagangan Republik Indonesia, 2022). Consumers consequently faced greater difficulty finding cooking oil as retailers experienced inconsistent inventory levels and delivery patterns. These conditions highlight the strong connection between supply chain performance, market stability, and consumer confidence (Christopher, 2016).

From an operational perspective, product availability and delivery timeliness represent two essential aspects of effective supply chain performance (Christopher, 2016; Mentzer et al., 2001). Product availability refers to the consistency with which consumers can locate a particular item when they intend to purchase it, while delivery timeliness reflects the ability of distribution and replenishment activities to place products on retail shelves within the expected time (Stock & Lambert, 2001; Chopra & Meindl, 2019). Poor performance in either area can influence consumer evaluations and lead them to develop negative perceptions

toward both the product and the company responsible for providing it (Agrawal et al., 2022).

Customer trust represents an important relational outcome because it determines whether temporary transactions can develop into enduring relationships between consumers and brands (Morgan & Hunt, 1994; Wiedmann & von Mettenheim, 2020). Consistent product availability and dependable replenishment can help brands and distributors strengthen the confidence that consumers place in them. However, the process through which operational performance develops consumer trust remains difficult to explain because shoppers cannot directly see the logistics activities behind product delivery and instead evaluate them through their personal purchasing experiences. Customer satisfaction therefore provides a potential link between these two aspects because it reflects consumers' overall evaluation of whether their purchase experience fulfills their expectations (Oliver, 1980) and can transform positive operational outcomes into stronger trust toward a brand or distributor (Garbarino & Johnson, 1999).

Previous studies that examine supply chain performance and customer satisfaction generally discuss the FMCG sector from a broad perspective and provide limited insight into how these relationships operate within the cooking oil industry in Greater Jakarta (Agrawal et al., 2022). Research has also rarely integrated operational supply chain factors with relational consumer outcomes within a single framework that identifies customer satisfaction as the mechanism connecting these variables (Wiedmann & von Mettenheim, 2020).

This research selects Greater Jakarta as the study area because the region combines a large population with diverse retail structures and relatively similar urban consumption characteristics (Badan Pusat Statistik [BPS], 2023). Focusing on this geographical area allows the research to maintain a clear scope while keeping the data collection process manageable within the limitations of an undergraduate study (Sekaran & Bougie, 2016).

Based on these considerations, this study examines the effects of product availability and delivery timeliness on customer trust within the cooking oil FMCG sector in Greater Jakarta while placing customer satisfaction as the variable that mediates these relationships.

1.2 Problem Formulation

The supply instability of the 2021–2022 cooking oil crisis laid bare structural weaknesses in how an essential commodity was distributed across Indonesia (OECD, 2022). Shortages, delayed availability, and unstable pricing left consumers dissatisfied and increasingly sceptical of distributors and producers alike (CNN Indonesia, 2022; Kementerian Perdagangan Republik Indonesia, 2022). Such conditions suggest that in the cooking oil sector, customer evaluations hinge on supply chain performance just as much as on the intrinsic quality of the product itself (Christopher, 2016; Kotler & Keller, 2016).

Within FMCG more broadly, operational factors like product availability and replenishment speed have been shown to drive customer experience (Mentzer et al., 2001; Stock & Lambert, 2001). Consumers of staple products such as cooking oil are especially sensitive to supply stability, because the product is purchased repeatedly and switching costs between brands are low (Badan Pusat Statistik [BPS], 2023).

That said, operational performance is unlikely to translate into customer trust directly. Customer satisfaction more plausibly acts as the mediating mechanism that converts operational reliability into relational confidence (Oliver, 1980; Garbarino & Johnson, 1999). The more reliably a product stays available and gets replenished, the more satisfying the purchase feels, and the more willing consumers become to trust the brand or distributor behind it (Wiedmann & von Mettenheim, 2020).

Even though these relationships matter in practice, the literature has generally kept operational performance and consumer evaluations in separate lanes, rarely treating customer satisfaction as an intermediary variable within an essential commodity setting. Studies zeroing in on cooking oil consumers in Greater Jakarta specifically remain scarce.

This study therefore sets out to examine how product availability and delivery timeliness influence customer trust in the cooking oil FMCG sector in Greater Jakarta, and whether customer satisfaction mediates those relationships.

1.3 Research Gap

Researchers have extensively studied how supply chain performance relates to customer outcomes in FMCG industries. Even so, a number of gaps remain in the existing literature.

1. Most existing studies gauge supply chain performance through internal operational metrics rather than through how end consumers actually experience product availability and delivery timeliness at the point of purchase.
2. Studies tend to examine operational efficiency and relational consumer constructs in isolation from one another, rather than integrating both within a single explanatory framework.
3. To the author's knowledge, no study within the cooking oil sector has positioned customer satisfaction as a mediating variable between operational supply chain performance and customer trust. Research treating trust as a relational outcome has instead concentrated on service industries and e-commerce, leaving FMCG staples comparatively unexamined.
4. Few studies have zoomed in on a concentrated geographical unit such as Greater Jakarta — Indonesia's largest urban consumer market and the one hit hardest by the 2021–2022 disruption.

This research responds to these gaps by bringing operational supply chain constructs and relational consumer constructs together within one conceptual framework, and by testing the mediating role of customer satisfaction in the cooking oil FMCG sector in Greater Jakarta.

1.4 Research Novelty

This study's novelty rests on three elements. First, rather than treating them separately, it brings two operational supply chain constructs together with two consumer evaluation constructs within a single model in an essential commodity category. Second, it specifies and empirically tests customer satisfaction as the transmission mechanism linking operational performance to customer trust, reversing the more common literature practice of treating trust as an antecedent of satisfaction. Third, it centres specifically on cooking oil consumers in Greater

Jakarta, offering contextual evidence from an Indonesian urban FMCG market that lived through a documented national supply and pricing crisis.

1.5 Research Questions

Based on the problem formulation above, this study addresses the following research questions:

1. Does product availability have a significant influence on customer satisfaction?
2. Does delivery timeliness have a significant influence on customer satisfaction?
3. Does product availability have a significant influence on customer trust?
4. Does delivery timeliness have a significant influence on customer trust?
5. Does customer satisfaction have a significant influence on customer trust?
6. Does customer satisfaction mediate the relationship between product availability and customer trust?
7. Does customer satisfaction mediate the relationship between delivery timeliness and customer trust?

1.6 Research Objectives

In line with the research questions, the objectives of this study are:

1. To analyse the influence of product availability on customer satisfaction.
2. To analyse the influence of delivery timeliness on customer satisfaction.
3. To analyse the influence of product availability on customer trust.
4. To analyse the influence of delivery timeliness on customer trust.
5. To analyse the influence of customer satisfaction on customer trust.
6. To analyse the mediating role of customer satisfaction in the relationship between product availability and customer trust.
7. To analyse the mediating role of customer satisfaction in the relationship between delivery timeliness and customer trust.

1.7 Research Significance

1.7.1 Theoretical Significance

This study adds to the literature by bringing supply chain performance constructs together with consumer evaluation constructs to explain how trust forms within the FMCG industry. Treating customer satisfaction as a mediator rather than an outcome extends the commitment-trust reasoning of Morgan and Hunt (1994) and the satisfaction-trust findings of Garbarino and Johnson (1999) into an operational supply chain setting, offering empirical evidence on whether operational performance shapes trust directly, indirectly, or both.

1.7.2 Practical Significance

These findings should give FMCG companies, particularly those in the cooking oil sector, a clearer sense of where to direct operational investment. In particular, the study clarifies whether gains in shelf availability and replenishment speed move consumer trust directly, or only insofar as they create a satisfying purchase experience. That distinction carries direct implications for how firms weigh upstream logistics capacity against retail execution at the point of purchase.

1.8 Scope and Limitations

This research focuses on cooking oil consumers who reside in the Greater Jakarta (Jabodetabek) area and evaluates four constructs consisting of product availability, delivery timeliness, customer satisfaction, and customer trust. The research applies a quantitative method through cross-sectional questionnaire data, which may introduce respondent bias and provides limited insight into changes that could occur in these relationships over an extended period.

The proposed model focuses specifically on two operational constructs. Although perceived price fairness, product quality, brand image, and promotional activity may also influence satisfaction and trust within this product category (Xia et al., 2004), this research does not include these factors in the analytical model and discusses them as limitations and opportunities for future studies in Chapter V. The use of non-probability purposive sampling and the restriction of the research area to one metropolitan region also limit the broader applicability of the findings, so

the results primarily describe patterns within the Greater Jakarta urban market rather than providing statistical generalisations for Indonesian consumers as a whole.

1.9 Structure of the Thesis

This thesis is organised into five chapters, as follows:

Chapter I – Introduction

This chapter introduces the study by discussing its background, problem formulation, research gap and novelty, research questions and objectives, theoretical and practical significance, as well as the scope and limitations that define the study.

Chapter II – Literature Review

This chapter discusses the theories and previous studies that provide the foundation for the constructs investigated in the research. The discussion explains each construct, reviews relevant empirical findings, establishes the conceptual framework, and develops the seven hypotheses examined in the study.

Chapter III – Research Methodology

This chapter explains the research design and population together with the sampling procedure, data collection process, variable operationalisation, measurement scale, and PLS-SEM technique applied to assess the measurement model, structural model, and proposed hypotheses.

Chapter IV – Findings, Analysis and Discussion

This chapter reports the respondent characteristics, instrument validity and reliability, data preparation, descriptive results, measurement model assessment, structural model assessment, and hypothesis testing before interpreting the findings by connecting them with the literature discussed in Chapter II.

Chapter V – Conclusion and Recommendation

This chapter summarises the findings according to the research objectives and discusses their theoretical and managerial implications. It also identifies the limitations encountered throughout the study and provides recommendations that can support future research.

CHAPTER II

LITERATURE REVIEW

2.1 Underpinning Theories

2.1.1 Expectation-Confirmation Theory

Oliver's (1980) Expectation-Confirmation Theory explains customer satisfaction through the comparison between expectations formed before purchasing and performance perceived after experiencing a product. Consumers develop expectations in advance and later evaluate the actual performance based on their experience during and after consumption. They experience confirmation and satisfaction when the performance fulfills or surpasses their initial expectations while lower performance creates disconfirmation that can result in dissatisfaction. This theory supports the way customer satisfaction is examined in the present study because it views satisfaction as an evaluation that develops from actual consumption experience rather than as a permanent consumer attitude. In the cooking oil category, consumers generally expect this essential household product to remain available and receive regular replenishment so operational disruptions can create negative disconfirmation when the actual purchasing experience fails to meet those expectations.

2.1.2 Commitment-Trust Theory

Morgan and Hunt (1994) developed the Commitment-Trust Theory by positioning trust as a central element in relationship marketing and an important basis for maintaining exchanges. Trust develops when an exchange partner demonstrates reliability and integrity and becomes stronger when consumers repeatedly observe the partner fulfilling its promises. Morgan and Hunt explained that individuals build trust through accumulated experiences rather than through the outcome of a single transaction. This perspective supports the present study in positioning customer trust as the final relational outcome and explains why dependable operational performance can contribute to stronger trust formation. Garbarino and Johnson (1999) later provided empirical evidence that satisfaction,

trust, and commitment perform different functions within customer relationships while also demonstrating that satisfaction can precede trust development. Their findings provide a theoretical foundation for examining customer satisfaction as the mediating mechanism between operational performance and customer trust in the proposed research model.

2.1.3 Supply Chain Management and Service Quality

Supply chain management theory explains that organisations create value for end customers by effectively coordinating sourcing, production, distribution, and inventory activities (Mentzer et al., 2001; Chopra & Meindl, 2019). Christopher (2016) viewed supply chain capability as a potential source of competitive advantage because customers ultimately experience supply chain effectiveness through the service they receive rather than through the organisation's internal operational efficiency. Stock and Lambert (2001) also identified reliable delivery as an essential component of logistics service quality. These theoretical views support the use of product availability and delivery timeliness as consumer-perceived constructs in this research because the study focuses on how customers experience supply chain performance instead of measuring internal operational outcomes.

2.2 Customer Satisfaction

Customer satisfaction refers to the overall evaluation consumers make when they assess whether a product or service fulfils their expectations and needs (Oliver, 1980). Kotler and Keller (2016) state that customers experience satisfaction when actual product performance matches or surpasses their expectations while performance below the expected level can create dissatisfaction.

In the FMCG sector, consumers form satisfaction not only from the quality of the product itself but also from operational and service factors that include product availability, ease of access, and delivery reliability (Christopher, 2016). Cooking oil represents an essential commodity that consumers expect to obtain consistently because households use the product as part of their routine daily consumption (Badan Pusat Statistik [BPS], 2023).

Previous research provides evidence that supply chain performance can significantly influence customer satisfaction. Agrawal et al. (2022), for example, found that effective supply chain management improves consumer satisfaction in FMCG markets by supporting easier product access and maintaining consistent service performance. This research therefore positions customer satisfaction as the mediating construct that connects product availability and delivery timeliness with customer trust.

2.3 Product Availability

Product availability can be defined as the degree to which a product remains consistently accessible to consumers whenever they need it at the point of purchase (Christopher, 2016). Within the supply chain management literature, availability ranks among the most important indicators of operational effectiveness, since it reflects the combined outcome of inventory management and distribution reliability.

Because FMCG purchases happen so frequently and repetitively, consumers within these industries generally expect continuous availability. Stockouts create inconvenience and dissatisfaction, and given how low switching costs tend to be, consumers may simply move to another brand (Stock & Lambert, 2001). This dynamic is especially pronounced for staple commodities, where the purchase itself cannot easily wait.

Prior studies point to a positive link between high product availability and consumer perceptions of the purchasing experience. Agrawal et al. (2022), for example, found that inventory availability significantly improves customer evaluations and contributes positively to satisfaction outcomes in FMCG sectors.

2.4 Delivery Timeliness

Delivery timeliness can be understood as a company's ability to distribute and replenish products within the timeframes customers expect (Mentzer et al., 2001), reflecting the efficiency of its logistics systems, transportation coordination, and inventory replenishment processes.

Delivery timeliness matters a great deal in FMCG industries, since delayed replenishment translates directly into stock shortages and reduced accessibility for

consumers. What makes this construct distinctive is that consumers never observe distribution performance itself — they infer it from whether shelves get restocked at the pace they expect, meaning delivery timeliness is felt indirectly, through its consequences at the point of purchase.

Stock and Lambert (2001) identify delivery reliability as a fundamental component of supply chain service quality, and Agrawal et al. (2022) similarly found that timely distribution positively influences customer satisfaction by improving operational responsiveness and purchasing convenience.

2.5 Customer Trust

Customer trust refers to consumers' willingness to depend on a product, company, or brand because they hold positive expectations regarding its reliability, integrity, and consistency (Morgan & Hunt, 1994). The construct plays an important relational role because repeated individual transactions can develop into a long-term relationship when consumers maintain confidence in the exchange partner.

Within the FMCG sector, consumers generally develop trust over time through repeated positive purchasing experiences, stable product availability, and dependable replenishment. When a company consistently demonstrates reliability and transparency, consumers become more confident in the brands and distribution channels associated with that company.

Garbarino and Johnson (1999) demonstrated that trust contributes significantly to relationship quality while previous satisfaction also influences its development. Wiedmann and von Mettenheim (2020) similarly highlighted the positive role of perceived trustworthiness in shaping consumer perceptions and subsequent behavioural responses. Based on these perspectives, this study positions customer trust as the final endogenous construct within the proposed research model.

2.6 Integration of Supply Chain Performance, Satisfaction and Trust

Supply chain performance has a close relationship with consumer evaluations in the FMCG sector because operational effectiveness directly influences the purchasing experience. Christopher (2016) explained that firms can

improve product delivery, maintain stable inventory levels, and respond to changing market demand through effective supply chain management, while consumers ultimately experience these capabilities through the service they receive.

Supply chain problems such as stock shortages, delayed replenishment, and irregular distribution can negatively affect consumer perceptions and reduce satisfaction (Stock & Lambert, 2001). Supply chain performance therefore extends beyond an internal operational function because it also shapes the customer experience and influences the relationship that develops between consumers and firms.

Integrating these perspectives provides a theoretical explanation of how the constructs in this research interact. Consumers cannot directly observe operational performance and instead evaluate its consequences through their purchasing experiences, which supports the expectation that reliable operations will directly improve satisfaction and strengthen trust primarily through the satisfaction they create. Oliver (1980) explains the formation of satisfaction through expectation and performance evaluations, while Morgan and Hunt (1994) and Garbarino and Johnson (1999) explain the development of trust within customer relationships, providing the theoretical reasoning for the mediated framework examined in this study.

2.7 Previous Research

Table 2.1 summarises the principal studies informing the constructs and relationships examined in this research.

Table 2.1 Summary of Previous Research

Author (Year)	Focus of Study	Relevance to This Research
Oliver (1980)	Cognitive model of the antecedents and consequences of satisfaction decisions	Provides the expectation-confirmation basis for defining and measuring customer satisfaction
Morgan & Hunt (1994)	Commitment-trust theory of relationship marketing	Establishes trust as a relational construct formed through perceived reliability and consistency
Garbarino & Johnson (1999)	The different roles of satisfaction, trust and commitment in customer relationships	Provides empirical support for satisfaction functioning as an antecedent of trust

(Continuation from the previous page)

Author (Year)	Focus of Study	Relevance to This Research
Mentzer et al. (2001)	Defining supply chain management	Provides the conceptual basis for delivery timeliness as a supply chain performance dimension
Stock & Lambert (2001)	Strategic logistics management	Positions delivery reliability as a core component of logistics service quality
Christopher (2016)	Logistics and supply chain management	Frames supply chain capability as customer-perceived service rather than internal efficiency
Kotler & Keller (2016)	Marketing management	Defines satisfaction in terms of perceived performance against expectations
Chopra & Meindl (2019)	Supply chain strategy, planning and operation	Provides the distribution and replenishment framework underlying product availability
Wiedmann & von Mettenheim (2020)	Attractiveness, trustworthiness and expertise in consumer influence	Supports the link between perceived consistency and reliability and consumer trust formation
Agrawal et al. (2022)	Supply chain performance and customer satisfaction in FMCG markets	Provides direct empirical precedent for the operational-to-satisfaction relationships tested here

Source: Compiled by Author, 2026

2.8 Hypotheses Development

2.8.1 The Influence of Product Availability on Customer Satisfaction

Product availability plays a central role in shaping satisfaction across FMCG categories, since consumers expect staple products to be there whenever they need them. Christopher (2016) noted that effective supply chain performance improves customer experience by keeping products accessible and reducing purchasing inconvenience. Where cooking oil stays consistently available across retail channels, consumers run into fewer disruptions during their shopping, which feeds positively into satisfaction.

Empirical evidence backs this relationship: Agrawal et al. (2022) found that operational efficiency and inventory availability significantly improve customer perceptions and satisfaction outcomes in FMCG markets. Read through the

expectation-confirmation logic of Oliver (1980), consistent availability confirms what consumers expect from a staple product and therefore generates satisfaction. On this basis, the following hypothesis is proposed:

H1: Product availability has a positive and significant effect on customer satisfaction.

2.8.2 The Influence of Delivery Timeliness on Customer Satisfaction

Delivery timeliness reflects how efficiently distribution and replenishment systems keep products available in step with consumer demand. When replenishment happens on time, stock shortages fall and purchasing becomes more convenient, both of which feed positively into customer satisfaction.

Stock and Lambert (2001) identify delivery reliability as a critical determinant of supply chain service quality, noting that efficient delivery systems let firms maintain stable availability and improve the overall customer experience. Within the cooking oil industry specifically, delayed replenishment disrupts established purchasing patterns and breeds dissatisfaction. Agrawal et al. (2022) similarly found that timely distribution and operational responsiveness positively affect consumer evaluations in FMCG markets. Accordingly:

H2: Delivery timeliness has a positive and significant effect on customer satisfaction.

2.8.3 The Influence of Product Availability on Customer Trust

Beyond shaping satisfaction, consistent product availability can also act as a direct signal of organisational reliability. Morgan and Hunt (1994) explained that trust builds when consumers see a company as reliable and capable of consistently delivering what it promises. When a consumer repeatedly finds a product on the shelf without running into shortages, they may come to see the brand and its distribution system as dependable, regardless of how satisfying any single purchase happened to be.

Wiedmann and von Mettenheim (2020) found that perceived consistency and reliability contribute positively to how consumer trust forms. Frequent

stockouts, on the other hand, create uncertainty and chip away at confidence in a company's ability to meet consumer needs. On this basis:

H3: Product availability has a positive and significant effect on customer trust.

2.8.4 The Influence of Delivery Timeliness on Customer Trust

Delivery timeliness can act as a similarly direct signal of operational dependability. Timely distribution keeps products consistently present in retail channels and cuts the risk of shortages. When replenishment stays consistent and on schedule, consumers may read the company as professionally managed, whereas delayed distribution and erratic restocking tend to generate negative perceptions of operational reliability.

Drawing on Morgan and Hunt's (1994) commitment-trust theory, where reliability and consistency serve as fundamental antecedents of trust, and on Garbarino and Johnson (1999), who emphasised that positive service experiences strengthen relationship quality, timely delivery performance is expected to contribute directly to customer trust. Because consumers only observe delivery performance indirectly, however, this direct effect may turn out weaker than that of product availability. Accordingly:

H4: Delivery timeliness has a positive and significant effect on customer trust.

2.8.5 The Influence of Customer Satisfaction on Customer Trust

Customer satisfaction is expected to be the strongest determinant of customer trust in this model. Morgan and Hunt (1994) argued that trust builds through consistent positive experiences and reliable organisational performance, rather than through any single transaction. Consumers whose expectations keep getting confirmed are more inclined to extend confidence to the brand and its distributor.

Garbarino and Johnson (1999) demonstrated empirically that satisfaction significantly strengthens customer relationships and feeds into trust formation, distinguishing the separate roles satisfaction, trust, and commitment play in relational outcomes. Wiedmann and von Mettenheim (2020) similarly found that positive consumer evaluations enhance perceived trustworthiness. On this basis:

H₅: Customer satisfaction has a positive and significant effect on customer trust.

2.8.6 The Mediating Role of Customer Satisfaction between Product Availability and Customer Trust

The hypotheses above point toward an indirect pathway. If product availability improves customer satisfaction (H₁), and customer satisfaction in turn improves customer trust (H₅), then satisfaction should carry part of product availability's influence through to trust. This reasoning follows Garbarino and Johnson (1999), who positioned satisfaction as the mechanism converting transactional experience into relational outcomes.

Because a direct path from product availability to trust is also hypothesised (H₃), the mediation is expected to be partial rather than full — that is, availability shapes trust both directly and through the satisfaction it generates (Hair et al., 2022). Accordingly:

H₆: Customer satisfaction significantly mediates the relationship between product availability and customer trust.

2.8.7 The Mediating Role of Customer Satisfaction between Delivery Timeliness and Customer Trust

The same logic carries over to delivery timeliness: if timely replenishment improves customer satisfaction (H₂), and satisfaction improves trust (H₅), then satisfaction should mediate the link between delivery timeliness and trust. This indirect pathway may matter even more for delivery timeliness specifically, since consumers cannot observe distribution performance directly and can only judge it through the purchasing experience it generates.

As with H₆, a direct path is also hypothesised (H₄), meaning partial rather than full mediation is expected here too. Accordingly:

H₇: Customer satisfaction significantly mediates the relationship between delivery timeliness and customer trust.

Table 2.2 Summary of Research Hypotheses

Hypothesis	Statement
H ₁	Product availability has a positive and significant effect on customer satisfaction
H ₂	Delivery timeliness has a positive and significant effect on customer satisfaction
H ₃	Product availability has a positive and significant effect on customer trust
H ₄	Delivery timeliness has a positive and significant effect on customer trust
H ₅	Customer satisfaction has a positive and significant effect on customer trust
H ₆	Customer satisfaction significantly mediates the relationship between product availability and customer trust
H ₇	Customer satisfaction significantly mediates the relationship between delivery timeliness and customer trust

Source: Developed by Author, 2026

Drawing on the theories, prior research, and hypotheses developed above, this study proposes that product availability and delivery timeliness influence customer satisfaction, which in turn influences customer trust. Both operational constructs are also given direct paths to customer trust, so the model can test whether their influence on trust runs entirely through satisfaction or partly bypasses it. Customer satisfaction therefore serves as the framework's mediating variable, while customer trust stands as its final endogenous construct.

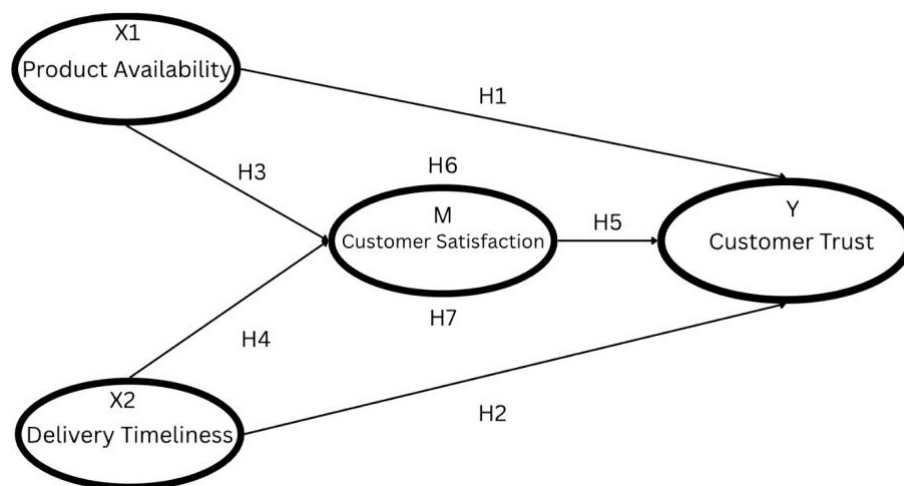


Figure 2.1 Conceptual Framework (Source: Developed by Author, 2026)

CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

This study takes a quantitative research approach built around a causal research design. A quantitative approach fits here because the aim is to measure relationships among variables objectively through numerical data and statistical analysis (Sekaran & Bougie, 2016; Creswell & Creswell, 2018). The causal design serves to examine how product availability and delivery timeliness influence customer satisfaction and customer trust within the cooking oil FMCG sector in Greater Jakarta.

Data collection follows a cross-sectional approach, gathering responses from participants at a single point in time through a questionnaire. Hair et al. (2019) note that cross-sectional designs are common in consumer behaviour and marketing research precisely because they allow relationships among variables to be analysed efficiently across a large population.

The research model comprises the following constructs:

- Exogenous (independent) variables: Product Availability and Delivery Timeliness
- Mediating variable: Customer Satisfaction
- Endogenous (dependent) variable: Customer Trust

The conceptual framework holds that the two operational supply chain constructs shape customer trust both directly and indirectly through customer satisfaction.

3.2 Population and Sample

3.2.1 Population

A population refers to the complete group of individuals or objects that possess characteristics relevant to the objectives of a study (Sekaran & Bougie, 2016). In this research, the population includes consumers who purchase cooking oil products across the Greater Jakarta area.

The study focuses on individuals who personally participate in decisions concerning cooking oil purchases because their direct experiences allow them to evaluate product availability, replenishment consistency, and satisfaction during the purchasing process. The Greater Jakarta region provides an appropriate research setting because it has a large population, diverse retail channels, and relatively consistent urban consumption patterns when compared with the broader Indonesian population.

3.2.2 Sampling Technique

This research applies a non-probability sampling approach through purposive sampling. Non-probability sampling becomes appropriate when researchers cannot access a complete sampling frame and need to select participants according to characteristics that correspond with the research objectives (Sekaran & Bougie, 2016). The large and difficult-to-enumerate population of cooking oil consumers across Greater Jakarta makes purposive sampling a practical approach for obtaining respondents who meet the requirements of this study.

The purposive sampling criteria applied in this study are:

1. Respondents reside within Greater Jakarta (Jabodetabek).
2. Respondents have purchased cooking oil products within the past six months.
3. Respondents are personally involved in household purchasing decisions.

These three criteria took the form of screening questions at the start of the questionnaire, and only respondents who answered yes to all three moved forward into the analysis.

3.2.3 Sample Size

Hair et al. (2019) suggest that the minimum sample size for structural equation modelling using partial least squares should generally sit at five to ten times the number of indicators in the study. With 20 indicators spread across four constructs — five per construct — this study's minimum sample size works out as follows:

$$n = 20 \times 5 = 100 \text{ respondents}$$

Based on this calculation, 100 respondents represents the minimum recommended sample. To strengthen statistical reliability and build in a margin against incomplete or inconsistent responses, this study targeted at least 150 respondents. A total of 166 valid responses were ultimately collected, each satisfying the screening criteria and retained for analysis — comfortably clearing both the calculated minimum and the target.

3.3 Data Collection Method

This study relies on primary data gathered through a structured questionnaire distributed online via Google Forms. The questionnaire is built around closed-ended statements measured on a five-point Likert scale, preceded by three screening questions and a brief demographic section covering age, occupation, monthly personal income, cooking oil purchasing budget, purchasing frequency, purchase quantity, and most frequently purchased brand.

The questionnaire items were adapted from indicators used in previous studies of supply chain performance, customer satisfaction and customer trust, as set out in Section 3.4. Each of the four constructs is measured using five indicators, giving a total of 20 measurement items. Hair et al. (2019) note that questionnaire instruments should retain sufficient indicators to ensure construct validity and reliability while avoiding an excessive number of items that may reduce respondent concentration and response quality. Sekaran and Bougie (2016) similarly emphasise that concise and focused questionnaires improve response consistency and reduce respondent fatigue. A five-item-per-construct design was adopted to balance these considerations.

3.4 Operational Definition of Variables

Table 3.1 presents the operational definitions, indicators and supporting sources for each construct examined in this study.

Table 3.1 Operational Definition of Variables

Variable	Operational Definition	Indicators	Sources
Product Availability (PA)	The extent to which cooking oil products are consistently available to the consumer when needed at the point of purchase	PA1. Product stock availability PA2. Ease of finding products PA3. Consistency of shelf stock PA4. Product accessibility PA5. Availability when needed	Christopher (2016); Stock & Lambert (2001); Agrawal et al. (2022)
Delivery Timeliness (DT)	The perceived efficiency and consistency of product restocking and replenishment within expected timeframes	DT1. Timely product replenishment DT2. Consistency of product delivery DT3. Reliability of restocking process DT4. Distribution responsiveness DT5. Availability consistency over time	Mentzer et al. (2001); Stock & Lambert (2001); Agrawal et al. (2022)
Customer Satisfaction (CS)	The overall consumer evaluation of whether the cooking oil purchasing experience has met expectations and needs	CS1. Overall satisfaction CS2. Fulfilment of expectations CS3. Positive purchasing experience CS4. Satisfaction with product accessibility CS5. Repurchase intention	Oliver (1980); Kotler & Keller (2016); Agrawal et al. (2022)
Customer Trust (CT)	Consumer confidence in the reliability, integrity and consistency of the cooking oil brand, distributor or company	CT1. Brand reliability CT2. Confidence in product availability CT3. Confidence in pricing practices CT4. Trust toward distributor/company CT5. Perceived consistency of company performance	Morgan & Hunt (1994); Garbarino & Johnson (1999); Wiedmann & von Mettenheim (2020)

Source: Adapted by Author from the cited literature, 2026

3.5 Measurement Scale

Every indicator in this study is measured on a five-point Likert scale, a format widely used in behavioural research for its reliability and ease of interpretation among respondents. The scale is defined as follows:

The scale is interpreted as follows: 1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, and 5 – Strongly Agree. A response of 1 therefore indicates the most negative evaluation of the statement presented, while a response of 5 indicates the most positive evaluation, and a response of 3 indicates that the respondent neither agreed nor disagreed with the statement.

A five-point scale was chosen over a seven-point one to ease the cognitive load on respondents filling out the questionnaire on mobile devices, and to stay consistent with the scales used in the prior studies from which the indicators were adapted.

3.6 Data Analysis Technique

This study analyses the research data through Partial Least Squares Structural Equation Modelling (PLS-SEM) using SmartPLS 4 software (Ringle, Wende & Becker, 2024) because the technique matches the characteristics of the proposed research model. The study develops a predictive and explanatory model instead of testing an already established theory through a confirmatory approach, which makes PLS-SEM more appropriate than covariance-based SEM for the research design (Hair et al., 2022). The method also allows the study to examine mediation among multiple latent constructs within the same analytical framework. PLS-SEM further provides an appropriate approach for consumer survey data measured with Likert scales because its non-parametric nature does not require multivariate normality (Ghozali, 2021).

Classical assumption tests including normality, heteroscedasticity, and the F-test belong to ordinary least squares regression and are therefore not required for PLS-SEM analysis. This research instead evaluates collinearity through variance inflation factor (VIF) values at both the indicator and construct levels as explained in Sections 3.7 and 3.8.

The data analysis follows three main stages:

1. **Measurement model evaluation (outer model)** assesses construct reliability, convergent validity, and discriminant validity.
2. **Structural model evaluation (inner model)** examines collinearity, path coefficients, the coefficient of determination, and effect size.
3. **Hypothesis testing** applies the bootstrapping procedure to evaluate both direct and indirect effects.

3.7 Evaluation of the Measurement Model (Outer Model)

The outer model evaluation looks at the relationship between each latent construct and its indicators, with the purpose of confirming that every indicator adequately measures its intended construct before any structural relationships are interpreted. Since all four constructs in this study are measured reflectively, three criteria are applied: internal consistency reliability, convergent validity, and discriminant validity.

3.7.1 Internal Consistency Reliability

Internal consistency reflects the degree of agreement among the items comprising a construct. It is assessed using Cronbach's alpha and composite reliability. Values above 0.70 indicate satisfactory internal consistency (Hair et al., 2022; Sekaran & Bougie, 2016).

3.7.2 Convergent Validity

Convergent validity measures the degree to which indicators representing the same construct correlate with one another. It is evaluated using outer loadings and Average Variance Extracted (AVE). According to Hair et al. (2022), indicators are considered valid when outer loadings exceed 0.70 and AVE exceeds 0.50. Indicators with loadings between 0.40 and 0.70 should be considered for removal only if their deletion improves composite reliability or AVE, while indicators loading below 0.40 should always be removed.

3.7.3 Discriminant Validity

Discriminant validity assesses the extent to which a construct is empirically distinct from other constructs in the model. Three criteria are applied. First, cross-loadings, where each indicator should load more strongly on its intended construct than on any other construct. Second, the Fornell-Larcker criterion, where the square root of each construct's AVE should exceed its correlations with all other latent constructs (Fornell & Larcker, 1981). Third, the Heterotrait-Monotrait ratio (HTMT), for which a conservative threshold of 0.90 is applied for conceptually similar constructs (Henseler, Ringle & Sarstedt, 2015).

3.8 Evaluation of the Structural Model (Inner Model)

The structural model describes the hypothesised relationships between the latent constructs. Following Hair et al. (2022), its evaluation comprises four elements.

- Collinearity (VIF): inner model VIF values below 5 indicate that there is no problematic collinearity among predictor constructs.
- Path coefficients: standardised coefficients indicating the strength and direction of each hypothesised relationship, with values closer to +1 indicating stronger positive relationships.
- Coefficient of determination (R-square): the proportion of variance in each endogenous construct explained by its predictors. Values of 0.75, 0.50 and 0.25 are interpreted as substantial, moderate and weak explanatory power respectively.
- Effect size (f-square): the contribution of each individual predictor to the R-square of an endogenous construct. Values of 0.02, 0.15 and 0.35 indicate small, medium and large effects respectively (Cohen, 1988).

In addition, the approximate model fit is examined using the Standardised Root Mean Square Residual (SRMR), for which values below 0.08 indicate acceptable fit, and the Normed Fit Index (NFI).

3.9 Hypothesis Testing

Hypothesis testing is conducted using the bootstrapping procedure in SmartPLS 4 to determine the statistical significance of the relationships among the constructs. Bootstrapping was performed with 5,000 subsamples using the percentile confidence interval method, a one-tailed test, and a significance level of 0.05, in line with the recommendations of Hair et al. (2022).

A hypothesis is accepted when both of the following conditions are met at a 95% confidence level:

- T-statistic greater than 1.645
- P-value less than 0.05

The study also evaluates specific indirect effects in order to test the mediating role of customer satisfaction between the two operational constructs and customer trust. Following Hair et al. (2022), mediation is classified according to the significance of the direct and indirect effects. Where both the indirect effect and the direct effect are significant and point in the same direction, complementary partial mediation is established. Where the indirect effect is significant but the direct effect is not, full mediation is established. Where the indirect effect is not significant, no mediation is present.

Table 3.2 Criteria for Model Evaluation

Criteria	Explanation
Evaluation Of Measurement Model	Assesses whether the indicators adequately represent their intended constructs before any structural relationship is interpreted
Internal Consistency	Cronbach's Alpha and Composite Reliability above 0.70
Convergent Validity	Outer loading above 0.70 and Average Variance Extracted (AVE) above 0.50
Discriminant Validity	Intended construct loading greater than loading on other constructs; square root of AVE greater than inter-construct correlations; HTMT below 0.90
Evaluation Of Structural Model	Assesses the hypothesised relationships between the latent constructs and the model's explanatory power
Collinearity (VIF)	Inner and outer model VIF values below 5 indicate no collinearity problem
Structural Path Coefficient	Values close to +1 reflect a strong positive relationship and are statistically significant
Coefficient of Determination	R-square values of 0.75, 0.50 or 0.25 for endogenous latent variables indicate substantial, moderate and weak explanatory power respectively
Effect Size	f-square values of 0.02, 0.15 and 0.35 indicate that predictors have a small, medium or large influence respectively
Hypothesis Testing	Determines the statistical significance of each relationship using bootstrapping with 5,000 subsamples
Significance	T-statistic greater than 1.645 and P-value less than 0.05 at a 95% confidence level

Source: Hair et al. (2014, 2022); Cohen (1988); Henseler et al. (2015); Ghozali (2021)

CHAPTER IV

FINDINGS, ANALYSIS AND DISCUSSION

4.1 Introduction

This chapter walks through the full procedure and outcomes of questionnaire development, reliability and validity testing, data collection, data processing, and both the results and descriptive analysis of the data. It sets out to explain how each independent variable and the mediating variable affect the dependent variable. The questionnaire itself was built on the Google Forms platform and distributed to cooking oil consumers living in the Greater Jakarta (Jabodetabek) area, with data collection continuing until 166 responses had been gathered. PLS-SEM was then used to evaluate the measurement and structural models, enabling the hypothesis testing needed to confirm the correlations between variables.

This chapter proceeds through the respondent profile, instrument validity and reliability, data preparation, descriptive analysis, research model evaluation, structural model evaluation, hypothesis testing, and finally a discussion of the findings. All statistical outputs come from SmartPLS 4 (Ringle, Wende & Becker, 2024).

Worth noting: the model estimated in SmartPLS positions Customer Satisfaction as the mediating construct and Customer Trust as the final endogenous construct, following the sequence Product Availability and Delivery Timeliness to Customer Satisfaction to Customer Trust, and every hypothesis reported in this chapter follows that same sequence. To stay consistent with Chapters I to III, the constructs continue to be named Product Availability, Delivery Timeliness, Customer Satisfaction and Customer Trust throughout — even though the raw SmartPLS output labels the last two constructs “Delivery Time” and “Consumer Satisfaction”, the underlying constructs and indicators remain identical.

4.2 Respondent Profile

Respondents in this research came from a fairly varied profile, and the questionnaire captured demographic information spanning domicile, age, occupation, monthly personal income, cooking oil purchasing budget, purchasing frequency, purchase quantity, and most frequently purchased brand. In total, 166 responses were collected, and every one of them met the predetermined screening criteria.

4.2.1 Screening Criteria

Three screening questions opened the questionnaire to make sure only qualified respondents made it into the analysis; Table 4.1 presents the screening results.

Table 4.1 Screening Criteria Result

Screening Criterion	Yes	Percentage
Reside in Greater Jakarta	166	100%
Purchased cooking oil within the last 6 months	166	100%
Personally involved in household cooking oil purchases	166	100%

Source: Online survey questionnaires by Author, 2026

All 166 collected responses fulfilled the predetermined requirements and were therefore retained for further analysis. No response was discarded due to screening failure or missing data.

4.2.2 Age

Table 4.2 Respondent Age Distribution

Age Group	Frequency	Percentage
17–25	9	5.42%
26–35	21	12.65%
36–45	52	31.33%
46–55	49	29.52%
56–65	30	18.07%

Age Group	Frequency	Percentage
> 65	5	3.01%
Total	166	100%

Source: Online survey questionnaires by Author, 2026

Respondents aged 36–45 years formed the largest age group at 52 respondents (31.33%), followed closely by the 46–55 bracket at 49 respondents (29.52%); together these two groups make up 60.85% of the sample. This points to a sample dominated by middle-aged consumers, the group most likely to have direct and repeated experience making household cooking oil purchasing decisions — in line with the purposive sampling criteria set out in Chapter III.

4.2.3 Occupation

Table 4.3 Respondent Occupation Distribution

Occupation	Frequency	Percentage
Private Employee	67	40.36%
Government Employee	42	25.30%
Housewife	24	14.46%
Student	19	11.45%
Entrepreneur	14	8.43%
Total	166	100%

Source: Online survey questionnaires by Author, 2026

Private employees make up the largest occupational group at 40.36% of respondents, followed by government employees at 25.30%. Housewives account for 14.46%, while students and entrepreneurs come in at 11.45% and 8.43% respectively. This spread across occupational backgrounds reduces the risk that the findings are being driven by any single occupational segment.

4.2.4 Monthly Personal Income

Table 4.4 Respondent Monthly Personal Income

Monthly Personal Income	Frequency	Percentage
Below IDR 5,000,000	64	38.55%

Monthly Personal Income	Frequency	Percentage
IDR 5–10 million	55	33.13%
IDR 10.1–20 million	29	17.47%
IDR 20.1–30 million	12	7.23%
More than IDR 30 million	6	3.61%
Total	166	100%

Source: Online survey questionnaires by Author, 2026

Respondents earning below IDR 5 million per month make up the largest income group at 38.55% of the sample, followed by those earning IDR 5–10 million at 33.13%. Combined, 71.68% of respondents earn IDR 10 million or less each month — a detail that matters for interpreting the findings, since cooking oil is a price-sensitive staple commodity, and it is precisely the lower and middle income tiers that feel stock shortages and price volatility most acutely.

4.2.5 Cooking Oil Purchasing Budget

Table 4.5 Monthly Cooking Oil Purchasing Budget

Monthly Cooking Oil Budget	Frequency	Percentage
Below IDR 50,000	12	7.23%
IDR 50,000–99,000	35	21.08%
IDR 100,000–149,000	50	30.12%
IDR 150,000–199,000	31	18.67%
IDR 200,000–299,000	23	13.86%
IDR 300,000–499,000	10	6.02%
IDR 500,000 and above	5	3.01%
Total	166	100%

Source: Online survey questionnaires by Author, 2026

The IDR 100,000–149,000 bracket is the most common cooking oil purchasing budget, accounting for 30.12% of respondents, followed by IDR 50,000–99,000 at 21.08% and IDR 150,000–199,000 at 18.67%. Respondents clustering in these mid-range budget brackets fits with regular household consumption rather than bulk or commercial purchasing.

4.2.6 Cooking Oil Purchasing Frequency

Table 4.6 Cooking Oil Purchasing Frequency

Purchasing Frequency	Frequency	Percentage
Weekly	18	10.84%
Every Two Weeks	54	32.53%
Monthly	78	46.99%
Every Two Months	16	9.64%
Total	166	100%

Source: Online survey questionnaires by Author, 2026

Monthly purchasing is the most common pattern, with 78 respondents (46.99%) buying cooking oil on that basis, while the next largest group buys every two weeks (32.53%). With almost 90% of respondents purchasing at least once a month, this confirms the high-repetition purchase behaviour typical of the FMCG sector described in Chapter I, and it underscores why product availability and delivery consistency matter as evaluation criteria for this product category.

4.2.7 Quantity of Cooking Oil Purchased

Table 4.7 Quantity of Cooking Oil Purchased per Purchase

Quantity	Frequency	Percentage
1–2 L	82	49.40%
2–4 L	64	38.55%
5–6 L	16	9.64%
> 6 L	4	2.41%
Total	166	100%

Source: Online survey questionnaires by Author, 2026

Close to half of respondents buy 1–2 litres per purchase, and 38.55% buy 2–4 litres, leaving only 12.05% who purchase more than 4 litres at a time. This pattern points to frequent, small-volume replenishment rather than stockpiling, which structurally makes respondents more sensitive to shelf availability and restocking speed at the point of purchase.

4.2.8 Most Frequently Purchased Cooking Oil Brand

Table 4.8 Most Frequently Purchased Cooking Oil Brand

Brand	Frequency	Percentage
Bimoli	44	26.51%
Filma	31	18.67%
Tropical	28	16.87%
Fortune	22	13.25%
Sania	17	10.24%
Siip	12	7.23%
SunCo	12	7.23%
Total	166	100%

Source: Online survey questionnaires by Author, 2026

Bimoli comes out as the brand respondents buy most often, at 26.51% of the sample, with Filma (18.67%) and Tropical (16.87%) close behind. No brand holds a majority share here, pointing to a fragmented, competitive category where low switching costs let consumers readily substitute between brands whenever their preferred product isn't available.

4.3 Instrument Validity and Reliability

A pilot study tests an instrument on a small scale to confirm it works properly and that respondents understand the items as intended. Before moving to full distribution, the researcher ran a pilot test to check that every questionnaire item was sound, unambiguous, and interpreted consistently by respondents. Following Hair et al. (2022), internal consistency was assessed first, using Cronbach's alpha reliability coefficients. The questionnaire proved reliable, with every Cronbach's alpha value sitting above 0.70, the accepted minimum for reliability (Sekaran & Bougie, 2016).

Next, to establish item validity, the researcher examined item-to-construct correlations, treating an item as legitimate when its correlation with the intended construct exceeded 0.30 (Malhotra, 2010). All 20 items across the four constructs cleared both criteria at the pilot stage, so nothing was dropped and the instrument

moved to full distribution unchanged. Section 4.6 presents the final validity and reliability evidence drawn from the full sample of 166 respondents in detail.

4.4 Data Preparation

After completing the pilot test, this study proceeded with the full questionnaire distribution and obtained 166 valid survey responses. The researcher examined the collected responses for missing values, straight-lining, and inconsistent answer patterns before including them in the analysis. All 166 responses met the data screening criteria, so the study retained the complete dataset for further processing.

The researcher then cleaned and prepared the data for descriptive statistical analysis to provide an overview of the variables and identify potential relationships among them. The descriptive analysis included the mean, standard deviation, skewness, and kurtosis as the main statistical measures. The mean represents the average value within the observed data, while the standard deviation indicates the degree of variation around the mean. Skewness describes the asymmetry of a frequency distribution by showing how far the distribution deviates from a balanced shape around its centre. Kurtosis indicates the degree to which observations concentrate around the centre and extend toward the tails of the distribution. The analysis covered four research variables consisting of Product Availability, Delivery Timeliness, Customer Satisfaction, and Customer Trust.

Table 4.9 Mean Value and Data Distribution of the Indicators

Indicator	Mean	Median	Std. Dev.	Min	Max	Skewness	Excess Kurtosis
PA1	3.898	4.000	1.254	1	5	-1.056	0.116
PA2	3.831	4.000	1.244	1	5	-0.956	-0.026
PA3	3.837	4.000	1.187	1	5	-0.956	0.076
PA4	3.873	4.000	1.313	1	5	-1.098	0.108
PA5	3.843	4.000	1.196	1	5	-0.877	-0.129
DT1	3.855	4.000	1.242	1	5	-0.894	-0.191
DT2	3.873	4.000	1.207	1	5	-0.968	0.024
DT3	3.916	4.000	1.203	1	5	-1.062	0.209
DT4	3.958	4.000	1.242	1	5	-1.090	0.149
DT5	3.843	4.000	1.260	1	5	-0.933	-0.120
CS1	3.873	4.000	1.232	1	5	-0.957	-0.048
CS2	3.873	4.000	1.237	1	5	-1.002	0.047
CS3	3.892	4.000	1.221	1	5	-0.963	-0.040
CS4	3.813	4.000	1.194	1	5	-0.887	-0.062
CS5	3.873	4.000	1.222	1	5	-0.986	0.038
CT1	3.855	4.000	1.217	1	5	-0.903	-0.126
CT2	3.861	4.000	1.235	1	5	-1.041	0.152
CT3	3.892	4.000	1.206	1	5	-0.943	-0.062
CT4	3.837	4.000	1.266	1	5	-0.958	-0.073
CT5	3.880	4.000	1.240	1	5	-1.063	0.177

Source: SmartPLS 4 output processed by Author, 2026

Table 4.9 shows Delivery Timeliness indicator DT4 (distribution responsiveness) carrying the highest mean at 3.958, with DT3 (reliability of the restocking process) at 3.916 and PA1 (product stock availability) at 3.898 close behind. At the other end, CS4 (satisfaction with product accessibility) has the lowest mean at 3.813, followed by PA2 (ease of finding products) at 3.831. In other words, respondents rate the responsiveness and reliability of distribution and restocking most favourably, while satisfaction with product accessibility comes off least favourably. With only 0.145 points separating the highest and lowest indicator means, respondents are evaluating all four constructs at a broadly similar, consistently positive level.

A perfectly symmetrical distribution would show a skewness score of 0. Table 4.9, however, shows negative skewness across all 20 indicators, ranging from

-0.877 (PA5) to -1.098 (PA4). Since every indicator falls below 0, the data skew left, with responses clustering toward the higher Likert categories and a longer tail stretching toward the lower ones. All the values sit outside the -0.5 to +0.5 range, so the indicators lean moderately to substantially left-skewed rather than approximately symmetrical. This kind of non-normality is typical of Likert-scale consumer survey data and does not undermine the analysis, since PLS-SEM is a non-parametric technique that does not assume multivariate normality (Hair et al., 2022).

Excess kurtosis for each indicator, also reported in the table, ranges from -0.191 (DT1) to 0.209 (DT3), with nine indicators showing negative values and eleven showing positive ones. Every value falls between -1 and +1, which places the distributions close to mesokurtic and, for the negative values, slightly platykurtic — flatter and less peaked than a normal distribution. None of the indicators shows extreme kurtosis, so nothing here points to problematic outliers in the dataset.

4.5 Descriptive Analysis

Before conducting the hypothesis testing, this research examined the questionnaire data to ensure that the responses fulfilled the required criteria for further analysis. The mean, median, and standard deviation were used to describe the central tendency and variation within the collected responses. The study applied a five-point Likert scale ranging from 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, to 5 = Strongly Agree. The descriptive results indicate that respondents selected the Agree and Strongly Agree categories for most items, which reflects generally favourable perceptions of the indicators representing each latent construct.

Table 4.10 Descriptive Analysis of the Variables

Variable	Mean	Std. Dev.	Skewness	Excess Kurtosis	Agree + Strongly Agree	Neutral	Disagree + Strongly Disagree
Delivery Timeliness (DT)	3.889	1.229	-0.980	-0.025	70.2%	14.7%	15.1%
Customer Trust (CT)	3.865	1.230	-0.976	-0.009	70.0%	14.9%	15.1%
Customer Satisfaction (CS)	3.865	1.219	-0.951	-0.044	69.6%	15.3%	15.1%
Product Availability (PA)	3.857	1.237	-0.988	0.013	70.1%	14.8%	15.1%

Source: SmartPLS 4 output processed by Author, 2026

Table 4.10 shows Delivery Timeliness carrying the largest variable mean at 3.889, while Product Availability sits lowest at 3.857; Customer Satisfaction and Customer Trust land on an identical mean of 3.865. This suggests that respondents in Greater Jakarta rate the timeliness and reliability of cooking oil replenishment somewhat more favourably than they rate the product's actual availability on the shelf. That pattern traces back to the indicator level: DT4 (distribution responsiveness), part of the Delivery Timeliness variable, posts the highest mean of all twenty indicators, which helps explain the lead of Delivery Timeliness, while PA2 (ease of finding products) sits among the lowest-scoring indicators under Product Availability, helping explain why Product Availability trails.

Worth flagging: the gap between the highest and lowest variable means comes to just 0.032 points, so all four constructs land at a very similar level, with no single one standing out as clearly more positive than the rest. All four also share an identical 15.1% share of negative responses, pointing to a consistent minority of respondents who view the cooking oil category unfavourably across every dimension measured.

Table 4.11 Means of All Variables and Indicators

Variable	Variable Mean	Indicator	Indicator Mean
Product Availability (PA)	3.857	PA1 – Product stock availability	3.898
		PA2 – Ease of finding products	3.831
		PA3 – Consistency of shelf stock	3.837
		PA4 – Product accessibility	3.873
		PA5 – Availability when needed	3.843
Delivery Timeliness (DT)	3.889	DT1 – Timely product replenishment	3.855
		DT2 – Consistency of product delivery	3.873
		DT3 – Reliability of restocking process	3.916
		DT4 – Distribution responsiveness	3.958
		DT5 – Availability consistency over time	3.843
Customer Satisfaction (CS)	3.865	CS1 – Overall satisfaction	3.873
		CS2 – Fulfilment of expectations	3.873
		CS3 – Positive purchasing experience	3.892
		CS4 – Satisfaction with product accessibility	3.813
		CS5 – Repurchase intention	3.873
Customer Trust (CT)	3.865	CT1 – Brand reliability	3.855
		CT2 – Confidence in product availability	3.861
		CT3 – Confidence in pricing practices	3.892
		CT4 – Trust toward distributor/company	3.837
		CT5 – Perceived consistency of performance	3.880

Source: SmartPLS 4 output processed by Author, 2026

4.5.1 Product Availability

Product availability captures how consistently cooking oil products stay accessible to consumers at the point of purchase. Consumers in the FMCG category expect continuous availability, given how often they buy and how cheaply they can switch brands. As Table 4.10 shows, Product Availability carries the lowest mean of the four constructs at 3.857 — respondents rate shelf availability positively overall, just somewhat less favourably than the other three constructs.

Table 4.11 shows all five Product Availability indicators sitting above 3.80, from 3.831 (PA2, ease of finding products) to 3.898 (PA1, product stock availability). Of the 830 responses collected for this construct, 582 (70.1%) fell into Agree or Strongly Agree, 123 (14.8%) were Neutral, and 125 (15.1%) were Disagree or Strongly Disagree — roughly seven in ten respondents in Greater Jakarta, then, consider cooking oil reliably available when they need it.

A notable pattern shows up within this construct: PA1 (stock is available) scores highest while PA2 (products are easy to find) scores lowest. That gap suggests respondents draw a distinction between a product simply existing somewhere in the market and that product being easy to locate at their preferred outlet, in their preferred brand or pack size. For cooking oil producers and distributors in Greater Jakarta, this points to availability problems showing up less as outright stockouts and more as search friction at the shelf — a distribution breadth and planogram issue rather than a national supply issue.

4.5.2 Delivery Timeliness

Delivery timeliness captures the perceived efficiency of restocking and supply consistency, and it's the dimension through which consumers indirectly observe how well the distribution system performs. Since consumers rarely see the logistics operation itself, they infer it from whether the shelf gets replenished at the pace they expect. Table 4.10 shows Delivery Timeliness as the highest-scoring of the four constructs, with a mean of 3.889.

At the indicator level in Table 4.11, DT4 (distribution responsiveness) posts the highest mean of all twenty indicators at 3.958, with DT3 (reliability of the restocking process) close behind at 3.916. DT5 (availability consistency over time) and DT1 (timely product replenishment) sit lowest at 3.843 and 3.855. Out of 830 responses for this construct, 583 (70.2%) were positive, 122 (14.7%) were neutral, and 125 (15.1%) were negative.

This pattern within Delivery Timeliness suggests respondents rate the responsiveness and reliability of restocking above its consistency over time. Put practically, respondents feel the system reacts quickly when a shortage hits, but they're somewhat less confident that supply stays uniformly stable week after week.

That distinction fits the market conditions described in Chapter I, where the 2021–2022 national cooking oil crisis played out as episodic rather than continuous disruption, hinting that the memory of past volatility still tempers consumer confidence in supply consistency.

4.5.3 Customer Satisfaction

Customer satisfaction in this study represents consumers' overall evaluation of whether their cooking oil purchasing experience fulfils their expectations and needs and the construct functions as a mediator connecting the two operational variables with Customer Trust. Table 4.10 reports a mean score of 3.865 for Customer Satisfaction which places the construct around the midpoint among the four variables examined.

The results in Table 4.11 show that CS3 representing a positive purchasing experience records the highest mean at 3.892 while CS4 concerning satisfaction with product accessibility records the lowest value at 3.813 and becomes the lowest-scoring indicator across the entire study. CS1, CS2, and CS5 each obtain a mean of 3.873. From 830 total responses, 578 responses or 69.6% fall into the positive category while 127 responses or 15.3% remain neutral and 125 responses or 15.1% fall into the negative category.

The distribution indicates that respondents generally view their purchasing experience positively and show a favourable intention to repurchase while product accessibility remains the main area where satisfaction declines. This result corresponds with the finding discussed in Section 4.5.1 where PA2 concerning ease of finding products also recorded a relatively weak result. Both findings indicate that the main operational difficulty within this sample occurs near the final stage of the supply chain where consumers physically search for cooking oil rather than in their broader evaluation of the product or brand.

4.5.4 Customer Trust

Customer trust represents the final endogenous construct in the research model and reflects consumer confidence in the reliability, integrity, and consistency of a brand, distributor, or company that develops through repeated purchasing

experiences rather than a single transaction. Table 4.10 shows a Customer Trust mean of 3.865 which matches the mean obtained by Customer Satisfaction.

The questionnaire results presented in Table 4.11 indicate that CT3 concerning confidence in pricing practices achieves the highest mean at 3.892 followed by CT5 related to perceived consistency of company performance at 3.880 while CT4 measuring trust toward the distributor or company records the lowest mean at 3.837. The 830 responses consist of 581 positive responses or 70.0%, 124 neutral responses or 14.9%, and 125 negative responses or 15.1%.

This indicator pattern shows that respondents express greater confidence in pricing practices and consistent company performance than in the distributor or company itself. The findings suggest that consumers currently associate trust in the cooking oil category more strongly with observable business behaviour such as pricing and delivery consistency than with institutional confidence in the firm. For cooking oil producers, this condition indicates that consumer trust develops through each successful transaction and remains dependent on sustained operational performance rather than relying on established brand goodwill that could protect the relationship during a future supply disruption.

4.6 Research Model Evaluation

This study evaluates its research model using PLS-SEM in SmartPLS 4 software, covering both the measurement model and the structural model. A reflective model calculates the relationship between each inner construct, or latent variable, and its dimensions — the arrows linking each construct to its indicators — while the research model then estimates the relationships between constructs themselves, shown as the arrows connecting one construct to another in Figure 4.1 below.

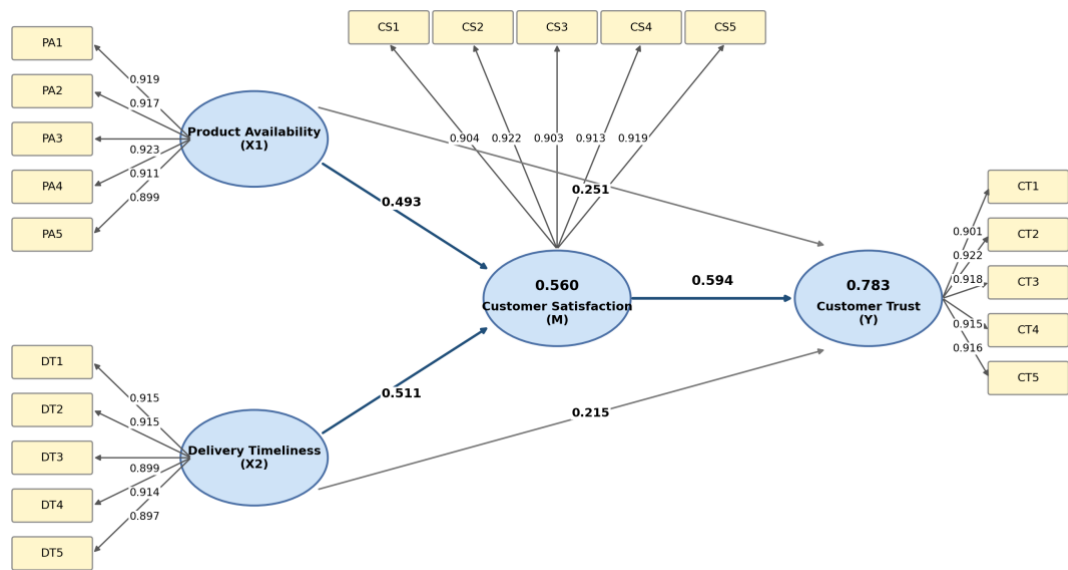


Figure 4.1 Research Model (Source: PLS-SEM result, standardized, 2026)

The measurement model is used to assess the existing indicators of the variables and can also be used to assess construct validity (Wong, 2013). There are two kinds of measurement model, reflective and formative. Reflective models are used to validate indicators against their latent variables, and this research uses the reflective measurement model. There are three criteria for evaluating reflective measurement models: internal consistency, convergent validity, and discriminant validity.

Internal consistency refers to the general agreement among the several items that make up the composite score of a survey measurement of a certain concept. Internal consistency is generally measured using Cronbach's alpha, with a range from 0 to 1, where higher values indicate greater internal consistency. In addition to Cronbach's alpha, internal consistency is also measured using composite reliability. Table 4.12 reflects the internal consistency of the research model.

Table 4.12 Internal Consistency Reliability Result

Construct	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Threshold	Result
Product Availability (PA)	0.951	0.953	0.962	> 0.70	Reliable
Delivery Timeliness (DT)	0.947	0.947	0.959	> 0.70	Reliable
Customer Satisfaction (CS)	0.950	0.950	0.961	> 0.70	Reliable
Customer Trust (CT)	0.951	0.951	0.962	> 0.70	Reliable

Source: PLS-SEM result, 2026

Table 4.12 confirms that every variable's Cronbach's alpha exceeds 0.70, clearing the acceptance threshold and confirming the reliability of the data gathered for each variable; the values range from 0.947 (Delivery Timeliness) to 0.951 (Product Availability and Customer Trust). Composite reliability tells a similar story: rho_c values run well above 0.70, between 0.959 and 0.962, and rho_a values fall between 0.947 and 0.953 — an exceptional level of dependability across all four constructs.

Convergent validity comes next, capturing how closely two measures widely used to assess the same construct actually agree. Table 4.13 presents this convergent validity, calculated through the indicators' outer loadings and Average Variance Extracted (AVE). Outer loading is the primary indicator of how strongly a latent variable relates to its observable variables; values should exceed 0.70, indicators between 0.40 and 0.70 warrant consideration for removal only if doing so improves composite reliability and AVE, and indicators below 0.40 should be dropped outright (Hair et al., 2022). AVE, in turn, measures how much variance a construct captures relative to variance from measurement error, with 0.50 as the minimum acceptable threshold.

Table 4.13 Convergent Validity Result

Construct	Indicator	Outer Loading	AVE
Product Availability (PA)	PA1	0.919	0.835
	PA2	0.917	
	PA3	0.923	
	PA4	0.911	
	PA5	0.899	
Delivery Timeliness (DT)	DT1	0.915	0.824
	DT2	0.915	
	DT3	0.899	
	DT4	0.914	
	DT5	0.897	
Customer Satisfaction (CS)	CS1	0.904	0.832
	CS2	0.922	
	CS3	0.903	
	CS4	0.913	
	CS5	0.919	
Customer Trust (CT)	CT1	0.901	0.837
	CT2	0.922	
	CT3	0.918	
	CT4	0.915	
	CT5	0.916	

Source: PLS-SEM result, 2026

Outer loading values in Table 4.13 run from 0.897 (DT5) to 0.923 (PA3), all comfortably above 0.70 — meaning each construct explains more than 50% of the variance in its indicators, a satisfactory degree of validity. Because all indicators exceed the minimum loading threshold of 0.70, the study retains every indicator in the proposed model. The AVE results support the same conclusion because the values range from 0.824 for Delivery Timeliness to 0.837 for Customer Trust and remain well above the minimum requirement of 0.50, indicating that each latent construct accounts for more than 80% of the variance in its indicators. These results confirm that all constructs satisfy the requirements for convergent validity.

Discriminant validity evaluates whether each construct represents a concept that remains sufficiently different from the other variables included in the model. The assessment uses three approaches consisting of indicator cross-loadings, the Fornell-Larcker criterion, and the Heterotrait-Monotrait (HTMT) ratio. Cross-loading analysis requires each indicator to achieve a higher loading on its assigned construct than on any alternative construct. The Fornell-Larcker approach compares the square root of each construct's AVE with its correlations against other latent variables and requires the square root value to exceed those correlations. HTMT provides another assessment by identifying potential discriminant validity problems when the ratio approaches one and this study adopts a 0.90 threshold for constructs with conceptually related measures (Henseler et al., 2015). The cross-loading results in Table 4.14 show that every indicator produces its highest loading on the intended construct rather than on another variable and this finding supports the presence of discriminant validity across the research model.

Table 4.14 Cross Loadings Validity Result

Indicator	Customer Satisfaction	Customer Trust	Delivery Timeliness	Product Availability
CS1	0.904	0.776	0.479	0.502
CS2	0.922	0.813	0.528	0.519
CS3	0.903	0.758	0.508	0.492
CS4	0.913	0.756	0.512	0.479
CS5	0.919	0.790	0.552	0.512
CT1	0.805	0.901	0.543	0.551
CT2	0.761	0.922	0.542	0.510
CT3	0.794	0.918	0.529	0.529
CT4	0.759	0.915	0.509	0.574
CT5	0.784	0.916	0.525	0.584
DT1	0.512	0.554	0.915	0.092
DT2	0.537	0.525	0.915	0.074
DT3	0.491	0.513	0.899	0.103
DT4	0.497	0.517	0.914	0.114
DT5	0.529	0.520	0.897	0.121
PA1	0.496	0.544	0.089	0.919
PA2	0.479	0.536	0.059	0.917
PA3	0.535	0.595	0.153	0.923
PA4	0.445	0.495	0.055	0.911
PA5	0.544	0.567	0.137	0.899

Source: PLS-SEM result, 2026

The Fornell-Larcker criterion, applied next and shown in Table 4.15, offers further evidence of discriminant validity by confirming that each construct's AVE square root, shown along the diagonal, exceeds all its correlations with the other latent variables.

Table 4.15 Fornell-Larcker Validity Result

Construct	CS	CT	DT	PA
Customer Satisfaction (CS)	0.912			
Customer Trust (CT)	0.854	0.915		
Delivery Timeliness (DT)	0.566	0.579	0.908	
Product Availability (PA)	0.549	0.601	0.111	0.914

Source: PLS-SEM result, 2026

Table 4.15's diagonal AVE square roots run from 0.908 to 0.915, each one exceeding the off-diagonal correlations in its row and column, so the Fornell-Larcker criterion holds. The highest inter-construct correlation, between Customer Satisfaction and Customer Trust, comes in at 0.854 — still below the diagonal values of 0.912 and 0.915. Worth flagging too: the correlation between Product Availability and Delivery Timeliness sits at just 0.111, suggesting respondents treat shelf availability and restocking speed as largely independent phenomena rather than two faces of the same underlying construct.

All HTMT values in Table 4.16 come in below the conservative 0.90 threshold, satisfying the HTMT criterion and further supporting the constructs' discriminant validity.

Table 4.16 HTMT Criteria Evaluation

Construct Relationship	HTMT	Threshold	Result
Customer Trust – Customer Satisfaction	0.898	< 0.90	Established
Delivery Timeliness – Customer Trust	0.610	< 0.90	Established
Delivery Timeliness – Customer Satisfaction	0.596	< 0.90	Established
Product Availability – Customer Trust	0.629	< 0.90	Established
Product Availability – Customer Satisfaction	0.575	< 0.90	Established

Construct Relationship	HTMT	Threshold	Result
Product Availability – Delivery Timeliness	0.114	< 0.90	Established

Source: PLS-SEM result, 2026

All six HTMT values land below 0.90, satisfying the discriminant validity criterion, though the value between Customer Satisfaction and Customer Trust, at 0.898, sits only marginally under the threshold. That tells us the two constructs, while statistically distinguishable under this criterion, are empirically very closely related in this sample — which makes theoretical sense, since satisfaction and trust are both cumulative evaluative judgements built through repeated purchasing experience (Garbarino & Johnson, 1999). Even so, this is flagged as a limitation in Section 5.3 and should be kept in mind when interpreting the strength of the path from satisfaction to trust.

4.7 Structural Model Evaluation

The structural model captures the relationship structure linking the model's latent variables, assessed through estimation and hypothesis testing of the defined causal relationships between exogenous and endogenous variables, with bootstrapping used to estimate standard errors. Structural model measurement draws on structural path coefficients, collinearity (VIF), the coefficient of determination (R-square), and effect size (f-square).

Table 4.17 Structural Model Evaluation Result

Relationship	Path Coefficient	Inner VIF	R-square	R-square Adjusted	f-square	Interpretation
PA → CS	0.493	1.012	0.560	0.554	0.544	Large
DT → CS	0.511	1.012	0.560	0.554	0.586	Large
PA → CT	0.251	1.564	0.783	0.779	0.186	Medium
DT → CT	0.215	1.606	0.783	0.779	0.133	Small
CS → CT	0.594	2.271	0.783	0.779	0.718	Large

Source: PLS-SEM result, 2026

Table 4.17 above lays out the strength of these relationships. Hair et al. (2022) note that path coefficients closer to +1 signal a stronger relationship, and all

five values here come out positive, ranging from 0.215 to 0.594. VIF tells a clean story too: inner model associations range from 1.012 to 2.271, well under 5, so there's no collinearity problem among the predictor constructs, and outer model VIF values of 3.347 to 4.427 stay below the same threshold, ruling out indicator-level collinearity.

The coefficient of determination (R-square) captures how much variance in the dependent variables the independent variables can account for. Hair et al. (2022) treat R-square values of 0.75, 0.50, and 0.25 for endogenous latent variables as substantial, moderate, and weak explanatory power respectively. Product Availability and Delivery Timeliness jointly explain 56.0% of the variance in Customer Satisfaction with an R-square of 0.560 and an adjusted R-square of 0.554 which indicates moderate explanatory power. Product Availability, Delivery Timeliness, and Customer Satisfaction also explain 78.3% of the variance in Customer Trust with an R-square of 0.783 and an adjusted R-square of 0.779 which indicates substantial explanatory power. These results show that the proposed model provides a strong explanation of the observed data with the highest explanatory capacity occurring for Customer Trust.

The study uses Cohen's f-square as a standardized measure to assess local effect size with values of 0.02, 0.15, and 0.35 representing small, medium, and large effects respectively while values below 0.02 indicate no meaningful effect (Cohen, 1988). Table 4.17 identifies three relationships with large effects consisting of Customer Satisfaction on Customer Trust at 0.718, Delivery Timeliness on Customer Satisfaction at 0.586, and Product Availability on Customer Satisfaction at 0.544. Product Availability shows a medium effect on Customer Trust with a value of 0.186 while Delivery Timeliness produces a smaller effect of 0.133 on the same construct.

The research also evaluates approximate model fit through the SRMR and NFI indices. The SRMR value of 0.036 falls below the conservative threshold of 0.08 proposed by Hair et al. (2022), while the NFI value of 0.927 exceeds the 0.90 reference point. Both indicators support an acceptable level of correspondence between the estimated research model and the observed data.

4.8 Hypothesis Test

With the models evaluated, the next step is testing the hypothesised links themselves — seven in total, five direct relationships and two mediating ones. SmartPLS 4's bootstrapping procedure ran 5,000 subsamples using the percentile bootstrap confidence interval method, a one-tailed test, and a 0.05 significance level, and the SEM output determines whether each hypothesis holds up. A hypothesis is accepted when its path coefficient approaches +1, the T value exceeds 1.645, and the p value falls below 0.05; failing any of these means rejection. Each hypothesis is evaluated in turn below.

Table 4.18 Hypothesis Testing of Relationships between Variables

Hypothesis	Relationship	Coefficient	Standard Deviation	T Statistic	P Value	Decision
H ₁	PA → CS	0.493	0.063	7.760	< 0.05	Supported
H ₂	DT → CS	0.511	0.063	8.125	< 0.05	Supported
H ₃	PA → CT	0.251	0.065	3.867	< 0.05	Supported
H ₄	DT → CT	0.215	0.044	4.914	< 0.05	Supported
H ₅	CS → CT	0.594	0.069	8.662	< 0.05	Supported
H ₆	PA → CS → CT	0.293	0.050	5.860	< 0.05	Supported
H ₇	DT → CS → CT	0.304	0.054	5.644	< 0.05	Supported

Source: PLS-SEM bootstrapping result (5,000 subsamples), 2026

H₁: Product availability has a positive and significant effect on customer satisfaction.

Hypothesis 1 (H₁) rests on the path coefficient and p value linking Product Availability to Customer Satisfaction. Table 4.18 puts that path coefficient at 0.493 (positive, moving toward +1), with a p value of 0.000 (below 0.05) and a T value of 7.760 (above 1.645); the 95% bias-corrected confidence interval, running from 0.387 to 0.597, does not cross zero. Together, these findings mean H₁ is accepted: product availability has a positive and significant effect on customer satisfaction in the cooking oil FMCG sector in Greater Jakarta. This backs up Agrawal et al.'s (2022) finding that inventory availability significantly improves customer evaluations and satisfaction outcomes in FMCG markets.

H2: Delivery timeliness has a positive and significant effect on customer satisfaction.

Table 4.18 puts the path coefficient between Delivery Timeliness and Customer Satisfaction at 0.511 — positive, and the second-highest coefficient in the model — with a p value of 0.000 (below 0.05) and a T value of 8.125 (above 1.645); the 95% bias-corrected confidence interval runs from 0.411 to 0.616, again excluding zero. These results confirm H₂ is accepted: delivery timeliness positively and significantly affects customer satisfaction in the cooking oil FMCG sector in Greater Jakarta, aligning with Stock and Lambert (2001), who positioned delivery reliability as a fundamental component of supply chain service quality.

H3: Product availability has a positive and significant effect on customer trust.

Table 4.18 puts the path coefficient linking Product Availability to Customer Trust at 0.251, with a p value of 0.000 (below 0.05) and a T value of 3.867 (above 1.645); the 95% bias-corrected confidence interval, from 0.146 to 0.357, excludes zero. These findings confirm H₃ is accepted — product availability does have a positive, significant direct effect on customer trust, though that direct effect is considerably smaller than its effect on customer satisfaction. This is consistent with Morgan and Hunt (1994), who argued trust develops when consumers see a company as reliable and capable of consistently delivering expected outcomes.

H4: Delivery timeliness has a positive and significant effect on customer trust.

The direct path coefficient between Delivery Timeliness and Customer Trust, per Table 4.18, is 0.215, with a p value of 0.000 (below 0.05) and a T value of 4.914 (above 1.645); the 95% bias-corrected confidence interval, from 0.148 to 0.290, excludes zero. These findings confirm H₄ is accepted — delivery timeliness has a positive, significant direct effect on customer trust in the cooking oil FMCG sector in Greater Jakarta, although it is worth noting this is the smallest path coefficient among the five direct relationships tested.

H5: Customer satisfaction has a positive and significant effect on customer trust.

Table 4.18 puts the direct path coefficient between Customer Satisfaction and Customer Trust at 0.594 — the highest in the entire model — with a p value of 0.000 (below 0.05) and a T value of 8.662 (above 1.645); the 95% bias-corrected confidence interval, from 0.481 to 0.705, excludes zero. These findings confirm H₅ is accepted: customer satisfaction has a positive, significant effect on customer trust, supporting Garbarino and Johnson (1999), who found satisfaction significantly contributes to relationship quality and trust formation.

H₆: Customer satisfaction significantly mediates the relationship between product availability and customer trust.

The mediating path coefficient of Customer Satisfaction between Product Availability and Customer Trust, per Table 4.18, is 0.293, with a p value of 0.000 (below 0.05) and a T value of 5.860 (above 1.645); the 95% bias-corrected confidence interval, from 0.220 to 0.385, excludes zero. These findings confirm H₆ is accepted — customer satisfaction does significantly mediate the relationship between product availability and customer trust. Since the direct effect from Product Availability to Customer Trust (0.251) is also significant, and both direct and indirect effects point the same way, this counts as complementary partial mediation (Hair et al., 2022). Notably, the indirect effect (0.293) outweighs the direct effect (0.251), meaning more of product availability's influence on trust flows through satisfaction than bypasses it. The total effect of Product Availability on Customer Trust comes to 0.544 (T = 9.421, p = 0.000).

H₇: Customer satisfaction significantly mediates the relationship between delivery timeliness and customer trust.

Table 4.18 gives the mediating path coefficient of Customer Satisfaction between Delivery Timeliness and Customer Trust as 0.304, with a p value of 0.000 (below 0.05) and a T value of 5.644 (above 1.645); the 95% bias-corrected confidence interval, from 0.221 to 0.399, excludes zero. These findings confirm H₇ is accepted — customer satisfaction significantly mediates the relationship between delivery timeliness and customer trust. As with H₆, this again reflects complementary partial mediation, and the imbalance is even more pronounced here: the indirect effect (0.304) substantially outweighs the direct effect (0.215). The total

effect of Delivery Timeliness on Customer Trust comes to 0.519 ($T = 9.624$, $p = 0.000$).

4.9 Discussion on Findings

This section discusses the findings from the PLS-SEM data processing and weighs whether the results confirm the supporting theories outlined in Chapter II. Before data collection began, the researcher developed seven hypotheses to understand what drives customer trust toward cooking oil brands and distributors in Greater Jakarta.

4.9.1 The Effect of Product Availability on Customer Satisfaction

The data point to a substantial relationship between product availability and customer satisfaction in the cooking oil FMCG sector, confirmed by a path coefficient of 0.493, a T value of 7.760 (above 1.645), and a p value of 0.000 (below 0.05) — all clearing the threshold, alongside a large effect size of 0.544. This backs up Agrawal et al. (2022), who found that inventory availability significantly improves customer evaluations and satisfaction outcomes in FMCG sectors, and lines up with Christopher (2016), who argued that effective supply chain performance improves customer experience by keeping products accessible and reducing purchasing inconvenience.

The descriptive findings from Section 4.5 reinforce this practical reading. PA2 (ease of finding products) is the weakest indicator within Product Availability, and CS4 (satisfaction with product accessibility) is the weakest indicator across the whole study. Both of the lowest-scoring items in the dataset sit on the same operational fault line, which suggests that whatever satisfaction gets lost in this category, it gets lost at the shelf rather than in the product itself.

4.9.2 The Effect of Delivery Timeliness on Customer Satisfaction

Delivery timeliness turns out to have a favourable, significant influence on customer satisfaction — in fact, the stronger of the two operational drivers. Its path coefficient of 0.511 outpaces product availability's, backed by a T value of 8.125 (above 1.645), a p value of 0.000 (below 0.05), and the largest effect size among satisfaction's antecedents at 0.586. This confirms Agrawal et al. (2022), who

showed that timely distribution and operational responsiveness positively affect consumer evaluations in FMCG markets, and supports Stock and Lambert (2001) on delivery reliability as a determinant of supply chain service quality.

One finding worth dwelling on: Product Availability and Delivery Timeliness are almost uncorrelated in this sample, at just 0.111. Respondents, in other words, do not experience shelf availability and restocking speed as the same thing — the two constructs contribute independent explanatory power to satisfaction. That carries a practical implication for supply chain management: speeding up replenishment will not automatically fix shelf availability problems, and vice versa. The two call for separate interventions.

4.9.3 The Effect of Product Availability on Customer Trust

Product availability turns out to have a positive, significant direct impact on customer trust toward cooking oil brands and distributors in Greater Jakarta, with a path coefficient of 0.251, a T value of 3.867 (above 1.645), a p value of 0.000 (below 0.05), and a medium effect size of 0.186. This supports Wiedmann and von Mettenheim (2020), who found that consistency and reliability positively contribute to consumer trust formation.

That said, this direct effect (0.251) runs only about half the size of product availability's effect on satisfaction (0.493), and falls short of the indirect effect that passes through satisfaction (0.293). Consistent availability by itself, it seems, doesn't build trust to any substantial degree — instead, availability builds trust mostly by first delivering a satisfying purchasing experience.

4.9.4 The Effect of Delivery Timeliness on Customer Trust

Delivery timeliness, per the study's conclusions, has a favourable and significant, though comparatively modest, direct influence on customer trust. Its path coefficient of 0.215 is the smallest of the five direct paths, with a T value of 4.914 (above 1.645), a p value of 0.000 (below 0.05), and a small effect size of 0.133 — consistent with Morgan and Hunt's (1994) commitment-trust theory, where reliability and consistency serve as fundamental antecedents of trust, and with Garbarino and Johnson (1999), who emphasised that positive service experiences strengthen consumer trust and relationship quality.

This relatively small direct effect makes theoretical sense: consumers never observe the logistics operation itself, only its consequences at the shelf and in their own purchasing experience. It follows, then, that it's reasonable for delivery performance to influence trust mainly through the experience it creates, rather than as something the firm is directly perceived to do.

4.9.5 The Effect of Customer Satisfaction on Customer Trust

Customer satisfaction has a positive, substantial impact on customer trust — in fact, the strongest relationship anywhere in the model. Its path coefficient of 0.594 is the highest among the five direct relationships, with a T value of 8.662 (above 1.645), a p value of 0.000 (below 0.05), and the model's largest effect size at 0.718. This supports Garbarino and Johnson (1999), who found satisfaction significantly contributes to relationship quality and trust, and aligns with Wiedmann and von Mettenheim (2020) on the link between positive consumer evaluations and trustworthiness.

This finding sits at the empirical centre of the study, establishing that within an essential commodity category, trust accumulates primarily as a consequence of satisfying experiences rather than as a direct response to operational metrics. It should still be read with some caution, though, given the HTMT value of 0.898 between these two constructs reported in Section 4.6 — a reminder that satisfaction and trust sit empirically very close together in this sample.

4.9.6 The Mediating Effect of Customer Satisfaction from Product Availability to Customer Trust

Customer satisfaction shows a positive, observable mediating influence between product availability and customer trust: its indirect path coefficient of 0.293 clears the threshold with a T value of 5.860 (above 1.645) and a p value of 0.000 (below 0.05). Since the direct effect from Product Availability to Customer Trust remains significant at 0.251, this counts as complementary partial mediation rather than full mediation (Hair et al., 2022), with the total effect of product availability on customer trust reaching 0.544.

This backs up Garbarino and Johnson's (1999) reasoning that satisfaction is the mechanism converting transactional experience into relational outcomes. Here,

the indirect path (0.293) outweighs the direct path (0.251), meaning most of product availability's influence on trust flows through the satisfaction it generates rather than being read directly by consumers as a signal of firm reliability.

4.9.7 The Mediating Effect of Customer Satisfaction from Delivery Timeliness to Customer Trust

Customer satisfaction likewise shows a positive, observable mediating influence between delivery timeliness and customer trust, with an indirect path coefficient of 0.304, a T value of 5.644 (above 1.645), and a p value of 0.000 (below 0.05) — all clearing the threshold. Since the direct effect from Delivery Timeliness to Customer Trust remains significant at 0.215, this is again complementary partial mediation. The total effect of delivery timeliness on customer trust is 0.519.

The mediation is more pronounced here than for product availability: the indirect effect (0.304) is 1.41 times larger than the direct effect (0.215), whereas for product availability the ratio is 1.17. This supports the interpretation offered in Section 4.9.4, namely that delivery performance is a largely invisible upstream capability whose effect on trust is almost entirely dependent on whether it succeeds in producing a satisfactory downstream purchasing experience. For cooking oil producers and distributors, this means that logistics investment does not translate into consumer trust automatically; it does so only to the extent that it is felt by the consumer at the point of purchase.

CHAPTER V

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

This study set out to examine how product availability and delivery timeliness influence customer trust in the cooking oil FMCG sector in Greater Jakarta, and whether customer satisfaction mediates those relationships. After analysing responses from consumers who personally participate in household cooking oil purchases through PLS-SEM, this study can address the seven research objectives established in Chapter I.

The first two objectives examine the effects of the two operational constructs on customer satisfaction and both receive empirical support. Product availability has a positive and significant effect on customer satisfaction which indicates that consumers evaluate their purchasing experience more favourably when cooking oil remains readily available at the point of purchase. Delivery timeliness also produces a positive and significant effect and shows a slightly stronger influence than product availability which indicates that consumers place considerable importance on the speed and consistency of shelf replenishment alongside actual stock availability.

The third and fourth objectives assess the direct effects of product availability and delivery timeliness on customer trust and both proposed relationships are supported. Consistent stock availability and dependable replenishment appear to signal organisational reliability to consumers. However, these direct relationships remain substantially weaker than the corresponding effects on satisfaction and delivery timeliness records the weakest direct relationship with trust among the paths examined. This result aligns with the theoretical argument that consumers cannot directly observe distribution activities and therefore have limited information for interpreting operational performance as evidence of the company's overall reliability.

The fifth objective examines the relationship between customer satisfaction and customer trust and this path produces the strongest relationship within the research model. Consumers who repeatedly experience outcomes that meet their expectations tend to develop greater confidence in the brand and its distributor which supports the argument that trust within an essential commodity category develops gradually through accumulated experience rather than through an isolated transaction.

The sixth and seventh objectives evaluate the mediating role of customer satisfaction and both hypotheses receive support. Each relationship demonstrates complementary partial mediation because the direct paths from product availability and delivery timeliness to customer trust remain statistically significant after including the mediator. The indirect effect through customer satisfaction exceeds the corresponding direct effect for both operational variables and this difference appears more pronounced for delivery timeliness than for product availability.

The overall findings indicate that supply chain performance influences customer trust through two pathways while the indirect pathway through customer satisfaction carries greater importance. Operational reliability alone does not fully establish consumer confidence because it mainly strengthens trust when consumers experience reliable availability and replenishment as part of a satisfactory purchasing experience. Once this mediating mechanism is considered, the research model explains a substantial proportion of the variance in customer trust.

5.2 The Implication of the Study

5.2.1 Practical Consequences

Customer satisfaction demonstrates the strongest influence on customer trust in this research, so cooking oil producers and distributors in Greater Jakarta should understand that operational performance cannot build consumer confidence by itself because consumers develop trust when they experience reliable operations as part of a satisfying purchase. The practical focus should therefore extend beyond moving products efficiently through the supply chain and include efforts to ensure that the final shelf experience meets consumer expectations.

The study also identifies an actionable pattern because the two lowest-scoring indicators across the dataset concern ease of finding products and satisfaction with product accessibility which both relate to the final stage of distribution rather than upstream supply activities. This pattern indicates that retail execution remains a key weakness within the Greater Jakarta cooking oil market and involves factors such as distribution coverage, shelf positioning, package size, and brand assortment at the outlets used by consumers. Companies should give greater attention to retail audit programmes, planogram compliance, and secondary distribution coverage instead of directing additional resources primarily toward expanding upstream logistics capacity.

Delivery timeliness produces the strongest effect on customer satisfaction while showing the weakest direct effect on customer trust which suggests that companies should manage logistics performance mainly as a contributor to consumer experience rather than as a communication asset by itself. Firms can improve this area by reducing delivery delays, coordinating more closely with distributors, monitoring retailer-level service performance, and strengthening replenishment systems while recognising that these operational improvements will influence trust mainly through the satisfaction they create.

The descriptive results for Customer Trust also indicate that consumers show greater confidence in observable practices such as pricing and consistent performance than in the distributor or company as an institution which suggests that trust within this category remains more transactional than institutional. An equal proportion of negative responses across the measured constructs also points to a consistent minority of Greater Jakarta consumers who remain unconvinced and this pattern may partly reflect the lasting influence of the 2021–2022 cooking oil crisis discussed in Chapter I. Companies can address this group by communicating pricing practices more transparently, maintaining consistent availability commitments, and providing visible service-level guarantees that strengthen institutional confidence over time.

5.2.2 Contribution to Theory

Previous research has widely discussed the Indonesian FMCG sector but has given relatively little attention to cooking oil as a specific context for combining operational supply chain factors with consumer perception variables. This study addresses that gap by examining how consumers in Greater Jakarta relate supply chain performance to their trust in cooking oil brands and distributors.

The research contributes to existing knowledge in three main areas. First, the findings provide empirical evidence that customer satisfaction serves as the main pathway through which operational supply chain performance influences customer trust within an essential commodity category. Both product availability and delivery timeliness produce stronger indirect effects through satisfaction than direct effects on trust which extends the commitment-trust perspective proposed by Morgan and Hunt (1994) and the satisfaction-trust relationship identified by Garbarino and Johnson (1999) into the operational supply chain setting.

Second, the results demonstrate that consumers distinguish product availability from delivery timeliness as separate concepts rather than viewing them as indicators of one underlying supply chain performance construct because the relationship between the two variables remains notably weak. This finding questions the tendency within supply chain research to combine operational performance into a single aggregate measure and supports the use of separate availability and timeliness dimensions in future research models.

Third, this study provides contextual evidence from the Indonesian urban FMCG environment by examining an essential commodity that experienced a documented national supply and pricing crisis. The findings respond to the geographic and sector-specific research gap identified in Chapter I while offering further insight into consumer responses to supply chain performance within a disrupted market context.

5.3 Limitation of the Study

Several limitations should be considered when interpreting the findings of this study. The first relates to sampling because the absence of a complete sampling frame for cooking oil consumers in Greater Jakarta required the research to apply

non-probability purposive sampling. This approach limits the statistical representativeness of the respondents and means that the findings should be interpreted as indicative of the selected sample rather than generalised to the wider population.

The second limitation concerns geographical coverage because the research only examines consumers within Greater Jakarta and therefore cannot readily represent markets outside the Jabodetabek urban area where differences in retail infrastructure, distribution distances, and price conditions may shape consumer experiences. The study also applies a cross-sectional design that collects information at one point in time. Since trust develops through accumulated experiences, this design cannot show how satisfaction and trust change over time or establish their causal sequence with complete certainty.

The third issue involves measurement because customer satisfaction and customer trust demonstrate a particularly close empirical relationship within the sample. Although the discriminant validity assessment meets the required criterion, the strong association between these constructs requires careful interpretation because some of the relationship may result from conceptual similarities in how respondents perceived the respective questionnaire items rather than from a purely causal connection.

The final limitation concerns the restricted scope of the research model which includes product availability and delivery timeliness while excluding perceived price fairness and other relevant factors such as product quality, brand image, and promotional activity. Price fairness represents a meaningful omission because cooking oil remains highly sensitive to price and the national crisis involved both supply shortages and significant pricing problems. The questionnaire also did not identify the retail channel used for each purchase such as modern trade, traditional markets, warung, or online platforms. Information about purchasing channels could have provided a clearer explanation of the accessibility problem because the weakest indicators identified in the research relate specifically to product access at the point of purchase.

5.4 Recommendation for Future Study

The findings, research methods, and limitations identified in this study provide several opportunities for further investigation.

First, future studies could include perceived price fairness as an additional explanatory variable. Existing literature provides a strong theoretical basis for examining this factor (Xia et al., 2004; Kotler & Keller, 2016), while the descriptive results from this research also support its relevance because confidence in pricing practices recorded the highest score among the Customer Trust indicators. Examining price fairness together with customer satisfaction or through its mediating role could provide a broader explanation of trust formation within a staple product category that remains highly sensitive to price changes.

Second, future research could introduce retail channel as a segmentation or moderating variable. The current findings indicate that the remaining operational weakness occurs closer to the point of purchase rather than within upstream supply activities, so comparing modern trade, traditional markets, and e-commerce could help identify where accessibility problems occur most strongly and allow companies to allocate retail execution resources more effectively.

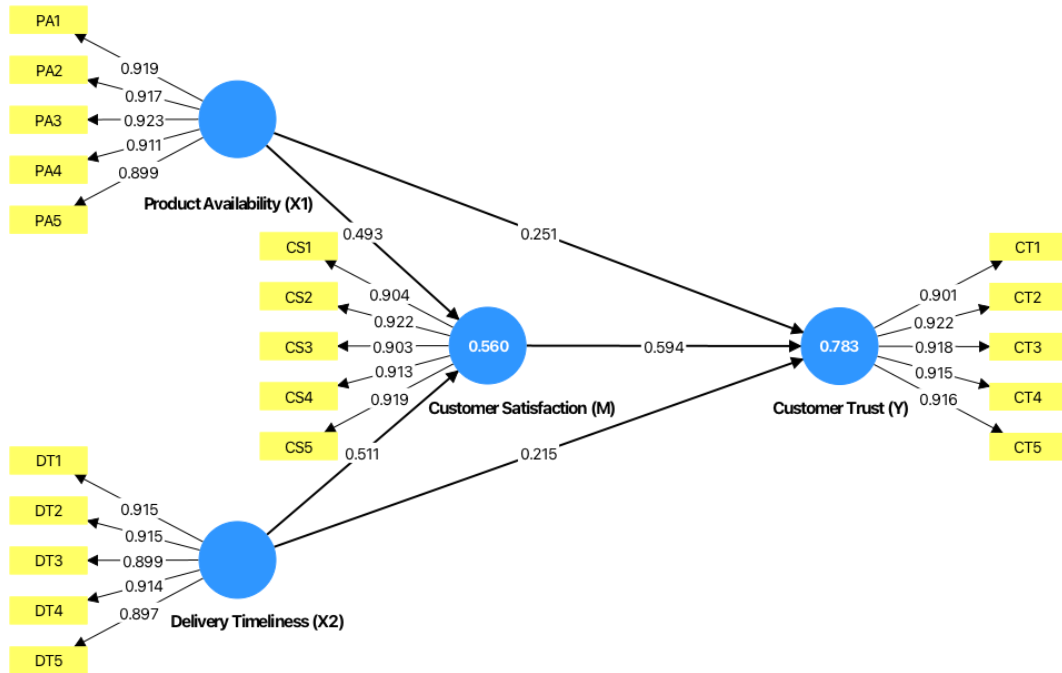
Third, researchers could apply a longitudinal design to observe changes in customer satisfaction and trust across different periods. Trust develops through accumulated experiences and the Greater Jakarta cooking oil market experienced a major disruption during 2021–2022, so tracking consumers over time could reveal whether confidence returns after a supply shock, how long the recovery process requires, and whether the mediating influence of satisfaction changes as market conditions become more stable.

Fourth, future investigations should apply probability sampling when a suitable sampling frame becomes available and could compare Greater Jakarta with other regions of Indonesia. Such comparisons would help determine whether the weak relationship between product availability and delivery timeliness observed in this research also appears in areas with longer distribution routes and lower retail density.

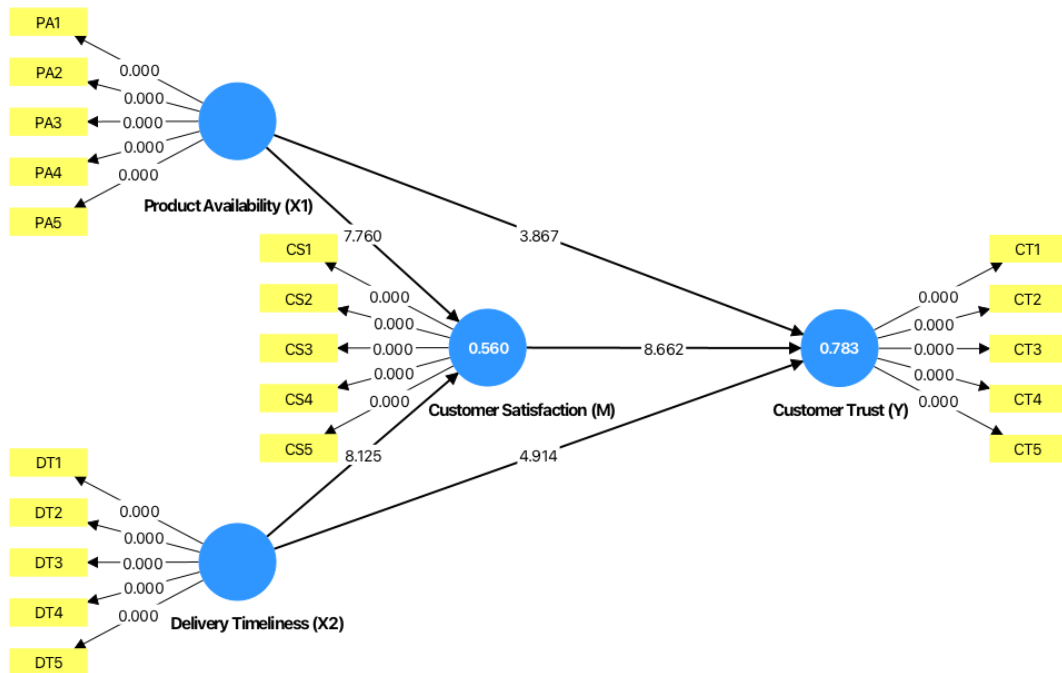
Fifth, future work should refine the measurement instruments for customer satisfaction and customer trust because the two constructs show a particularly strong empirical relationship within the current sample. Researchers could strengthen their distinction by linking satisfaction indicators more directly to specific purchasing experiences while framing trust measures around consumers' expectations regarding the firm's future reliability.

Appendices

Smart PLS 4 Results:



PLS Algorithm



Bootstrapping results

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