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Integrating RFM Analysis and Customer Pain Point Ethnography for Customer Segmentation and Churn Identification: Evidence from the Business-To-Business (B2B) Crude Palm Oil Market

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Abstract

This study presents an executive-level analysis of customer relationship dynamics in the crude palm oil (CPO) industry using a two-period RFM (Recency, Frequency, Monetary) framework combined with an ethnographic pain value approach. Using transaction data from 13 buyers in 2024 and 15 buyers in 2025 obtained from PT XYZ's Customer Relationship Management (CRM) system and e-commerce auction platform, the study calculated RFM scores through three-class binning and mapped customers into eight loyalty segments. The analysis revealed that three buyers progressed toward the Champion status, three buyers declined into the At Risk category, and one buyer experienced complete churn. The revenue at risk reached 10.9% of the 2024 transaction value despite an overall aggregate growth of 16.9%. This pattern was further interpreted through an ethnographic pain value inquiry based on a structured interview with the company's Commercial Department Head. The findings indicated that churn and loyalty erosion were primarily driven by the internal buyer-selection and volume-allocation mechanisms implemented by the Board of Directors rather than by service-related failures. The insights were synthesized into an Online Value Proposition (OVP) delivered through an open online bidding mechanism integrated with the company's CRM and e-commerce auction platform. The proposed OVP emphasized real-time price and volume transparency, digital contract flexibility, and proactive automated monitoring, which were subsequently translated into concrete 8P marketing mix strategies. Customer retention was recorded at 92.3%. This research contributes an integrated quantitative–qualitative model for churn diagnosis and Online Value Proposition design that can be applied to business-to-business (B2B) commodity industries, including the palm oil sector.

INTRODUCTION

The palm oil industry plays a strategic role in the global and national economy, with crude palm oil (CPO) serving as a major export commodity and a primary raw material for the food, oleochemical, cosmetic, and biofuel industries. As one of the world's largest CPO producers and exporters, Indonesia faces dual pressures arising from global commodity price fluctuations, evolving cross-border trade policies, and increasingly intense competition among producers in both domestic and international markets. Under these conditions, the ability of CPO-selling companies to establish and maintain long-term buyer relationships is a key determinant of business sustainability. This is particularly important because transaction volumes in the business-to-business (B2B) sector are highly dependent on trust, reliability, and continuity of collaboration rather than one-time transactions.



Figure 1. Analog Rice and Cooked Analog Rice with the Addition of GMS and Seaweed Puree

Data source: BPS Indonesia, GAPKI, Ministry of Trade & Ministry of Industry of the Republic of Indonesia

The challenges in the CPO industry are becoming increasingly complex due to buyers' relatively strong bargaining positions. Each buyer generally maintains relationships with multiple CPO suppliers as part of a supply risk diversification strategy. Therefore, a buyer's decision to allocate purchase volume to a particular supplier is strongly influenced by price competitiveness, supply reliability, logistics efficiency, and compatibility with the buyer's production requirements. Without an adequate monitoring system, changes in buyer allocation decisions, whether in the form of gradual volume reductions or complete transaction termination, may remain undetected and significantly affect company revenue.

One of the main challenges faced by CPO companies is customer churn (Adiana Soesanti I. & Permanasari, 2018), which refers to the discontinuation of transactions by previously active buyers, as well as loyalty erosion among buyers who continue to transact but with declining frequency and transaction value. This issue is often overlooked by management because it may be masked by overall company revenue growth. When annual transaction value continues to increase due to contributions from new buyers or existing buyers that expand their purchase volumes, declining activity from other buyers may remain unnoticed until the buyer completely ceases transactions. Furthermore, loyal customer status is not permanent. Customer loyalty represents a strong commitment to consistently repurchase products or services in the future, which should be maintained through continuous customer relationship management (Kotler Keller K. L. Ang S. H. Leong S. M. & Tan, 2023). A buyer classified as Champion or Loyal in one period may decline to the At Risk category in a subsequent period if not continuously monitored, while buyers previously categorized in lower segments may improve to the Loyal category. This dynamic movement of customer loyalty status indicates that snapshot-based customer segmentation (Arthanugraha Azzuhri M. B. Ramadhan Y. W. & Heikal, 2024) is insufficient for supporting proactive marketing decision-making (Amanda Sri Nugroho Fitra Alghifari Suhardi Jerry Heikal, 2024).

To address these challenges, RFM (Recency, Frequency, Monetary) (Aditya, 2023) analysis has been widely adopted as a customer segmentation method due to its simplicity and ability to evaluate customer value based on three dimensions of transaction behavior: transaction recency, transaction frequency, and monetary value (Hughes, 2005; Tsiptsis & Chorianopoulos, 2011). For example, in the CPO sector, (Syahfitri & Heikal, 2024) applied RFM (Hipkin, 2023) analysis to classify customers and identify potential loyal buyers. However, most RFM studies, including those in the palm oil industry, remain cross-sectional

or analyze only a single period of transaction data, limiting their ability to capture changes in customer loyalty status over time or identify early indicators of potential churn.

Beyond limitations related to the time dimension, conventional RFM analysis is also primarily quantitative and based on historical transaction patterns, making it unable to explain the underlying causes of changes in buyer behavior. An RFM score can indicate that a buyer has experienced a substantial decline in transaction frequency and monetary value, but it cannot explain whether the decline resulted from product dissatisfaction, internal strategic decisions by the buyer, market conditions, or other contextual factors. Understanding the root causes of behavioral changes is essential to ensure that marketing strategies address actual problems rather than merely responding to observable symptoms. This limitation highlights the need for a complementary contextual approach, such as an ethnographic-based pain value study, which explores deeper sources of dissatisfaction and relationship barriers through in-depth interviews with key informants who understand buyer decision-making processes. This approach aligns with the principle of integrating qualitative insights to enrich the interpretation of customer data for churn risk mitigation (Bi Cai M. Liu M. & Li, 2016)

The combination of longitudinal RFM analysis and ethnographic pain value exploration provides a more comprehensive approach to understanding customer behavior in B2B markets. RFM analysis identifies changes in customer value and loyalty patterns, while ethnographic inquiry provides contextual explanations behind those changes. Through this integrated approach, companies can identify at-risk customers earlier, understand the factors influencing buyer decisions, and develop more targeted customer retention strategies. This is particularly relevant in the CPO industry, where long-term buyer relationships, supply reliability, and transaction continuity are critical factors for maintaining business sustainability.

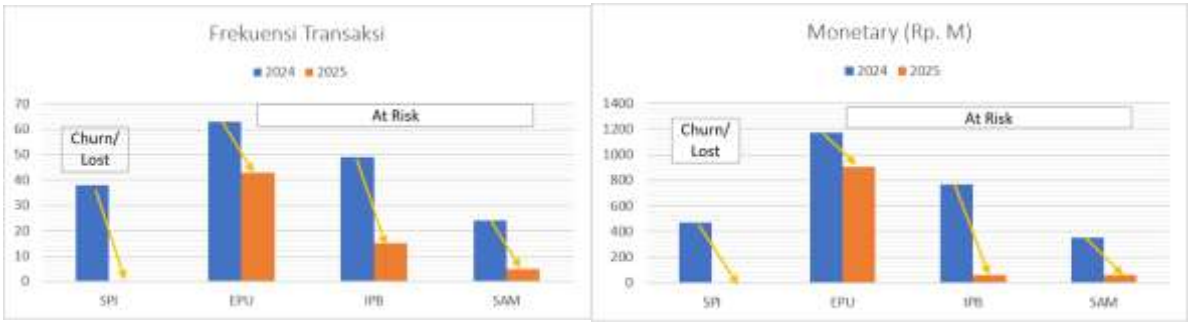


Figure 2. Cooked Analog Rice Made from Arrowroot Starch with the Addition of GMS and Seaweed Puree

Source: Graph of empirical evidence of Customer Churn and At Risk (source of sales data of PT. XYZ in 2024 and 2025)

As preliminary empirical evidence of this issue, observations of PT XYZ's CPO transaction data for the 2024–2025 period confirmed that churn and declining customer loyalty were not merely theoretical concerns but had occurred in practice. Of the 13 buyers recorded as active in 2024, one buyer (SPI code) ceased all transactions in 2025, resulting in a churn rate of 7.7% and a loss of transaction value amounting to IDR 469.49625 million. Three other buyers who remained active in both periods (EPU, IPB, and SAM) experienced declines in transaction frequency of 31.7%, 69.4%, and 79.2%, respectively, compared with the previous year. One of these buyers (SAM) was not identified through the categorical RFM score because the decline did not result in a change in its score category. In aggregate, the potential revenue loss from the four problematic buyers reached 10.9% of the total transaction value in 2024. More importantly, this issue remained largely undetected in the company's overall performance because PT XYZ's total transaction value in 2025 increased by 16.9% compared with 2024.

Therefore, a buyer retention rate of 92.3% could create a misleading impression that all buyer relationships were performing well. This preliminary empirical evidence confirmed the urgency of this study by demonstrating that, without individual buyer-level analysis, symptoms of churn and loyalty erosion could remain unnoticed by PT XYZ's management and eventually affect the sustainability of company revenue.

Based on the description above, this research was motivated by three main problems faced by PT XYZ as a CPO-selling company. First, indications of churn and declining buyer loyalty were potentially masked by the company's aggregate revenue growth. Second, the company lacked longitudinal mapping of buyer loyalty status that could illustrate changes in customer segments over time. Third, the company had not fully identified the underlying factors contributing to churn and declining loyalty, creating a risk that existing marketing strategies would not effectively address customer needs. These three issues were interconnected and required a research approach that combined quantitative analysis of transaction data with qualitative exploration through interviews. Such an integrated approach ensured that the resulting marketing strategies were not only reactive to observed symptoms but also addressed the underlying causes of customer behavior changes while translating insights into actionable value propositions and marketing tactics (Serrano, 2023).

This study aimed to: (1) analyze the RFM (Recency, Frequency, Monetary) profiles of PT XYZ buyers across two consecutive periods, namely 2024 and 2025, to identify changes in buyer loyalty status between periods; (2) explore the pain value underlying churn and declining buyer loyalty through an ethnographic approach based on in-depth interviews with internal stakeholders who directly understood buyer-related decision-making processes; (3) develop an Online Value Proposition (OVP) based on an open auction mechanism (online bidding) derived from the interpretation of pain value findings as a basis for developing more relevant offerings for at-risk and loyal buyers; and (4) formulate an 8P marketing mix strategy (Product, Price, Place, Promotion, People, Process, Physical Evidence, and Productivity and Quality) to operationalize the OVP, prevent churn, manage at-risk buyers, and strengthen the retention of high-value buyers sustainably.

METHOD

The population of this study consisted of all business-to-business (B2B) crude palm oil (CPO) buyers of PT XYZ who conducted purchase transactions from January 2024 to December 2025. The population included 16 unique buyer codes, comprising 13 active buyers in 2024 and 15 active buyers in 2025, with changes in buyer participation between the two periods. Due to the relatively small population size and the availability of complete transaction records in the company's CRM system, total sampling (census sampling) was applied, in which all population members were included as research samples. For the qualitative component, informants were selected using purposive sampling, with the Commercial Department Head of PT XYZ chosen as the key informant due to their direct knowledge and authority regarding long-term buyer selection processes and CPO volume allocation mechanisms determined by the Board of Directors (BOD).

The research variables were operationalized as follows. Recency (R) was measured based on the time interval between the buyer's last transaction date and the end of the observation period and was categorized into three score classes (1 = old, 2 = medium, 3 = recent). Frequency (F) was measured as the total number of purchase transactions conducted by each buyer during the observation period and was categorized into three score classes (1 = rare, 2 = moderate, 3 = frequent). Monetary (M) was measured as the accumulated transaction

value of each buyer during the observation period (in million IDR) and was categorized into three score classes (1 = low, 2 = moderate, 3 = high). Loyalty status (RFM segment) was derived from the combination of R, F, and M scores within each period and changes between periods, resulting in eight customer segments: Champion, Loyal, Growing, New Customer, Trial, Hibernating, At Risk, and Lost/Churn. Churn was identified as the condition in which a buyer recorded transactions in 2024 but no transactions in 2025. The At Risk category represented buyers who continued to transact in both periods but experienced a transaction frequency decline of more than 30% compared with the previous period. Pain Value was identified as qualitative information regarding financial losses (in million IDR) resulting from churn or declining buyer volume, along with the underlying causes explored through interviews. Online Value Proposition (OVP) was formulated based on the interpretation of Pain Value findings and represented a strategic value statement implemented through an open auction mechanism (online bidding) for CPO prices and volumes using digital platforms, including CRM systems and e-commerce auction platforms, to address identified causes of churn and declining loyalty.

This study applied two complementary analytical approaches: quantitative RFM analysis and qualitative ethnographic Pain Value analysis.

RFM analysis was conducted through several stages. Transaction data were processed and organized by buyer using Microsoft Excel. The R, F, and M scores for each buyer were calculated using the three-class binning method with IBM SPSS, following approaches applied in previous RFM studies (Angelis Lymperopoulos C. & Dimaki, 2005; Cheng et al., 2025). The combinations of R, F, and M scores from 2024 and 2025 were subsequently compared to identify changes in buyer loyalty status (loyalty shift) and classify buyers into eight segments (Cheng et al., 2025).

The ethnographic Pain Value analysis adopted a qualitative approach to explore contextual factors underlying buyer behavior changes through direct engagement with relevant informants. Data were collected through semi-structured interviews with the Commercial Department Head of PT XYZ, focusing on long-term buyer selection mechanisms, CPO volume allocation criteria, and factors influencing the Board of Directors' decisions regarding buyer retention or volume adjustments. Interview (Z, 2026) data were analyzed thematically and triangulated with quantitative RFM patterns of problematic buyers, including churned and At Risk buyers, to generate contextual interpretations of Pain Value. The resulting Pain Value insights were used as the foundation for developing an Online Value Proposition (OVP) based on an open auction mechanism (online bidding) and were subsequently translated into an 8P marketing mix strategy (Product, Price, Place, Promotion, People, Process, Physical Evidence, and Productivity and Quality) as the final research output.

RESULTS AND DISCUSSION

Based on the transaction data obtained, the number of active buyers will increase from 13 buyers in 2024 to 15 buyers in 2025, with the total frequency of transactions increasing from 718 to 751 transactions (+4.6%) and the total transaction value increasing from IDR 15,849,218.74 to IDR 18,531,954.81 or growing 16.9% (in units of IDR million). A summary of transaction data is presented in Table 1.

Table 1. Summary of CPO Transaction Data for 2024 and 2025

Remarks	Year 2024	Year 2025
Number of active subscribers	13	15

Total transaction frequency	718	751
Total transaction value (Million Rp)	15.849.218,74	18.531.954,81
Frequency growth (%)	-	+4,6%
Transaction value growth (%)	-	+16,9%

Source: Primary data from the research results, 2026.

Higher transaction value growth compared to frequency growth indicates an increase in average transaction value per transaction (*average order value*), driven by the contribution of new buyers and an increase in the activity of loyal group buyers. However, this aggregate growth has the potential to mask problems at the individual buyer level, especially buyers who experience a decrease in transaction activity or even stop transacting, so it is necessary to analyze at the buyer level through a two-period RFM score (Heikal et al., 2022).

The Recency, Frequency, and Monetary scores are calculated for each buyer using the three-class binning method. The results of *crosstabulation* between Frequency, Monetary, and Recency scores for 2024 and 2025 are presented in Table 2 and Table 3.

Table 2. Cross-tabulation of Frequency × Monetary × Recency Score in 2024

Recency	Frequency	Monetary = 1	Monetary = 2	Monetary = 3	Total
1	1	3	-	-	3
1	2	1	-	-	1
2	2	-	2	0	2
2	3	-	1	2	3
3	2	-	2	0	2
3	3	-	0	2	2
Total	-	4	5	4	13

Source: Primary data from the research results, 2026.

Table 3. Cross-Tabulation of Frequency × Monetary × Recency Score in 2025

Recency	Frequency	Monetary = 1	Monetary = 2	Monetary = 3	Total
1	1	4	-	-	4
1	2	1	-	-	1
2	2	-	3	0	3
2	3	-	0	2	2
3	2	-	2	0	2
3	3	-	0	3	3
Total	-	5	5	5	15

Source: Primary data from the research results, 2026.

The distribution of scores in both years showed a relatively similar pattern, with the low-scoring buyer group (R=1, F=1, M=1) remaining the group with the largest number of members (4-5 buyers), while the high-scoring buyer group (R=3, F=3, M=3) increased from 2 buyers in 2024 to 3 buyers in 2025. This pattern indicates polarization, that is, some buyers move up towards the high-value group, while the low-value group relatively remains in their position, so further analysis is needed regarding the direction of the change in the buyer's loyalty status.

Based on the combination of RFM scores and their changes between 2024 and 2025, buyers are grouped into eight segments, namely *Champion* (score of 333 in both periods or increased to 333), *Loyal* (high and stable score in the Frequency and Monetary dimensions), *Growing* (score increases sharply compared to the previous period), *New Customer* and *Trial* (buyers who have only appeared in 2025), *Hibernating* (score of 111 in both periods), *At Risk* (experiencing a significant decrease in score or transaction volume), and *Lost/Churn* (no longer transacting in 2025). The results of segmentation and the direction of loyalty change are presented in Table 4.

Table 4. Segmentation and Changes in CPO Buyer Loyalty Status in 2024-2025

Customer Code	RFM Score 2024	RFM 2025 Score	Frek. 2025	RFM 2025	Segments
CUB	-	222	14	222	New Customer
EPU	333	222	43	222	At Risk
IPB	232	121	15	121	At Risk
ITM	-	322	44	322	Growing
KAJ	111	111	2	111	Hibernating
LCD	-	111	1	111	Trial
MAN	333	333	136	333	Champion
PAA	111	111	2	111	Hibernating
PSR	121	322	40	322	Growing
SPA	233	233	107	233	Loyal
SSD	111	111	1	111	Hibernating
SPI	322	-	-	-	Churn (Lost Customer)
SAM	222	222	5	222	At Risk*
SPM	322	333	91	333	Champion
Text message	222	333	48	333	Champion
WIN	233	233	202	233	Loyal

Source: Primary data from the research results, 2026.

Table 4 shows that of the 16 buyer codes recorded as having transacted in the 2024-2025 period, three buyers (MAN, SPM, SMS) managed to achieve or maintain *Champion* status in 2025, with SPM and SMS showing an increase (upgrade) in loyalty status from *Loyal/Growing* in 2024 to *Champion* in 2025. Two buyers (SPA and WIN) are in the Loyal segment with high and stable Frequency and Monetary scores in both periods, while PSR shows a surge in status from *At Risk* (121) in 2024 to *Growing* (322) in 2025. The change in loyalty that is the main emphasis of this study is the *downgrade* of the status of three buyers (EPU, IPB, SAM) to *At Risk*, as well as *total churn* in one buyer (SPI), which is presented in detail in Table 5.

Table 5. Summary of Changes in Buyer Loyalty, Churn and At Risk

Customer Code	Categories	Frequency (2024 vs 2025)	Transaction Value Million Rp (2024 vs 2025)	Δ Frequency	Δ Transaction Value
SPI	Churn (Lost)	38 → 0	469,496.3→ 0	-100%	-100%
EPU	At Risk	63 → 43	1,169,170.2 → 907,947.9	-31,7%	-22,3%
IPB	At Risk	49 → 15	766,772.3 → 59,833.4	-69,4%	-92,2%
SAM	At Risk*	24 → 5	353,254.1 → 62,938.5	-79,2%	-82,2%

Source: Primary data from the research results, 2026.

Longitudinal analysis of buyer transaction status found one buyer who experienced full churn (Lost), namely a buyer coded SPI, with 38 transactions worth IDR 469,496.3 (in Million IDRs) in 2024 but no transactions at all in 2025. The loss of one buyer out of a total of 13 buyers in 2024 results in a churn rate of 7.7%, or the equivalent of a buyer retention rate of 92.3%. In addition, EPU buyers experienced a decrease in loyalty status from 333 to 222 (frequency decreased by 31.7% and transaction value decreased by 22.3%), and IPB buyers experienced a sharper decrease from 232 to 121 (frequency decreased by 69.4%, transaction value decreased by 92.2%), so technically it is not churn but the pattern of decline is close to completely disappearing if not handled.

Another finding was obtained from SAM buyers, whose categorical RFM score was recorded at 222 in both periods, so if only relying on a three-class categorical score, the loyalty change in this buyer would not be detected. However, in absolute volume, the frequency of SAM transactions decreased by 79.2% and the transaction value decreased by 82.2%, a much larger decrease than that of EPU. These findings demonstrate the limitations of the three-class RFM score binning method in capturing sharp loyalty changes when they are still within the same range of score classes, so comprehensive loyalty monitoring needs to complement the categorical RFM score with a percentage change in absolute values over time. In aggregate, the potential loss of revenue from the four non-performing buyers (SPI, EPU, IPB, and SAM) reached around IDR 1,727,973.1 (in Million IDRs), or equivalent to 10.9% of the total transaction value in 2024, which was covered by *the* growth of the company's total transaction value of 16.9% in Table 1.

To understand the causes of changes in loyalty in 4 buyers (SPI, EPU, IDB and SAM), this study developed Ethnography Pain Value, which is the identification of the value of financial losses (*pain value*) arising from *churn* or decreased buyer loyalty, which was interpreted through an ethnographic approach based on in-depth interviews with the Commercial Department Head of PT. XYZ. A summary of pain value and its causative factors is presented in Table 6.

Table 6. Ethnography Pain Value: Loss Value and Factors Causing Churn/At Risk

Customer Code	Categories	Lost / Risky (Risky.felianadevi Nayla Azkia Jerry Heikal, 2024) Value (Million Rp)	Causative Factors (Results of Interview Commercial Dept. Head of PT. XYZ)
SPI	Churn (Lost)	IDR 469,496.2 (100% of the 2024 transaction value is lost)	The termination of the transaction was due to the price and volume of CPO from SPI which was no longer competitive compared to other buyers, so that the BOD of PT. XYZ transfers the full volume allocation to other buyers according to market conditions, logistics cost efficiency. The need to fulfill the capacity of SPI buyer factories that have been met from other companies' supply sources.
IPB	At Risk (critical)	IDR 706,938.9 (92.2% of the 2024 transaction value)	The very sharp decrease in volume was due to the reduction in allocation by the BOD of PT. XYZ, because IPB's price/volume offer was relatively less competitive than other buyers in that period, Factors of adjustment of shipping logistics costs and changes in the need to fulfill the capacity of IPB buyers' factories.
EPU	At Risk	IDR 261,222.4 (22.3% of the 2024 transaction value)	The gradual and proportional decrease in volume was caused by the reallocation of part of the volume to other buyers by the BOD of PT. XYZ, in line with the dynamics of CPO market conditions and adjustments to the needs of meeting the capacity of EPU buyer factories, without a complete termination of business relationships.
SAM	At Hidden Risk	IDR 290,315.6 (82.2% of the 2024 transaction value)	The decrease in volume that is not reflected in the categorical RFM score indicates a reduction in allocation by the BOD of PT. XYZ which took place gradually, related to relatively less competitive price/volume offers and adjustments to changes in the capacity needs of SAM buyers in that period.

Source: Primary data from the research results, 2026.

Based on the results of an interview with the Commercial Department Head of PT. XYZ, churn and a decrease in loyalty to the four buyers are not solely caused by buyers' dissatisfaction with products or services, but are more influenced by the internal mechanism of determining buyers and the allocation of CPO volumes by the Board of Directors (BOD) of PT. XYZ. The determination of long-term buyers mainly considers the price and volume of CPO offered by the buyer to PT. XYZ. Furthermore, the distribution of buyers and CPO volume per buyer is determined by the BOD, with the determination of prices and volumes generally adjusting to market conditions, logistics costs, and the needs of fulfilling factory capacity from each buyer. This ethnographic interpretation is the basis for the development of *an Online Value Proposition* (OVP) based on an open auction mechanism (*online bidding*), which is designed to respond to the pain value of each buyer specifically.

The interpretation of Ethnography Pain Value in Table 6 was further developed into *an Online Value Proposition* (OVP) using the Value Proposition Canvas framework (Osterwalder Pigneur Y. Bernarda G. & Smith, 2014) as an analysis tool, which maps the Customer Profile (*Jobs, Pains, Gains*) of CPO buyers into the company's Value Map (*Products & Services, Pain Relievers, Gain Creators*)). The canvas mapping based on the results of Ethnography Pain Value is presented in Table 7.

Table 7. Value Proposition Canvas Based on Ethnography Pain Value

Customer Profile	Value Map PT. XYZ
Customer Jobs Obtaining a stable, quality CPO supply that meets the needs of each buyer's factory production capacity, with an efficient transaction process (price quote, volume submission, and contract monitoring) through digital/online channels.	**Products & Services** An online CRM and auction platform that provides real-time CPO catalogs, digital quality specifications (COAs), as well as online volume contract submission and monitoring features.
Breads Quote/volume of PT. XYZ is less competitive than other buyers; uncertainty of volume portions over time; lack of visibility into logistics costs; and the lack of proactive notifications when the volume starts to decrease (SAM cases) because it has not been automatically monitored on the online system.	**Pain Relievers** Real-time market price dashboard on the online platform for supply transparency; digital long-term volume contract submission feature; integrated logistics cost calculator on the platform; and *an RFM trend-based automated alert system installed on the buyer's account on the online platform.*
Earnings Certainty of long-term supply sustainability; prices and volumes that remain competitive despite changing market conditions; full visibility of transaction and contract status; and a transparent and responsive partnership relationship whenever accessed online.	**Gain Creators** Transaction history and partnership status that buyers can monitor in real time through online accounts; periodic digital volume re-bidding feature; direct digital communication services (chat/messaging) with the sales team through the platform; as well as priority notifications for high-value buyers.

Source: Primary data from the research results, 2026.

The canvas in Table 7 shows that the buyer's main Pains are centered on price/volume competitiveness and allocation uncertainty, so they are responded to through Pain Relievers in the form of *a real-time* price dashboard, long-term volume contracts, and RFM-based early warning systems, while the Gains expected by buyers in the form of transparency and certainty of long-term partnerships are responded to through Gain Creators in the form of online transaction history and proactive communication. Based on the mapping, *an Online Value Proposition* (OVP) was formulated which was realized through an open auction mechanism (*online bidding*), which is a system for submitting prices and CPO volumes digitally on a CRM/*e-commerce* platform that allows buyers to submit and update bids in a transparent and competitive manner, while providing a BOD with a more objective and documented evaluation of volume allocation. Details of the proposed open auction-based OVP elements for each problematic buyer are presented in Table 8.

Table 8. *Online Value Proposition* (OVP) Based on Open Auction (*online bidding*) per Buyer Based on Ethnography Pain Value.

Customer Code	Categories	Pain (Source of Problems)	Proposed Open Auction-Based OVP Elements (online bidding)	Expected Gain
SPI	Churn (Lost)	Price/volume quotes are less competitive; BOD allocation shifts to other buyers	Reactivation through online platform accounts with real-time price dashboards and periodic digital volume re-bidding features	Transaction reactivation opportunities for SPI; the opportunity to recover volume allocation for PT. XYZ

IPB	At Risk (critical)	Price/volume competitiveness decreased sharply; Possible Less Efficient Logistics Costs	A landed cost dashboard is integrated into the online platform for transparency, along with a competitive price-volume scheme that can be submitted digitally	IPB's transaction volume has stabilized again; PT. XYZ remains a priority for IPB BOD allocation
EPU	At Risk	Reallocation of part of the volume to other buyers in line with market dynamics and factory capacity	A digital multi-tiered volume contract submission feature on the platform, which EPU can adjust in real-time according to its plant capacity needs	Certainty of minimum volume for EPUs; certainty of the allocation portion for PT. XYZ
SAM	At Hidden Risk	The gradual decline has not been detected early; risk of being unwittingly shifted	Automated alerts on online platform accounts when transaction activity decreases, accompanied by price/volume quotes that remain competitive	SAM's business relationship is maintained; early detection for PT. XYZ before reallocation occurs

Source: Primary data from the research results, 2026.

In general, the four elements of OVP in Table 8 can be synthesized into one headline value proposition. XYZ, namely: *Transparent Online Value Proposition through Open Bidding for Long-Term CPO Partnership,* a value proposition realized through an open auction system (*online bidding*) for submitting prices and CPO volumes online, transparent, and *in real time*, equipped with *a re-bidding* featureperiodic and automatic notifications, so that the buyer gets a fair and open opportunity to submit a competitive offer, as well as give PT. XYZ is a more objective volume allocation basis in the eyes of BOD.

In order for the Online Value Proposition (OVP) based on open auctions to be realized operationally, this study formulated a tactical strategy using the 8P service marketing mix framework (*Product, Price, Place, Promotion, People, Process, Physical Evidence, and Productivity and Quality*), which is an extension of the conventional 7P framework by adding elements of Productivity and Quality (Lovelock & Wirtz, 2016) 8P Framework was chosen because the characteristics of CPO transactions through CRM and e-commerce auction platforms resemble relationship-intensive business-to-business (B2B) transactions, so that *the elements of People, Physical Evidence, Process, and Productivity and Quality* are relevant to be analyzed in addition to the elements of the conventional marketing mix (Product, Price, Place, Promotion). Details of the 8P tactical strategy presented in Table 9.

Table 9. 8P Tactical Strategy to Establish OVP

8P Elements	Tactical Strategies to Prevent/Deal with Churn
Product	Displaying CPO quality specifications, RSPO certification, and Certificate of Analysis (COA) for each shipment digitally on the CRM/e-commerce platform, so that buyers can verify product quality online at any time, strengthening the position of PT. XYZ compared to alternative suppliers when BOD evaluates the sustainability of cooperation.

Price	Providing a real-time market price dashboard and a more competitive and flexible volume-price scheme submission feature (long-term contracts, market-adjusted prices, tiered volume discounts) directly through an online platform, especially for buyers at risk of reallocation (EPU, IPB, SAM), so that PT. XYZ remains a BOD priority.
Square	Integrating logistics cost calculators on online platforms so that buyers can monitor landed cost estimates transparently, as well as optimizing the efficiency of physical deliveries to each buyer's location such as IPB to remain competitive compared to other suppliers.
Promotion	Conduct proactive communication and negotiation through automatic notifications and digital messages on online platforms regarding price and volume adjustments, including digital win-back campaigns to SPI and the opening of the online volume re-bidding feature in the next period.
People	Providing digital customer support services (live chat/dedicated account manager) that can be accessed by buyers through online platforms, as well as strengthening the role of the commercial team in monitoring the competitive position of PT. XYZ and regularly communicate with procurement buyers regarding their factory capacity needs.
Physical Evidence	Providing a dashboard of transaction history, contracts, prices and volumes, as well as a digital repository of quality reports (COA) that buyers can access at any time through an online platform account, as concrete evidence of the transparency and reliability of PT. XYZ, including for high-value buyers (MAN, SPM, SMS, SPA, WIN).
Process	Build an automated early warning system based on RFM score trends that is integrated directly into CRM/e-commerce platforms and BOD accounts, so that significant declines such as in the case of SAM and IPB can be detected early, as well as simplify the process of submitting contracts, claims, and renegotiating volumes online.
Productivity and Quality	Increase the productivity of internal processes (order processing, delivery scheduling, and quality verification) through automation on online bidding platforms, as well as maintaining consistency of quality and timeliness of volume fulfillment, so that PT. XYZ remains continuously efficient and competitive in every online bidding session in the eyes of BOD.

Source: Primary data from the research results, 2026.

The eight elements of the marketing mix complement each other in realizing OVP and responding to the pain value identified in Table 6 and Table 7, namely the competitiveness of price and volume offerings in the eyes of BOD, market conditions, logistics costs, and buyer factory capacity needs. The Price element is the main key because it directly responds to the main criteria of the BOD in determining volume allocation through the open auction mechanism, while the Place element plays a role in maintaining logistics cost efficiency, especially for buyers with sharp declines such as IPB. The Promotion and People elements are important in building proactive communication and negotiation with buyers, including *SPI's win-back efforts* and renegotiations with EPU and IPB, while the Process element, in particular the integration of RFM score monitoring into the BOD evaluation process, specifically addresses the weaknesses found in the SAM case. The Product and Physical Evidence elements play a role in strengthening the bargaining position of PT. XYZ as a whole, including for

Champion and Loyal buyers (MAN, SPM, SMS, SPA, WIN), while the Productivity and Quality element ensures that internal process efficiency and quality consistency are maintained so that every offer submitted by PT. XYZ in each open auction session (*online bidding*) remains competitive on an ongoing basis. Thus, the implementation of the 8P strategy which is integrated with OVP, RFM analysis results, and Ethnography Pain Value is expected to reduce churn rates and strengthen the retention of high-value CPO buyers in a sustainable manner.

CONCLUSION

This research addressed the four objectives formulated in the introduction. The two-period RFM (Recency, Frequency, Monetary) analysis successfully mapped the profile and changes in CPO buyer loyalty status at PT XYZ. The results showed that, among 13 buyers in 2024 and 15 buyers in 2025, three buyers (MAN, SPM, and SMS) improved or remained at the Champion status, two buyers (SPA and WIN) remained stable in the Loyal status, three buyers (EPU, IPB, and SAM) declined to the At Risk category, and one buyer (SPI) experienced complete churn. The analysis resulted in a retention rate of 92.3% and identified potential revenue risks amounting to 10.9% of the 2024 transaction value, which remained concealed behind an aggregate growth of 16.9%. The ethnography-based Pain Value study, conducted through interviews with the Commercial Department Head of PT XYZ, revealed that churn and declining loyalty were primarily caused by internal buyer-selection and CPO volume-allocation mechanisms implemented by the Board of Directors. These mechanisms considered price and volume competitiveness, market conditions, logistics costs, and buyer production capacity requirements rather than failures in the company's services. The Pain Value findings were subsequently synthesized into an Online Value Proposition (OVP) based on an open auction mechanism (online bidding), enabling PT XYZ to provide real-time price and volume transparency, digital bidding flexibility, and automated monitoring for both high-value and at-risk buyers. The OVP was tr anslated into a concrete and actionable 8P marketing mix strategy, prioritizing Price and Place, supported by Promotion and People strategies for win-back initiatives and renegotiation processes. Furthermore, Process was designed as an RFM-based early warning system integrated into the BOD evaluation process, while Productivity and Quality focused on maintaining efficiency and consistency in offer quality over the long term.

Overall, this study demonstrated that integrating quantitative RFM analysis with qualitative ethnography-based Pain Value analysis provided a more comprehensive understanding of customer loyalty dynamics and churn behavior. This integrated approach also generated more targeted marketing strategy recommendations compared with conventional RFM approaches that rely solely on transaction data.

This study had several limitations, particularly the relatively small number of customer samples (13–15 buyers) and the limited two-year observation period. Future research is recommended to extend the observation period and apply clustering methods (Dinda Ayu Pradina Ahmad Syawaldi Jerry Heikal, 2024), such as K-Means or DBSCAN, to RFM data involving a larger number of customers to obtain more objective and robust segmentation results for supporting marketing strategies and churn prediction in the CPO industry. Additionally, future studies could explore the integration of longitudinal RFM approaches with predictive models, such as time-varying Markov models, to better capture temporal dynamics in customer state transitions (Du et al., 2021).

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