

Optimizing Mortgage Lending Strategies: A Data-Driven Approach to Enhancing Bank BTN's Non-Subsidized Credit Model

Farid Alghofari^{1*}, Joyo Winoto², Yudha Heryawan Asnawi³

¹⁻³School of Business Post Graduated, IPB University, Bogor, Indonesia

Email: ¹⁾ faridalghofari@apps.ipb.ac.id, ²⁾ joyowinoto@apps.ipb.ac.id, ³⁾ yudha.asnawi@apps.ipb.ac.id

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Abstract

The rising demand for non-subsidized mortgages in Indonesia has intensified competition among banks, necessitating improvements in credit approval efficiency and risk management. This study evaluates the business model of PT Bank Tabungan Negara (Persero) Tbk (Bank BTN) in the non-subsidized mortgage sector using SWOT analysis and the Analytical Hierarchy Process (AHP) to prioritize strategic interventions. The findings highlight decision-making conflicts, weak initial verification processes, and fraud risks as critical weaknesses, with AHP results ranking Credit Decision-Making Integration (0.54) as the most urgent strategic action. Digital transformation (0.52) presents the greatest opportunity, while competition from more efficient banks (0.49) is the most significant external threat. Managerial implications suggest the necessity of process standardization, AI-driven credit risk assessment, and automation in document verification to enhance efficiency and mitigate fraud risks. Benchmarking against leading competitors like BCA and Mandiri underscores the importance of real-time verification and centralized decision-making in reducing non-performing loan (NPL) ratios. The study provides a data-driven roadmap for Bank BTN to enhance its competitiveness, optimize risk management, and improve operational efficiency. However, limitations include the study's focus on internal process improvements without extensive consideration of external macroeconomic fluctuations and regulatory changes. Future research should incorporate predictive modeling techniques to refine credit evaluations and explore global best practices in mortgage lending.

Keywords: Analytical Hierarchy Process, Banking Strategy, Mortgage Lending, Risk Management, SWOT Analysis

1. Introduction

The global banking industry is currently navigating a recovery phase following several years of economic turbulence. According to the International Monetary Fund (IMF), the banking sector has exhibited strong resilience, supported by adequate liquidity and stable capital ratios. The IMF projects that global economic growth will reach 3.2% in 2024, which is expected to have a positive impact on the financial sector, including banking (Hassan et al., 2021). Other studies emphasize that this recovery is not solely driven by macroeconomic conditions but is also significantly influenced by risk management strategies and the increasing adoption of financial technology (fintech) across different markets (Choudhary & Thenmozhi, 2024). In Indonesia, the banking sector has shown a promising growth trajectory. The Financial Services Authority (OJK) reported a 10.52% year-on-year increase in credit disbursement by the end of 2023, signaling that Indonesian banks have maintained stability despite external challenges. However, risks such as global economic uncertainties and rising credit risk remain critical concerns that must be effectively managed (Salem et al., 2024).



Within the national banking landscape, mortgage loans (*Kredit Pemilikan Rumah/KPR*) continue to be a key financial product, particularly in the non-subsidized segment. Data from Bank Indonesia (BI) indicates that the growth of non-subsidized mortgages reflects a rising demand from the upper-middle-class segment, which seeks more flexible financing schemes with competitive interest rates. PT Bank Tabungan Negara (Persero) Tbk (BTN), a major player in the housing finance sector, plays a pivotal role in both subsidized and non-subsidized mortgage loan distribution. However, despite the growing demand, BTN faces several challenges in the non-subsidized mortgage segment, including intensifying competition and increasing non-performing loans (NPLs), some of which stem from fraudulent practices such as developers submitting fictitious debtor applications (Vergara-Perucich, 2023).

To address these challenges, BTN has introduced several business model innovations, including the establishment of the Regional Loan Processing Centre (RLPC), designed to improve efficiency in credit processing. While this initiative aims to enhance service quality, recent audit reports (2023–2024) highlight persistent weaknesses in the credit approval mechanism, creating loopholes that could be exploited for data manipulation. Such vulnerabilities increase the risk of rising NPLs, which in turn could negatively impact the bank’s financial health (Sardana et al., 2024). These risks align with existing research that underscores the need for stronger regulatory frameworks and tighter supervision systems to mitigate credit risks in the banking industry (Fernández-López et al., 2024). Currently, BTN remains the market leader in the overall mortgage loan sector, as illustrated in the following table:

Table 1. Mortgage Loan Market Share in 2023

No	Bank	Outstanding Loan (Billion IDR)	Market Share (%)	Growth (%)
1	BTN	265,792	38.40	10.45
2	BCA	121,800	17.60	12.47
3	BNI	58,400	8.45	9.16
4	Mandiri	58,760	8.44	17.26
5	BRI	51,720	7.41	16.52

However, in the non-subsidized mortgage loan segment, BTN ranks seventh among banks operating in Indonesia in terms of loan disbursement:

Table 2. Non-Subsidized Mortgage Loan Disbursement in Indonesia (September 2023)

No	Bank	Realized Loans (Billion IDR)	Growth (%)
1	BCA	117,900	11.5
2	BNI	56,500	8.7
3	Mandiri	53,400	11
4	BSI	51,220	10.59
5	BRI	50,200	18.39
6	CIMB Niaga	42,710	2.7
7	BTN	41,310	24.95

Given this context, this study aims to evaluate and refine BTN’s current business model in the non-subsidized mortgage loan sector by comparing it with more successful models adopted by competitors. The research seeks to identify strategic weaknesses and operational inefficiencies that may be limiting BTN’s growth in this segment. Additionally, it explores

alternative business strategies that could enhance BTN's competitiveness, with a particular focus on product innovation, risk management, and operational efficiency.

By providing data-driven recommendations, this study aspires to assist BTN in strengthening its market position and mitigating credit risks, ensuring long-term financial stability and sustainability. Furthermore, the findings of this research could serve as a valuable reference for other banks looking to develop more competitive and resilient mortgage lending strategies in an increasingly dynamic financial landscape.

2. Literature Review

2.1. Business Model in Banking

A business model defines how a company creates, delivers, and captures value. In the banking sector, it determines revenue streams through financial services, risk management, and customer relationship strategies. Razak and Mahadi (2023) highlighted that digital transformation and fintech integration are crucial for modern banking models, enabling banks to remain competitive and enhance operational efficiency. Moreover, Jagesar (2022) emphasized that blockchain and AI-driven innovations are reshaping business models, particularly in financial payments and lending. In mortgage lending, banks must balance credit risk management and customer satisfaction. Huang et al. (2022) pointed out that leveraging data analytics can improve credit assessment and reduce default risks in mortgage portfolios. The combination of traditional banking practices with digital lending platforms is crucial in addressing the evolving market needs.

2.2. Strategic Management in Banking

A strategic approach in banking involves risk management, market adaptation, and regulatory compliance. Dezem et al. (2024) applied the SWOT framework to analyze banking strategies, concluding that a competitive edge is gained through innovative service models and strong governance policies. Coskun et al. (2024) demonstrated that an Analytical Hierarchy Process (AHP) can effectively prioritize strategic initiatives, enabling banks to optimize decision-making in risk assessment and investment planning. In mortgage lending, strategy formulation must consider economic fluctuations, customer behavior trends, and regulatory changes. Bouraima et al. (2023) analyzed financial institutions using AHP and SWOT, confirming that banks that implement data-driven strategies can significantly reduce credit risks and improve mortgage product offerings.

2.3. Non-Subsidized Mortgage Lending

Non-subsidized mortgages are loans where the borrower bears the full financial responsibility, without government support. Huang et al. (2022) found that effective credit evaluation mechanisms, such as AI-driven assessments, significantly enhance mortgage approval accuracy and reduce default rates. Bouraima et al. (2023) highlighted that banks that integrate customer risk profiling with dynamic interest rate models achieve better financial performance in mortgage lending.

2.4. Business Model Canvas (BMC) for Mortgage Lending

The Business Model Canvas (BMC) provides a structured framework for analyzing mortgage business models. According to Razak and Mahadi (2023), key areas in banking BMC include:

1. Value Proposition – Competitive mortgage rates, flexible repayment options.

2. Customer Segments – Middle-to-upper-income households seeking long-term home loans.
3. Channels – Digital banking, mobile applications, branch networks.
4. Revenue Streams – Interest income, service fees.
5. Key Activities – Credit risk assessment, loan processing, customer service.

2.5. Comparative Analysis & Benchmarking in Mortgage Lending

Comparing different mortgage lending models helps banks refine their strategies. Jagesar (2022) used benchmarking analysis to compare traditional banking models with fintech-driven mortgage solutions, finding that digital-first banks outperform conventional banks in customer satisfaction and loan processing efficiency. Zubair and Tiwary (2023) identified that banks adopting data-driven decision-making in mortgage lending have higher profitability and lower non-performing loan (NPL) ratios.

2.6. SWOT and AHP in Mortgage Business Model Optimization

The SWOT framework helps banks identify Strengths, Weaknesses, Opportunities, and Threats in mortgage lending. Dezem et al. (2024) demonstrated that integrating SWOT with AHP allows banks to prioritize strategic changes in their business models, optimizing mortgage lending performance.

2.7. Conceptual Framework of the Research

This study adopts a structured framework to analyze and enhance BTN’s non-subsidized mortgage lending model. The approach begins with Business Model Canvas (BMC) analysis to map BTN’s current strategies, followed by a benchmarking study comparing its model with competitor banks to identify best practices. A SWOT analysis is then conducted to assess internal strengths and weaknesses alongside external opportunities and threats (Widawati et al., 2022). Finally, Analytical Hierarchy Process (AHP) is applied to prioritize strategic initiatives, ensuring optimal business performance and competitiveness.

3. Methods

3.1. Research Location and Time

This study was conducted at PT Bank Tabungan Negara (Persero) Tbk (BTN), focusing on the Consumer Credit Business Division, Risk Credit Division, and Operations Division, particularly the Regional Loan Processing Centre (RLPC). Data collection took place from April to October 2024, covering two major BTN branches and comparative studies with Bank Mandiri, BRI, BNI, BCA, and CIMB Niaga.

3.2. Data Collection

This study uses both primary and secondary data to analyze and improve BTN’s non-subsidized mortgage business model.

Table 3. Data Source Collection

Data Type	Source	Purpose
Primary Data	Observations at RLPC and BTN branches	Identify workflow gaps, fraud risks, and process inefficiencies
	Interviews with RLPC staff, branch officers, division heads (Business, Risk, Operations)	Benchmark BTN’s model against competitors

Data Type	Source	Purpose
Secondary Data	Interviews with banking professionals from Mandiri, BRI, BNI, BCA, CIMB Niaga	Provide contextual insights
	BTN internal reports	
	Job descriptions	Support findings with internal documentation
	Annual reports Internal policies and mortgage regulations	

The combination of direct observations, expert interviews, and internal reports ensures a comprehensive assessment of BTN’s mortgage lending operations.

3.3. Sampling Method

This study applies purposive sampling, selecting individuals with direct expertise in non-subsidized mortgage lending. The sample includes:

1. RLPC officers (Verification, Risk, OTS, and Signing Officers).
2. Branch-level officers (Consumer Loan Sales and Loan Service).
3. Division policymakers (Business, Risk, and Operations).
4. Competitor bank officers (Mandiri, BRI, BNI, BCA, CIMB Niaga).

3.4. Business Model Canvas (BMC) Analysis

The Business Model Canvas (BMC) framework is used to map BTN’s non-subsidized mortgage business model, covering:

Table 4. BMC Focus Area

BMC Component	Focus Area in BTN’s Mortgage Lending
Customer Segments	Identifying target home loan customers
Value Proposition	Competitive interest rates, fast processing
Channels	Branch banking, digital platforms, marketing agents
Customer Relationships	After-sales support, loyalty programs
Revenue Streams	Interest income, service fees
Key Resources	IT systems, human capital, risk evaluation tools
Key Activities	Loan assessment, credit risk analysis, customer service
Key Partnerships	Developers, property agents, credit rating institutions
Cost Structure	Operational costs, risk management expenses

This analysis helps identify weaknesses and improvement areas in BTN’s existing mortgage model.

3.5. Comparative Analysis & Benchmarking

BTN’s business model is compared against leading mortgage lenders (Mandiri, BRI, BNI, BCA, CIMB Niaga) through:

1. Identifying Best Practices – Analyzing competitor business models and risk management.
2. Case Study Review – Studying fraud mitigation and loan approval strategies.
3. Adopting Competitive Strategies – Recommending improvements based on industry benchmarks.

3.6. SWOT Analysis

A SWOT framework is used to evaluate BTN’s mortgage model, identifying:

Table 5. SWOT Focus Analysis

Factor	Analysis
Strengths	Strong market position, housing finance expertise
Weaknesses	High non-performing loans (NPL), fraud vulnerabilities
Opportunities	Expanding digital mortgage services, fintech collaboration
Threats	Rising competition, regulatory constraints, fraud risks

3.7. Analytical Hierarchy Process (AHP) for Strategy Prioritization

The AHP method is applied to rank business model enhancements based on:

1. Competitiveness – How well BTN’s model performs against competitors.
2. Risk Mitigation – Effectiveness in reducing fraud and NPL rates.
3. Operational Efficiency – Improvement in loan processing and customer satisfaction.
4. Feasibility – Ease of implementation and regulatory compliance.

AHP ensures that the most impactful business model improvements are identified and prioritized.

4. Results and Discussion

4.1. Research Results

4.1.1. Overview of PT Bank Tabungan Negara (Persero) Tbk

PT Bank Tabungan Negara (Persero) Tbk (BTN) is a key financial institution specializing in housing finance in Indonesia. Originally established as Postspaarbank in 1897 under the Dutch colonial government, it was later rebranded as Bank Tabungan Negara in 1963 following Indonesia’s independence. In 1974, BTN was appointed as the exclusive distributor of the Kredit Pemilikan Rumah (KPR) program, positioning itself as a pioneer in mortgage financing. Over time, BTN expanded its services beyond mortgage loans to include various financial products. The bank went public in 2009, listing its shares on the Indonesia Stock Exchange (IDX), which facilitated capital expansion and accelerated digital banking innovation.

The bank operates under a structured corporate governance framework that ensures efficient operations and regulatory compliance. Figure 1 illustrates BTN’s organizational structure, which consists of the Board of Commissioners, responsible for policy oversight, and the Board of Directors, which manages daily operations. Various divisions, including Finance, Consumer Credit, Information Technology, and Risk Management, ensure specialized functions are well-coordinated. Supporting units such as the Audit Committee, Risk Monitoring Committee, and Nomination & Remuneration Committee further reinforce transparency and accountability in decision-making.

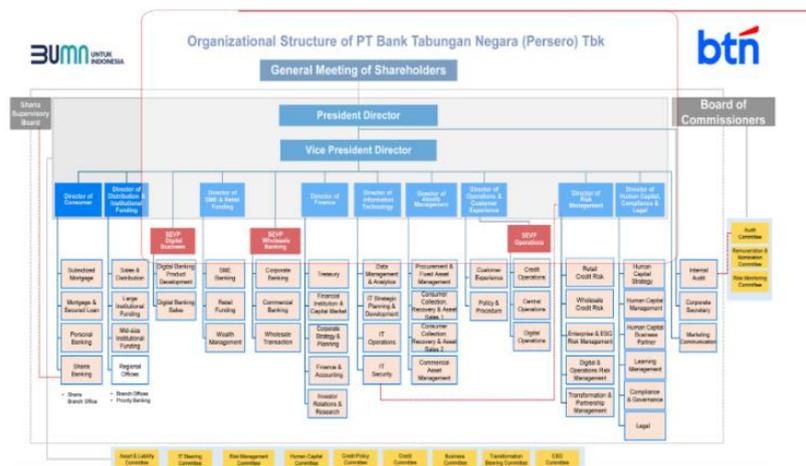


Figure 1. Organizational Structure of PT Bank Tabungan Negara (Persero) Tbk
 Source: Bank BTN, 2024

Beyond its core function in mortgage financing, BTN plays a critical role in financial inclusion, particularly in extending banking services to underserved regions. Its mortgage financing has fueled economic growth, creating employment opportunities and boosting investments in the property sector. Additionally, BTN has embraced digital transformation to enhance service efficiency and accelerate loan disbursement, aligning with the government’s push for financial technology adoption. With its strong market positioning and commitment to innovation, BTN continues to lead the mortgage banking industry while contributing to sustainable economic growth in Indonesia.

4.1.2. Business Model Canvas (BMC) Analysis of Non-Subsidized Mortgage in Bank BTN

Bank Tabungan Negara (BTN) has developed a robust Non-Subsidized Mortgage (KPR Non-Subsidi) business model that aligns with its strategic vision of being a leader in housing finance. This model is structured using the Business Model Canvas (BMC) framework, which maps key elements such as customer segments, value propositions, key activities, and revenue streams. The primary target market for this product includes middle to upper-class individuals, predominantly professionals and business owners seeking competitive mortgage financing. BTN’s key value propositions include its strong brand reputation in mortgage banking, competitive interest rates, and seamless digital services that enhance customer experience (Haryonugroho, 2025). Furthermore, the bank's extensive digital transformation efforts, such as its BTN Property platform, play a crucial role in streamlining mortgage application processes and improving accessibility for customers.

The bank's distribution channels leverage a combination of direct banking networks, digital platforms, and real estate partnerships with developers and property agents. As shown in Figure 1, the organizational structure of BTN supports this model by integrating key departments such as Risk Management, Consumer Loan Services, and Credit Processing Centers to ensure efficient credit assessments and loan disbursement. One of the key challenges in the BMC framework is managing customer relationships, particularly in ensuring transparency and responsiveness in loan processing. Advanced risk management practices, such as the use of credit scoring models and AI-driven loan evaluation tools, help mitigate default risks and enhance lending decisions (Muller et al., 2025). Additionally, revenue streams are mainly generated from interest rates, processing fees, penalties, and insurance services associated with mortgage loans. Effective cost management strategies, such as digital loan processing and partnerships with legal and valuation firms, have been

instrumental in maintaining operational efficiency. Below is the structured Business Model Canvas (BMC) based on the identified elements in BTN’s Non-Subsidized Mortgage model:

Table 6. Business Model Canvas (BMC) Framework for Bank BTN’s Non-Subsidized Mortgage

BMC Component	Description
Customer Segments	Middle-to-upper-class professionals, entrepreneurs, and salaried employees seeking home financing.
Value Proposition	Strong mortgage brand, competitive interest rates, efficient digital mortgage applications, and risk management solutions.
Channels	Bank branches, digital mortgage platforms (BTN Property), property agents, real estate developers.
Customer Relationship	Personalized advisory services, automated loan tracking systems, and digital communication channels.
Revenue Streams	Interest rates, administrative fees, prepayment penalties, insurance commissions.
Key Resources	Credit risk models, digital infrastructure, experienced loan officers, extensive banking networks.
Key Activities	Credit underwriting, risk assessment, customer acquisition, digital mortgage processing, and compliance management.
Key Partnerships	Real estate developers, property agents, government institutions, legal consultants, and valuation firms (KJPP).
Cost Structure	IT infrastructure, credit risk management, marketing expenses, operational and personnel costs.

With this structured approach, BTN successfully positions itself as a dominant player in Indonesia’s mortgage industry, leveraging digital innovation and strategic partnerships to sustain growth and profitability. As highlighted by Khalili et al. (2025), financial institutions integrating digital transformation into their BMC frameworks tend to exhibit higher operational efficiency and customer engagement, which aligns with BTN’s long-term strategy. By continuously refining its risk-based pricing models and digital mortgage application platforms, BTN ensures that its Non-Subsidized Mortgage product remains competitive and aligned with evolving customer expectations.

4.1.3. Benchmarking Analysis of Non-Subsidized Mortgage Business Models in Indonesian Banks

A comparative analysis of non-subsidized mortgage (KPR Non-Subsidi) business models across leading Indonesian banks highlights key differences in credit approval workflows, risk mitigation strategies, and verification processes. The benchmarking includes state-owned banks (BRI, Mandiri, BNI, BTN), a major private bank (BCA), and a multinational bank (CIMB Niaga), all of which play a significant role in Indonesia’s mortgage sector. While BTN specializes in mortgage lending, other banks have integrated more comprehensive verification mechanisms at the initial stages to prevent fraudulent applications. As illustrated in Table 7, the primary differentiating factors lie in their document verification protocols, approval workflows, and fraud mitigation techniques.

The comparison reveals that most banks (except BTN) conduct initial site visits to verify customer information before processing the loan, whereas BTN relies more on document checks. Additionally, credit approvals in BTN are separated between credit processing and decision-making units, whereas other banks integrate these functions within the same team. BCA and CIMB Niaga, for example, implement stringent fraud detection mechanisms by requiring live verification during the loan signing process. BNI enforces strict account

statement verification, outright rejecting suspicious financial records, while Mandiri prohibits third-party submission of loan applications, ensuring all applicants apply directly. These differences directly impact their risk profiles and non-performing loan (NPL) ratios, as depicted in Table 8.

Table 7. Business Model Comparison of BTN and Other Banks

Bank	Initial Verification Process	Credit Approval Workflow	Fraud Mitigation Strategies
BTN	Document check at the branch	Separate processing and approval units	Basic document verification, no live customer validation
BRI	Site visit and document check	Unified credit processing and approval	Spot-checks on applicants' workplaces and bank account history
Mandiri	Strict document check and direct customer interaction	Integrated approval system (branch, area, and credit center)	Prohibits loan applications from third parties, preventing developer fraud
BNI	Verifies applicants with HR confirmation (if employer is reputable)	Integrated approval unit at the branch	Immediate rejection of falsified account statements, no appeal process
BCA	Site verification for self-employed applicants, digital verification for salaried employees	Consumer division handles all verification and approval	Requires real-time financial proof during loan signing
CIMB Niaga	Cross-checks credit history and employer verification	Centralized credit analysis at HQ	Deep account analysis and employer verification via national credit registry

A key metric in evaluating the effectiveness of these models is the Non-Performing Loan (NPL) ratio, which measures the proportion of delinquent loans. The benchmarking results suggest that banks with stricter verification and centralized approval systems tend to have lower NPL ratios. As seen in Table 4.2, Mandiri has the lowest NPL at 1.02%, followed by BCA (1.10%) and CIMB Niaga (1.96%), while BTN records a relatively higher NPL of 2.47%, indicating room for improvement in risk management practices.

Table 8. Non-Performing Loan (NPL) Ratios for Non-Subsidized Mortgages (2023)

Bank	NPL Ratio (%)
BTN	2.47
BRI	3.03
Mandiri	1.02
BNI	2.10
BCA	1.10
CIMB Niaga	1.96

The data highlights how a more rigorous approval and verification process correlates with lower NPL ratios. Banks with automated verification, live validation techniques, and

stricter fraud detection mechanisms (such as BCA, Mandiri, and CIMB Niaga) maintain healthier mortgage portfolios. The benchmarking analysis underscores several opportunities for Bank BTN to refine its mortgage business model, particularly in risk mitigation and credit approval efficiency. The main areas for improvement include:

1. Enhancing Early Verification – Adopting live customer validation at loan signing (as implemented by BCA) to prevent fraudulent applications.
2. Stronger Fraud Prevention – Implementing instant rejection of suspicious financial records (BNI’s approach) to reduce exposure to high-risk applicants.
3. Streamlining Credit Approval – Consolidating processing and decision-making units (like Mandiri and CIMB Niaga) to reduce redundancy and improve response times.

By integrating advanced risk analytics, increasing digital verification, and adopting best practices from competitors, BTN can enhance its mortgage lending efficiency while reducing default risks.

4.1.4. Strategic Evaluation of Bank BTN’s Non-Subsidized Mortgage Business: A SWOT and AHP Approach

This section analyzes the strengths, weaknesses, opportunities, and threats (SWOT) in Bank BTN’s non-subsidized mortgage business and applies the Analytical Hierarchy Process (AHP) to prioritize strategic interventions. The SWOT analysis identifies key internal and external factors affecting Bank BTN’s mortgage operations, while AHP quantifies their impact, guiding decision-making.

Bank BTN remains a dominant player in the KPR sector, leveraging its market leadership, structured loan processing (RLPC), and advanced digital infrastructure. However, operational inefficiencies, decision-making conflicts, and fraud risks pose significant internal challenges. Opportunities arise from the expansion of the housing sector and digital transformation, while external threats include intense competition, economic volatility, and regulatory constraints. Table 9 presents the SWOT analysis.

Table 9. SWOT Matrix for Bank BTN’s Non-Subsidized Mortgage Business (internal)

Internal Factors	Strengths (S)	Weaknesses (W)
Market Position	Market leader in KPR with 38.40% share	Decision-making conflicts between RLPC and branch offices
Operational Process	Centralized credit processing via RLPC improves efficiency	Weak initial verification process at branch level
Portfolio Size	Largest KPR loan portfolio in Indonesia (Rp257.92 trillion)	Risk of fraud due to weak control mechanisms
Technology	Advanced IT infrastructure for digital processing	High dependence on manual approval processes

Table 10. SWOT Matrix for Bank BTN’s Non-Subsidized Mortgage Business (external)

External Factors	Opportunities (O)	Threats (T)
Market Demand	High demand for housing finance from the middle-class segment	Intense competition from banks with more efficient processes
Regulatory Support	Favorable government policies supporting home ownership	Increasingly strict regulations from OJK and BI
Digital Transformation	Digital banking allows faster credit approval	Economic uncertainty affecting interest rates and affordability
Product Innovation	Potential for flexible KPR products to attract diverse customers	High NPL rates in non-subsidized mortgage segment

AHP is used to systematically evaluate the weight of these SWOT factors, helping to determine the most effective strategic actions. Figure 2 illustrates the AHP hierarchy model used in this analysis.

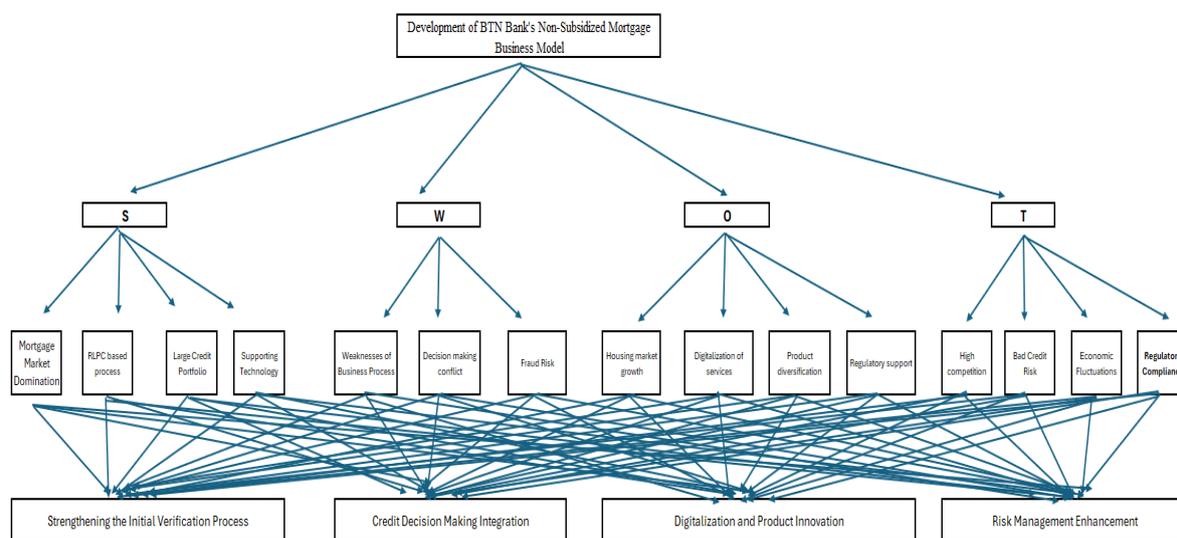


Figure 2. AHP Hierarchical Model for Bank BTN's Mortgage Strategy

The AHP analysis reveals that addressing internal weaknesses should be the top strategic priority, as it holds the highest weight (0.48). This highlights the urgent need to improve procedural efficiency and mitigate fraud risks in Bank BTN's mortgage business model. Following this, strengths rank second (0.24), emphasizing the importance of leveraging technological advancements and market leadership to sustain competitive advantage. Meanwhile, threats (0.19) and opportunities (0.09) hold lower weights, indicating that external factors, although significant, should be addressed only after internal structural issues are resolved.

Among the key weaknesses, decision-making conflicts (0.60) emerge as the most critical concern, particularly due to inconsistencies between RLPC and branch offices in the credit approval process. On the strengths side, RLPC-based credit processing (0.48) stands out as a fundamental asset, offering a structured and centralized approach to mortgage approvals. In terms of opportunities, digital banking innovation (0.52) presents the most promising avenue for enhancing efficiency and customer experience. However, the greatest external threat (0.49) is the intense competition from more efficient banks, necessitating process improvements to maintain market dominance.

The most effective strategic intervention identified by the AHP analysis is Credit Decision-Making Integration (0.54), which calls for a centralized and data-driven approach to credit approvals. This aligns with industry best practices, where automation and analytics-driven credit evaluation have been shown to reduce risk and enhance efficiency.

Recent research supports the relevance of AHP in banking decision-making. Karakaya (2009) demonstrated how AHP can improve risk-based decision frameworks in mortgage lending, allowing banks to refine their credit evaluation criteria systematically. Similarly, Onne et al. (2024) applied AHP to assess financial risk exposure, reinforcing its utility in risk management and regulatory compliance. Moreover, Solangi and Magazzino (2025) highlighted the role of AHP in optimizing policies for managing non-performing loans (NPLs), showcasing its effectiveness in financial stability planning.

By integrating SWOT and AHP, Bank BTN can systematically prioritize business model improvements to enhance operational efficiency and risk mitigation. The implementation of a centralized credit decision-making framework, strengthened digital verification processes, and stricter fraud prevention measures will be key to ensuring sustainable growth. Aligning these strategies with the ongoing digital transformation in banking will further solidify Bank BTN's position in Indonesia's non-subsidized mortgage sector, enabling it to remain competitive in an evolving financial landscape.

4.2. Discussion

The findings from this research highlight the critical need for strategic improvements in Bank BTN's non-subsidized mortgage business model. The SWOT and AHP analysis revealed that internal weaknesses, specifically inefficiencies in credit approval and fraud vulnerabilities pose the most significant challenge, with a weight of 0.48. Decision-making conflicts between RLPC and branch offices emerged as the most critical issue (0.60), reflecting the need for a more centralized and transparent approval system. These findings align with recent studies, such as Jefry (2024), which emphasize the importance of risk mitigation strategies in mortgage banking to reduce the accumulation of foreclosed assets and prevent fraudulent loan applications. The strengths of Bank BTN, including its market leadership and structured RLPC system (0.48), indicate that leveraging digital transformation and automated risk assessment could be key to maintaining a competitive edge in the Indonesian mortgage market. This is consistent with the findings of Hendro et al. (2020), which identified digital banking innovation as a primary driver of competitiveness in housing finance.

The AHP analysis also highlights that external threats, particularly competition from banks with more efficient processes (0.49), pose a significant risk. Comparisons with other financial institutions suggest that leading banks, such as BCA and Mandiri, have implemented more robust initial verification systems, including real-time document validation and stricter fraud prevention measures (Hunjak & Jakovčević, 2001). The study by Korableva and Kalimullina (2015) further supports the argument that banks utilizing AHP-based strategy selection are better positioned to manage credit risks and enhance operational efficiency. Opportunities such as digital transformation (0.52) remain promising, but their impact is limited unless internal weaknesses are first addressed. This aligns with the work of Dinçer et al. (2018), who found that banks integrating fintech solutions with traditional mortgage products achieved greater loan processing efficiency and reduced NPL ratios.

Strategically, credit decision-making integration emerged as the most effective solution (0.54), reinforcing the need for centralized, data-driven credit approval systems. This is consistent with Jiang et al. (2021), who demonstrated that combining SWOT with AHP enables banks to quantify optimal strategies and prioritize improvements based on risk exposure. The integration of advanced risk analytics, automated document verification, and standardized decision-making frameworks could significantly improve BTN's mortgage approval process, reducing inefficiencies and mitigating fraud risks. Given the increasing adoption of AI-driven credit assessments in global banking (Malhotra et al., 2025), adopting such approaches could strengthen BTN's market position while ensuring sustainable growth in the non-subsidized mortgage sector.

5. Conclusion

This research presents an examination of Bank BTN's non-subsidized mortgage business model through the use of SWOT and AHP analysis, pinpointing crucial areas for strategic enhancement. The findings emphasize that internal weaknesses specifically inefficiencies in credit decision-making and fraud risks—pose the most significant challenge, requiring immediate attention. The AHP analysis confirms that Credit Decision-Making Integration (0.54) is the highest-priority strategy, reinforcing the need for a centralized, data-driven approval system. Furthermore, digital transformation (0.52) presents a major opportunity for enhancing operational efficiency, while competition from more efficient banks (0.49) remains a primary threat. By addressing these weaknesses and leveraging technological advancements, Bank BTN can strengthen its position in the mortgage market, reducing credit risks and increasing competitiveness.

From a managerial perspective, the study highlights the urgent need for governance improvements, particularly in credit verification and approval workflows. Integrating AI-driven risk assessment models, automating document validation, and standardizing RLPC procedures can mitigate inefficiencies and reduce fraud risks. Additionally, benchmarking against leading competitors, such as BCA and Mandiri, suggests that real-time verification and stricter fraud detection mechanisms should be implemented to lower NPL rates. The implications for regulatory compliance are also significant, as improved transparency and risk management practices align with OJK and Bank Indonesia's increasing oversight on credit disbursement. Enhancing these frameworks will not only improve BTN's financial performance but also increase investor confidence in its mortgage portfolio sustainability.

Despite its contributions, this study has several limitations. The research focuses primarily on internal process improvements, while external macroeconomic factors, such as interest rate fluctuations and regulatory changes, require further investigation. Additionally, the study is based on AHP weighting, which, while effective for prioritization, does not fully capture behavioral aspects of mortgage applicants and branch-level decision-makers. Future research should incorporate predictive modeling techniques, such as machine learning algorithms for risk assessment, to enhance accuracy in credit evaluation. Furthermore, a cross-country comparative study would provide deeper insights into global best practices in mortgage financing and digital lending innovation, ensuring that Bank BTN remains competitive in the evolving financial landscape.

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