

## D/ DETAILED OUTLINE

### I. Introduction (100 words)

- Briefly introduce oligopolistic markets.
- Outline the purpose and scope of your analysis.
- Mention the assigned market and the scope of your market based on your student number and briefly explain why it is categorized as monopolistic market.

#### Example:

- Oligopolistic markets, characterized by a small number of firms holding substantial market share, present unique challenges and opportunities for analysis. These markets, unlike perfectly competitive ones, are marked by a strong interdependence among firms, leading to strategic behaviors that significantly impact market dynamics.
- This report will look closely at how companies in an oligopoly behave and make decisions, using ideas from economics and game theory. Additionally, emphasizing practical application, a simulated scenario will test theoretical concepts in a real-world context
- Based on the last digits of my student number (e.g., 34), my focus will be on the Banking and Financial Services sector within Vietnam. Vietnam's Banking and Financial Services market is oligopolistic due to the presence of a few dominant banks that exert significant control over market prices, services, and overall market dynamics.

### II. Market Analysis (800 words)

1. Identification of Major Players (130 words)
  - Introduction (20-30 words): Briefly introduce the market (e.g., Banking and Financial Services)
  - Identification Method (30-40 words): Outline the method used for identifying major players, focusing on market share, influence, and interdependence, as suggested by game theory principles.
  - Key Players (30-40 words): List the identified major players, briefly noting their market share or influence that qualifies them as major players. Review historical data to see which firms have consistently played a significant role in the market. Long-standing influence is a good indicator of a major player. Consider using pie charts and data from Passports, Market reports (Nielsen, McKinsey & Company,...) from to make your work stand out.
  - Conclusion (10-20 words): Summarize the significance of these players within the market structure, highlighting their role in the oligopolistic dynamics.

#### Example:

- Vietnam's Banking and Financial Services market is characterized by a dynamic and growing sector dominated by several key state-owned and private banks, playing a crucial role in the country's economic development.
- To identify dominant firms shaping the sector, the market share and strategic interdependence among firms, key indicators in oligopolistic environments, will be analyzed.
- Key players identified include Vietcombank, noted for its extensive market presence and influence in setting industry trends; VietinBank, recognized for its significant share in corporate banking; and Techcombank, distinguished by its rapid growth and strategic partnerships. These institutions exhibit interdependent behaviors typical of oligopolistic markets, often responding to each other's strategies.
- The identified banks play a pivotal role in Vietnam's financial landscape, their strategies and interactions offering insights into the sector's oligopolistic dynamics

## **2. Firm Behavior Analysis (205 words)**

- Analyze Pricing Strategies:
  - Examine how firms set their prices or service charges.
  - Investigate price leadership dynamics, where one firm's pricing decisions influence others.
  - Assess alignment with Nash equilibrium, determining if a change in pricing strategy benefits any firm given the strategies of others.
- Examine Output Decisions:
  - Analyze how firms decide on the quantity of goods or services produced or provided.
  - Look for evidence of collusion or cooperative strategies to control market supply.
- Study Other Strategic Interactions:
  - Investigate how firms compete in non-price areas such as quality, technology, customer service, or innovation.
  - Evaluate if their strategies represent dominant strategies, optimal irrespective of competitors' actions.
- Use of Theoretical Frameworks:
  - Apply Nash equilibrium to analyze mutual decision-making scenarios.
  - Use dominant strategies and best response strategies to understand strategic choices and reactions.

- Support with Data and Facts:
  - Utilize industry reports, financial statements, and market analyses to support your findings.
  - Observe trends in financial performance, market share, customer growth, or other relevant metrics.

**Example:**

- In analyzing Vietnam's Banking and Financial Services market, an oligopolistic sector, we focus on key firms' strategic behavior in terms of pricing, output, and other interactions using economic theories like Nash equilibrium and dominant strategies.
- The market is dominated by major state-owned and private banks such as Vietcombank, VietinBank, and Techcombank. These banks exhibit strategic pricing behaviors, often setting interest rates and service charges that influence the entire industry. For instance, when Vietcombank adjusts its loan interest rates, others tend to follow, hinting at a form of price leadership. This behavior aligns with Nash equilibrium concepts, where no single bank benefits from deviating from this unspoken pricing agreement while others maintain their strategies.
- In terms of output, these banks control the volume of loans and credit facilities offered. There's an observed balance in maintaining market supply, suggesting a non-explicit collusion to avoid aggressive competition. Additionally, they engage in non-price competition, investing in digital banking technologies and customer service improvements, reflecting dominant strategies where each bank aims to outperform others in service quality regardless of the others' moves.
- Analyzing financial reports and market data reveals patterns in these strategies. Post-strategic shifts, banks often show marked changes in customer growth and profitability, affirming the effectiveness of their strategies. This analysis underlines the oligopolistic nature of Vietnam's banking sector, where major players' strategic interactions significantly impact market dynamics.

**3. Market Structure Identification (130 words)**

- Introduction (20-30 words): Briefly introduce the market and the purpose of the analysis, stating that you are classifying its structure based on oligopoly models.

- **Market Analysis (60-70 words):**
  - Summarize your observations of the market's characteristics, focusing on how firms compete (quantity vs. price).
  - Highlight key behaviors from the major players that align with either Cournot (quantity-focused) or Bertrand (price-focused) competition.
    - For Cournot: Check if firms are more focused on production levels, capacity expansions, and output decisions.
    - For Bertrand: Observe if price adjustments, price matching, and price wars are common strategies.
- **Justification and Conclusion (30-40 words):**
  - Conclude by justifying your classification based on the evidence observed. Use market data to see patterns. In a Cournot market, you might see firms responding to changes in others' output levels. In a Bertrand market, you might observe frequent price adjustments in response to competitors.
  - State whether the market is closer to a Cournot or Bertrand oligopoly, and briefly mention the implications of this classification on market dynamics.

**Example:**

- In analyzing Vietnam's Banking and Financial Services market, it exhibits characteristics aligning more closely with a Bertrand oligopoly model.
- Here, competition is predominantly seen in pricing strategies rather than output quantities. Major banks like Vietcombank, VietinBank, and Techcombank are observed frequently adjusting interest rates, fees, and service charges in response to each other's pricing strategies. This behavior suggests a competitive focus on price rather than the volume of loans or financial services offered.
- The prevalence of such price-based competition, along with instances of price matching and promotional offers, reinforces the market's alignment with the Bertrand oligopoly model.
- This classification underscores the strategic importance of pricing decisions in shaping the market dynamics within Vietnam's banking sector.

**4. Market Power and Welfare (205 words)**

- **Introduction (30-40 words):** Begin with a brief introduction, stating the purpose of your evaluation. Mention that you are assessing the impact of firm behaviors on market power, consumer welfare, and social welfare in your chosen market.
- **Market Power Analysis (50-60 words):** Discuss how the behaviors of key firms influence their market power. Include data on market share concentration, price-

setting ability, and barriers to entry. Highlight any evidence of monopolistic tendencies or competitive dynamics.

- **Consumer Welfare Evaluation (50-60 words):** Analyze the impact on consumers, focusing on pricing, quality, and choice. Use data like pricing trends and consumer satisfaction surveys to assess whether consumer welfare is positively or negatively affected.
- **Social Welfare Impact (40-50 words):** Examine the broader social implications, such as economic efficiency and resource allocation. Discuss whether the market dynamics lead to allocative and productive inefficiencies, referencing relevant economic theories.
- **Conclusion (25-35 words):** Summarize the key findings of your analysis. Conclude by stating the overall impact of these firm behaviors on the market, highlighting any significant implications for policy or future research.

**Example:**

- In assessing Vietnam's Banking and Financial Services sector, we observe significant impacts of firm behaviors on market power, consumer welfare, and social welfare.
- Dominant banks, including Vietcombank, VietinBank, and Techcombank, exhibit substantial market power. This is evidenced by their combined market share dominance and ability to set interest rates and service fees, influencing the entire banking landscape.
- Consumer welfare in this sector shows mixed effects. On one hand, consumers benefit from innovative banking services and digital platforms introduced by these major banks. However, the limited competition in setting service charges and interest rates can lead to higher costs for consumers, potentially reducing consumer surplus.
- Regarding social welfare, the banking sector's efficiency and stability contribute positively to Vietnam's economic growth. Nevertheless, the concentration of market power raises concerns about allocative efficiency. The dominance of a few major banks might lead to a less competitive environment, potentially hindering optimal resource allocation and innovation in the long term.
- Overall, while Vietnam's banking sector shows robust growth and innovation, the concentration of market power among a few players has mixed implications for consumer and social welfare. It underscores the need for regulatory measures to ensure fair competition and protect consumer interests, enhancing the sector's contribution to the broader economy.

## **5. Hypothesis Formulation (130 words)**

- Introduction (20-30 words): Briefly introduce the context and the purpose of the hypothesis, linking it to your previous market analysis.
- Statement of Hypothesis (20-30 words): Clearly state your hypothesis in one sentence, focusing on the specific potential disruption (such as technological advancements, regulatory changes, economic shifts, entry of new competitors, or changes in consumer preferences) and its expected impact.
- Impact on Market Dynamics (30-40 words): Summarize how the identified disruption could alter the market dynamics, mentioning key changes in consumer behavior or competitive landscape.
- Influence on Firm Strategies (30-40 words): Discuss briefly how major firms in the market might respond or adapt their strategies in reaction to the disruption.

### **Example:**

- In Vietnam's Banking and Financial Services market, a potential disruptive force is the rapid adoption of fintech and digital banking technologies. The hypothesis posits that this technological shift will significantly alter market dynamics, driving a transition from traditional banking methods to digital-first strategies.
- As consumers increasingly favor online banking services, traditional banks with strong physical branch networks may face challenges in maintaining their market dominance.
- This disruption is expected to prompt major banks like Vietcombank, VietinBank, and Techcombank to accelerate their digital transformation, investing heavily in online platforms, cybersecurity, and mobile banking services.
- The competitive landscape may also shift, with tech-savvy banks gaining an edge over those slower to adapt, potentially leading to a reconfiguration of market power within the sector.

## **III/ Market Numerical Exercise (600 words)**

### **1. Simulation Parameters (150 words)**

- Number of firms (20-30 words):
  - Select a realistic number of firms, typically 3-5, representing major players in the market. This number is manageable for simulation and reflects oligopolistic competition.
  - Justify based on market share or influence in the real market.
- Market Demand (20-30 words):
  - Define a simplified market demand scenario. It could be based on consumer preferences, demographic trends, or economic factors relevant to the market.
  - Use a straightforward demand function, like a linear model, for ease of simulation.

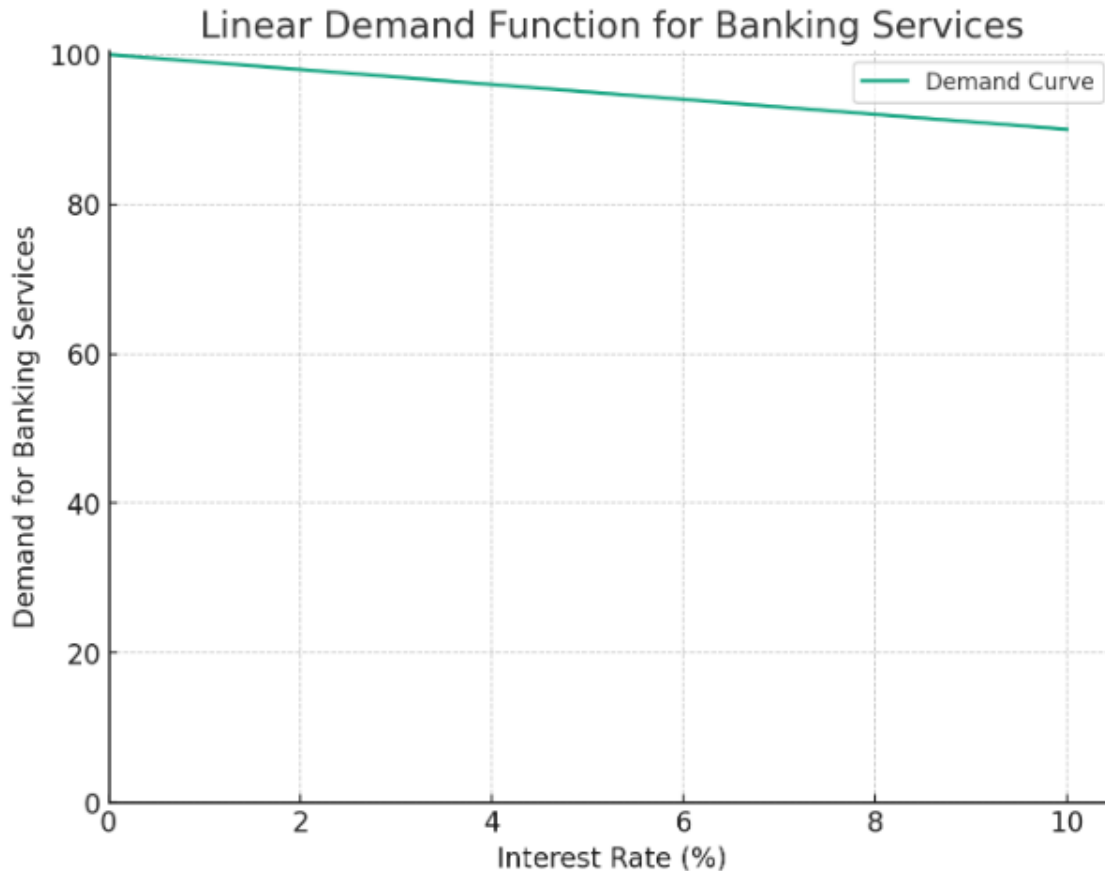
- **Cost Structures (20-30 words):** Assign cost structures for each firm, including fixed and variable costs relevant to the industry, like R&D for pharmaceuticals or infrastructure for telecommunications.
- **Pricing Models (20-30 words):** Develop pricing models that reflect the type of competition in the market, whether it's price-based (like in airlines) or feature/service-based (like in streaming services). Include basic pricing strategies observed in the real market.

**Example:**

This simulation outlines key parameters for Vietnam's Banking and Financial Services Sector, aimed at understanding competitive dynamics within an oligopolistic framework.

**Number of Firms:** The simulation includes five major banks - Vietcombank, VietinBank, Techcombank, BIDV, and Agribank. Chosen for their significant market shares, these banks collectively represent a substantial portion of Vietnam's banking industry, offering a realistic view of the market's competitive landscape.

**Market Demand:** We adopt a linear demand function reflecting the growing demand for banking services, influenced by Vietnam's economic growth and increasing financial literacy. The demand curve is simplified to highlight shifts due to changes in interest rates and banking services.



**Cost Structures:** Each firm's cost structure includes fixed costs (branch networks, IT infrastructure) and variable costs (loan processing, customer service). These are scaled to mirror the size and operational scope of each bank.

**Pricing Models:** The pricing strategy simulation focuses on interest rates and service fees. Banks adjust these based on competitive positioning, regulatory changes, and market demand, reflecting the real-world scenario where pricing is a key competitive tool.

## 2. Role Assignment and Strategic Decisions (200 words)

- **Introduction (30-40 words):** Start with a brief introduction, stating the firm you're representing and the context of your strategic decision-making process.
- **Market Context and Firm Position (30-40 words):** Summarize the market conditions and the firm's position within it. Highlight key competitive strengths or challenges.



- Strategic Decision Areas (30-40 words): Identify the main areas where strategic decisions are made, such as pricing, service offerings, or technological investments.
- Nash Equilibrium Decision-Making (70-120 words): Explain how you applied Nash Equilibrium to find the optimal strategy, considering potential competitor responses.
- Conclusion (20-30 words): Conclude by summarizing the strategic decisions made and their expected impact on the firm's market position.

**Example:**

- In the role of Vietcombank within Vietnam's Banking and Financial Services market, this part outlines the strategic decision-making process under oligopolistic conditions.
- Vietcombank, a leading entity in the market, faces competition primarily from VietinBank, Techcombank, and BIDV. Its market position is strong, with a focus on digital banking and a substantial customer base. The current market scenario indicates a shift towards digital services and heightened competition in loan interest rates.
- The strategic decision areas include digital banking expansion, loan interest rate adjustments, and enhanced customer service. Competitor analysis, incorporating market trend reports and customer feedback, suggests a shift towards competitive digital banking services. Within the scope of the report, loan interest rate adjustments would be selected for further analysis.
- In the banking payoff matrix, two banks face strategic choices on interest rates. Should both set high rates, the market remains unchanged (0,0). If one bank reduces rates, it gains customers, disadvantaging the other (+5, -5). Mutual rate cuts initiate a price war, diminishing profits (-1, -1). The Nash Equilibrium occurs when both banks lower rates to (-1, -1), recognizing it as the optimal mutual strategy to prevent customer loss and maintain a competitive stance.

### Banking Sector Nash Equilibrium Payoff Matrix

	High Interest	Low Interest
High Interest	(0, 0)	(-5, 5)
Low Interest	(5, -5)	(-1, -1)

- Nash Equilibrium suggest that matching interest rate cuts by competitors would be the best strategy to maintain our competitive edge in interest rates

### 3. Testing Hypotheses (150 words)

- Initial Hypothesis Application:
  - Start the simulation by applying the strategies derived from your hypotheses.
  - For example, if your hypothesis is that lowering interest rates will attract more customers, begin by implementing a lower interest rate strategy for your firm.
- Monitoring Outcomes:
  - Observe how the market responds to your strategy. Does customer behavior align with your expectations?
  - Collect data on key performance indicators like market share, customer acquisition rate, and profitability.
- Analyzing Results:
  - Compare the actual outcomes with the expected results of your hypothesis.
  - Look for patterns and trends that either support or refute your initial assumptions.
- Strategy Adjustment:
  - If the outcomes differ from your expectations, analyze why this might be happening. Consider external factors like competitor actions or changes in the regulatory environment.
  - Adjust your strategy to account for these factors. For instance, if competitors also lower their rates, you might need to explore non-price competitive strategies like improving service quality or offering new banking products.
- Re-testing:
  - Apply the adjusted strategies in the simulation.
  - Continue to monitor and analyze outcomes, using this new data to further refine your strategies..

#### Example:

Monitoring Outcomes:

The initial response of cutting interest rate was positive, with a surge in new loan applications, indicating alignment with the hypothesis. Market share increased modestly, but profitability metrics indicated a slight decrease, likely due to the reduced margins on loans.

#### Analyzing Results:

The uptick in customers was less than anticipated, suggesting that interest rates were not the sole factor influencing customer decisions. Additionally, competitor banks quickly matched our rate cuts, nullifying our competitive edge.

#### Strategy Adjustment:

Given the competitor response, we shifted focus to enhance digital banking services, aiming to improve customer experience and retention. This non-price competitive strategy was a pivot from our initial approach.

#### Re-testing:

The revised strategy led to an improved customer satisfaction score, which is expected to translate into longer-term customer loyalty and profitability, despite the short-term costs associated with the service enhancements.

In conclusion, while the interest rate reduction initially attracted more customers, the competitive reaction required us to adapt and focus on service quality, demonstrating the dynamic nature of strategic decision-making in oligopolistic markets like Vietnam's Banking and Financial Services sector.

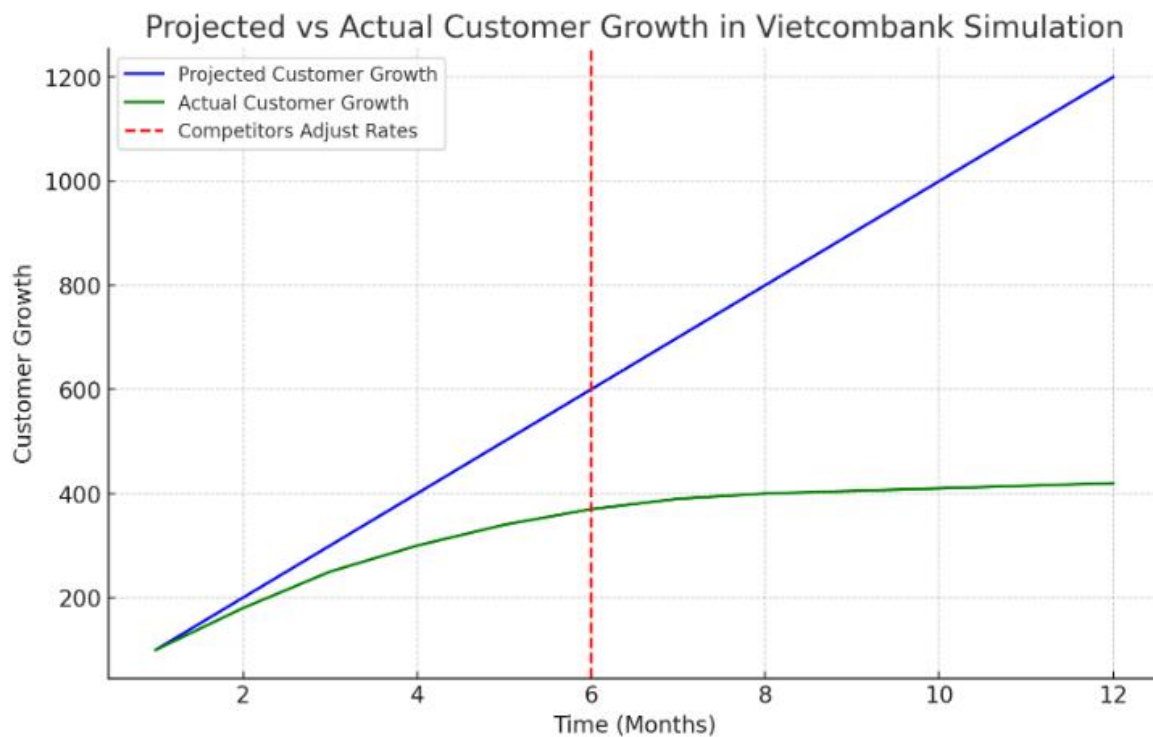
#### 4. Reflection on Outcomes (100 words)

- Outcome Analysis (30-40 words): Summarize how the outcomes deviated from the hypotheses, emphasizing the key differences observed in market behavior.
- Game Theory Insight (30-40 words): Explain how game theory concepts provided insight into competitive interactions and market equilibrium.
- For visualization, consider a dual-axis line graph depicting the expected versus actual outcomes over time, with annotations highlighting where game theory concepts such as Nash Equilibrium were evident. This visual can succinctly convey the alignment or divergence from the hypotheses.

#### Example:

- In our simulation for Vietcombank, initial hypotheses posited that lowering interest rates would substantially grow market share. Outcomes diverged, showing only a modest increase, as competitors also reduced rates, leading to a new Nash Equilibrium.

- The visualization depicts two lines on a graph: one for projected customer growth based on reduced rates and another for actual growth, with the divergence after competitor rate adjustments clearly marked.



- Insights from game theory illuminated these reactive strategies, underscoring the importance of anticipating competitor moves in an oligopolistic market like Vietnam's banking sector.

#### **IV/ Policy Implications (400 words)**

- **Introduction (50-60 words):** Begin with a brief introduction that sets the context. Mention the market sector you're focusing on and the importance of regulatory policies for enhancing social welfare.
- **Market Data Analysis (70-80 words):** Summarize the key findings from your market data analysis. Highlight specific issues like monopolistic tendencies, lack of competition, or consumer pain points that justify the need for regulatory intervention.
- **Identified Areas for Intervention (60-70 words):** List the critical areas identified for regulatory intervention based on your analysis. Explain briefly why these areas are pivotal for improving social welfare in the sector.
- **Policy Proposals (100-120 words):** Present your policy suggestions, linking each proposal to the issues identified in the market analysis. Explain how these policies can address the challenges and enhance social welfare. Use bullet points for clarity and conciseness.

- **Data and Analysis Support (50-60 words):** Provide a brief overview of the data and analysis that support your policy proposals. Highlight how the data underscores the need for the suggested interventions.
- **Stakeholder Impact (30-40 words):** Acknowledge the potential impact of these policies on different stakeholders, including businesses, consumers, and the broader economy.
- **Conclusion (30-40 words):** Conclude by emphasizing the importance of these regulatory policies in promoting fair, competitive, and consumer-friendly market conditions.

### **Example:**

In addressing the enhancement of social welfare in Vietnam's Banking and Financial Services sector, this report outlines a series of data-driven regulatory policies and interventions.

### **Market Data Analysis:**

Our comprehensive analysis revealed key concerns in the sector, including limited access to banking services in rural areas, high transaction fees, and a lack of financial literacy among consumers. Additionally, the data highlighted a concentration of market power in a few major banks, potentially limiting competitive pricing and innovation.

### **Identified Areas for Intervention:**

Based on the analysis, critical intervention areas include:

Expanding banking access to underserved regions.

Regulating transaction fees to ensure affordability.

Promoting financial literacy among consumers.

Encouraging competition to foster innovation and fair pricing.

### **Policy Proposals:**

**Rural Banking Access:** Implement regulations incentivizing banks to establish branches and ATMs in rural areas, potentially paired with tax benefits.

**Fee Regulation:** Cap transaction and service fees, ensuring banking services are affordable to all income groups.

**Financial Literacy Programs:** Mandate banks to fund and conduct financial literacy programs, aimed at educating consumers on financial management, savings, and investments.

Competition Enhancement: Introduce policies to encourage new entrants in the banking sector, possibly through relaxed licensing for fintech companies and small-scale banks.

Data and Analysis Support:

The proposals are grounded in market data indicating disparities in banking access across regions, as well as consumer feedback on service affordability. The lack of financial literacy was evident from the low utilization of investment and savings products, as per consumer surveys.

Stakeholder Impact:

These policies aim to balance consumer welfare with industry sustainability. While banks may face initial costs in implementing these changes, the long-term benefits include a more financially literate customer base and expanded market reach.

Conclusion:

The implementation of these regulatory policies is expected to significantly enhance social welfare in Vietnam's banking sector. By addressing accessibility, affordability, and education, these measures will not only benefit consumers but also contribute to the overall stability and growth of the financial ecosystem.

## **V/ Conclusion (50 words)**

- Summarize the main findings and insights gained.

### **Example:**

- Their analysis of Vietnam's Banking and Financial Services sector revealed intricate oligopolistic dynamics and strategic interplays. Applying game theory illuminated competitive behaviors, guiding regulatory recommendations focused on broadening rural access and capping fees, aimed at fostering equitable financial inclusion and stimulating market-wide innovation and fairness.

## **E/ TIPS & TRICKS**

- Use charts and graphs to illustrate your points, making data more accessible to your audience.
- Ensure that your works are well-organized, concise, and thoroughly researched. Your arguments should be well-supported with credible sources and data. Additionally, maintain clarity and coherence in your writing, making it easy for readers to follow your position and reasoning.
- Each section should naturally lead to the next, building a coherent argument for your position on the policy initiative. Additionally, make use of headings, bullet points, and visuals for readability and clarity.

- To write succinctly within a word limit, prioritize key information, avoid redundancy, and use clear, specific language. Plan your structure, edit rigorously, and stay focused on the assignment's main objectives to maximize efficiency.