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Industrial Policy and Firm Capability in Late Industrialization: Explaining Toyota Kijang's Success under Indonesia's KBNS Program (1977–1996)

Afrianti Wulandaria[1] | R. Tuty Nur Mutia[2] | Rostineu[3]
tantiafry29@gmail.com, tutymuas@ui.ac.id, rostineu31@ui.ac.id
[1,2,3] Department of History, Faculty of Humanities, Universitas Indonesia.

Abstract

This study examines the role of industrial policy in shaping automotive industrialization in Indonesia through the implementation of the Kendaraan Bermotor Niaga Sederhana (KBNS) program between 1977 and 1996. While the developmental state literature highlights the importance of state intervention in promoting industrial development, limited attention has been given to the interaction between policy instruments and firm-level capabilities in explaining divergent industrial outcomes within the same policy environment. This study addresses this gap by analyzing how the KBNS policy contributed to the success of the Toyota Kijang compared to other participating firms. Using a historical policy analysis approach based on archival policy documents, industry statistics, and secondary literature, this study examines the design and implementation of KBNS policy instruments and their effects on firm performance. The findings identify three key mechanisms through which the policy facilitated industrial development: tariff protection that created a protected domestic market, progressive localization requirements that stimulated technology transfer and supplier development, and fiscal incentives that encouraged long-term investment. However, the comparative analysis reveals that policy support alone was insufficient to ensure success. Toyota's superior firm-level capabilities—particularly in supplier development, technological commitment, and product adaptation to local conditions—enabled it to leverage policy incentives more effectively than its competitors. This study contributes to the developmental state literature by demonstrating that the effectiveness of industrial policy depends not only on policy design but also on the alignment between state intervention and firm capabilities in late industrializing economies

Keywords: Kendaraan Bermotor Niaga Sederhana, industrial policy, Toyota Kijang, automotive industrialization

Abstrak

Penelitian ini mengkaji peran kebijakan industri dalam membentuk industrialisasi otomotif di Indonesia melalui implementasi program Kendaraan Bermotor Niaga Sederhana (KBNS) antara tahun 1977 dan 1996. Meskipun literatur mengenai negara pembangunan menyoroti pentingnya intervensi negara dalam mendorong perkembangan industri, perhatian terhadap interaksi antara instrumen kebijakan dan kapabilitas tingkat perusahaan dalam menjelaskan hasil industri yang berbeda-beda dalam lingkungan kebijakan yang sama masih terbatas. Penelitian ini mengatasi kesenjangan tersebut dengan menganalisis bagaimana kebijakan KBNS berkontribusi terhadap kesuksesan Toyota Kijang dibandingkan dengan perusahaan peserta lainnya. Dengan menggunakan pendekatan analisis kebijakan historis berdasarkan dokumen kebijakan arsip, statistik industri, dan literatur sekunder, penelitian ini mengkaji desain dan implementasi instrumen kebijakan KBNS serta dampaknya terhadap kinerja perusahaan. Temuan penelitian mengidentifikasi tiga mekanisme utama melalui mana kebijakan tersebut memfasilitasi perkembangan industri: perlindungan tarif yang menciptakan pasar domestik yang terlindungi, persyaratan lokalisasi progresif yang merangsang transfer teknologi dan pengembangan pemasok, serta insentif fiskal yang mendorong investasi jangka panjang. Namun, analisis komparatif menunjukkan bahwa dukungan kebijakan saja tidak cukup untuk menjamin kesuksesan. Kemampuan tingkat perusahaan Toyota yang unggul—terutama dalam pengembangan pemasok, komitmen teknologi, dan adaptasi produk terhadap kondisi lokal—memungkinkan perusahaan tersebut memanfaatkan insentif kebijakan secara lebih efektif dibandingkan pesaingnya. Studi ini berkontribusi pada literatur negara pembangunan dengan menunjukkan bahwa efektivitas kebijakan industri tidak hanya bergantung pada desain kebijakan, tetapi juga pada keselarasan antara intervensi negara dan kemampuan perusahaan di negara-negara yang sedang mengalami industrialisasi

Kata kunci: Kendaraan Bermotor Niaga Sederhana, kebijakan industri, Toyota Kijang, industrialisasi otomotif

1. Introduction

After World War II, countries in East and South Asia began to focus on industrial development and on addressing global economic backwardness. The state's useful, positive role in development led these countries to orient the automotive industry towards a strategy to achieve late economic growth after World War II (Abdul-Aziz et al., 2019; Doner et al., 2026; Pavlínek, 2016; Seta, 2024). The developmental state approach was also adopted by countries in East and Southeast Asia (Benedicto A. Alampay & M. Gutierrez, 2025; Bi, 2025; Carroll, 2020; Harrell & Haddad, 2021). After the examples of Japan and South Korea, this pathway proved successful as well for Taiwan, which also pursued through it a rapid industrialisation; so too did Indonesia under its New Order (1966-1998) (Aswicahyono & Hill, 2017; Sato, 2017; Tadjoeddin & Chowdhury, 2019; Tambunan, 2024). In pursuit of this developmental state approach, the state played an important role in shaping industrial development through government policy interventions. Selective protection, subsidies, and stringent performance requirements were the means by which the Suharto regime steered Indonesia's industrial growth (Croissant, 2022; Ramesh, 2025; Fünfgeld, 2026). *Rencana Pembangunan Lima Tahun I* (Five-Year Development Plan, Repelita I, 1969) was concerned with economic recovery (Wie, 2002), Repelita II (1974-1979), which detracted from the former by more explicitly emphasizing the goal of import substitution industrialization, particularly concerning the strengthening of strategic industries and enhancement of domestic technological capabilities (A. E. Booth, 1979; Pangestu, 2019).

In that context,the auto sector was designated as the lead priority sector. The automobile industry was recognized as a strategic sector thanks to its strong backward and forward linkages, including with steel and electronic parts. Furthermore, the car stood for progress and economic self-sufficiency. As the height of this targeted intervention was implemented through Ministerial Decree No. 168/M/SK/8/1976, the multi-purpose commercial motor vehicle (KBNS) program was launched (Anugrah, 2018; Kusnanto & N. Marpaung, 2025). The goal was to develop a flexible, sturdy, and affordable car for Indonesia's challenging geographic and economic conditions, while laying the foundation for an automotive industry through local technology development.

Program KBNS: With the fact that Indonesia still needed a multipurpose vehicle that must be designed based on the geographical and sociological conditions of Indonesia, but available at a low price, strong enough to cross bumpy roads, and capable of various purposes (Fauzi, 2019). This approach reflected the logic of the development state, which holds that industrialization should serve domestic needs while developing national technological capabilities. Four models, the Toyota Kijang, Volkswagen Mitra, Datsun Sena, and Vauxhall Morina, were part of the program, 4 cars,which initially all received similar policy support and localization targets. This initial parity provided a natural experiment for studying the extent to which the strategic expertise of the four participants in KBNS led them to different successes within the same policy environment (Pawitra, 1988).

The KBNS embodied a policy design with mutually reinforcing tools: (1) BCU import bans to build confidence of investors; (2) mandatory local content requirements to promote technological learning; (3) fiscal incentives to reduce investment risks; and (4) supplier development programs to overcome weaknesses in local components production (Chalmers, 1988). This mix complied with the 1970s state knowledge chain that, for industrial complexes, requires integrated and synergetic policies (Amsden, 1989; Wade, 1990)

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The adoption of KBN occurred at a propitious moment in the 1970s. The oil boom, especially after the 1973 Oil Crisis, led to a sharp rise in Indonesia's oil earnings, giving the country ample fiscal room to fund industrialisation programmes through subsidies, tax breaks, and training (Arndt & Hill, 1988; Seta, 2024; Wahid & Ikhsan, 2019). At the same time, Japanese companies took the fight to emerging markets as their home market hit saturation and rich economies became more protectionist (Cole & Yakushiji, 1984; Makino et al., 2024; Urata, 2019). In the end, these circumstances created opportunities for Indonesia to realize investment in the automotive industry. At the domestic level, Repelita II reestablished industrialization as a national priority and provided the government with a robust political and institutional base to support long-term programs such as KBNS (A. Booth, 1994; Dutt et al., 1996; Hakim et al., 2022; Kawamura, 2008; Negara & Hidayat, 2021; Wicaksono et al., 2023).

The KBNS programme demonstrates that the Indonesian government did indeed learn from other countries' industrialization experience and adapted accordingly. It followed the liberal South Korean local content policy (20-40-60%), connecting access to a protected internal market with obligations to increase the use of domestic components (Amsden, 1989; Rasiah, 2020). Secondly, *PT Bank Pembangunan Indonesia* (Indonesian Development Bank, *Bapindo*), in collaboration with the Japan International Cooperation Agency (JICA) supplier development programme, introduced Japan's model systems for quality control, production-based systems, and supply chain management (Wijaya, 2025). Such policy learning suggests that Indonesia did more than simply follow the East Asian model wholesale; it selectively borrowed from it to fit its institutions and specific circumstances.

KBNS also drew on specific attributes of Indonesia's developmental state, as distinguished from the "purer" East Asian versions. South Korea and Taiwan tended to have more meritocratic and politically insulated bureaucracies (Evans, 1995), while the New Order bureaucracy was a more mixed phenomenon: there were technocratic enclaves in the Industrial Ministry and Ministry of National Development Planning of the Republic of Indonesia, but politics certainly slipped into implementation, shaping activities, as did business interests (MacIntyre, 1994; Robison, 1986). In the KBNS case, the program's relative success was attributed to overall goal convergence between the state and leading business groups, especially Astra Group, which maintained political closeness while taking a long-term view toward developing competitiveness and automotive capacity.

This approach departed from the Weberian model of bureaucracy, which prioritized professional purity and complete insulation from business, a model that countries like Japan, South Korea, and Taiwan have embraced. Business-state relations in Indonesia were nearer and not infrequently identical to the political network. However, the Indonesian model of "embedded autonomy" was successful in generating effective industrial policies when state and business interests were congruent for long-term development (MacIntyre, 2001).

Of the four KBNS participants that initially enjoyed similar support of policy, none were as successful as Toyota Kijang, which survived, becoming a symbol and pride of Indonesian automotive, in contrast to its three competitors, which went out of business in the late 1980s or the early 1990s (Thee, 2005; Wad, 2009). This is a critical empirical puzzle: Why did the four KBNS program participants produce such different results within similar policy confines? Sales of the Toyota Kijang increased throughout the 1970s and 1990s.

The first-generation Kijang Buaya (1977–1980) recorded total sales of 26,806 units, averaging 6,702 units per year. Its successor, the second-generation Kijang Doyok (1981–1985), experienced a substantial increase in market performance, achieving sales of approximately 84,068 units, or an average of 16,814 units annually. The third-generation model, introduced in 1986 and produced until 1996, marked a breakthrough in the Indonesian automotive market, with cumulative sales reaching around 492,123 units, corresponding to an average of 44,738 units per year (Gabungan Industri Kendaraan Bermotor Indonesia, 1996).

That development resulted in an accumulation of 602,997 units over the years 77 to 96, with a compound annual growth rate (CAGR) of 11.2%. This 11.2% figure is revealing, as it already represented outstanding growth even by the standards of Indonesia's booming economy at the time. Three other components fell first: VW Mitra with 3,200 units in 1977 and left in 1984; the Datsun Senareached its peak with 2,500 units/year in 1980 before leaving by disaster in 1985; Vauxhall Morina never went beyond 1,000 units/year and fell away at the beginning of the decade as well (Departemen Perindustrian Republik Indonesia, 1976; Departemen Perindustrian Republik Indonesia, 1985). These stark differences in outcomes under the same policy context underscore that comparing the policy alone is insufficient and that it is necessary to consider how firm-level capabilities interact with the policy environment to drive industrialization.

Kijang's popularity was not only as a market leader in sales volume but also in three other dimensions that aligned with development-state goals: market power, completion of localization targets, and cultural identity construction. First, market power: at some points in the mid-1990s, Toyota Kijang accounted for more than 50% of Indonesia's MPV production, thereby achieving a near-monopoly in the product category intended to be the core of KBNS (Thee, 2005). Second, localization performance: The Toyota Kijang reached 62.7% local content by 1990, exceeding its target (60%) and the competitors' ceiling of 35% by a landslide (Departemen Perindustrian Republik Indonesia, 1985).

This 62.7% local content success supported two key developmental state goals: transferring technology from international producers to local industry, and building a skilled national supplier base. Third is the construction of cultural identity: "Kijang" has become a synthetic name that represents a multi-purpose vehicle (genericization of a trademark), an embodied product in the social realm, from family private vehicles to public transportation, and government vehicles as well (Thee, 2005; Isnanta, 2007). This cultural permeation shows how successful the Toyota Kijang has become as a truly national product, beyond sales success.

The New Order's automotive policy rested on several key instruments. First, the government imposed a ban on the importation of completely built-up (CBU) vehicles through Law No. 25/1974, which effectively created a protected domestic market. This protection allowed domestic car prices to rise in the absence of direct competition from global automotive brands (Chang, 2002). Second, the policy mandated compulsory local assembly through completely knocked-down (CKD) programs with phased localization targets of 20, 40, and 60 percent within three years, as stipulated in Decree No. 307/M/8/1976. These requirements resembled the performance-based industrial policy applied in South Korea, linking market access to technology transfer commitments and the development of domestic suppliers (Amsden, 1989).

Third, the government implemented layered protective tariffs: 100–200 percent on fully built vehicles, 60–100 percent on semi-knocked-down (CKD) units, and 40–60 percent on automotive components. As a result, effective protection rates were very high, enabling local producers to generate profits despite relatively low production efficiency compared to international competitors. Finally, the policy was complemented by various fiscal incentives and capacity-building programs, including import duty exemptions for machinery, tax holidays for new investments, low-interest credit from state-owned banks, and supplier development initiatives supported by Bapindo–JICA through technical assistance, capital support, and technology transfer.

Within KBNS, traditional viewpoints would consider Toyota's Kijang a success, signaling that policy has worked and that competitors' failures reflect only business-level inadequacies. A more systematic comparison of successful and unsuccessful cases within the same policy frameworks is required to understand the circumstances under which developmental state programmes "work" or "fail" (Chang, 2003; Kohli, 2004). The KBNS initiative is an ideal "natural experiment" for comparison, since the four companies had to work under the same policies but got substantially different results.

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Fourth, much of the literature on developmental state policy (including LC requirements) tends to focus on how policies are made and what they are intended to accomplish, rather than on how they actually work in practice or how effectively they are implemented (Veloso, 2006; Stone et al., 2015). In practice, how well an industrial strategy will work depends greatly on the government's ability to enforce adherence to the rules, ensure that claims for local content are legitimate, provide technical support to enhance capabilities, and punish anyone who doesn't follow the rules. It had some positives and negatives, New Order Indonesia.

For instance, the Department of Industry had many trained, dedicated technocrats who knew how to do their jobs. In contrast, rent-seeking was rife in the New Order political economy, both through patron-client networks and through policies that were less effective (Robison, 1986; MacIntyre, 1994). To know how KBNS is actually being used, we need to look beyond policy texts alone. We must also examine actual monitoring systems, technical assistance programs, and how bureaucrats, businesses, and political elites interact to shape outcomes at the local level.

Several previous studies focused on specific features of the Toyota Kijang. For example, Isnanta (2007) studied how the shape and manner of use of the Kijang brand in Solosociety became part of the culture's memory. This research, by contrast, did not examine the roles of industrial policy or the factors that lead to economic success. Technical research, such as Klara & Sutrisno (2016) on changing exhaust systems or Brinaldi & Purwanto (2020), on testing engine components, will arm engineers with valuable data, but doesn't take into account the economic, political, or policy perspectives. Student theses, such as Imrani & Fakih (2023) on the history of Toyota Kijang manufacture between 1977–2003, offer interesting stories from the past but are mostly descriptive and lack systematic comparative analyses or strong theoretical frameworks. In other words, there are some key deficiencies in the current literature. For instance, there is no synthesis of developmental theory and actual policy mechanisms. Nor is there any comparative research that accounts for the variability of such responses across firms. Finally, there are too few studies that analyze the causal mechanisms linking policy instruments to firm outcomes. Finally, the Indonesian case does not sit straightforwardly within the comparative developmental state literature.

The following research question is derived from these literature gaps: How did the KBNS implemented by the New Order government contribute to Toyota Kijang's success as Indonesia's national car product between 1977 and 1996? This question will be answered by focusing on three issues: (a) model-specific KBNS policy instruments and design to reach developmental state goals; (b) causal mechanisms through which KBNS policy contributed to Toyota Kijang's success; and (c) causes of the competitive triumphs of Toyota Kijang rather than other local competitors, including Volkswagen Mitra and Datsun Sena.

2. Conceptual Framework

The developmental state literature emphasizes the central role of government intervention in guiding industrial transformation. Rather than relying solely on market forces, developmental states actively shape industrial development through strategic policy instruments such as protection, subsidies, and performance-based incentives (Amsden, 1989; Johnson, 1982; Wade, 1990). In this framework, the state functions not only as a regulator but also as a facilitator of industrial capability development by coordinating investment, encouraging technological learning, and fostering close collaboration between government institutions and private firms. Evans (1995) further conceptualizes this relationship through the notion of *embedded autonomy*, in which bureaucratic institutions maintain policy authority while remaining embedded within networks of industrial actors to support coordinated industrial upgrading.

Within this perspective, industrial policy instruments play a critical role in shaping firm incentives and industrial outcomes. Governments frequently employ policy tools such as tariff protection, localization requirements, and fiscal incentives to create temporary advantages for domestic producers (Chang, 2002; Doner et al., 2005). These policy measures provide firms with protected market space, encourage the development of domestic supply chains, and reduce the risks associated with long-term industrial investment. In the Indonesian context, these mechanisms were institutionalized through the *Kendaraan Bermotor Niaga Sederhana* (KBNS) program, which combined market protection, progressive local content requirements, and fiscal incentives to stimulate the development of a domestic automotive industry (Prozorovskii, 2016; Thoburn & Natsuda, 2018).

However, industrial policy alone does not automatically generate industrial success. A growing body of research suggests that policy effectiveness depends on how firms respond to the incentives created by state intervention. Firms differ significantly in their technological capabilities, supplier development strategies, and investment commitments, which influence their ability to utilize policy support effectively (Kaplinsky & Morris, 2012; Kong, 2023; Zheng & Zhao, 2013). As a result, firms operating within the same policy environment may experience divergent outcomes depending on their internal capabilities and strategic responses to policy incentives.

Building on this perspective, this study conceptualizes industrial policy as a structural factor that creates opportunities for industrial upgrading, while firm-level capabilities determine how effectively these opportunities are utilized. Policy instruments such as market protection, localization requirements, and fiscal incentives generate incentives for firms to invest in production capabilities, develop domestic supplier networks, and adapt products to local market conditions (Barwick et al., 2025; Fanti et al., 2026; L. C. Li & Painter, 2016; Sha et al., 2025). Firms that possess stronger organizational and technological capabilities are therefore more likely to transform policy incentives into sustained industrial growth.

Based on this reasoning, the analytical framework of this study proposes that industrial policy instruments influence industrial outcomes through firm-level response capabilities. Industrial policy creates the institutional and economic conditions that enable domestic industrial development, but the ultimate success of industrialization depends on the extent to which firms can respond to these opportunities through capability development and strategic investment. Figure 1 illustrates the analytical framework of this study, highlighting the relationship between industrial policy instruments, firm response capability, and industrial success.

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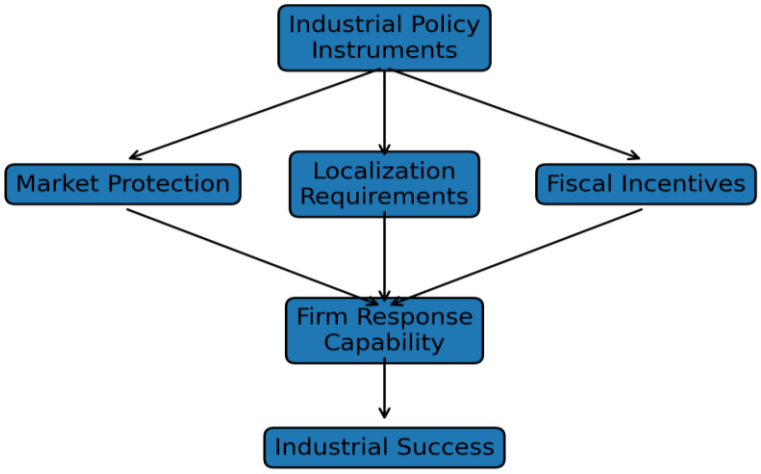

Figure 1. Conceptual framework illustrating how industrial policy instruments influence industrial success through firm-level response capability.

3. Materials and Methods

Its methodology is historical, with a policy analysis perspective, as described by Gale (2001).

3.1 Heuristics (Source Collection): This stage includes searching for historical documents related to the topic at hand, such as the Ministerial Industry Decree, Department of Industry reports, Gaikindo data, and other KBNS-related archives. The aim is to gather enough source material on the policy background and implementation. The heuristic phase involved collecting both primary and secondary sources. Primary sources consisted of governmental policy documents, including Decree No. 168/M/SK/8/1976 of the Ministry of Industry concerning the KBNS Program; Decree No. 307/M/8/1976, which imposed minimum national content requirements and technical specifications; and Decree No. 32/M/SK/1/1969, which regulated completely knocked-down (CKD) imports. These documents were examined to analyse the design of policy instruments and the development of the regulatory environment governing the automotive industry.

The other primary data sources interviewed were the KBNS program implementation reports of the Ministry of Industry (period 1976-1996), production and sales data from Gaikindo, and the internal documents of Toyota Astra Motor, to which we had public access in archives, which consisted of photographs and interview transcripts with former executives involved in KBNS implementation. Theoretical contextualisation and contrast are also informed by secondary sources, including academic literature on the developmental state, automotive industry policy, and Indonesian economic history (Hill, 1996; Thee, 2005; Robison, 1986; Aswicahyono & Feridhanusetyawan, 2004).

3.2 Source Criticism (Verification): The collections are first harvested and checked for authenticity and credibility. There are two types of criticism, external (determination) and internal (evaluation). External criticism determines a document's authenticity and reliability. Among other things, external criticism was ensured by checking the accuracy of policy documents against official files at the Ministry of Industry and government publications. Internal critique was utilised by assessing the credibility and coherence of information within documents. Data from Gaikindo were cross-checked with company annual reports and industry publications. Interview reports were corroborated through triangulation with written information and numerical figures to minimize data-collection bias (Natow, 2020; Santos et al., 2020; Hosseini et al., 2021; Hendrawati et al., 2025). The information gaps in internal records were expected to be filled by other sources (media reports and industry publications from that time).

3.3 Interpretation (Analysis): Factual certainties are rethought, and the arrow of causality is followed, as new meanings are added to history. In this research context, this means analyzing how the KBNS policy facilitated the Toyota Kijang's market success in Indonesia. The PA technique was used to resolve KBNS during the analysis. First, the policy instrument analysis showed that the KBNS comprises four distinct policy instruments: tariff protection, deletion program requirements, fiscal incentives, and capacity-building programs. It also helped me understand the extent to which these instruments were capable of achieving the developmental state objectives of Import Substitution Industrialisation (ISI) and the development of local technological capabilities.

Second, the analysis of the causal mechanism examined how each policy tool changed the opportunities and incentives landscape for firms, mainly by protecting economic rents through domestic market protection measures, stimulating backward linkages through localisation requirements, and reducing the costs of compliance in exchange for receiving incentives.

Third, CS was applied: the trajectory of Toyota Kijang compared to rivals such as Volkswagen Mitra, Datsun Sena, and Vauxhall Morina indicates that firm-level factors played a role in companies' capacity to seize opportunities afforded by policy. We examined quantitative sales and production data to gauge each company's market share, whether it was growing, and, if so, at what pace. We also searched for qualitative sources, such as documents and interviews, to understand how companies responded to policy pressures.

3.4 Historiography (Historical Writing): Historiography: Organising the historical narrative (Riezal et al., 2024). As a final step, research findings are integrated into a historical narration, still systemic and chronological, but now analytical. The result is a report that reveals how government policy has influenced the auto sector over time.

The historical approach was considered because it could reconstruct policy processes and outcomes over time. The policy analysis perspective adds to this by offering a conceptual tool for identifying the policy instrument, the causal mechanism, and the result. This configuration provides a comprehensive view of KBNS activities and Toyota Kijang's prosperity during the period 1977-1996. Theperiods 1977–1996 were divided into three phases; the period of launch and initial market penetration (1977–1980) where Toyota Kijang was launched under the new KBNS regime, the phase for consolidation and growth (1981–1985) that represented Toyota's willingness to follow deletion program requirement, and finally when Toyota Kijang seized leadership position in the overall market share from its competitors. Such a periodization enabled tracking of how the KBNS policy developed and influenced industry trends over time, and it also helped pinpoint pivotal moments of mutual influence between state policies and firm strategies. This study recognizes limitations in access to internal company documents, which limit insights into firm decision-making, but sought to mitigate them through source triangulation and by focusing on widely publicized policy dimensions.

4. Results

4.1 KBNS Policy Structure and Mechanisms: The first one is the need to assemble locally through CKD (Completely Knocked Down) kits; all vehicle components are assembled at the local site, resulting in ready-to-run units. A part of the KBNS, the program validated that participant vehicles were

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to be built in Indonesia, assembled as CKD, with ongoing requirements for local content as follows; 20 % (first year), 40% (second year), and 60% (third year) (Surat Keputusan Menteri Perindustrian Tentang Program KBNS, 1976). This policy provided strong incentives for manufacturers to develop local supply chains and transfer production technology to Indonesian suppliers. Secondly, tariffs and import restrictions on CBU with little or no local assembly. However, the government introduced total bans on fully built-up KBNS-category vehicles via MD 25/74. Import duties on components were quite high: between 100-200% for finished vehicles, 60-100% for CKD, and 40-60% for raw materials (Departemen Perindustrian Republik Indonesia, 1976). Such a tariff regime led to very high effective protection for the domestic industry. Third, fiscal investment is mainly in the form of waivers on import taxes on plant and machinery, tax holidays for new investments, and concessional credit for investments from state banks. For Toyota Astra Motor, such agglomerations helped the company to build a modern assembly plant in Sunter, Jakarta (Interview with Trisanyoto, H., former executive of Toyota Astra Motor in Jakarta, March 15, 2024).Fourth, local supplier capacity building. In addition to requiring local content, KBNS offered supplier development programs under the Bapindo-JICA (Japan International Cooperation Agency) plan, which provided technical training, capital support, and technology transfer for local component firms (Departemen Perindustrian Republik Indonesia, 1985). Taken together, these four policy instruments formed the core mechanism of the KBNS industrial policy framework, linking market protection with technological upgrading and domestic supplier development.

Table 1. Industrial policy instruments used in the KBNS program to promote automotive industrialization in Indonesia

Policy Instrument	Policy Mechanism	Intended Industrial Outcome
Local assembly requirement (CKD system)	Mandatory domestic assembly with phased localization targets (20–40–60%)	Development of domestic manufacturing capability and technology transfer
Tariff protection and CBU import restrictions	High tariffs (100–200%) on imported vehicles and restrictions on CBU imports	Creation of protected domestic market for local producers
Fiscal incentives	Tax holidays, import duty exemptions for machinery, and concessional investment credit	Encouragement of long-term industrial investment
Supplier development programs	Technical assistance, training, and financial support for local component manufacturers through Bapindo-JICA	Strengthening domestic supplier networks and improving component quality

The employment of these four pillars revealed a thorough policy sequencing and coordination that chronicles Indonesia's developmental state learning. The CBU import ban was introduced step-by-step: first for sedans (Decree No. 25/74), then for commercial vehicles in 1976, to provide a transition period for companies and distributors established to avoid market turmoil (Departemen Perindustrian Republik Indonesia, 1976). An establishment of compulsory deletion programs for local components was carried out in a phased mannerwith simple components like tires, batteries, and paint enforced first (November 1976), more complex technological-based components, including exhausts and radiators, later (November 1977), and ultimately precision manufacturing parts such as transmission products and engine bodies at a late stage (Departemen Perindustrian Republik Indonesia, 1985). This sequencing allowed local suppliers to develop capability incrementally without encountering technical infeasibility and gave assemblers visibility into when they could expect locally sourced resources.Interservice cooperation for KBNS was effective, though far from perfect. The Department of Industry developed the policy, monitored compliance with local content requirements, and administered technical assistance to suppliers. Tax incentives were offered, and the process of machinery import was reduced at Customs through facilitation by the Finance Department. KBNS was embedded in the national industrial development planning and infrastructure budget by the Ministry of National Development Planning of the Republic of Indonesia *(Badan Perencanaan Pembangunan Nasional Republik Indonesia, Bappenas). To* obtain foreign investment licenses, the Capital Investment Coordinating Board *(Badan Koordinasi Penanaman Modal, BKPM)* fast-tracked KBNS participant companies. This partnership could provide investors with a one-stop service, lifting them above bureaucratic barriers and added expenses. Coordination issues persisted, as ministries occasionally operated in silos or competed for power. He received strong political backing from President Soeharto, who considered the car industry a symbol of national development and supported it in breaking down bureaucratic barriers and securing the ministers' cooperation.Mechanisms for enforcing local content rules were relatively robust in the case of developing country standards, as they author a voluntary claim of local inclusion on a random basis and graduated sanctions, ranging from warnings to the removal of KBNS status for noncompliant bidders. It had its challenges, with subsequent disputes over how to calculate local content, insufficient audit capacity that could be easily manipulated, and undue political influence from crony capitalists. However, KBNS enforcement was still relatively strong compared to other New Order industrial policies, owing to widespread public awareness and the government's view of the automotive industry as tactically important.

4.2 Policy Implementation: Toyota Kijang Case: Toyota Astra Motor implemented the KBNS policy in stages. In the first stage (1977-1980), Toyota introduced the first-generation Kijang, produced with 22 percent local content, and sold about 26.000 units, supported by tariff protection, which made it more competitive. During the second phase (1981-1985), local production was increased to 46% through the expanded use of local parts, with over a dozen South Korean suppliers involved, resulting in sales of more than 84,000 units. The third phase (1986-1996) increased Kijang local content to approximately 63% through a technology development program to produce local engine & transmission components; it sold nearly 500.000 units, and Kijang was established as a market leader and a national automotive industry icon. The growth trajectory of Toyota Kijang production during the KBNS period is illustrated in Figure 2.

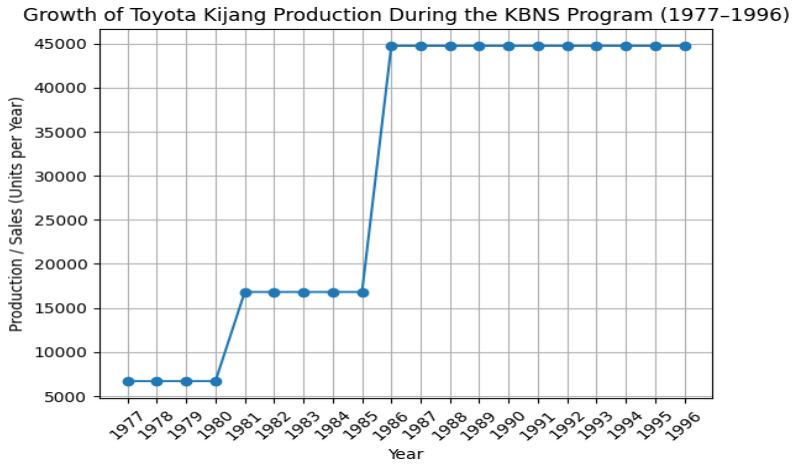

Figure 2. Growth trajectory of Toyota Kijang production during the KBNS industrial policy period (1977–1996)

As shown in Figure 2, Toyota Kijang production experienced three distinct phases of growth. The initial phase (1977–1980) reflects the early stage of market entry and supplier development. The second phase (1981–1985) shows a substantial increase in production as localization targets were progressively implemented and domestic supplier networks expanded. The third phase (1986–1996) represents the consolidation stage in which Toyota achieved higher localization levels and stronger market dominance. This trajectory suggests that the KBNS policy framework facilitated a gradual process of industrial upgrading in Indonesia's automotive sector.

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4.3 Comparison with KBNS Competitors: Many of Kijang's competitors have not survived the crushing course of the KBNS. Volkswagen Mitra, launched in 1977, was unable to build effective local supply chains and eventually achieved only 28% local content, as sales started to slide, until it finally abandoned international trucks in Indonesia by the early 1980s.

The Datsun Sena, introduced in 1977, also achieved its 35% local content target but faced quality problems and poor after-sales service, leading to a sales disaster and its termination in 1985. Vauxhall Morina was launched in 1978, with financial, engineering, and supply network constraints from the beginning; it achieved only 18% local content by 1981, and sales never exceeded 1,000 units per year before its closure in 1983.

Figure 3 Morina (Mobil Rakyat Indonesia), 1978
Source: Mobil Motor Lama (2017)

History records that in 1976, PT Garmak Motor introduced a simple commercial vehicle, the Morina, or the Indonesian People's Car, as shown in Figure 3 above. PT Garuda Diesel was then appointed as Garmak Motor's distributor. Morina was one of the products of the Simple Commercial Motor Vehicle Policy (KBNS) issued by the government to increase investment in the Indonesian automotive industry at that time. The comparison of the four KBNS participants reveals substantial differences in their ability to develop domestic production capabilities and sustain market competitiveness.

Table 2. Comparative Performance of KBNS Participants under the Same Policy Environment

Firm	Year Introduced	Maximum Local Content	Production Performance	Market Outcome
Toyota Kijang	1977	62.7%	Continuous production growth; cumulative sales reached 602,997 units (1977–1996)	Market dominance
Volkswagen Mitra	1977	28%	Declining production after initial launch	Market exit in early 1980s
Datsun Sena	1977	35%	Limited market penetration; peak around 2,500 units/year	Production terminated in 1985
Vauxhall Morina	1978	18%	Very limited production; sales below 1,000 units/year	Market exit in early 1980s

Table 2 highlights a striking empirical pattern: although all four firms operated under the same KBNS industrial policy framework, their industrial outcomes differed significantly. Toyota Kijang achieved continuous growth in production and localization performance, eventually dominating the Indonesian multipurpose vehicle market. In contrast, Volkswagen Mitra, Datsun Sena, and Vauxhall Morina failed to sustain production despite receiving identical policy incentives. This divergence suggests that industrial policy alone was insufficient to guarantee industrial success. Instead, the effectiveness of the KBNS program depended heavily on the ability of firms to develop technological capabilities, supplier networks, and long-term investment commitments. *4.4 Success Differentiators:*The success of the Toyota Kijang compared with its competitors can be explained by several firm-level capabilities that allowed Toyota to effectively utilize the opportunities created by the KBNS policy framework. While all participating firms received similar policy incentives, Toyota demonstrated a stronger capacity to transform these incentives into sustained industrial growth.First, Toyota developed a robust domestic supplier network through the transfer of production knowledge from the Toyota Production System (TPS). Local component manufacturers received technical training, quality control guidance, and production management assistance. This process significantly improved the reliability of locally produced components and reduced manufacturing defects. Second, Toyota demonstrated a stronger commitment to long-term investment in the Indonesian market. The establishment of the Toyota Astra Motor assembly plant in Sunter and subsequent investments in local component manufacturing created a stable production base. In contrast, several competitors relied primarily on short-term assembly operations without substantial investments in domestic production capacity. Third, Toyota successfully adapted its product design to Indonesian market conditions. The Kijang was designed as a multipurpose vehicle capable of operating on uneven road infrastructure while remaining affordable for middle-income consumers. This design adaptation significantly increased the vehicle's acceptance among Indonesian consumers. Fourth, Toyota benefited from an extensive distribution and after-sales service network. The presence of reliable service facilities and spare-part availability strengthened consumer confidence and contributed to the long-term popularity of the Kijang. To better illustrate the differences in firm-level capabilities among KBNS participants, Table 3 summarizes the key capability dimensions that influenced their industrial performance.

Table 3. Firm-Level Capability Differences among KBNS Participants

Capability Dimension	Toyota Kijang	Volkswagen Mitra	Datsun Sena	Vauxhall Morina
Supplier development	Strong supplier training and TPS transfer	Limited supplier integration	Partial supplier integration	Weak supplier network
Investment commitment	Long-term manufacturing investment	Moderate investment	Limited investment	Minimal investment
Product adaptation	Designed for Indonesian conditions	Limited adaptation	Moderate adaptation	Poor adaptation
After-sales service network	Extensive nationwide service network	Limited network	Weak network	Very limited network
Technological upgrading	Continuous upgrading and localization	Slow technological development	Limited upgrading	Minimal technological development

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The comparison presented in Table 3 highlights an important empirical finding of this study. Although the KBNS program provided identical policy incentives to all participating firms, only Toyota successfully developed the technological capabilities, supplier networks, and investment commitments required to sustain industrial growth. In contrast, competing firms lacked the organizational capacity to respond effectively to the policy framework. This evidence suggests that the effectiveness of industrial policy depends not only on policy design but also on the ability of firms to develop the capabilities required to leverage policy incentives. These findings indicate that the interaction between industrial policy and firm-level capability development played a decisive role in determining the outcome of the KBNS program.

5. Discussion

5.1 KBNS Policy as Developmental State Instrument: The findings of this study indicate that the KBNS program represents a clear example of developmental state–oriented industrial policy in Indonesia. Consistent with classic developmental state theories, the program combined strategic government intervention with targeted industrial policy instruments aimed at fostering domestic manufacturing capabilities. Through policies such as tariff protection, localization requirements, and fiscal incentives, the Indonesian government created a policy framework that encouraged technological learning, supplier development, and long-term industrial investment. This approach reflects the broader developmental state tradition described by Johnson, Wade, and Amsden, in which the state plays an active role in guiding industrial transformation rather than relying solely on market forces. However, the Indonesian experience also demonstrates an important variation of the developmental state model. Rather than operating through highly insulated bureaucratic institutions, as observed in Japan or South Korea, the KBNS policy framework functioned through a more flexible system of state–business interaction. In this context, the Department of Industry retained sufficient technical capacity to coordinate industrial policy while remaining responsive to the needs of domestic producers. This arrangement closely resembles Evans' concept of embedded autonomy, in which state institutions maintain policy authority while remaining embedded within networks of industrial actors. Such institutional arrangements allowed policymakers to adjust implementation mechanisms and incorporate feedback from industry participants, thereby maintaining the effectiveness of the policy despite institutional constraints.A central feature of the KBNS program was the use of conditional protection, in which access to the protected domestic market was tied to performance requirements—particularly the gradual increase in local content levels. This policy design ensured that protectionist measures did not merely shield domestic firms from competition but instead encouraged continuous technological upgrading and supplier development. In this sense, the KBNS program reflects Chang's argument that strategic protection can function as a developmental instrument when combined with dynamic performance requirements that push firms toward capability accumulation. The gradual sequencing of localization targets allowed domestic suppliers to develop production capabilities incrementally, reducing technological risks while encouraging the transfer of production knowledge from multinational firms.

Recent empirical research supports the effectiveness of such policy mechanisms in late-industrializing economies. Studies show that industrial policies combining tariff protection, localization requirements, and state–business coordination can create temporary market space for domestic firms to expand production and accumulate technological capabilities (Petreski et al., 2017). Localization policies, in particular, have been widely used to stimulate supplier development and encourage technology transfer within manufacturing industries. Evidence from emerging automotive industries indicates that these policies can strengthen domestic supply chains and promote technological upgrading when supported by appropriate industrial ecosystems and investment incentives (Marzo et al., 2023; Tang, 2023). At the same time, effective coordination between governments and private firms remains essential for resolving coordination failures and facilitating the development of domestic production capabilities (Hartanto et al., 2025).

Nevertheless, the effectiveness of developmental state policies is increasingly shaped by the dynamics of globalization and global value chains. International trade regimes and the growing influence of multinational corporations have reduced the policy space available for traditional protectionist strategies. As a result, developing countries must carefully balance protective industrial policies with strategies that promote technological upgrading, innovation, and integration into global production networks (Wuttke, 2022). The KBNS experience therefore illustrates how developmental state policies can remain effective when protection, localization requirements, and state–business coordination are strategically combined to support long-term industrial capability development.

5.2 Causal Mechanisms: How KBNS Facilitated Success: The results of this study reveal three interrelated causal mechanisms through which the KBNS policy framework facilitated the success of the Toyota Kijang and the broader development of Indonesia's domestic automotive industry. The first mechanism was selective protection. Through import bans on completely built-up (CBU) vehicles and high tariffs on automotive components, the government created a protected domestic market that allowed Toyota to gradually build production capacity, establish supplier networks, and strengthen brand recognition without facing immediate competition from imported vehicles. This protected environment provided the time and space necessary for domestic industrial capabilities to develop during the early stages of production.

The second mechanism involved progressive localization requirements. The KBNS program mandated incremental local content targets of 20%, 40%, and eventually 60%, which created strong incentives for Toyota to develop domestic supplier networks and transfer production technology to local firms. As localization deepened, Toyota experienced significant improvements in production efficiency and cost competitiveness. By the early 1990s, production costs had fallen by approximately 20–25%, while supplier defect rates declined from around 8% to 2%. These improvements strengthened product reliability and allowed Toyota to outperform competing models that relied more heavily on imported components.

The third mechanism consisted of fiscal incentives that encouraged long-term industrial investment. Policies such as tax holidays, concessional credit, and exemptions from import duties on machinery reduced the financial risks associated with establishing domestic manufacturing facilities. These incentives enabled Toyota Astra Motor to invest in large-scale production infrastructure, including the construction of the modern Sunter assembly plant valued at approximately US$30 million. Such investments signaled the government's long-term commitment to the KBNS program and reinforced the credibility of Indonesia's industrial policy framework.

Importantly, these three mechanisms did not operate independently but interacted in a mutually reinforcing process of industrial upgrading. Protection created market space for domestic production, localization requirements stimulated technological learning and supplier development, and fiscal incentives supported long-term investment in manufacturing capacity. Together, these mechanisms generated a cumulative process of capability accumulation that gradually strengthened the competitiveness of Indonesia's automotive industry. This dynamic interaction illustrates how industrial policies that initially appear protectionist can, under certain institutional conditions, evolve into mechanisms that enhance efficiency and technological upgrading. In this sense, the KBNS program resembles what Wade described as a "governed market," in which state intervention strategically reshapes market incentives to promote long-term industrial development.

These findings are consistent with recent empirical research showing that industrial policy instruments—such as local content requirements, fiscal incentives, and tariff protection—can stimulate technological upgrading and domestic supplier development when implemented through coherent capability-building strategies. Local content requirements, for example, encourage firms to utilize domestic inputs and services, thereby fostering technological learning and strengthening local supplier networks (Kalyuzhnova, 2021; Lebdioui, 2020). Empirical evidence from several emerging economies also demonstrates that localization policies can stimulate supplier diversification and technological upgrading when supported by capacity-building initiatives and institutional support for domestic firms (Ezenagu & Eze-Ajoku, 2021). Similarly, fiscal incentives such as subsidies and tax

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benefits have been shown to encourage research and development investment and innovation in emerging industries, particularly in sectors where government support accelerates technological capability development (Han et al., 2026; Yang et al., 2024). Protectionist instruments such as tariffs can also contribute to industrial upgrading by providing temporary protection that enables domestic firms to accumulate production capabilities before competing in global markets, although excessive protection may reduce efficiency if not combined with technological upgrading incentives (Lebdioui, 2020). Overall, this body of literature supports the argument that industrial policy can promote technological upgrading and supplier development when protection, localization policies, and innovation incentives operate together within a coordinated policy framework that supports long-term capability accumulation.

5.3 Why Competitors Failed: Firm-Level Capabilities Role: Although all KBNS participants operated under the same industrial policy framework, their industrial outcomes differed significantly. The comparison between Toyota Kijang and its competitors—Volkswagen Mitra, Datsun Sena, and Vauxhall Morina—demonstrates that firm-level capabilities played a decisive role in shaping industrial performance. While the KBNS program provided similar policy incentives to all participating firms, only Toyota was able to translate these opportunities into sustained production growth and market dominance. Three major capability dimensions explain Toyota's superior performance. First, Toyota demonstrated a stronger strategic commitment to the Indonesian market. The company invested significant financial resources, managerial attention, and relatively advanced production technology in its Indonesian operations. In contrast, several competitors treated Indonesia as a secondary market and relied largely on outdated technologies or limited assembly operations. This difference in strategic commitment influenced the scale of investment, technological upgrading, and long-term industrial development.

Second, Toyota developed a much stronger supplier development system. Through the transfer of production knowledge from the Toyota Production System (TPS), Toyota implemented intensive supplier training programs, technology transfer initiatives, and quality control systems. These mechanisms enabled local component manufacturers to gradually improve product quality and production efficiency while reducing manufacturing costs. Competing firms, by contrast, lacked comparable supplier development capabilities and remained heavily dependent on imported components, which limited their ability to achieve higher levels of localization.

The case of the Datsun Sena illustrates these limitations. Introduced in 1977, the Sena was one of the early competitors in the KBNS program but failed to sustain its market position due to quality problems and weak supplier integration.

Figure 4. Datsun Sena, 1980
Source: Sudjatmiko (2020)

The Sena project was initiated in 1974 by PT Indokaya, the then-holder of the Datsun brand in Indonesia. Although the vehicle was introduced earlier than the Toyota Kijang, its production system remained heavily dependent on imported components and lacked a strong domestic supplier network. As a result, the model struggled to maintain product reliability and market competitiveness.

Third, Toyota demonstrated a superior capability to adapt its product design to local market conditions. The Toyota Kijang was specifically engineered to accommodate Indonesia's road infrastructure, fuel quality, and consumer purchasing power while also functioning as a multipurpose vehicle suitable for both family and commercial use. This product adaptation significantly increased the vehicle's acceptance among Indonesian consumers. The second-generation model, popularly known as the "Kijang Doyok," introduced several design improvements that strengthened its market appeal.

Figure 5 "Kijang Doyok", 1981-1985 (Source: Toyota Bandung (2020)

This model featured a more modern body design, hidden door hinges, improved grille alignment, and an upgraded engine with a 1,500 cc capacity that provided better performance and reliability. These improvements enhanced the vehicle's functionality as a family car and contributed to the growing popularity of the Kijang in the Indonesian market.

These findings reinforce the argument that industrial policy alone cannot guarantee uniform outcomes across firms. Empirical studies show that firms operating within the same policy environment often experience divergent outcomes due to differences in technological capabilities, supplier development, and long-term investment commitment. Firms possessing stronger dynamic capabilities—such as the ability to adopt new technologies, coordinate supplier relationships, and respond to market changes—tend to achieve higher levels of innovation and competitiveness (Y. Li et al., 2024; Remedi-Rumi & Arzuaga-Williams, 2024). Technology transfer also plays a critical role in shaping industrial outcomes, as firms that actively collaborate with suppliers and expand their technological knowledge base are better able to integrate new production technologies and sustain competitiveness during periods of technological change (Arrighetti & Bottani, 2020). Moreover, firms embedded in coordinated supplier networks can achieve economies of scale and accelerate technological learning processes, which significantly improves industrial performance (Roberts, 2020). Differences in investment commitment further explain divergent outcomes, as firms with

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stronger research and development intensity and long-term investment strategies are more likely to accumulate technological capabilities and sustain competitive advantages (Liu et al., 2021; Sardiana & Sawmong, 2025).

Taken together, these findings highlight an important implication for the developmental state literature. Industrial policy should not be understood solely as a set of state-led interventions that automatically produce industrial success. Instead, policy effectiveness depends on how firms respond to policy incentives and whether they possess the organizational and technological capabilities necessary to leverage these opportunities. The KBNS case therefore demonstrates that successful industrialization emerges from the interaction between state policy and heterogeneous firm capabilities rather than from policy intervention alone.

5.4 Global Context and Timing: Enabling Conditions: The success of the KBNS program cannot be understood solely through domestic policy design; it was also shaped by favorable global economic conditions that created opportunities for industrial upgrading. During the 1970s and 1980s, Japanese automotive manufacturers were rapidly expanding their overseas production networks in response to rising production costs and trade pressures in advanced economies. In this context, Indonesia emerged as an attractive destination for foreign investment and technology transfer. The expansion of Japanese automotive firms facilitated the transfer of production knowledge, managerial practices, and supplier development strategies, which played an important role in strengthening Indonesia's emerging automotive industry.

At the same time, macroeconomic conditions during the oil boom of 1973–1982 provided the Indonesian government with significant fiscal resources that could be used to support industrial development. Increased state revenues allowed the government to invest in infrastructure, provide fiscal incentives for manufacturing investment, and stimulate domestic market expansion. These conditions created a supportive economic environment in which industrial policy initiatives such as KBNS could be implemented more effectively.

Another important enabling factor was the evolving structure of the global automotive production system. By the late twentieth century, the automotive industry had begun to adopt more modular production structures, allowing components to be produced in geographically dispersed locations. This modularization made it technically feasible for developing countries to participate in automotive production without fully integrated domestic supply chains. As a result, Indonesia was able to gradually increase local content in vehicle production while still relying on imported technologies and intermediate components.

While these global conditions facilitated the implementation of KBNS, the findings also suggest that the success of the policy was not determined solely by favorable timing. Instead, policy effectiveness depended on the interaction between external opportunities and domestic institutional arrangements, including conditional protection, localization requirements, and firm-level capability development. In this sense, the Indonesian case illustrates how industrial policy outcomes are shaped by both global structural conditions and domestic policy choices.

Recent research further highlights the importance of product adaptation to local market conditions as a critical factor in the success of domestic manufacturing industries in developing economies. Firms that tailor product design to local consumer preferences, infrastructure conditions, and regulatory environments tend to achieve stronger market acceptance and deeper localization of production activities. Empirical studies in the automotive sector show that aligning product innovation with domestic production capabilities can significantly enhance technological upgrading and industrial growth (Wuttke et al., 2026). Knowledge transfer mechanisms—such as training programs and collaboration between multinational firms and local suppliers—also play a crucial role in enabling domestic firms to meet technological standards and integrate into global production networks (Guzman-Anaya, 2022). In addition, localization strategies often involve the adaptation of manufacturing processes, customization of product features, and the development of local supplier networks that facilitate both technological learning and operational efficiency (Benbouja et al., 2021). The adoption of flexible production systems and mass-customization approaches further allows automotive manufacturers to respond to diverse consumer demands while maintaining production efficiency (Pawlowski, 2024).

Taken together, these findings suggest that the success of industrial policies such as KBNS depends not only on protective policy instruments but also on the ability of firms to adapt products to local market conditions while simultaneously building domestic supplier networks and technological capabilities. This combination of global opportunities, adaptive industrial policy, and firm-level capability development helps explain why certain industries in developing economies are able to achieve sustained industrial growth while others struggle to move beyond assembly-based production.

6. Conclusions

This article shows that Toyota Kijang's success under the KBNS program can be attributed to three main mechanisms: market protection that enables the establishment of local manufacturers, progressive local content requirements that encourage technology transfer and supplier development, and fiscal incentives that favour long-term investment. But policy was not enough; firm promotion would determine the outcome. Toyota has been successful by leveraging modern technology, committing to long-term investment, and developing local suppliers, while maintaining a product design that caters to local needs. KBNS represents a classic example of a relatively successful state developmental intervention in Indonesia, combining capacity-state and embedded autonomy, in contrast to many other developing-country industrial policies that have proved unsuccessful due to rent-seeking or policy inconsistency.This paper, based on lessons from the KBNS program, suggests that Indonesian industrial policy can employ several tools. For one, policy packages need to be comprehensive and consistent, covering protection, localization requirements, fiscal incentives, and supplier development. The second is that protection must be temporary and conditional, based on performance requirements, to avoid inefficiency and rent-seeking. Thirdly, there is a need to prioritize developing local suppliers, which could be achieved through technology transfer, technical assistance, and access to financing. Fourth, sectoral selectivity is crucial for targeting resources to high-technology, employment-generating sectors. Fifth, the implications of the KBNS experience extend to electric vehicle industrialization across the entire industry chain ecosystem, realistic localization paths, investment attraction to ensure long-term commitment, and global partnerships for technology transfer. The present article has some limitations that offer opportunities for future research. First, its policy focus limits detailed discussion of how firm-level strategies and capacity are developed, such as Toyota's supplier development program or product adaptation and market penetration policies. Second, we have yet to study the political economy dimensions of KBNS, including supporting/opposing actors and New Order context linkages; more detailed comparisons may be made, for instance, with Malaysia or Thailand. Third, consumer-side-bound processes also need to be investigated: responses to Kijang, brand identity formation, and cultural factors that make Kijang part of a cultural icon. Fourth, a full cost-benefit analysis is required to evaluate the social costs (e.g., increased consumer prices and resource-allocation opportunity costs) relative to the net social benefits of the KBNS program.

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