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THE INFLUENCE OF PROCUREMENT LOGISTICS STRATEGY ON ORGANIZATIONAL HIERARCHIES: STRATEGIC, TACTICAL, AND OPERATIONAL PERSPECTIVES

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Abstract: *This article discusses the impact of key procurement logistics tasks on strategic, tactical, and operational levels within organizations. Procurement activities such as supplier selection, make-or-buy decisions, and the implementation of just-in-time (JIT) and just-in-sequence (JIS) supply systems significantly shape long-term corporate strategies by aligning supply chain objectives with business goals. Outsourcing and the choice between centralized and decentralized procurement approaches influence tactical decisions, affecting cost efficiency, flexibility, and risk management. At the operational level, decisions regarding transportation modes and loading unit selection ensure the smooth flow of goods and materials while optimizing daily operations. The integration of these procurement functions strengthens organizational resilience and enhances responsiveness to market dynamics. This article emphasizes the interconnectedness of procurement tasks across hierarchy levels, demonstrating how strategic alignment improves supply chain efficiency. Tactical adjustments provide adaptability, while operational decisions support seamless execution. The findings underline the critical role of procurement logistics in achieving overall business competitiveness. By analyzing these functions, this research provides insights into their cascading effects across organizational hierarchies, contributing to the development of more robust procurement strategies.*

Keywords: *procurement logistics, just-in-time, just-in-sequence, supplier selection, make-or-buy.*

1. INTRODUCTION

Procurement logistics has become increasingly significant in today's globalized economy, playing a crucial role in ensuring the smooth functioning of supply chains. The COVID-19 pandemic exposed major vulnerabilities in global supply networks, leading to significant disruptions and fragmentation. These challenges sparked rapid advancements in procurement logistics as companies sought innovative solutions to adapt to a volatile environment. The situation has been further changed by the Russian-Ukrainian war, which created additional difficulties in the supply of raw materials and other critical resources. These crises have highlighted the importance of efficient procurement systems in maintaining business continuity and resilience. The pandemic caused factory shutdowns, shipping delays, and labor shortages, while the war led to raw material shortages, energy price spikes, and geopolitical risks. These challenges resulted in increased costs, longer lead times, and a need for businesses to reassess and diversify their supply strategies.

For decades, the Institute of Logistics at the University of Miskolc has conducted extensive research on procurement and its role in corporate logistics systems [1-9]. Building on these research results, it becomes evident that procurement logistics not only influences material flows but also exerts a significant impact on various levels of organizational hierarchy. Companies with well-developed procurement strategies have demonstrated better adaptability, strategic alignment, and operational efficiency in response to external disruptions. By analyzing these aspects, this article focuses on the analysis of impact of

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procurement-related decisions on the different hierarchical levels of manufacturing companies.

2. SUPPLIER SELECTION

When selecting suppliers, several principles should guide the decision-making process. First, reliability is key; suppliers must have a proven track record of delivering products on time and meeting quality standards. Second, cost-effectiveness should be considered, but not at the expense of quality or service. Third, the supplier's ability to scale and meet future demand is important, ensuring they can grow alongside the business. Fourth, strong communication and responsiveness are essential for addressing issues quickly and maintaining a good working relationship. Fifth, sustainability and environmental responsibility should be prioritized, particularly in industries with stringent regulations. Sixth, suppliers should have robust financial health to avoid disruptions due to financial instability. Seventh, geographical proximity can play a role, as it can reduce lead times and transportation costs. Eighth, flexibility in terms of customization, production schedules, and changing demands is critical for adapting to market needs. Ninth, compatibility with your company's ethical standards and practices, including labor practices, should be considered. Finally, the supplier should demonstrate a willingness to collaborate and innovate, fostering a long-term partnership that drives mutual growth [10-15].

The consequences of these principles for the strategic, tactical, and operational levels can vary in their impact and scope (see Fig. 1).

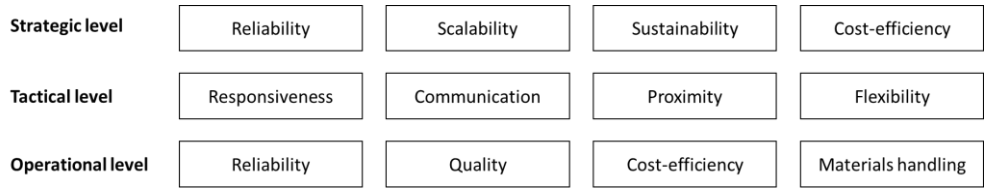

Figure 1. *Impact of supplier selection on organizational hierarchies (Source: own research)*

2.1. Impact of Supplier Selection on Strategic Level

At the strategic level, selecting suppliers based on these principles helps ensure long-term business success. Reliability, scalability, and sustainability are critical for aligning the supplier base with the company's long-term goals. Building relationships with suppliers who are financially stable and ethical can protect the company from reputational risks and disruptions. This can lead to a competitive advantage by securing a reliable supply chain that supports consistent growth and adaptability to market changes. Cost-effectiveness also plays a crucial role, as it helps optimize overall profitability while maintaining quality, which is essential for maintaining a competitive position in the marketplace.

2.2. Impact of Supplier Selection on Tactical Level

At the tactical level, these principles influence decisions regarding supplier selection and negotiation. Communication and responsiveness are particularly important here, as they directly affect day-to-day operations and help resolve short-term issues quickly.

Geographical proximity may impact distribution strategies and regional inventory management, influencing logistics planning. Flexibility in supplier relationships also allows for adjustments in production schedules and the ability to meet demand fluctuations. Evaluating ethical standards and sustainability is crucial at this level for ensuring that supplier practices align with the company's policies, reducing the risk of compliance or regulatory issues in the medium term.

2.3. Impact of Supplier Selection on Operational Level

At the operational level, the principles guide day-to-day supplier interactions, including order fulfillment, quality checks, and inventory management. Ensuring reliability and quality standards directly affects product consistency and customer satisfaction. Operational teams must also manage the logistics and supply chain issues that arise from decisions about transportation modes and unit loads, ensuring that the supply chain operates efficiently without delays or disruptions. The IT systems required for managing supplier data and communications become vital here, ensuring smooth transactions, timely deliveries, and accurate records. Cost-effectiveness affects budgeting and procurement planning, ensuring that operational activities are carried out within financial constraints while maintaining quality and service levels.

3. MAKE-OR-BUY DECISIONS

When making a make-or-buy decision, several key criteria should be considered. First, cost analysis is essential; the company should evaluate the total cost of manufacturing in-house versus purchasing from an external supplier, including materials, labor, and overhead costs. Second, the quality of the product must be ensured; if an external supplier can provide higher or more consistent quality, this may favor buying. Third, the company should consider the level of expertise required; if specialized knowledge or technology is needed that the company lacks, outsourcing may be the best option. Fourth, lead times are crucial; if internal production takes too long, buying from a supplier with quicker turnaround may help meet customer demands. Fifth, the flexibility of the supplier should be considered; whether they can adapt to changing specifications or order volumes. Sixth, the availability of capacity in-house is important; if internal resources are stretched thin, it may be more efficient to buy. Seventh, control over production and the ability to innovate or make design changes quickly are factors that may encourage making the product in-house. Eighth, long-term strategic goals play a role; if a product is critical to the company's core business, making it in-house may offer a strategic advantage. Ninth, the complexity of the part or assembly should be taken into account; complex, high-precision parts may be better made internally, while simpler components can be purchased. Lastly, risk management is essential; factors like supplier reliability and the impact of supply chain disruptions can influence whether to make or buy [16-18]. The impacts of make-or buy decision on organizational hierarchies (strategic, tactical, and operational levels) are shown in Fig. 2.

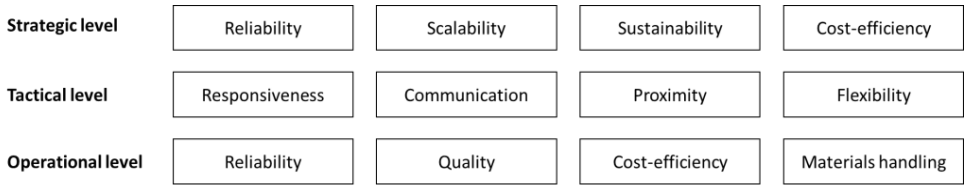

Figure 2. *Impact of make-or-buy decision on organizational hierarchies (Source: own research)*

3.1. Impact of Make-or-Buy Decision on Strategic Level

At the strategic level, the make-or-buy decision influences long-term business goals and competitiveness. The choice of making in-house or buying externally can impact the company's core competencies and market position. For instance, deciding to make a product internally may support a strategy of vertical integration, enabling more control over the supply chain and fostering innovation. On the other hand, outsourcing certain components may allow the company to focus on its core business while benefiting from external expertise. Strategic considerations also include the company's ability to scale operations—if growth is anticipated, the decision to buy may ensure flexibility and avoid overinvestment in capacity. Additionally, aligning the make-or-buy decision with long-term sustainability goals or ethical sourcing can have lasting reputational effects.

3.2. Impact of Make-or-Buy Decision on Tactical Level

At the tactical level, the make-or-buy decision impacts sourcing strategies, vendor management, and operational planning. For example, choosing to outsource may involve negotiating contracts with suppliers, assessing their capabilities, and managing supplier relationships. Tactical decisions also revolve around inventory and supply chain management, where buying may require more robust logistics coordination, while making in-house could necessitate investment in production facilities or training for staff. Lead times and flexibility in response to demand fluctuations are crucial tactical considerations—buying may reduce lead times but require managing multiple suppliers, while making the product internally may provide better control over timelines and customization. This level involves balancing cost savings with operational efficiency.

3.3. Impact of Make-or-Buy Decision on Operational Level

At the operational level, the consequences of the make-or-buy decision directly affect day-to-day activities. If parts are made internally, it requires a focus on production planning, quality control, and resource allocation to ensure smooth operations. The company may need to invest in machinery, labor, or raw materials, which could impact short-term cash flow. On the other hand, outsourcing parts to suppliers requires operational teams to manage purchasing, delivery schedules, quality assurance, and inventory. If buying, the company needs to track supplier performance and ensure timely deliveries, while if making, internal teams must manage the production schedule and address any production bottlenecks. The operational impact also includes managing the risks of supply chain disruptions, whether from external suppliers or internal production issues.

4. JUST-IN-TIME AND JUST-IN-SEQUENCE DELIVERY

Just-in-Time (JIT) or Just-in-Sequence (JIS) delivery can be applied effectively in manufacturing environments with stable and predictable demand. JIT works best for materials that are used frequently, such as standard fasteners, packaging, or bulk raw materials. JIS, on the other hand, is ideal for items that need to arrive in a specific order for immediate use, such as pre-assembled car seats or custom wiring harnesses in automotive production. These approaches are suitable for high-volume production processes where consistent and reliable supply is critical. Materials that are costly to store or have limited shelf life, such as chemicals, perishables, or fragile components, benefit significantly from JIT to reduce storage costs and waste. However, JIT and JIS require highly reliable suppliers capable of meeting strict delivery schedules without delays. Critical, high-value parts, such as electronic modules or precision-engineered components, are good candidates for JIT to minimize inventory risks. These methods are less effective for materials with unpredictable lead times or those sourced from distant or volatile regions. Companies in industries with complex assembly processes, like automotive or electronics, can apply JIS to optimize workflow and reduce assembly line delays. Finally, to successfully implement JIT or JIS, robust logistics, real-time tracking, and seamless supplier communication are essential to ensure the timely and accurate delivery of materials [19-21]. The impacts of make-or buy decision on organizational hierarchies (strategic, tactical, and operational levels) are shown in Fig. 3.

Figure 3. *Impact of just-in-time and just-in-sequence delivery on organizational hierarchies (Source: own research)*

4.1. Impact of Just-in-Time (JIT) or Just-in-Sequence (JIS) delivery on Strategic Level

Implementing JIT/JIS aligns with long-term cost reduction strategies by minimizing inventory and associated carrying costs. Strategic partnerships with reliable suppliers become crucial to ensure uninterrupted material flow. The dependency on real-time logistics and supply chain infrastructure increases, necessitating investment in risk mitigation strategies. JIT/JIS supports sustainability goals by reducing waste and overproduction, enhancing the company's environmental initiatives.

4.2. Impact of Just-in-Time (JIT) or Just-in-Sequence (JIS) delivery on Tactical Level

Reducing inventory requires effective tactical planning to balance supply continuity and production demands. Accurate forecasting and demand planning systems are critical for maintaining smooth operations without overstocking or stockouts. JIT/JIS necessitates optimization of transportation schedules and logistics to meet precise delivery timelines, requiring advanced planning tools.

4.3. Impact of Just-in-Time (JIT) or Just-in-Sequence (JIS) delivery on Operational Level

Production efficiency improves as materials arrive exactly when needed (JIT) or in the required order for assembly (JIS). Suppliers' quality and reliability directly impact operational performance, as there is little room for error in the supply chain. Real-time tracking and IT integration with suppliers ensure seamless communication and delivery monitoring at the operational level.

Efficient coordination between logistics providers and production teams is essential to avoid delays or mismatched deliveries. Any disruptions in the supply chain, such as late shipments or incorrect sequencing, can lead to production downtime and increased costs. Continuous monitoring and performance evaluations of suppliers are necessary to maintain the high standards required for successful JIT and JIS implementation.

4.4. Comparison of Impact of Just-in-Time (JIT) or Just-in-Sequence (JIS) delivery

JIT ensures materials and components arrive exactly when needed for production, while JIS takes this further by delivering items in a specific sequence for immediate use in the assembly process. JIT is suitable for reducing inventory across various industries, while JIS is particularly valuable in complex assembly lines, such as automotive or electronics manufacturing. Both JIT and JIS minimize inventory levels, but JIS also reduces the time spent sorting or organizing materials on the production floor. JIS is more complex to implement than JIT, as it requires synchronized logistics and precise scheduling to deliver materials in the correct order. JIT offers more flexibility in material delivery schedules, whereas JIS demands stricter adherence to timing and sequencing. JIS relies more heavily on advanced IT systems and real-time communication to manage sequencing, while JIT can operate with less stringent technological requirements (see Figure 4).

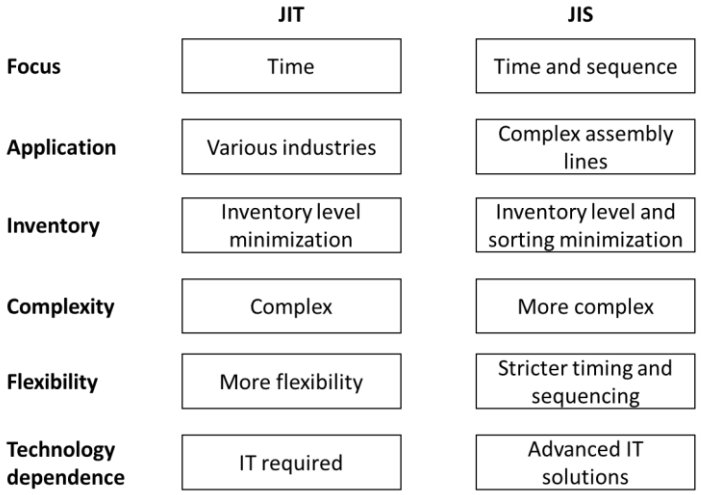

Figure 4. *Comparison of just-in-time and just-in-sequence delivery from focus, application fields, inventory management, complexity, flexibility and technology dependence (IT) point of view (Source: own research)*

5. IT SOLUTIONS

Effective collaboration with suppliers requires robust IT systems and seamless connections to ensure efficiency and reliability. An Enterprise Resource Planning (ERP) system is essential for integrating procurement, inventory, and production data, enabling streamlined communication and coordination. Similarly, Supply Chain Management (SCM) software provides real-time visibility into supplier performance, optimizes logistics, and helps track deliveries.

Automated data exchange through Electronic Data Interchange (EDI) minimizes manual errors by facilitating the transfer of purchase orders, invoices, and shipping notifications. Vendor Management Systems (VMS) enhance supplier relationship management by tracking performance, compliance, and contract terms. Real-time inventory management tools allow suppliers to monitor stock levels and trigger replenishments when thresholds are met, ensuring a continuous flow of materials.

Collaboration platforms or portals enable buyers and suppliers to share forecasts, production schedules, and demand data, improving accuracy and reducing uncertainty. Transportation Management Systems (TMS) further support logistics coordination by optimizing routing and delivery schedules. Integration with IoT technologies, such as RFID and GPS, allows tracking of materials in transit, ensuring timely and accurate deliveries. Lastly, cloud-based systems enhance scalability and flexibility, while robust cybersecurity measures protect sensitive data shared between companies and their suppliers. Together, these IT systems and connections create a strong foundation for efficient supplier collaboration [22-23]. The impacts of IT solutions on organizational hierarchies (strategic, tactical, and operational levels) are shown in Fig. 5.

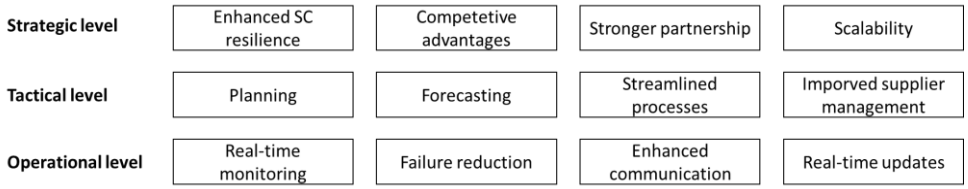

Figure 5. *Impact of IT solutions on organizational hierarchies (Source: own research)*

5.1. Impact of IT Solutions on Strategic Level

Strategic investments in IT systems improve the company's ability to anticipate and manage risks in the supply chain, such as disruptions or delays. Real-time data sharing and advanced analytics enable better decision-making, giving the company a competitive edge in cost, quality, and delivery performance. Advanced IT systems facilitate closer collaboration with suppliers, fostering long-term partnerships that align with strategic goals. Cloud-based platforms ensure the supply chain can scale with business growth, supporting global operations and expanding supplier networks.

5.2. Impact of IT Solutions on Tactical Level

Tools like ERP and SCM software enhance demand forecasting and production planning, ensuring optimal inventory levels and efficient resource allocation. Automated data exchange

through EDI reduces administrative workload, speeding up procurement and payment cycles. Vendor management systems enable tactical teams to track supplier performance, ensuring compliance with quality and delivery standards.

5.3. Impact of IT Solutions on Operational Level

IoT integration and real-time tracking systems help operational teams monitor shipments, ensuring materials arrive on time and in good condition. Automation and digital tools minimize manual errors in purchase orders, invoices, and inventory updates, improving operational accuracy. Seamless IT integration facilitates quick resolution of issues, enabling operational teams to respond rapidly to changes in demand or supply disruptions.

6. ORGANIZATION OF SUPPLY AND TRANSPORTATION

The decision on who handles the supply and who organizes the transportation should be determined by several key criteria. Cost-efficiency is a primary factor; the choice should minimize total logistics and administrative costs to ensure the most economical solution. Expertise also plays a crucial role; the party with more experience in managing transportation logistics or complex supply chains should ideally take on the responsibility. Reliability is another important consideration; the party with a proven track record of meeting deadlines and ensuring supply chain continuity should be entrusted with these tasks. Geographical proximity is relevant as well; if one party is closer to the production site or key suppliers, they may be better positioned to handle transportation effectively. Control requirements should also be factored in; if tight oversight is needed over timing or handling, it may be preferable for the company itself to manage transportation internally.

Supplier capabilities are key; if a supplier has established and efficient transportation systems in place, delegating the task to them can streamline operations. Flexibility is another consideration; the party that can adapt quickly to changes in demand or disruptions should be the one to organize transportation. Risk management should also be evaluated; the decision should account for who is best equipped to handle potential risks such as delays, damage, or regulatory compliance issues. Technology integration plays a role, too; the party with better IT systems for tracking and coordinating deliveries may be more suited to manage transportation. Sustainability goals can influence the decision, with preference given to the party that can provide greener logistics practices in line with the company's environmental objectives. The scale of operations is important; larger organizations may prefer to handle transportation themselves for economies of scale, while smaller companies may find it more efficient to outsource [24-25]. Lastly, contractual agreements and pre-existing service level agreements (SLAs) must be considered, as these may dictate which party is responsible for handling the supply and transportation (see Fig. 6).

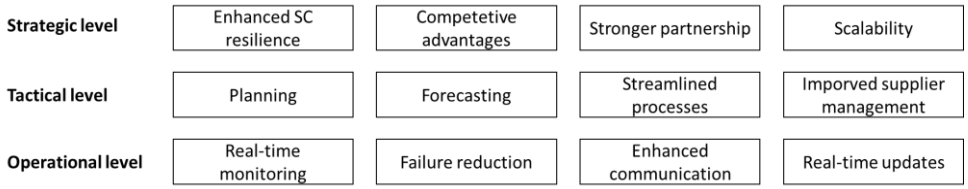

Figure 6. *Impact of organization of supply and transportation on organizational hierarchies (Source: own research)*

6.1. Impact of Organization of Supply and Transportation on Strategic Level

The decision impacts long-term cost management strategies. Outsourcing transportation can lead to cost savings, whereas managing it internally might provide more control but higher fixed costs. By selecting the right party for handling supply and transportation, a company can enhance its supply chain's flexibility and resilience, reducing the risk of disruptions. Choosing a supplier or third-party logistics (3PL) provider to handle transportation fosters strategic partnerships, influencing future collaboration, reliability, and performance. Efficient transportation management can provide a competitive edge, improving delivery speed, reducing lead times, and enhancing customer satisfaction.

6.2. Impact of Organization of Supply and Transportation on Tactical Level

At the tactical level, the decision affects day-to-day logistics planning, including route optimization, scheduling, and inventory management. Outsourcing transportation might require more coordination but can lead to greater efficiency. The company must manage and evaluate supplier or third-party performance to ensure they meet delivery expectations, quality standards, and compliance. Tactical decisions must address risk factors such as delays, damages, or regulatory issues. If a third party handles transportation, the company must ensure the provider has appropriate risk management measures in place.

6.3. Impact of Organization of Supply and Transportation on Operational Level

The handling of transportation influences inventory management practices. If the company manages transportation, it can synchronize supply arrivals with production schedules more precisely. The operational level requires continuous communication with suppliers and logistics providers to track shipments, resolve issues, and ensure timely deliveries. If transportation is outsourced, operational teams need to be able to respond quickly to unforeseen changes or disruptions in the delivery process, requiring efficient communication and contingency plans.

7. CENTRALIZED AND DECENTRALIZED PROCUREMENT

The decision of whether procurement should be centralized or decentralized depends on several factors, including the size and structure of the organization. Centralized procurement allows for greater control over purchasing decisions, ensuring consistent standards, policies, and supplier negotiations across the company. This approach can lead to cost savings through

bulk purchasing, as centralization leverages economies of scale. Additionally, centralized procurement allows for better coordination, making it easier to standardize processes and implement strategic sourcing initiatives. It also enables the company to maintain stronger relationships with suppliers, as negotiations are handled by a dedicated team with expertise in procurement.

On the other hand, decentralized procurement offers more flexibility, allowing individual departments or business units to make purchasing decisions based on their specific needs. This approach can speed up the procurement process, as it eliminates the need for approval from a central body, enabling faster response times. Decentralized procurement also empowers local teams, fostering a sense of ownership and accountability. It is particularly beneficial for organizations with diverse products, services, or geographical locations, where local market knowledge and supplier relationships are important. However, decentralized procurement can lead to duplication of efforts, with each unit potentially negotiating separate contracts, which may result in higher overall costs. It can also create challenges in maintaining consistency and compliance with company-wide policies.

Ultimately, the decision depends on the company's goals, the complexity of its supply chain, and its ability to balance control with flexibility. Many organizations adopt a hybrid approach, centralizing certain procurement activities for strategic purchases while decentralizing others to meet local or departmental needs [26-27]. The impacts of centralized or decentralized procurement on organizational hierarchies (strategic, tactical, and operational levels) are shown in Fig. 7.

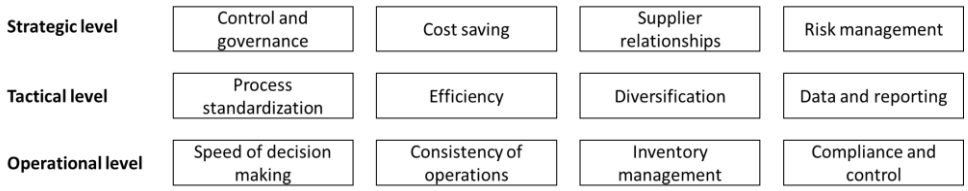

Figure 7. *Impact of centralized or decentralized procurement on organizational hierarchies (Source: own research)*

7.1. Impact of Centralized or Decentralized Procurement on Strategic Level

Centralized procurement offers greater control over spending, supplier selection, and procurement strategies, enabling better alignment with the overall business strategy. It helps standardize processes across the organization and ensures compliance with corporate goals. Centralized procurement often leads to better cost control and savings through bulk purchasing and negotiated contracts with suppliers, improving overall profitability. A centralized approach can strengthen relationships with key suppliers through long-term contracts, ensuring consistency and reliability. In contrast, decentralization might lead to fragmented supplier relationships, reducing leverage in negotiations. Centralized procurement allows for a unified risk management strategy, helping mitigate supplier risk, compliance issues, and supply chain disruptions more effectively. Decentralization, however, might lead to uneven risk exposure across different parts of the organization.

7.2. Impact of Centralized or Decentralized Procurement on Tactical Level

Centralized procurement enables standardization of purchasing processes, improving efficiency, and ensuring compliance with policies. However, decentralized procurement provides flexibility and responsiveness to local needs, enhancing efficiency in certain cases where speed is important. Decentralization allows for more tailored supplier selection based on local or departmental requirements, potentially leading to a wider variety of suppliers and innovative solutions. Centralized procurement, on the other hand, may limit diversity by focusing on fewer, larger suppliers. With centralized procurement, it's easier to collect and analyze procurement data across the organization, providing valuable insights for strategic decision-making. In decentralized systems, however, data is often fragmented, making it harder to track and evaluate performance comprehensively.

7.3. Impact of Centralized or Decentralized Procurement on Operational Level

Decentralized procurement speeds up decision-making as individual units or departments can make purchasing decisions without waiting for central approval, enhancing operational responsiveness. Decentralized procurement allows local teams to respond more quickly to specific needs, utilizing their expertise and market knowledge for better procurement outcomes. In contrast, centralized procurement can delay decision-making due to the need for approvals or coordination with other departments. Centralized procurement ensures consistency in the selection of suppliers, contract terms, and product quality across the organization, reducing operational complexity. However, decentralized procurement can lead to variations in product quality and supplier performance across different units. Centralized procurement often leads to better inventory management by consolidating orders and reducing overstocking, whereas decentralized procurement may result in excess inventory or stockouts due to a lack of coordination between departments. Centralized procurement improves control over compliance with procurement policies, regulations, and company standards, while decentralization might lead to inconsistencies in adherence to those policies at the operational level.

8. TRANSPORTATION MODES

A company should be capable of receiving a variety of transportation modes to ensure flexibility and efficiency in its supply chain operations. Road transportation is essential for short to medium distances, providing flexibility in delivery schedules and routes, especially for smaller shipments or last-mile deliveries. Rail transport can be used for bulk or heavy goods over long distances, offering a cost-effective solution with a lower environmental impact compared to road transportation. Airfreight is critical for fast delivery of high-value or time-sensitive goods, enabling quick turnaround times but at a higher cost. Sea freight is ideal for large, bulk shipments across international borders, providing an economical solution for moving goods in large volumes, though it requires more time for delivery.

Intermodal transportation, which combines multiple modes of transport like rail and road, allows companies to optimize costs and delivery times, especially for long-distance shipments. Pipeline transportation may be necessary for companies dealing with liquids or gases, such as oil or chemicals, where continuous and secure flow is essential. Courier services are valuable for handling small parcels and urgent deliveries, often utilized in e-

commerce or for time-sensitive documents. Public transportation networks may also be employed for specific deliveries in urban areas where road access is limited or expensive.
The ability to handle containerized shipments is crucial for companies involved in international trade, as containers offer standardized sizes and protection for goods. Flatbed trucks should also be part of the capability to handle oversized or non-stackable items, like construction materials or large machinery. Refrigerated transport (e.g., refrigerated trucks or containers) is necessary for perishable goods that require specific temperature conditions during transit. Finally, bulk carriers should be considered for companies dealing with raw materials like grains, coal, or minerals, which need specialized transport methods to handle large quantities. By ensuring capabilities in these transportation modes, a company can optimize its supply chain, reduce costs, and improve delivery performance across various sectors [28-29]. The impacts of transportation modes on organizational hierarchies (strategic, tactical, and operational levels) are shown in Fig. 8.

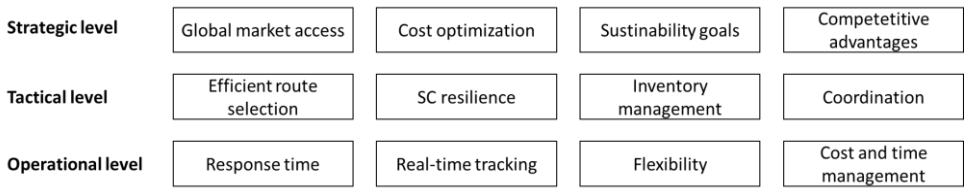

Figure 8. *Impact of transportation modes on organizational hierarchies (Source: own research)*

8.1. Impact of Transportation Modes on Strategic Level

The capability to receive different transportation modes expands a company's reach, allowing it to access international markets and diversify its customer base. This strategic flexibility enables the company to align with global expansion goals. By utilizing the most cost-effective transport modes for specific shipments, companies can strategically reduce transportation costs. For instance, sea freight can be used for large volumes, while air freight is reserved for high-value, urgent deliveries, allowing for optimal cost allocation. Companies can align their transportation strategies with sustainability objectives by choosing modes with lower environmental impacts, such as rail or sea transport over road freight, contributing to a more ecofriendly supply chain. The ability to use multiple transportation modes offers a competitive edge, as the company can meet diverse customer needs with flexibility in delivery options, speed, and cost.

8.2. Impact of Transportation Modes on Strategic Level

Tactical decision-makers can optimize logistics by selecting the most appropriate transport mode based on cost, speed, and delivery requirements, ensuring efficient resource allocation. Having multiple transportation options allows the company to be more agile in responding to disruptions, such as strikes, weather events, or port congestion, minimizing the impact on delivery timelines. The flexibility to receive goods through different transportation modes helps ensure better inventory control by enabling more frequent deliveries or adjusting to shipping schedules based on need and lead time. Coordinating between various transport

modes requires careful planning and collaboration with suppliers and logistics providers to ensure smooth transitions, such as from sea freight to road delivery.

8.3. Impact of Transportation Modes on Strategic Level

With a variety of transportation options, operational teams can respond quickly to changes in demand, delivery schedules, or urgent shipments by switching to faster modes like airfreight when needed. The use of diverse transport modes requires robust tracking systems to monitor shipments across various channels, ensuring timely deliveries and reducing the risk of delays or lost goods. Operational teams must be prepared to handle different types of cargo, whether it's bulk, oversized, perishable, or containerized goods, requiring specialized equipment and facilities at loading and unloading points. Operational decision-making must focus on balancing time sensitivity and cost, using slower, cheaper transport for non-urgent deliveries and faster, more expensive options for critical goods, optimizing the supply chain's efficiency.

9. LOADING UNITS AND CONTAINERS

In procurement processes, the types of unit loads accepted should align with the company's operational needs, storage capacity, and transportation capabilities. Palletized loads are commonly accepted as they standardize handling and storage, making them easy to stack, transport, and store. Containerized loads are essential for international shipments, offering a secure, standardized method for transporting goods while protecting them from damage. Bulk loads should be considered for materials such as grains, liquids, or chemicals that require large quantities and specific handling conditions, often involving specialized equipment like silos or tanks. Roll cages or mesh containers are useful for handling smaller, high-turnover goods in retail environments, offering efficient transportation and easy access to items.

Drums and barrels are often accepted for liquid or powdered products, particularly in industries such as chemicals or food production, providing secure containment during transportation. Intermediate Bulk Containers (IBCs) are suitable for large volumes of liquid or granular materials, offering better space utilization compared to drums or barrels. Finally, cartons or boxes are ideal for smaller, individual items, particularly for e-commerce or retail, where they offer easy handling and labeling. Accepting the right types of unit loads ensures streamlined operations, efficient inventory management, and cost-effective logistics. The impacts of used loading units in procurement processes on organizational hierarchies (strategic, tactical, and operational levels) are shown in Fig. 9.

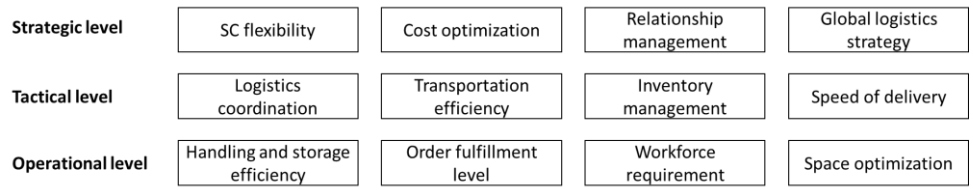

Figure 9*. Impact of used loading units in procurement processes on organizational hierarchies (Source: own research)*

9.1. Impact of Used Loading Units in Procurement on Strategic Level

The ability to accept different unit loads allows a company to adapt to varying market demands and product types, providing flexibility in sourcing and responding to customer needs. Standardizing unit loads, such as palletized or containerized goods, enables economies of scale in transportation and warehousing, ultimately reducing logistics costs and improving profitability. The decision to accept specific unit loads can influence relationships with suppliers, as it sets clear expectations for packaging and delivery methods, ensuring alignment with broader strategic goals. Accepting containerized or bulk loads is critical for international procurement, supporting global expansion and positioning the company to efficiently handle international supply chains and cross-border logistics.

9.2. Impact of Used Loading Units in Procurement on Tactical Level

The choice of unit loads impacts inventory control by optimizing space utilization and handling efficiency, aiding in better stock rotation, and ensuring easier access to materials when needed. Accepting various unit loads requires tactical planning to align transportation and storage needs with product characteristics. This requires coordination between procurement, warehousing, and transportation teams to optimize the flow of goods. By choosing standardized unit loads like pallets, a company can streamline transportation logistics, reducing handling time, optimizing loading and unloading processes, and improving the overall speed of delivery.

9.3. Impact of Used Loading Units in Procurement on Operational Level

On the operational level, accepting a variety of unit loads affects daily activities in warehousing and distribution, where the team must be equipped to handle specific loads, such as pallets, drums, or cartons, using the appropriate tools and storage systems. By accepting and properly managing unit loads, operational efficiency is improved, allowing faster order picking, packing, and shipping. Operationally, handling diverse unit loads may require specialized equipment (e.g., forklifts, conveyors) and staff training to ensure safe and efficient handling, influencing workforce planning and safety protocols. Different unit loads require specific storage configurations, and effective acceptance policies ensure that warehouse space is utilized optimally, reducing wasted space and lowering overhead costs.

10. CONCLUSIONS

In conclusion, selecting suppliers requires careful consideration of their reliability, quality, cost-effectiveness, and alignment with the company's strategic objectives. When making a make-or-buy decision, factors such as cost, quality, capacity, and core competencies should guide the choice, with critical or specialized components likely to be sourced externally. Just-in-time (JIT) delivery can be successfully applied for materials that are non-perishable, high-demand, and easily stocked, ensuring minimal inventory while maintaining supply chain efficiency. A strong IT system is necessary to ensure seamless communication and real-time tracking of deliveries, fostering collaboration and transparency with suppliers.

The decision of who handles the supply and organizes transportation should be based on cost, expertise, control, and proximity to suppliers, with outsourcing beneficial when

flexibility and efficiency are prioritized. The choice between centralized or decentralized procurement depends on the company's size, structure, and need for local responsiveness versus overall control. The company should be capable of receiving a variety of transportation modes, including road, rail, air, and sea, to ensure flexibility and reliability across different delivery scenarios. Accepting diverse unit loads, such as palletized, containerized, or bulk shipments, allows for streamlined operations and better inventory management.

Lastly, the warehouse stock levels for each material group should be tailored to demand, lead times, and product criticality, balancing inventory costs with the need for operational flexibility and uninterrupted production. By carefully applying these principles, companies can enhance their procurement strategies, improve supply chain efficiency, and reduce costs, ultimately driving better operational and strategic outcomes.

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