

Policy Briefs

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Source: US Airforce Logistics of Readiness

An Assessment of Logistics Performance of Manufacturing Firms in the Philippines

Introduction

The Philippines' logistics system is deemed archaic, inefficient and costly to users. However, available logistics data is scant and unable to provide information on the actual performance of the country's logistics capabilities. Knowledge of logistics performance is critical for firms as a starting reference in assessing their relative position. Additionally, it can help raise awareness and improve cooperation among members of the supply chain.

To this end, a study was conducted in 2017 to present an initial baseline assessment of the logistics performance of manufacturing firms in the Philippines. The primary goal is to mobilize firms, industry representatives and policy makers to work together in addressing the actual logistics weaknesses and sustaining the existing strengths in the logistics of manufacturing firms in the Philippines.

Based on an extensive literature review, a questionnaire was developed and distributed to manufacturing firms across the country. 159 usable questionnaires were collected from firms in major cities such as Clark, Batangas, Cebu, Iloilo, Davao, Tagaytay, Cagayan de Oro, General Santos and those in Metro Manila. Majority of the survey respondents were small and medium size enterprises (SMEs), mainly from the food industry (42 percent), the construction materials sector (12 percent), and the furniture and decors sector (11 percent).

There are four main components of logistics cost over sales, which is the key logistics performance measure developed in this study. These components are: (1) transport cost over sales; (2) warehousing cost over sales; (3) inventory carrying cost over sales; and (4) logistics administration cost over sales. The transport cost over sales includes both outbound and inbound costs of the surveyed firm, while the warehousing cost over sales covers all the activities related to the

► *The primary goal is to mobilize firms, industry representative and policy makers to work together in addressing the actual logistics weaknesses and sustaining the existing strengths in the logistics of manufacturing firms in the Philippines.*

¹ The questionnaire was reviewed, revised and validated by the International Finance Corporation (IFC), the Department of Trade and Industry (DTI), industry experts and several representatives from key professional organizations.

operations in the warehouse. On the other hand, the inventory carrying cost over sales captures the cost of having the physical inventory instead of using that money for another purpose, often referred to as the “opportunity” cost. This component is the most difficult to estimate.

Lastly, the logistics administration cost over sales is an imputed value that is equivalent to the 10 percent of the sum of transport, warehouse and inventory carrying cost. This computation is mainly based on the paper of Banomyong (2007) suggesting that if transport, warehouse and inventory carrying costs are obtained, then 90 percent of the total logistics cost is available.

General Observations from the Survey Results

Figure 1 provides a comparative illustration of the Philippines’ logistics costs against other selected ASEAN member states (i.e., Indonesia, Vietnam and Thailand). As exhibited, the Philippines has the highest level of logistics cost/sales as compared with Indonesia, Vietnam and Thailand. In contrast, Thailand has the lowest cost among the four countries while Indonesia ranks next to the Philippines at 21.4 percent.

A similarity between Indonesia and the Philippines is their geographic structure², which is most likely contributing to the high logistics cost. On another note, the high transport and inventory costs likewise reflect the unreliability of the logistics system in the Philippines.

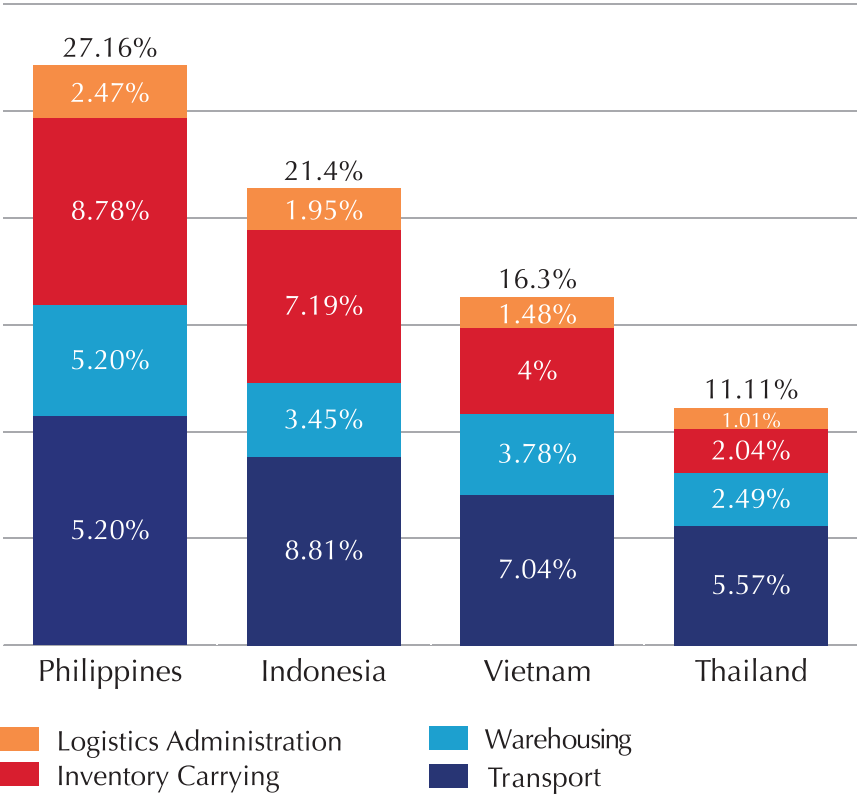


Figure 1. Logistics Cost/Sales by Component

Source: Survey data

Logistics cost also differs based on the sector in which the responding firm operates. As shown in Figure 2, firms operating in higher value sectors often have lower logistics costs than firms in lower value sectors. As compared with

² Indonesia and the Philippines are both archipelagoes.

Indonesia, Vietnam and Thailand, the Philippines has higher logistics cost in the following sectors: chemical, textile and garments, electronics.

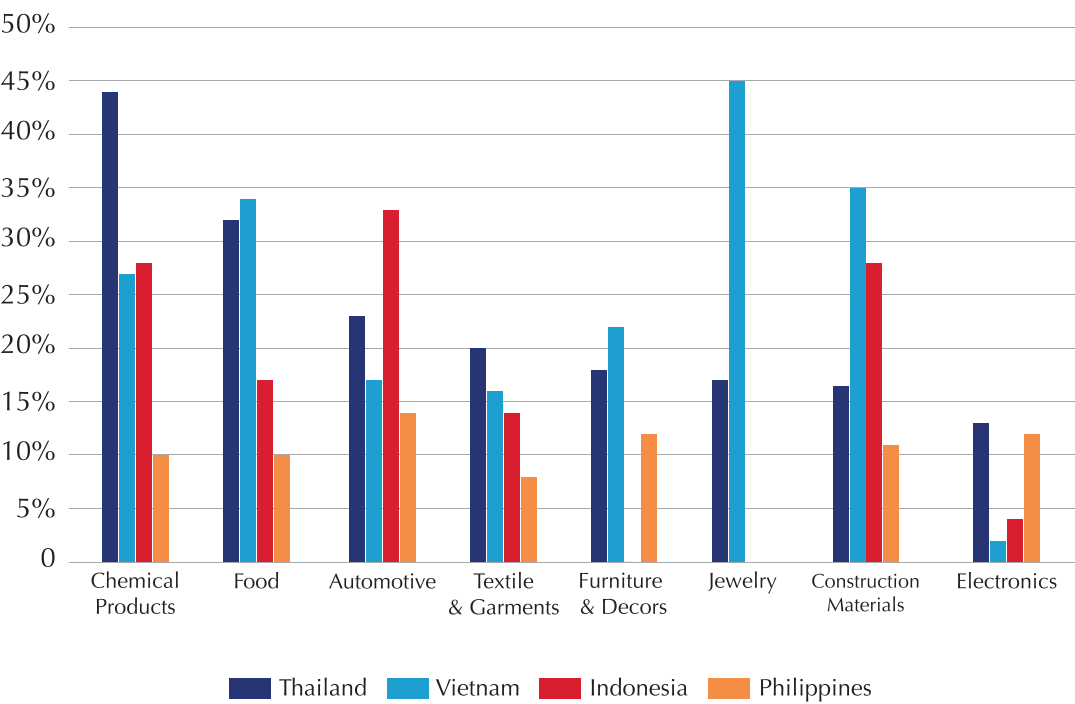


Figure 2. Logistics Cost/Sales by Sector

Source: Survey data

Likewise, the country faces relatively high logistics cost/sales in the food sector as it is expensive to transport food products within the Philippines given its archipelagic structure.

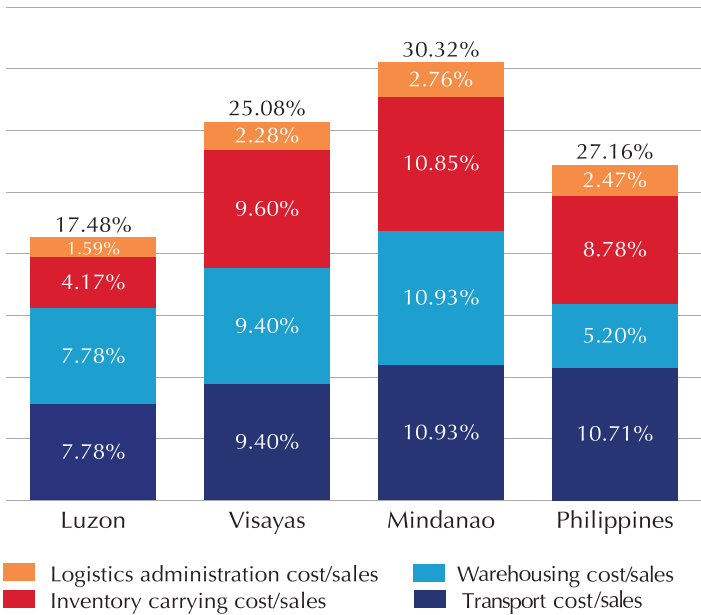


Figure 3. Logistics Cost/Sales Components by Island Group and National Average

Source: Survey data

In general, the logistics cost by sector in the Philippines is higher than that in Thailand. This can be attributed to the more industrialized nature of Thailand, which allows them to benefit more from value added in the final product, subsequently resulting to lower logistics cost/sales.

Logistics Performance of the Philippines

Logistics performance has three main dimensions: cost, time and reliability. The combination of these reflects overall logistics performance in the Philippines. In the survey, respondents were asked to weigh the dimensions based on importance, using a multi-criteria decision making technique. Figure 4 illustrates how respondents perceive the overall logistics performance in the country.

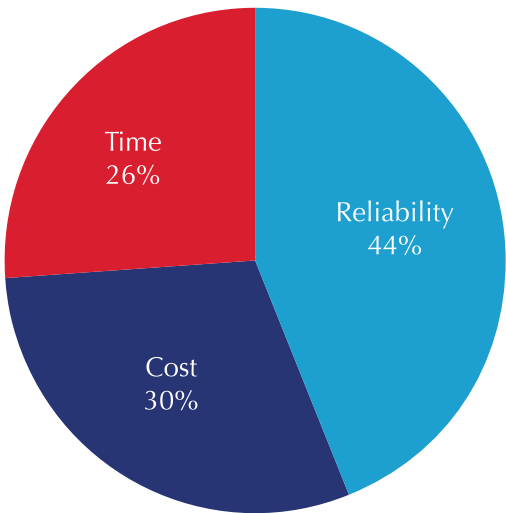


Figure 4. Logistics Performance Dimensions

Source: Survey data

Results reveal that the most important issue for manufacturers in the Philippines is reliability. Although cost is highly important, it is also seen as a by-product of low logistics reliability. Hence, if reliability is not improved, cost issues may continue to persist because its level is highly affected by obtained reliability. Moreover, high costs are usually passed on to either customers or suppliers.

Several Key Performance Indicators (KPIs) have been selected to reflect overall logistics performance in the country. The main KPIs are: delivery in full and on time (DIFOT), damage rate, customer complaint rate, ratio of returns, forecast accuracy, and cash conversion cycle.

Table 1 illustrates a comparison of the overall logistics performance of the respondents based on the KPIs. Data shows that the Philippines is not doing terribly compared with the selected ASEAN member states. Its DIFOT capability is second to Vietnam but its ratio of returns is the highest at 5.15 percent.

The accuracy of forecast in the Philippines, meanwhile, is better than Vietnam’s, although not as good as in Indonesia or in Thailand. The country’s cash conversion cycle is also slightly longer by 1.5 to almost 3 days compared to other countries.

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Table 1. Comparing Logistics Key Performance Indicators

Key Performance Indicators (KPIs)	Philippines	Indonesia	Vietnam	Thailand
Delivery In Full & On Time (DIFOT)	89.62%	81.92%	90.99%	87.84%
Damage rate	3.7%	2.01%	2.18%	4.16%
Customer complaint rate	5.97%	6.61%	6.65%	2.64%
Ratio of returns	5.15%	3.55%	2.26%	3.58%
Forecast accuracy	80.15%	81.68%	75.53%	84.40%
Cash Conversion Cycle (C2C)	21.77 days	19 days	20.29 days	N.A

Source: Survey data, WB logistics performance surveys, Banomyong et al (2014)

Although the KPIs reflect various aspects of logistics performance, their focus are mostly output-based and do not reflect inputs or processes. Interestingly, the cash conversion cycle is the only indicator that reflects the financial dimensions in logistics. Having the overall logistics cost and performance of the country is essential.

However, an important thing to note is that the logistics cost and performance depend heavily on the industrial sectors. Delivery in full and on time (DIFOT) is a critical KPI, showing the output of a given logistics system. Table 2 compares the DIFOT capability of key industrial sectors in selected ASEAN member states.

Table 2. Comparative DIFOT Assessment

Delivery In Full & On Time (DIFOT)	Philippines	Indonesia	Vietnam	Thailand
Automotive	97.18%	83.75%	98%	82.45%
Chemical products	85.71%	81.17%	100%	87.57%
Construction materials	81.44%	95.58%	75%	86.36%
Electronics	88.05%	95.32%	80%	85.36%
Food	88.02%	91.14%	100%	89.41%
Furniture & decors	96.3%	90.22%	N.A	86.09%
Jewellery	99.6%	89.64%	N.A	N.A
Textile & Garments	91.55%	93.75%	80%	90.66%

Source: Survey data, WB logistics performance surveys, Banomyong et al (2014)

The Philippine automotive sector benefits from a high DIFOT level, which is likely due to the nature of the industry's standard just-in-time practices. It is also interesting to note that the electronics industry together with textiles and garments and food are at the third highest DIFOT level, while construction materials is at the lowest DIFOT level. Meanwhile, the DIFOT level for jewellery is the highest in the country.

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Philippine Logistics Performance by Island Group

In the Philippines, logistics performance differs by island group. Figure 5 illustrates the differences (in days) in logistics performance based on order cycle time, transport lead-time, and cash conversion cycle among the island groups of Luzon, Visayas and Mindanao. The average order cycle time or OCT accounts for the time the responding firm receives/takes an order until the time the item/s is/are delivered to the customer. This reflects both the administrative process involved in responding to an order and the actual physical transport of the goods. On the other hand, the transportation lead-time only focuses on the actual physical transport from the responding firm to the customer.

Based on the results, Visayas registered lower levels of performance and stakeholders attributed this finding to the geographical nature of the region, with a multitude of inter-island shipping used in the logistics of freight. This finding also underscores the critical issue confronting smaller islands that have limited connectivity to main economic locations within the country.

Meanwhile, the cash conversion cycle in Mindanao is the shortest at almost 14 days, while Visayas has a cash cycle of almost one month. This translates to higher financial burden faced by respondents in Visayas than in Mindanao.

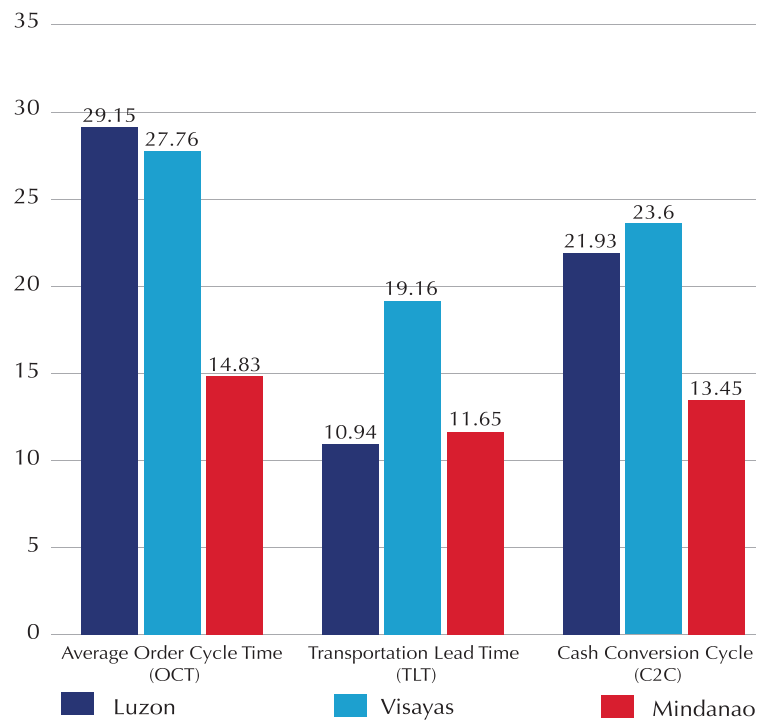


Figure 5. Regional (island group) differences in logistics performance (days)

Source: Survey data

Figure 6 illustrates benchmarking data based on the actual output of the survey respondents. Luzon appears to outperform the other regions. Visayas, on other hand, seems to suffer from low logistics performance. Mindanao experiences the highest level of returns, which pose additional logistics problems.

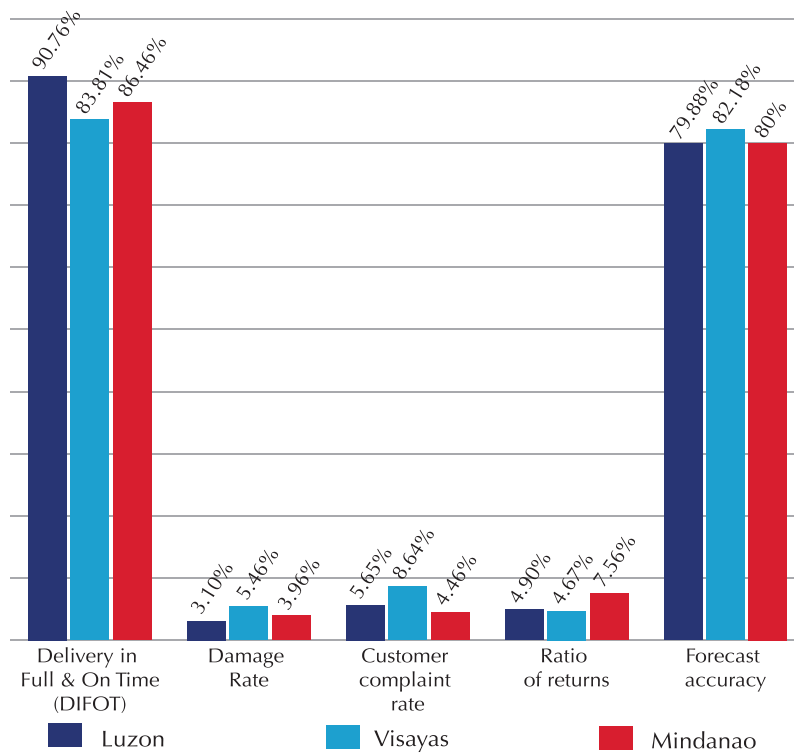


Figure 6. Regional (island group) differences in logistics performance (percent)

Source: Survey data

Benchmarking with The World Bank's Logistics Performance Index (LPI)

The World Bank's Logistics Performance Index is a standard tool created to help countries identify the challenges and opportunities faced in trade logistics. It is based on a worldwide survey of operators on the ground (global freight forwarders and express carriers) who provide feedback on the logistics "friendliness" of countries where they operate and trade.

In this study, the respondents were asked the same questions used in the World Bank's LPI survey to reveal gaps between the external and internal perception of logistics performance. The scores are from those who are outside the country and from those who are operating in the Philippines. The results in Table 3 reveal differences in perception between the international and domestic respondents. The average scores of the Philippines (3.45 for international, 3.34 for domestic) are higher than its LPI score (2.86).

Table 3. Perceived Performance of the Philippines' Logistics Performance

	WB LPI 2016	International	Domestic
Industrial Logistics Score	2.86	3.45	3.34
Rank (out of 160)	71	31	40
Country (Equivalent)	Philippines	Malaysia	Panama

Note: The highest score is 5 out of 5.

Source: Survey of 159 Manufacturing Firms in the Philippines

The highest gap is in the perception on: (1) the effectiveness of Customs and other authorities in customs services; and (2) the quality of transport and

telecommunication infrastructure as Philippine respondents tend to assign higher scores than the respondents from outside the country, partly due to their familiarity and knowledge in handling such logistics performance dimensions.

Based on international perception, the Philippines’ logistics performance is at par with Malaysia, which is considered a logistics-friendly country and the second highest in ASEAN. Meanwhile, based on domestic perception, the country’s logistics performance is around the same level as Panama’s, which has been identified as a consistent performer in terms of logistics.

Outsourcing and Logistics Service Provider Capability

Although the management of logistics can be done in-house or outsourced, the trend among the respondents is to handle domestic logistics activities in-house and outsource international logistics. The Philippines’ outsourcing ratio is similar with Indonesia (Figure 7). In Vietnam, the ratio of logistics outsourcing is higher at 68 percent to take advantage of logistics service providers (LSPs) and sustaining competitive advantage.

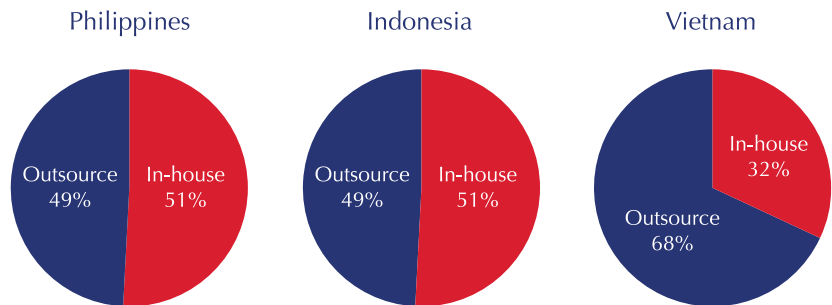
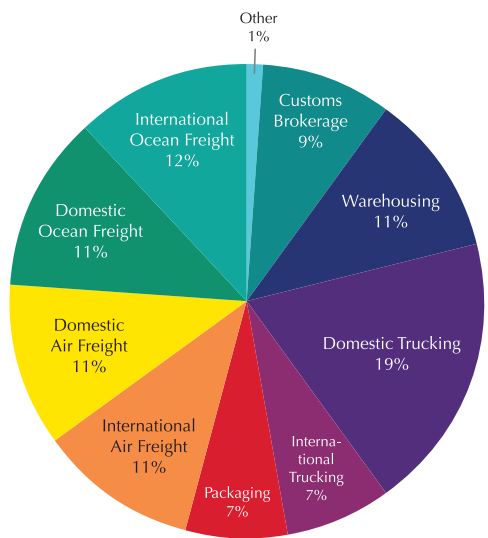


Figure 7. Outsourcing ratio

Source: Survey data, WB logistics performance surveys

Meanwhile, the most outsourced logistics activities in the Philippines are international transport and customs brokerage; and the highest outsourcing ratios are with domestic trucking and domestic ocean freight (Figure 8). Understandably, transport activities are the most outsourced among other activities to minimize the burden of manufacturers in managing their own fleet of vehicles and ocean vessels.



Most outsourced activities are:

- Domestic transport
- Domestic ocean freight
- International transport
- Customs brokerage

Most in-house activities are:

- Warehouse
- Inventory management
- Logistics IT system
- Value-added services

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Figure 8. Outsourced Logistics Activities

Source: Survey data

While service level agreements (SLAs) are important for users of LSPs, the results are quite surprising. As shown in Figure 9, more than a third of respondents do not have any type of SLA, probably because outsourced logistics is often made on an ad-hoc basis and more of an expense that needs to be reduced, rather than being considered a strategic value.

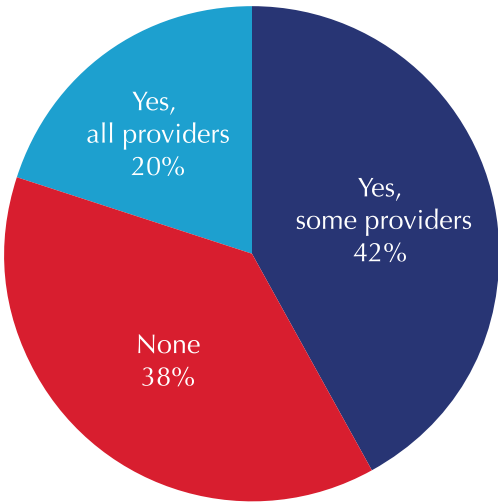


Figure 9: Service Level Agreements

Source: Survey data

Table 4 compares the logistics performance of service providers in the Philippines and select ASEAN member states. Among the KPIs, the most important is the DIFOT KPI as it reflects the overall capacity to deliver in full and on time based on the customers’ instructions. As seen in the table, the capabilities of service providers in the Philippines are at par with that of selected ASEAN member states. In fact, the C2C rate appears to be relatively better.

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Table 4. Comparative Logistics Performance Assessment of Service Providers

Key Performance Indicators (KPIs)	Philippines	Indonesia	Vietnam	Thailand
Average Order Cycle Time (days)	8.71	10.27	6.35	7.13
Transportation Lead Time (days)	4.97	9.06	4.35	NA
Delivery In Full On Time (DIFOT)	85.12%	81.13%	93.70%	86.6%
Cash Conversion Cycle (C2C) (days)	12.29	13.85	16.1	13.09
Customer Complaint Rate	NA	NA	4.73%	5%
Damage rate	2.37%	3.71%	NA	NA

Source: Survey data, WB logistics performance surveys, Banomyong et al (2014)³

Figure 10 indicates that customs processes are considered as the most difficult issue faced by logistics service providers in the Philippines. Customs delays combined with other inspection delays take up almost a quarter of the problems. In addition, congestion and weather also act as hindrances to the performance of logistics providers.

³ Banomyong, R., Huong T.T.T., Ha, P.T., (2014) A Study of logistics performance of manufacturing and import-export firms in Vietnam, Proceedings of the 6th International Conference on Logistics and Transport (ICLT), Kuala Lumpur, Malaysia, August 26-29, 2014, ISSN 2392-5728.

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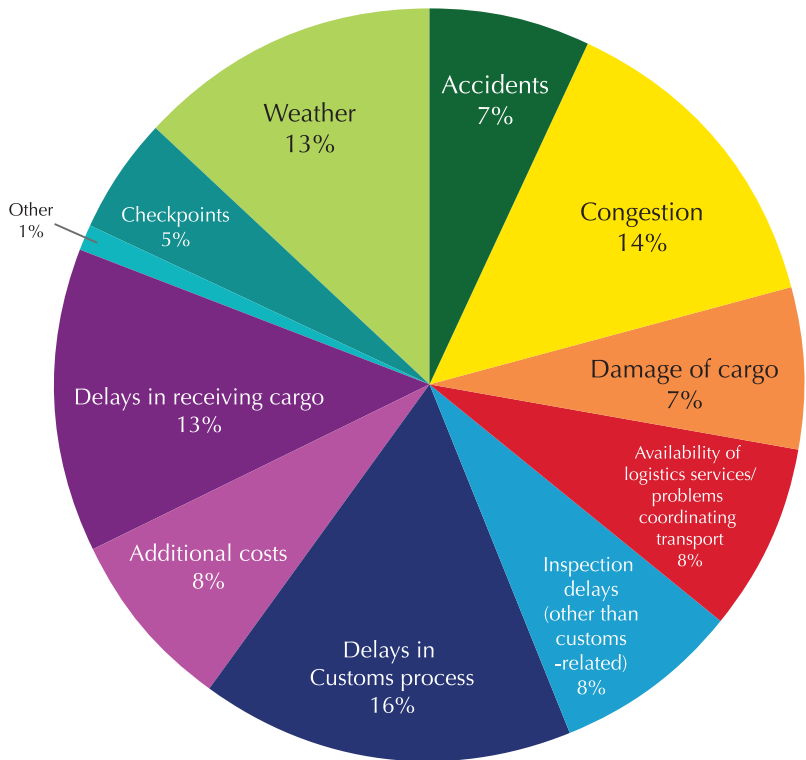


Figure 10. Most Common Problems Faced by Logistics Service Providers
Source: Survey data

Logistics Human Resource

On a positive note, respondents from the manufacturing sector and LSPs do not consider logistics human resources as an issue in the Philippines. The respondents reveal that most logistics skills are easily available in the country. This information favors the Philippines since qualified logistics human resource is difficult to find in most ASEAN member states.

Summary and Way Forward

The Philippines registered the highest logistics cost/sales as compared with countries such as Indonesia, Vietnam and Thailand. Its high logistics cost is not only caused by its archipelagic structure but also by reliability issues, which directly impact the level of inventory of manufacturers and consequently, the overall logistics cost faced by users.

There are regional and sector-specific variations in terms of logistics performance and cost in the country. These are expected given the different requirements related to logistics performance as well as the island structure of the country. Understandably, islands that are farther from economic centers suffer most from

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limited connectivity. Studying the commodity flows to and from these smaller islands will improve logistics and reduce the cost of access to and from these islands. A reliable inter-island shipping network can serve as a primary step towards the right direction.

From the user's perspective, reliability prevails as the most dominant issue in the logistics system of the country. This problem forces manufacturers to rely on inventory and warehouses, further increasing the logistics cost for the users. Thus, a reliable and consistent logistics system is needed to be able to plan efficiently.

Logistics outsourcing in the Philippines is still focused on traditional logistics activities. Outsourcing of value-added activities, on the other hand, remains limited as respondents are unaware of the types of value-added services offered by LSPs in the country. Logistics outsourcing can be expanded but this will require the support of an LSP quality assurance scheme.

The perception on logistics performance in the country appears to be higher than the WB's LPI score and ranking for both international and domestic logistics. This inconsistency calls for harmonization of domestic logistics standards with international logistics standards, which will facilitate seamless connectivity between domestic and international logistics.

In addition, there is a need for deeper understanding of supply chain issues in both the best and worst performing sectors of the country. Logistics knowledge transfer is part of the "peer" group methodology approach, which includes the sharing of best practices and lessons learned to greatly benefit less performing sectors. Moreover, studies on domestic logistics corridors would likewise be necessary to identify waste in the system.

Taken as a whole, efforts must be focused on eliminating uncertainties to establish a more reliable logistics system in the Philippines. Improving reliability will create an established and dependable environment where local manufacturers and LSPs can plan and design more efficient logistics systems. This can effectively reduce the logistics costs faced by key sectors and increase their competitiveness. In the long-run, focus can be diverted to time-based competition in order to sustain the country's competitiveness.

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This policy brief highlights specific issues and policy implications cited in the study submitted to the Department of Trade and Industry (DTI) in partnership with The World Bank. The policy brief may be downloaded at www.industry.gov.ph.

The views and opinions expressed in this policy brief are of the author/s and do not necessarily reflect Philippine government policy.

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