ASEAN SMEs' Integration in Global Value Chains (GVCs): Opportunities and Challenges in Response to COVID-19

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This document was produced under the Canada-OECD Project on ASEAN SMEs (COPAS) that aims to create more competitive, resilient and innovative SMEs which have the capacity to benefit from the ASEAN Economic Community (AEC) and foster inclusive development and poverty alleviation in the region. It is a result of a joint collaboration between the OECD and the ASEAN Coordinating Committee on Micro, Small and Medium Enterprises (ACCMSME), in close coordination with the ASEAN Secretariat.

This document was authored by a team of researchers from the Leibniz Institute for Economic Research at the University of Munich (ifo Institute): *Lisandra Flach*, *Isabella Gourevich*, and *Camille Semelet*. It was reviewed by the OECD Trade and Agriculture Directorate and the OECD Global Relations and Cooperation Directorateand consulted with the ACCMSME.

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Canada-OECD Project on ASEAN SMEs (COPAS)

The Canada-OECD Project on ASEAN SMEs (COPAS) aimed at creating more competitive, resilient and innovative SMEs which have the capacity to benefit from the ASEAN Economic Community (AEC) and foster inclusive development and poverty alleviation in the region. Overseen by the ASEAN Coordinating Committee on Micro, Small and Medium Enterprises (ACCMSME) and implemented with the funding support of Canada and technical expertise of the OECD, COPAS was launched in 2016 and ran until the end of 2021, covering components on enhancing productivity and access to finance for SMEs, as well as the ASEAN SME Policy Index 2018 that provided a tool to identify the strengths and weaknesses that exist in the current SME policy and benchmark the status of implementation of the ASEAN Strategic Action Plan for SME Development 2016-2025 to complement the ASEAN SME key performance indicators. COPAS also covered the initiatives to support the integration of ASEAN SMEs into the Global Value Chains (GVCs), among others through the publication of Fostering Participation in Digital Trade for ASEAN MSMEs (2019), Participation and Benefits of SMEs in GVC in Southeast Asia (2019), and Integrating Southeast Asian SMEs in Global Value Chains: Trade, Investment and Regulatory Policy Synthesis Note (2019).

OECD through the COPAS also extended its expertise for the ASEAN policy makers through the organisation of Regional Policy Networks of the OECD Southeast Asia Regional Programme (SEARP).

OECD Southeast Asia Regional Programme (SEARP)

For over two decades, the OECD and Southeast Asia have enjoyed a mutually beneficial relationship, fostering policy dialogue and disseminating good practices and mutual learning in areas such as investment, education, inclusiveness, sustainable infrastructures, good governance, access to markets, and fiscal policy. The SEARP, launched in 2014, has been instrumental in strengthening OECD co-operation with this dynamic region. Its structure is designed to encourage a systematic exchange of experiences to develop common solutions to regional and global policy challenges.

SEARP Trade Initiative

Trade liberalisation has played a key role in the economic transformation of Southeast Asian countries, whose trade, investment and production are increasingly organised around global value chains.The OECD and Southeast Asian countries collaborate on a range of trade-related issues such as:

- The Trade Facilitation Indicators (TFIs) that cover the full spectrum of border procedures
- The OECD Services Trade Restrictiveness Index (STRI) database which covers 44 countries in 22 services sectors.
- The OECD/WTO Trade in Value Added (TiVA) database currently covers 62 countries including eight ASEAN member states.

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Executive Summary

Southeast Asia has emerged as a key player in Global Value Chains (GVCs) due to its transformation into a global manufacturing hub. The ASEAN Economic Community (AEC) Blueprint 2025 aims at achieving a highly integrated and cohesive economy. The region continues to further promote integration of businesses into GVCs and helping them move up the GVC through innovation, digitalisation and access to trade. Indeed, the region exported USD 1.7 trillion worth of goods in 2021, with one-third of these exports going to OECD Member countries (IMF).

However, challenges such as COVID-19, climate change and the digital transformation just to name a few, have placed increased pressure on global supply chains, demonstrated the necessity of open markets and a rules-based trading system in good working order to address new challenges in world production. Arguably, small- and medium-sized enterprises (SMEs) are the most affected by these challenges.

This report provides a brief overview on the degree of integration of ASEAN countries in Global Value Chains (GVCs) focusing on SMEs and investigating the challenges and opportunities that these firms face in response to COVID-19, as well as considering gender-specific challenges and draw policy implications.

For the empirical analysis, the report exploits enterprise-level data for ASEAN countries from several sources: World Bank Enterprise Survey, Future of Business Survey and Global Entrepreneurship Monitor. It also uses indicators at the aggregate level from the Asian Development Bank Multiregional Input-Output Database and the World Bank COVID-19 Business Pulse Survey. The key messages and policy implications are as below.

1. **ASEAN integration in GVCs:** In ASEAN countries, the average import content of local production (backward GVC participation) equals 27% and the share of value added that was exported by ASEAN countries to be used in the production abroad (forward GVC participation) equals 25% on average. Regional value chains within the Asian region play a key role. The degree of integration varies largely across ASEAN countries: backward GVC participation is highest in Viet Nam and Cambodia (Figure 1). The degree of integration varies in part due to differences in sectoral specialization, economic size or degree of development of the country.
2. **Direct vs indirect integration of SMEs in ASEAN:** Indirect importing and exporting play an important role as a first step towards global integration of small firms. Enterprise data show that the number of firms that import and export directly increase rapidly with size: Whereas only 5% of small firms trade directly, for middle-sized firms this number is roughly 30% (Figure 2). As SMEs grow, they start relying less on indirect imports and more on direct imports, but also more of them start to export.

3. **Barriers to trade for SMEs:** Limited experience, low returns to scale and worse access to finance in comparison to larger firms impose additional constraints on SMEs. Among SMEs in the ASEAN region that are integrated into international markets through imports and/or exports, competition from informal firms and political instability are the most frequently mentioned constraints (Figure 3).
4. **Heterogeneous effects across size:** Barriers faced by ASEAN SMEs depend on how they are integrated into foreign markets (through imports and/or exports) and on firm size. Whereas small-sized importing enterprises mention access to finance and customs regulations most frequently as a barrier, large importing SMEs mention political instability and inadequately educated labour force most frequently as a barrier (Figure 3).
5. **Female entrepreneurship in ASEAN**: The share of female entrepreneurs in the ASEAN region is larger than in high-income countries, in part due to lack of alternatives (Figure 4). In Indonesia, Thailand and Viet Nam, the share of early-stage entrepreneurial activity of female is equal to the share of male. Gender parity is observed in particular among young entrepreneurs. However, the potential for integration in global supply chains is dampened by gender-specific constraints. For instance, women-owned SMEs are more likely to report transportation access as a major obstacle (Table 2). In the context of GVCs, lack of transportation can be a strong impediment for international integration.
6. **Female entrepreneurship during COVID-19:** Female dominated sectors such as retail and service activities face higher trade barriers and were more severely hit by the pandemics.
7. **Entrepreneurship gap**: SME entrepreneurship gap is lower in ASEAN countries in an international comparison. In several dimensions, pre- and post-pandemic constraints affect male and female entrepreneurs in a similar way (Figure 5). For instance, both for male- and female-led businesses, the share of ASEAN SMEs that mentioned financial stability as a challenge has almost quadrupled after the pandemic.
8. **Challenges for SMEs in response to COVID-19**: Due to COVID-19, the main struggles of firms are access to financing and securing liquidity. Governments should put greater emphasis on easing access to formal financing and reducing administrative burden to increase competitiveness of SMEs.
9. **Digitalization and SME growth:** The empirical analysis has shown that digital presence has multiple positive effects on firm activity (Figure 6 and Table 1). Governments need to further assist firms on their digitalization journey.
10. **Access to information for SMEs:** The main reason why firms have not applied for government support during the pandemic is a lack of awareness. Lack of awareness is also one important obstacle to digitalization.

Policy implications:

1. The pandemic has shown that SMEs have limited financial liquidity. Providing SMEs with better access to formal financial services by reducing regulatory barriers (e.g. simpler and transparent loan applications or trade insurance) will help firms weather future crises and support their integration into GVCs.

2. The digitalization trend of business was accelerated by the pandemic and the resulting lockdowns. Many SME owners struggle with integration of digital solutions in their business activities due to lack of skills. Investments in training and public support programs will help firms overcome knowledge gaps.

3. While female and male-led businesses face similar difficulties, these are amplified for women due to cultural and institutional barriers, such as problems to receive loans due to lack of collateral. Creating a gender-sensitive ecosystem for promoting women entrepreneurship can help firms overcome these issues.

4. Lack of awareness regarding government programs was during COVID-19 an important barrier for firms. The improvement of dissemination of information is a low-cost measure with high benefits for SMEs.

5. Regional supply linkages with other Asian countries represent a large portion of value-added created in the ASEAN member states. Further harmonization of standards and the decrease in trade barriers are important ways to increase global integration of SMEs in GVCs.

Introduction

ASEAN[1] small- and medium-sized enterprises (SMEs)[2] are a very heterogeneous group of firms, ranging from solo entrepreneurs to small traditional family businesses or high-growth start-ups located both in metropolitan cities and rural areas. Together they build the backbone of economic activity in the ASEAN region. At the regional level, the total number of SMEs in the region account for an average of 97% of all enterprises, employ 85% of the total workforce and contributed on average to 44.80%[3]. These firms, which were also hit the hardest during the pandemic (OECD, 2021), are now an important pillar for making the economic recovery in the post-pandemic world more sustainable and resilient to future shocks. The reasons for that are multifold. SMEs employ most of the workforce, which range from unskilled workers to entrepreneurs and employ many female workers in rural areas. They are an important source of dynamism in the economy and are a key driver in transforming old industries or developing new industries (ADB, 2021a). However, SMEs face several challenges with respect to business integration in the ASEAN region and in global markets through global value chains (GVCs). Complex border and customs procedures, limited experience and restricted access to finance in comparison to larger firms impose constraints on SMEs to enter foreign markets and grow (ADB, 2021a).

High fixed costs associated with the lack of economies of scale inhibit participation of SMEs in global markets, which is more severe in developing countries (WTO, 2019). Nonetheless, the rise of global production networks and the digitalization of the economy may open new opportunities for SMEs.[4] Whereas participation in GVCs is dominated by large firms (Ganne and Lundquist, 2019), the specialization in a few stages of the production chain offers growth perspectives for SMEs. Promoting the integration of SMEs into GVCs provides opportunities for job creation, an increase in national productivity and reduced inequality.

Gender-based disparities to start and grow a business persist in the ASEAN region (UN-ESCAP, 2018). The barriers faced by women, such as difficulties in access to finance, lower levels of education, and a disproportionate burden of unpaid domestic work, were

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[1] ASEAN refers to the Association of Southeast Asian Nations comprising 10-member states in Southeast Asia: Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Viet Nam.

[2] Despite differences in the definition of SMEs across ASEAN countries, (see definitions of MSME in AMS), this report uses a common definition of SMEs that is consistent with the OECD classification used in prior work in the region: SMEs are firms with less than 200 employees. This definition integrated the microenterprises into the SMEs for the sake of simplicity. *Source*: OECD-ERIA (2014); ADB (2015); OECD (2016b); Lopez-Gonzalez (2017); OECD-UNIDO (2019).

[3] ASEAN Strategic Action Plan for SME Development 2016-2025: 2020 KPI Monitoring Report

[4] Recent evidence shows that digitally-connected SMEs in developing countries tend to import a higher share of their inputs than non-digitally-connected firms (see Lanz et al. 2018 and Ganne and Lundquist 2019) for further evidence on digitalization of SMEs.

reinforced by the COVID-19 pandemic. Entrepreneurship is a form of economic empowerment where entrepreneurs can use their ideas and businesses to promote economic growth and societal transformation through their investments, innovations, and job creations (Xavier et al., 2016). For that reason, a further important measure to build back an inclusive economy is the promotion of female entrepreneurship.

Against this background, this report provides a short overview of the situation, challenges and opportunities faced by ASEAN SMEs that integrate into GVCs, while considering gender-specific challenges in response to the COVID-19 pandemic.

Chapter 1: Integration of ASEAN Countries in GVCs

1.1. ASEAN Integration in GVCs: Backward and Forward Linkages

The emergence of GVCs is one of the most important developments for foreign trade in the 21st century (Baldwin 2012). A global value chain is one in which the production of a final good is shared between two or more countries. This means that goods are often produced in a variety of production stages in a variety of locations, and some value is added at each stage. The analysis of global value chains using information on the cross-industry use of inputs gave rise to the concept of value-added trade, which more accurately reflects the country in which value was created and the destination country where that value is ultimately consumed (Chor, 2019).

The report follows Wang et al. (2017) to evaluate the value-added created and the GVC participation of ASEAN countries when the stages of production are divided across countries. Figure 1 shows the degree of integration of ASEAN countries in GVCs. A common characteristic among all ASEAN members is the key role played by regional supply chains: integration with other Asian countries account in most of the cases for over 50% of the value created through GVCs. Of nine ASEAN Member States, the Philippines and Indonesia are the countries with the lowest share of GVC participation.[5]

The importance of backward and forward GVC linkages is also evaluated. Following Wang et al. (2017), backward GVC-Participation measures the share of foreign value added in the domestic production of final goods. Forward GVC-Participation indicates the share of domestic value added that is exported in the form of intermediate goods and is used in final goods production abroad.

As shown in Figure 1, backward linkages are more prominent in Viet Nam and Cambodia, which indicates the importance of foreign value added for final goods production in these countries. In Viet Nam, for instance, the share of imported intermediate goods used in the domestic final production is around 42% (Figure 1) and most of the job creation results from backward linkages (WTO, 2019). Forward GVC participation is the highest in Brunei Darussalam and Singapore: Intermediate products produced in Singapore and exported abroad contribute to around 42% of the country's GDP. Nonetheless, it is important to emphasize that the nature of the participation in GVCs varies across countries. For instance, in Singapore, roughly 47% of the forward GVC participation refers to services and only 2.8% to agriculture and mining, whereas in Brunei Darussalam agriculture and mining account for over 10% of the forward participation.[6]

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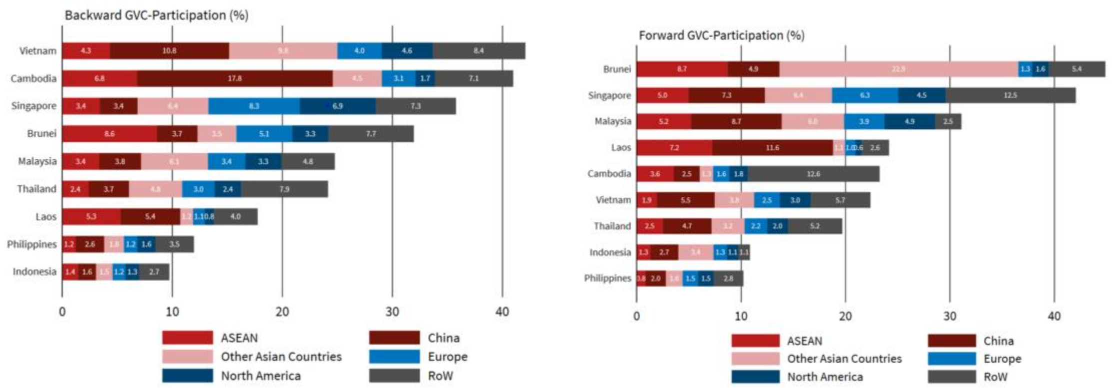
[5] Data for Myanmar is not available in the ADB statistics.

[6] Another example refers to forward linkages in the Philippines and Indonesia, the countries with the lowest share of GVC integration in the ASEAN region. Whereas in the Philippines half of the forward GVC participation refers to services, in Indonesia the share of agriculture and mining is the highest among ASEAN members (as % of total forward GVC participation).

The shares for backward and forward participation in the ASEAN countries are high in international comparison, which indicates the relatively high degree of integration of ASEAN members in GVCs. For instance, backward and forward GVC participation of China and the US in 2019 were under 10% (Flach et al. 2021a) and in large Latin-American economies such as Brazil, Argentina and Mexico, GVC participation varies between 4% and 11% (Baur et al. 2021), whereas the average backward GVC participation of ASEAN countries equals 27% and forward participation 25% on average. The degree of integration of ASEAN countries is similar to the degree of integration of the four Visegrád countries (Czech Republic, Hungary, Poland and Slovakia). These four European countries have an average backward GVC participation of 27% and forward participation of 26.6%, which is explained by the large integration with neighboring Western European countries (Flach et al. 2021a). Similarly, for ASEAN countries, a large part of the GVC integration is explained by linkages with other Asian countries, as shown in Figure 1.
The RCEP (Regional Comprehensive Economic Partnership) trade agreement signed in November 2020 between the ten ASEAN countries and China, Japan, South Korea, Australia and New Zealand is likely to reinforce regional linkages in Asia. RCEP creates the world's largest free trading zone and leads to lower trade costs between member states.[7] The RCEP agreement has the potential to increase trade relations among its members and further promote the development of regional value chains in ASEAN countries (Flach et al., 2021b).

Figure 1: Backward and Forward GVC Participation in the ASEAN Countries



Reading note: The figure shows the integration of ASEAN countries (with the exception of Myanmar) in GVCs for the year 2020 in all sectors of the economy. The figure displays three key facts. First, a common aspect across all ASEAN countries is the great importance of regional integration. Second, the degree of integration is heterogeneous across countries, with the Philippines and Indonesia being the countries with the lowest share of GVC participation in value-added terms. Third, the degree of integration varies by type: Viet Nam and Cambodia are highly integrated into GVCs through backward linkages whereas Brunei Darussalam and Singapore are the most integrated through forward linkages.

Source: ADB MRIO Table 2021, own calculations.

[7] Despite low tariff reductions, the agreement consolidates and harmonizes the rules of origin of existing contracts: intermediate inputs from the 15 member-states also count into domestic production (Flach et al., 2021b).

1.2. Integration of SMEs in Supply Chains in ASEAN Countries

SMEs' participation in GVCs is possible through several channels. By purchasing or selling goods and services to domestic or international firms, SMEs can take part in backward and forward supply linkages. Direct and indirect transactions, especially imports and exports, constitute major indicators of a firm's participation into GVCs. While the latter has traditionally been studied through the lens of direct linkages, indirect participation can also strengthen the connection of SMEs to supply chains: SMEs can supply inputs to larger domestic firms that, in turn, supply foreign firms; or they can source or supply local affiliates of foreign multi-national enterprises (MNEs) – example of foreign direct investment linkages. These interactions between domestic and foreign, and medium and large firms, spur greater knowledge flow and collaboration, which can help sustain the growth of SMEs (Chapter 1, OECD-UNIDO, 2019; López González, et al., 2019).

To evaluate the participation of SMEs in GVCs, enterprise-level data from the World Bank Enterprise Surveys for almost all ASEAN countries was combined.[8] Information on whether the establishment imports or exports, directly or indirectly, are available for firms in the manufacturing and services sector. Overall, 23% of SMEs in the ASEAN region are importing (directly or indirectly), and less than 12% of them are exporting (directly or indirectly). This number is close to previous estimates of the share of GVC firms in Southeast Asia—including larger firms—which lies at around 20% (Urata, 2021). This suggests that the integration in GVCs of the ASEAN countries, as described in Figure 1, is mainly driven by larger firms: 58% and 54% of firms with more than 200 employees in the region import or export, respectively. Among these firms, a large portion are also foreign owned (30% of large importers and 23% of large exporters are foreign-owned, against 4% and 2% of foreign-owned SMEs, respectively). There also exist large heterogeneities across SMEs in the ASEAN region, for instance, with respect to their country of origin, size, or the sector in which they operate.

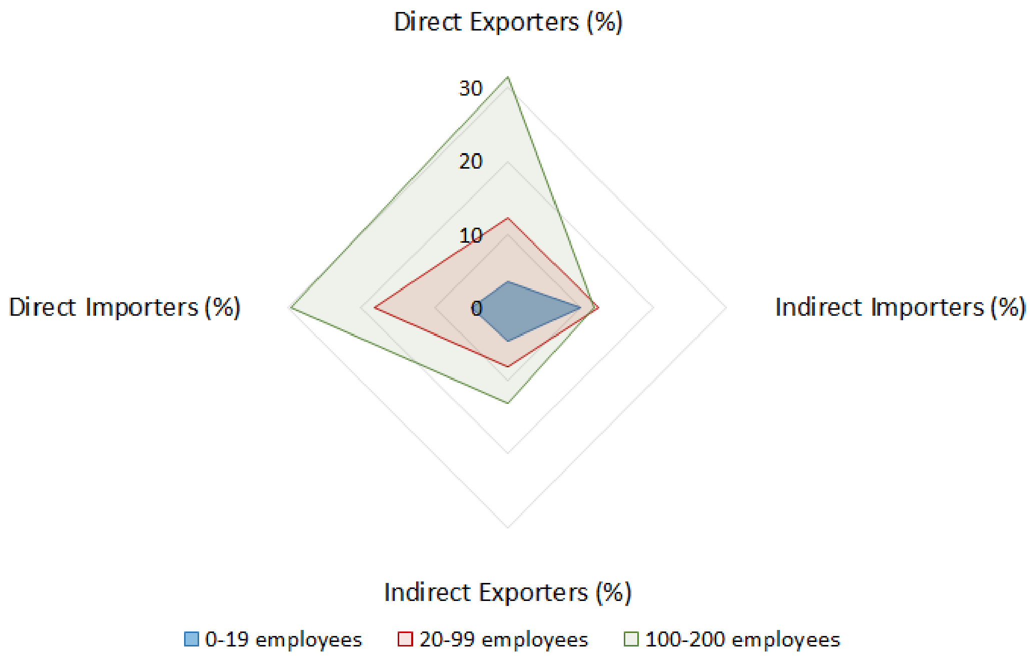
The literature shows that indirect exports[9] represent an important channel for ASEAN SMEs integration. López González, et al. (2019) find that in Viet Nam, for example, SMEs export indirectly through larger firms more than twice as much as they do directly. Across sectors, indirect export would be more prevalent in GVC intensive sectors such as electrical equipment and transport equipment. The report accounts for some of those differences when looking at supply chain participation. In particular, there exist distinct

[8] Information is available for eight ASEAN countries: Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Thailand and Viet-Nam. The waves and countries used in the analysis are described in Table A1. The sampling methodology used for the survey is stratified random sampling, and the survey sample frame is derived from the universe of eligible firms. Using sample weights, statistics for the whole population of private manufacturing and services firms can be inferred for the ASEAN countrieswhere data is available.

[9] Indirect exports refer to goods or services that firms sell to other larger domestic firms and which export their products internationally. As such, goods and services from the first firms are indirectly exported abroad via a larger firm. Similarily, indirect imports refers to goods and services purshased by small firms from larger domestic firms, which themselved sourced those inputs from abroad.

patterns across the firm-size distribution and across sectors. This analysis reinforces the importance of accounting not only for direct but also for indirect linkages to estimate the role played by SMEs in GVCs.

Figure 2: Share of SMEs in the ASEAN Region Integrated in Supply Chains, by Firm-Size



Reading note: This figure shows the share of SMEs that is importing or exporting, directly or indirectly, by number of employees. Results are based on a representative sample of firms made available by the World Bank Enterprise Survey for eight ASEAN countries.
Source: Authors' calculation using Enterprise Survey Data, includes Manufacturing and Services sectors. Sample description is available in Table A1.

Direct versus Indirect Participation of SMEs, by firm size: As shown in Figure 2, the number of firms that directly import increases by 25 percentage points when comparing the smallest and the largest SMEs. Only 5% of firms with less than 20 employees export or import directly, which reinforces the important role of indirect participation as a first step towards global integration of small firms. About the same share of firms exports some goods and services indirectly, but more of them tend to rely on indirect imports by sourcing foreign inputs from domestic firms. Medium-sized firms with 20 to 99 employees are more integrated in direct supply chains, with more than 15% or 10% of them now directly importing or exporting, respectively. The share of firms indirectly exporting or importing has also increased, but to a lesser extent. As SMEs grow, they start relying less on indirect supply chains and more on direct supply chains, but also more of them start exporting their output to foreign firms or local MNE affiliates. This pattern is accentuated among the biggest SMEs in GVCs, with about 30% of them sourcing foreign inputs directly from abroad, and directly exporting their products. In comparison, the share of firms that still import indirectly hovers just above 10%.

Unsurprisingly, the largest SMEs are more likely to enter direct supply chain linkages and take part in GVCs. They tend to have better access to resources, are potentially less financially constrained, and can benefit from positive externalities such as know-how and spillover effects as they become even more integrated. Nevertheless, integration of SMEs into GVCs remains low in absolute terms, even among the largest ones. First, SMEs with more than 100 employees represent only 6% of the total sample. Most SMEs (64%) have less than 20 employees. Second, even among those large SMEs, less than one third of them is integrated into GVCs. The weak integration of SMEs into GVCs is often rationalized by SME-specific constraints, such as size and lack of experience. There might also exist, however, additional constraints to the integration of SMEs in trade linkages, which is exploited in Chapter 2.

Direct versus Indirect Participation of SMEs, by sector: The report investigates direct and indirect participation of SMEs across the manufacturing and services sectors. For the manufacturing sector, which represents more than one third of the SMEs in the sample, firms import directly and indirectly in similar proportions (12% for direct imports, 11% for indirect imports). Regarding exports, the proportion of firms that directly sell their output abroad is slightly larger than the one of indirect sells (13% against 10%). Overall, these differences are not significant. A different pattern for firms in services is observed. First, more SMEs in the service sector import inputs indirectly (15%) rather than directly from abroad (10%)—at least for Myanmar and Lao PDR, for which this information is available.[10] Second, they tend to export less than manufacturing firms altogether, whether directly or indirectly (5% and 4%, respectively). The contrast across sectors in terms of export can partly be explained by intrinsic differences in what is exported: goods and products are more easily exported than services (World Trade Report, 2019). Further, firms in services tend to be more involved in downstream operations, i.e. at the end of the global value chain and directly in relation with consumers; relatively to manufacturing firms that are more likely to be upstream producers and export intermediary goods to other firms further down the global value chain (World Trade Report, 2019).

[10] While the World Bank Enterprise Survey includes questions on exports for all firms, questions on imports are limited to the manufacturing sector, and the firms in services in Myanmar and Lao PDR only. Thus, any results on services import should be interpreted with caution as it is only representative for those two countries.

Chapter 2: Barriers to International Integration of SMEs

2.1. Constraints Faced by SMEs

Firm-level characteristics and the policy environment—domestic and international—are important determinants of participation in GVCs of SMEs. From the literature, the main determinants for better integration of SMEs as buyers and suppliers revolve around productivity, size, digitalization and ownership[11] (Lopez-Gonzalez et al., 2019; Urata, 2021). On the productivity side, exporting firms need to overcome high entry costs such as market research and advertising (Melitz, 2003). Thus, firms that are more integrated into GVCs tend to be highly productive, and employ more productive workers (Lu et al., 2018). The former argument can also help explain why almost only large SMEs are integrated into GVCs. Smaller firms also have smaller scale-productions, which limit their ability to benefit from economies of scale. Smaller firms also face additional constraints regarding resources, either material, human or financial. Lack of (access to) information also undermines SMEs participation in international markets. Access to digitalization and to ICT (information and communication technologies) can help enterprises with management of products and services, facilitate communication with intermediaries and clients as well as facilitate knowledge transfer. Finally, there is also evidence that foreign-owned SMEs will more likely be integrated into supply chains (Harvie, Narjoko, and Oum, 2010), as opposed to government-owned SMEs (Urata, 2021).

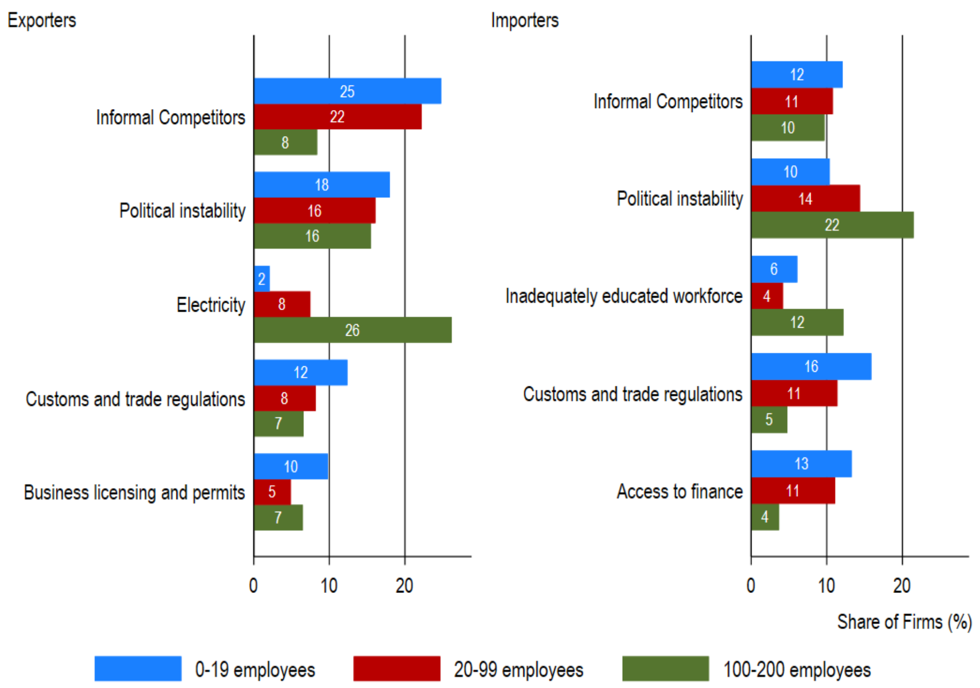
Evidence suggests that characteristics of importers and exporters tend to be similar. Bernard et al. (2007) find that there is a strong correlation (0.87) between industries with high share of importing firms and those with high share of exporting firms. Further, they are both bigger, more productive, pay higher wages, and are more skill- and capital-intensive than non-exporting and non-importing firms. In terms of constraints faced by SMEs, there exist similarities between importers and exporters but also some differences.

Using the Enterprise Survey data, the main obstacles reported by ASEAN SMEs integrated into supply chains are studied, across exporters and importers, but also across firm size (Figure 3). From here onwards, the terms importers and exporters are used independently of whether their linkages are direct or indirect. A general pattern is noticeable: informal competition and political instability are the main obstacles for most ASEAN SMEs in the sample, and this pattern holds across all countries. This is especially true for small exporting SMEs, as half of them report those two obstacles. Informal competition can have several faces and does not necessarily refer to unregistered firms. In fact, exporting and importing firms most often need to be registered to operate freely. This does not prevent, however, costs avoidance, bribes to get input or output through

[11] While age seems to matter too, the exact channel remains unclear: there is evidence that older and more experienced firms are more likely to be integrated, but also evidence that younger and more agile firms are more capable to adapt to new production systems; see Wignaraja (2013), Lu et al. (2018) and Harvie, Narjoko, and Oum (2013).

customs, or tax evasion for example. On political instability, any sudden change in government, policies, or legislation, can be detrimental for small firms, which often have little resources to invest. Ignatenko, Raei, and Mircheva (2019) found that rule of law and contract enforcement can increase participation in supply chains.

Figure 3: Biggest Obstacle Faced by SMEs that Import and/or Export, by Firm-Size (in %)



Reading note: This figure shows the top 5 obstacles faced by SMEs in the ASEAN regions, across exporters and importers. The x-axis can be read as the share of firms that report the obstacle on the Y-axis as the biggest constraint they face. Results are based on a representative sample of firms made available by the World Bank Enterprise Survey for eight ASEAN countries.
Source: Authors' calculation using Enterprise Survey Data. Sample description is available in Table A1.

For 26% of the largest exporting ASEAN SMEs, electricity is the main obstacle to their business operations. While smaller firms would be more likely to struggle to get connected to the grid because of high fixed costs, for example, firms that are already connected might also have to face frequent and lasting outages in their country. Those outages can heavily disrupt firms' activity and incur additional costs for SMEs, such as delays or waste in production. This is even more costly for larger firms, which have higher production scales and may lose a larger share of their total production in a short period of time. As a result, this can hamper their competitiveness as exporters. For both exporters and importers, customs and trade regulations are the fourth main obstacle overall, and smaller SMEs are more likely than large SMEs to highlight trade regulations as a constraint. In general, trade costs and tariffs are disproportionately borne by SMEs due to their small-scale production (Lopez-Gonzalez et al., 2019).

ASEAN SMEs also report that unskilled workforce and access to finance and business licensing and permits are major obstacles to their operations. This is in line with previous research, which suggests that SMEs must deal with several constraints related to investment and financial access, education of workers, governance, and the quality of infrastructure (Lopez-Gonzalez et al. 2019; Urata, 2021).

Finally, there are noticeable differences in the enterprise data across countries with respect to constraints faced by firms. In Lao PDR, Myanmar, the Philippines and Viet Nam, a higher share of SMEs declare being financially constrained than in the rest of the ASEAN region. This is especially true for importing firms, where 35% and 30% of them, in Lao PDR and Myanmar respectively, report that access to finance is the largest obstacle they face. In Cambodia, 31% of exporters face the most difficulties regarding tax rates, whereas this is only the case for under 15% of SMEs in other countries. In Thailand, issues related to electricity access and reliability is a major constraint for about half for exporters (49%) and almost a third of importers (31%), which suggests that quality of infrastructure can differ significantly across the ASEAN region. Lao PDR and Myanmar also have high a share of firms facing electricity issues: 28% and 15% of exporters and 13% and 27% of importers in both countries, respectively.

2.2. The Role of Digitalization for International Integration of SMEs

Digital technologies can tremendously help SMEs access international markets. In fact, evidence for firms is ASEAN countries suggests that increasing internet use by 10 percent is associated with an increase of almost 4 percent in trade in goods and services (see López González, J., 2019). Digitalization makes it easier for SMEs to integrate into GVC for several reasons (WTO, 2019). First, by reducing export costs[12], access to digital tools allows smaller firms to absorb more easily the larger fixed costs associated with the activity in foreign markets. Second, digitalization can decrease the need for intermediaries, help reach consumers through online platforms, and add significant time-benefits. However, evidence also suggests that digitalization could reinforce polarization between countries and firms as a result of specific constraints: lack of infrastructure, weak and/or expensive broadband access; but also, always stricter requirements to trade with larger firms, in terms of technology and data sharing (López González, J., 2019; WTO, 2019).

Using data from the World Bank Enterprise Survey, the role of digitalization and technical capacity for internationalization are studied. For this purpose, conditional correlations are shown by regressing firms' characteristics on firms' international activity, ac-

[12] Examples of additional costs faced by firms to enter foreign markets are market research or operational support, which can be reduced by digital technologies such as digital platforms. Moreover, online financial tools and mobile banking might reduce costs related to financial transactions and access to finance.

counting for country, sector, and year fixed effects. The main focus is on the role of digitalization (using a measure that indicates whether firms use websites or emails) and on quality and technical capacity, measured by a binary variable that indicates if firms have internationally recognized certifications. These certifications span a wide range of actions, from administrative quality management systems (e.g. ISO 9000, ISO 9001) to food and hygiene certificates (e.g. HACCP).

Table 1: Access to Information, Technical Capacity, and International Integration of ASEAN SMEs

	Importer		Exporter	
	probit	Marginal effect	probit	Marginal effect
Website and/or Emails	0.658*** (0.148)	0.153*** (0.034)	0.419* (0.228)	0.070* (0.037)
Internationally Recognized Certification	0.563** (0.249)	0.131** (0.056)	0.701*** (0.238)	0.118*** (0.041)
Observations	3,881		4,612	

Reading note: The table shows estimated coefficients from a probit regression as well as the transformation that allows an easier interpretation of average marginal effects. The dependent variable is a dummy for being (direct or indirect) importer or exporter. The regression includes country, sector, and year fixed effects, as well as a constant. Data used is at the enterprise-level,from the World Bank Enterprise Survey for 8 ASEAN countries for manufacturing and services sectors. See Table A2 and A3 for summary statistics.
Source: Enterprise Survey Data, own calculations. Sample description is available in Table A1.

The analysis shows that digitalization is a major determinant for both importers and exporters, as using websites or emails increases the probability of exporting by 0.15 and 0.07, respectively. As firms are often already importers before becoming exporters,[13] importing firms rely more on digitalization and information access to enter backward linkages. This result is in line with work by Lanz et al. (2018), which suggests that digital changes can support SMEs participation into GVC, and backward-linkages in particular. On the other hand, exporting is rather explained by international certifications, which can be viewed as a gauge of product quality and experience (see Verhoogen, 2008). The OECD-UNIDO (2019) report also shows that international certification increases the likelihood of integration in GVCs, and this for various participation channels (direct and indirect import/export, partnership with foreign companies and investors). While it cannot be inferred from Table 1 whether digitalization and international certifications were

[13] López González, J. et al. (2019) finds that a one percentage point increase in the use of imported inputs also increases the probability of exporting but by a much higher 15%, for SMEs in Southeast Asia.

pre-requisites for the participation of SMEs in GVCs, the results still show the strong importance of those characteristics for integrated SMEs.

While average results for the entire ASEAN region are documented, it is important to assess differences that exist between countries and sectors. López González, J., (2019) highlights that the share of ASEAN SMEs with a webpage differs across countries and sectors. More firms report having a website in the food or tourism industries in comparison to manufacturing and retail firms. Regarding internet penetration, Cambodia, Lao PDR, Myanmar, and Viet Nam (CLMV countries) have lower access overall than other countries of the ASEAN region. In Myanmar, the cost of fixed broadband access can reach up to USD 75 per month, against USD 25-30 in Indonesia or Cambodia. Regarding digitalization and trade, the study also shows significant differences across countries regarding export of ICT goods and services. The Philippines, Malaysia and Singapore account for most of the value added of those exports in the region.

Chapter 3: Women Entrepreneurship in ASEAN

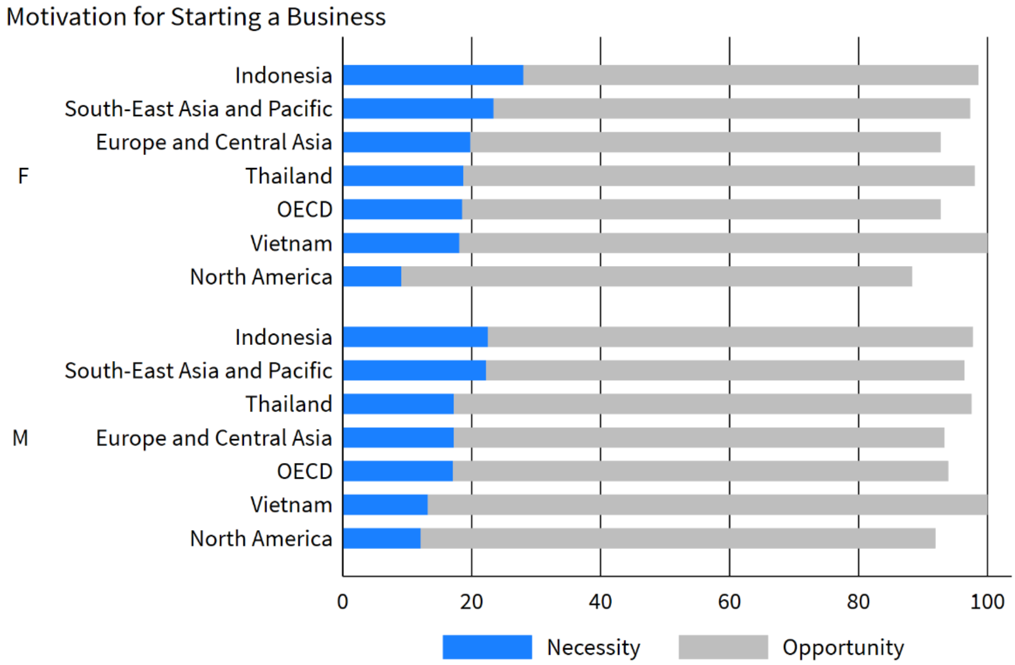
In 2015 an estimated 61.3 million female entrepreneurs owned and operated businesses in the ten ASEAN member countries, accounting for 9.8 percent of the total ASEAN population (Xavier et al., 2016). Despite women entrepreneurial activities being high in an international comparison, women still face gender specific barriers to further entering and expanding their entrepreneurial activities. Entrepreneurship is a form of economic empowerment where entrepreneurs can use their ideas and businesses to promote economic growth and societal transformation through their investments, innovations and job creations (Xavier et al., 2016). Hence, constraints on women’s activities are costly, not only for women but also for whole societies. Gender gaps in entrepreneurship and other forms of labour force participation can have negative effects on productivity growth and income as a significant part of a country's potential remains untapped (UNESCAP, 2018). Therefore, women’s entrepreneurship is a key pathway for advancing women’s economic empowerment and inclusive economic growth (UNESCAP, 2018). This chapter aims to provide an overview of the current situation in the ASEAN countries.

3.1. Female Entrepreneurial Activity

The Global Entrepreneurship Monitor (GEM) provides data on the total early-stage entrepreneurial activity (TEA), which is defined as setting up a business or owner-managers of new businesses up to 3.5 years old (GEM, 2018). Perhaps surprisingly, entrepreneurial activity is higher for women in low-income countries in comparison to high and middle-income countries. ASEAN member states support this pattern and display high shares of female TEA. In three ASEAN countries (Indonesia, Thailand, and Viet Nam), the TEA of women is equal to that of men. Especially among the young entrepreneurs (18-24 years) gender parity in entrepreneurial activity can be observed. This indicates that the new generation faces fewer hurdles in engaging in business activities (GEM, 2018).

A variety of factors influence the decision to start engaging in entrepreneurial activities: education, labour force participation and employment options, occupational and industry segregation by gender, societal norms such as cultural and religious beliefs or political stability (OECD, 2017). Combined in different ways, these factors may encourage or discourage women’s entrepreneurship. Motivations to start a business can be separated into two broad categories: they can arise either from a lack of employment possibilities (necessity) or by pursuing a business opportunity. Across all countries, opportunity is the main reason for starting a business. However, as shown in Figure 4, there is strong variation in necessity driven entrepreneurship across countries, less across gender. While the rate of opportunity motivated business activities in Viet Nam surpasses the OECD average, the rate is much lower for Thailand and Indonesia. This indicates that further effort should be undertaken to improve the societal and economic conditions in these countries to decrease the share of entrepreneurs who start a business out of necessity and promote entrepreneurs who start their businesses due to opportunity.

Figure 4: Motivation for Starting a Business, by Gender (F: Female, M: Male)



Reading note: The graph presents the distribution of entrepreneurs who started their businesses out of opportunity and those who started the business out of necessity, due to lack of other employment opportunities, as a share of total early-stage entrepreneurial activity (TEA). One can observe a large heterogeneity across ASEAN member countries and in comparison, to other regions in the world. Necessity driven business activities are lower in Viet Nam, than the OECD average, while the share in Indonesia is much higher. Nevertheless, one cannot observe significant differences across genders.
Source: Global Entrepreneurship Monitor - 2018/2019 Women's Entrepreneurship Report, own calculations. Data are described in Table A1.

3.2. Characteristics of Women-led Firms

It is important to understand the characteristics that define women-led businesses and how they differ from male-led businesses. According to UNESCAP (2017), female entrepreneurs are on average older than their male counterparts. Female business owners are also less likely to have received higher education. This can adversely influence the development and growth trajectory of a business. Moreover, female entrepreneurs have smaller social networks when they start a business. The lack of connections reduces the knowledge and opportunities female entrepreneurs receive to expand their businesses.

Korinek et al. (2021) show that women-led businesses are usually smaller in size, have a lower turnover and lower productivity. This can be explained by various factors. The most fundamental reasons are that women-led businesses operate in sectors with lower productivity, such as services, and have a lower capital intensity in their production. These businesses also engage less in trade. These supply-side constraints are discussed in the next section.

3.3. Constraints Faced by Women-SMEs

Overall, there are important distributional differences in terms of industry and firm-size between women- and men-owned businesses. In ASEAN member countries, women are more likely to be concentrated in micro and small enterprises and specialize in sectors such as retail and service activities (UNESCAP). This also suggests that women-owned businesses are likely to face different constraints than those faced by men. In terms of GVC integration, retail and services activities are also subject to higher trade costs in comparison to other sectors. Women are thus more likely to restrain their business activities to local rather than international markets (UNESCAP).

Thanks to the World Bank Enterprise Survey data, the gender of the business owner can be identified and it is possible to look at the different constraints reported by ASEAN SMEs in the manufacturing and services industries, for men and women. First, about 70% of SMEs in the sample are led by men. Differences across sectors are rather small, and unlike the UNESCAP report, women-owned SMEs are found to be more present in the manufacturing sector, as a share of the total numbers of SMEs per sector. Regarding size differences, there are also no substantial differences across gender.

While surprising, the lack of significant differences across sector and size by gender may allow us to pin down intrinsic differences between the two types of businesses—or at least those not related to industry and size. As shown in Table 2, overall, men- and women-owned businesses are both reporting informality as a major obstacle to their operation, although to a lesser extent for women. They also tend to report difficulties in accessing finance in similar shares, which is representative of general SMEs' constraints. More interestingly, women-owned businesses are more likely to mention transportation access as a major obstacle, which suggests that women SMEs face additional difficulties regarding connection and transport. This is not due to the location of women-owned SMEs, as 55% of them are in the capital city of their country—against 52% for men.

Table 2: Top 5 Obstacles faced by SMEs, by Gender

Rank	Men-Owned	Women-Owned
1	Informal Competitors (33.7%)	Informal Competitors (16.0%)
2	Tax rates (10.9%)	Political instability (12.3%)
3	Political instability (9.4%)	Transport (9.4%)
4	Access to finance (8.0%)	Tax rates (8.7%)
5	Business licensing and permits (6.1%)	Access to finance (8.6%)

Reading note: This table shows the top 5 obstacles faced by SMEs, for both men- and women-owned businesses. The share of SMEs reporting each obstacle is given in parentheses. Results are based on a representative sample of firms made available by the World Bank Enterprise Survey for eight ASEAN countries.
Source: Authors' calculation using Enterprise Survey Data. Sample description is available in Table A1.

Obstacles for SMEs that import and export, by gender: In the context of GVC integration, lack of good transportation infrastructure and road access can be a strong impediment to start importing or exporting products. This report thus also looks at differences in reported obstacles faced by importing and exporting industries across gender, still using the Enterprise Survey Data. A first striking pattern is that for both men and women, the shares of importing and exporting firms are remarkably similar, and even larger for women (21 and 25% for importers, and 11 and 14% for exporters, for men and women, respectively). Still, there exist some differences across gender regarding the main constraints they face to import or export. For importers, women are more likely to report political instability as the main obstacle, whereas more men mention customs and trade regulations as their main hurdle. For exporters, more men-owned businesses report that informal competition and electricity are major obstacles, whereas more women report facing constraints regarding access to business licenses and permits.

Chapter 4: Responses to the COVID-19 Crisis

The pandemic has reinforced a growing anti-globalization sentiment of recent years and increased the scepticism about the international division of labour (Irwin, 2020). As discussed in a recent report from the Asian Development Bank (ADB, 2021a), SMEs missed out on the opportunity of gaining from globalization due to limited human, technological and financial resources. Hence, it is key to promote participation of SMEs in GVCs in response to the pandemic, as Southeast Asia has been a model for globalization-led high economic growth (ADB, 2021a). This chapter aims to shed light on how the challenges to integration in GVCs have changed for SMEs in response to the pandemic.

The COVID-19 crisis caused major disruptions around the globe and will have a lasting impact on firms and economies. Governments in the ASEAN region acted quickly to confine the COVID-19 spread and to hamper its negative economic effects. Vast public spending programs were implemented to assist individuals and businesses in need. SMEs were provided support through various channels which differed across member countries. These included debt tax relief (corporate income tax reductions or exemptions), wage subsidies to employees, business cost reductions (discounted electricity and reduced office rental fees/waiver), deferred loan repayments or moratoria, debt restructuring (reduced rates and extended loan maturities), soft loans or new refinancing facilities, and credit guarantees (ADB, 2020b). According to the IMF the region experienced a 3.4 percent contraction in GDP growth in 2020 but is expected to grow by 2.9 percent in 2021.

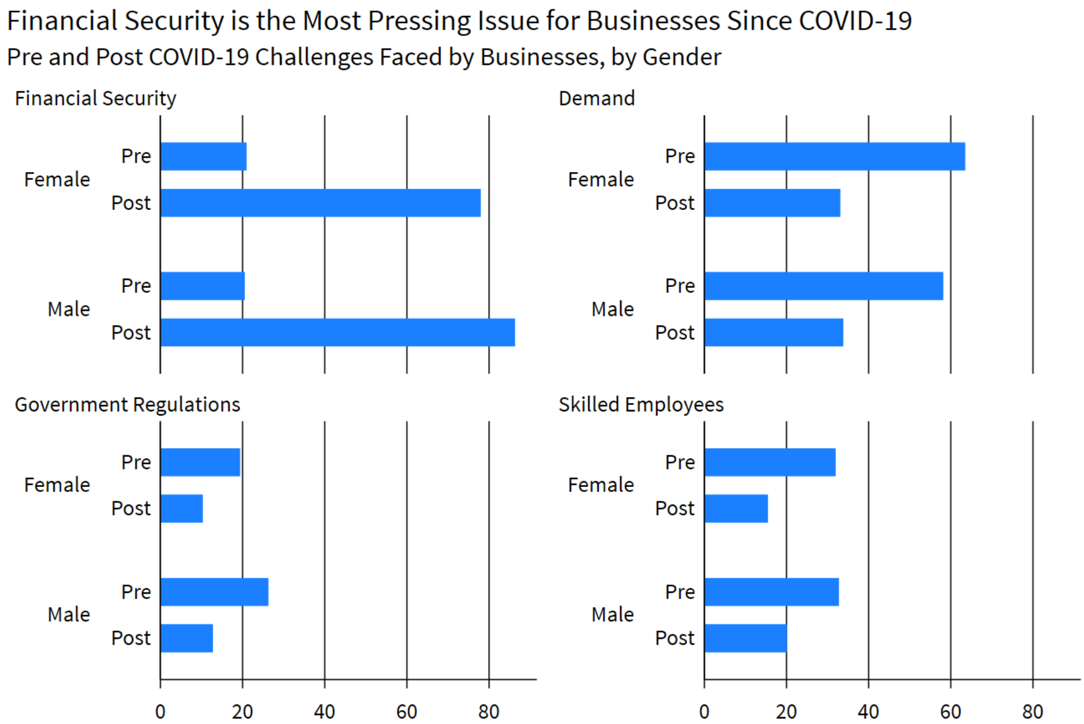
SMEs were more severely hit than large firms during the pandemic (OECD, 2021). Unlike large firms, SMEs are more fragile and sensitive to global economic disruptions and external shocks such as the COVID-19 pandemic. With the increasing availability of vaccines, the new normal brings along new challenges and trends and accentuates existing ones. The Future of Business Survey[14] was conducted across nearly 100 countries, including three ASEAN countries.[15] It asked businesses on the currently pressing issues in the waves conducted before and during the pandemic, which allows examining the new challenges the pandemic has created for SMEs. For the ASEAN countries in the sample, a clear shift is observed, as depicted in Figure 5. While the challenge of expanding the customer base resonated with most of the businesses before the pandemic hit, it became less pressing in the new normal. On the other hand, the share of firms (both female- and male-led) that mentioned financial stability as a challenge has almost quadrupled after the pandemic. This is not surprising, as smaller

[14] The Future of Business Survey should not be considered representative of all business owners, but rather micro, small and medium-sized firms with an online presence on Facebook

[15] The waves prior to the February 2021 (Wave 12) include 8 ASEAN countries. In wave 12 only 3 ASEAN countries were included. Since this analysis relies on the results of Wave 12, only these 3 countries were selected from the prior waves for consistency reasons.

firms are more financially fragile due to fewer cash buffers (OECD, 2021) and face higher constraints in accessing formal funding. This sentiment is among others mirrored in the ADB October 2021 Brief, which reports the findings of the "Trade Finance Gaps, Growth, and Jobs Survey". Over 50% of the surveyed firms find that greater access to finance and public-sector support are crucial to pave the way for post-pandemic recovery.

Figure 5: Pre and Post COVID-19 Challenges Faced by Businesses, by Gender



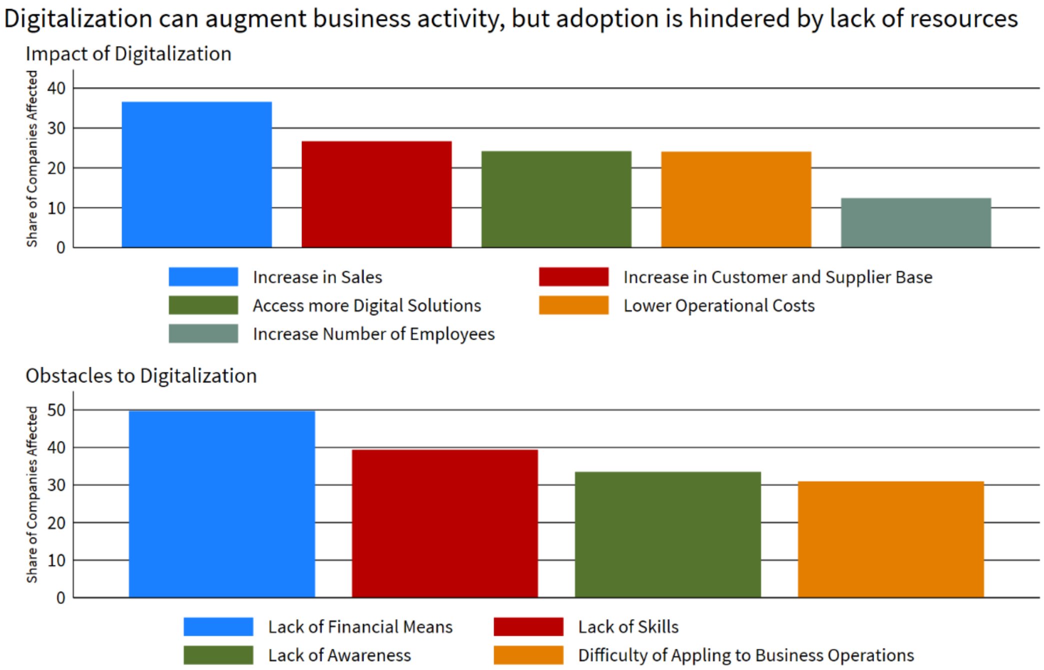
Reading note: The survey results show that during the pandemic financial insecurity emerged as the most pressing issue, while other challenges such as expanding the customer base or adhering to government regulation became less of a challenge. The analysis uses the Future of Business Survey conducted by Facebook in cooperation with the World Bank and the OECD. The calculations are based on 1335 observations for the pre-COVID-19 period (Spring 2019, wave 3) and 355 observations for the post-COVID-19 one (February 2021, wave 12). The graph includes the survey results for Indonesia, the Philippines and Viet Nam as only these three countries were surveyed in the post-COVID-19 wave. The answer possibilities in the pre-COVID-19 survey and post-COVID-19 survey included slightly different options and were therefore grouped into four categories which are displayed above. Each business could choose how many answer possibilities apply, therefore the displayed shares do not add to 100.
Source: Authors' calculation using data from Future of Business Survey. Data are described in Table A1.

The question arises why financial security is the most pressing issue, given that large government support programs were announced and provided during the crisis. One probable reason is that business owners were not aware of these programs. The results of the COVID-19 Pulse Business Survey[16] conducted by the World Bank have shown that the main reason for not being able to access public support programs was the lack of information on government support. This also goes hand in hand with the findings of the Mid-Term Review of the ASEAN Strategic Action Plans for SME Development 2016–2025 (SAP SMED 2025). An important finding from the report is that the private sector had little awareness about the activities of the SAP SMED 2025. This shows that policy makers should improve the strategy to disseminate the information on existing and future programs.

In addition, the trend of digitalization was amplified during the crisis. The ASEAN region was one of the fastest growing digital economies prior to the pandemic. The number of digital consumers almost tripled from 90 million in 2015 to 250 million in 2018 (ERIA, 2021). Lockdowns have forced many firms to attempt to digitize their businesses, such that by the end of 2020 the region had more than 300 million consumers. Before the pandemic this number was forecasted to be reached only by 2025 (Facebook and Bain & Company, 2020). The positive impact of digitalization on businesses can be seen in the Future of Business survey outcome, which is shown in Figure 6. Over 30% of businesses answer that they could increase their sales and over 25% of businesses mention that their customer and supplier base expanded through digitalization. Nonetheless, many SMEs in ASEAN still lack behind in terms of digitalization in comparison to large firms in the urban areas (ERIA 2019). Reasons why many firms struggle to digitalize are the lack of financial means and know-how to implement and integrate digital solutions in their business activities (see Figure 6). This is especially difficult for firms in rural areas, as access to reliable internet connections is not ensured (Lurong, 2020).

[16] The Covid-19 Business Pulse Survey was conducted by the World Bank across 76 countries and covers 3 ASEAN countries (Indonesia, Philipines and Viet Nam). The Survey provides information on 30 harmonized indicators about the impcat on operation of businesses during the pandemic and the public support they have received.

Figure 6: Impact of digitalization on SMEs' business and obstacles to digitalization



Reading note: This graph illustrates the impact of digitalization on businesses and what struggles they face when digitizing. One can see that through digitalization SMEs could increase sales and expand their customer base. Nevertheless, insufficient financial means and lack of skills prevent firms from expanding the adoption of digital solutions in their business operations. The analysis uses the Future of Business Survey conducted by Facebook in cooperation with the World Bank and the OECD. The calculations are based on 2622 observations from all ASEAN countries excluding Brunei Darussalam, as no data is available. Firms could choose how many answers apply; therefore, the shares do not add up to 100.
Source: Authors' calculation using data from Future of Business Survey. Data are described in Table A1.

In addition to the challenges discussed above, the pandemic has affected female entrepreneurs negatively on further dimensions. The long lockdowns and working from home have created extra burden for women, since household chores, child and elderly care fell disproportionately on women (ERIA, 2021). Moreover, female-led businesses operate in sectors such as tourism, hospitality or retail (OECD, 2017), which were hit during the pandemic (UNESCAP, 2020). Female businesses are also more likely to operate in the informal sector (ERIA, 2021). This means that those firms were excluded from the wide-ranging recovery programs set up by the local governments.

Furthermore, the disadvantaged position of women to access capital in comparison to men, which was discussed in the previous section, has made it more difficult for women to weather the pandemic (Ajemone Marsan and Ruddy, 2020). Lastly, the study by Sey (2021) has shown that the gender gap regarding access to and usage of digital technologies has been high in this region. The gap is larger in more advanced metrics of participation in the digital economy such as skills or entrepreneurship opportunities, than for more basic access metrics. This digital gender divide in ASEAN has the potential to becoming a further source of gender inequality as the pandemic has shifted towards the digital economy (ERIA, 2021)

Chapter 5: Conclusions

This report has provided a short overview of the situation and challenges faced by ASEAN SMEs that integrate into GVCs, while considering a gender lens and the constraints imposed by the COVID-19 pandemic.

The analysis has highlighted the degree of integration of ASEAN countries in GVCs and shown that regional supply chains in Asia play a key role for the ASEAN members. This analysis suggests that the integration in GVCs of the ASEAN countries is mainly driven by large firms, whereas SMEs have a low degree of participation. The integration of SMEs into GVCs is heterogeneous across firm size, sector and country of operation. Large SMEs are better integrated due to better access to human, technological and financial resources. The main obstacles reported by ASEAN SMEs to participate in GVCs are informal competition and political instability. The literature has shown that the main determinants for better integration of SMEs revolve around productivity, size, digitalization, and ownership. This is also supported by this analysis, which has illustrated digitalization to be an important determinant for becoming an importer and exporter.

The share of female entrepreneurial activities is high in the ASEAN region in international comparison and is at parity with men in Indonesia, Thailand, and Viet Nam. Despite that, women still face gender-specific barriers to entering into and expanding their entrepreneurial activities. Women-owned businesses operate predominantly in sectors such as retail and services, which face higher trade costs in comparison to other sectors. This makes women more likely to limit their business operations to the local community instead of expanding activity to international markets. Additional higher barriers for women to access finance in comparison to men and lack of transportation infrastructure are strong impediments for international integration.

The COVID-19 crisis caused major disruptions around the globe and will have a lasting impact on firms and economies. The new normal brings along new challenges for SMEs and accentuates existing ones. During the pandemic, SMEs faced challenges in securing their financial liquidity due to lack of access to finance and low awareness of government support programs. Another obstacle for SMEs was the digitalization of their businesses due to the lack of financial and human resources. During the crisis, female entrepreneurs were exposed to further barriers, such as additional household chores and worse access to financial services and digital solutions in comparison to their male counterparts.

SMEs employ most of the workforce, which range from unskilled workers to entrepreneurs and employ many female workers in rural areas. They are an important source of dynamism in the economy and are a key driver in transforming old industries or developing new industries. For that reason, SMEs are key to building back a more resilient and inclusive economy in the new normal.

Policy makers should assist SMEs through various channels to foster their growth: one effective measure is the reduction of regulatory barriers through simpler and more transparent loan applications or the reduction of administrative red tape, which may increase the competitiveness of SMEs and help them further integrate into GVCs. Investments in training and public support programs will help firms overcome knowledge barriers that hinder them from digitizing their businesses. Creating a gender-sensitive ecosystem for promotion of women entrepreneurship through public support programs can assist in overcoming gender-specific barriers. Through further harmonization of standards and the decrease in trade barriers, policy makers can assist SMEs to further integrate into GVCs.

Lack of awareness regarding government programs was one important barrier for firms during COVID-19. Hence the most important measure for governments is to improve the dissemination of information on all public support programs and raise awareness across potential recipients. Additionally, all relevant stakeholders should be included when designing and implementing new policies. This is a low-cost measure with high benefits for SMEs.

Table A1: Datasets Descriptions

Data Sources	Sample Description and Restrictions
Enterprise Data (World Bank)	Includes cross-sectional data for Cambodia (2016), Indonesia (2015), Lao PDR (2018), Malaysia (2015), Myanmar (2016), the Philippines (2015), Thailand (2016) and Viet Nam (2015). The sample is restricted to SMEs (less than 200 employees) within the manufacturing and services sectors. Retail firms are excluded so as not to include trading non-GVCs actors (e.g. commercial intermediaries). Export and import information is available for the entire sample, except for imports on services which are asked about only in Myanmar and Lao PDR.
Future of Business Survey (OECD, World Bank, Facebook)	Cross-sectional data for ASEAN countries is used. The survey aims to give a snapshot of small and medium-sized businesses with an online presence. The pre-COVID survey wave is from Spring 2019. The two post-COVID survey are from December 2020 and February 2021. The Future of Business survey includes questions about perceptions of current and future economic activity, challenges, strategy, and business characteristics.
Global Entrepreneurship Monitor	Survey of Entrepreneurs across 59 countries including Viet Nam, Indonesia and the Philippines in 2018 on business activities and conditions
Covid-19 Business Pulse Survey (World Bank)	Harmonized indicators for Viet Nam, Indonesia and the Philippines about the impact on operation of businesses during the COVID-19 pandemic and public sector support they have received.

Table A2: Summary Statistics Table 1, Column 1: Importers

	count	mean	sd	min	max
Importer	3881	0.300	0.458	0	1
Website/Email	3881	0.626	0.484	0	1
International Cer- tif.	3881	0.159	0.365	0	1
Years:					
2014	3881	0.039	0.193	0	1
2015	3881	0.516	0.500	0	1
2016	3881	0.350	0.477	0	1
2017	3881	0.034	0.181	0	1
2018	3881	0.061	0.239	0	1
Sectors:					
Manufacturing	3881	0.949	0.220	0	1
Services	3881	0.051	0.220	0	1
Countries:					
Cambodia	3881	0.023	0.150	0	1
Indonesia	3881	0.223	0.416	0	1
Lao PDR	3881	0.061	0.239	0	1
Malaysia	3881	0.104	0.305	0	1
Myanmar	3881	0.107	0.309	0	1
Philippines	3881	0.204	0.403	0	1
Thailand	3881	0.147	0.354	0	1
Viet- Nam	3881	0.132	0.339	0	1

Table A3: Summary Statistics Table 1, Column 2: Exporters

	count	mean	sd	min	max
Exporter	4612	0.201	0.400	0	1
Website/Email	4612	0.644	0.479	0	1
International Certif.	4612	0.146	0.353	0	1
Years:					
2014	4612	0.040	0.197	0	1
2015	4612	0.517	0.500	0	1
2016	4612	0.364	0.481	0	1
2017	4612	0.028	0.166	0	1
2018	4612	0.051	0.219	0	1
Sectors:					
Manufacturing	4612	0.819	0.385	0	1
Services	4612	0.181	0.385	0	1
Countries:					
Cambodia	4612	0.044	0.206	0	1
Indonesia	4612	0.209	0.407	0	1
Lao PDR	4612	0.051	0.219	0	1
Malaysia	4612	0.112	0.316	0	1
Myanmar	4612	0.090	0.287	0	1
Philippines	4612	0.202	0.401	0	1
Thailand	4612	0.144	0.351	0	1
Viet Nam	4612	0.147	0.354	0	1

References:

ADB (2020a), “Asia Small and Medium-Sized Enterprise Monitor 2020: Volume I - Country and Regional Reviews”, Asian Development Bank Report.

ADB (2020b), “Asia Small and Medium-Sized Enterprise Monitor 2020: Volume II - Covid-19 Impact on MSMEs in Developing Asia”, Asian Development Bank Report.

ADB (2021a), “Enhancing SME Participation in Global Value Chains: Determinants, Challenges and Policy Recommendations”, Asian Development Bank Report.

ADB (2021b), “2021 Trade Finance Gaps, Growth and Job Survey”, ADB Briefs No. 192.

Ajmone Marsan, G. and L. Ruddy (2020), “Post-Pandemic ASEAN must Bridge the Digital Gender Divide”, ERIA News & View, 13 May 2020, https://www.eria.org/database-and-programmes/op-ed-post-pandemic-asean-must-bridge-the-digital-gender-divide, accessed on 5 November 2021.

ASEAN (2021), “Mid-Term Review of the ASEAN Strategic Action Plan for SME Development 2016-2025”, Evaluation Report, The ASEAN Secretariat Jakarta.

Baldwin, R. (2012), “Global Supply Chains: Why they emerged, why they matter, and where they are going” CEPR Discussion Paper Nr. 9103.

Baur, A., L. Flach and F. Teti (2021), “30 Jahre Mercosur – Integrationsfortschritte, Misserfolge und zukünftige Handelspolitik”, ifo Schnelldienst, 74 (4).

Bernard, A.B., J. B. Jensen, S.J. Redding, and P.K. Schott (2007), “Firms in International Trade”. Journal of Economic Perspectives. 21 (3). pp. 105−30.

Chor, D. (2019): “Modelling Global Value Chains: Approaches and Insights from Economics". In the Handbook of Global Value Chains, 2019. Eds: Gereffi, Ponte, and Raj-Reichert. Edward Elgar.

ERIA (2019), “Study on MSMEs Participation in the Digital Economy in ASEAN, Nurturing ASEAN MSMEs to Embrace Digital Adoption”, Final Report, Economic Research Institute for ASEAN and East Asia.

ERIA (2021), “ASEAN MSMEs in a Covid-19 World”, Final Report, Economic Research Institute for ASEAN and East Asia.

Facebook and Bain & Company (2020), “Digital Consumers of Tomorrow, Here Today, A SYNC Southeast Asia Report”, A Sync Southeast Asia Report.

Flach, L., J. Gröschl, M. Steininger, F. Teti, A. Baur (2021a) "Global Value Chains - Assessment of Challenges and Opportunities", Report Commissioned by the Konrad-Adenaur Stiftung, ifo Institute at the University of Munich.

Flach, L., H. Hildenbrand und F. Teti (2021b), „The Regional Comprehensive Economic Partnership Agreement and Its Expected Effects on World Trade", Intereconomics, 56(2).

Ganne, E. and K. Lundquist (2019), "The Digital Economy, GVCs and SMEs", in: WTO Report, "Global Value Chain Development Report 2019", Chapter 6.

GEM (2018), "Global Entrepreneurship Monitor - 2018/2019 Women's Entrepreneurship Report", Published by the Global Entrepreneurship Research Association, London Business School.

Harvie, C., D. Narjoko, and S. Oum (2010), "Firm Characteristic Determinants of SME Participation in Production Networks", ERIA Discussion Paper Series, ERIA-DP-2010-11. Jakarta: Economic Research Institute for ASEAN and East Asia.

Ignatenko, A., F. Raei, and B. Mircheva (2019), "Global Value Chains: What Are the Benefits and Why Do Countries Participate?", IMF Working Paper 19/18, January. Washington, DC: International Monetary Fund.

IMF, Direction of Trade statistics Database, Accessed 2 June 2022.

https://data.imf.org/?sk=9D6028D4-F14A-464C-A2F2-59B2CD424B85&sId=1390030341854

Irwin, D. A. (2020) "The Pandemic Adds Momentum to the Deglobalization Trend", Peterson Institute for International Economics, Realtime Economic Issues Watch.

Korinek J., Moïsé E., Tange J (2021), "Trade and Gender: A Framework of Analysis", OECD TRADE POLICY PAPER No. 246

Lanz, Rainer, et al. (2018), "E-commerce and developing country-SME participation in global value chains", No. ERSD-2018-13. WTO Staff Working Paper.

Lanz, R., K. Lundquist, G. Mansio, A. Maurer and R. The (2018), "E-commerce and developing country-SME participation in global value chains", World Trade Organization, Staff Working Paper ERSD-2018-13.

López González, J. (2017), "Mapping the participation of ASEAN small- and medium-sized enterprises in global value chains", OECD Trade Policy Papers, No. 203, OECD Publishing, Paris.

López González, J. et al. (2019), "Participation and benefits of SMEs in GVCs in Southeast Asia", OECD Trade Policy Papers, No. 231, OECD Publishing, Paris.

López González, J. (2019), "Fostering participation in digital trade for ASEAN MSMEs", *OECD Trade Policy Papers*, No. 230, OECD Publishing, Paris.

Lu, Y., H. Shi, W. Luo, and B. Liu (2018), "Productivity, Financial Constraints, and Firms' Global Value Chain Participation: Evidence from China". Economic Modelling. 73. pp. 184–94.

Lurong, Chen (2020), "Improving Digital Connectivity For E-commerce: A Policy Framework and Empirical Note for ASEAN", ERIA Discussion Paper Series No. 327.

Melitz, M.J. (2003), "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity". Econometrica. 71 (6). pp. 1695–725.

OECD (2017), "Strengthening Women's Entrepreneurship in ASEAN - Towards Increasing Women's Participation in Economic Activity", OECD Report funded by the Government of Canada.

OECD-UNIDO (2019), "Integrating Southeast Asian SMEs in Global Value Chains: Enabling Linkages with Foreign Investors", Paris. www.oecd.org/investment/Integrating-Southeast-Asian-SMEs-in-global-value-chains.pdf

OECD (2021), One Year of SME and Entrepreneurship Policy Responses to Covid-19: Lessons Learned to "Build Back Better", OECD, Tackling the Coronavirus (Covid-19): Contributing to a Global Effort.

OECD Trade in Value Added (TiVA) database, https://stats.oecd.org/index.aspx?queryid=106160

Sey, A. (2021), "Gender Digital Equality Across ASEAN", ERIA Discussion Paper Series No.358.

UNESCAP (2018), "Fostering Women's Entrepreneurship in ASEAN", Economic and Social Commission for Asia and the Pacific, United Nations Publication.

UNESCAP (2020), "Policy recommendations for supporting women owned micro small medium enterprises affected by COVID-19 pandemic in Cambodia", Policy Guidelines, Economic and Social Commission for Asia and the Pacific, Programme undertaken with financial support from the Government of Canada.

Urata, S. (2021). "Enhancing SME Participation in Global Value Chains: Determinants, Challenges, and Policy Recommendations". Asian Development Bank Institute.https://www.adb.org/sites/default/files/publication/682891/adbi-book-enhancing-sme-participation-global-value-chains.pdf

Verhoogen, E. (2008), "Trade, Quality Upgrading and Wage Inequality in the Mexican Manufacturing Sector." Quarterly Journal of Economics, vol. 123, no. 2, pp. 489-530.

Wang, Z., S.-J. Wei, X. Yu und K. Zhu (2017) „Measures of Participation in Global Value Chains and Global Business Cycles", *NBER Working Paper Nr. 23222*

Wignaraja, G. (2013), "Can SMEs Participate in Global Production Networks? Evidence from ASEAN Firms". In D.K. Elms and P. Low, eds. Global Value Chains in a Changing World. Geneva: World Trade Organization.

WTO (2019), "Global Value Chain Development Report 2019: Technological Innovation, Supply Chain Trade, And Workers In A Globalized World", WTO, Genf.

Xavier, S.R., Sidin, S.M., Guelich, U., and Nawangpalupi, C. (2016). “Global Entrepreneurship Monitor ASEAN Regional Entrepreneurship Report 2015/2016”. ASEAN Entrepreneurship: The Context, Impact and Opportunities for Women Entrepreneurs and Startups; Key Pivots for Growth and Sustainability.