Institutional Determinants of Mindanao Small and Medium Enterprises' Linkage to Global Value Chains
By Maribel A. Daño-Luna

I. Introduction

A. Background of the Study

There is an established global recognition of small and medium enterprises as crucial backbone of the economy. On the one side, SMEs provide important contribution to job creation and investments which promote national development and sustainable development goals (UNDP 2016). On the other, SMEs have the potential to expand and participate in the global value chains towards higher economic and social impact (ADB 2015 and APEC 2017). Indeed, SMEs are integral part of the economy and influencing their competitiveness is beneficial to countries around the world. However, SMEs are more vulnerable to distinct challenges due to their smaller size and lower productivity. While recent policy measures point towards increasing linkages of SMEs to global value chains, this is often complicated when businesses operate in the context of fragility and armed conflict, often with weak institutions, such as in Mindanao – a region in Southern Philippines laden with history of armed conflict.

As the business environment can either restrict or facilitate firm competitiveness, institutions need to be strengthened to provide a level-playing field for competition. This nexus between the internal capacity of the firm and the business environment is captured in the definition of SME competitiveness by the International Trade Centre (ITC) – a joint agency of United Nation and World Trade Organization that reports the annual SME Competitiveness Outlook of different countries. ITC defines SME competitiveness as driven by their "capacity to compete, connect, and change in various levels of the economy whether at the firm-level, immediate business level, or national government level." Firm competitiveness, an economic concept that dated back to 1980s, refers to the relative performance of a firm versus other main competitors. In the literature, competitiveness is defined either from the viewpoint of product or service value improvement or the internal capacity of the firm to compete.

In this study, SME competitiveness in terms of its capacity to form linkages with global value chains, as influenced by its business environment, is the scope of inquiry. This focus is supported by the empirical study by Boffa et. al (2017) which shows that participation of SMEs in GVCs in developing countries are correlated with SME competitiveness. A value chain, as defined in the Handbook for Value Chain Research, is the set of all activities performed by firms or workers from conception to end use of product (Kaplinsky and Morris, 2001), thus part in the global value chain can be done in a different country. A value chain is different from a supply chain in the sense that supply chains exist for satisfying a customer's request or demand while value chains are interrelated activities to promote competitive advantage (Investopedia). This means that a raw material sourced from country A can be processed with additional value in country B to be sold in country C.

The Philippines has become greatly linked with the global market in the recent decades. Apart from multilateral and bilateral trade agreements, the Philippines is active in various regional cooperation such as the Asia Pacific Economic Cooperation (APEC), Association of Southeast Asian Nations (ASEAN) Economic Community, and Brunei-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA). While the first two involve the membership of the entire country, the latter's focus is the membership of poorer regions in the four countries. Development and competitiveness of SMEs are central to the policies of this three regional cooperation and as such is given priority in member countries. In the Philippines, the Philippine Development Plan 2017-2022 recognizes the importance of promoting SME competitiveness where specific indicators in the development plan includes "proportion of small-scale industries (enterprises) in total industry value added increased" and "number of MSMEs participating in global value chains increased". The latter is an important opportunity for SMEs, if prioritized in the government with supportive policy incentives given the potential of SMEs to provide massive employment and local investments as well as to grow to large enterprises. However, "statistics on industry and services, including those for MSMEs, are inadequate" (NEDA, 2017), and thus only the direct linkage to global value chains (either through export or import) can be probed in this study. Moreover, a recent strand of literature suggests the inclusion of small and medium enterprises (SMEs) in the global value chains to address inequality (ADB, 2015; Falciola et. al, 2017; Lim and Kimura, 2010). However, according to a recent study of Asian Institute of Management, the top three constraints in Philippine SME linkage with GVCs include corruption, high tariff rates in export markets, and quality of telecommunication facilities, ports and airports, and other infrastructure relevant to trade (Francisco et. al, 2018) – which are all institutional constraints.

Indeed, the linkage process of SMEs to global value chains is heavily influenced by institutions governing business relationships with foreign businesses constituting the GVCs – which the SMEs target to be able to reach the global market. Institutions or "rules of the game" (North, 1991) influence behavior of firms including SMEs as a system of constraints that provide a framework for human interaction (North, 1990). Formal constraints are rules, laws, or constitutions, which aim to facilitate political or economic exchange. This differs from informal social constraints such as norms of behavior, self-imposed codes of conduct or conventions. Rich literature confirms the crucial role of governing institutions to facilitate or restrict SME linkage to global value chains.

The intricacy of the problem is complicated in the context of SMEs operating in an environment with complicated political economy context such as in Mindanao – a region in the Philippines plagued with poverty and history of armed conflict. With opportunities for linkages with global value chains under the umbrella of APEC, ASEAN, and BIMP-EAGA, this study intends to look at how governing formal institutions influence Mindanao SMEs in linking with GVCs.

This relationship between formal institutions and firm behavior highlights the importance of looking at the institutional determinants of business operation in a certain context rather than applying a one-size-fits all formula for business success. In the problem probed in this study, this inseparable bond is the relationship between the formal institutions in the business environment and SMEs capacity to form linkages with GVCs.

In the Philippines, a small and medium enterprises is defined as an enterprise with asset size between PHP 3 million to PHP 100 million (excluding land) and with employee size of 10 to 199 (RA 9501 or Magna Carta for MSMEs). Micro, small, and medium enterprises (MSMEs) comprise bulk (99.6%) of Philippine businesses and provide more than 60 percent of jobs in the country (DTI, 2016). This statistic is consistent with the Asian share of SMEs and their role as an important driver of economy (ADB 2015). However, challenges abound in the external and internal environments influencing SMEs competitiveness in its capacity to compete, connect, and change (International Trade Center 2017). Age-old issues of Philippine SMEs include access to finance, technology, and inputs (Hampel-Milagrosa, 2014) as well as vulnerability to instability in the business environment (Mead and Liedholm, 1998).

Specifically, for Mindanao SMEs linkage to GVCs, a unique opportunity is the region's membership in the Brunei-Indonesia-Malaysia East ASEAN Growth Area (BIMP-EAGA) under the mandate of the Mindanao Development Authority (MinDA). Under the wider umbrella of Asia Pacific Economic Conference (APEC) and Association of Southeast Asian Nations (ASEAN), BIMP-

EAGA offers opportunities for SMEs to link to global value chains (BIMP-EAGA Vision 2025). The BIMP-EAGA Vision 2025 identifies Greater Sulu-Sulawesi Corridor – a maritime corridor as the nerve center trade in BIMP-EAGA – where the corridor route includes 1) Palawan-Sabah; 2) Zamboanga Peninsula – Sabah (including Basilan, Sulu, and Tawi-Tawi in the Philippines); 3) Davao (Davao del Sur); and 4) General Santos – North Sulawesi. Aligned with BIMP-EAGA, the Mindanao 2020 Peace and Development Framework implemented by MinDA, operationalizes peace and development in the region by identifying economic corridors (i.e. Northern Mindanao, Western Mindanao, South Central Mindanao development corridors). With the potential opportunities presented by the economic activities in these corridors and the potential of SMEs as drivers of local economic development, it pays to look at how institutional factors in Mindanao localities influence SMEs to link to global value chains.

However, in the absence or inadequacy of enabling policies for SMEs (Aldaba 2014), staying competitive and linking to global value chains can be complicated by prevailing local political economy context, such as in Mindanao - a region in the Southern Philippines which has been plagued with fragility and armed conflict situations for decades and houses almost 40% of the country's poorest (World Bank 2017). Notably, only 15 percent of SMEs operate in Mindanao. In Mindanao, "weak institutions undermine quality of governance" (Mindanao 2020 Peace and Development Framework Plan (MPDFP) 2011-2030) and thus affect economic opportunities. For instance, MPDFP reports that although corruption is not unique in Mindanao, it is aggravated by factors such as "proliferation of armed groups, political warlordism, undue domination of local business by political leaders, the Muslim secessionist movement and extreme poverty." It has been found in an empirical study by the Asian Institute of Management (AIM) by Canare, Francisco, and Price (2017) that the ease and cost of doing business indicator wanes its importance in explaining business creation in the poorest areas such as in Mindanao. The AIM study showed that governance is seen as the more significant factor in business creation in poorest cities and municipalities.

In a 2017 study by Albert et. al reporting on the results of Philippine Survey on Innovation Activity of firms, "firms in Mindanao tend to cater less to international markets than those in Visayas and Luzon (outside NCR)". Although Mindanao as well as National Capital Region (NCR), has the biggest share of firms that are innovation active with a rate of 45 percent or above, this can be basic innovation in terms of product improvement and not necessarily introduction of innovative products. Moreover, Mindanao has the least expenditures for innovation in both levels (580 thousand pesos) and in relative terms (2.9% of gross sales). Based on the study's logit regression, "firms in NCR and Balance Luzon, all other things equal, are more likely to be product innovators than firms in Mindanao." As innovation greatly affect quality of products which influences SMEs to reach global market, the study shows that this may be one of the constraints faced by Mindanao SMEs.

As political and economic processes shape how businesses operate in the society, it is important to look at competitiveness of localities in facilitating SME competitiveness. This includes looking at institutional constraints and enablers in doing business for SMEs, specifically in linking to GVCs in the context of doing business in a region with history or armed conflict and poverty.

To put simply, if the goal of institutions is to influence – through policy incentives and institutions – SMEs' behavior to maximize opportunities for linkages to GVCS, then it begs to ask: Are formal institutions responsive to the context of doing business in a fragile and conflict-affected area such as Mindanao? Specifically, this study aims to answer: How do formal institutions restrict or facilitate Mindanao SMEs' competitiveness in linking to global value chains (through export, import, and/or subcontracting to exporting firms)?

B. Statement of Research Problem and Objectives

The study seeks to answer the main research question, "How do formal institutions significantly influence small and medium enterprises (SMEs) in Mindanao in linking to global value chains (GVCs)?"

Specific questions include:

1. What are firm-level (internal) constraints and enablers of Mindanao SMEs in terms of linking to GVCs?
2. How are formal institutions responsive (restrictive or facilitative) to the firm-level constraints of Mindanao SMEs in terms of linkage with GVCs?
3. What are business environment (external) constraints and success factors of Mindanao SMEs in terms of linking to GVCs?
4. How are formal institutions responsive to the business environment constraints of Mindanao in terms of linkage with GVCs?
5. How do formal institutions influence Mindanao SMEs in linking to GVCs? Does it restrict SMEs' in linking to GVCs? Does it facilitate?

The main objective of the study is to assess how formal institutions significantly influence – restrict or facilitate - small and medium enterprises (SMEs) in Mindanao in terms of linking to global value chains (GVCs).

The specific objectives are:

1. To gain a deeper insight about Mindanao SMEs participation in the GVCs;
2. To determine the constraints and enablers of Mindanao SMEs in linking to GVCs at the level of: a) Firm; b) External business environment; and c) Formal institutional level.
3. To determine how formal institutions, restrict or facilitate SMEs' capacity to link with global value chains;
4. To provide an empirical analysis on the institutional determinants of Mindanao SMEs in linking to GVCs.

C. Significance of the Study

The relevance of the study is in its prime objective of looking at the business side of peace and development at a subnational level, in this case in Mindanao. For many years, politics and governance has been the known focus of reforms in the region with pockets of conflicts and fragility. As small and medium enterprises have a known importance in providing jobs, the study is important in looking at paths on how relevant policy and programs on institutions can help SMEs compete in the global arena thereby providing local investments and needed jobs. The study hopes to complement numerous studies on improving the policy and governance in Mindanao by focusing on SMEs.

In the Asia Pacific regional level, the study lends its significance in looking at how a subnational region with fragile and conflict-affected context can link with global value chains. This is significant in contributing to shared prosperity with the vision of an inclusive global value chain. Moreover, it is significant to Asia Pacific Economic Cooperation (APEC), Association of Southeast Asian Nations (ASEAN), Brunei-Indonesia-Malaysia-Philippines-East ASEAN Growth Area (BIMP-EAGA) groupings where opportunities exist and agenda on prioritizing SMEs is being tackled. It is noted that in the APEC's SME Internationalization Index, the Philippines, as well as Malaysia, has a high number of SMEs in need of government support compared to other countries.

D. Scopes and Limitations

Since Mindanao only has 15% of SMEs in the Philippines, the qualitative inquiry of the study is limited to the selected cities in Mindanao with a relatively larger portion of small and medium enterprises. These cities are Davao City and Cotabato City. The study covered small and medium enterprises and did not include micro and large enterprises. The study only focused on Mindanao SMEs capacity to link to global value chains as influenced by institutional variables while controlling for other variables. The focus is only on formal institutions and not informal institutions. Given the limitation in accessing data, only binary variables generated from the Philippine Statistical Authority's Annual Survey of Philippine Business and Industry (ASPBI) was used as well as estimation from best available data. Moreover, cities and municipalities covered in the regression analysis was based on the best available data.

To accommodate the schedule of various SME owners, a key informant interview was conducted instead of a focus group discussion. Although requests for interview were sent to the Department of Science and Technology and Philippine Chamber of Commerce and Industry, they were not able to confirm. As such, including them in future studies is recommended.

II. Review of Related Literature

Firms linking to global value chains (GVCs) is affected both by economic and political institutions and processes. As such, this section discusses the following: 1) Empirical Studies on SME competitiveness, linkage with global value chains, and institutions; 2) Related studies on institutions and SME competitiveness in the Philippines; 3) Philippine SMEs Linkage with GVCs: APEC, AEC, and BIMP-EAGA; 4) SMEs in the Philippines and in Mindanao; and 5) Factors Influencing Mindanao SMEs Linkage to Global Value Chains.

<u>1. Empirical Studies on SME Competitiveness, Linkage with GVCs, and Institutions</u>

Growing economic interdependence among nations paved the way for globalization to be realized. Dominated by multinational companies and large firms, global production networks are sought to be more inclusive (ADB, 2015; APEC, 2017; Coe, Dicken, and Hess, 2008) to create a more equitable domestic impact. A recent strand of literature suggests the inclusion of small and medium enterprises (SMEs) in the global value chains to address inequality – a major criticism on the unintended consequences of globalization (Rodrik, 2000). However, SMEs are more vulnerable compared to large businesses and thus they face challenges in their competitiveness and growth. Numerous literatures have investigated firm-level performance factors of SMEs, but another important factor is the institutions surrounding the business environment. This section of the chapter reviews related empirical studies on institutional factors affecting SME competitiveness in terms of linkage with global value chains.

In the literature, there is no single universal definition of SMEs yet there is a wide recognition of its relevance in sustainable economic development (OECD and Blue Orchard, 2017). Castel-Branco (2003) critiqued that the lack of common indicators in defining SMEs can result in lack of common policies to address SME issues. The author noted that large differences in SME definition depend upon social and economic processes distinct in the country of operation. In the Philippines, a small and medium enterprises is defined as an enterprise with asset size between PHP 3 million to PHP 100 million (excluding land) and with employee size of 10 to 199 (RA 9501 or Magna Carta for MSMEs). Despite variations in definition, development impact of SMEs is widely recognized by scholars. Earlier studies on SMEs in the 1990s (Mead, 1994 as cited by Hampel-Milagrosa, 2014; Arnold, Liedholm, Mead, and Townson, 1994) noted the growing importance of employment and income from small-scale non-farm enterprises in rural and urban economies of developing countries. However, in another study by Mead and Liedholm (1998), although they have found out that in many countries, at least a third of the labor force are finding work in micro and small enterprises (MSEs), these were offset when businesses close. The study concluded that changes in enterprise births, closures, and expansions are influenced by the state of macroeconomy and other diverse factors; thus, policy design should be based on a firm grasp of this diversity to effectively contribute to poverty alleviation.

More recent empirical studies confirm earlier studies that challenges abound in the SMEs competitiveness at the entrepreneur level ((Falciola, Jansen, and Rollo, 2017; Hampel-Milagrosa, Loewe, and Reeg, 2014); enterprise capacity level such as access to finance ((Aldaba, 2014; Falciola, Jansen, and Rollo, 2017; Hampel-Milagrosa, 2014; Wang, 2016) and innovation ((Mead, 1994; Mead and Liedholm, 1998; APEC, 2017; OECD, 2018); and environment level where constraints are identified in SME linkages with other SMEs and large and foreign firms and internationalization of SMEs through linkage to global value chains (Berry, 1997; Canare, Francisco, and Price, 2017; Cusolito, Safadi, and Taglioni, 2017).

A value chain is the set of all activities performed by firms or workers from conception to end use of product (Handbook of Value Chains, Kaplinsky et. al, 2017), thus part in the global value chain can be done in a different country. A value chain is different from a supply chain in the sense that supply chains exist for satisfying a customer's request or demand while value chains are interrelated activities to promote competitive advantage (Investopedia). Global value chains (GVCs), similar to the Global Commodity Chain (GCC), is a more restricted network compared to global production networks (GPN). In a study by Coe, Dicken, and Hess (2008) on the potential of global production networks, they have noted that although the three conceptualizations are similar in terms of its "interconnected functions, operations and transactions through which a specific product or service is produced and distributed and consumed, two major differences identify GVC/GCC from GPN as shown in the table below.

Table 1. Difference between Global Value Chain and Global Production Network

GVC / GCC	**GPN**
Linear structure	strive to go beyond such linearity to incorporate all kinds of network configuration
Focus narrowly on the governance of inter-firm transactions	attempt to encompass all relevant sets of actors and relationships

Source: Coe, Dicken, and Hess (2008)

Recent strand of literature points to the promotion of SMEs capacity to internationalize or link with global value chains (UNCTAD, 2005; ADB, 2017; Cusolito, Safadi, and Taglioni, 2017; APEC, 2016). Increased regionalism and globalization (OECD, 1997 as cited by ADB, 2015) led to the expansion of global value chains. As a result, international production and distribution networks were formed which influenced FDI flows in Asia. In the Philippines, increase in foreign direct investment is one of the notable effects of regionalism (ADB Asian Economic Integration Report 2017). And thus, several Asian countries begin to view SME growth and development in terms of their linkage with GVCs (ADB, 2015).

Types of linkages with GVCs. There are several types of linkages that SMEs develop to grow and be competitive. Lim and Nakamura (2010) of ADB Institute studied the potential of SMEs to increase its contribution to regional development through greater participation in GVCs. In their study, they have noted that due to the small size of SMEs, linkages with GVCs through large businesses and multinational firms give the best chance for technology and knowledge spillover to SMEs. In Asia, the Asian Development Bank has also studied the linkage of SMEs to GVC with focus on the role of financing institutions.

In the Philippines, SMEs show two types of linkages with GVCs: forward linkages and backward linkages. Department of Trade and Industry (DTI) Glossary of Business Terms and Concepts" defines *forward linkages* as "the provision by one firm or industry of produced inputs to another firm or industry". The glossary also defined *backward linkage***s** as "the use by one firm or industry of produced inputs from another firm or industry". A study by Canare et. al of Asian Institute of Management on internationalization of SMEs identifies the following direct and indirect linkages to GVCs shown in the table below:

Table 2. Types of SME linkages with GVCs

Backward linkages	• SMEs whose suppliers of inputs and supplies are multinational companies outside PH (imports) • SMEs whose suppliers of inputs and supplies are large firms within PH which imports supplies and inputs from foreign firms
Forward linkages	• SMEs which are subcontractors or outsourced by multinational companies outside PH • SMES which are subcontractors or outsourced by large firms within PH • SMEs which supply inputs and supplies to multinational companies outside PH • SMES which supply inputs and supplies to large firms within PH • SMEs which export products outside PH

Source: Author's compilation based on Canare et. al (2017)

Various literatures have investigated both the firm-level factors affecting SME performance and competitiveness (i.e. entrepreneurial orientation or mindset; firm performance) as well as the effect of environmental factors (i.e. immediate business environment and institutions). SME competitiveness, as defined by the International Trade Centre (ITC) - multilateral agency with joint mandate from UN and World Trade Organization, is the capacity to compete, connect, and change in different levels of environment (internal firm, immediate business, and national environment) (ITC, 2015). ITC's flagship annual publication SME Competitiveness Outlook looks at indicators of competitiveness across different countries. Below are the SME Competitiveness indicators identified:

Figure 1. SME Competitiveness Grid

Source: International Trade Centre

Table 3. International Trade Centre's indicators of SME Competitiveness in different levels of economy

Capacity to compete	Capacity to connect	Capacity to change
• quantity and cost requirements • time requirements • certification and standards • competitors	• ICT requirements • linkages with customers • linkages with businesses • linkages with institutions	• financing requirements • skills requirements • intellectual property requirements • innovation requirements

Source: International Trade Centre SME Competitiveness Outlook 2017

The above indicators drive SME competitiveness in various levels of the economy: firm-level, immediate business environment, and national government. Strong and weak institutions make or break how a business would perform to its optimal level. The framework identifies SMEs capacity to connect with global value chain partners (customers, businesses, and institutions) as one important pillar driving SME competitiveness.

2. Related Studies on Institutions, SME Competitiveness in Linkage with GVCs in the Philippine context

Numerous studies on SMEs in the Philippines identify the barrier and enablers to its growth and development. The review of related local studies shows that although institutional constraints and enablers have been widely studied in terms of business growth and competitiveness, there are few studies on institutions and firm competitiveness in fragile and conflict-affected situations such as in Mindanao. Studies in other countries with institutional perspective on SME competitiveness in fragile and conflict-affected situations are approached at a national level. This study hopes to address this gap by focusing on the impact of institutions on SMEs competitiveness in linking with global value chains given a fragile and conflict-affected context at a subnational level such as in Mindanao.

A pioneer in the Philippines in promoting MSME development through trainings and research is the University of the Philippines Institute for Small Scale Industries (UP ISSI). One of their notable trainings is the Manager's Course – a flagship program to train entrepreneurs and managers making decisions for the firm. An assessment of 107 MSMEs surveyed that underwent UP ISSI's management course from 2006 to 2011 (de Vera, 2012) shows that the MSME owners need more aggressive marketing through advertisements and promotions, need to set up quality control systems, formalize job evaluation of workers, and improve accounting records. Although the study presented the coping mechanisms by MSMEs, it did not expound on the success factors. Marquez (2012) in his study on "Building a Sustainable Business Framework for Philippine Small-Medium Enterprises" reviewed extant literature and identified critical elements to success of SMEs. However, his study did not focus on the linkage of SMEs to GVCs. This aspect of SME internationalization or linkage with GVCs were studied by Francisco, Canare, and Labios (2018). Table 4 shows the identified key success factors (Marquez, 2012) for SMEs sustainability and constraints (Francisco et. al, 2018) for SMEs in linking with the GVC.

Table 4. SME success factors and constraints in linking with GVCs

Key success factors	Constraints

(compiled by Marquez, 2012)	(Francisco, Canare, and Labios, 2018)
Flexibility to change	Corruption
Innovation	High tariff rates in export markets
Long-term focus	Quality of telecommunication facilities, ports, airports, and other infrastructure relevant to trade
Management support	Foreign currency exchange
Organized systems	Difficulty in meeting international products and service standards
Profitability	Quality of internet connection in the Philippines
Stakeholder engagement	Access to credit and financial institutions
	Access to raw materials, supplies, technology,
	Business licensing and permits

Source: Author's compilation based on Marquez (2012) and Francisco et. al (2018)

Focusing on subcontracting of SMEs, Aldaba (2008) studied the subcontracting activities of SMEs in the manufacturing sector. She noted a decline in subcontracting ratios in GPN sectors (i.e. wearing apparel, machinery except electrical form, and transport) from 1998 to 2003.

Sibel (2017) presented a methodology for calculating SME Competitiveness Index. In his conceptual framework, he suggested the use of institutional support indicators which SMEs need to be competitive in. This complements the earlier study of Xheneti and Bartlett (2012) where they identified institutional constraints on SME competitiveness.

Table 5. Institutional Indicators of SME Competitiveness in linking with GVCs

Categories of Institutional indicators (Sibel, 2017)	**Categories of institutional constraints (Xheneti and Bartlett, 2012)**
Support from the state (regulations and support)	Regulation-related constraints
Municipal Support (local projects)	Corruption-related constraints
Industry (branch) organization support	Support-related constraints
Higher education institutions and training institutions	Information-related constraints

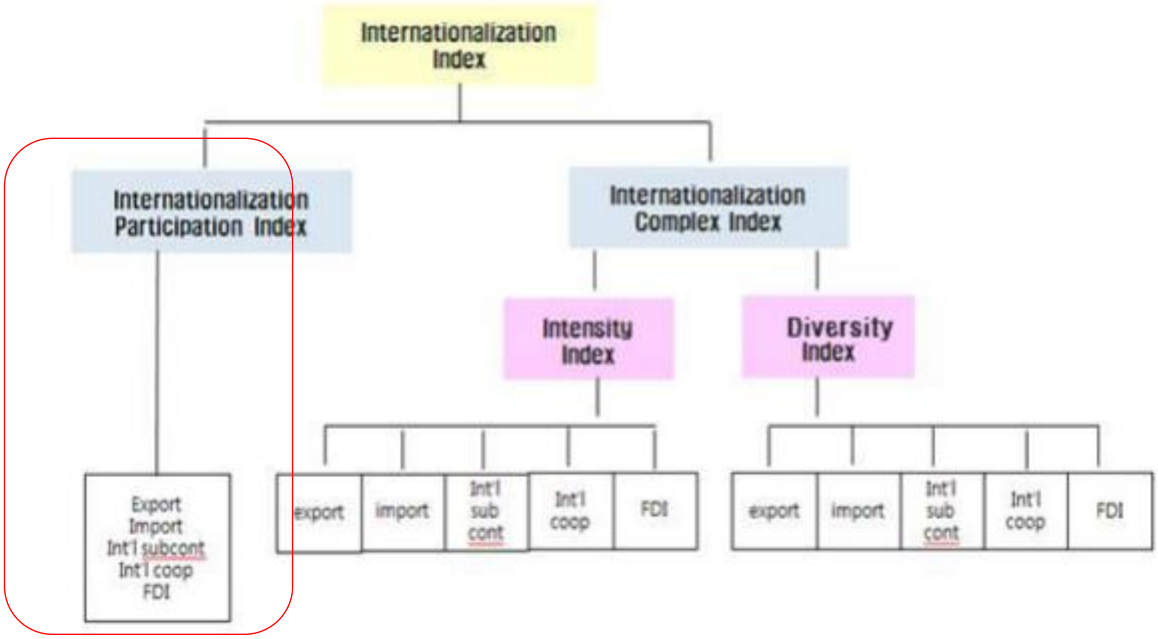
Source: Author's compilation.

Categories lifted from A. Sibel (2017) and Xheneti and Bartlett (2012

3. SME Internationalization Activities in Asia and the Pacific

APEC (2016) defines SME internationalization as the process through which SMEs strengthen their positions for global business by diversifying overseas markets and sourcing methods based on their capabilities. As a general rule, the larger the firm size, the higher its tendency to link with the global value chains (GVCs). For SMEs, linkage to GVCs is just one aspect of SME internationalization, as measured by APEC index. The study also notes that there are "four major impediments in internationalization: shortage of working capital to finance exports, difficulty identifying foreign business opportunities, limited information for analyzing markets, and inability to contact potential overseas customers."

Figure 2. APEC SME Internationalization Index (2016)



Source: APEC. (2016) APEC SME Internationalization Model Indices: Development and Application.

SME internationalization participation (Yuhua, 2015) measures direct and indirect internationalization activities of SMEs as either direct exporting, direct importing, investment abroad, subcontractors to foreign enterprises, having foreign subcontractors, and cooperation with foreign enterprises. For the indirect or subcontracting activities, these are further measured by activities related to joint ventures, non-equity alliances, licensing, and franchising.

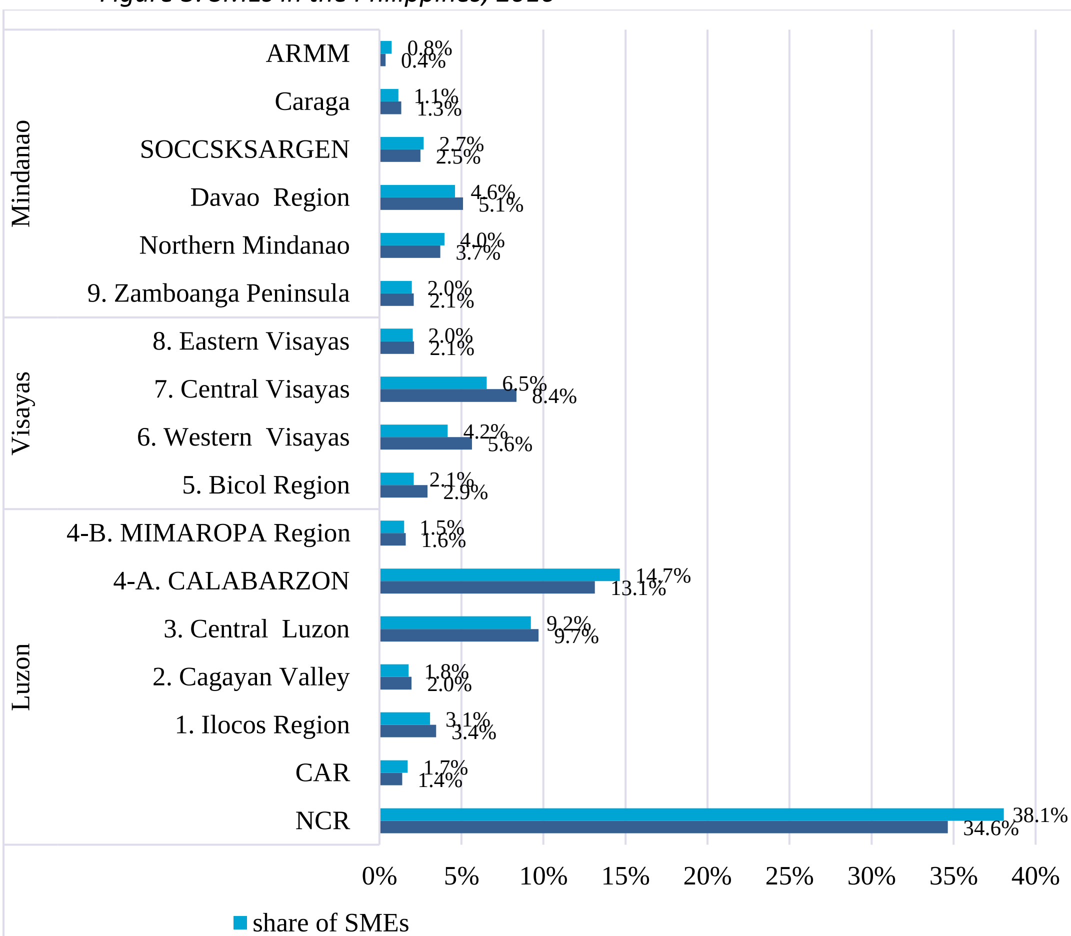
Specifically, for Mindanao SMEs linkage to GVCs, a unique opportunity is the region's membership in the Brunei-Indonesia-Malaysia East ASEAN Growth Area (BIMP-EAGA) under the mandate of the Mindanao Development Authority (MinDA). The BIMP-EAGA Vision 2025 identifies Greater Sulu-Sulawesi Corridor – a maritime corridor as the nerve center trade in BIMP-EAGA – where the corridor route includes 1) Palawan-Sabah; 2) Zamboanga Peninsula – Sabah (including Basilan, Sulu, and Tawi-Tawi in the Philippines); 3) Davao (Davao del Sur); and 4) General Santos – North Sulawesi. Aligned with BIMP-EAGA, the Mindanao 2020 Peace and Development Framework implemented by MinDA, operationalizes peace and development in the region by identifying economic corridors (i.e. Northern Mindanao, Western Mindanao, South Central Mindanao development corridors).

4. SMEs in the Philippines and in Mindanao

In the Philippines, small and medium enterprises are defined as those businesses with asset size of PHP 3 million to PHP 100 million and employee number of 10 to 199. Out of the total number of firms in the country, 99.6 percent belong to micro, small, and medium enterprises or MSMEs and they account for 63.3 percent of employment (DTI, 2016). Evidently, SMEs, hold a high potential in driving inclusive local economic development. However, challenges abound in SMEs ability to innovate, grow, and expand thereby hindering them from creating strong linkage to global value chains and poses risks of shrinking or informalization in the absence of appropriate enabling industry policies.

Moreover, achieving inclusive economic development remains a high goal yet to be fulfilled. Although, globalization brought to fore developments, it has highlighted inequality in different parts of the globe. In the Philippines, a striking example is the concentration of developments in major cities mostly in Metro Manila and CALABARZON region. Notably, 7 of the top 10 poorest provinces in the Philippines are in Mindanao (PSA, 2015) where almost 40 percent of the poorest Filipinos reside (World Bank, 2017). Moreover, it can be noted that only 15 percent of SMEs are in Mindanao as compared to lion share in Metro Manila and CALABARZON region. It can also be noted that there is a seeming trend that the lower number of SMEs correspond to a lower Gross Regional Domestic Product (see Figure 3 below).

Figure 3. SMEs in the Philippines, 2016



Source: DTI and PSA, 2016 as cited by Daño-Luna, Canare, Francisco (2018)

SME challenges. As noted earlier, SMEs are beset by challenges due to their relatively vulnerable position as compared to large businesses. In the Philippines, SMEs' potential for growth, expansion, and innovation is hampered by constraints in access to finance, supply and inputs, markets, labor, and technology as well as limiting government regulations (Canare et. al, 2017). Moreover, although most SMEs are owned and/or managed by women, gender mismatch in policy implementation on the ground is observed (Philippine Commission on Women website). If capacity to access as the bare minimum requirement is not even satisfied, such constraints can greatly affect industry attractiveness of SMEs for investment and promotion.

SME Policy Issues. Statistics on industry and services, including those for MSMEs, are inadequate (Philippine Development Plan (PDP) 2017-2022, NEDA). The development plan also notes that the government needs to "assess the implementation of, and compliance with, MSME laws (i.e., Go Negosyo Act, Magna Carta for MSMEs, and the Barangay Micro Business Enterprises Act) and determine if and where remedial legislation is needed".

For Mindanao SMEs, the Mindanao 2020 Peace and Development Framework Plan highlighted that traditional impediments of SMEs such as access to financing, technology, raw materials, and markets, must be addressed with deliberate policy and program intervention.

For instance, although the Agri-Agra law requires at least 25 percent of bank loans to go to agribusiness, loaning institutions would rather pay the penalty fees than face the risks of loaning to agribusinesses. This is especially problematic in Mindanao with a predominantly agribusiness sector (Mindanao 2020 Peace and Development Framework Plan (MPDFP), 2011-2030) and shares only 15 percent of total SMEs in the Philippines. Moreover, access to technology is one of the challenges faced by SMEs where it was noted that despite availability, technologies are not widely used by MSMEs to increase their productivity and competitive advantage. Apart from financing, access to skilled labor is also one of the constraints for SMEs to grow, innovate, and or expand/export. In terms of SMEs capacity to connect with large business or global value chains, SMEs face greater risks and lower bargaining power in various forms of linkages (joint venture, subcontracted etc.)

Institutions and SMEs in Mindanao: Challenges and Issues. Mindanao SMEs comprise 15 percent of the total SMEs in the Philippines as compared to National Capital Region with 35 percent and CALABARZON with 14 percent, both regions taking the lion share of SMEs in the country (DTI, 2016). A striking difference of Mindanao SMEs from the rest of the country is the predominantly agribusiness sector (Mindanao 2020 Peace and Development Framework Plan (MPDFP), 2011-2030) as compared to NCR 0061nd CALABARZON - both with minimal agribusiness (DTI MSME Statistics 2016). Although majority of Mindanao firms are agribusinesses, the lion share of agribusinesses are micro enterprises. The MPDFP 2011-2030[1] points towards developing prominent drivers of economic development in Mindanao which are: 1) agriculture and agriculture-based industries; 2) organic farming and Halal food production; 3) forestry industry; 4) coastal and marine fisheries; 5) mining. However, growth of the agricultural sector is constrained by " limited access to credit & insurance, low farm mechanization and inadequate post-harvest handling, poor extension service and adoption of R&D outputs" This contributed "to stagnant agricultural productivity, little use of local and international market opportunities, and an overall low competitiveness of Agriculture, Forestry and Fisheries products"

Another peculiarity faced by Mindanao SMEs is their business operation in a region where some areas are under the context of armed-conflict and governance issues. Notably, 11 of the top 20 poorest provinces (PSA, 2016) are in Mindanao. Moreover, the usual metrics of ease of doing business index wanes its relevance in poorest municipalities "as a determinant of business creation; governance indicators become more important" (Canare et. al, 2017). Given Mindanao's unique "history, context, and needs" coupled with higher levels of poverty and inequality, the goal is to have higher levels of investment which promotes inclusivity and sustainability. However, MPDFP 2011-2030 identifies the following impediments: 1) negative peace and order image of Mindanao; 2) poor infrastructure such as energy; 3) weak or lopsided value chains that effectively lead to the exclusion of certain areas or sectors, higher costs, inequitable benefits and concentrated market power; 4) inhospitable local political business climate; 5) low levels of productivity; and 5) unresponsive government programs due to excessively top-down governance while LGUs are ill-equipped to address persistent development challenges.

[1] The MPDFP 2011-2030 is currently being updated

Opportunities for SMEs in the Philippines. Aligned with the ASEAN Strategic Action Plan for SME Development, the Philippine Development Plan 2017-2022 under its section on Inequality-reducing Transformation: Ordinary Filipinos will feel the "Pagbabago" states that one of the ways to achieve the outcome of improved access to production networks is to develop "inclusive business models and social enterprises".

In terms of competition, PDP 2017-2022 notes of creating a "level playing field for MSMEs" which will be done through (a) diminishing anti-competitive practices; (b) reducing barriers to entry; and (c) reducing limits to entrepreneurship to allow micro, small and medium enterprises to thrive. The recent passage of the Ease of Doing Business Law is a positive development in curtailing red tape in government business transactions. Moreover, the Secured Transactions Act which will include moveable assets, inventory etc. as collaterals for loans will help SME access to funding issues.

With recognition of MSMEs contribution to economic development, one of the indicators in PDP 2017-2022 is for "proportion of small-scale industries (enterprises) in total industry value added increased" and "number of MSMEs participating in global value chains increased". At the regional level, the Philippine Development Plan also notes the "Small Enterprise Technology Upgrading Program" which will be expanded to enable more MSMEs to access government assistance. These indicators are concretized in the MSMED Development Plan by MSMED Council where a dedicated Bureau for SMEs Development in DTI is part of the council.

5. Factors Affecting Mindanao SMEs Linkage to Global Value Chains

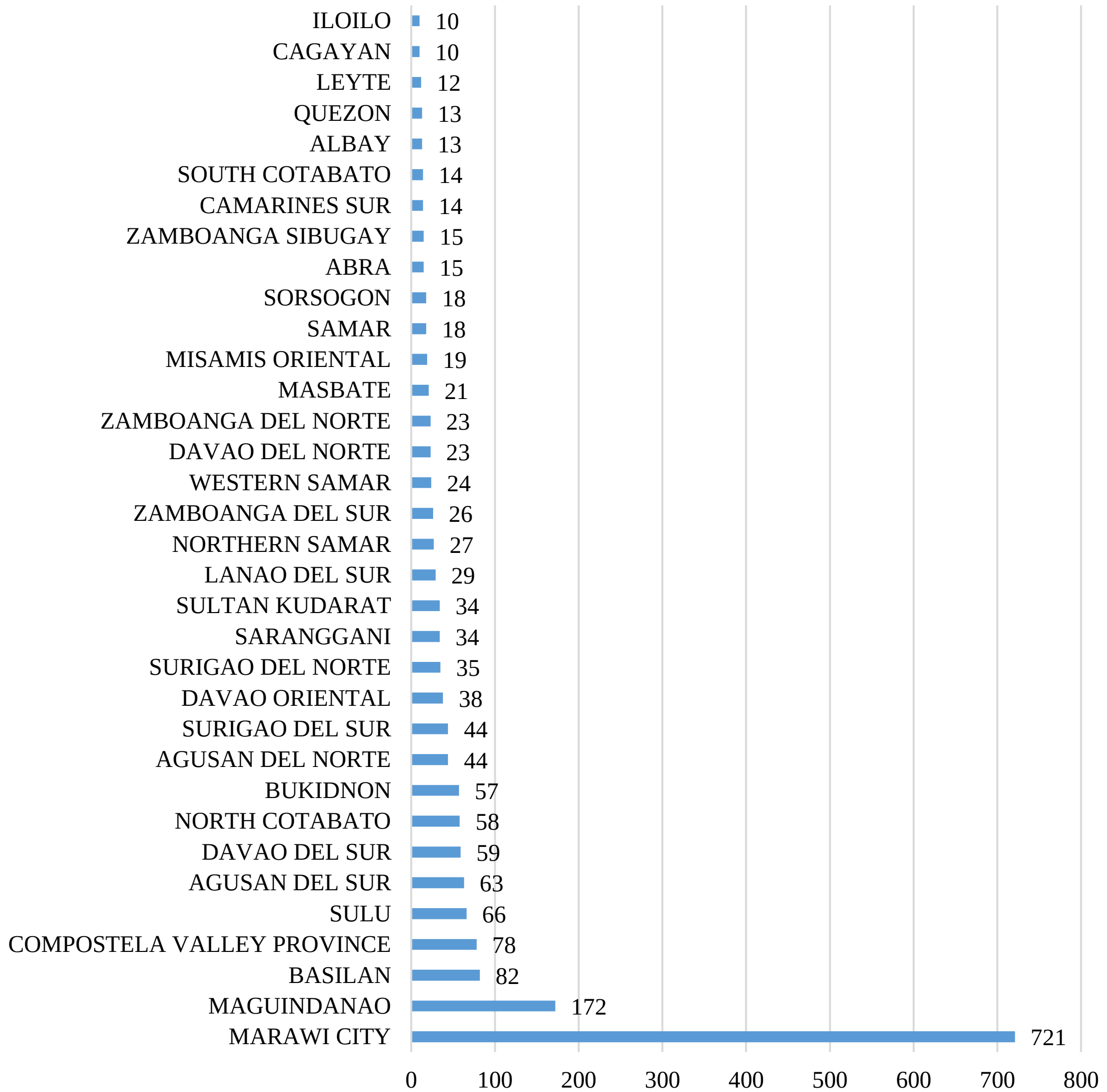
Measures of institutions: Cities and Municipalities Competitiveness Index (CMCI). Competitiveness as a concept emerged since the 1980s and is used by countries as one measure of strength of their institutions. Defined by the World Economic Forum, competitiveness is the set of institutions, policies, and factors that determine the level of productivity (Word Economic Forum Global Competitiveness Report 2017-2018 Methodology, page 11). Under basic requirements sub-index of the report, Pillar 1 is institutions. The sub-indicators under pillar 1 institutions are (Appendix D, Technical Notes of the WEF Report): property rights, intellectual property protection, diversion of public funds, public trust in politicians, irregular payments and bribes, judicial independence, favoritism in decisions of government officials, efficiency of government spending, burden of government regulation, efficiency of legal framework in settling disputes, efficiency of framework in challenging regulations, transparency of government policymaking, business costs of terrorism, business costs of crime and violence, organized crime, reliability of police services, ethical behavior of firms, strength of auditing and reporting standards, efficacy of corporate boards, protection of minority stakeholders' interests, and strength of investor protection. These set of indicators reflect the formal institutions defined by North (1990) as formal rules of the game specifically referring to regulations, policies, and laws. Other countries like Kosovo also develop subnational competitiveness index in the form of municipal competitiveness index. It aims to show the "performance of local governance while attempting to capture different dimensions of local competitiveness" (USAID, 2018).

In the Philippines, subnational competitiveness is measured through the Cities and Municipalities Competitiveness Index (CMCI). In 2006, the Task Force on Competitiveness was created which was upgraded to National Competitiveness Council (NCC) in 2011. The Council is a public-private partnership body that monitors global competitiveness indicators including the WEF's Global Competitiveness Index and IMD's World Competitiveness Yearbook. The CMCI recognizes that local competitiveness is a building block for overall national competitiveness. (WEF Report Box. 2: The Philippines: Building City Competitiveness. Contributed by Guillermo M. Luz, Private Sector Co-Chairman, National Competitiveness Council of the Philippines). With the passing of the Republic Act 11032 or the Ease of Doing Business (EODB) Law on May 28, 2018, the NCC was replaced by the Anti-Red Tape Authority (ARTA) and EODB and ARTA Council. Currently, the collection of the CMCI is under the Competitiveness Bureau of the Department of Trade and Industry.

Recognizing the various subnational contexts in the Philippines, one study of the application of the CMCI to Mindanao by Silva and Tamayo (2016) argues that the weights for each of CMCI's pillar should not be all equal. Taking the case of Compostela Valley, the study suggests the weighted average value of the three indicators measured where Economic efficiency had a weight of 50%, Government efficiency 30%, and Infrastructure development 20%. This changes the results of the most competitive cities and municipalities in the province and thus would impact further policymaking and governance. Nevertheless, CMCI, despite its imperfections, is regarded as an important government tool in managing its cities and municipalities towards higher productivity and overall country competitiveness.

Armed-conflict and security in Mindanao. As North (1991) argued, institutional framework or environment provides opportunities for organizations such as firms to increase economic productivity. However, in the case of Mindanao, weak institutions undermine quality of governance (MPDFP, 2011-2020) which influence quality of doing business in the region. Armed-conflict – armed encounters between the state and non-state armed groups – is a factor unique in armed-conflict affected regions, mostly in Mindanao. The armed conflict data provided by the Armed Forces of the Philippines notes that in 2017, majority (22 out of 34 provinces) with 10 or more recorded armed encounters occurred in Mindanao provinces. It should be noted, however, that the Marawi siege in 2017 is an outlier in the data.

Figure 4. Number of Armed Encounters, 2017



Source: OJ3, Armed Forces of the Philippines

International variable. Looking at the demand-side of linkage to global value chains, the international variable is an important factor that influence SMEs linkage to GVC. Specifically, for Mindanao, SMEs in a city or municipality belonging to the economic development corridor under BIMP-EAGA has a more likelihood of participating in the GVC. The BIMP-EAGA Vision 2025 identifies Greater Sulu-Sulawesi Corridor – a maritime corridor as the nerve center trade in BIMP-EAGA – where the corridor route includes 1) Palawan-Sabah; 2) Zamboanga Peninsula – Sabah (including Basilan, Sulu, and Tawi-Tawi in the Philippines); 3) Davao (Davao del Sur); and 4) General Santos – North Sulawesi. Aligned with BIMP-EAGA, the Mindanao 2020 Peace and Development Framework implemented by MinDA, operationalizes peace and development in the region by identifying economic corridors (i.e. Northern Mindanao, Western Mindanao, South Central Mindanao development corridors).

III. Methodology

1. Variables and Measures/Concept and Indicators

This study applied the institutional theory by North (1990) and integrate in the framework used in the study by Korsakienė, R., D. Diskiene, and R. Smaliukiene (2015) on internationalization of SMEs, specifically on the influence of institutions. Rich literature looks at institutional theory when looking at firm behavior and development. One of the studies which investigated on institutional theory and firm internationalization is Korsakienė et. al (2015). The study provided a rich discussion on how the institutional context significantly impacts international behavior of firms by facilitating or restricting internationalization processes.

Theoretical Framework: Institutional theory

Weak or strong institutions (North, 1990) impact how the state, its organizations, and firms operate. Institutional theory can be traced from sociology, economics, and political sciences. Despite varying disciplines assumption and approach, there is a recognition that "activities of entrepreneurs are constrained and fostered by institutions (Bruton et al. 2010)". Moreover, policy incentives foster entrepreneurial activities.

Institutional-Based View in Firm Study

Institutions or "rules of the game" (North, 1991) "are humanly devised constraints that structure political, economic, and social interaction". Institutions influence behavior of firms including small and medium enterprises (SMEs). Through dynamic evolution of formal institutions (Shepsle, 2006), incentives are structured through policies to affect SME behavior for sustainable economic development.

However, tension arises when institutions do not provide adequate normative pressure (Zucker, 1987) to promote firm behaviors such as SME capacity in linking with global value chains (GVCs). The intricacy of the problem is even complicated in the context of SMEs operating in an environment with complicated political economy context such as in Mindanao – a region in the Philippines plagued with poverty and history of armed conflict. With opportunities for linkages with global value chains under the umbrella of Asia Pacific Economic Cooperation (APEC), the institution-based view (coined by Peng, 2002) in complement by the study intends to look at how institutions influence Mindanao SMEs' competitiveness in linking with GVCs.

The problem presented above can be traced with clarity to the study of institutions from the perspective of sociology, economics, and political science as well as the early conceptions of political economy. Early political economists, notably Keynes in the 1970s saw the importance of state intervention in the economy through fiscal economic policies to prevent crisis such as the Great Depression. This is consistent with the concept of social embeddedness forwarded by Karl Polanyi (1968) where he argued that functioning economy cannot be disassociated from the social world to which it is embedded; and that there is an inseparable bond between economic institutions and institutions related to culture, social, and political. In the realm of political science (Taylor, 1996), institutions are viewed as great influencers which affect political outcomes. In the economics perspective (North, 1991), the effect of institutions as "rules of the game" – humanly devised constraints, either formal or informal, affecting individuals and organizations – are quantified through transaction costs which are often incurred with transactions with institutions. This relationship between external formal institutions and firm behavior highlights the importance of looking at the institutional determinants of business operation in a certain context rather than applying a one-size-fits all formula for business success.

Firm behavior is usually studied based on the resource-based view – where the internal capacity of the firm and its firm characteristics (e.g. firm size, firm age, firm performance, export sales) are viewed to influence the strategic management and development of a firm. However, as emphasized in the institutional theory by Douglass North (1990), the institutions, either formal or informal, influence how people and organizations, even firms, behave and make decisions. *Thus, institution-based view (Peng, 2002) is used in this study to explore how formal institutions in Mindanao - a region with history of armed conflict, influence or impact capacity of SMEs to link with the global value chains, either through export and import.*

Using North's (1990) theory on institutions (Figure 3) broadly dividing into two, formal and informal, the study focuses on the formal institutions. Formal institution is defined as rules such as constitutions, laws, and property rights. The formal economic constraints are created and enforced by political institutions, either effectively or otherwise, to regulate or support behaviors. The effectivity of enforcement of formal institutions describe the weakness or strength of the formal institution in a given area or sphere. Thus, weak formal institutions are those which are not effectively enforced and thus do not effectively influence people, organizations, and firms to behave in an intended way. The concepts under the formal institutions are laws, regulations, and formal rules that are regulative as well as supportive in nature. These concepts are used to investigate operational variables which describes the formal institutional factors (independent variables) which are the selected indicators from the Cities and Municipalities Index. The dependent variable is the number of SMEs able to link to the global value chains.

Figure 5. Theoretical Framework (Institutional Theory by North, 1990)

Degree of Formality (North, 1990)	Examples	Supportive Pillars (Scott, 1995)
Formal institutions	• Laws	• Regulative (coercive)
	• Regulations	
	• Rules	
Informal institutions	• Norms	• Normative
	• Cultures	• Cognitive
	• Ethics	

Source: Douglass North (1990) as cited by Peng, Li Sun, Pinkham, and Chen (2009)

Meso-level institutional constraints - specific rules (not general or organizational) delineating the domain of possible transactions and enforcement - widely investigated were: 1) barriers to entry to market, 2) export and import barriers, and 3) trade and investment policies. It should also be noted that formal institutions interact with informal institutions (North, 1990). Given the scope and limitation of the study, this study only focused on formal institutions. The figures below show the comparison of different branches of institutional theories.

Table 6. Comparison of different branches of institutional theories.

Characteristics	Economic/political branch	Sociology/organisation theory branch
Assumptions	People make decisions based on the convenience and standardization of rules and agreements	People make decisions based on heuristics because of cognitive limitations and take action based on conventions and preconscious behaviour
Drivers of human behaviours	Rules and procedures, formal control	Social norms, shared cultures, cognitive scripts, and schemas
Relationship between institutions and organisations	External institutions create structures for organisations	Organisations adjust and conform to values and limits prescribed by a society's institutions

Source: Korsakienė et. al (2015)

Table 7. Main drivers of internationalization and roles of institutions

Table 2. Main drivers of internationalization of SMEs and role of institutions

	Internationalization from emerging to developed countries	Internationalization from developed to emerging countries
Drivers	Learning opportunities, lower level of institutional and country risk, greater market potential, the aim to overcome resource and capabilities deficiencies, leveraging entrepreneurial orientation	Cheaper production opportunities, possibility to expand sales for products or services, to realize additional production capacity, to avoid strict regulation in home country
Relationship between institutions and SMEs	SMEs are seeking to compensate weakness of institutional environment in emerging countries (e.g. in terms of capital, labor and product markets) and increase their legitimacy in home country.	SMEs are aiming to exploit support of institutional environment in developed countries (e.g. well-developed banking systems, strong public equity markets and established venture capital industries), stronger values supporting internationalization

Source: developed by authors (considering Kiss and Danis 2008;Yamakawa *et al.* 2008)

Source: Korsakienė et. al, 2015

Based on the study by Korsakiene et. al (2015), there are three perspectives on internationalization of firms (Figure 6): Resource-based view, industry-based view, and institution-based view. Yamakawa, Peng, and Deeds (2008) as cited by Korsakiene et. al (2015) proposed integration of these three views to build a strategic orientation for the firm. Industry-based view explains the industry's conditions and how it impacts internationalization decisions of firms. Resource-based view, related to entrepreneurial orientation, highlights firm-specific resources and capabilities and its impact on firm performance (in terms of profit and sales). Lastly, institution-based highlights formal and informal institutions impacting performance of firms.

However, Yamakawa et. al (2008) (as cited by Koraskiene et. al, 2015) notes the differing interpretation of the three view on SME internationalization. Industry-based view highlights it as beneficial, due to 1) enhanced learning opportunities, 2) lower level of institutional and country risk and 3) greater. Resource-based view notes it as beneficial with conditions of a high level of entrepreneurial orientation defined by autonomy, innovativeness, risk-taking, aggressiveness and proactiveness motivates international expansion of SMEs. For institution-based view on SME internationalization, there is the analysis of both benefits and negative outcomes of SME internationalization – that is, "push" factors such as harsh regulation and "pull" factors such as friendlier institutional environment influence SME internationalization.

This study takes the institutional-based lens in studying linkages to GVC of SMEs in Mindanao. Factors that affect Philippine SME competitiveness in GVC can be studied from micro, meso, or macro levels (Francisco et. al, 2018). Poor policy at the institutional (meso) level constraints SME internationalization. Although other micro and macro level factors may be discussed, this study focuses the inquiry at the meso-level where quality of institutions and environment, standards, and regulatory requirements are highlighted **(Figure 7).**

Figure 6. Three perspectives on SME internationalization

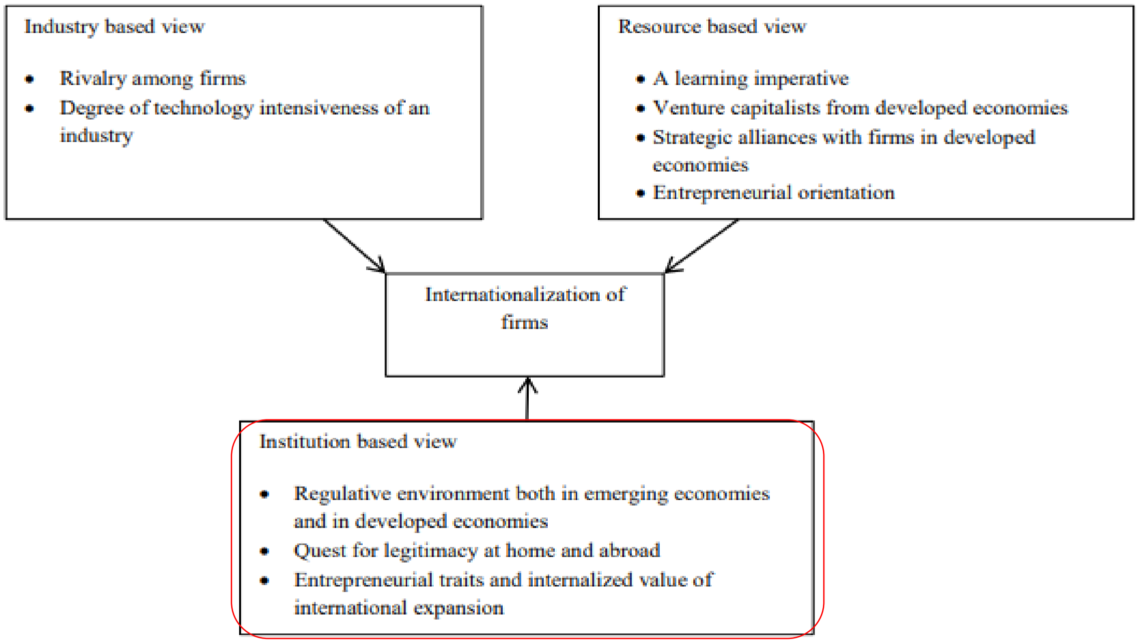
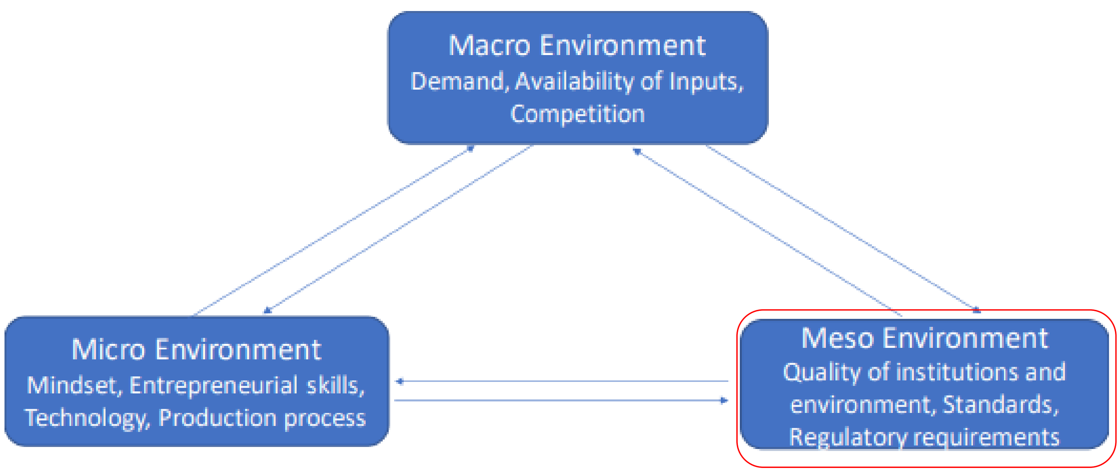


Fig.1. Three perspectives

Source: Yamakawa *et al*. 2008

Source: Yamakawa et al. 2008 (as cited by Korsakienė, R., D. Diskiene, and R. Smaliukiene, 2015)

Figure 7. Factors that affect SME Competitiveness in Global Value Chains

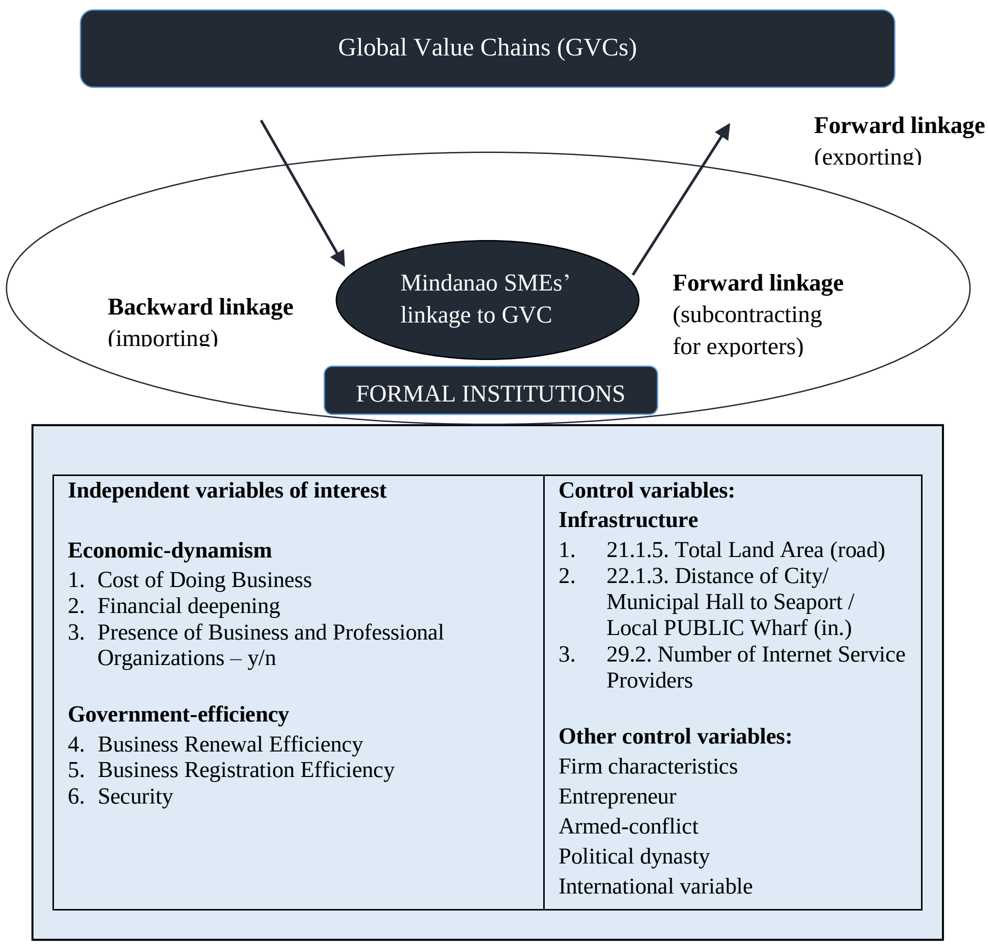


Source: Francisco, Canare, Labios (2018)

<u>Operational Framework</u>

The framework model below shows the analytical approach employed for the study. It considers indicators that describe the quality of local institutions which are formal institutions (laws, rules, regulations). The framework situates Mindanao small and medium enterprises which operate and behave within these formal institutions. These institutions act as barriers or enablers depending on the strength and weakness of institutions. Overall, the framework (Figure 8) looks at how these institutions restrict or facilitate Mindanao SMEs linkage to GVCs or internationalization of firms (Korsakienė et. al, 2015).

Figure 8. Operational Framework (study)



Source: Author's modified framework based on North (1990) and Korsakienė et. al (2015)

DEFINITION OF TERMS

Term	Conceptual Definition	Operational Definition
Institutions	Douglas North (1990) defined institutions as the "rules of the game" or "humanly devised constraints that structure political, economic, and social interaction. They consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of	In this study, only formal institutions are be included in the scope of inquiry, that is, formal rules of the game (North, 1990) in the forms of regulations and policies, political or economic, that create an economic environment, either regulative or coercive for improving productivity (North, 1991). The study operationalizes formal institutions

<table>
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<td>conduct) and formal rules (constitutions, laws, property rights)”

This is supported by the concept of social embeddedness forwarded by Karl Polanyi (1968) which highlights that the functioning economy cannot be disassociated from the social world to which it is embedded; and that there is an inseparable bond between economic institutions and institutions related to culture, social, and political.</td>
<td>relevant to firm’s linkage to GVC by using selected indicators in the cities and municipalities competitiveness index. The indicators are used as measures for the quality of local institutions (Dollar, Ge, and Yu, 2016) relevant to SMEs linkage to GVC:
<table>
<tr>
<td>Independent variables of interest (sub-pillar)

Economic-dynamism
1. Cost of Doing Business
2. Financial deepening
3. Presence of Business and Professional Organizations – y/n

Government-efficiency
4. Business Registration Efficiency
5. Business Renewal Efficiency
6. Security</td>
<td>Control variables (raw data indicator): Infrastructure
1. Roads
2. Ports
3. Information technology capacity</td>
</tr>
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</td>
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<tr>
<td>Small and medium enterprises</td>
<td>According to the Republic Act 9501 series of 2008 as amended in or Magna Carta for MSMEs, small and medium enterprises are defined as,

an enterprise (single proprietor, partnership, cooperatives, or corporation) with asset size between PHP 3 million to PHP 100 million (excluding land) and with employee size of 10 to 199</td>
<td>The study adopted the official and legal definition of SMEs according to Magna Carta for MSMEs (RA 9501 through Sec. 2 amended Sec. 2 of RA 6977, as amended by RA 8289) an enterprise (single proprietor, partnership, cooperatives, or corporation) with asset size between PHP 3 million to PHP 100 million (excluding land) and with employee size of 10 to 199</td>
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<tr>
<td>Global value chains (GVCs)</td>
<td>A value chain, as defined in the Handbook for Value Chain Research, is the set of all activities performed by firms or workers from conception to end use of product (Kaplinsky and Morris, 2001), thus part in the global value chain can be done in a different country.</td>
<td>This study adopts the concept of GVCs as expounded by Coe, Dicken and Hess (2008),

global value chain is a more restricted network, compared to global production networks, with “interconnected functions, operations and transactions through which a specific product or service is produced and distributed and consumed.” A global value</td>
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<td>Coe, Dicken and Hess (2008) expounded on global value chain as

a more restricted network, compared to global production networks, with “interconnected functions, operations and transactions through which a specific product or service is produced and distributed and consumed.” A global value chain is linear in structure and focused narrowly on the governance of inter-firm transactions.</td>
<td>chain is linear in structure and focused narrowly on the governance of inter-firm transactions.</td>
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<tr>
<td>Linkage to global value chains</td>
<td>There are several types of linkages, either forward or backward, that SMEs develop to grow and be competitive. The Department of Trade and Industry (DTI), in its Glossary of Business Terms and Concepts (Third Edition) provides the following definition:
Forward linkage - The provision by one firm or industry of produced inputs to another firm or industry.
Backward linkage - The use by one firm or industry of produced inputs from another firm or industry.
The Asian Institute of Management discussed two types of SME linkages with GVCs, either direct or indirect, as shown in the table below:
Types of SME linkages with GVCs
<table>
<tr><td>Backward linkages</td><td>1) SMEs that import inputs and supplies to multinational companies outside Philippines
2) SMEs that import inputs and supplies to large firm exporters within Philippines</td></tr>
<tr><td>Forward linkages</td><td>1) SMEs that are subcontractors or outsourced by multinational companies outside Philippines
2) SMES that are subcontractors or outsourced by large</td></tr>
</table>
</td>
<td>The study adopts the SME linkages with GVCs, through direct forward and backward linkages, as defined by the DTI

Forward linkage - The provision by one firm or industry of produced inputs to another firm or industry.
Backward linkage - The use by one firm or industry of produced inputs from another firm or industry.
And specifically, the following operationalized definition by Canare et. al (2017) of Asian Institute of Management.
<table>
<tr><td>Backward linkages</td><td>1) SMEs that import inputs and supplies from companies outside the Philippines</td></tr>
<tr><td>Forward linkages</td><td>1) SMEs that export products outside Philippines
2) SMES engaged in subcontracting activities to exporting firms</td></tr>
</table>
Source: Author’s compilation based on Canare et. al of Asian Institute of Management (2017)</td>
</tr>
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		firm exporters within Philippines 3) SMEs that supply inputs and supplies to multinational companies outside Philippines 4) SMES that supply inputs and supplies to large firm exporters within Philippines 5) SMEs that export products outside Philippines	
	Source: Author's compilation based on Canare et. al of Asian Institute of Management (2017)		

2. Research Design and Methods

Research Design

Against the background and review of literature, this study intends to look at how institutional determinants impact Mindanao SMEs' linkages to global value chains. The study intends to:

1. To gain a deeper insight about Mindanao SMEs participation in the GVCs;
2. To determine the constraints and enablers of Mindanao SMEs in linking to GVCs at the level of:
    a. entrepreneur
    b. firm; and
    c. institutional environment;
3. To determine how formal institutions, restrict or facilitate SMEs' capacity to link to global value chains;
4. To provide an empirical analysis on the institutional determinants of Mindanao SMEs in linking to GVCs.

To achieve the above objectives, mixed methodology was applied: quantitative and qualitative research methodology.

Table 8. Summary of method of data gathering and analysis

Objective	**Data gathering and source of data**	**Method of analysis**
1) To gain a deeper insight on Mindanao SMEs participation in the GVCs	Key informant interviews	Guide questions; Thematic analysis using NVivo software
2) To determine the constraints and enablers of Mindanao SMEs in linking to GVCs at the level of: a) entrepreneur; b) firm; and	Key informant interviews	Guide questions; Thematic analysis using NVivo software

c) institutional environment		
3) To determine how formal institutions, restrict or facilitate SMEs' capacity to link to global value chains;	Selected indicators in the Cities and Municipalities Competitiveness Index (CMCI) from National Competitiveness Council	Describe the strength or weakness of institutions in Mindanao relevant to SME linkage to GVC (using the selected indicators in the CMCI)
4) To provide an empirical analysis on the institutional determinants of Mindanao SME's in linking to GVCs.	Data on SMEs in Mindanao with linkages to GVCs. (ASPBI data with estimation on number of SME exporters, importers, and suppliers to exporters) Selected indicators in the Cities and Municipalities Competitiveness Index (CMCI) from DTI Competitiveness Bureau	Regression analysis: Number of SMEs with linkages to the GVCs (dependent variable) was regressed with selected indicators from the CMCI Index (independent variables) to check for significant relationship (impact of institutional environment to SME participation in GVCs)

Regression model

For the quantitative methodology, regression analysis and secondary data analysis was conducted. *Regression analysis* of institutional variables (independent variables) - selected indicators from the CMCI as expounded in Chapter II Section E –and number of Mindanao SMEs linked to global value chains (dependent variable) was conducted.

$$SMEGVClink = \beta o + \beta 1 * econcost + \beta 2 * econfin + \beta 3 * govreneweff + \beta 4 * armedconflict + \beta i * Xi + \mu i \qquad (1)$$

where:
econcost = cost of doing business
econfin = financial deepening (financial institutions)
govreneweff = business renewal efficiency
armedconflict = number of armed conflict in a city or municipality

Equation (1) intends to test how quality of local institutions (Dollar et. al, 2016) influence Mindanao SMEs linkage to GVC. The quality of local institutions are operationalized using selected sub-pillars and indicators from the economic dynamism and governance efficiency pillar: 1) *economic institutions* which includes selected sub-pillars *econcost or* cost of doing business (6 indicators pertaining to cost of inputs, utilities, wages and rents), and *econfin* or financial deepening (9 indicators pertaining to presence of formal financial institutions such as banks, microfinance etc.); and 2) *governance institutions* which includes selected sub-pillars *govreneweff* or business renewal efficiency (2 indicators on number of renewed business permits) and armed conflict. To control for the effect of firm and entrepreneurial characteristics, control variables were included as sourced and estimated from the ASPBI. To account for the armed-conflict context in Mindanao, the variable on the number of encounters recorded by the Uppsala Conflict Data Program. Peace and order were taken into account already with the CMCI sub-pillar on security (number of policemen). To account for the effect of international trade variable, the share of exports/imports by port in the Philippine Statistical Survey was used. To account for differences of linkages to GVC of Goods and Services sector, a binary variable was created where yes=0 if the SMEs produce Goods and no=0 if the SMEs provide services or belong to non-goods sector. Although the Magna Carta for MSMEs define SMEs as those with asset size between PHP 3 million and PHP 100 million and employee size of 10-199 employees, the variable "number of employees" was used as proxy for firm size as this is what is used in the Annual Survey of Philippine Business and Industry (ASPBI) conducted by the Philippine Statistical Authority. The variables and data sources are summarized below:

Table 9. List of variables and data sources

Dependent variable (Source: PSA's 2015 ASPBI)	**Independent variable (institutional indicators)** (Source: DTI Competitiveness Bureau's CMCI)	**Control variables –** (Source: PSA's ASPBI and PSY, AIM, and ACLED)
y = number of SMEs with linkages to global value chains (either exporting, importing, or subcontracting to exporting firms)	**1) Economic dynamism** x_1 = Cost of Doing Business (6 indicators) x_2 = Financial deepening (9 indicators) x_3 = Business and Professional Organizations (y/n) **2) Government efficiency (selected CMCI indicators)** x_4 = Business Registration Efficiency (2 indicators) x_5 = Business renewal efficiency (2 indicators) x_6 = Security (number of policemen) **Control variables:** **3) Infrastructure** x_7 = Roads x_8 = Ports x_9 = Information Technology capacity	1) **Firm characteristics** x_{10} = Firm size (number of employees) x_{11} = Firm age (number of years in operation) x_{12} = Firm performance (profit) x_{13} =Goods x_{14} = R&D activity (y/n) **2) Entrepreneur characteristics (LFS)** x_{15} = single owner x_{16} = with foreign owners **4) Armed-conflict** x_{17} =no. of armed conflict **5) Political dynasty** x_{18} = dynastic indicator **6) International trade** x_{19} = share of exports by port X_{20} = share of imports by port

Sources:

1. For the dependent variable, firm and entrepreneur characteristics, the data are sourced from Philippine Statistical Authority's 2015 Annual Survey of Philippine Business and Industry. The data on international variable on share of exports by port is from the 2015 Philippine Statistical Yearbook
2. The armed-conflict per city / municipality level is sourced from 2015 data of the Uppsala Conflict Data Program
3. The data on political dynasty per LGU is sourced from the Asian Institute of Management Rizalino S. Navarro Policy Center for Competitiveness
4. The main independent variables on Cities and Municipalities Competitiveness Index are sourced from DTI Competitiveness Bureau.

*Estimation procedure for the dependent variable***.** In estimating the number of SMEs with linkages to global value chains (dependent variable), variables were generated from the PSA's Annual Survey of Philippine Business and Industry (ASPBI) to account for the forward linkages (direct exporting and subcontracting to exporters) as well as backward linkages (importing) (equation 2).

$$y = f(x) \;\; where \text{ y is SMElinkGVC}$$

$$y = SMElinkGVC(SMEexport, SMEimport, SMEsubcon) \qquad (2)$$

where:

SMElinkGVC = SMEs that are either exporting, subcontracting to exporters, or importing
SMEexport = SMEs that are exporters
SMEimport = SMEs that import tangible assets
SMEsubcon = SMEs that are subcontractors of exporters

The components of the dependent variable are generated binary variables (yes=1, no=0) from the 2015 ASPBI questions on: 1) sales from direct exports, 2) sales to exporters; and 3) directly imported tangible assets. The variable *SMEexport* are those that earned income from export sales in that year. Since the ASPBI also asks for the sales to domestic market, sales to exporters is used as a proxy for *SMEsubcon* to gauge the subcontractors or suppliers of exporting firms wherein the products reach the global market. For backward linkages, the only question related to importing is the directly imported tangible asset (i.e. expected to last for at least a year) acquired in 2015. Hence, this is used as a proxy for the *SMEimport.*

Qualitative methodology

To triangulate the results of the regression analysis, key informant interviews (KIIs) with policymakers and SMEs was be conducted. The KII focused on relevant policymakers or SME experts for the discussion on the institutional environment in Mindanao:

1) Department of Trade and Industry – Davao City
2) Department of Trade and Industry – Cotabato City
3) Department of Social Welfare and Development – Cotabato City
4) Mindanao Development Authority – Davao City

To further probe on the results of the interview, a key informant interview (KII) was conducted in the two selected cities with SME owners from the three sectors (agribusiness, services, and industry). The benefit of conducting a series of key informant interviews compared with focus group discussion (FGD) is the direct information from a key informant satisfying the general and specific criteria. General criteria for selection of key informants are the following: 1) owners or managers of SMEs for at least two years; 2) SME should be in operation for at least 3.5 years; and 3) each of the three key sectors (i.e. agriculture, industry, services) were represented. The two sites are Davao City and Cotabato City. Specifically, three SME key informants from each site should have successfully linked to the global value chains while the other three are those who have not successfully linked. There was a total of 16 KIIs (12 SMEs and 4 policymakers).

Table 10. Key Informant Interviews

	SMEs*			**Policymakers**
City	**Agri**	**Industry**	**Services**	
1) Davao City	2	2	2	2

2) Cotabato City	3**	2	2	2
Total = 17 KIIs	5	4	4	4

*SMEs are either with linkage or without linkage to GVC

*should be operating for at least 3.5 years (Global Entrepreneurship Monitor Report [2016] defines established business as those operating for at least 3.5 years)

**one additional SME is interviewed in Cotabato City to balance the analysis for those with linkages and without linkages to GVC

Analytical Approach. The perceptions of the policymakers and the SME owners/managers was compared to see common and differing views on what confronts SMEs in Mindanao in linking to GVC. Sectoral comparison of SMEs in the Agri, Industry, and Services sector was also conducted. The interview transcriptions were analyzed with the aid of NVivo software.

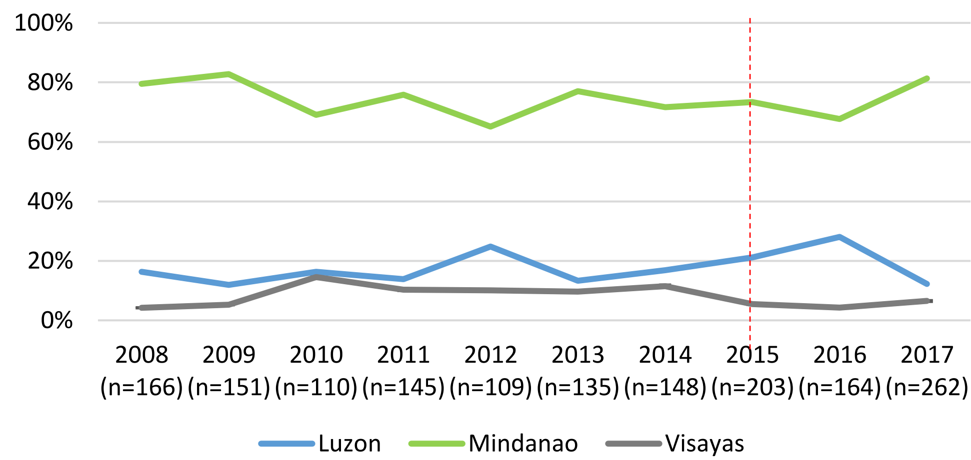
3. Data Analysis

Political and policy environment. In 1969, the University of the Philippines Institute for Small-Scale Industries (UP ISSI) was established and pioneered in stimulating, promoting, and developing the small-scale industry sector. It conducts trainings, research, and consultancy work for small business and industry groups (UP ISSI Website). To this day, they form part of the advisory council of the MSME Development Council (DTI website). Post-Marcos era, former Philippine president Corazon Aquino signed into law the landmark act Magna Carta for MSMEs or Republic Act 6977 of 1991. It created the MSME Development Council – a government body tasked to lead the promotion and development of MSMEs; established the Small Business Corporation (SBCorp) to exclusively provide financing for MSMEs in terms of credit guarantees, wholesale and retail lending; and mandated the banks to set aside at least 5 percent (10 percent on the second year of the law) of loan portfolio for MSME lending. In 1997, the MSME law was amended by RA 8289 under former President Fidel V. Ramos redefining MSME by increasing asset size grouping (micro enterprises are those with less than PHP 1.5M asset size compared to P50,000 asset size in the 1991 version of the MSME law) and thereby removing the "cottage industry" classification retaining micro, small, and medium enterprises. The 1997 amendment decreased the mandatory bank lending for MSMEs to at least 6 percent (for public banks) and 2 percent (for private banks). In 2008 under the presidency of Gloria Macapagal Arroyo, further amended MSME law RA 9501 increased the public lending for micro and small enterprises to at least 8 percent while retaining the 2 percent allocation required from private banks. Also, under former President Arroyo was the signing of the Barangay Micro Business (BMBEs) Act of 2002 or Republic Act 9178 specific for the micro enterprises, which gives registered BMBEs the following incentives: income tax exemption, exemption from coverage of minimum wage law, priority to a special credit window, and technology transfer, production and management training, and marketing assistance programs.

In the three amendments of the Magna Carta for MSMEs, despite increase in asset size classification for MSMEs and decrease in mandatory lending from private banks, the penalty amount for non-compliance of private banks remained low thus the tendency of banks to prefer paying the penalties rather than lending to SMEs. Despite these, amendments in the MSME law provided incentives for enterprises such as Presidential Awards for Outstanding MSMEs, devoting 2nd week of July as the MSME Week, and assigning a Congressional Oversight Committee to monitor and oversee implementation of the MSME Act. Further policy support for MSMEs were strengthened by the Go Negosyo Act of 2014 or Republic Act 10644 under the administration of former president Benigno "Noynoy" Aquino, Jr. Apart from setting-up a startup fund for MSMEs sourced from the MSME Development Fund, the law effectively mandates the establishment of Go Negosyo Centers – a one-stop shop for inquiries of potential and existing MSME owners including assistance for the availment of technology transfer, production, and training programs. Currently, President Rodrigo Duterte remains supportive of the MSME sector and signed the executive order for the updating of the MSME Development Plan 2011-2016 to 2017-2022 signaling the possible extension of the Magna Carta for MSMEs (which is due for extension in 2018). Notable SME programs from the DTI are the Kapatid Mentor ME (KMME) Program, Shared Service Facility (SSF) (under Department of Science and Technology [DOST]), and the Go Lokal. Through the KMME, micro and small enterprises owners are given capacitation through weekly coaching and mentoring from large corporations on different aspects of business operations. The SSF provides a physical place for MSME owners to access equipment and tools specific to their needs in terms of product innovation and testing, among others. The Go Lokal is a retail concept store that showcase quality and innovative MSME products. As of this writing, there is no impact assessment of these programs.

*Local institutions and SMEs in Mindanao***.** Since the quantitative data analysis is cross-sectional in nature, meaning the conclusions drawn from the analysis are applicable for 2015, the context in Mindanao during that year is presented. It is noted in the Mindanao Peace and Development Framework Plan 2020 that "weak institutions undermine quality of governance". According to the armed conflict monitoring of the Uppsala Conflict Data Program (UCDP) run by the Uppsala University in Sweden, there is a decreasing trend (**Figure 9)** in armed conflict in Mindanao from 2009 to 2015. However, due to the Marawi Siege in 2017, a spike similar to 2009 can be observed.

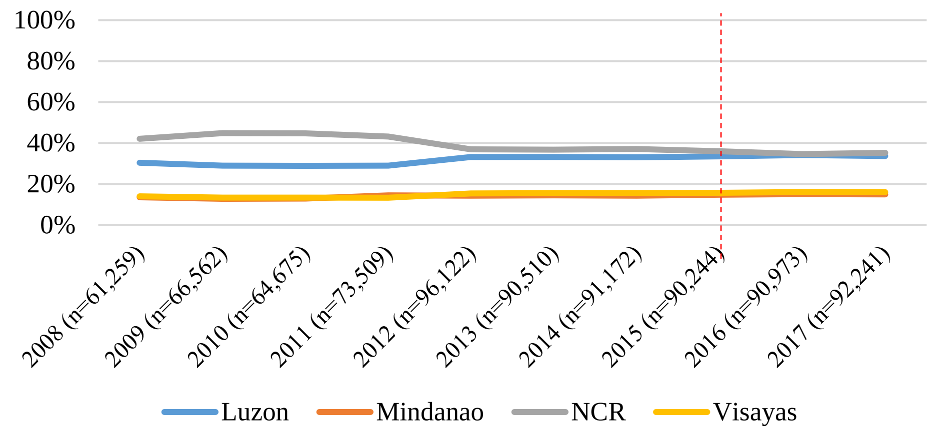
Figure 9. Armed conflict in the Philippines, 2008-2017



Source: Uppsala Conflict Data Program (UCDP), 2008-2017

The impact of prolonged fragility due to armed conflict can also be detrimental to the private sector. Individually-displaced persons during times of violence and conflict can include entrepreneurs who flee the location wither leaving behind their business or taking with them their capital and potential local income and jobs (Peschka, Emery, and Martin, 2011). Looking at the trend of SMEs according to PSA's list of establishments (Figure 10), it can be observed that Mindanao and Visayas consistently have low share (less than 20%) of total SMEs from 2008-2017. However, it should be noted that including micro enterprises, the top 5 regions where MSMEs operate are in NCR, CALABARZON, Central Luzon, Central Visayas, and Western Visayas and they account for 59.86 percent of total MSMEs in the country (DTI MSME Statistics, 2017).

Figure 10. SMEs by region, 2008-2017



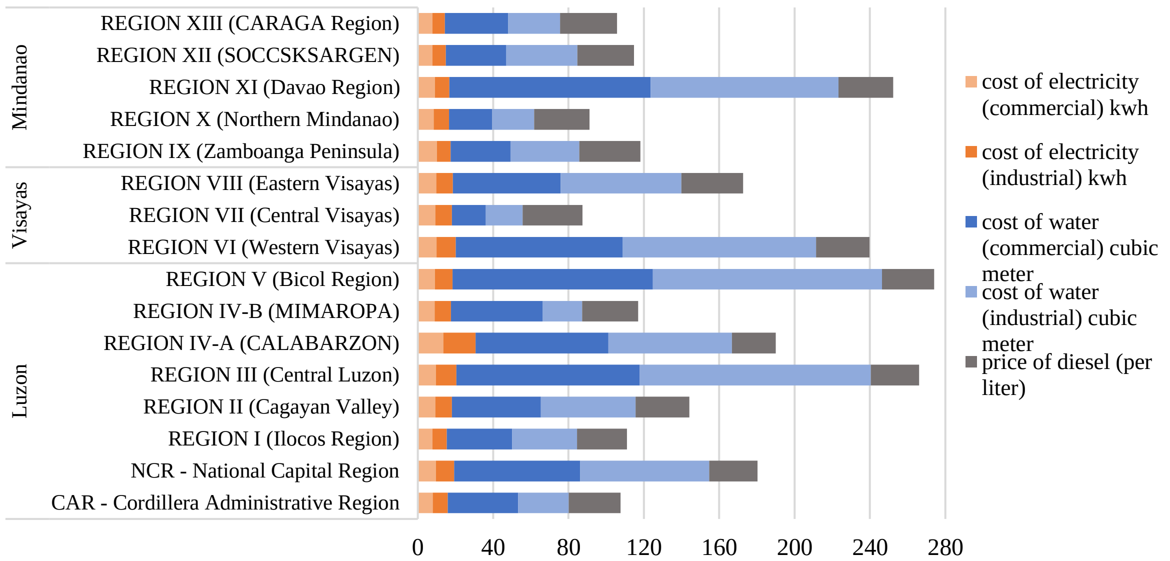
Source: PSA List of Establishments, 2008-2017

In the Philippines, subnational competitiveness is measured through the cities and municipalities index (CMCI) currently being monitored by the Ease of Doing Business (EODB) and Anti-Red Tape Authority Council (formerly monitored by the National Competitiveness Council which was replaced after the passing of the EODB law in May 2018). The CMCI has four pillars: economic dynamism, governance efficiency, infrastructure, and resilience. Each pillar, which is composed of 10 indicators, has the same weight of 25 percent. Each indicator has equal weight of (25/10 or 2.5). Computation of weight per sub-indicator is determined by further subdividing the indicator's weight. For example, business organization indicator has two sub-indicators, thus their weights are 2.5/2 or 1.25 each. The CMCI scores are standardized and computed like how the Human Development Index is computed and is multiplied to the identified weight per indicator:

$$score = \frac{(actual\ value - minimum\ value)}{(maximum\ value - minimum\ value)} * (weight\ per\ indicator)$$

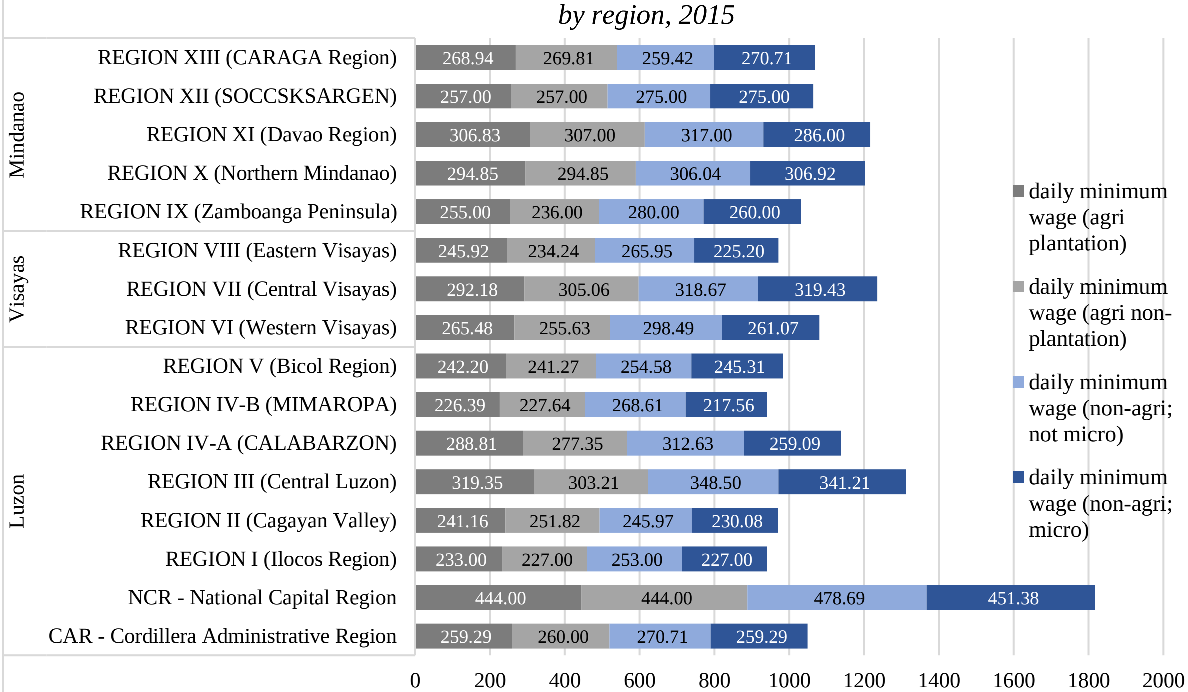
Based on the scores of selected indicators of CMCI (Table 11), it can be noted that it is relatively cheaper to do business in Mindanao and Visayas compared with NCR and Greater Luzon. However, a closer look at the cost of doing business sub-indicators: cost of electricity and water for commercial and industrial, diesel, minimum wages for agri and non-agri firms [micro and not micro], cost of land in central business district, and cost of rent, Figures 11 and 12 show that the average cost of electricity (kilowatt per hour) for commercial and industrial users are most expensive in Zamboanga Peninsula (PHP10.10) compared with NCR (PHP9.63). Average cost of water (cubic meters) for commercial users per region is most expensive in Davao Region (PHP106.89) compared with NCR at PHP66.84. As expected, daily minimum wages and cost of land in central business districts are higher in NCR and some regions in Luzon. It is interesting to note that based on CMCI data, average cost of rent in Davao Region (PHP1,895.04) is the next highest to NCR's average rental cost at PHP2,284.89.

Figure 11. Average cost of doing business,
cost of utilities and diesel sub-indicators (in PHP), by region, 2015



Source: Cities and Municipalities Competitiveness Index, 2015

Figure 12. Average cost of doing business, minimum wage sub-indicators (in PHP),
by region, 2015



Source: DTI Competitiveness Bureau, Cities and Municipalities Competitiveness Index, 2015

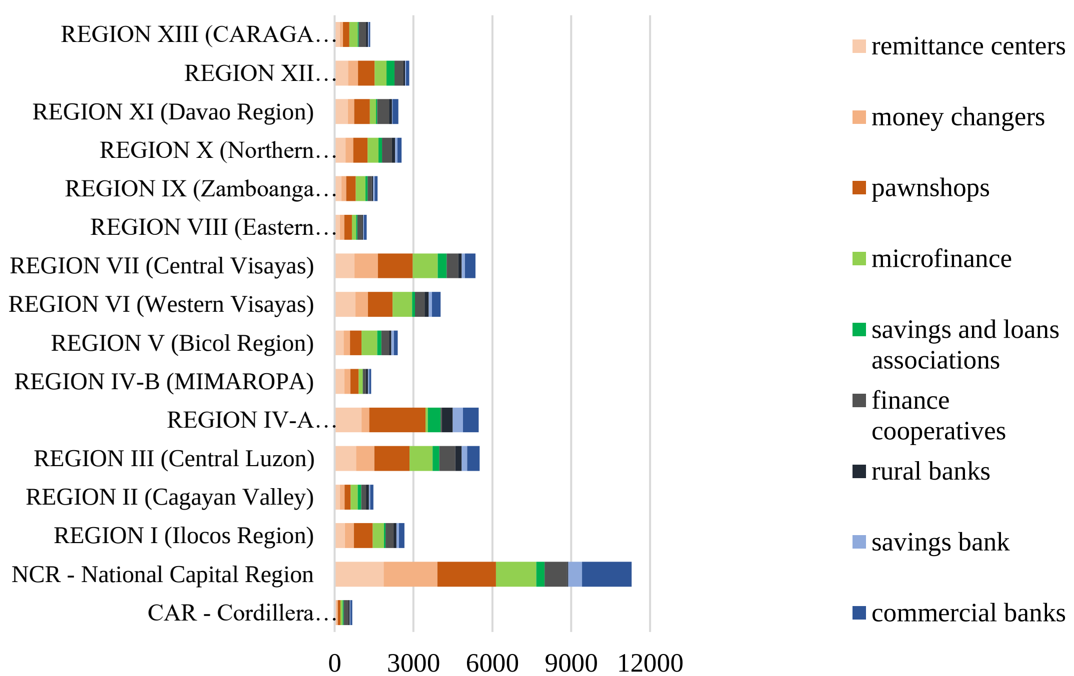
Table 11. Average CMCI scores per selected indicators, 2015

Regional Grouping	Region	Economic dynamism (3 out of 10 indicators)			Government efficiency (3 out of 10 indicators)		
		cost of doing business	financial deepening	business orgs	business registration efficiency	business renewal efficiency	security
NCR	NCR - National Capital Region	0.6468	0.4963	0.0721	0.3213	0.0462	0.3651
Greater Luzon	CAR - Cordillera Administrative Region	0.3466	0.0548	0.0149	0.2217	0.0608	0.0544
	REGION I (Ilocos Region)	0.2971	0.0406	0.0033	0.2031	0.0758	0.0237
	REGION II (Cagayan Valley)	0.3389	0.0444	0.0063	0.1985	0.0785	0.0244
	REGION III (Central Luzon)	0.4452	0.0683	0.0186	0.1575	0.3270	0.0330
	REGION IV-A (CALABARZON)	0.3832	0.0751	0.0114	0.1681	0.0799	0.0341
	REGION IV-B (MIMAROPA)	0.3366	0.0379	0.0024	0.1559	0.0997	0.0209
	REGION V (Bicol Region)	0.3425	0.0419	0.0053	0.1265	0.0850	0.0299
Visayas	REGION VI (Western Visayas)	0.3586	0.0490	0.0020	0.1499	0.0856	0.0438
	REGION VII (Central Visayas)	0.4301	0.0492	0.0068	0.1746	0.0892	0.0277
	REGION VIII (Eastern Visayas)	0.3859	0.0335	0.0020	0.1551	0.0892	0.0265
Mindanao	REGION IX (Zamboanga Peninsula)	0.3637	0.0659	0.0103	0.1857	0.0917	0.0549
	REGION X (Northern Mindanao)	0.3841	0.0508	0.0044	0.1478	0.0670	0.0298
	REGION XI (Davao Region)	0.4170	0.0687	0.0037	0.1258	0.0900	0.0496
	REGION XII (SOCCSKSARGEN)	0.3913	0.0589	0.0243	0.2316	0.0742	0.0758
	REGION XIII (CARAGA Region)	0.3712	0.0438	0.0060	0.1898	0.0787	0.0860

Source: DTI Competitiveness Bureau, Cities and Municipalities Competitiveness Index

For *financial deepening indicator* – presence of banks and financial institutions in a city or municipality – Davao Region (0.0687) and SOCCSKSARGEN (0.0659) in Mindanao are almost at par in terms of average score (Table 11) with CALABARZON (0.0751) and Central Luzon (0.0683). However, as presented (**Figure 13)**, it must be noted that more commercial banks (bars with shades of blue) operate in Luzon while majority of financial institutions operating in Mindanao are financial institutions with lower revolving fund and financing limit such as finance coops, microfinance, and savings and loan associations (bars with shades of green).

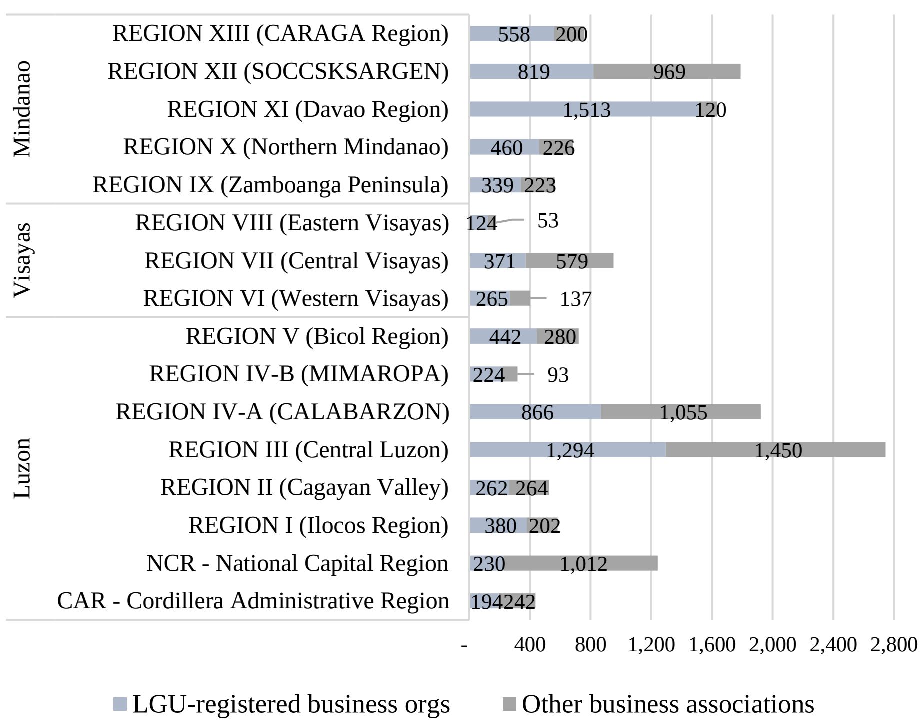
Figure 13. Number of financial institutions, by region, 2015



Source: DTI Competitiveness Bureau, 2015 CMCI data

In terms of number of *business organizations* **(Figure 14)** (either LGU-registered or other business organizations), SOCCSKSARGEN has the next highest average score (0.0243) next to NCR (0.0721). It can be noted that this score is higher than the scores of Central Luzon (0.0186). These three regions have less LGU-registered business organizations and more other business organizations not registered with the LGU. These includes informal networks of local entrepreneurs.

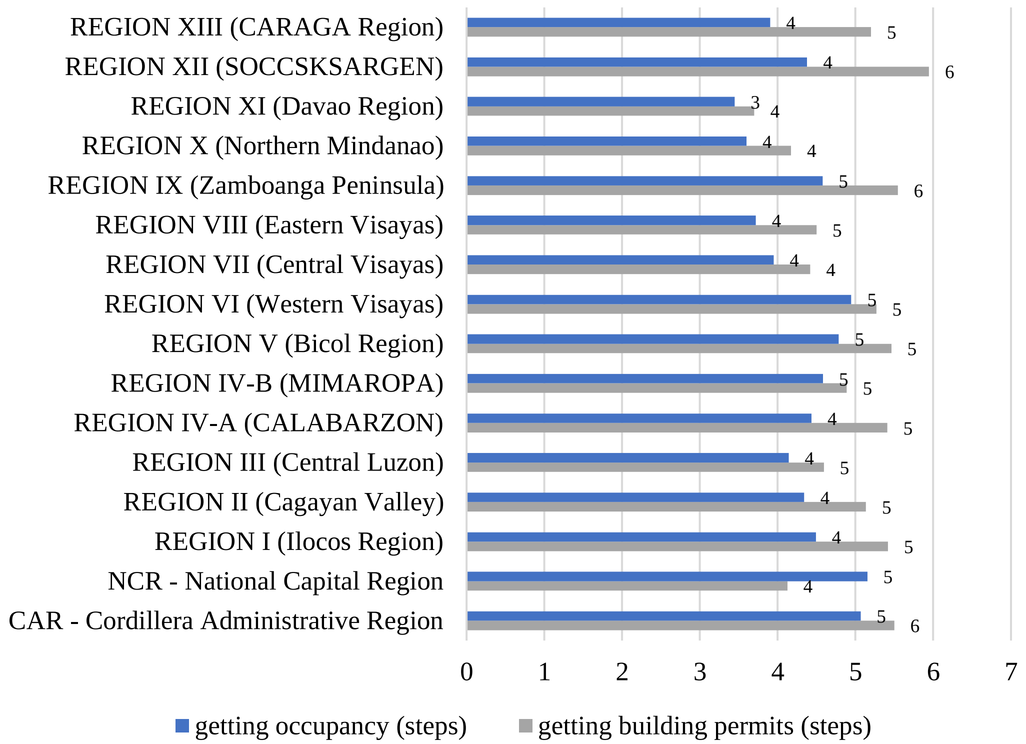
Figure 14. Business organizations, by region, 2015



Source: DTI Competitiveness Bureau, 2015 CMCI data

In the aspect of *governance efficiency*, the higher the scores for business registration and business renewal efficiency (**Figure 15, Tables 12 and 13**), the less efficient these government processes are. In business registration, SOCCSKSARGEN, CARAGA, and Zamboanga Peninsula has high scores (comparable to the scores of NCR and some Luzon regions), which signals less efficient process in getting permits. Indeed, as presented in **Table 12**, SOCCSKSARGEN and Zamboanga Peninsula have the most number of steps (6 steps) in getting building permits. Getting permits for occupancy in Zamboanga region takes longer (3.4 minutes) than the overall average (2.62 minutes), albeit only by a minute. There is not much difference in terms of how long it takes to get building permits in various regions except for NCR that takes the longest at an average of 1,854.5 minutes. In business renewal (**Table 13**), Davao (4.4 minutes) and Zamboanga (4.7 minutes) regions, on average, takes the longest time in Mindanao. This is in comparison with 4.8 and 4.6 minutes in MIMAROPA and Bicol regions. Notably, NCR on average has faster renewal process (3.3 minutes).

Figure 15. Average business registration efficiency, permits sub-indicator (no. of steps), 2015



Source: DTI Competitiveness Bureau, 2015 CMCI data

Table 12. Average business registration efficiency, getting permits sub-indicators (minutes), 2015		**Minutes**	
Regional grouping	**Regions**	**getting building permit (minutes)**	**getting occupancy permits (minutes)**
Luzon	CAR - Cordillera Administrative Region	105.98	1.68
	NCR - National Capital Region	1854.54	4.02
	REGION I (Ilocos Region)	3.30	1.34
	REGION II (Cagayan Valley)	104.16	3.78
	REGION III (Central Luzon)	367.78	3.72
	REGION IV-A (CALABARZON)	295.64	2.12
	REGION IV-B (MIMAROPA)	108.66	1.61
	REGION V (Bicol Region)	138.76	2.72
Visayas	REGION VI (Western Visayas)	225.34	4.52
	REGION VII (Central Visayas)	3.29	2.58
	REGION VIII (Eastern Visayas)	211.06	1.74
Mindanao	REGION IX (Zamboanga Peninsula)	382.19	3.35

	REGION X (Northern Mindanao)	307.01	1.94
	REGION XI (Davao Region)	352.89	2.28
	REGION XII (SOCCSKSARGEN)	190.36	1.61
	REGION XIII (CARAGA Region)	443.89	2.65
	Overall Average	238.09	2.62

Source: DTI Competitiveness Bureau, 2015 CMCI data

Table 13. Average business renewal efficiency, sub-indicators, 2015

Regional Grouping	**Region**	**business renewal (steps)**	**business renewal (minutes)**
Luzon	CAR - Cordillera Administrative Region	0.1	3.3
	NCR - National Capital Region	0.4	2.8
	REGION I (Ilocos Region)	1.1	3.9
	REGION II (Cagayan Valley)	0.8	4.0
	REGION III (Central Luzon)	16.5	3.2
	REGION IV-A (CALABARZON)	6.3	4.0
	REGION IV-B (MIMAROPA)	1.4	4.8
	REGION V (Bicol Region)	1.3	4.6
Visayas	REGION VI (Western Visayas)	1.6	4.5
	REGION VII (Central Visayas)	1.9	4.4
	REGION VIII (Eastern Visayas)	1.6	4.4
Mindanao	REGION IX (Zamboanga Peninsula)	1.3	4.7
	REGION X (Northern Mindanao)	6.0	3.6
	REGION XI (Davao Region)	1.3	4.4
	REGION XII (SOCCSKSARGEN)	0.8	3.8
	REGION XIII (CARAGA Region)	1.4	4.0
	Overall Average	**3.8**	**4.1**

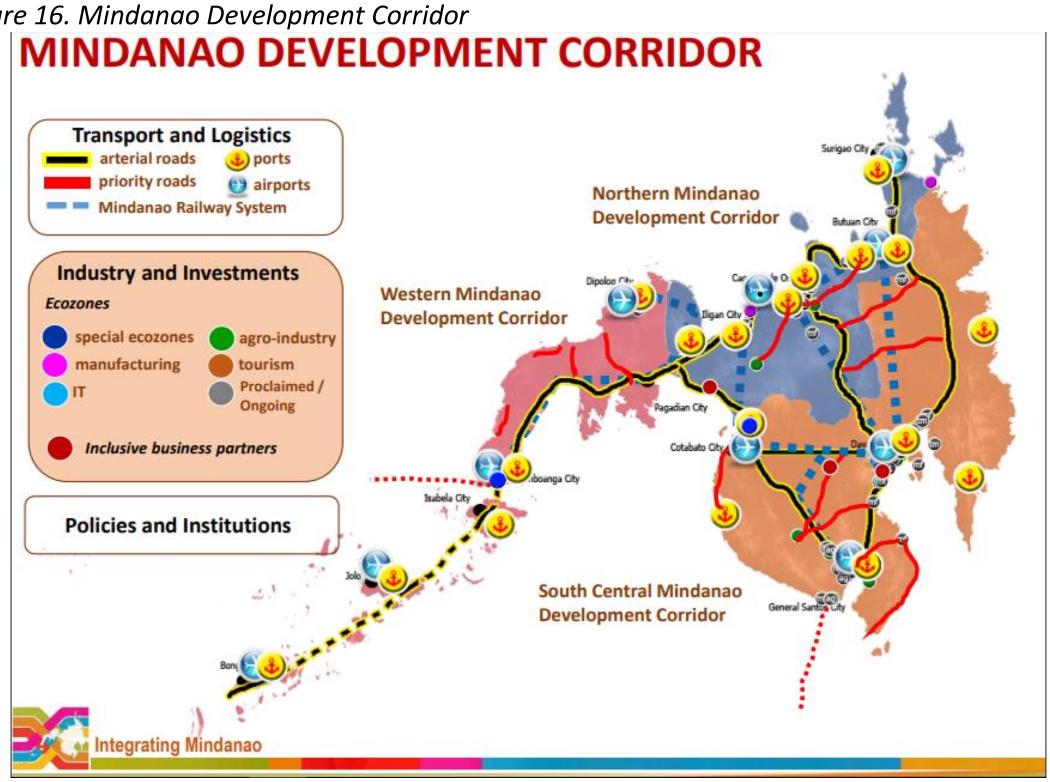
Source: DTI Competitiveness Bureau, 2015 CMCI data

Economic context. Indeed, small and medium enterprises are the backbone of a country's economy. Majority of firms (99.6%) in the Philippines are micro, small, and medium enterprises or MSMEs (DTI MSME Statistics, 2016). They account for more than 60 percent of jobs in the country and an estimation by Department of Trade and Industry shows that around 60 percent of exporters are MSMEs. One strand of policy agenda and literature looks at increasing the participation of SMEs in the GVC to further its competitiveness and consequently, support economic development.

Inclusion of SMEs in the global value chains is a priority in the Asia Pacific Economic Cooperation (APEC) and ASEAN Economic Community. The Boracay 2015 Action Agenda of the APEC conference on that year identifies globalizing SMEs as a priority. However, Philippine SMEs pale in comparison with other ASEAN neighbors when it comes to MSME density where only less than 10 Philippine MSMEs are present per 1,000 population (International Finance Corporation, 2012). Moreover, there is a trend where lower number of Philippine MSMEs correspond to lower regional gross domestic product (Daño-Luna, Canare, Francisco, 2018). In 2016, APEC developed an SME internationalization index which hopes to measure the GVC participation of SMEs in Asia and the Pacific. In the Philippines, one of the indicators identified in the Philippine Development Plan (PDP) 2017-2022 is "number of MSMEs participating in the Global Value Chains increased" and "number of MSMEs/Cooperatives integrated into corporate value chains increased". However, due to unavailability of data as the Philippine Statistics Authority does not generate such data, there is no baseline and update on these indicators (PDP Results Matrices).

In Mindanao, there are opportunities under the BIMP-EAGA - a unique regional cooperation exclusive to poor regions in the four countries including Mindanao and Palawan in the Philippines - through identified Mindanao Development Corridors (MinDCs) (**Figure 16)** program of the Mindanao Development Authority (MinDA). Together with DTI, DOST, and other government agencies, these corridors are envisioned to facilitate an enabling environment in Mindanao, especially for MSMEs. As connectivity is an important aspect for SMEs to link with global value chain partners, MinDA designed the development planning in a spatial approach MinDCs – aims to increase competitiveness of Mindanao industries by providing common service facilities. Industry development is clustered in the following corridor: 1) Northern Mindanao corridor (business and industrial cluster); 2) Western Mindanao Development Corridor (mariculture and trade cluster); 3) South Central Mindanao Development Corridor (biodiversity and ecotourism cluster; food basket cluster; and food, agribusiness, industry, and logistics cluster).

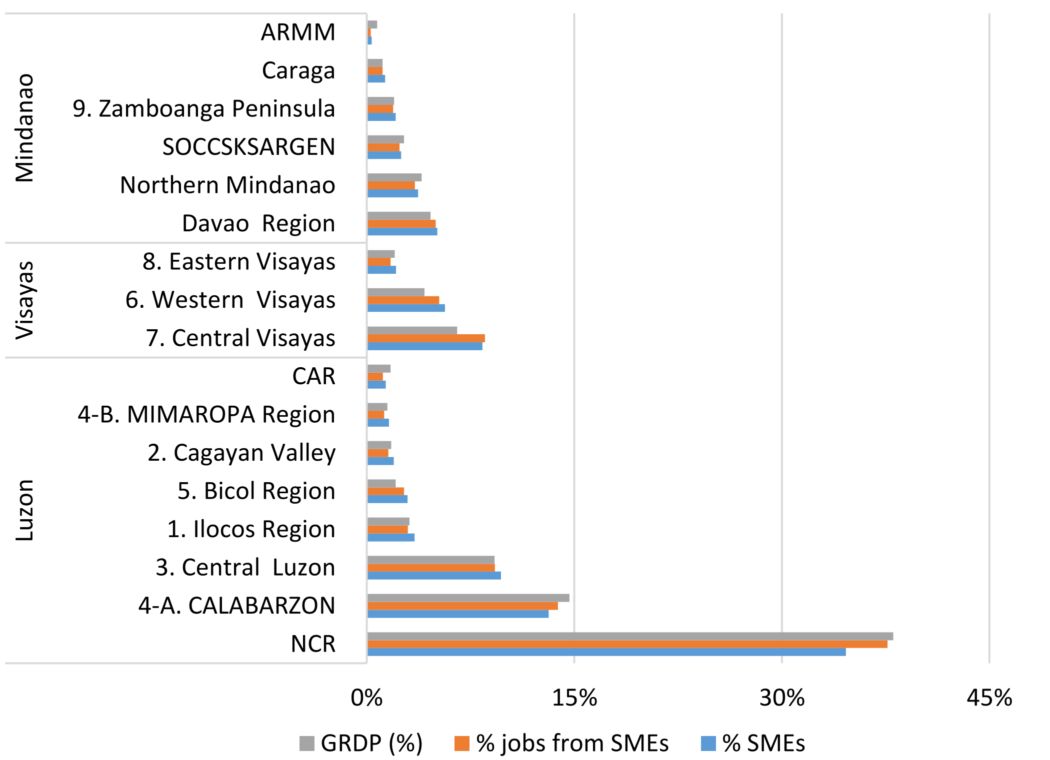
Figure 16. Mindanao Development Corridor



Source: Mindanao Development Authority (2017). http://www.minda.gov.ph/resources/Presentations/2017/Mindanao_Development_Corridors_Prez_2017.pdf

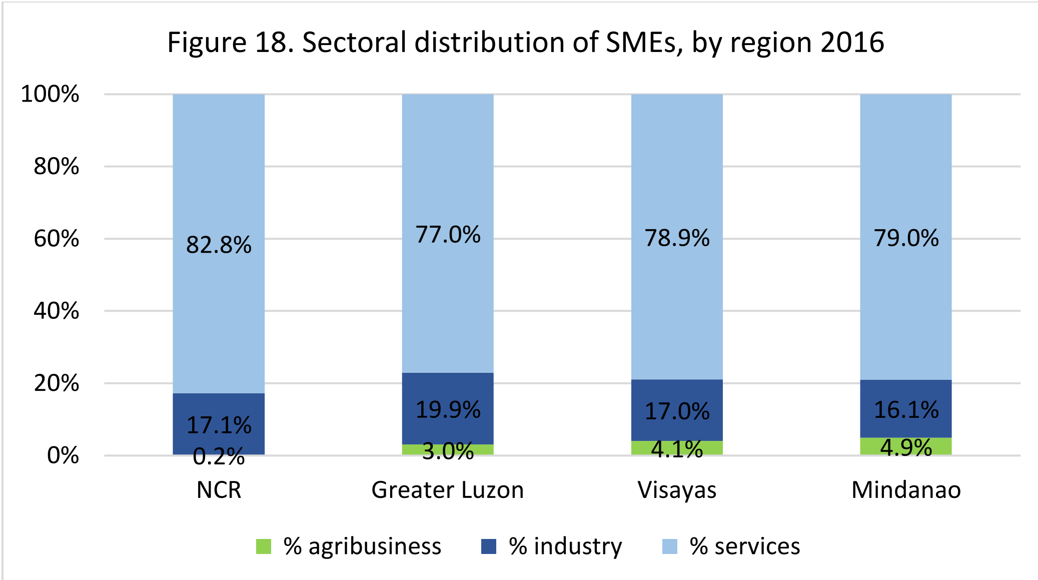
Overall, although SMEs only comprise 10 percent of total firms in the country, it contributes 33 percent of jobs generated by all firms. Indeed, SMEs play a crucial role in addressing economic development and poverty through jobs generation and contribution to the gross regional domestic product (GRDP). However, looking at the subnational disaggregation of data (**Figure 17**), only 15 percent of SMEs are in Mindanao compared with the lion share of SMEs located in Luzon (NCR at 35%; CALABARZON at 14%). Jobs generated in Mindanao (14%) is the lowest among all regional groupings while more than 70 percent of jobs generated by SMEs are in Luzon. Trend shows that the higher the number of SMEs, the higher jobs and GRDP contributed.

Figure 17. GRDP share and jobs generated by SMEs, 2016



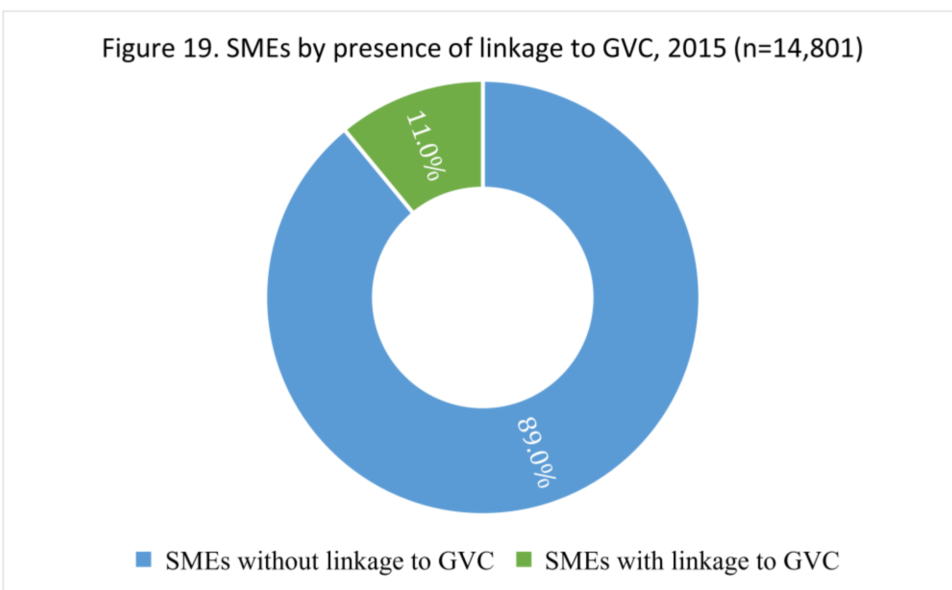
Source: Author's computation based on PSA data (2016)

Unlike in other regions where bulk of firms are in the services sector, majority of Mindanao enterprises are in the agriculture sector. However, most of these agricultural firms are micro. Sectors across all regions (**Figure 18)**, the lowest share of SMEs is in agriculture sector while majority are under the services sector. It should be noted that in terms of contribution to Gross Domestic Product, SMEs tend to be concentrated in less productive sectors such as in agriculture and services sectors (AIM SME Report 2018). Thus, increasing productivity of SMEs is an important agenda for policymaking. A strand of literature studies the increasing the inclusion of SMEs to global value chains as one path to increase productivity (Lim and Kimura, 2010; ADB, 2015; Boffa et. al, 2017; Cusolito et. al, 2017; Canare et. al, 2017; Francisco et. al, 2018).



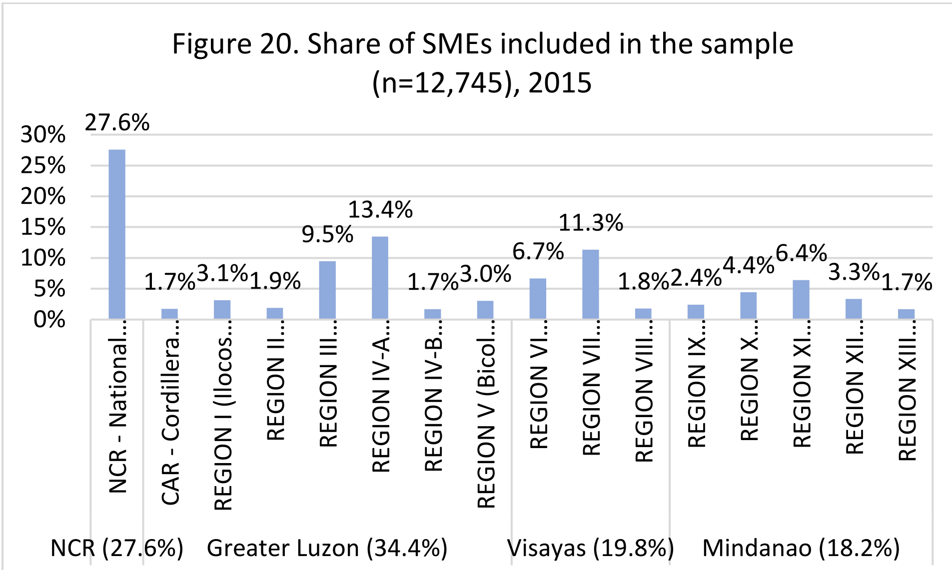
Source: Author's computation based on DTI MSME Statistics, 2016.

SMEs with linkage to GVC. Based on the data from Philippine Statistical Authority's 2015 Annual Survey on Philippine Business and Industry, it is estimated (**Figure 19)** that out of 14,801 SMEs included in the nationwide survey, only 1,625 (11%) have linkages to GVC either as direct exporters (4.9%), provider of services abroad (1.9%), seller to exporters (2.6%), provider of services to exporting firms (2.6%), and importer of tangible asset (0.2%). It should be noted that this estimation is based only in the nationwide survey but not on the census of all establishments. Moreover, SME importers of raw materials are not captured in the estimation since ASPBI questionnaire does not include this. Nevertheless, this estimation serves as a proxy for Philippine SMEs with linkage to GVC given that no data is being generated by the Philippine Statistical Authority.

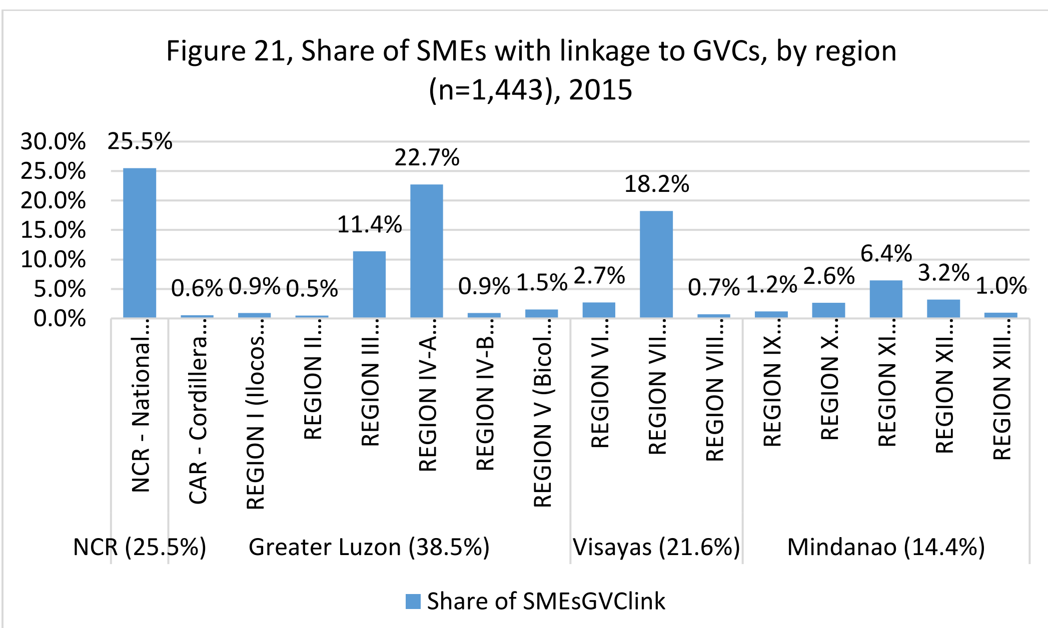


Source: author's computation based on PSA 2015 ASPBI data

Profile of SMEs with linkage to GVC. Out of the 14,801 SMEs from the PSA ASPBI dataset, 12,745 SMEs were used as the sample for the analysis. This is because only 701 cities in the 2015 CMCI dataset matched with the corresponding cities and municipalities covered in the ASPBI. **Figure 20** shows the distribution of SMEs per region.



Source: PSA ASPBI (2015) and DTI CB's CMCI (2015)

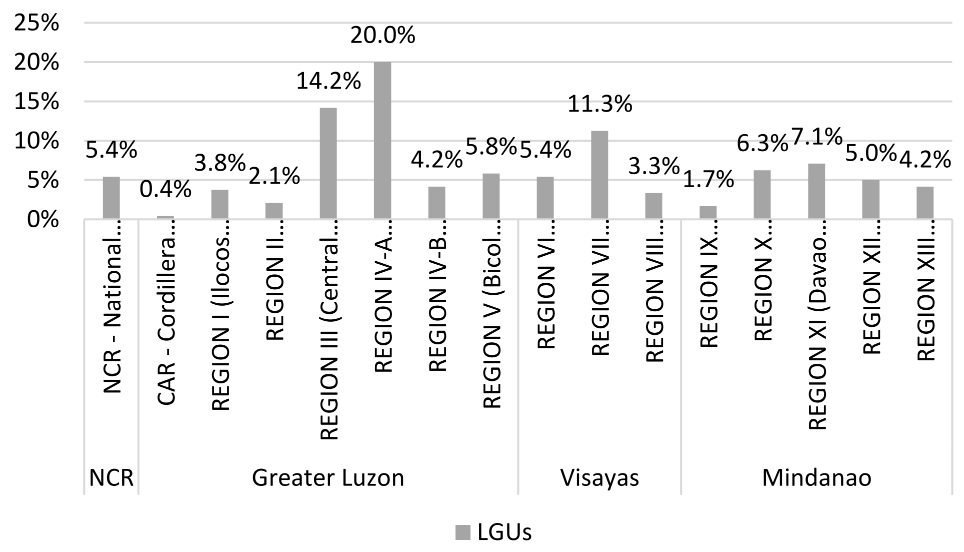


Source: PSA ASPBI (2015) and DTI CB's CMCI (2015)

Using the sample of 12,745 SMEs, an estimation of SMEs able to link to GVC (either exporting, subcontracting to exporters, or importing) shows that 1,443 SMEs are able to link to GVC. The least number of SMEs with GVC linkages (**Figure 21**) are in Mindanao (14.4%) compared to the other regional groupings. It should be noted that Davao region (6.4%) has the fourth highest share of SMEs with linkage to GVC. Less than half of Philippine SMEs with linkages are in NCR (25.5%) and CALABARZON (22.7%) while 11.4 percent are in Central Luzon.

Half of cities and municipalities or LGUs that has SMEs with linkages to GVC (**Figure 22**) are from Greater Luzon (50.4%) while less than a quarter are both from Mindanao and Visayas while the remaining is from NCR. Approximately 40.3 percent of SMEs with linkage to GVC are in Greater Luzon Table 14 shows the summary of total number of SMEs from each region as well as those SMEs that are exporters, with income abroad, subcontractor or sellers to exporters, and importers of tangible asset in 2015. It can be noted that 1,443 SMEs in the sample with linkages to GVC come from 240 out of 701 cities and municipalities. In terms of cities and municipalities with SMEs linked to GVC, it can be noted that 48 LGUs in CALABARZON account for top share of SMEs with linkages to GVC (22.7%) (excluding NCR), while 58 LGUs in Mindanao account for only 14.4 percent.

Figure 22. Cities and municipalities with SMEs linked to GVC (n=240), 2015



Source: PSA ASPBI and DTI CB's CMCI, 2015

Table 14. Data summary, by region, 2015

Regional island grouping	Region	LGU	SMEs	exporters	with income abroad (services)	seller to exporters (Goods)	subcontractor to exporters (services)	importers of asset	LGU (w/ SMEs linked to GVC)	SMEs linked to GVC
NCR	NCR - National Capital Region	13	3,517	78	189	40	73	1	13	381
Greater Luzon	CAR - Cordillera Administrative Region	15	223	3	4	-	1	-	1	8
	REGION I (Ilocos Region)	56	401	4	-	1	9	-	9	14
	REGION II (Cagayan Valley)	39	240	-	-	-	7	-	5	7
	REGION III (Central Luzon)	72	1,205	82	8	39	50	4	34	183
	REGION IV-A (CALABARZON)	86	1,714	198	7	113	65	10	48	393
	REGION IV-B (MIMAROPA)	36	218	5	1	4	4	-	10	14
	REGION V (Bicol Region)	49	386	10	1	5	6	-	14	22
Visayas	REGION VI (Western Visayas)	65	852	8	7	8	17	-	13	40
	REGION VII (Central Visayas)	79	1,443	140	31	64	47	3	27	285
	REGION VIII (Eastern Visayas)	25	227	5	-	2	4	-	8	11
Mindanao	REGION IX (Zamboanga Peninsula)	20	305	6	-	8	6	-	4	20
	REGION X (Northern Mindanao)	48	564	20	1	10	11	1	15	43
	REGION XI (Davao Region)	30	814	55	2	17	27	2	17	103
	REGION XII (SOCCSKSARGEN)	37	424	13	1	18	19	1	12	52
	REGION XIII (CARAGA Region)	31	212	8	-	4	3	-	10	15
	Grand Total	**701**	**12,745**	**635**	**252**	**333**	**349**	**22**	**240**	**1,443**

Source: PSA's 2015 ASPBI data and DTI CB's 2015 CMCI

IV. Results and Discussion

B. Results and Discussion

1. Regression Analysis

As noted in the previous data presentation and context analysis, Autonomous Region of Muslim Mindanao is not included in the data sample for analysis. It is because although 2015 CMCI survey covered Lamitan in Basilan and Marawi City in Lanao del Sur, the 2015 ASPBI survey did not. Nevertheless, it should be noted that both the 2015 ASPBI and CMCI include the two fieldwork sites of this study - Davao City and Cotabato City – which is used for purposes of parallel interpretation with the qualitative data (key informant interviews).

Out of the 1,443 SMEs with linkage to GVC, majority (1,438 SMEs or 99.7%) has forward linkages while the remaining has backward linkage. However, backward linkage only includes direct importers of tangible asset instead of raw materials based on the available ASPBI data. As of this writing, PSA's ASPBI questionnaire does not include question on importing activities in terms of raw materials and supplies. As emphasized in the previous section, using the data on importer of tangible asset is used as a proxy for importers and is used for purposes of estimating the linkage of SMEs to GVC

A logit regression analysis is used to test the relationship between quality of local institutions (using CMCI data) and the dependent variable SMEs linkage to GVC (binary variable; yes=1 and no=0) while holding other variables constant. The model was based on similar regression analysis conducted by APEC (2016) in its SME internationalization index and Dollar et. al (2016). While the regression done by the 2016 APEC SME study tested for the association between firm characteristics and SME linkage to GVC, the regression analysis done by Dollar et. al (2016) is one of the few studies that tested for the association between the quality of local institutions and SMEs linkage to GVC. It should be noted that Dollar et. al (2016) used a firm-level data for China as extracted from the World Bank's enterprise survey while the 2016 APEC SME study used a survey data conducted in multiple countries including the Philippines. Using the best available and accessible Philippine data, the control variables used are the following: firm age, goods versus non-goods sector, firm size, innovation, sales through e-commerce (which also signal use of technology), earning from franchise, receiving government subsidies, ownership (individual or not), infrastructure, tax collection, and location (whether city or municipality). To create a model considering the political context, variables on armed conflict and political dynasty were added.

After checking for multicollinearity[2] of variables identified in the methodology, the following variables with VIF or variance inflation factor values greater than 10 were dropped: 1) NCR – due to presence of outliers since NCR has the highest number of SMEs and also those with linkage to GVC; 2) average profit; 3) share of exports by port; and 4) share of imports by port. After running the logit regression of the remaining variables, all the independent variables of the base model have VIF values lower than 4.89 which indicates that there is no multicollinearity (**Table 15**).

[2] Multicollinearity exists when one or more independent variables are correlated with each other (Investopedia.com)

Table 15. VIF values for checking multicollinearity		
Variable	VIF	1/VIF
city	4.89	0.204667
small	4.4	0.227367
infraports	4.31	0.231917
poldynasty	3.36	0.297243
infraroads	1.68	0.595236
Goods	1.52	0.658857
ave_SMEfirmage	1.51	0.662964
capacitytogen_localresource	1.48	0.674764
armedconflict	1.29	0.772532
singleowner	1.29	0.773508
innovator	1.08	0.92579
withsubsidies	1.04	0.96236
ecommerce	1.01	0.991517
franchise	1	0.997847
Mean VIF	2.13	

Source: author's computation using STATA

Significant control variables in the base model. The result of the logit regression is presented in **Table 16**. To test how being in Mindanao is associated with SMEs linkage to GVC, group of variables were added in a staggered manner while holding control variables in the base model (model 1) constant. Overall, there are eight models generated. Consistently, across all the models, there is a significant positive association between SMEs linked to GVC and the following control variables (held const): 1) being in the Goods (Agri or Industry) sector, 2) those that innovate, 3) selling through e-commerce, and 4) capacity of a city or municipality to generate local resource (tax collection). Significant negative associations are noted between SMEs linkage to GVC and the following: 1) average firm age – the older the firm, the less likely to link to GVC; 2) small firm size – the smaller the firm size, the less likely an SME is to link to GVC; 3) individual ownership – individually-owned SMEs are less likely to link to GVC; and 4) armed conflict – the higher the number of armed conflict, the lower the likelihood of SMEs to link to GVC. Interestingly, road infrastructure (using score in CMCI) has significant negative association with SME linkage to GVC. Further look at the sub-indicators of road infrastructure (**Table 16.a.**) CMCI indicator revealed that SMEs with linkage to GVC are less likely to be found in cities and municipalities with longer concrete roads and longer total roads land area. The base model suggests that taking into account firm and entrepreneurial characteristics as well as infrastructure and tax collection capacity of an LGU, armed conflict has a significant negative association with SMEs linkage to GVC. Interestingly for political dynasty variable, significant positive associations with SME linkage to GVC exist. However, when economic and governance institutions are taken into account, political dynasty becomes negatively associated with linking to GVC of SMEs. The sections below expound on the hypothesis testing on the association between Mindanao SMEs linkage to GVC and the local economic and governance institutions in Mindanao. Notably, out of 1,443 SMEs able to link to GVC, only 208 are from Mindanao.

Table 16. Logit Regression	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	SMEGVClink	SMEGVClink	SMEGVClink	SMEGVClink	SMEGVClink	SMEGVClink	SMEGVClink	SMEGVClink
ave_SMEfirmage	-0.0195***	-0.0196***	-0.0186***	-0.0185***	-0.0195***	-0.0185***	-0.0182***	-0.0183***
	(0.00264)	(0.00266)	(0.00264)	(0.00265)	(0.00267)	(0.00265)	(0.00266)	(0.00266)
Goods	2.440***	2.438***	2.520***	2.526***	2.430***	2.525***	2.521***	2.524***
	(0.0703)	(0.0698)	(0.0745)	(0.0746)	(0.0702)	(0.0748)	(0.0749)	(0.0747)
small	-0.548***	-0.554***	-0.549***	-0.543***	-0.550***	-0.544***	-0.537***	-0.538***
	(0.0726)	(0.0726)	(0.0730)	(0.0731)	(0.0726)	(0.0731)	(0.0731)	(0.0731)
innovator	0.585***	0.599***	0.582***	0.579***	0.597***	0.585***	0.582***	0.576***
	(0.114)	(0.114)	(0.116)	(0.116)	(0.114)	(0.116)	(0.116)	(0.116)
ecommerce	1.319***	1.325***	1.342***	1.343***	1.334***	1.342***	1.339***	1.339***
	(0.326)	(0.327)	(0.327)	(0.326)	(0.327)	(0.325)	(0.325)	(0.326)
franchise	0.440	0.453	0.510	0.484	0.487	0.477	0.473	0.485
	(0.648)	(0.637)	(0.639)	(0.635)	(0.638)	(0.637)	(0.637)	(0.636)
withsubsidies	0.398	0.382	0.424	0.425	0.370	0.422	0.433	0.417
	(0.302)	(0.302)	(0.302)	(0.300)	(0.300)	(0.299)	(0.299)	(0.300)
singleowner	-0.779***	-0.779***	-0.753***	-0.748***	-0.776***	-0.745***	-0.741***	-0.747***
	(0.0936)	(0.0935)	(0.0946)	(0.0947)	(0.0937)	(0.0947)	(0.0949)	(0.0949)
armedconflict	-0.0460**	-0.0379	-0.0165	-0.0387	-0.0264	0.0429	-0.0191	-0.0478
	(0.0215)	(0.0247)	(0.0270)	(0.0292)	(0.0259)	(0.0507)	(0.0651)	(0.0414)
poldynasty	0.0544***	0.0412***	-0.0289*	-0.0280	0.0466***	-0.0184	-0.0133	-0.0183
	(0.0143)	(0.0149)	(0.0171)	(0.0175)	(0.0152)	(0.0179)	(0.0180)	(0.0177)
infraroads	-0.00492***	-0.00502***	-0.00402***	-0.00448***	-0.00554***	-0.00467***	-0.00476***	-0.00474***
	(0.00126)	(0.00130)	(0.00130)	(0.00131)	(0.00132)	(0.00131)	(0.00132)	(0.00132)
infraports	-0.00976	0.0139	0.0214	-5.52e-05	0.00934	-0.00574	-0.00985	-0.00280
	(0.0163)	(0.0175)	(0.0195)	(0.0207)	(0.0181)	(0.0210)	(0.0216)	(0.0208)
city	-0.0496	-0.0455	0.00379	0.00275	0.0302	0.00570	0.0260	0.0165
	(0.0782)	(0.0808)	(0.0858)	(0.0898)	(0.0866)	(0.0897)	(0.0906)	(0.0907)
capacitytogen_localresource	0.927***	1.012***	0.762***	0.754***	1.052***	0.777***	0.782***	0.774***
	(0.0899)	(0.0920)	(0.0988)	(0.0998)	(0.0930)	(0.101)	(0.101)	(0.101)
GreaterLuzon		0.195**	0.904***	0.895***	0.122	0.848***	0.834***	0.875***
		(0.0962)	(0.154)	(0.155)	(0.104)	(0.159)	(0.160)	(0.159)
Visayas		0.411***	1.114***	1.097***	0.355***	1.041***	1.020***	1.070***
		(0.103)	(0.153)	(0.155)	(0.108)	(0.158)	(0.161)	(0.159)
Mindanao		0.193	0.772***	0.823***	0.194	0.0576	-0.888	-0.112
		(0.126)	(0.167)	(0.172)	(0.129)	(0.888)	(1.003)	(0.438)
econcost			2.295***	2.037***		1.853***	1.788***	2.004***

			(0.412)	(0.417)		(0.428)	(0.432)	(0.418)
econfin			-0.172	0.406		0.574**	0.646**	0.473
			(0.152)	(0.269)		(0.283)	(0.320)	(0.292)
econbizorg			1.172***	1.066***		0.931***	0.882***	0.931***
			(0.282)	(0.296)		(0.312)	(0.322)	(0.314)
govregeff				0.0669	-0.0379	0.00207	0.0130	0.0708
				(0.249)	(0.240)	(0.253)	(0.279)	(0.277)
govreneweff				-0.0179	-0.0213	-0.0201	-0.0222	-0.0205
				(0.0213)	(0.0209)	(0.0213)	(0.0214)	(0.0213)
govsecurity				-0.577***	-0.364***	-0.733***	-0.838***	-0.704***
				(0.218)	(0.124)	(0.235)	(0.277)	(0.258)
econcostMindanao						1.819	2.299	
						(1.998)	(1.975)	
econfinMindanao						-1.261**	-1.173	
						(0.591)	(0.878)	
econbizorgMindanao						5.809**	0.643	
						(2.504)	(3.281)	
govregeffMindanao							-0.401	-0.0183
							(0.817)	(0.789)
govreneweffMindanao							10.64**	11.73***
							(4.142)	(3.597)
govsecurityMindanao							0.926	0.133
							(0.761)	(0.361)
Constant	-2.576***	-2.802***	-4.385***	-4.247***	-2.712***	-4.132***	-4.113***	-4.241***
	(0.135)	(0.167)	(0.324)	(0.330)	(0.177)	(0.336)	(0.343)	(0.338)
Observations	12,745	12,745	12,745	12,745	12,745	12,745	12,745	12,745

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Local economic institutions. The following hypotheses are tested to see how the *cost of doing business* and *financial institutions* are associated with Mindanao SMEs linkage to GVC.

Testing hypothesis 1: Cost of doing business has no effect on Mindanao SMEs linkage to GVC. Based on **Table 16**, the cost of doing business has a significant positive association with SMEs linkage to GVC. This means that the higher the cost of doing business, the higher the likelihood of SMEs with linkage to GVC to be found in these areas with higher cost of doing business. Probing closer on the 11 sub-indicators of cost of doing business (**Table 16.a.**), it was revealed that SMEs with linkage to GVC are located in cities and municipalities with significantly higher cost of doing business compared with the location of SMEs with no linkage to GVC. These 6 sub-indicators are related to the cost of electricity (both for commercial and industrial firms); and 2) daily minimum wages in the Agri (plantation and non-plantation) and non-Agri (micro and not micro) sectors. Interestingly, SMEs not linked to GVC are more likely to be located in cities and/or municipalities with higher cost of water for commercial users and higher price of diesel. However, cost of doing business loses its significance when explaining Mindanao SMEs linkage to GVC as compared with non-Mindanao SMEs. Although it should be noted that positive association still exist between cost of doing business and Mindanao SMEs linkage to GVC, the association is not significant. *Given this, hypothesis 1 is not rejected.*

Testing hypothesis 2 Financial deepening has no effect on Mindanao SMEs linkage to GVC. Results (**Table 16 models 6 and 7**) show that the higher the number of financial institutions, the more likely are SMEs to link to GVC. However, the significant relationship becomes negative for Mindanao SMEs compared with non-Mindanao SMEs. In other words, higher financial institutions are associated to less Mindanao SMEs able to link to GVC. As presented in the first section of chapter 5, Mindanao cities and municipalities tend to have fewer financial institutions compared with the other regions in the country, and these are more likely to be non-bank institutions with lower financing capacity. Probing on the nine sub-indicators (**Table 16.b.)** of financial deepening or financial institutions, it is noted that Mindanao SMEs able to link to GVC are more likely to be in cities and municipalities with significantly lower commercial and savings banks as well as money changers as compared with non-Mindanao SMEs with linkage to GVC. Notably, Mindanao SMEs with linkage to GVC are more likely to be located in LGUs with more non-bank financial institutions. But this negative association is only significant when governance institutions are not considered, suggesting the effect of governance in facilitating SME linkage to GVC despite issues in access to finance of SMEs. *Given this, hypothesis 2 is not accepted.*

Table 16.a. Comparison between SMES with linkages and without linkage to GVC (n=12,745)	**SMEs linked to GVC (n=1,443)**		**SMEs not linked to GVC (n=11,302)**		**p-value (at 0.01)**
Variables (ROAD INFRASTRUSTRUCTURE)	**Mean / % share**	**Std. Error**	**Mean / % share**	**Std. Error**	
Asphalt road (km)	87.9	16.3	81.8	3.5	0.30
gravel road (km)	82.7	33.5	71.9	1.2	0.19
concrete (km)	184.5	11.9	228.4	2.2	**0.00**
unpaved (km)	35.3	5.4	41.7	2.9	0.22
total land area of roads (square kilometer)	16.4	3.9	31.0	1.9	**0.00**
Variables (COST OF DOING BUSINESS)	**Mean / % share**	**Std. Error**	**Mean / % share**	**Std. Error**	**p-value**

					(at 0.01)
cost of electricity (commercial) (PHP/kwh)	**15.2281**	0.6441677	9.507307	0.0690211	**0**
cost of electricity (industrial) (PHP/kwh)	**15.66227**	0.7270967	9.409716	0.0927808	**0**
cost of water (commercial) (PHP/cubic meter)	48.05201	1.584545	**55.1466**	0.5847277	**0**
cost of water (industrial) (PHP/cubic meter)	54.61714	2.075232	56.6651	0.6355409	0.144
price of diesel (PHP/liter)	24.8693	0.1946145	**25.42451**	0.0673777	**0.0029**
daily minimum wage (agri)	**336.3042**	1.754334	329.3925	0.7147585	**0.0005**
daily minimum wage (agri non-plantation)	**335.5211**	1.791614	327.5112	0.7325683	**0.0001**
daily minimum wage (non-agri & not micro)	**366.0482**	1.820262	356.6349	0.7581338	**0**
daily minimum wage (non-agri & micro)	**338.8586**	2.006166	331.8116	0.8099312	**0.0015**
cost of land in central business district	44577.26	1828.327	42350.88	604.1598	0.1097
cost of rent (commercial business)	1214.138	59.44811	1181.527	18.94827	0.284

Source: author's computation using PSA ASPBI and DTI CB CMCI 2015 data

Local Government Institutions. The following hypotheses 3 and 4 are tested to see how the business renewal efficiency and armed conflict are associated with Mindanao SMEs' linkage to GVC.

Testing hypothesis 3: Business renewal efficiency has no effect on Mindanao SMEs linkage to GVC. Interestingly, less efficient business renewal has a significant positive association (**Table 16**) with Mindanao SMEs' linkage to GVC compared with non-Mindanao SMEs. It should be noted that the higher the score for business renewal efficiency, the less efficient the renewal is (longer processing and more steps). A closer look at the 2 sub-indicators (**Table 16.b.**) show that, for SMEs with linkage to GVC, business renewal steps are significantly more for Mindanao SMEs compared with non-Mindanao SME. In addition, it takes longer time for Mindanao SMEs linked to GVC to renew business compared with non-Mindanao SMEs, although the relationship is not significantly. This suggests that ease of doing business is a significant institutional determinant for Mindanao SMEs to link to GVC. *Given this, hypothesis 3 is not accepted***.**

Table 16.b. SMEs only able to link to GVC Mindanao and non-Mindanao (n=1.443)	**Mindanao SMEs linked to GVC (n=208)**		**Other SMEs linked to GVC (n=1235)**		**p-value (at 0.01)**
Variables (FINANCIAL INSTITUTIONS)	**Mean / % share**	**Std. Error**	**Mean / % share**	**Std. Error**	
no. of commercial banks	57.75481	4.602447	**94.93765**	3.94302	**0.0001**
no. of savings bank	5.341346	0.5363671	**24.14332**	0.8499733	**0**
no. of rural banks	**13.78365**	0.9572484	7.140891	0.1756013	**0**
no. of finance coops	**93.95673**	6.992595	32.11822	1.115821	**0**
no. of savings and loans associations	**24.82692**	3.822551	20.68664	0.8608963	0.057
no. of pawnshops	**138.9375**	9.386953	111.4049	3.514181	**0.0017**
no. of moneychangers	62.42788	3.987715	**111.5919**	4.957968	**0**
no. of remittance centers	**125.3125**	9.431997	74.04777	2.837861	**0**

no. of microfinance	**42.39423**	3.16453	80.84534	5.52721	**0**
Variables (BUSINESS RENEWAL)	**Mean / % share**	**Std. Error**	**Mean / % share**	**Std. Error**	
business renewal (minutes	1.207581	0.0665454	0.9005115	0.0833529	0.0668
business renewal (no. of steps)	**4.076923**	0.0567714	3.693927	0.0281111	**0**

Source: author's computation using PSA ASPBI and DTI CB CMCI 2015 data

Testing hypothesis 4: Armed conflict has no effect on Mindanao SMEs linkage to GVC. Approximately 1,183 SMEs are located in cities and or municipalities with armed conflict in 2015. Out of these SMEs, only 94 are able to link to GVC. Armed conflict has a significant negative association (**Table 16**) with SMEs linkage to GVC. However, the armed conflict variable is only significant when economic and governance institutions are not considered. It loses its significance when the institutional variables are factored in. Moreover, comparison between SMEs in Mindanao and in other regions of the country shows no significant relationship with SMEs' linkage to GVC albeit consistently having a negative association. *Thus, hypothesis 4 is not rejected* but with a caveat that economic and governance institutions are in place.

Although not conclusive, testing for the four hypotheses while holding other variables constant reveals that cost of doing business has no significant association with Mindanao SMEs linkage to GVC. Financial institutions have significant negative association only if Mindanao SMEs local governance institutions are not considered. In governance institutions, business renewal efficiency has significant positive associations where Mindanao SMEs linked to GVC are more likely to be located in cities and/or municipalities with less efficient business renewal. Lastly, armed conflict, although a significant variable when taking into account firm and environment factors, loses its significance when economic and governance institutions are factored in.

Not included in the hypotheses but interesting to note are two things: 1) being an SME in Mindanao becomes positively significant when economic and governance institutions are considered. 2) business organizations, consistently across all the models, has a significant positive association with SMEs' linkage to GVC.
However, it should be noted at this point that the regression results further be triangulated with sectoral analysis as well as thematic analysis of key informant interviews.

2. Sectoral analysis of Mindanao SMEs

The regression analysis in the previous section tested for the relationship between the quality of economic and governance institutions and Mindanao SMEs' linkage to GVC compared with SMEs in the rest of the country. While findings in the regression has policy implications in terms of spatial planning and policymaking, the sectoral aspect is another crucial consideration. Narrowing the analysis using data on 2,319 Mindanao SMEs, sectoral analysis using non-paired t-test and comparison of proportions is presented below between 1) goods and services SMEs; and 2) agriculture and industry SMEs.

Goods and Services SMEs in Mindanao. Out of all Mindanao SMEs, 739 (32%) produce goods either in the agriculture or industry sector while the rest provide services (68%). According to the DTI Glossary of Business Terms and Concepts, goods is a "product that can be produced, bought, and sold, and that has a physical identity". For purposes of comparison in this study, goods SMEs are classified as those belonging to agriculture and industry. Comparison between goods and services SMEs in Mindanao **(Table 17)** shows that those producing goods are more inclined to be exporters and subcontractors of exporters compared with services SMEs. Also, goods SMEs tend to be bigger in firm size and have higher average profit compared with those in the services sector. It should be noted that they are more likely to be innovators and less likely to receive subsidies from the government compared with services SMEs. Looking at economic institutions where these Mindanao SMEs operate in 2015, it is noted that more goods SMEs tend to operate in cities and/or municipalities with lower financial institutions such as pawnshops, finance cooperatives, rural banks, and commercial banks. It is also noted that there are significantly more business organizations in cities and municipalities where services SMEs operate compared with goods SMEs in Mindanao. Governance institutions in cities and/or municipalities where goods SMEs are more likely to operate in are those with less efficient business renewal, lower taxes on business and real property, and lower number of armed conflicts.

Table 17. Comparison between goods and services Mindanao SMEs (n=2,319)	**Goods SMEs in Mindanao (n=739)**		**Services SMEs in Mindanao (n=1,589)**		**p-value (at 0.01)**
Linkages to GVC	**Mean / % share**	**Std. Error**	**Mean / % share**	**Std. Error**	
exporters	13.0%	1.2%	0.4%	0.2%	**0**
with income abroad from services provided	0.0%	0.0%	0.3%	0.1%	0.09
subcontractors	15.0%	1.3%	0.44%	0.17%	**0**
importer of tangible asset	0.3%	0.2%	0.1%	0.1%	0.18
Firm and entrepreneur characteristics	**Mean / % share**	**Std. Error**	**Mean / % share**	**Std. Error**	**p-value (at 0.01)**
small firm size (y/n)	80.5%	1.5%	87.0%	0.8%	**0.00**
firm age (years)	20.7	0.5	24.7	1.3	0.02
profit (PHP)	₱21,900,000	₱4,796,554	₱9,671,062	₱990,478	**0.0003**
sole proprietorship	26.1%	1.6%	22.7%	1.1%	0.03
engaged in R&D / innovation	6.2%	0.9%	0.9%	0.2%	**0.00**
earns from franchise	0.00%	0.00%	0.06%	0.06%	0.25
receives subsidy from government	0.14%	0.14%	3.29%	0.45%	**0.00**
Economic institutional determinants (CMCI scores of selected indicators; raw data of *selected sub-indicators*)	**Mean / % share**	**Std. Error**	**Mean / % share**	**Std. Error**	**p-value (at 0.01)**
cost of doing business (score)	0.42	0.00	0.42	0.00	0.38
cost of electricity (commercial) (PHP/kwh)	₱7.87	₱0.10	₱7.70	₱0.03	0.02
cost of water (commercial) (PHP/cubic meter)	₱40.88	₱2.20	₱41.05	₱0.79	0.47
financial institutions (score)	0.40	0.01	0.49	0.01	**0.00**
no. of savings and loans associations	18.95	1.73	17.27	1.08	0.20
no. of pawnshops	132	5	136	3	**0.00**
no. of finance cooperatives	90	4	111	2	**0.00**
no. of rural banks	14	1	17	0	**0.00**
no. of commercial banks	56	2	71	2	**0.00**
business organizations (score)	0.048	0.002	0.061	0.001	**0.00**
no. of LGU-registered business orgs	262	15	302	11	**0.00**
no. of other business orgs	51	2	66	1	**0.00**
Governance institutional determinants (CMCI scores of selected indicators; raw data of *selected sub-indicators*)	**Mean / % share**	**Std. Error**	**Mean / % share**	**Std. Error**	**p-value (at 0.01)**
business renewal efficiency (score)	0.08	0.00	0.07	0.00	**0.00**
getting mayor's renewal permit (mins)	1.03	0.03	2.12	0.43	0.04
capacity to generate local resource (score)	0.05	0.00	0.06	0.00	**0.00**
business tax collected (PHP)	₱422,000,000	₱18,700,000	₱555,000,000	₱12,900,000	**0.00**
real property tax (PHP)	₱245,000,000	₱10,400,000	₱307,000,000	₱6,950,406	**0.00**
no. of armed conflict	2	0	3	0	**0.00**

Source: author's computation based on PSA ASPBI (2015) and DTI CB CMCI (2015)

Agriculture and Industry SMEs in Mindanao (Table 18). Goods SMEs in Mindanao are 33% agribusinesses while 67% are in the industry sector. Notably, industry SMEs in Mindanao are more likely to be subcontractors or sellers to exporters compared with those in the agriculture. Industry sector SMES are also more likely to be owned by an individual, have higher average profit, and be engaged in innovation as compared with the agriculture sector. Although there is no significant difference in cost of doing business, it is notable that agriculture SMEs in Mindanao tend to operate in cities and municipalities with lower number of financial institutions such as pawnshops, finance cooperatives, rural and commercial banks compared with industry SMEs. Moreover, Agri SMEs are more likely located in areas with lower number of business organizations. Governance institutions in cities and municipalities where Agri SMEs are more likely to be located are those with lower business and real property tax collection as well as those with lower armed conflict compared with industry SMEs.

The combination of results suggests that in comparison with services SMES, goods SMEs in Mindanao have higher GVC linkage potential and higher productivity potential and are more likely to be in areas with higher governance efficiency – more efficient business renewal and lower number of armed conflicts. However, compared with industry, Agri SMES have lower GVC linkage and productivity potential and are more likely located in areas with lower number of business organizations and lower number of financial institutions – two important factors identified in the literature for SMEs to scale-up and be able to link to GVC.

Table 18. Comparison between agri and industry Mindanao SMEs (n=739)	**Agri SMEs in Mindanao (n=246)**		**Industry SMEs in Mindanao (n=493)**		**p-value (at 0.01)**
Linkages to GVC	**Mean / % share**	**Std. Error**	**Mean / % share**	**Std. Error**	
exporters	12.2%	2.1%	13.4%	1.5%	0.3248
subcontractors	9.3%	1.9%	17.8%	1.7%	**0.001**
importer of tangible asset	0.0%	0.0%	0.4%	0.3%	0.16
Firm and entrepreneur characteristics	**Mean / % share**	**Std. Error**	**Mean / % share**	**Std. Error**	**p-value (at 0.01)**
small firm size (y/n)	80.1%	2.5%	80.7%	1.8%	0.42
firm age (years)	22.1	0.8	20.1	0.5	0.02
profit (PHP)	₱5,554,468	₱1,530,706	₱30,000,000.0	₱7,123,451	**0.01**
sole proprietorship	17.9%	2.4%	30.2%	2.1%	**0.0002**
engaged in R&D / innovation	1.2%	0.7%	8.7%	1.3%	**0.00**
receives subsidy from government	0.00%	0.00%	0.20%	0.20%	0.24
Economic institutional determinants (CMCI scores of selected indicators; raw data of *selected sub-indicators*)	**Mean / % share**	**Std. Error**	**Mean / % share**	**Std. Error**	**p-value (at 0.01)**
cost of doing business (score)	0.42	0.00	0.42	0.00	0.30
cost of electricity (commercial) (PHP/kwh)	₱8.01	₱0.20	₱7.81	₱0.12	0.17
cost of water (commercial) (PHP/cubic meter)	₱42.28	₱5.20	₱40.19	₱2.04	0.33
financial institutions (score)	0.30	0.02	0.44	0.02	**0.00**
no. of pawnshops	94	8	151	6	**0.00**
no. of savings and loans associations	21	3	18	2	0.21
no. of finance cooperatives	64	6	103	5	**0.00**
no. of rural banks	10	1	15	1	**0.00**
no. of commercial banks	39	4	64	3	**0.00**
business organizations (score)	0.040	0.004	0.051	0.002	**0.01**
no. of LGU-registered business orgs	186	23	300	19	**0.0002**
no. of other business orgs	43	4	55	3	**0.01**
Governance institutional determinants (CMCI scores of selected indicators; raw data of *selected sub-indicators*)	**Mean / % share**	**Std. Error**	**Mean / % share**	**Std. Error**	**p-value (at 0.01)**
business renewal efficiency (score)	0.08	0.00	0.08	0.00	0.21
getting mayor's renewal permit (minutes)	1.01	0.06	1.04	0.04	0.32
capacity to generate local resource (score)	0.03	0.00	0.05	0.00	**0.00**
business tax collected (PHP)	₱278,000,000	₱28,500,000	₱494,000,000	₱23,500,000	**0.00**
real property tax (PHP)	₱172,000,000	₱16,400,000	₱281,000,000	₱13,000,000	**0.00**
no. of armed conflict	2	0	3	0	**0.001**

Source: author’s computation based on PSA ASPBI (2015) and DTI CB CMCI (201

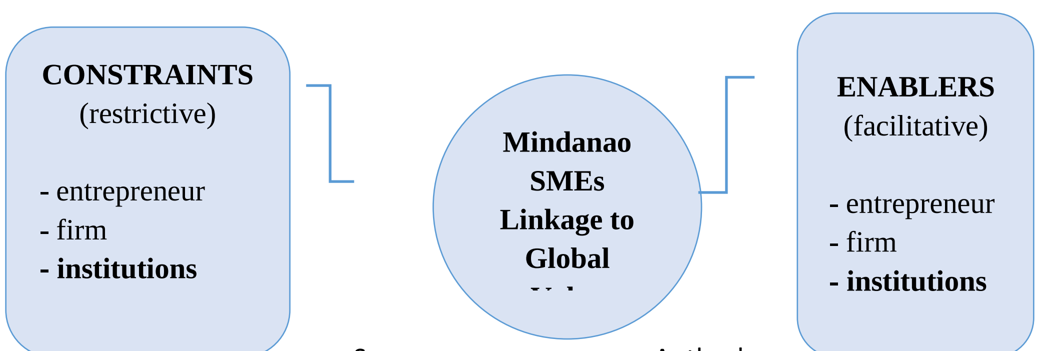
3. Thematic Analysis: SMEs Institutional Constraints and Enablers in Linking to GVC

To gain a deeper insight on how local institutions (economic and governance) restrict or facilitate SME linkage to GVC in the Mindanao context, 12 key informant interviews were conducted with relevant policymakers, SMEs with linkages to global value chains and SMEs without linkage to global value chains. The interviews were conducted in Davao City and Cotabato City.

a) Analytical Framework

The key informant interviews were analyzed according to the thematic analytical framework (**Figure 23**). The two main themes used in the analysis are: constraints and enablers. These main themes are further analyzed and coded depending on the view or perspective (Korsakiene et. al, 2015) espoused by the key informant and where the constraint or enabler emanate from as observed during the interview. As such, the two main themes were categorized according to these perspectives: the entrepreneur, enterprise or firm, and institutional environment (Nasir et. al, 2017; Yamakawa et.a al, 2008 as cited by Korsakiene et. al, 2015; APEC, 2018). **Table 21** shows the description of main themes and codes used in the study. Other constraints and enablers not belonging under the sub-themes are categorized as other constraints and/or enablers (i.e. climate change, informal institutions). Institutions-based view (Peng et. al, 2009), which is the focus of this study, looks at the constraints and enablers that emanates from formal policies, rules, and laws (North, 1990). Although the study focuses on the formal institutions, responses of key informants related to informal institutions were coded accordingly. This may also include the political constraints and enablers emanating from formal rules. In other words, the analytical framework focuses the analysis on the institutional constraints and enablers while taking into account entrepreneurial, firm, and other constraints and enablers.

Figure 23. Analytical framework for the key informant interviews



Source: Author's analytical framework based on North (1990) and Korsakiene et. al (2015)

In **figure 22** above, it can be noted that institutional constraints are categorized as restrictive while institutional enablers are facilitative for the Mindanao SMEs to be able to link to global value chains.

*Profile of Key informants***.** To ensure representation and balance in getting the perception of stakeholders, criteria were employed. For the policymakers, the main criteria in choosing the key informant is having a strategic and operational knowledge on SME policymaking and program implementation in the two cities. In Davao City, the director for policy and planning of Mindanao

Development Authority was interviewed and the division chief of DTI Davao City's business development division. In Cotabato City, the DTI ARMM Regional Secretary and the DSWD Sustainable Livelihood Program Provincial Coordinator were interviewed.

Davao City and Cotabato City are the fieldwork sites selected for the key informant interviews. The two cities were selected to take into account the experiences and perception of SMEs from two cities with different context of armed-conflict and number of SMEs with linkage to GVC. It can be noted that only about 11 percent of SMEs in the sample used for the regression analysis were able to link to GVC in 2015. Out of the 1,443 SMEs estimated to have been able to link to GVC, approximately 14 percent are from the 58 cities and municipalities in Mindanao. Note that the highest number of Mindanao SMEs with linkages are in Davao City while no SME surveyed in Cotabato City was able to link to GVC. Given that it is a panel data, same businesses were surveyed. It could either be that the SMEs are able to level up as a large enterprise or did not link to GVC in 2015. Notwithstanding this observation, the following criteria were used in selecting SME key informants: 1) operating for more than 3.5 years (defined as number of years as established business by the Global Entrepreneurship Monitor); 2) coming from the three sectors (agriculture, industry, and services) to ensure representation of responses.

Gender balance is also considered with total of 7 male and 6 female key informants with average age at 48 years old. On average, SMEs interviewed operate for more than 11 years but this includes the two outliers (3.5 years minimum and 47 years maximum). SMEs able to link to GVC did so after more than 7 years in operation on average. For SMEs without linkage to GVC, attempts were made to either export or subcontract to exporters after 10 years of operation. **Tables 19** and **20** below is the summary of profile of SMEs interviewed:

Table 19. Profile of Policymakers	**nature of work**	**gender of key informant**	**age of key informant**
Mindanao Development Authority	director of policy, planning, and program	male	45-50 years old
Department of Trade and Industry, Davao City Field Office	chief of business development division	female	45-50 years old
Department of Trade and Industry, ARMM	outgoing regional secretary	male	45-50 years old
DSWD Sustainable Livelihood Program, Cotabato City	provincial coordinator for Sustainable Livelihood Program	male	40-45 years old

Source: author’s compilation

Table 20. Profile of SMEs by sector		nature of business	years in operation	year linked to GVC (or attempted to link to GVC)	years in operation when linked (or attempted to link) to GVC	gender of key informant	age of key informant
	Agri SMEs						
with linkages to GVC	Gran Verde Farms (Davao)	cacao beans supplier to exporter/ consolidator	8 years	2015	4	female	56
	Moro Gulf Sterling Corp (Cotabato)	cavendish banana exporter	23 years	2014	18	male	63
	Al Mani Coop (Cotabato)	organic black rice exporter	4 years	2015	4	male	
without linkages to GVC	Cacao Culture (Davao)	cacao nursery	3.5 years	2018	2.5	male	36
	Shariff Kabunsuan MPC (Cotabato)	fish pond; crab and shrimps	18 years	2018	17	male	71
	Services SMEs						
with linkages to GVC	Prep Events (Davao)	corporate events management	8 years	2018	7	female	32
	DSA Software Solutions (Cotabato)	IT company	4 years	2017	2	male	29
without linkages to GVC	Rophe's Chicken (Davao)	seller of roasted chicken; catering services; buffet restaurant	4 years	not yet; in 15 years	na	male	28
	Kok's Chicken (Cotabato)	seller of different flavors of chicken; thinking of expanding as a franchise	5 years	not yet; in 5 years	na	male	45
	Industry SMEs						
with linkages to GVC	Crystal Seas (Davao)	woven bag exporter to Japan and Brunei; no online selling because of lower price	13 years	2008	11	female	34
without linkages to GVC	Schechem Marketing Belle Juice (Davao)	all-natural juice; no preservatives	7 years	2017	5	female	59
	Moving Forward for Quality Life Coop (Cotabato)	garments; school and office uniform	47 years	1994	22	female	76
	Pogan's Food Products (Cotabato)	traditional Maguindanao Muslim food	6 years	2018	5	female	53
Source: author's compilation			**> 11 years on average**		**w/ linkages:** 7.7 ave **without linkages:** 10.3 years ave	**gender-balanced** (6 female; 7 male)	**48 y.o. average**

*Themes and codes used in the analysis***.** Guided by the analytical framework and observation during the interview, the answers were analyzed based on where the constraints, enablers, or motivation emanates from (i.e. entrepreneur, enterprise, or institutions). In terms of coding main themes of institutional constraints and institutional enablers, these are defined as more established policies and rules. For instance, the creation of a Cacao City coop, although distinct enabler of the Agri sector on cacao, is categorized as institutional enablers since the creation of the Cacao City was mandated by the Davao City LGU and supported by DTI. Political constraints and enablers are categorized under institutional constraints and enablers. These are comprised of factors brought about by the political context and circumstances. Declaration of Martial Law, which is a formal institution (North, 1990) is coded as political given its political nature. The same coding is applied to Bangsamoro Basic Law. Overall, these codes were used to compare the responses of the key informants based on the two main themes and three perspectives of the following groupings: 1) policymakers and SMEs; and 2) by sector (Agri, Industry, Services). Below (**Table 21)** is the codebook used in the thematic analysis with descriptions for all codes used.

Table 21. Code description

Name	Description
CONSTRAINT	factors that hinder SMEs from forming linkages to the global value chains
entrepreneurial constraints	entrepreneurial mindset that hinders SMEs linkage to GVC
firm constraints	constraints emanating at the level of the firm or SME
institutional constraints	constraints emanating from the formal institutional environment
other constraints	other factors (e.g. market, climate, informal institutions)
ENABLER	factors that support or facilitate SMEs linkage to global value chains
entrepreneurial enablers	enabling factors emanating at the level of the entrepreneur
firm enablers	enabling factors emanating from the firm or SME level
institutional enablers	enabling factors brought about by formal institutional environment (policies, rules, laws)
other enablers	enabling factors brought about by other factors (market, climate, informal institutions)

Source: author's compilation

<u>a. Comparison of institutional constraints and enablers: Policymakers and SMEs</u>

Institutions or "rules of the game" (North, 1990) can either be restrictive or facilitative in influencing firm behavior such as linking of SMEs to global value chains. As these "rules" are human-devised, comparison of stakeholders involved is conducted. **Table 22** below shows the comparison of constraints and enablers of SMEs in linking to GVC as perceived by the policymakers and SME owners. The comparison is based on the most frequent references or highlighted texts coded in the responses of the key informants. Firm and institutional constraints and enablers are the most coded in the responses. As expected, the policymakers discussed more institutional constraints and enablers while SMEs discussed more constraints and enablers at the firm level.

In terms of firm constraints, it is worth noting that for SMEs in the industry and Agri sectors, apart from capital, satisfying the volume requirement for exports is a top firm constraint for them. This was addressed by linking to consolidators in the area. The setback, however, is that the products no longer carry the local brand name.

"Our cooperative does not have enough capital to finance farming in a large area. We need to have 35 hectares of land to support the needed volume of rice. We also have a partner that exports rice. But the disadvantage is that the product is not named after us." – Cotabato SME (Al Mani Coop)

For SMEs in the services sector, access to skilled labor as well as poor internet connection are the top constraints faced when they provide international services. This is because the standards of international services require capacitation of workers and sometimes, it would be difficult to get skilled labor. internet connection is cited as a constraint for it delays important communication with clients abroad.

"Number two, internet. It's hard here in Davao City. Sometimes they feel we were not interested with their orders but then its technology. We can't really do anything about it… the internet is not that stable but that's our most important tool in communicating with export buyers."
– Davao SME (Crystal Seas), female, 34

Looking at the institutional constraints (**Figure 24**), policymakers view the following as the top hindrance for SMEs to linkage to GVC is access to finance followed by political constraints, inefficient government process and poor logistics. While for SMEs, top institutional constraints they face in linking to GVC is related to political aspect followed by inefficient government process and business permits.

Access to finance, an age-old issue, seems to affect farmers and smaller businesses despite Magna Carta for MSMEs requiring a mandatory allocation for micro and small enterprises (MSE) loans.

"Our people have less access to financing… I've been banging our banks. You are violating our laws, I told them. Under the law, they have to have a window for farmers or micro businessmen. Do you think it's easy to apply for loans in banks? It's easy if you are an employee."
- DTI ARMM Regional Director, male

Apart from non-compliance of banks to mandatory loans for MSEs, a policymaker noted that alternative financing institutions such as finance cooperatives are not able to manage revolving funds.

"Government financing institutions seems to be inaccessible to farmers… What's within them (referring to finance cooperatives), in our evaluation is that associations are not yet matured enough to manage their own revolving fund."
- MinDA Director for Policy and Planning, male

Political constraints, the top hindrance perceived by SME key informants, are also experienced on the ground whether because of armed conflict in the past.

"We have problems with technical workers. When they hear about the conflicts, the worker himself is willing to go but the wife does not... It's not easy to learn about the banana. It's something you need to learn over the years. We have to import the technology from Davao."
- Cotabato Agriculture SME (Moro Gulf Sterling), male, 63

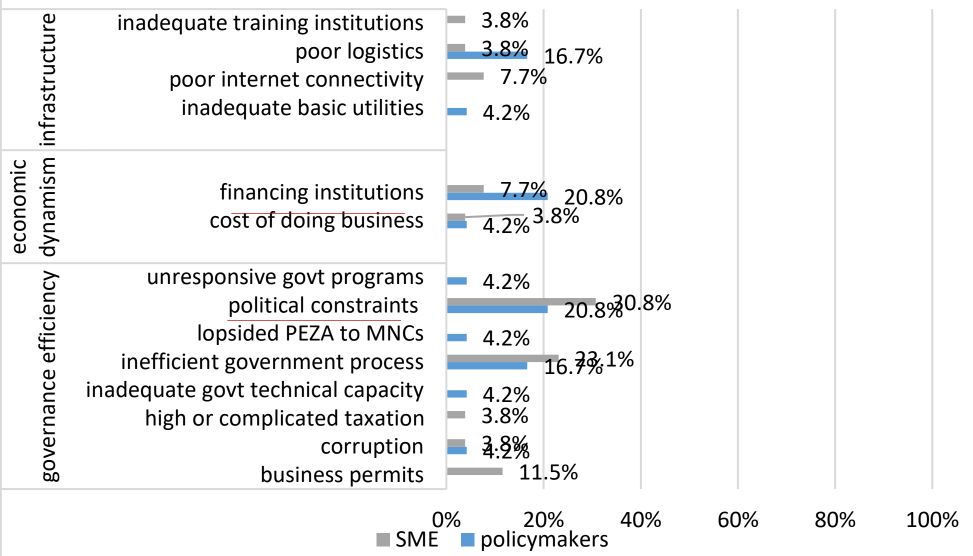
or due to recent changes in the political environment.

"They required me to have 10 flavors and I did… The representative called me and told me that the Korean embassy does not allow them to go to the area until Martial Law in Mindanao is lifted."
– Davao Industry SME (Shechem), female, 59

Table 22. Comparison of identified constraints and enablers, by stakeholder (no. of referenced responses)	**POLICYMAKERS**	**SMEs**
1: CONSTRAINTS	**50**	**85**
entrepreneurial constraints	1	4
firm constraints	15	39
INSTITUTIONAL CONSTRAINTS	29	23
other constraints	5	19
2: ENABLERS	**46**	**98**
entrepreneurial enablers	0	17
firm enablers	11	34
INSTITUTIONAL ENABLER	31	39
other enablers	4	7

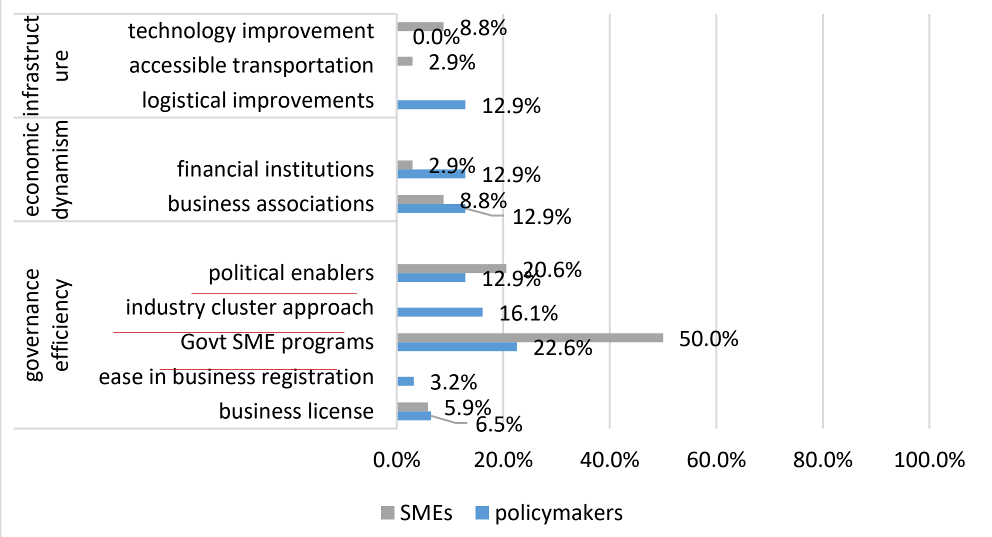
Source: author's compilation

Figure 24. Institutional Constraints, By Stakeholder



Source: author's computation

Figure 25. Institutional enablers, by stakeholder



Source: author's computation

In terms of institutional enablers (**Figure 25**), both SMEs and policymakers cited government SME programs as top institutional enablers. These government programs include the *Kapatid* Mentor Me Program – a capacitation program of DTI for SME entrepreneurs through mentorship from entrepreneurs from large businesses or corporations. Another top cited program is the shared services facility – where SMEs are able to use common facilities to test new products or product improvements. Go *Lokal* – a one-stop shop retail store for local products – is also cited as an enabler. Another is the DOST SETUP program where SMEs are able to apply for soft loan (no interest rates; installment payment for 5 years; first payment starts after 1 year of loan) to purchase machines for their business.

"… to buy things like high end computers, servers that allow us to connect to international clients. Before we were hosting websites but through the improvements provided by DOST to us, we were able to cater to more clients." – Cotabato SME (DSA Software), male, 29

Other relevant government SME programs include trade fairs and business matching. In terms of attending trade fairs, it is noted by SMEs in the industry and Agri sector to be a big help in marketing their products for possible export or subcontracting to exporters. However, they noted that there can also be risks in attending trade fairs given that subsidy doesn't seem to apply to them anymore.

"It's a risk. Sometimes, we got sponsorship from Export Marketing Bureau, but it only covers the joining fee. We pay the rest of the expense. We tried before to join twice a year international trade fair when it was not that much expensive. Before, there is subsidy but now, there is none." – Davao SME (Crystal Seas), female, 34

For policymakers, industry cluster approach takes on the primacy as the institutional enabler for SMEs to link to GVC. Dubbed as Mindanao Development Corridors (MinDCs) – a spatial economic planning strategy spearheaded by Mindanao Development Authority which aims to increase competitiveness of Mindanao industries by providing them with common service facilities. Industry development is clustered in the regional corridors expounded in section 1 of Chapter 5.

"Main policy directive is to focus on establishing agro-economic zones in the poorest provinces in Mindanao" – MinDA director for policy and planning, male

However, a Cotabato policymaker noted that there seems to be an absence of ARMM in the industry cluster approach under Mindanao Development Corridors.

"For me, there's absence of ARMM in the corridor aside from BaSulTa and Zamboanga. The ARMM just became a support. Investors of fishing industry are in Zamboanga but fish are coming from Basulta area. Tuna comes from Ilyada Bay of Maguindanao but is processed in Gen San. There are sardine factories there, but fish supplies come from us."

- DTI ARMM Regional Director, male

Nevertheless, it should be noted that MinDA shared that with the passing of the Bangsamoro Basic Law, the Bangsamoro Corridor will be included in the overall Mindanao Development Corridors.

In support of the more strategic industry cluster approach are the political enablers, cited as second top institutional enabler by SMEs. This includes support from LGUs, Bangsamoro Organic Law (BOL), and even Martial Law. For the cacao makers in Davao, they have noted the enabling role of building a cacao cooperative as mandated by Davao LGU.

"We were enabled by LGU, mandated by the mayor. The DTI paid for our interior designer because we have pop-up carts… We were able to solicit. Those are the enabling mechanisms." – Davao SME (Gran Verde Farms), female, 56

SME owners also expressed optimism with the passing of the BOL. One Agri SME in Cotabato which has experienced evacuating and leaving harvest products behind expects a more positive environment in terms of conflict with the BOL.

"But I think the situation has improved. Since there is an agreement with the Bangsamoro Organic Law, it seems there is nothing to be afraid of. Our fears of conflicts, of evacuation have somehow subsided." – Cotabato SME (Shariff Kabunsuan MPC), male, 71

b. Comparison of SMEs by sector (agriculture, industry, services).

Institutional determinants of Mindanao SMEs' linkage to GVC can also be further contextualized based on the sector where the SME belongs. Responses from 12 key informants were compared by group according to the sector: Agri (2), Industry (2), and Services (2). **Table 23** below shows that all three sectors cited institutional constraints as the top constraint in linking to GVC. For enablers, Agri and services SMEs cited firm level capacity as their top enabler while industry cited institutions. Cited firm enablers by Agri SMEs that facilitates linkage to GVC include access to capital, access to skilled labor, and high product quality. For Services SMEs, these firm enablers are more on making use of the technology and social media, growth mindset of the entrepreneur, and skilled labor. It is worth noting that cited firm constraints of Industry SMEs relate to their application for Food and Drug Administration (FDA) accreditation. As FDA document is an important pre-requisite for Industry and Agri SMEs (Goods SMEs) to be able to attend trade fairs and export, being able to comply with FDA is notably a big firm constraint.

"One of the main constraints of SMEs are the paper works needed to operate the business-like license from FDA…. We cannot export or import since we do not have evidence that our manufacturing is legal, that we are legitimate business." – Cotabato SME (Pogan's Food Products), female, 53

The DTI in Davao City expounded on their observation regarding the lack of technical know-how on SMEs to be able to satisfy accreditation. They are working with DOH on an MOU to facilitate capacitation for SME compliance.

"There is lack of basic knowledge on importing and exporting and market information. There are also challenges in terms of technology. Sometimes a business lacks the requirements that buyers are looking for. One good example of this is the FDA approval. They grapple on the local requirements so how much more with international standards?"- DTI Davao City business development chief, female

Table 23. Constraints and Enablers identified, by sector	**AGRI**	**INDUSTRY**	**SERVICES**
CONSTRAINTS	**79**	**37**	**25**
entrepreneurial constraints	2	1	1
firm constraints	17	13	3
institutional constraints	43	18	17
other constraints	17	5	4
ENABLERS	**32**	**29**	**32**
entrepreneurial enablers	2	4	11
firm enablers	17	8	12
institutional enablers	10	15	7
other enablers	3	2	2

Note: COT = Cotabato; DVO=Davao

Source: author's computation based on NVivo software

Focusing on the institutional constraints (**Figure 26)**, political constraints are cited by Industry and Services SMEs as their top hindrance in linking to GVC while for Agri SMEs, inefficient government process restricts them more.

In terms of political constraints, mandatory curfew due to Martial law restricts not just the business hours but as well as the movement of people and products for the Industry SMEs.

"Business hours became shorter... Some would also drop by at the store to pick up products. But now, at 7pm you would want to leave the store since you do not know what might happen... If I will get back here, I cannot enter the City if it is past 10 pm. Bus trips are already limited." – Cotabato SME (Pogan's Food Products), female, 53

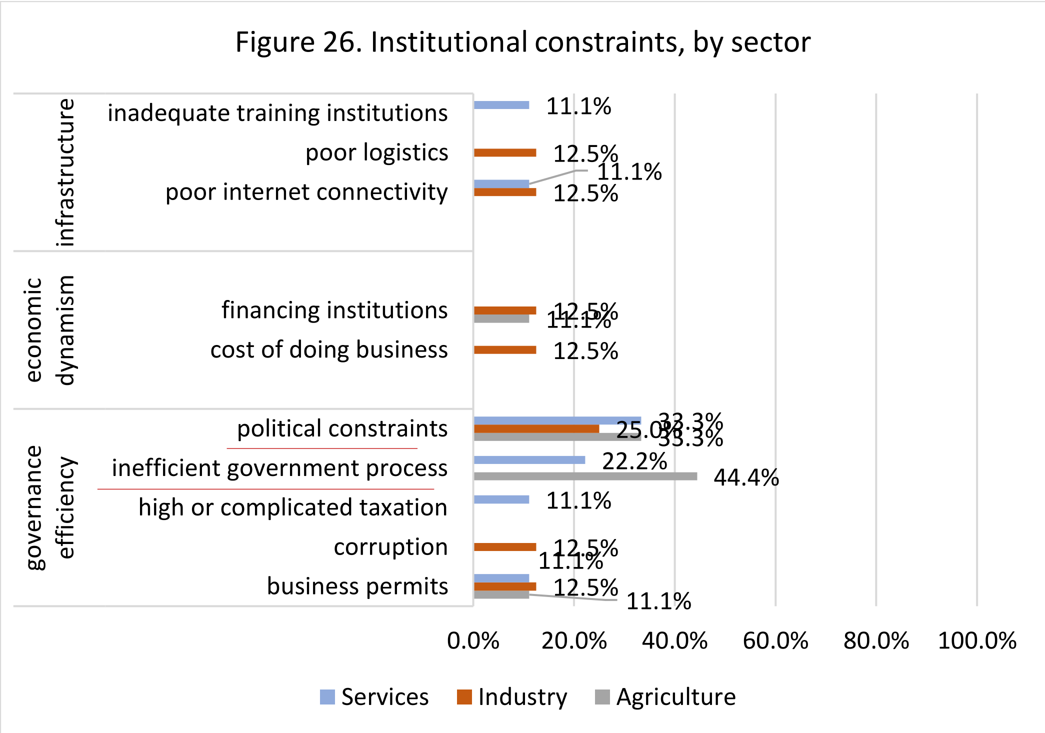
For Service SMEs, they noted the negative perception about armed conflict in their area that affects getting clients to work with them.

"Number one of course is the integrity of the location... When you say you're from Cotabato City, Maguindanao, they ask about the massacre and the like so that's a factor. It's a minus." – Davao SME (DSA Software Solutions), male, 29

Inefficient government process is also cited by Agri SMEs as top institutional constraint. This includes application for FDA and accreditation for organic farming.

"I think the normal process of the business is also a challenge. For example, applying for permits and the likes. We heard that applying for FDA license is a very tedious one, a very long process." – Davao SME (Cacao Culture), male, 36

"There are a lot of procedures in getting organic farming certification. It is also costly. .. We are having difficulty because of our limited funds... It's been a year since our application. Gaining the Organic Farming Certification would enable us to directly export our products." – Cotabato SME (Al Mani Coop), male,



Source: author's computation

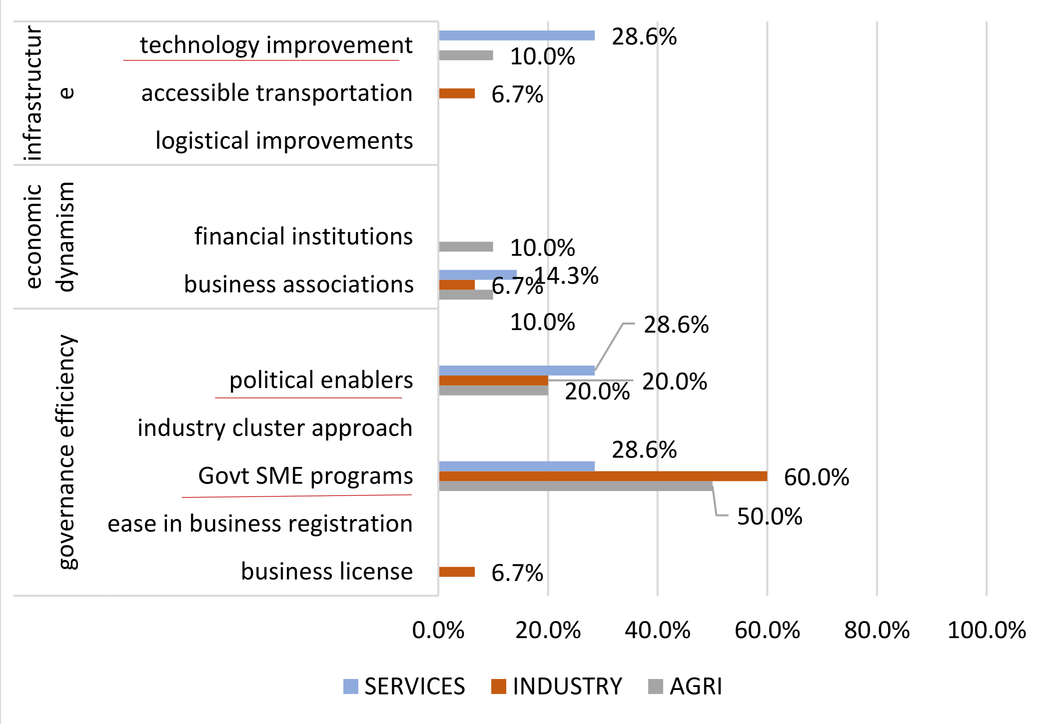


Figure 27. Institutional enablers, by sector

Source: author's computation

In terms of institutional enablers (**Figure 27)**, all sectors cited government SME programs as important to institutional enables for them to link to GVC. These programs, as expounded in section 4.a. of this chapter, are Kapatid Mentor Me Program, Shared Services Facility, and Go Lokal, among others. For Services SME, they also value the networks they formed after attending the mentorship program.

"I think the network. Like in DTI, I met other business people from Mentor Me. Some of the SMEs included there became my suppliers."
– Davao SME (Rophe's chicken), male, 28

Technology improvements are important enablers for SMEs to link to GVC.

"A really good internet connection. Linked-in is very good in linking with executives outside. In social media, I've got a lot of international events… There are also people in social media vouching for me."
– Davao SME (PREP Events), female, 32

For Industry SMEs, the shared services facility is deemed an important facility that they look forward in maximizing for them to link to GVC.

"The SSF is a big thing… But it Is not well incorporated with the needs of the industry, so I really asserted myself. There are many types of SSF: food and non-food." – Davao SME (Crystal Seas), female, 34

Overall findings from thematic analysis. In terms of institutions, it can be noted that policymakers tend to view political constraint as the top constraints in linking to GVC, among others. The top enabler cited by policymakers is seen to address this with the industry cluster approach. However, there are conflicting sentiments that ARMM is not integrated in the Mindanao Development Corridor which is seen to influence SMEs linking to GVC. That is, ARMM SMEs only take on support role instead of directly linking to GVC. Nevertheless, at the operational level, government SME programs are implemented to promote linkage of SMEs to GVC.

Goods (Agri and Industry) and Services SMEs have similar top institutional constraint, that is the political constraint given the recent declaration of Martial Law and history of armed conflict in the region. Although there is an agreement about the negative influence of armed conflict to SMEs linkage to GVC, there are mixed results when it comes to how the political climate is seen to influence SMEs linkage to GVC. On the one hand, SME linkage to GVC can be impeded by the declaration of Martial Law in Mindanao given the travel restrictions for foreign clients and shorter business hours due to curfew. This is particularly cited by SMEs in the Industry sector where physical inspection is required by international clients. On the other, SMEs, particularly in the Agri sector, view Martial Law as a good policy to minimize conflict. It is noted that Agri SME owners are prone to leaving perishable products behind in times of armed conflict. SMEs are also optimistic about the passage of the Bangsamoro Organic Law that they think will bring peace and development in the region, and therefore provide a better business environment.

Access to finance and inefficient government process are also cited as top constraints by the SMEs and even the policymakers. For Agri and Industry SMEs, not being able to respond to volume requirements for exporting is linked to lack of access to capital as it will require additional hectares of land (for Agri SMEs) and additional or bigger machines (for Industry SMEs). Aside from non-compliance of banks to mandatory loans for SMEs, the firm level constraint of SMEs should also be addressed such as training in preparing financial statements – an important requirement for SMEs to apply for bank loans. Nevertheless, it should be noted that, as seen in section 1 of this chapter, there are fewer banks in Mindanao compared with the other regional grouping. Inefficient government process affects all sectors of SMEs. For Services SMEs, delays in processing of government documents for travel of employees cause delays and incurs cost. For the Goods SMEs (Agri and Industry), not being able to secure certifications such as FDA and organic farming certification hurt their chances of joining trade fairs and more importantly, in exporting their products.

Overall, government SME programs are important enablers for SMEs to link to GVC. However, there needs to be more effort in facilitating the use of shared services facility for SMEs to be able to innovate – an important enabling factor for SMEs to export or subcontract. Moreover, further interagency collaboration with accrediting agencies is needed to address the bottleneck of SMEs in terms of FDA and organic farming accreditation, among others.

V. Conclusion and Recommendation

A. Summary

Small and medium enterprises are major contributor to a country's economy. In the Philippines, 99.6 percent of firms are micro, small, and medium enterprises (MSMEs) and contributes more than 60 percent of jobs. Specifically, for small and medium enterprises (SMEs), although only comprising 10 percent of total firms, they contribute a third of jobs from firms, which is comparable to jobs generated by large firms. However, SMEs are found in less productive sectors based on contribution to regional GDP. Moreover, there is a trend where lower number of SMEs per region also shows lower regional income. Indeed, it is crucial to increase productivity of SMEs. One path for increasing SME competitiveness and productivity is increasing their linkage to global value chains (GVC). However, SMEs are laden with distinct challenges such as traditional firm and entrepreneurial constraints. This can be further complicated by complex political economy such as in Mindanao – a region in Southern Philippines. Through resource-rich, has been plagued with history of armed conflict and where top poorest provinces are located.

Data shows that based on the 2015 ASPBI, only 11 percent of total SMEs are able to link to GVC. Out of these Philippine SMEs that are able to link to GVC, only 14 percent are from Mindanao. While 2015 CMCI scores show that cost of doing business in Mindanao is cheaper than Luzon and NCR, it is noted that basic utilities such as water and electricity for commercial use are higher in Zamboanga and Davao regions. Moreover, financial institutions are low in Mindanao compared with Visayas and

Luzon. Notably, Mindanao has the least number of banks while more of financial institutions present are those with lower financing capacity such as pawnshops, microfinance, savings and loans associations, and finance cooperatives. In terms of governance efficiency, less efficient business registrations exist in Mindanao regions compared with Luzon (i.e. Zamboanga, SOCCSKSARGEN, and Davao regions). It is interesting to note that these regions house major cities in Mindanao, and as such, the center of business activities. This suggests that indeed, in terms of quality of institutions, regions in Mindanao lag behind and can further be improved to provide a level-playing field for SMEs to be able to link to GVC.

Results of hypothesis testing shows that financial institutions and business organizations are significant institutions that influence Mindanao SMEs linkage to GVC. In terms of regression analysis, cost of doing business and armed conflict, are not significant institutional determinants for Mindanao SMEs linkage to GVC. However, there is a caveat that this is only true when economic and governance institutions are in place as evidenced by sectoral analysis and thematic analysis of interview results. The next section outlines the conclusion and recommendations of the study.

B. Conclusion

An important contribution of the study to the literature is in examining the quality of local institutions in a fragile and conflict-affected region at a subnational level and how it influences SMEs linkage to global value chains. Traditional firm theory such as the resource-based view highlights firm and entrepreneurial factors in determining how a firm's behavior. This study took an institutional-based view to investigate on the restrictive and facilitative institutions for SMEs to link to GVC in the context of Mindanao.

Findings show that financial institutions and business organizations are relevant institutional enablers while less efficient business renewal process is a relevant institutional constraint for Mindanao SMEs to link to GVC as well as cost of doing business where highest cost in basic utilities is in Mindanao regions. The study finds that the higher the armed conflict, the less likely the SMEs are in linking to GVC. However, the significant relationship diminishes when Mindanao SMEs economic and governance institutions are taken into account. In terms of regression analysis, cost of doing business and armed conflict, are not significant institutional determinants for Mindanao SMEs linkage to GVC. However, there is a caveat that this is only true when economic and governance institutions are in place as evidenced by sectoral analysis and thematic analysis of interview results. Results of interview shows that political environment in Mindanao can either restrict or facilitate SMEs linkage to GVC, depending on the location and sector of an SME. More SMEs in Cotabato City cited armed conflict as a constraint while more SMEs in Davao City cited the political environment and local chief executive as enabling factors.

In terms of economic institutions, regression analysis shows that financial institutions and business organizations have significant associations with SME linkage to GVC in Mindanao. However, using national data, it is noted that Mindanao SMEs linkage to GVC has negative relationship with financial institutions. Probing further, it is found out that this is because Mindanao has few financial institutions compared with the rest of the country. Just focusing on Mindanao SMEs, sectoral analys shows that those producing goods and SMEs bigger in size are more likely to link to GVC. However, it is also noted that Goods SMEs are located in areas with less financial institutions and less business organizations. Thus, despite the importance of these economic institutions for Mindanao SMEs linkage to GVC, results suggest that these institutions are lacking in Mindanao especially for sectors with higher potential of linking to GVC. Cost of doing business does not have significant association to Mindanao SMEs linkage to GVC when taking into account national data comparison. It should be noted, however, that cost of basic utilities are found to be most expensive in Zamboanga and Davao regions – two regions in Mindanao with greater business activities - compared with NCR and Greater Luzon. Moreover, sectoral analysis shows that although not significant, Agri SMEs tend to be be found in areas with higher cost of water and electricity compared with Industry SMEs. As such, reducing these costs of doing business can further promote Mindanao SMEs to linkage to GVC.

In terms of governance institutions relevant to SME linkage, business renewal efficiency has significant relationship with linkage to GVC of SMEs in Mindanao. However, the positive association of less efficient business renewal to number of Mindanao SMEs able to link is noted. Further probing on the sub-indicators show that this result is brought about by the fact that Mindanao SMEs able to link to GVC are more likely to be found in cities and municipalities with less efficient business renewal process. This do not have significant difference by sector which means that both goods and non-goods SMEs operate in areas with less efficient business renewal process.

In terms of political environment, results show that the higher the number of armed conflicts, the less likely the Philippine SMEs are in linking to GVC. This agrees with the result of the key informant interviews where it is noted that armed conflict and even perception of armed conflict in Mindanao affects the chances of Mindanao SMEs in getting export clients. In the case of Mindanao, although negative relationship still exists, armed conflict loses its significance as a factor in determining linkage to GVC when economic and governance institutions variables are taken into account. This suggests the role of institutions to provide a level-playing field for firms to operate and compete despite political changes and environmental fragility. Sectoral analysis of Mindanao SMEs show that industry SMEs are more likely to be in places with higher number of armed conflict than Agri sector.

Combination of results show that institutional determinants for Mindanao SMEs are also related with the other SMEs in the country. However, the difference is in the emphasis on how the institutions respond to the sectoral and firm-level needs of Mindanao SMEs given the political constraints. As higher cost of basic utilities and fewer financial institutions are in Mindanao, addressing these inadequacies in the business environment can address constraints of Mindanao SMEs in accessing finance, engaging in innovation, as well as complying with standards for accreditation – which are all necessary elements for SMEs (Mindanao or not) to successfully link to GVC. Indeed, strengthening of local institutions is crucial for SMEs to level up and link to GVC, no matter where it is located. However, strengthening of institutions according to the sectoral needs and context at the subnational level can provide more meaningful targeted recommendations to improve chances of SMEs to link to global value chains.

C. Recommendation

On Mindanao institutions being responsive to firm-level constraints of SMEs in linking to GVC, the study recommends the following:

1) Stronger support for capacitation of business organizations, and not just the entrepreneur. Business organizations are identified as strong institutional enabler for SMEs to link to GVC. Given the smaller firm size of SMEs compared with large enterprise able to export, forming an alliance together could provide a stronger footing in linking to GVC. In comparison with other regions, more business organizations are found in Zamboanga and Davao regions but less in other Mindanao regions. But more than the quantity of these business organizations, the more important aspect is their capacitation to enable SME members to link to GVC. As cited in the interviews, some cooperatives are not able to manage revolving funds more efficiently and thus result to failure with financing members. DTI through their Negosyo Centers can also come up with a Mentor Program where bigger business organizations can share experiences and mentoring for smaller business associations and cooperatives.

2) Loans matching for SMEs and financial institutions. It is noted that access to finance and capital remains to be one of the biggest firm constraints for SMEs. But this is complicated for Mindanao SMEs where insufficient financial institutions exist. On the side of SMEs, they do not have collaterals or complete financial documents to comply with the bank's requirements. Similar to business matching, the study recommends loans matching where Negosyo Centers can match the financial needs and available documents / requirements of an SME with another financial institution. As a directly attached agency of DTI, SBCorp loans and financing can be matched with the needs and

documentary requirements of SMEs. For this to happen, awareness raising both on the side of the Negosyo Center staff and SMEs are needed.

This process can be integrated in the modules for Mentor Me program to capacitate the SMEs to know more about the loan application process and prepare beforehand. This can also include DTI SME programs preparing the SMEs to address the negative spillover effects of armed conflict to them. Through mentorship and training programs, SMEs are able to learn how to prepare financial statements and business plans which may come in handy as important requirements by banks for emergency loans.

Apart from banks and SBCorp, DTI can also link SMEs with cooperatives with a stronger background in financing and loans. An example would be the First Community Cooperative (FICCO) that has loans designed to cater to Mindanao SMEs. (Appendix 10)

3) Skills transfer from DTI to business orgs on FDA and organic farming certification processing so they can capacitate their members. Although DTI Negosyo Centers implement relevant SME programs, their capacity is only limited and therefore, transferring skills and knowledge to cooperatives and business organizations to conduct more trainings can benefit more SMEs. Incentives for business organizations and cooperatives to conduct trainings can include subsidies for trade fairs at the domestic and international levels for SME members.

4) Further studies on the role of business councils and organizations in Mindanao SME Linkage to GVC. This study recommends further studies on the role of business councils and business organizations in Mindanao SMEs linkage to global value chains. As indicated in the limitation of this study, interview with the SME division of the Philippine Chamber of Commerce and Industry (PCCI) would benefit such further study.

5) Further study on ports and logistics as factors for Mindanao SME linkage to GVC. This study recommends further investigation on the exports and imports of SMEs through ports. As this study was not able to get the data of customs on SME exports and imports, further study can include this data for further probing. Consequently, a more thorough study on logistics as factors for SME linkage to GVC is recommended.

6) Further study on role of big business on Mindanao SME linkage to GVC and comparative studies with other countries. As subcontracting to exporters is one of the pathways towards SME linkage to GVC, a deeper probe with the “big brother” dynamics between smaller firms and big businesses can be further studied. This study recommends further look at inclusive business models such as the 1) Jollibee Foundation doing business with small businesses, and 2) San Miguel. Future comparative study with the 1) Thailand Business Initiative in Rural Development (TBIRD); 2) industry cluster approach of Korea; and 3) Taiwan SME approach is recommended.

VI. Implications

Given the findings, the responses to the five research questions of the study are answered in the following way:

On the firm-level constraints and enablers of Mindanao SMEs in terms of linking to GVC, innovation and selling through e-commerce are identified enablers of SMEs on linking to GVC. However, it is found out that Mindanao SMEs producing physical goods (Agri and Industry) are more likely to be innovators than Services SMEs. Among goods, Agri SMEs are less likely to engage in innovation compared with Industry. Firm-level constraints identified are access to finance, complying with volume requirements for exports and complying with accreditation standards.

On how formal institutions are responsive to the firm-level constraints of Mindanao SMEs in terms of linkage to GVC, it is noted that in terms of addressing two crucial firm constraints – access to finance and complying with accreditation standards - Mindanao institutions are not responsive. As findings show, there are insufficient financial institutions in Mindanao to cater to the financing needs of SMEs. Moreover, majority of these financial institutions are those with lower financing capacity compared with banks. In terms of accreditation standards, DTI has yet to launch a partnership with

FDA to capacitate SMEs in complying with accreditation. In terms of satisfying the volume requirements for exports, some Mindanao institutions are restrictive while others are not. The MinDC program of MinDA tries to address the issue on volume through the industry cluster approach by providing common services facilities. DTI also tries to link the SMEs to exporters, through business matching, to allow Mindanao SMEs to be subcontractors of existing exporters. However, these do not promote the direct linkage of SMEs to the GVC.

On business environment constraints and success factors of Mindanao SMEs in terms of linking to GVC, political factors in the business environment were both identified as constraints and enablers. Armed conflict is considered a constraint as well as Martial Law. In times of armed conflict, leaving behind perishable items is a problem more for Agri SMEs while shorter business hours and restriction in transportation time is faced by Industry SMEs. For Services SMEs, they are more affected by the negative perception of clients about armed conflict in Mindanao. But SMEs also cite the enabling aspect of Martial Law declaration in providing a more peaceful environment. An important success factor identified by SMEs is having a growth mindset coupled with having a strong internet connectivity. These are deemed important by most SMEs interviewed. However, they also complain of poor internet connectivity in their areas.

On how formal institutions are responsive to the business environment constraint of Mindanao in terms of linkage to GVC, addressing armed conflict takes a whole of nation approach and cannot be addressed by the local institutions alone. However, if the focus is on how institutions can address armed conflict's effect to SMEs, apart from improving logistics and transport in the corridors that facilitate transport of products, the DTI SME programs prepare the SMEs to address the negative spillover effects of armed conflict to them. Through mentorship and training programs, SMEs are able to learn how to prepare financial statements and business plans which may come in handy as important requirements by banks for emergency loans.

On how formal institutions influence Mindanao SMEs in linking to GVC, financial institutions and business organizations are significant institutional enablers for Mindanao SMEs to link to GVC. Moreover, making business renewal more efficient for SMEs is imperative given that Mindanao SMEs with linkage to GVC are prone to be in cities and municipalities with less efficient business renewal process.