



# Identifying Business Potential for Small and Medium-Sized Enterprises (SMEs) Based on Developmental Plans in Penang, Malaysia

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**Abstract:** This study aims to identify the business potential possibilities for small and medium-sized enterprises (SMEs) and explore the ways in which such businesses and state, regional and national economic development planning may interact. Drawing insights from Penang's development plans and/or blueprints, this paper generates a typology of such plans and maps them accordingly in terms of economic sector. In capturing the national and state development plan and/or policies for its economic progress, research methodology through a content analysis was done by referring to the documents issued by Penang and national agencies. The strategies will help equip a way forward for SMEs to grow in response to these development plans. By participating in the main economic sectors this strategy will directly bring benefits for SMEs' as they will be able to have wider access to markets, including government programs and incentives. When SMEs align their business model with what an economy is trying to achieve policy-wise, this endeavor will to a certain extent mitigate the common challenges that hinder SMEs' growth.

**Keywords:** SMEs, Penang's development plan, business strategies

## 1. Introduction

In many economies, governments play an important role in stimulating entrepreneurship and encouraging SMEs (Small and Medium-sized Enterprises) to grow (Fakhreldin, 2015). In essence, from around 62 in 2006 to 134 in 2018, the number of nations with a national economic development plan on SME has more than doubled. More than 80% of people in the world reside in nations that have such a plan in some shape or form (Chimhowua, Hulmeb & Munroc, 2019). It has been estimated that approximately one-quarter of all support programmes in the Organisation for Economic Co-operation and Development (OECD) countries primarily target SMEs (OECD, 1997). Since SMEs account for more than 90% of businesses, 50% of employment worldwide and contribute up to 40% of national income (GDP) in emerging economies (The World Bank, 2015), these figures explain why governments have generally prioritised policies relating to SMEs.

SME development requires a crosscutting strategy (Hallberg, 2000). In effect the success of a small business depends on the ability of governments to implement sustainable macroeconomic policies, the ability of stakeholders to devise conducive microeconomic business environments, and SMEs have the ability to develop competitive operating procedures, business strategies, and practices (Hallberg, 2000). Accordingly, a fundamental issue that continually demands the attention of policymakers concerns the drivers of economic performance in the SME sector (Doh & Kim, 2014). Over the years, a variety of arguments were put forward to address this issue. It is often contended that governments support SMEs because of their greater economic benefits compared to large firms, such as corporations - in terms of job creation, efficiency, and growth (Doh & Kim, 2014; Hallberg, 2000). In addition to this, other

researchers do infer that SMEs should be competitive and productive. They must be able to respond quickly and efficiently to take advantage of trade and investment opportunities (OECD, 2004). The review of market orientation explains market-driven strategic resources that enable SMEs to respond beyond simply satisfying their customers or client base. It also explains the SMEs' capacity to refigure and configure their strategies so that they can deal with changing business or industry dynamics (Doh & Kim, 2014). While government policies can boost or consolidate SMEs' market orientation (Dobscha, Mentzer & Littlefield, 2015; Jabeen, Aliyu & Mahmood, 2016), how SMEs could and are able to identify the potential business opportunities or gaps in a given market, will be the critical first step in this entrepreneurial process (Shane, 2012).

SMEs form a significant proportion of the commercial landscape and have long been the backbone of Asian economies (OECD & World Bank, 2020). Not only do SMEs contribute to the economic development of a country, the level of their success also acts as a justification of government policy in nurturing entrepreneurial activities (Nasir, Al Mamun, & Breen, 2017). In Penang, the post-1969 economic policy of industrialisation, which has been promoted to this day, has not only encouraged foreign direct investment and created employment opportunities for its people. It also opened up opportunities for local entrepreneurs, especially those operating small and medium-sized businesses that have links to foreign multinational companies (Athukorala, 2017). Mindful of the importance of SMEs, the Penang Skills Development Centre (1989), Penang Strategic Development Plan (1991), and the Second Penang Strategic Development Plan (2001) were devised at the state level to demonstrate a commitment to the expansion of SMEs (Chik, Selvadurai & Er, 2013).

Over the years, the Penang authorities have set out to promote the potential contribution of SMEs to economic growth. The Penang Structure Plan 2020, Penang Structure Plan 2030 and The Northern Corridor Economic Region Strategic (NCER) Development Plan formulated specific strategies for the development of SMEs. However, a study conducted by the National Higher Education Research Institute (2010,p.22) revealed that SMEs have not fully utilised their potential. A more concerted effort by the relevant agencies is needed to help SMEs achieve better access to opportunities and better develop their products and services to be more competitive. For this reason, it is crucial to identify the deliberate strategies SMEs should implement as commercial enterprises to realize their true potential and operate in tandem with government policies (Saleh & Ndubisi, 2006). This issue motivates this research to identify business opportunities for SMEs drawing from Penang's future economic plans. Through content analysis, this study generates a typology of the national plans and maps them with industries and discusses additional ways for SMEs to make progress in tandem with these development plans.

This study advances the literature in two specific ways. Firstly, it moves beyond academic discourse which largely deals with SMEs and how governments and aid agencies can best encourage their development. Numerous important research has shown that government assistance is essential for improving the performance of SMEs (see Hallberg, 2000; Mohammad & Hoque, 2018; Pruthi & Wright, 2016; Songling, Ishtiaq, Anwar & Ahmed, 2018; Tahir, Batool, & Takrim, 2016). This study instead endeavors to identify the potential business areas that enables SMEs to benefit from the Penang and Malaysian governments' economic plans. Secondly, other studies posit that while research on entrepreneurship has burgeoned in recent years, how SMEs identify opportunities backed by government policies has not received adequate attention in the literature (Karlesky, 2015; Shane, 2012). In fact, there is growing evidence that it has implications not only for how SMEs respond to the economic plan but also on how the SMEs can make progress in tandem with such development strategies (Doh & Kim, 2014). In this sense, this study fills the gaps in our knowledge by discussing and documenting the way forward for SMEs' growth in response to such economic policies. It is noted that SME development strategies will necessarily be country- and context-specific. Each nation has its own conditions, challenges, prospects and significances in which change can occur. Resources available for implementation will vary from country to country, so the end results will inevitably differ (OECD, 2004). Consequently, it is misleading to assume there is homogeneity in the strategic orientations that countries' governments pursue (Rauch, Wiklund, Lumpkin, Frese & Practice, 2009). As such, the findings presented in this paper generate important insights into the best strategies that should be implemented for the circumstances prevailing in Penang, so that SMEs as well as foreign investors can engage in various economic activities in line with government policies.

The paper is organised as follows. Following this introduction, the second section provides an overview of the current state of Penang's economy and business sectors. This section also documents the Penang state plan and/or policies that will enable economic progress. A content analysis was conducted paying special attention to the relevant documents/and or blueprints issued by Penang's authorities and agencies. The third section identifies business opportunities for SMEs, while the fourth section discusses a way forward for SMEs growth drawing from the economic developmental plans. Section five is the conclusion, and it summarizes the key points articulated in this paper.

## 2. Overview of Penang's Economic Performance and Business Sectors

Nestled along the northwest coast of Peninsular Malaysia, Penang state covers a total area of 1,031 km<sup>2</sup> and has a population of 1.8 million in 2021. It is one of Malaysia's smallest states (Penang Institute, 2021a). As early as the 1970s, from a traditional seaport economy that has now turned into a 'Silicon Valley'-type economy, Penang is one of the first economies to create a free trade zone in East Asia. Currently, Penang is considered a leader in manufacturing activities and is the growth center for northern Malaysia. Based on this brief outline of the state's development, this

section provides an overview of Penang’s economic and business sectors which also presents an overview of SMEs and their future in the area’s economic development.

### 2.1 Penang’s Economic Performance

Penang has demonstrated good economic achievements relative to the country’s accomplishments in the last few decades. In the early 1970s, Penang’s per capita of GDP (Growth Domestic Product) was about 10% lower than the national average. However, with the main contribution of the manufacturing sector this grew at an annual rate of 11.6% between 1971 - 80, and it is far exceeding the national figure of 8.4% in the same period (Salih & Young, 1987). Within a few decades this rapid export-led growth made Penang the richest state of Malaysia (Athukorala, 2011). In 2010, Penang’s per capita GDP was MYR 33,597 (Department of Statistics, n.d), so it was in effect 57% higher than the national average and 30% higher than Selangor (Athukorala, 2011). Since 2014 Penang has exceeded real GDP per capita among Malaysia’s 13 states (Leng, 2020), as depicted in Fig. 1 below.

From 2015 to 2018, Penang's real GDP per capita increased at a 4% yearly rate, reaching over RM52,000 in 2018, up from RM46,000 in 2015. Penang's real GDP per capita is just slightly lower than those of the two federal territories, Kuala Lumpur and Labuan. Penang has a far higher level of living than Selangor and Johor, Malaysia's two other highly industrialized states (Leng, 2020). The state's GDP growth rate fell by 0.3 percentage point to 5.3% in 2017, owing primarily to a negative 10.1% growth rate in construction (Penang Institute 2019). However, it recovered in 2018 and achieved a GDP of 5.1% (see Fig. 1). Penang's economic growth slowed to 3.8% in 2019, down 1.3 percentage points from the previous year's rate, owing to slower growth in the industrial and services sectors (Penang Institute, 2020b). The disruptions of the COVID-19 pandemic resulted in Penang’s GDP registering a negative GDP growth of -2.1% in 2020, yet the state posted better growth than the national GDP of -5.6%. In summary, Penang managed to achieve GDP per capita of RM54,718 between 2016 and 2020, exceeding the national average of RM43,378 and is anticipated to register an average annual growth rate of 5.4% between 2021 and 2025 under the 12th Malaysia Plan (12MP) (Economic Planning Unit, 2021).

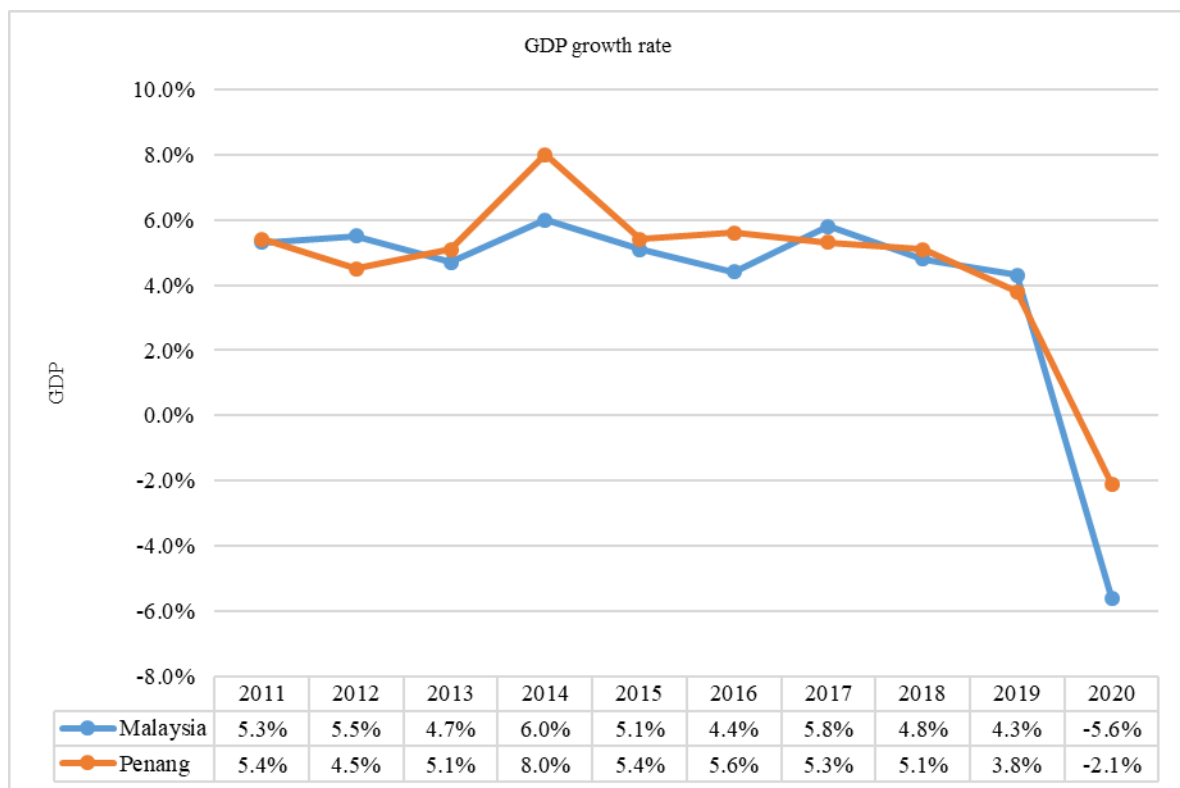


Fig. 1 - GDP Growth in Malaysia and Penang, 2011-2020 (based on 2010 constant prices)

Sources: Kim-Hwa & Han (2016) and Penang Institute (2019)

## 2.2 Performance of the Penang Business Sectors

The major contributors to Penang's economic growth rate are manufacturing, in particular the electrical and electronics (E&E) services sector such as utilities, telecommunications, tourism, followed by construction, agriculture, mining and quarrying (see Table 1). Since 2005, the manufacturing sector constituted well over half (54.6%) of Penang's total GDP (Penang Institute, 2016). However, its percentage fell to 45.9% in 2010, and then to 42.8% in 2019. In turn, services activities grew in importance and enjoyed moderate growth as a proportion of state output, surpassing manufacturing growth. In 2019, the services sector remained the key growth engine for Penang's economy, contributing for 51.4% of the state's GDP. This tendency is consistent with the economy's maturity and the Penang state government's desire to converge the industrial and service industries through shared services and outsourcing-related enterprises. This effort is a critical step toward lifting Penang's households out of the middle-income bracket (Lee, 2015).

**Table 1 - Percentage share of economic activity to Penang's GDP (2010-2019)**

Economic activity	2010	2011	2012	2013	2014	2015	2016	2017 <sup>1</sup>	2018	2019 <sup>2</sup>
Agriculture	2.4	2.4	2.4	2.4	2.3	2.2	2.0	2.0	2.2	2.2
Mining and quarrying	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Manufacturing	45.9	45.2	43.9	43.5	44.1	44.7	44.7	44.6	43.3	42.8
Construction	2.8	2.8	3.3	3.1	3.2	3.0	3.1	2.6	2.9	2.8
Services	48.3	48.9	49.6	50.2	49.5	49.1	49.2	49.3	50.6	51.4

<sup>1</sup> GDP 2010 -17 (at constant 2010 prices)

<sup>2</sup> GDP 2018 - 19 (at constant 2015 prices)

Sources: data compilation from Penang Institute (2019) and Penang Institute (2020b)

The agriculture sector contributes very little to Penang's GDP, and in fact this share of the sector dropped from 2.4% in 2010 to 2.2% in 2019. Such small contributions were mainly associated with Penang's highly industrialised economy, limited land size and in the meantime a decline in overall agricultural land use. Nonetheless, through links with the manufacturing sector and connecting the poor along the agricultural supply chain, this sector continues to play an important role in overall growth and poverty reduction (Penang Institute, 2019). Similarly, the contribution of the construction industry to Penang's GDP has been persistently low. This sector shrank by 2.6% in 2017, owing primarily to a decline in residential, non-residential, and special trade activities (Penang Institute, 2019). Meanwhile, the mining and quarrying sector contributed less than 1% of Penang's GDP in 2019 and this has not improved considerably since 2010.

### 2.2.1 Manufacturing Sector

In Penang, it is not possible to discuss the diversified manufacturing business sectors without reference to the evolution of Bayan Lepas Free Industrial Zone. For nearly five decades, the manufacturing sector has been Penang's and the country's economic backbone, with the big chunk of income from manufacturing once the colonial-era free-port status was removed in 1969 by the federal government (Penang Institute, 2019). As demonstrated in Table 2 below, the investment in manufacturing has developed beyond the electrical and electronics industry, and expanded to related segments, such as medical devices and new technology.

The establishment of the Bayan Lepas FIZ in 1972 may be seen as a watershed moment in Penang's industrialisation and the beginning of the state's electrical and electronics sector cluster. The initial wave of the electronics sector in Penang saw the establishment of semiconductor plants by international corporations focusing on simple assembly operations (Chai & Im, 2009). The entry of the eight pioneer foreign companies also known as the Eight Samurai<sup>1</sup>, provided a network of ancillary industries that emerged to meet their requirements, in particular stamped metal components, automation equipment, gigs and fixtures, machine tools, and molded rubber products. This industrialisation has opened opportunities for local entrepreneurs, especially those operating small and medium-sized

<sup>1</sup> Known as the 'Eight Samurai' (PDF), these companies drove the industrialisation of Penang. The first MNC (multinational corporation) to set up in the Free Trade Zone (FTZ) in the northern Malaysian state of Penang was National Semiconductor, followed by Advanced Micro Devices and Intel in 1972. Other early arrivals were Osram, Hewlett-Packard (HP), Bosch, Hitachi Semiconductors and Clarion (see Athukorala 2011).

enterprises (SMEs) as support industries for foreign MNCs (Multi-national Companies) (Lim, 1991)<sup>2</sup>. Many MNCs and SMEs then became more prominent over time, resulting in a large pool of local tooling and equipment manufacturing firms expanding (Athukorala, 2011).

**Table 2 - Key milestones and main business of industries in Penang**

Years	Main business sectors
1970s	Simple components, semiconductor parts assembly and semi-knocked down (SKD) electrical products
1980s	Consumer electronics parts to full assembly
1990s	Office & computer equipment (including hard disk drive), transition to research & development (R&D) activities to move up value chain
2000s	Optoelectronics, medical devices, wafer fabrication, integrated circuit design, R&D operations
2010s	Low volume, high complexity & high mixed products to stay competitive, higher value-added products/ activities
2020 or Current	Sensors, IoT, cloud computing, wireless electronics, nano technology, SMART Electronics, 3D integration, smart grid advanced energy, storage, fables

Sources: adapted from Lin and Yap (2020), PenangInvest (2021) and Rasiah (2017)

Penang had a well-established export cluster by the mid-1980s, with a substantial number of branch factories of major electronics and electrical MNCs and a network of supporting businesses. Penang thereafter became the world's top exporter and the third largest semiconductor assembler after the United States and Japan (Athukorala, 2011). Following the industrial growth and export performance, Penang is often dubbed the Silicon Valley of the East (Palacios, 1995). From the late 1990s a number of MNCs, including Sony, Sanyo, NEC and Dell established assembly plants for consumer products, such as car stereos, hi-fi equipment, calculators and telephones. Other major players in this industry, including Seagate, Maxtor, Hitachi Metals, Control Data, Applied Magnetic and Conner Peripherals, set up assembly plants in Penang (Mckendrick, Doner, & Haggard, 2003). With the advent of disc drives, local industry began to manufacture disc drive components, which necessitate a high level of precise engineering technology. In addition, the industry improved and rebuilt machines based on imported prototype machinery for both local and regional markets (Athukorala 2017).

Since 2000 onwards the production base has begun to diversify into a number of electronics-related dynamic product lines. More investments were seen in optoelectronics, medical devices, (PenangInvest, 2021), integrated circuit (IC) design, and R&D operations (Rasiah, 2017). Firms in Penang also engaged in wafer fabrication as well as in chip, process and product and system design. Forward linkages to consumer, industrial and military electronics users have been devised along with backward linkages with moulds, plating, packaging, bonding, lead frames, precision materials, testing and R&D (Kharas, Zeufack, & Majeed, 2010). In the context of optoelectronics, international players in the light-emitting diodes (LED) industry have made significant inroads into the Penang export hub. Such activities are driven by increased LED penetration rates in mobile handsets, notebooks, LCD (liquid crystal display) televisions, automotive and general lighting (Athukorala, 2017). For the medical services and equipment industry, a number of newcomers have entered the industry. With six of the world's top 25 medical devices operations, Penang is home to one-third of medical device companies in Malaysia (Ming, 2020).

Under the Third Industrial Master Plan, Penang was approved for Multimedia Super Corridor status in 2006, which allowed firms in Penang to import human capital for their operations. As a direct result of these policies, a number of firms moved wafer fabrication, Integrated Circuit (IC) design, and research and development (R&D) operations in Malaysia. The number of semi-conductor firms performing these functions in Malaysia rose from 0 in 1999 to 11 in 2014, which mainly operated in Penang (Rasiah, 2017). From 2010 onwards, companies moved from high-volume low-mix to high-mix low-volume operations to stay competitive (Lin & Yap, 2020) or expanded into

<sup>2</sup> Former Intel employees established LKT Engineering, Globetronics, Shinca, Shintel and Unico, and former Motorola employees set up Loshita and BCM Electronics. Other local firms such as Eng Teknologi and LKT Engineering expanded their operations and benefited from the vendor development program launched by Intel and other MNCs (Athukorala 2017)

more highly value-added manufacturing operations (Penang Institute, 2016). Penang has overtaken the Klang Valley as the leading region for patents granted to Malaysians. In fact, Penang generated 37% of all patents compared to only 29% from the Klang Valley during this period (Kharas et al., 2010).

Currently, Penang is gearing up to take advantage of the Industrial Revolution 4.0, which covers various aspects of automation and data exchange in manufacturing technologies. The Internet of Things (IoT) - the integration of computing into devices and connecting them to the Internet through cloud data - has emerged as the main focus of some companies such as Intel Penang (Penang Institute, 2016). Western Digital, as Malaysia's first Lighthouse, is working with other industry leaders to revitalize the country's manufacturing industry. These include utilizing artificial intelligence, robotics, automation, advanced analytics and the Internet of Things (The Edge Markets, 2021).

### 2.2.2 Services Sector

Compared to other states in Malaysia, Penang's economy is uniquely driven by both manufacturing and services sectors in boosting the economic growth. The growth of the services sector in 2019 is supported mainly by accommodation, food & beverage service activities (8.30%), and business services (8.30%), followed by transportation and storage (6.9%) (see Table 3).

**Table 3 - Major contributors and growth of Penang services sub-sectors 2019**

Sub-sectors of services	Sub-sectors of services growth in 2019
Accommodation and food and beverage service activities	8.30%
Business services	8.30%
Transportation and storage	6.90%
Information and communication	6.80%
Wholesale and retail trade	5.90%
Private health services	5.60%
Financial and insurance/takaful activities	5.00%
Administrative and support service activities	2.50%
Education services	2.10%
Real estate activities	1.70%

Source: Department of Statistics (2020)

Next, telecommunications service activities recorded a growth rate of 6.9% which was driven by internal demand data communication services. Social media platforms like WhatsApp, Facebook, Twitter, YouTube and apps internet banking also stimulate demand for these kinds of services. Wholesale and retail trade contributed 5.9% and private health services contributed 5.6%. Financial and insurance/takaful activities have recorded 5.0% growth, supported by monetary intermediation activities, while insurance is growing faster driven by the life insurance industry. Of the services sub-sectors, administrative and support service activities recorded 2.5%, while education services recorded 2.1% and real estate activities 1.7%, respectively.

In this services sector, Penang attracts millions of tourists each year in this sector because to its unique cuisine, rich mix of cultures and traditions, ancient historical enclaves, and attractive beaches. Furthermore, eco-tourism, cruise tourism, wedding tourism, education tourism, and meetings, incentives, conferences and exhibitions (MICE) tourism also play significant roles in encouraging economic growth (Penang Institute, 2020b). With the creation of new businesses in the food, retail, and accommodation industries, this sector provides more employment opportunities to Penangites. As a spill-over effect, the small business sector will be invigorated by trade, income, and entrepreneurship.

Medical tourism has emerged as one of the main sub-sectors that has significantly contributed to tourism revenue (Penang Institute, 2020b). Penang heads the list in healthcare travel revenue, earning RM750 million from 500,000 patients who flew to the state in 2019, as reported in the Malaysia Healthcare Travel Industry Blueprint 2021-2025. There are only 18 private hospitals in Penang, while Selangor has 54 and Kuala Lumpur has 44. However, Penang is recognized in the Blueprint as being the "most established state in healthcare travel" (Chern, 2021). In 2019, Indonesian travelers comprised the highest number at 65.8%, followed by healthcare travelers from China (5.1%), India (3.1%), the United Kingdom (2%), Japan (2%) and other countries such as Australia, Singapore, the Philippines, the United States and Bangladesh (Chern, 2021). Most Indonesian 'health tourists' firmly place Penang as their first choice due to its closeness, minimal language barrier and low cost (Penang Institute, 2016).

### 2.2.3 Agriculture Sector

Although agriculture contributes only around 2% to Penang's GDP, the sector functions as a food supplier, employment provider, export earner, and provider of raw materials for agro-based industries (Penang Institute, 2019). Basically, the agriculture sector consists of three main activities, these being crop farming, livestock farming and fisheries (Penang Green Council, 2020). Regarding crop farming, these subsectors of agriculture in Penang include rice, fruits, coconuts, vegetables, cash crops, spice crops, sugar cane, and others, depending on the land use. Penang produces the second-highest yield of rice in Malaysia, behind Sekinchan in Selangor, even though paddy farming is the country's primary agricultural sector (Penang Green Council, 2020). Seberang Perai, one of Peninsular Malaysia's ten main granary areas and the centre of paddy cultivation, makes a substantial contribution to the domestic production of the nation. Paddy production currently occupies 12,782 hectares of land, or close to 30% of the state's total agricultural (crop sub-sector) land use (Penang Institute, 2020a).

Other economically important agriculture activities in Penang are fruits, especially durians and pineapples - planted mainly in the Seberang Perai Tengah and Seberang Perai Selatan districts, respectively. However, Penang's total crop land use has decreased from 19,569.3 hectares in 2014 to 17,946.4 ha in 2018, primarily as a result of a sharp fall in the use of fruit and coconut land (Penang Institute, 2020a). Such decline is due to the increase in amounts of land set aside for residential and development purposes and competition from other sectors (Penang Institute, 2020a).

Along with the growing planted area, vegetable production in Penang is facing an upward trend at the same pace. The 57.2% increase in output from 2009 to 2017 indicates that Penang's vegetable sub-sector is growing (Penang Institute, 2020b). Despite having a very small market share, organic production is one of the Penang vegetable sub-fastest-growing sector's areas due to advancements in production management and technology. (Penang Institute, 2020a). Meanwhile other crops in particular cash crops, spices crops and others only involve small areas in Penang due to limited land allocated to agriculture. This is especially the case for those near existing urban centres mainly due to urbanization, thus reducing the availability of farmland for food (National Higher Education Research Institute, 2010).

Another major contributor to Penang's agriculture industry is the livestock sector, which is divided into two main categories: firstly, ruminants including cattle, sheep, goat, and buffalo; and secondly, non-ruminants encompassing chickens, ducks, pigs, and eggs (Penang Institute, 2019). The latter sub-sector, especially poultry and pigs, has grown in recent years yet the former sub-sector has not. Currently, an intensive farming system is used for poultry and pigs but not the others, which results in high reliance on imported ruminant products (Penang Green Council, 2020). The non-ruminants sub-sector is characterized by well-developed technology and a heavily involved private sector, in contrast to the ruminant sub-sector (Penang Institute, 2020b). Despite the fact that the livestock sector has grown gradually over the years, the industry has proven difficult to work in. About 31.8% of farmers have left it since 2014, leaving only 1,390 livestock breeders in Penang by 2018 compared to 1,978 in 2010. Interestingly, the number of livestock rose slightly from 13.2 million to 13.5 million by 2018 (Penang Institute, 2020a). The next subsector of agriculture is the food fish sector, and in terms of revenue, it may be divided into three categories in 2019; marine capture fisheries (77%), aquaculture fisheries (22%), and inland fisheries (0.3%) (Penang Green Council, 2020).

For many years, the fisheries industry in Penang has played an important role in poverty reduction, especially among coastal communities, and this has helped to achieve some level of food security. Fishing in Penang remains a livelihood for traditional fishermen. In 2016, the fisheries sector provided direct employment to 4,973 fishermen, 444 culturists, and 1,872 workers in the aquaculture industry. Out of 7,289 people working in the fisheries sector, 6,124 (84%) are local (Penang Institute, 2019).

### 2.2.4 Construction Sector

In the case of Penang, this sector is primarily driven by residential and non-residential buildings, as well as the industry's top sub-sectors in both general and specialty trade activities. In 2018, non-residential construction accounted for more over 42% of the total value of construction activities, followed by residential building at 41% (Penang Institute, 2019). Overall, Penang's construction industry shrank by 3.8% in 2018, primarily due to a slowdown in supply and weak demand (Leng, 2020). Residential houses with overhangs are still a major concern. In the higher-end category, there are a lot of completed residential units that are yet unsold. 3,929 overhang units totaling RM3.26 billion were reported as of Q2 2019, with 58% of them having a value of RM500,001 or more. In other words, up to 42% of houses priced at less than RM500,000 are still available (Leng, 2020).

### 2.2.5 Mining and Quarrying Sector

The mining and quarrying sector's share, on the other hand, still accounted for less than 1% of Penang's GDP in 2019; this has not changed significantly since 2010. This sector's activity is concentrated on Seberang Tengah and in 2015 only 1,550 worked in it (Department of Statistics, 2021).

## 2.3 An Overview of SMEs in Penang

SMEs are integral drivers of Penang's economy, making up a staggering 99.0% of all business establishments<sup>3</sup>. The contribution of SMEs in the agriculture sector to the economy is relatively small, standing at less than 1.0% across all parameters (see Table 4), which mirrors the contribution of the sector to Penang's GDP. However, considering the contribution of the manufacturing sector and services constituted share is about half of the Penang's GDP, this does not reflect SMEs across sectors which deliver for the Penang economy. Most of the SMEs' contributions to the economy are largely derived from the services sectors (88.2%) compared to manufacturing at 5.9%, respectively.

**Table 4 - Contribution of Penang's SMEs according to the economic sectors, 2015**

Contribution	Sector*	Agriculture	Construction	Manufacturing	Services	Total contribution
Contribution of SMEs to Penang's industry sectors		0.7%	4.1%	5.9%	88.2%	98.9%
<u>Number of establishments:</u>						
Total		486	2888	4191	59997	67562
Proportion of SMEs		470	2804	4021	59600	66895
% of SMEs based on industry sectors		0.7%	4.2%	6.0%	89.1%	
<u>Composition of SMEs</u>						
Micro		224	1242	1862	47779	51127
Small		190	1217	1946	10907	14260
Medium		56	345	213	894	1508
Number of persons engaged in SMEs		0.6%	6.8%	16.0%	39.5%	62.9%
Salaries and wages paid in SMEs		0.4%	5.5%	14.6%	28.1%	48.6%
Value added		0.6%	2.9%	13.0%	31.3%	47.8%

\* Sectors contribution excludes the mining and quarrying industry which has a much smaller presence in comparison to the other sectors (29 establishments with a workforce of 1,550 persons), and therefore is not considered in detail here

Sources: Penang Institute (2020b) and Penang Institute (2021b)

While SMEs in Penang collectively account for 99% (66,895) of all establishments, a large of 89.1% (or 59600) of SMEs are involved in the services sectors. Only 6.0% or 4191 SMEs were involved in the manufacturing sector, which is followed by 4.2% (2804) in the construction sector, and 0.7% (470) in agriculture. Concerning SMEs definition, they are generally divided into three sizes, namely micro, small and medium-sized industries, based on the total annual sales turnover and number of employees. In this breakdown, most SMEs in the services sectors are dominated by micro enterprises that consist of 47,779 establishments, followed by small enterprises (10,907) and medium-sized enterprises (14,260). This pattern and number are similar to those businesses working in agriculture. However, for the manufacturing sectors, small SMEs dominated it and they are followed closely by micro-SMEs. In the meantime, the share of the micro and small SMEs is very similar in the construction sector.

In terms of added value, services sector SMEs accounted for approximately one-third of the sector's overall contribution to the economy, and they were also responsible for 39.5% of the workforce. Comparatively, manufacturing SMEs contributed almost half of SMEs services' added value, salaries and wages paid and number of persons employed. Agriculture contributed the least to economic performance across all parameters.

## 3.0 Research Methodology

This section highlights research methodology employs by this study. Content analysis is a research tool used to determine the presence of certain words, themes, or concepts within some given qualitative data (i.e., text). Using content analysis, researchers can quantify and analyze the presence, meanings, and relationships of such certain words,

<sup>3</sup> Department of Statistics Malaysia (2016), Economic Census, Penang. Figures referring to SME establishments in this report are based on the latest available data, which would be for the year 2015, unless otherwise stated.



themes, or concepts. Sources of data could be from interviews, open-ended questions, field research notes, conversations, or literally any occurrence of communicative language (such as books, essays, discussions, newspaper headlines, speeches, media, historical documents). In capturing the state plan and/or policies for its economic progress, research methodology through content analysis was done by referring to the documents issued by Penang authorities and national agencies, in particular:

- i. The Penang Structure Plan 2030 (Rancangan Struktur Negeri Pulau Pinang 2030), issued by PLANMalaysia@Pulau Pinang, which cover development for Penang State (Pulau Pinang Town and Country Planning Department) (PLANMalaysia@Pulau Pinang, 2021),
- ii. The Draft Seberang Perai Local Plan 2030 (Draf Rancangan Tempatan Seberang Perai 2030), issued by Seberang Perai City Council, which covers development of Penang's mainland, specifically Seberang Perai Utara, Seberang Perai Tengah and Seberang Perai Selatan (Seberang Perai City Council, 2022)
- iii. The Northern Corridor Economic Region Strategic (NCER) Development Plan (2021-2025) (NCER, 2020).

While these blueprints are essential in charting Penang's future social and economic development, the concern is focused to the latter since this study focuses on the business potential for SMEs. In extracting Penang's future development plans, this study concentrates on the policies and strategies that are linked to Penang's main industries, urban development and rural settlements. The policies and strategies that directly address SMEs' development are also considered. In mapping Penang's future development, many policies target surrounding services, manufacturing, agriculture and construction activities (see Table 5). Less consideration has been given to mining and quarrying sectors because they have accounted for less than 1% of Penang's GDP since 2010.

**Table 5 - Mapping of Penang's future development plan and/or policies corresponding to the economic sector and SMEs industry**

Sectors Blueprints	The Penang Structure Plan 2030	The Draft Seberang Perai Local Plan 2030	The NCER Development Plan (2021-2025)
Services	<ul style="list-style-type: none"> <li>▪ Tourism Development Goals</li> <li>▪ Development of Communication and Transportation System Goals</li> </ul>	<ul style="list-style-type: none"> <li>▪ International-level of tourism</li> <li>▪ Main regional logistics center</li> <li>▪ Comprehensive and efficient road network</li> <li>▪ Smart technology telecommunications</li> </ul>	<ul style="list-style-type: none"> <li>▪ Penang Transport Master Plan (PTMP)</li> <li>▪ Road &amp; Highway Network</li> <li>▪ Tasek Gelugor Rail Infrastructure</li> <li>▪ Penang Port Expansion</li> <li>▪ Promoting tourism</li> </ul>
Manufacturing	Industrial Development Goals	Value added industry	High value-added manufacturing
Agriculture	Agricultural Development Goals	Productive agriculture	Agricultural Development Goals
Construction	Provision of Housing and Community Facilities Goals	Sufficient, good quality, safe and vibrant housing	-

Sources: NCER (2020), PLANMalaysia@Pulau Pinang (2021) and Seberang Perai City Council (2022)

## 4. Penang's Future Development Plans

This section highlights development strategies and policies that address Penang's economic development for its long-term sustainability and prosperity.

### 4.1 Policies and Strategies Related to Services Sectors

In developing the services sectors, one of the main concerns that has been addressed in the blueprints is to expand tourism. The Penang Structure Plan 2030 is aiming to increase the number of tourists from 6,848 in 2015 to 7,735 by 2030. In realizing Tourism Development Goals, the Draft Seberang Perai Local Plan 2030 has outlined upgrading the urban tourism cluster, and tourism associated with history/heritage, culture and nature. The urban tourism cluster

involves sports, medicine, education and MICE (meetings, incentives, conferences, and exhibitions) activities, while the historical, heritage and cultural cluster deals with those self-evident events and food-related tourism. Nature tourism is more concerned about recreational tourism in the environment and some aspects of agriculture or farm work. Holistic tourism support facilities will be set up by developing an integrated hub (Penang Sentral) equipped with an information center, facilities and one-stop shop for local entrepreneurs advertising tourism goods and services.

In promoting tourism, the NCER Development Plan (2021-2025) will emphasise Nibong Tebal as an ecotourism and agro-tourism destination - Black Thorn durian has great potential as a tourism product for the mainland. Other activities such as Balik Pulau ecotourism, Guar Kepah Archaeology site and Penang hill cable car were set up to be attractive aspects of tourism. Sports tourism will be developed in Batu Kawan - Simpang Empat. Sky cab at the Butterworth and George Town Development will be developed, while an eco-extreme park will be planned for the Tok Kun Recessed Amusement Forest, exploration park at the Bukit Panchor State Forest Reserve and forest education at the Ayer Item Dalam will be improved.

Under the development of communication and transportation system goals, the Penang Structure Plan 2030 will increase the operational capacity of terminal buildings at Penang's International Airport, Northern Butterworth Container Terminal, Swettenham Pier Cruise Terminal and public transport terminal at the Penang Sentral. These strategies are aligned with the NCER Development Plan (2021-2025) which is part of the Penang Transport Master Plan (PTMP) and port expansion. Implemented here will be a comprehensive, efficient and well-connected transport system. Road networks which involve Juru to Sungai Dua, and Northern Corridor Highway Phase 1B (from Batu Kawan to Serdang) will be enhanced. In the meantime, Kubang Menerong rail infrastructure will be developed as part of the Tasek Gelugor Rail Infrastructure strategy. In setting up a comprehensive and efficient road network, the Draft Seberang Perai Local Plan 2030 proposes an alternative route to road users so that the journey is more comfortable and efficient. The road routes mainly covering areas in Seberang Perai Utara, Seberang Perai Tengah dan Seberang Perai will be widened to accommodate current traffic requirements. Furthermore, in realizing the regional logistics center strategies, the port of Penang as the northern region goods transport hub will be expanded.

Additionally, the Draft Seberang Perai Local Plan 2030 has proposed smart technology telecommunications to stimulate economic activity. Digital infrastructure will be enhanced through a high-speed broadband area, and an additional comprehensive telecommunications tower and digital network installation.

#### **4.2 Policies and Strategies for the Manufacturing Sector**

For Industrial Development Goals, the Penang Structure Plan 2030 has set a target of industrial land involving 11,447 acres, which is an increase of 54.92% for the period 2014 -2030. At least 80% of SMEs will work in this industry to achieve the outcomes of Industrial Revolution 4.0 technology. Concerning the Draft Seberang Perai Local Plan 2030, value added industries will be implemented in four main strategies. Firstly, illegal factories that are involved in bleaching will be relocated. Factories which are operating without permission can only obtain their status as a permanent and legal factory once they have moved to recognized industrial zones. Factories that are operating in designated rice granary areas are no longer permitted. Secondly, the local government will improve small industries in villages, agro-based businesses and SMEs by relocating them and providing new facilities, creating supply chains and expanding development of PERDA as a food park in Kubang Menerong, Seberang Perai Utara. Thirdly, the existing industry will be revitalized by boosting manufacturing in the industrial park area, improving facilities and infrastructure. These activities will require well integrated drainage systems, removal of waste solids and better road networks. Fourthly, industrial zones that focus on the Industrial Revolution 4.0 objectives will be enhanced. In the meantime, the NCER Development Plan (2021-2025) seeks to promote value-added manufacturing, particularly electrical and electronics (E&E).

#### **4.3 Policies and Strategies in the Agriculture Sector**

In achieving Agricultural Development Goals, the Penang Structure Plan 2030 specifically concentrates on how agricultural land should be used. The policy has set targets for this land in the state which should amount to 36,405.53 hectares by 2030. This area means in effect a reduction from 43,278.44 hectares in 2015. Nevertheless, such a decline will not impact on the rice granary area. At the same time the policies have set a production target in agriculture of 505,000 tons' metric of foodstuffs.

The Draft Seberang Perai Local Plan 2030 seeks to improve productive agriculture employing four strategies. Firstly, the state government will increase crop land use and production by maintaining land use zones, increase paddy productivity as well as food crop areas by devising permanent food production parks and a proposed 'agro-technology park' area for high-tech activities. Secondly, sustainable livestock production will be increased to help improve sustainability of existing pig breeding areas, a proposed permanent poultry production park in Jawi and to increase intensive cattle production and integration. Thirdly, sustainable fisheries production will be increased with existing Aquaculture Industrial Zone (ZIA) areas, such as upgrading the existing marine and river fish landing areas. Fourthly, urban agricultural activities will be given priority to increase vegetable production and an 'agro-technology park' area will be proposed to employ advanced technologies.

The strategic positioning under the NCER Development Plan (2021-2025) seeks to improve agricultural output through inclusion initiatives comprising the cultivation of super fruits, such as fig and gac fruit, and a seed center. Agribusiness initiatives such as super fruits, cash crop, EMM 2.0, aquaculture (abalone & oyster farming), seed centre and agro-tourism via anchor company model in Balik Pulau will be implemented. Under the Transkrian Special Agro Economic Zone Nibong Tebal will be promoted as an example of ecotourism, and agro-tourism destinations in which Black Thorn durian is grown have much potential as tourist destinations.

#### 4.4 Policies and Strategies in the Construction Sector

As noted earlier, Penang's construction sector is predominantly driven by residential and non-residential buildings. For housing and community facility goals, the Penang Structure Plan 2030 has set a target of building 742,520 houses. At least 30% of such establishments will be affordable and this sub-total amounts to 222,756 units paid for by the Penang government.

The Draft Seberang Perai Local Plan 2030 has outlined two strategies for sufficient, good quality, safe and vibrant housing. In the first strategy, given the anticipated housing need projections by the year 2030, low-cost or affordable housing must account for at least 40% to 45% in Seberang Perai. Approximately 37,500 to 43,000 low-cost houses are required by 2030, which can be achieved through the Affordable Housing Program for those who earn an income less than RM3000 per month. Part of this proposal is to resettle squatters as part of the People's Housing Program Housing Program, and to meet the housing needs for people in the low-income group (B40). Apart from low-cost housing, this strategy will provide hostels for industrial area workers.

In the second strategy, the Draft Seberang Perai Local Plan 2030 aims to improve the quality of life of identified villages by upgrading communications systems and roads, implementing activities that will emphasise the values of traditional design aesthetics, village houses, and developing landmarks that symbolize the identity of the village. Housing development villages will only be permitted for low-density housing. The Draft Seberang Perai Local Plan 2030 also aims to re-build fishermen's villages by replacing obsolete homes, equip the community with better facilities and infrastructure in line with current needs.

#### 4.5 Policies and Strategies Related to Urban Area, Rural Settlement and Business Activities

Drawing from policies and strategies designed for Penang's development, the authorities target it to become a center of regional growth and maintain its position as a smart state/city (see table 6). On this issue, Penang's international trade ambitions will be expanded by focusing on the (IoT) Internet of Things and Industrial Revolution 4.0. It is envisaged that Penang will emerge as a main trading center and in turn will enable George Town to function as a global city, The Waterfront as a business hub, and Butterworth as a leading regional center.

**Table 6 - Mapping of policies and strategies that are related to urban areas, rural settlement and business activities**

Blueprints	Policies and/or Penang future direction
The Draft Seberang Perai Local Plan 2030	<ul style="list-style-type: none"> <li>▪ Vibrant city center</li> <li>▪ Diversify commercial activities</li> </ul>
The Penang Structure Plan 2030	<ul style="list-style-type: none"> <li>▪ The interests of the State of Penang in expanding international trade and cooperation</li> <li>▪ Establishment of Penang as the center of regional growth, Northern Territory of Peninsular Malaysia;</li> <li>▪ Penang as Main Trading Center</li> <li>▪ Balance arrangements between the cities and villages</li> </ul>
The NCER Development Plan (2021-2025)	<ul style="list-style-type: none"> <li>▪ Batu Kawan industrial zone</li> <li>▪ Science Park, regional retail outlets, area improvement district, halal park</li> <li>▪ Kepala Batas - Tasik Gelugor Growth Node</li> <li>▪ Commercial, education hub, Business Services, SME Industrial Park</li> <li>▪ George Town Development Zone</li> <li>▪ Waterfront business hub for global business services</li> </ul>

Sources: NCER (2020), PLANMalaysia@Pulau Pinang (2021) and Seberang Perai City Council (2022)

Commercial activities will be diversified by upgrading and expanding business centers which also involve Seberang Perai Tengah and Kepala Batas. Instead of business services, a SME industrial park will be developed at Tasek Gelugor. In Batu Kawan industrial zone, a key project of Byram SMEs Hi-Tech Park is an ongoing initiative for

the private and public sectors to work together to develop SMEs and heavy industries. Science Park, regional retail outlets, area improvement district, and a halal park have been identified as a key strategic focus. In the meantime, Penang Eco Innovation Park as a new SMEs industrial park will be developed in Bertam and it will also serve as an education hub.

### 5. Identify Business Opportunities for SMEs Based on Developmental Plans

This section identifies business opportunities for SMEs based on the policies and development plans at both the national and state levels. This approach will enable existing and futures SMEs to establish a market-driven business and make it possible to expand in the future. Below in Table 7 is a summary of the match between targeted business sectors and business opportunity. Although Table 6 suggests that SMEs’ business opportunities are in line with local and national economic development plans, the success of SMEs will be determined by internal and external factors. In this respect, SMEs should also consider the strengths and weaknesses of their operations in implementing a strategic business model, which has been widely discussed in the literature. One of the main challenges encountered by SMEs is the current shortfall in skills and knowledge required for business management (Alkahtani, Nordin, & Khan, 2020; Khan, 2022), which bring implications for business expansion. In this regard, the business environment as presented in this study will equip SMEs to find the information, they need on dealing with the external factors in identifying the most potential business area and products development.

**Table 7 - Mapping the salient points of Penang business sectors and SME business opportunities**

Policies and Developmental Plan	Targeted Business Sector	Business opportunity for SMEs
The Draft Seberang Perai Local Plan 2030	Services	Small business in tourism services such as accommodation, food and beverages, photography, and transportation
The Penang Structure Plan 2030	Manufacturing	Supporting services required by manufacturers in industrial zone such as transportation, workers’ accommodation, supply chains, and services and products for consumers
The NCER Development Plan (2021-2025)	Agriculture	Agricultural activities and agriculturally based products such as processed food, agro-tourism, organic planting and supplies for the agricultural activities
	Construction	Supporting services required by developers such as transportation, and professional services

Other external factors that have hindered Malaysian SMEs’ development can be identified as market competition, financial assistance, bank loan policy and poor supply chain management (Shekar, Hassan, & Mubarak, 2021). On the aspects of market competition, new SMEs often face challenges in product penetration in a given industry. Since large companies have economies-of-scale to produce goods at lower cost per unit, this places SMEs at a competitive disadvantage in the local as well as global market. Limited credit history, under-collateralization, and ambiguous accounting information typically prevent SMEs from accessing the resources they need (OECD, 2013). A lower risk of defaulting as the main concern in bank policies, resulted SMEs are riskier mainly from the point of view of lenders. Further, when it comes to supplier partnerships, SMEs frequently find themselves at a disadvantage because their suppliers or partners are also small firms and lack the purchasing power to exert leverage. Achieving the levels of visibility necessary for SMEs’ supply chains to be competitive can be a big or downright difficult problem without the information technology budgets to match those of large enterprises.

In resolving the discussed issues, aligning the SMEs’ business model with the main economic thrust of an economy, will to some extent enable them to achieve a bigger market share. SMEs that function according to the basic directions of development plans or policies can potentially receive financial assistance from the government or financial/banking institutions. The following matching grant programs are offered to SMEs; establishment of new businesses, enhancement of specific competencies in design, labelling, and product packaging, productivity and quality improvement, and market expansion and brand marketing (including their activities abroad). Instead of increasing SMEs’ access to financial assistance, such help should also be extended to improve product/service quality so that market demand is fulfilled. Similarly, problems in the supply chain may be solved if SMEs participating in a business can benefit from what economic policy is trying to achieve. For example, embarking on a food processing business in

agriculture may ease the burden on an SME if stable and guaranteed supply lines and logistics already exist. As such, SMEs should plan that a business model which can deliver a good inventory turn-over and affordable credit term transactions will keep the business viable.

## 6. The Way Forward for SMEs' Growth in Response to Economic Plans and Policies

The analysis provided in this study bring significant to the SMEs in certain respects as discussed below.

- i. Drawing from structured and systematic analysis on the potential business sector for SMEs based on the government plans and policies, entrepreneurs can identify the best business sector to operate in. This approach would reduce the risks encountered by SMEs due to mismatch between what is needed by the market and what is offered by the SMEs. Market risk has been identified as one of the main problems associated with how well SMEs perform (Grondys, Ślusarczyk, Hussain, & Androniceanu, 2021). For SMEs, managing market risk is very critical since this type of business set-up becomes the most vulnerable when a market or industry changes or in fact declines (Rathore & Khanna, 2020).
- ii. The analysis provided in this study would be useful for the SMEs to ensure their business activities are in line with the economic development policy or agenda of a state. Public policies and plans highlight the social and economic development plan of a government, which reflect most of the resources will be channeled. In other words, by participating in the prime focus of the government policies, the SMEs may gain access to certain programs, subsidies and incentives. Thus, government help is important for SMEs since most of them initially experience inadequate funding, limited resources and operating with low-end technology. The previous study has revealed significant impact of government financial assistance on performance of SMEs (Vaghefi & Joyee, 2021).
- iii. For the government agency that is involved in developing SMEs and providing support to them, the analysis provided here is useful in paving the way for new businesses to emerge. In today's modern world it is the market-driven approach that is dictating how SMEs need to function. Establishing business models that are related and relevant to changes in an industry will directly affect performance and growth (Zalewska-Kurek, Kandemir, Englis, & Englis, 2016).
- iv. The success of SMEs is linked to external and internal factors. In other words, assistance to SMEs must be provided to assist them to overcome the limitations and challenges at both the individual and institutional levels. At the individual level, an entrepreneur's traits such as determination to succeed can predict the soundness of decisions (Awwad & Al-Aseer, 2021), and subsequently business performance. In addition, the literature on SMEs has highlighted the common financial issues among SMEs such as lack of financial resources or budgeting strategies, proper management of finances and types of loans that may not be affordable. Mastering these is critical to ensuring SMEs can grow and contribute to an economic plan.

## 7. Conclusion

One of the most significant external accelerators for firms is economic policy. Business cycles, which are driven by fluctuations in the level of economic activity, have a variety of effects on SMEs. Through policies for the country's and nation's economic development, the government may strive to boost or reduce the level of economic activity. One of the most significant external accelerators for firms is economic policy. Business cycles, which are driven by fluctuations in the level of economic activity, have a variety of effects on SMEs. Through policies for the country's and nation's economic development, the government may strive to boost or reduce the level of economic activity. These continually shifting external environmental factors that have an impact on SMEs' business strategies and operations are typically out of management's control. No company is big or strong enough to make significant changes to the external environment. Therefore, rather than being change agents, managers and/or owners of SMEs are more often change adapters. In order to succeed as much as possible in the economic environment in which they conduct business, managers must comprehend and adapt to the economic system or systems in which they operate.

In the case of Penang, business sectors targeted for the promotion of SMEs have been identified as services, manufacturing, agriculture and construction. Drawing from the state economic development strategies and policies, urban organisation and rural settlement, there are opportunities for SMEs to commence and make progress. By participating business according to the main economic sectors and the direction of developmental plan, to a certain extent, help SMEs to mitigate common risks facing by them. Furthermore, the government initiatives helps and incentives avail to ensure SMEs are able to grow and contribute significantly to development plan of an economic.

Although this study has analysed the key policies formulated by the authorities in charge of Penang, the findings have limitations but nonetheless create new opportunities for further research to explore. Since SME development strategies will necessarily be country- and context-specific and each nation has its own circumstances, the challenges, opportunities and priorities for SMEs is another promising subject and could incorporate a larger sample within Malaysia, or compare the situation in Penang to other parts of the country.

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