



World Scientific News

An International Scientific Journal

WSN 208 (2025) 155-164

EISSN 2392-2192

Direct Investment in Manufacturing Sector: Potential Economic Impact, Important Features Of Industrial Park And Way Forward

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ABSTRACT

Manufacturing sector plays an important role in improving standard of living and income at least through the experience of many developed countries. Direct investment in this regard acts as catalyst for manufacturing sector expansion. In accommodating the need for manufacturing sector to expand, industrial park or areas play significant role to house the various types of direct investment that take place. Industrial parks and industrial estates are areas that are gazetted to house manufacturing direct investment as well as industrial and manufacturing activities. It is an area that are created to support activities for the industrial sector and usually come with various infrastructure facilities that are important to support the activities of the industrial sector. They also play a role in gathering industrial activities in a specific location where small and medium-sized companies can enjoy certain infrastructure together so that the industrial sector can move in a more manageable way. Looking at the development of industrial estates and parks in Sabah, there are several that are active and play important role in supporting the development of the industrial sector. In moving forward and in the framework of the development of the industrial sector, there is much that can be learned from the experience of industrial parks in other places. This study aims to discuss the characteristics of an ideal industrial park and present suggestions on things that need to be taken into account before creating an industrial park in the future. In addition, the study estimates the impact of investment in manufacturing sector on the economy.

Keywords: direct investment, manufacturing sector, industrial park.

(Received 23 August 2025; Accepted 18 September 2025; Date of Publication 8 October 2025)

1. INTRODUCTION

Manufacturing sector plays an important role in improving standard of living and income at least through the experience of many developed countries. Direct investment in this regard acts as catalyst for manufacturing sector expansion. In accommodating the need for manufacturing sector to expand, industrial park or areas play significant role to house the various types of direct investment that take place.

Industrial parks and industrial estates are areas that are gazetted to carry out industrial and manufacturing activities. Those areas are created to support activities for the industrial sector and usually come with various infrastructure facilities that are important to support the activities of the industrial sector. They also play a role in gathering industrial activities in a specific location where small and medium-sized companies can enjoy certain infrastructure together so that the industrial sector can move in a more manageable way. Looking at the development of industrial estates and parks in Sabah, there are several that are active and play a role in supporting the development of the industrial sector.

In Sabah, there are at least three industrial parks which play important role in supporting manufacturing sector's activity which are namely the Kota Kinabalu Industrial Park (KKIP), Palm Oil Industrial Cluster (POIC) and Sabah Oil and Gas Industrial Park (SOGIP). All are built to support economic activities in respective geographical locations and as a place which was established to accommodate domestic or foreign investment for strategic sectors.

In Sepangar, near to the capital city of Sabah, Kota Kinabalu Industrial Park (KKIP) was established in 1994. The industrial park was projected as a fully integrated park which aim to develop KKIP with sustainable social and economic developments that will significantly contribute to the progress of Sabah. KKIP is conceived as a catalyst to spur industrialization in Sabah. The industrial park situated near to the Sapangar Bay Container Port in Sepangar.

In the eastern part of Sabah, the Sabah State Government established Palm Oil Industrial Cluster (POIC) Lahad Datu in 2005 to spearhead the development of palm oil downstream processing, to create jobs, and business opportunities. Besides palm oil, POIC Lahad Datu is also position to attract investments in port and logistics, biomass, biorefineries, oil and gas, and related small and medium enterprises.

Sabah Oil and Gas Development Corporation Sdn Bhd (SOGDC) was incorporated by the state government in August 2010 as a state government agency, under direct purview of the State Ministry of Industrial Development and Entrepreneurship (MIDE) to spearhead the development of the Sipitang Oil and Gas Industrial Park (SOGIP). In addition, SOGIP has the vision of being premier oil and gas industrial park and port for petrochemical hub.

Besides the three industrial parks mentioned above, there are also several industrial estate or area situated in some different places such as in Kolombong, Inanam, Kinarut, Manggatal, Tawau, and Sandakan, among others. Generally, it was built to meet the need of smaller factories in the size of small enterprises.

Looking into data between the year 2000 and 2022, table 1 depicts that Sabah has recorded an ups and downs in direct investment inflow. In terms of foreign direct investment inflow, approved projects by Malaysian Investment Development Authority (MIDA) in Sabah were below RM1 billion most of the time, with exception to the year 2007, 2013, 2019, 2021, 2022. In addition, in terms of domestic direct investment, the data indicated that there were 8 times on which MIDA approved projects exceeded the RM1 billion threshold.

In moving forward and for the development and expansion of the manufacturing sector, there is much that can be learned from the experience of industrial parks in other places. This study aims to discuss the characteristics of an ideal industrial park and present suggestions on things that need to be taken into account before creating an industrial park in the future. While building the discussion on the importance and role of industrial park and direct investment, it is also important to examine the impact of investment in manufacturing sector. Hence, the study also estimates the impact of investment in manufacturing sector to understand the potential estimated impact of future direct investment.

Table 1. MIDA Approved Projects.

Year	Number of Approved Projects	Employment	Domestic Investment (RM million)	Foreign Investment (RM million)	Total Capital Investment (RM million)
2000	805	1,241	310	59	369
2001	927	956	224	53	276
2002	792	2,015	310	39	349
2003	965	1,099	127	26	154
2004	1,101	3,237	318	21	338
2005	1,027	2,233	926	279	1204
2006	1,077	4,682	4,184	885	5069
2007	949	2,820	1,081	2,177	3258
2008	40	3244	621	344	964
2009	30	1642	296	383	679
2010	39	3,481	849	476	1,326
2011	27	1648	877	44	921
2012	30	2153	4,768	267	5,034
2013	25	1873	2433	1001	3434
2014	23	1796	2370	548	2918
2015	10	504	91	257	348
2016	19	4,588	1,645	494	2,138
2017	14	827	740	45	785
2018	13	620	181	46	227
2019	15	3,372	1,603	4,853	6,456
2020	15	683	11,942	11	11,954
2021	14	1,391	482	4379	4,861
2022	23	3,307	794	7587	8,381
2023	8	572	1,301	0	1,301

Source: Malaysian Investment Development Authority (MIDA) (from: Ministry of Economy website)

In moving forward and for the development and expansion of the manufacturing sector, there is much that can be learned from the experience of industrial parks at other places. This study aims to discuss the characteristics of an ideal industrial park and present suggestions on things that need to be taken into account before creating an industrial park in the future.

While building the discussion on the importance and role of industrial park and direct investment, it is also important to examine the impact of investment in manufacturing sector. Hence, the study also estimates the impact of investment in manufacturing sector to understand the potential estimated impact of future direct investment.

To sum up, the study attempts to estimate the impact of direct investment in manufacturing sector on the economy. Besides, to support state readiness of receiving bigger investment in the future, the study highlight strategic basic features of establishing future industrial parks in Sabah.

2. LITERATURE REVIEW

There are many studies related to manufacturing sector and industrial parks all over the world and in Malaysia specifically. Studies generally focus on various spectrum of industrial park and manufacturing sector, such as related to environmental aspects, operational matters, and efficiency perspective of industrial parks, among others. This can be seen, for example, in the studies of B. Tayebbeh et.al (2025); A. Csordás, A. Háy and C. Tóth (2025); X. Gao et. Al (2025); K. S. Nikolaevna and K. Viktor (2024); X. Yu, W., Hu and M. Wang (2024); S. Wetherell (2020); Dale, B.G. et. al (1995); Dale, B.G. (1994); Z. Miao and P. Zetao (2025); Y. Liang et. al (2021); N. S. F. A. Rahman and A. F. A. Najib (2017); F. C. Leh (2016).

With regard to Sabah's economy and studies using input-output table analysis to estimate the impact of investment in Sabah, several studies were found. However, most studies were found in estimating the impact of investment on the economy in general or output growth, for example. This can be found, for instance, in the study of Idris R. (2018); Idris R. et.al (2017); Idris R. (2021); Idris et al. (2021); Idris R. et.al (2024). However, most of the studies do not attempt to estimate the impact of investment on employment. A study on east Malaysian economy using input output table is found in the work of Hassan M. K. H. et.al (2017) using 2005's input output table.

Based on literature being reviewed, limited studies are found in examining or looking into matters related to industrial park in Sabah. This study attempts to estimate the impact of direct investment in manufacturing sector on economy and to support the readiness to receive bigger investment in the future, the study highlight strategic basic features of establishing future industrial parks in Sabah.

3. METHODOLOGY

In relation to investment and its impact to the economy, a simple application is developed by the author to estimate the impact of investment on job creation and economy as a whole. The application use the input-output model analysis. Under the Input-Output analysis framework, the Rafiq investment multiplier application employs a comprehensive Input-Output (IO) framework combined with sectoral analysis to estimate economic impacts of targeted investment. To do the estimation, several key variables are used, such as investment amount (RM Million), State-specific multipliers, sectoral productivity factors, Sub-sector specialization coefficients, and social impact coefficients. These variables are used to compute the following formulas.

Sectoral Economic Multipliers

$$\text{Effective_Multiplier} = (\text{State_Multiplier} + \text{Sector_Multiplier}) / 2 \quad \dots\dots\dots(1)$$

$$\text{Total Output} = \text{Investment} \times \text{Effective_Output_Multiplier} \quad \dots\dots\dots(2)$$

$$\text{Total GDP} = \text{Investment} \times \text{Effective_GDP_Multiplier} \quad \dots\dots\dots(3)$$

$$\text{Output Growth (\%)} = (\text{Total Output} / \text{Base Output}) \times 100 \quad \dots\dots\dots(4)$$

Employment Impact with Sectoral Adjustment

$$\text{Job Creation} = \text{Investment} \times \text{Effective_Job_Multiplier} \quad \dots\dots\dots(5)$$

$$\text{Unemployment Change (\%)} = -(\text{Job Creation} / \text{Labor Force}) \times 100 \quad \dots\dots\dots(6)$$

Social Impact with Innovation Factor

$$\text{Poverty Change (\%)} = -(\text{Investment} \times \text{Effective_Social_Multiplier}) / 100 \quad \dots\dots\dots(7)$$

This study explore the features of several major industrial parks of the world, including a visit to the oldest industrial park in the world, Trafford Park in Manchester, United Kingdom. In addition, interviews were also conducted with several stakeholders in Sabah to understand the reality on the ground. Moreover, several documents and studies are reviewed to understand the important features and best practices of managing industrial park, as well as factors to consider should there be any plans to open new industrial park.

4. FINDINGS/RESULTS

Apart from having three industrial parks, there are also industrial estates that exist in various places in Sabah. Due to the increasing population and consumer demand, as well as the need to expand the manufacturing sector, there are views that Sabah needs new industrial parks to accommodate the expansion.

The study undertakes simulation using Rafiq Investment Multiplier application, the followings are the estimated impact on manufacturing sector when there is direct investment inflow amounting RM100 million, RM500 million and RM1 billion. Table 2 is a summary of the impact based on three scenarios where the direct investment values are differ, assuming other factors remain constant.

Table 2. Summary of direct investment impact estimation.

SCENARIO	DIRECT INVESTMENT (IN MILLION RM)	DIRECT JOBS CREATED	CHANGE IN POVERTY RATE FROM PREVIOUS RATE (IN %)
1	100	400	-0.62
2	500	2000	-3.2
3	1000	4000	-6.4

*Notes: - sign indicates reduction, + sign indicates increase
change in percentage for poverty rate and unemployment rate refers to reduction in the said indicators based on baseline data.*

The additional of direct investment by RM100 million is projected to create approximately 400 new jobs. The additional investment also is estimated contribute in poverty reduction by 0.62%.

Besides that, the additional investment of half a billion ringgit is projected to create approximately 2,000 new jobs. In addition, it has the potential to reduce poverty rate by 3.2%.

The investment of RM1 billion is estimated to create approximately 3960 new direct jobs. Besides that, it has the potential to reduce poverty rate by 6.4%.

Having discussed the above, it is important to note that the value being projected aims to provide guide and is a preliminary estimation. The dynamics of Sabah, Malaysia, and world economy, geopolitics in the region or in other region, changes in economic or other variables, and production method involved, such as whether it is capital or labour intensive, may make the value to vary. Moreover, the number of direct jobs estimated are merely new jobs created in the particular sector and does not include indirect jobs created in other sectors or sub sectors as well as induced jobs to be created. Table 2 suggests selected important features of industrial park.

Table 3. Summary of input obtained on the ideal features for industrial park.

Features	Feedback and Recommendations
Strategic geographical location	Strategic geographic location is crucial factor. Strategic features like its distance to major transportation hubs such as airports, highways and ports is important in facilitating movement of goods. Airport with international airport status and connected to many international airports through direct flights and the location is not too far from industrial park is a must to make investment to be attractive.
Sufficient infrastructure	Physical Infrastructure is important in supporting the activities in any industrial parks. Reliable services such as stable power and water supply, sewage, telecommunications and waste management are basic infrastructure services that any industrial park would have. In certain situation, more advance infrastructure might be required to support the production of goods of advance technology.
Attractive government support and incentive	Government Support and Incentives are important to support the industrial parks in attracting investors. The government support and incentives and can come in the form of tax benefits, subsidies, and policy in attracting direct domestic and foreign investments.
Ease and attractive cost of doing business	Cost and ease of Doing Business is an important feature of a successful industrial park. Complicated administrative procedures and higher cost of doing business may make an industrial park to be less attractive. Hence, an industrial park characterised by simplified administrative procedures, clear land acquisition policies, and streamlined licensing can make cost to be lower and give ease for business.

Sufficient manpower	Sufficient manpower in certain geographical location of an industrial park is pivotal feature that can make an industrial park to be attractive for investors. In this regard, availability of certain skilled workforce needed for certain industry is extremely important. An industrial park on which access to trained labour, technical institutes, and vocational training centres will make it a preferred location for investors.
Industrial park is well connected with logistic hubs and infrastructure, as well as port	Industrial park which is well connected with seaport and logistics hubs and infrastructure is crucial in making an industrial park a successful one. Industrial park characterized by efficient transportation networks and equipped with warehousing facilities will increase the attractiveness vis-à-vis others.
Supportive ecosystem	Supportive ecosystem by which the presence of supporting or ancillary industries, research and development centres, and service providers are strong is an ideal feature for an industrial park.
Focused industrial park	A more focus industrial park specializing in producing certain categories of products only has the potential of supporting external economies of scale.
Sufficient residential housing with quality education and healthcare services	An industrial park where it is close with sufficient residential housing complex as well as quality education services healthcare services. The presence of university, international schools and specialist hospitals among others in nearby areas will make the new industrial park to be more attractive. An industrial park where all these are available at least in a nearby area, has the potential to attract direct investment inflow. Besides, it has the ability to pull pool of talent, scientists, experts, engineers, consultants, skilled and semi-skilled workers among others to work in the industrial park.
Greener and circular economy industrial park	Factories and manufacturing plants using greener technology should be the way forward of today's industrial park. Characterized by circular economy where reducing waste, reusing materials, and regenerating nature are the core tenets for today's industrial park.
Sufficient land size to be gazetted for industrial park	It is important that sufficient land size to be gazetted for industrial park. The land size must align with the objectives and direct investment targeted for any proposed industrial park.

Based on the inputs and information obtained while considering several features of established industrial parks such as Trafford Park in the United Kingdom, Suzhou Industrial Park in China, Tahoe-Reno Industrial Center and Elk Grove Village Business Park in the United States, and Jubail Industrial City in Saudi Arabia, among others, table 2 suggests some of the important features of industrial park. Table 2 depicts strategic geographical location of geopark, sufficient infrastructure, attractive government support and incentive, ease and attractiveness of cost for doing business, sufficient manpower, availability of land or space to receive/house investment, the interconnectedness of industrial park with logistic hub and supportive ecosystem among others are among important features of industrial park.

5. CONCLUSION

Direct investment plays important role for the expansion of manufacturing sector. To expand the manufacturing sector of Sabah, industrial area or park need to be prepared as it is an important place to house large direct investment inflow. A systematic, well planned and efficient industrial park equipped with required infrastructure and logistic facilities will make an industrial park to be interesting destination for investment. This study highlighted some of the important features of industrial park which is a must for at least most industrial park. The features highlighted might not be a complete features for ideal future industrial parks, as the production requirement of certain products may differ from time to time and depending on the types of infrastructure, energy, and technology required.

Features such as greener and circular economy industrial park, strategic geographical location, sufficient manpower, sufficient infrastructure, ease and attractive cost of doing business, focused industrial park, supportive ecosystem, attractive government support and incentive, connected with logistic hubs and infrastructure, as well as port and access to sufficient residential housing, quality education, and healthcare services, among others, are identified as some characteristics which are important for an ideal industrial park.

The study also estimate the amount of direct jobs to be created and changes in poverty rate to be expected. Based on the simulation, for every RM1 billion direct investment inflow, it is estimated that more than 4000 new direct jobs are to be created, depending on the mix of labour and capital intensity as well as technology adopted for production of goods. Besides, poverty rate is estimated to decline by 6.4% from the previous year value. The findings of the study are merely preliminary estimation and act as a guide for policy makers and other stakeholders.

While estimating the impact, it is important to be noted that the study does not examine the impact of direct investment on other aspects of the economy. The study purely focusing on the potential impact on job creation and poverty rate based on the scenario being assumed in the study.

Moving forward, while considering all the features being mentioned, it is also important to be noted that sufficient amount of land or space must be available or gazetted if the country or state wish to secure bigger amount of direct investment. It is pointless to promote huge direct investment if land or space is not available to accommodate such investment. Moreover, as being suggested, incentives and support for investment must be reviewed from time to time to make investment to be attractive.

Acknowledgement

This research is a part of several research conducted on Preliminary study on the ideal investment policy, industrial park and port transshipment hub in Sabah funded by UMS research grant (SDK0247-2020).

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