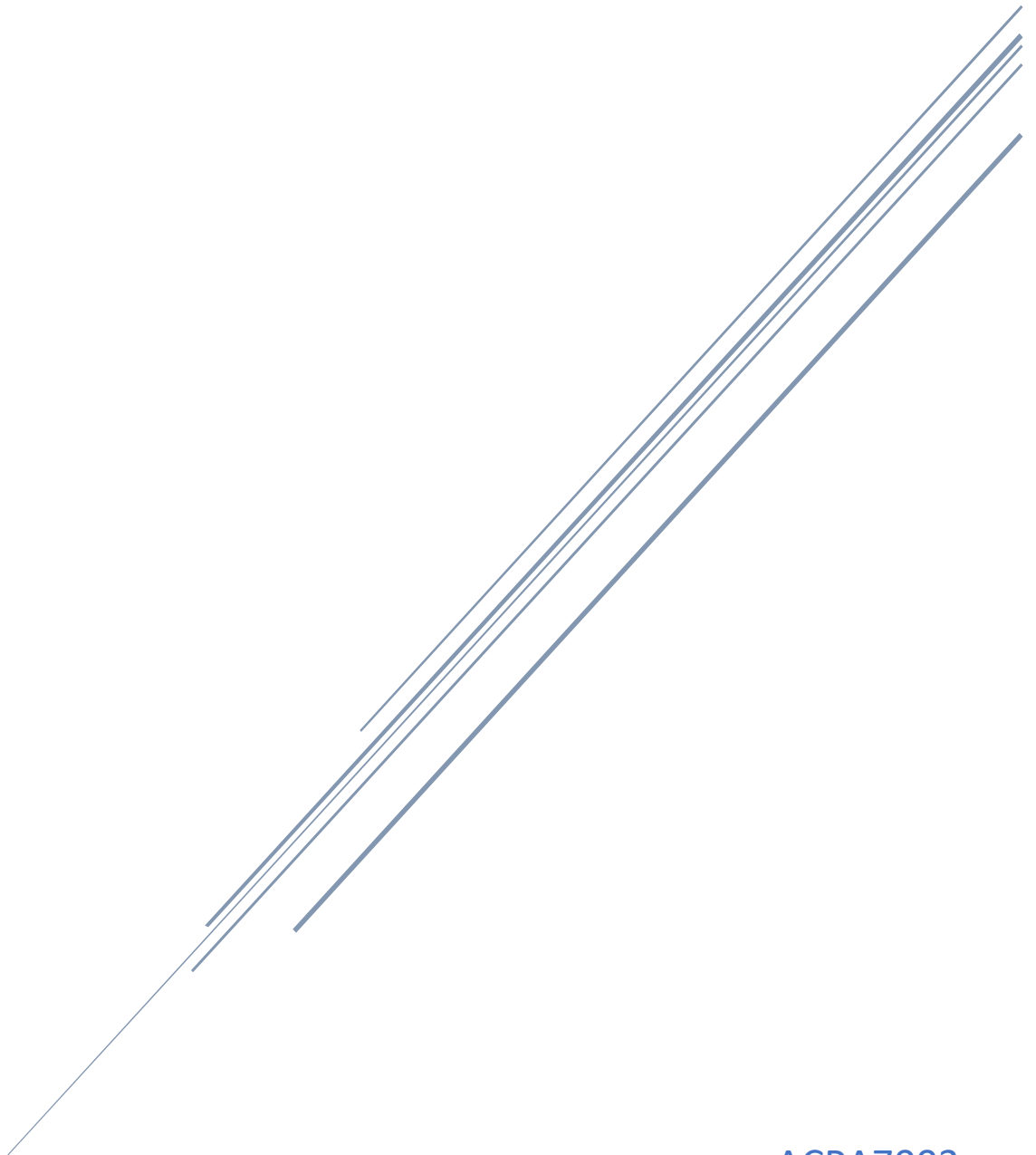


INTERNATIONAL OPERATIONS

Naomi Mann (2012095) Words: 3912 (2984 without Reference list)



ACPA7003

International Innovation Management

SYNOPSIS

Organisation-X are developing an international expansion strategy with aim to control manufacture and distribution of their product-line on a global scale. With headquarters in Wales, initial investigations identified the following locations for consideration in new manufacturing facilities:

South America	Asia	Africa
Chihuahua, Mexico	Shenzhen, China	Durban, South Africa
Montevideo, Uruguay	Visakhapatnam, India	Bulawayo, Zimbabwe
Sao Paulo, Brazil	Taipei, Taiwan	Tunis, Tunisia

Table 1: Shortlisted manufacturing locations by region

This report outlines key factors - by region and country – in selecting locations for Organisation-X manufacturing facilities and interprets and compares location-related developments to propose a best-fit location strategy.

STATEMENT OF REQUIREMENTS

Although importance of each factor will differ, the following aspects will be considered to select optimal locations:

- Logistics/transportation: favourable access to utilities, transportation, and infrastructure.
- Quality of business environment; including ease of doing business, custom regulations, and supplier availability.
- Political stability and financial incentives offered by governments.
- Cultural and social implications: alignment and awareness of cultural differences and business practice variations.
- Manufacturing and production: availability and cost of suitably skilled labour.

LOGISTICS/TRANSPORTATION

Whether a company manages logistics internally or outsources to third-parties, transportation infrastructure and logistic services availability are important considerations for site selection. (Trunick, 2011) This is because transportation infrastructure significantly impacts a business's productivity and profitability. (Ojala & Çelebi, 2015)

Logistics Performance Index (LPI) is an interactive tool, developed by The World Bank, which helps countries identify challenges and opportunities in their performance on trade logistics. LPI combines data on core performance components to provide a qualitative evaluation every two years. (World Bank, n.d.)

Six dimensions make up the overall LPI score: Customs, infrastructure, international shipment, logistics quality and competence, tracking and tracing and timeliness. (Trade Facilitation Implementation Guide, n.d.)

LPI provides insight into the relative ease and efficiency by which a product can be moved into and within a country, offering International and Domestic perspectives. (World Bank, n.d.) This corresponds to the ability to distribute products to domestic and global markets, which influences the effectiveness of material delivery within supply chains; factors which add value to customers. Subsequently, reliable logistic services and infrastructure contribute to the success of a business and LPI provides a quantifiable metric to compare performance between locations.

LPI results for the shortlisted locations under consideration are summarised and interpreted below:

Group	Country	LPI Rank	LPI Score	Customs	Infrastructure	International shipments	Logistics competence	Tracking & tracing	Timeliness	Aggregated LPI* Rank
Asia	China	26	3.61	3.29	3.75	3.54	3.59	3.65	3.84	27
	Taiwan	27	3.6	3.47	3.72	3.48	3.57	3.67	3.72	24
	India	44	3.18	2.96	2.91	3.21	3.13	3.32	3.5	42
Africa	South Africa	33	3.38	3.17	3.19	3.51	3.19	3.41	3.74	29
	Tunisia	105	2.57	2.38	2.1	2.5	2.3	2.86	3.24	104
	Zimbabwe	152	2.12	2	1.83	2.06	2.16	2.26	2.39	161
South America	Mexico	51	3.05	2.77	2.85	3.1	3.02	3	3.53	53
	Brazil	56	2.99	2.41	2.93	2.88	3.09	3.11	3.51	56
	Uruguay	85	2.69	2.51	2.43	2.73	2.71	2.78	2.91	75

Table 2: International LPI 2018 (World Bank, 2018)
***Aggregated LPI (2012, 2014, 2016 and 2018) (World Bank, 2018)**

Although LPI provides a benchmark for a country's logistic performance, studies have shown that social factors have greater influence on results than economic factors. This should be considered when using the tool to influence decisions. (Guner & Coskun, 2012). To understand performance trends, an analysis of interactions between logistic performance, and the economic and political environment would be beneficial. (Ojala & Çelebi, 2015) Economic and political factors are considered in a later section.

AFRICA

The 2018 World Bank LPI ranks South Africa as the third most competitive market behind Thailand and China in terms of logistics performance among upper-middle-income economies. (Liedtke, 2018)

When compared with Tunisia and Zimbabwe, South Africa ranks significantly higher in aggregated and 2018 LPI performance: 29th and 33rd respectively (Table 2). Dr Petrus de Kock, Brand South Africa's General Manager for Research recognises the quality of South Africa's physical infrastructures as a driver for the countries' ability to offer diverse logistics service. He highlights "Logistics performance is vital for a countries' economic growth and refers to cost, time, and complexity in accomplishing import and export activities" (Brand South Africa, 2018)

A review of LPI indicates South Africa would be preferential in providing access to transportation and infrastructure, when compared with Tunisia and Zimbabwe.

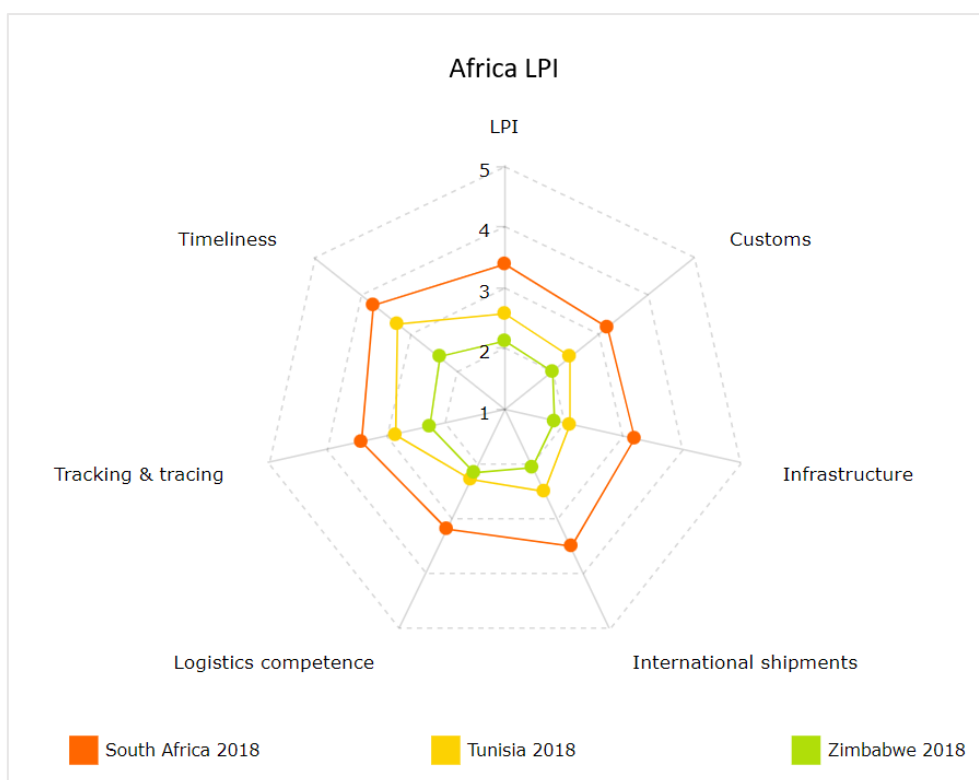


Figure 1: Radar comparison – Africa, LPI 2018 (World Bank, 2018)

ASIA

In 2018, China scored highest in 4 of 6 International LPI indicators (Figure 2) and ranked top of the shortlisted locations within Asia, placing 26th. Taiwan followed closely in performance, placing 27th and outperformed China in the aggregated International LPI, placing 24th and holding the highest score in 4 of 6 indicators (Table 2).

India had the lowest score in each indicator, with a noticeable variation in infrastructure, placing significantly lower at 44th in 2018. (Table 2).

This indicates China and Taiwan would offer improved infrastructure, transport and logistics services when compared with India.

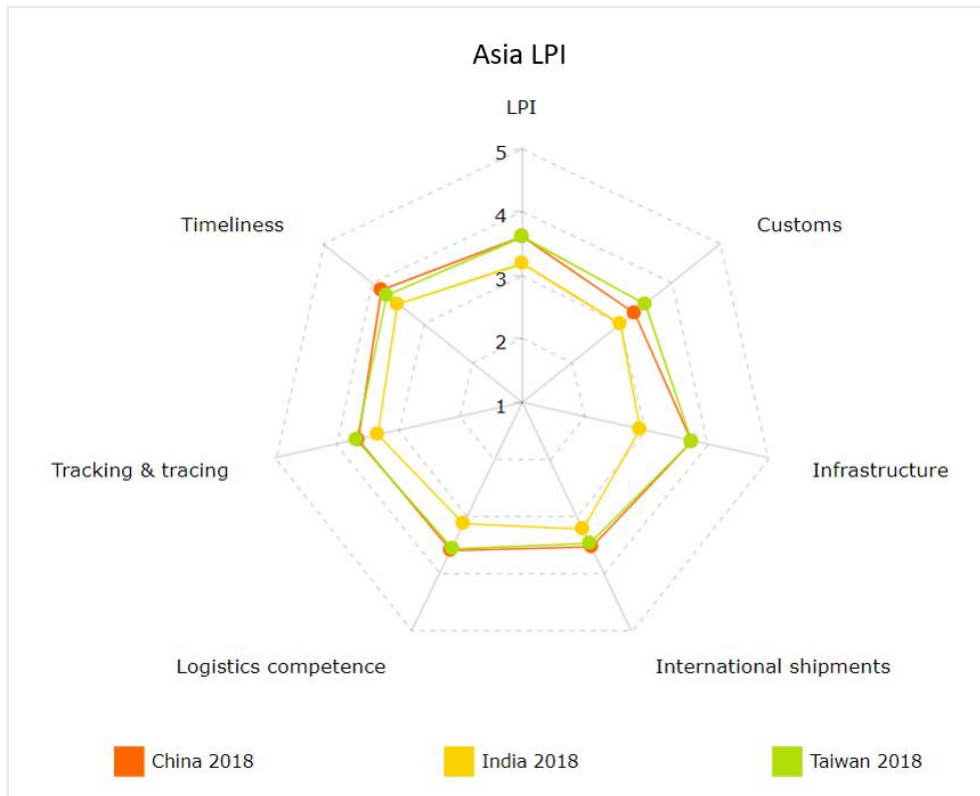


Figure 2 Radar comparison – Asia, LPI 2018 (World Bank, 2018)

SOUTH AMERICA

A review of LPI performance (Table 2) highlights Mexico as the top performer for the South America locations under consideration; placing 51st in 2018. Brazil, closely followed at 56th and Uruguay had the lowest ranking in the shortlisted countries positioning 75th.

An analysis of LPI data reveals no Latin American country placed in the top 20% of LPI global ranking.

Although Mexico and Brazil show comparable performance, Mexico's strategic location next to the U.S., and Brazil's relative distant location from major markets should be noted. (NAPS International, 2015). These factors would impact the total cost of manufacture and movement of goods into and within the country.

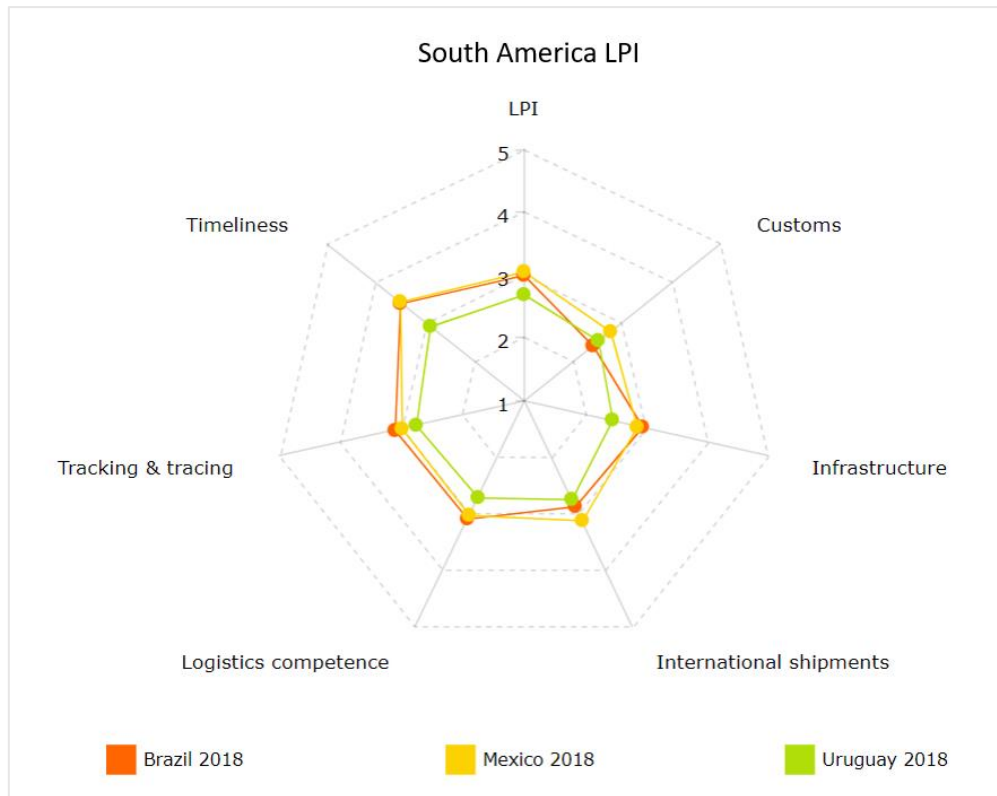


Figure 3: Radar comparison – South America, LPI 2018 (World Bank, 2018)

ECONOMIC ASPECTS

Key drivers in manufacturing site selection include economic, environmental, social, and political factors such as: political stability; regulatory quality; language; site cost; and financial incentives. Favourable regions are likely to score highly on a number of these factors. During this review, focus was given to economic and tax considerations as these factors can be quantified and accessed through widely used data sources, such as World Bank. (World Bank, 2022)

ECONOMIC AND TAX CONSIDERATIONS

Gross domestic product (GDP) is the most used measure for showing the size and health of a country's economy over a period. It measures the value of goods and services produced within a country in a specific time. When GDP increases, economic activity is increasing which means the economy is growing. (Eurostat, 2019) GDP provides a snapshot of a country's economic state and can be used as a key tool in influencing strategic location decisions.

GDP per capita considers a country's population, providing a measure of how much economic value can be attributed to each individual person. (Fernando, 2021) Analysis of each country's GDP per capita growth can provide an indication of overall economic health in relation to its population, which in-turn will influence the decision of manufacturing locations.

GDP per capita growth 2016-2020 for Organisation-X's shortlisted countries are summarised below:

Group	Country	2016	2017	2018	2019	2020
Asia	China	6.24	6.30	6.25	5.57	2.12
	Taiwan*	-	-	-	-	-
	India	7.08	5.67	5.43	2.99	-8.16
Africa	South Africa	-0.81	-0.27	0.11	-1.20	-7.62
	Tunisia	0.01	1.09	1.34	0.28	-10.13
	Zimbabwe	-0.79	3.19	3.36	-7.47	-7.62
South America	Mexico	1.40	0.93	1.05	-1.26	-9.27
	Brazil	-4.07	0.51	0.99	0.65	-4.74
	Uruguay	1.33	1.26	0.11	-0.01	-6.18

Table 3: GDP per capita growth 2016-2020 (World Bank, 2022)

*No data was available for Taiwan.

When considering GDP per capita growth, China remains most competitive, with annual growth. All other countries show a negative percentage in 2020, likely reflecting effects of the coronavirus pandemic.

The data indicates China has the strongest, most stable economic state of the countries in Asia, while GDP per capita growth analysis within Africa and South America is so close it would be advisable to consider other factors more prominently.

Countries are becoming increasingly aware of the impact of high corporate tax rates on business investment decisions. In 2021, the average statutory corporate income tax rate worldwide is 23.54%, and 25.44 when weighted by GDP. (Bray, 2021)

Below is a summary of corporate tax rates for each shortlisted location in 2021:

Region	Country	Corporate Tax Rate
Asia	China	25.00%
	India	30.00%
	Taiwan	20.00%
Africa	South Africa	28.00%
	Tunisia	15.00%
	Zimbabwe	24.72%
South America	Mexico	30.00%
	Brazil	34.00%
	Uruguay	25.00%

Table 4: 2021 corporate tax rates (KPMG, 2021)

Tunisia has a significantly lower corporate tax when compared with the alternative locations (Table 4) – reducing their rate from 25% in 2020 to 15% in 2021. (Bray, 2021)

All other countries have comparable corporate tax rates in the region of 25-30%, so no decisive conclusion can be made from this data alone.

MANUFACTURING AND PRODUCTION

LABOUR SUPPLY AND DEMAND

When choosing optimal locations for manufacturing facilities, availability and demand of a qualified workforce is vital. (Bays, 2018) Organisation-X's product line is categorised under electronic devices and such expansion locations should provide access and availability to a suitable skilled workforce for this production.

Region	Country	Year	Labour force (thousands)	Population (thousands)
Asia	China	2020	775,799.02	1,410,929.36
	India	2020	471,688.99	1,380,004.39
	*Taiwan	2020	-	-
Africa	South Africa	2020	21,742.74	59,308.69
	Tunisia	2020	4,107.93	11,818.62
	Zimbabwe	2020	6,985.54	14,862.93
South America	Mexico	2020	53,978.98	128,932.75
	Brazil	2020	99,843.13	212,559.41
	Uruguay	2020	1,686.70	3,473.73

Table 5: Comparison of labour force size and population 2020 (World Bank, 2021)

* No data was available for Taiwan

SUPPLY CHAIN

Another key driver for manufacturing location is closeness to supply chain; being close to raw materials can provide cost savings. It is however noteworthy that Organisation-X's finished product is of considerable size and weight, so this should be balanced with costs of transporting to market.

A review of industry specific literature recognises Tunisia as an electronics production hub, suggesting its proximity to Europe contributes to its attractiveness for electronic production. As of July 2019, 232 electronic firms had received foreign investment. (Oxford Business Group, 2019) Tunisia's reputation in the electronics field would make it attractive option for Organisation-X.

CULTURAL & SOCIAL IMPLICATIONS

CULTURE

While undertaking international expansion it can be crucial to gain an understanding of local business and consumer culture within the target market. There is increasing recognition that partnerships with local firms are key to providing local insight and establishing trust within new markets. (Meadowlands, 2013)

Hofstede's cultural dimensions theory provides a framework for understanding differences in culture across countries. (Hofstede Insights, n.d.) This model has been adopted to understand differences in ways that business is done (Corporate Finance Institute, n.d.), and in-turn assess their impact within national business activities. The Hofstede model of national culture consists of six dimensions that define culture (Figure 4):

1. Power Distance Index (PDI),
2. Individualism vs Collectivism (IDV),
3. Masculinity vs Femininity (MAS),
4. Uncertainty Avoidance Index (UAI),
5. Long Term Orientation vs Short Term Normative Orientation,
6. Indulgence vs Restraint (IVR)

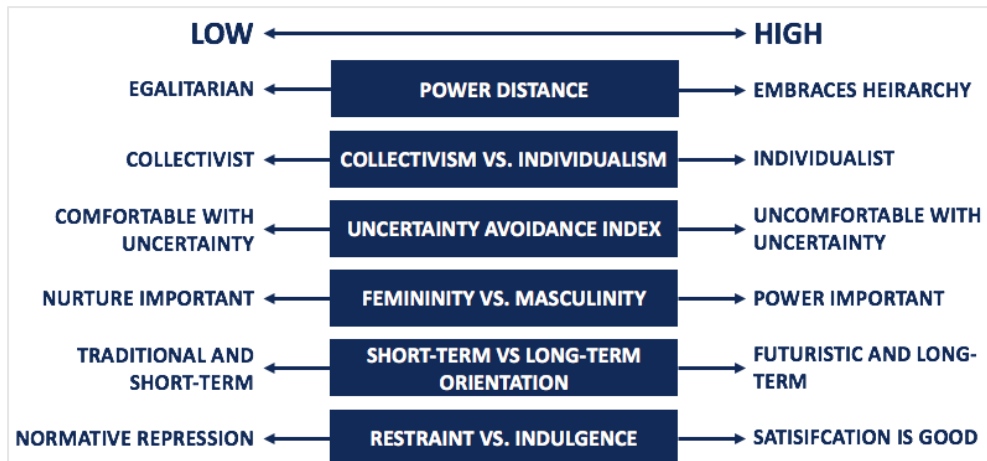


Figure 4: Hofstede's six dimensions of culture (Hofstede Insights)

A comparison of Hofstede's six dimensions for the shortlisted locations is shown below:

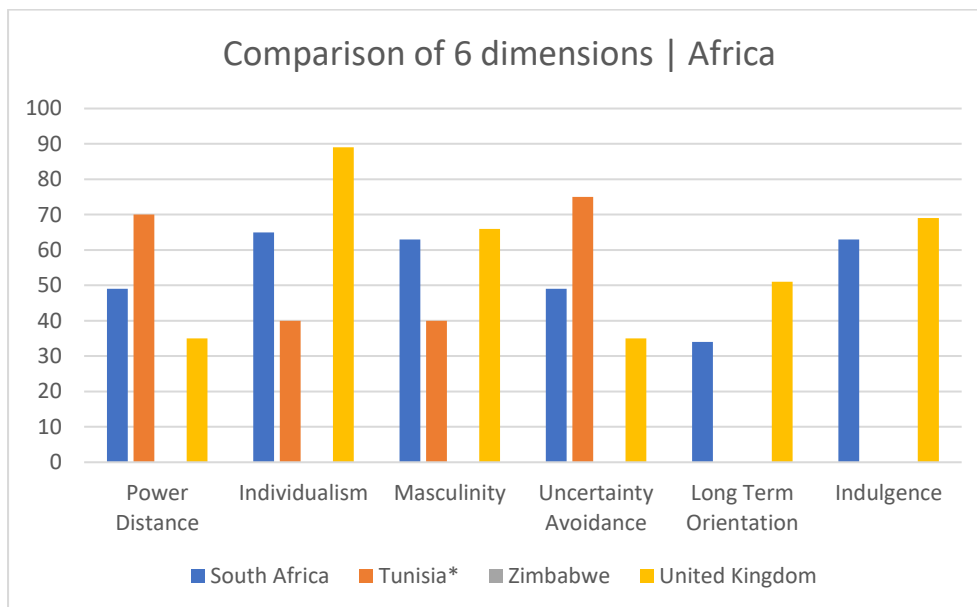


Figure 5: Hofstede's cultural dimensions theory; Africa (Hofstede Insights, 2022)

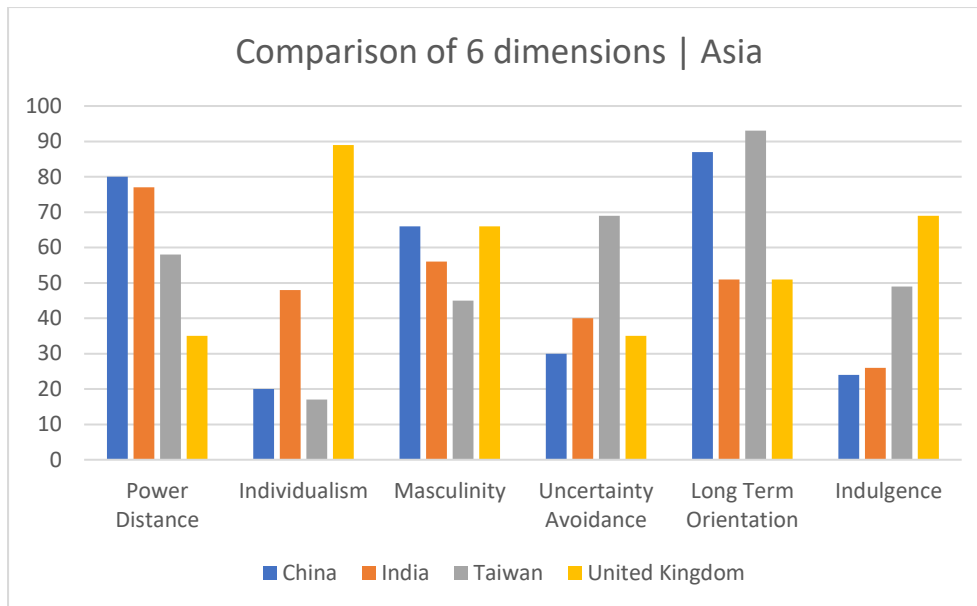


Figure 6: Hofstede's cultural dimensions theory; Asia (Hofstede Insights, 2022)

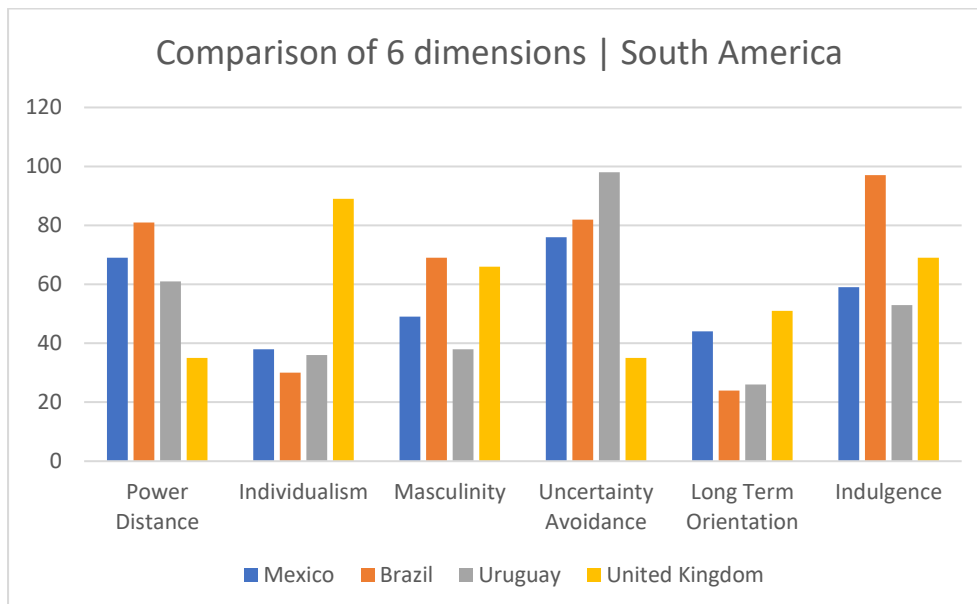


Figure 7: Hofstede's cultural dimensions theory; South America (Hofstede Insights, 2022)

While outsourcing comes with a range of benefits, such as: reducing costs; encouraging innovation; and providing flexibility, it is not without its challenges. Cultural differences can directly impact effectiveness of a project and so cultural awareness is essential when selecting and working with global partners to improve cross-cultural interactions. Research has shown cultural alignment can impact risks involved in offshoring and as such cultural distance is a determinant in location decisions. (Hahn & Bunyaratavej, 2010)

CONCLUSION

Expanding Organisation-X's facilities internationally will enable strategic positioning for facilitating the manufacture and distribution of products to a global market. Based on selection criteria provided and findings from this review, the following locations are recommended for the manufacturing operation:

SHENZHEN, CHINA

In terms of the quantifiable location drivers identified, China outperformed India and Taiwan in infrastructure, economic stability, and labour-availability.

China is the world's second largest economy, and the largest in terms of purchasing power. (Foreign, Commonwealth & Development Office, 2021) Partnering with Chinese companies can provide access to funding opportunities as the government are investing in technology and international collaboration. (Department for International Trade, 2022)

In Doing Business 2020, a report by World Bank which provides a quantitative measure of a country's regulations that enhance and hinder business activity, China had a global ranking of 31 among 190 economies. (World Bank, 2019). Its large workforce means a vast market for selling products and relatively low wages.

Coupled with its superiority of infrastructure – a key determinant in site selection – these characteristics make Shenzhen, China a favourable location for manufacturing within Asia.

DURBAN, SOUTH AFRICA

As transportation infrastructure and availability of logistic services were deemed key determinant in the decision-making process, Durban, South Africa was selected as the most desirable location for Organisation-X's manufacturing site, having an international LPI ranking of 33. (World Bank, 2018) The diverse logistics services are result of physical infrastructures, for instance ports, road, and rail. (Brand South Africa, 2018)

Additionally, South Africa is the most sophisticated and developed economy in Africa and ranked higher than its African counterparts in ease of doing business according to World Bank. (World Bank, 2019)

Although Tunisia was identified as an attractive location for electronic production, South Africa too has well-established electronic manufacturing sectors. Furthermore, the South African Government have created special economic zones, for instance Dube TradePort, with aim to attract foreign investment. Benefits include manufacturing incentives; high end infrastructure; preferential tax rates and the Electronics manufacturing and assembly sector is a targeted priority sector. (Dube TradePort, n.d.)

A review of industry news found Samsung announced plans to open a manufacturing plant in Durban, South Africa. (White, 2020) This supports the decision that Durban, South Africa has desirable characteristics in a location.

CHIHUAHUA, MEXICO

Mexico and Brazil showed comparative performance in several factors influencing site selection, however Chihuahua, Mexico, was selected due to a handful of favourable characteristics, such as its strategic location next to the U.S.

In economic terms, Mexico is an emerging market, being the second largest in Latin America and twelfth largest in the world. (Foreign, Commonwealth & Development Office, 2021) Competitive labour costs and access to suitably skilled workforce add to the attractiveness of Mexico in manufacturing and supplying products to the U.S. In addition, Mexico entered a trade agreement – USMCA - with the United States and Canada in July 2020 to facilitate greater cross-border trade. (International Trade Administration U.S. Department of Commerce, n.d.)

According to Doing Business 2020, Mexico outranks Brazil in its ease of doing business placing 60th and 124th respectively. (World Bank, 2020) Its strategic position would provide benefits such as improved cost of transportation and reduced lead times due to closeness to markets. (NAPS, n.d.)

A basic understanding of Spanish and partnerships with a local consultancy firms would facilitate expansion to Mexico.

BENEFITS OF INNOVATION MANAGEMENT STANDARDS DURING OPERATIONAL EXPANSION

Through adopting innovation management standards – such as the ISO 56000 series – Organisation-X can not only be better positioned to grow to a sustainable and prosperous future, but also more prepared to adapt to unexpected challenges such as the disruption of global value chains in 2020. (Brady, 2021)

The ISO56000 series was prepared by experts from 49 countries, and provides a general framework to help organisations implement, maintain, and improve innovation management systems. (International Organization for Standardization, 2020)

“An organization’s ability to innovate is recognized as a key factor for sustained growth, economic viability, increased well-being and the development of society.” (International Organization for Standardization, 2020)

Standardisation would be particularly beneficial when outsourcing as it can improve alignment between collaborative parties and provide guidance on how to manage innovation partnerships.

The series provides guidance to help organisations create an infrastructure to effectively capture and implement ideas; with a view to share what works well, what could be improved and, how to understand innovation and put steps in place to make it successful. (British Standards Institute)

Adopting the ISO 56000 series to implement an innovation management system would benefit Organisation-X while expanding to global markets and play an essential part in achieving growth.

There are currently five guidance standards within the ISO 56000 series:

- ISO 56000:2020, Innovation management – Fundamentals and vocabulary
- ISO 56002:2019, Innovation management – Innovation management system – Guidance
- ISO 56003:2019, Innovation management – Tools and methods for innovation partnership – Guidance
- ISO/TR 56004:2019, Innovation Management Assessment – Guidance
- ISO 56005:2020, Innovation management – Tools and methods for intellectual property management – Guidance

(International Organization for Standardization, 2020)

Alice de Casanove, Head of Innovation Culture at Airbus and Chair of ISO/TC says “Guidance such as that offered by ISO 56002 helps every business manage its ideas, continually improve, and prepare against business disruptors such as the competition, ... It also helps instil a culture of innovation in the company, thereby harnessing the creativity and motivation of the staff and ultimately improving its overall performance.” (International Organisation for Standardization, 2020)

According to the ISO series, eight principles form the basis of managing innovation activities within organisations (Figure 8).

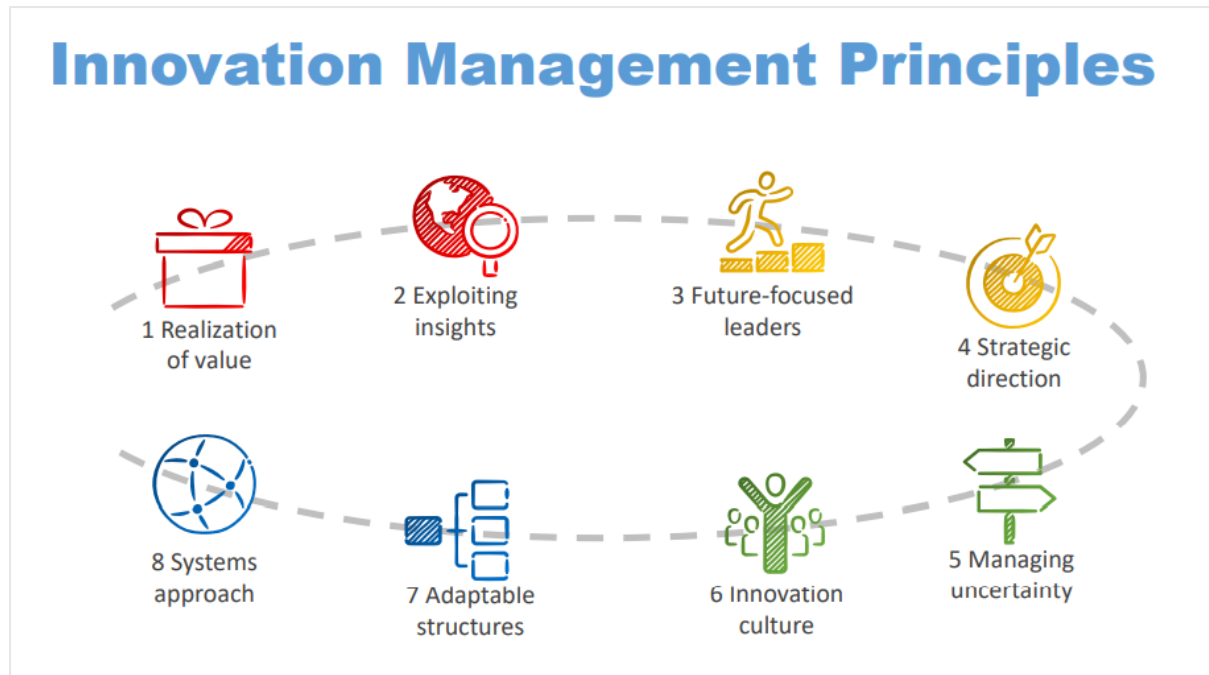


Figure 8: Innovation Management Principles (Karlsson, 2020)

A systematic management of innovation activities can support Organisation-X in:

- Defining innovation processes,
- Promoting a culture that compliments innovation,
- Removing barriers to innovation activities,
- Accelerating speed of innovations,
- Managing risks and challenges,
- Improving ability to adapt,
- Determining resources required for innovation activities,
- Pursuing opportunities more effectively,
- Supporting continuous improvement,
- Establishing KPI's and metrics.

The results of these successful innovations will help Organisation-X stand out in the global market and play a role in sustaining competitiveness and growth. (Brady, 2021) In this sense, it would increase the likelihood for success with the global expansion of manufacturing sites by identifying ways to reduce uncertainties and improving communication. The ISO 56000 series recognise how decisions made today will impact the future of the business.

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APPENDIX

Organisation-X's locations for considerations mapped:

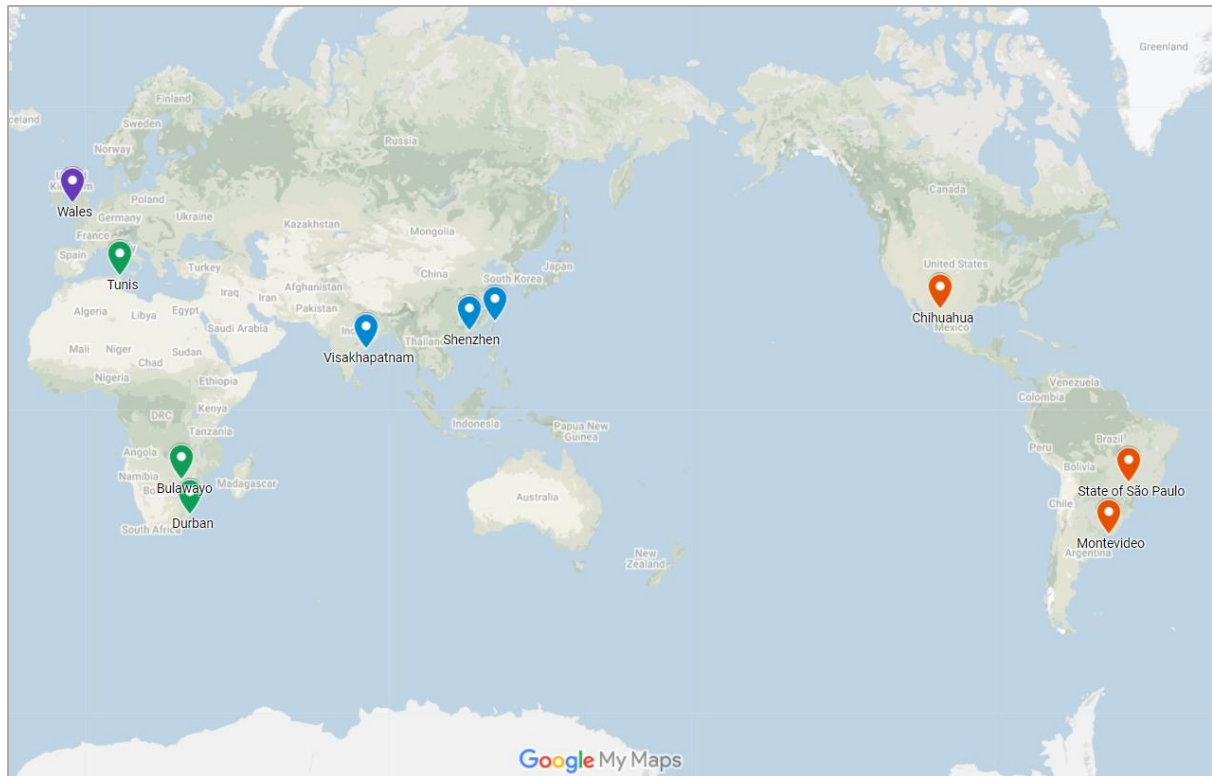


Figure 9: Mapped plot of all shortlisted locations and UK headquarters