

A metamorphic perspective for growth of landlocked developing countries

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Abstract: A landlocked country is generally disadvantaged in its goal of development. Higher costs of transportation for international movements are fairly higher both for imports and exports, putting international trade if tangible goods on the back foot. The article delves into these factors, analyzing the determinants of Porters home diamond model and its variants. Finally the author depart from the concepts of the home diamond model and propose an important role of the Government policies in enhancing competitive advantage of the landlocked nation from a perspective of a multiple diamond model to address the question “ If there are inorganic ways to achieve higher prosperity rates for Landlocked developing countries?” The author believes that Governments of such Landlocked Developing Countries (LLDC) miss out on an opportunity to transform to create an intellectual landscape and this perspective can be used to mitigate the selective factor disadvantage of ‘landlockedness’ in such nations. To make a comparative study, the author takes into consideration the determinants of Porter's Home's diamond model, the double diamond model of Rugman, and the multiple diamond model of Cartwright, Role of Multinational Enterprises by Dunning, and others and proposes a new paradigm understanding by synthesizing the multiple diamond model into what is a metamorphic perspective a nation can adopt. The author hopes this perspective shall give a platform for future research to add value.

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1.0 Introduction

Landlocked countries (LLC), as the name implies, are inaccessible to the ocean and have access only through at least one territorial neighbouring state. This results in increased land transportation costs and, in some cases, requires multiple modes of transportation contributing to higher costs and the difficulties associated with accessing maritime trade.

As per the United Nations statistics division (*UNCTAD Statistics*, 2022), there are forty-four landlocked countries, including de facto states, covering 11.4% of the land area and 6.9% of the population, totalling around 510 million people. Africa, more specifically Sub-Saharan Africa, has sixteen landlocked countries, making it the highest number in a continent globally, with Europe coming next with fourteen countries and states and Asia numbering twelve countries following third. Out of this, the United Nations recognizes thirty countries as landlocked developing countries (LLDCs). The inaccessibility of ocean transportation has made trade vulnerable to high costs. Most of the time, shipments have to be brought in by various transport methodologies, which mostly include both road and rail or both, leading to multiple handling costs and also high charges due to the return of the transport mechanisms in case the countries do not have much to export.

Digressing from the disadvantages of landlocked countries, the author wishes to highlight conceptual aspects on the competitiveness of a nation. Michael Porter, in his "Home Diamond Model," explains how six major determinants shape national competitive advantage. These are namely: factor conditions, demand conditions, related and supporting industries, firm strategy, structure, and rivalry as the major determinants, followed by the influences of government and chance as two other factors. Porter emphasizes a mediocre role of the Government in influencing development through policy advocacy. This concept was challenged by Rugman, Cartwright, Dunning, and others in its failure to capture the influences of MNEs (multinational enterprises), contributions of service sectors, and the advantages of the nation's largest trading partners and regional partners. The modifications done to the Porter's model were to include the role of MNEs and the diamonds of the trading partners of the host nation. The concept was improved to what is called the double-diamond model and the multiple-diamond model focused mostly on small developing nations. Empirical studies related to small countries showed that the impact of considering the Multiple diamond model reflected a nations competitiveness better than the Home diamond model (Brouthers & Brouthers, 1997)

On yet another note, the term “Metamorphosis” is synonymous with a change of physical form by supernatural means, a striking alternation in circumstance and an abrupt change in form. In this article, the author has developed a new perspective that land locked developing countries can take by a radical review and change of their attitude towards achieving economic prosperity. A few departures surmises the viewpoints, from the Porter’s home diamond model which seem to have made a tremendous impact on policy makers and industry in shaping up their performance inspite of its non applicability wholly for smaller developing economies.

There are three ways to study the impact of performance of LLDC’s. One is to compare the population and GDP of countries that are landlocked and similar countries that are directly connected to ocean routes with that of LLDC’s, and the second is to compare the parameters within the list of landlocked countries to find how some outperform the others and the factors that contribute to the difference. The third aspect is to give a new paradigm of understanding by synthesizing the home diamond model into what the author wishes to term a metamorphic perspective route an LLDC can take to make a meaningful impact on its macro economic performance. This manuscript delves in to the last perspective of a national metamorphosis opportunity giving a platform for future research to embark and add value.

The article discusses Porters home diamond model and its variants, the nature of industrial clusters, the challenges of poor economic prosperity in LLDC’s, and attempts to identify transformational methodologies that can be adopted by LLDS’s to augment their economic performance.

2.0 Literature Review

2.1 An overview of Porters home diamond

One of the key pieces of literature that the author considers in this review is that of Michael Porter’s Competitive Advantage of Nations (Porter, 1990), a landmark study that identifies the determinants contributing to the competitive advantage of nations generally known as the Porter’s Home Diamond model. The study itself considers the national performance of ten developed countries, and Porter defines prosperity for a nation is by the enhanced productivity of the employees in the nation, thereby giving a microeconomic foundation to define a nation’s progress. As per Porter, competence building is one of the key strengths of the nation and promulgates six determinants that influence a nation’s competitive advantage. They are factor conditions, demand conditions, related and supporting industries, and firm strategy and rivalry. The other two influencing factors are government and chance. This article shall not delve into the chance factors. It is essential that there be interdependency among the main four determinants, and the proficiency of one determinant alone cannot contribute to a national competitive advantage. Amongst the determinants, the factor condition can be categorized into two categories: basic factors and specialized factors. Basic factors are the natural endowments available in a country, location, labor that is unskilled and semiskilled, and debt capital, while the specialized factors include high-end communications, educated personnel availability, and the availability of graduates from advanced disciplines. It is important that a nation possess more advanced factors than basic factors. It has been repeatedly seen that the presence of natural

endowments is in fact a detrimental factor, given the lack of value addition and specific competitive advantage. The presence of advanced factors provides the necessary conditions for rivalry and competition in providing superior products and services.

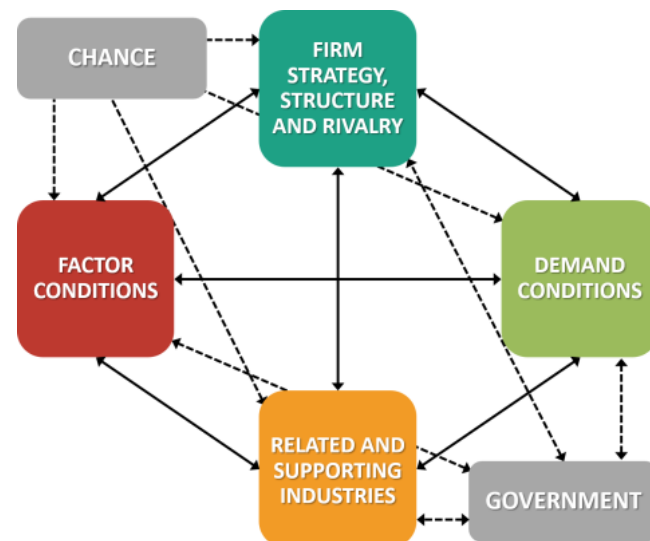


Figure 1: Porters Diamond Model (Porter, 1990)

2.2 National conditions, Challenges leading to success or failure of home country firms:

Competition is essential for any industry to thrive and innovate. One of Porter's determinants involving firm rivalry is focused on levels of intense rivalry amongst firms. Such rivalry can happen in two ways. One is when industries get into cutthroat competition by reducing prices, it hurts all the players in the market. The other is for firms to engage in upgrading the quality of the products through continuous innovation and the use of superior technology that results in higher and higher quality. This will also enable the home nation's consumers to be aware of the features of the products and raise their awareness and demand levels for superior products. This experience will help largely the home nation industry succeed when they approach international markets(Porter, 1990). However, the competition intensity must also be characterized by the appropriate pressure levels, as too little or too much of this can hamper purposeful economic performance due to a lack of efficiency or innovation (Lawrence, 1987).

2.3 Role of Clusters

Advanced factor conditions depend on higher and more intense levels of rivalry, and this has been greatly influenced by the formation of industrial clusters. Clusters are geographic concentrations of homogenous industries and their value chains (Porter, 1990). The competitive intensity is also vastly influenced by the size and performance of the cluster and the number of R&D centers developed that enhance innovativeness across firms (Jia et al., 2017). Clusters are becoming more popular in both developing and developed countries as firms brace up to face the challenges of globalization and to sustain effective economic activities that are contributed by global competition (Malmberg & Maskell, 2002) (Bathelt et al., 2004) (Martin & Sunley, 2003) (Porter, 2000). Clusters are capable of creating agglomeration economies in the region by creating local external economies that have value creation and value capture as the main critical components of cluster strategy (Lorenzen & Mudambi, 2013). The value chain rests on continuous improvement based on specialized knowledge

in a home nation environment where there is a high degree of institutional development, infrastructure, and market development (Hoskisson et al., 2013). It is critical to understand that a nation's endowed factors are used to produce goods and services (transformation activities), while the institutions convert inputs to outputs with other firms (transactional activities) (Wan & Hoskisson, 2003). Institutions have a higher level of influence in influencing business activities. These institutions face enormous transitions with the advent of globalization. Unfortunately, it is observed that there is a lack of institutional development and a lack of infrastructure and market factor development in traditional emerging economies (Hoskisson et al., 2013). Hence, it is imperative for firms to strategize their entrepreneurial orientation and resource orchestration capabilities to handle the impact of globalization. This is highly emphasized by the need to structure elements of human resources, social network movements, and resources related to financial and technological matters that shall help exploit expanding opportunities and enhance the nation's competitive advantage (Ireland et al., 2003).

Innovation can happen in a nation only if it has a very strong infrastructure for research and strong human strengths. While in many cases this is carried out by MNEs, innovation can also happen through a strong cluster development program, which drives a nation's competitive advantage (Ozkanli & Akdeve, 2009). Such continuous innovation practices and the collective efficiency of a cluster can be measured and applied to manage the performance of the cluster as a whole, not just of individual firms (Carpinetti et al., 2007). It is in this context that the concept of "coopetition," which denotes cooperation and competition amongst players in a cluster network, was born. However, it must be noted that such cooperation seems to be mostly present only in basic cost-saving strategies, and when it comes to innovation and high-tech interventions, the cooperation strategy may not work out and the players prefer to do it themselves (Felzensztein et al., 2018).

3.0 Landlocked Developing Countries (LLDC)

The definition of a landlocked country has been discussed earlier in this article. There are sixteen countries in Africa, making it the most countries in a continent, followed by Europe and Central Asia. Most of these countries do not have proper infrastructure and also suffer from high costs of materials that need to be imported from elsewhere. There is also the aspect of "collective deficiency", where the neighbouring states also perform poorly. There has been adequate literature confirming the adverse impacts of trade in LLDCs. The impact of the trade adversity is enhanced in Africa given not only the distance from the sea to important trade centers in the LLDC but also the various geopolitical issues that hinder a streamlined flow of goods into and out of these countries. There are several challenges to doing trade in a LLDC, which include enhanced difficulty in the migration of labor on cross-border aspects and arranging enhanced infrastructure development (Gallup et al., 1999). While it has been observed that LLDC can export more than 100% if they have access to the sea, the economic growth showed 1.5% lower growth prospects than a non-landlocked country (Mackellar et al., 2000). Some of the challenges faced by LLDC are also related to their poor neighborhood (Paudel & Cooray, 2018). The author opines that this may be very subjective, and with the right levels of governance and strategic policies, a LLDC may be able to overcome this. Apart from difficulties arising from physical

infrastructure-related factors, non-physical infrastructures like border crossing formalities and customs procedures, quarantines, expensive financial transactions, and levies play a major role in increasing the costs involved in such cross-border trade and imports and exports.

However, it may be observed that some European countries have excelled in terms of economic performance in spite of their landlocked status. This seems to have been augmented by the presence of strong neighbours. From a "multiple diamond" perspective, it is possible to increase trade within the region by creating a supranational diamond instead of a home diamond so that the LLDC are able to outperform their current levels of economic performance.

The author observes that due to poor economic performance in some LLDC the cluster development has not been motivated due to challenges in funding and the ignorance of the concept amongst industry and governments in such countries. Especially the study by (Hoskisson et al., 2013) categorises economies in terms of its emergence. The taxonomy of such classification rides on the Institutional development factors and the Infrastructure and market development factors apart from state of the art research institutions.

The article emphasizes the fact that infrastructure and factor market development, including institutional development, are poor in traditional emerging economies (Hoskisson et al., 2013). This appears to be a vicious cycle for such economies in that the value chain that defines the development of both factors has to interact with each other. Most of the LLDCs are traditional emerging economies. While some of the LLDCs in Africa have natural endowment, it has not helped grow the economy due to factors that are related to poor technology, poor human capital, and a high cost of capital. In spite of the global increase in nations adapting to technological changes and innovation, by 2016 the share of total merchandise exports of landlocked countries was a mere 1% compared to non-landlocked countries at 22%, which signifies the poor adaptive synergies that could have been exploited through increased use of technology and capable manpower (Paudel & Cooray, 2018).

Further, the author also proposes that nations do not need to reinvent the wheel when it comes to managing knowledge. Nations can adopt either of the four knowledge strategies based on geographical sources and contextual knowledge, namely replicating, scouting, connecting, and integrating (Li & Bathelt, 2020). Though these strategies are for MNEs, it is our opinion that they can be extended to nations.

Replicating is the knowledge transfer that happens from the home country to a foreign subsidiary or vice versa. This knowledge is non-contextual, meaning it can be replicated without much modification at the destination. Scouting happens when an entity from a non-cluster studies a cluster component for new knowledge. Since this is mostly operational or restricted to a function or surrounding it, it envelopes a contextual position, and hence the essence can only be derived or mapped to suit another use for the knowledge. Connecting strategies and integration strategies occur when different knowledges in different spatial settings are being considered for assimilation or augmentation, respectively (Li & Bathelt, 2020). These methods of knowledge-based strategies can be used by nations for accelerating economic progress and are referred in subsequent discussions.

4.0 Discussions on how the above can be exploited by LLDC's

Given the difficulties of being traditional borrowers, most LLDCs have poor infrastructure and factor market conditions. The institutional development index is also very low, indicating low levels of motivation for MNEs to invest and bring in FDI (foreign direct investment). Thus, the failure of the landlocked developing countries to attract FDI can be attributed to poor local factor endowment and a failure to accelerate economic development. While the author wishes to use the matrix of

institutional development and infrastructure of nations, it is proposed that the core determinants that shape up these factors need to be studied and understood for LLDCs.

From Porter's home diamond model, the author observes that the factors that are considered are what would be called as high-level factors, or in Porter's terminology, broad determinants. The author intends to propose that there are fundamental factors that are critical and the root cause of the performance of the high-level factors and has developed the table below to highlight the factor categorization for LLDC countries.

Determinants of Home Diamond	Dependent variables	Competitiveness Criticality (Low- Moderate- High)
Factor Conditions	Labor- Unskilled Labor – Skilled Arable land Natural Resources Capital Infrastructure Academia / R&D Technology	Low High Low High Moderate High High High
Demand Conditions	Per capita income Per Capita consumption Education Product Quality Product range Government policies	Low High High Moderate Moderate High
Related and Supporting Industries	Government Policies Infrastructure Education Academia/ R&D Supply Chain Technology	High High High High High High
Firm Strategy, Structure and Rivalry	Education Government Policies Capital Academia/R&D	High Moderate Moderate High

Table 1: Causal factors of broad determinants of Competitive advantage of nations

An observation on LLDC's given that countries like Zambia, South Sudan, Chad, Central African Republic, Ethiopia are large geographies, the author makes a considered opinion on the following specific factors that are critically important:

1. Arable land – The larger the arable land availability it becomes a factor of abundance and there appears no reason for relevant sectors to focus on innovative practices to increase yield.

2. Natural Resources – The results of focus of LLDC's where there is abundance of natural resources, seems to be that the whole economy banks on the exploitation of the resource. Since the prices of mineral resources are globally volatile, such movements invariably affect the performance of the economy. Also the author feels that in such cases where the economy is highly dependent on exploitation of natural resources, which in turn does not require advanced skillset the economic progress of such nations, which is normally

measured by the GDP gives a wrong picture of the actual domestic consumption. This is because the export of such mineral resources in raw form reflects in the nation's GDP and not necessarily the goods that are produced that are consumed within the nation. This eventually gives a wrong notion of having higher GDP and higher per capita income but eventually the prosperity of the citizens are compromised. Hence, in line with Porters four stages of nation's growth viz Factor driven, Investment driven, Innovation driven and Wealth driven (Porter, 1990), the nation essentially gets itself into a growth lock at the factor driven stage (Aiyar et al., 2013). Hence while it may appear to the policy makers that the natural resource is a critical factor, the author argues that it must not be the case.

3. The author proposes that Government policies must play a major role in shaping up the economy and carefully planned interventions into development of industrial clusters will enhance the normal route of conversion from a factor driven to investment driven economy maturing into an innovation driven industry.

5.0 A conceptual proposal - A metamorphic direction for growth

Porter has argued that Governments must be support systems and any influence from the government in controlling the private sector and its performance may not provide the necessary foundation for progress (Porter, 1990). This was confined mainly to the list of developed nations that were part of the study. The author however counter argues that for developing countries especially the ones that are disadvantaged due to being landlocked, it is critical to have positive interventions from the government. The author proposes the following actions to be considered by Governments of LLDC's in order to strategically align many of their long term vision in terms of prosperity to actions that result in collective efficiencies of the efforts of all the stakeholders.

1. Aid in formation of Industrial clusters

The author opines that the concept of clusters development is virtually absent in many of the LLDC's. It has been often confused to be forming an economic zone, or an association of some industries. Catalytic agencies like UNIDO generally would wish to have proposals for Cluster development coming from the government to initiate action, which invariably does not happen mainly due to ignorance of the subject. It must be clearly understood that the government intervention must be catalytic in nature for the value chains under consideration.

2. Systematically move away focus from factor driven approach to growth

This involves a mindset change in the bureaucracy to act in parallel to develop co competencies in emerging sectors. Merely extrapolating past performance and actions do not require a strategy (Igor, 2019), and with rapidly changing technological landscape it is very important for nations to identify and develop competencies that the industry can capitalize on.

3. Enhance advanced factors with a focus on building competence

It is generally observed that skills and competence are confused. Skills explain how to do a job, while competence involves additionally, the knowledge of why a job is being done. Most workers know how to do but are not able to develop competence through knowledge by understanding the fundamentals of the operations. It is this competence that Porter talks about that

enhances productivity and hence the prosperity of a nation. It is the author's considered opinion that apart from institutions that reflect inclusivity, the Government must create centres of excellence in sectors that it identifies as having a potential for rapid growth. This shall include Academic institutions, Research & Development orientation between Institutions and Industry, State of the art testing laboratory for various sectors.

4. Governments to address selective factor disadvantage by metamorphic action

Porter has proven in his seminal works that a nation with a selective factor disadvantage works its way through innovatively to transform the factor disadvantage into an advantage. However, it appears nations that are landlocked do not perceive that as a factor disadvantage and policies are developed in creating conditions that merely amplify the disadvantage than ameliorate it. The paper argues that it shall be a major role of the LLDC government to identify technological advancements as factors for transforming their nations from the factor disadvantage. For example, Information technology has no relevance to being landlocked or land linked, and transactions happen instantaneously from and to other geographies thousands of miles apart. The author proposes that nations can develop faster being virtually linked than being land linked. With the high costs of transportation, irrespective of the quality, efficiency and effectiveness of the produce, firms in LLDC are subject to being out priced by the time the produce reaches the destined markets. With adoption of technology not only is the value addition immense but it also paves way for investments both ways, for MNE's (Multi national enterprises) to invest in the home country as well as local firms to expand and invest in other markets.

One may question as to why such steps cannot be taken by ocean bordered developing countries. It is the author's opinion that the criticality of a situation is best described when there is a disadvantage. Hence ocean bordered nations may be focused on enhancing trade using manufacturing of physical goods as it is the least expensive route to growth.

6.0 Conclusion:

From the above, the perspectives of the author provide a platform for LLDC to shy away from traditional planning for development actions, and to probe into creating sustainable long term advantages from competence in emerging sectors. The author has given a viewpoint that has the capacity to make the LLDC to jump from its factor driven growth prospects to an innovation driven one by focusing on advanced factors. This also establishes the economic growth envelopes a multiple diamond model than a home diamond one. A word of caution in adopting this is the time frame taken to achieve certain threshold levels of economic prosperity given that competence development cannot be obtained collectively in a short span of time. For LLDC that look at creating a sustainable platform for increasing prosperity levels in their nations, it is critical to think beyond harvesting basic factor conditions. This is an initial thought and provides huge scope for future researchers to develop on this idea.

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