Is Namibia in a middle – income trap?
A comparative analysis

By

Bernie Zaaruka, PhD[1]
Charlotte Tjeriko, MA

Research and Financial Stability Department

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Executive summary

Economic literature has shown that few middle-income countries have successfully progressed to high-income level. *This phenomenon raises concern about the validity of the neoclassical growth theory, which predicts global economic convergence. Namibia has established an enviable track record of political stability, mostly prudent macroeconomic policies, reasonable growth, and natural resource conservation.*

There is growing concern that Namibia might have fallen into a "middle-income trap" and be unable to move on to achieve high levels of economic growth and further economic transformation. *A middle-income trap is a development stage that characterizes countries that are squeezed between low-wage producers and highly skilled, fast-moving innovators. Therefore, this paper attempts to highlight the Namibian economy patterns since its independence up to the current position using the middle-income trap criteria.*

The theoretical definition refers to middle-income trap as a trap of policy misdiagnosis when countries fail to match their growth strategies with prevailing structural characteristics of the economies. *First, it is observed when middle-income countries get squeezed between the low-wage countries (particularly China) that dominate in mature industries (such as the manufacturing sector) and the innovators in rich countries that dominate in industries undergoing rapid technological change due to higher wages. The second trap is caused by a premature leapfrog into knowledge economies, without proper institutional infrastructure in place.*

The middle-income trap (MIT) definitions are subdivided into absolute and relative approaches (Im and Rosenblatt 2015). *The absolute definitions are based on absolute middle-income thresholds whereas the relative approaches refer to the per capita income relative to a developed country (frequently the US).*

Based on the two MIT definitions, the absolute definitions do not provide conclusive results for Namibia. *This is mainly because the upper middle-income upper bound is closely related to Namibia's present-day GDP per capita PPP. The Spence (2011) and Felipe et al., (2014) thresholds of U$ 10,000 and U$ 11,750 is close to Namibia's GDP per capita of U$ 11,135 in 2018. The definition by Eichengreen et al., (2013) does point to a potential growth slowdown for Namibia.*

The relative approach definition by Im and Rosenblatt (2013) shows that, given Namibia's current GDP per capita growth rate, it will take Namibia 54 years to catch up to the US economy. *Using the relative approach definition, if a country grows faster (in per capita terms) than the rich countries, it will eventually catch up with the high-income countries real GDP per capita. Assuming the US economy's average growth rate of real GDP per capita is 1.8 percent per annum, it will take Namibia 54 years to converge to high income status, provided that it grows by an average of 5 percent per annum. Namibia's average GDP per capita growth rate since independence is 2.13 percent, at this growth rate, it will take Namibia over three centuries to reach high income status.*

According to the literature, there are several factors that trigger an MIT. *Based on literature, these factors range from poor quality universities, low levels of human capital, limited venture capital, regulatory barriers and incomplete rule of law present significant barriers to becoming an innovation-driven economy. In this paper we highlight five economic factors (human capital, export structure, TFP, innovation and infrastructure) most often identified as triggering factors in the MIT literature. Namibia performed poorly in all these factors, which indicates that the country is in MIT and should look into policies that aim to improve these factors.*

The following policies are proposed for Namibia to avoid MIT. *Namibia's education system needs to be linked with industrial targets; give priority to niche manufacturing that is employment-intensive and geared to global markets to increase exports, acquiring foreign technology that build domestic firms technological and business capabilities, to improve productivity gains; Government, in consultation with the private sector, should identify growth-enhancing infrastructure projects for collaboration as well as making public procurement deliver value for money by reducing corruption; Namibia should Invest in Research and Development (R&D) to support innovation and industries in Namibia; Integrating domestic markets into global markets will helps increase firm competitiveness in Namibia*

1. Introduction

1. **Namibia has established an enviable track record of political stability, generally prudent macroeconomic policies, moderate growth, and natural resource conservation.** Namibia made a few strides on reducing poverty. The share of people living on USD1.25/day or less, has declined by almost 60 percent—to 21 percent in 2009 from 49 percent in 1993. The Gini index declined from 70.1 in 1993/94 to 60.3 in 2003/2004; to 59.7 in 2009/2010, and further to 56.0 in 2015/16. Per capita income has grown sufficiently to place the country in the upper-middle income classification. Namibia has achieved these gains while facing constraints imposed by geography and legacies of apartheid and colonialism (World Bank, 2017).

2. **There is growing concern that Namibia might have fallen into a "middle-income trap" and is unable to move to achieve higher levels of economic growth.** Namibia successfully transitioned from low- to upper -middle -income status in 2008, however, there is growing concern that Namibia might be in a "middle-income trap" and unable to move to higher levels of economic growth and further economic transformation. Furthermore, despite the huge improvements in poverty levels, Namibia's total factor productivity has been falling (Ziramba et.al., 2018). In addition, the country relied substantially on foreign direct investment in the mining sector for technological transfer. Therefore, adequate technology creation and diffusion did not occur, and industry linkages and clustering are not widespread to break through a potential middle-income trap.

3. **The economic growth literature has shown that only few middle-income countries have successfully attained high-income levels.** Although economic growth during the early 1960s has lifted many low-income economies to middle-income levels and other economies to even higher levels of income, very few countries have been able to catch up with the high per capita income levels of the developed world (Arias and Wen, 2015). Many poor countries today have a per capita income that is 30 to 50 times smaller than that of the U.S. and sometimes even lower.

4. **This economic divergency raises concern about the validity of the neoclassical growth theory, which predicts global economic convergence**. The neoclassical growth model suggests that poor economies, starting with a lower capital stock, will be able to grow relatively faster than developed countries and eventually catch up with their

income levels through capital accumulation and technological adoptions from the developed world (Robert Solow 1956). This implies that effective transition from middle to high-income level requires an efficient resource use, private sector improvement, productivity enhancement and technology.

5. **What is of interest then is to know what is meant by this so-called middle-income trap.** During the last decade the term "middle-income trap" (MIT) has entered common talks and received much attention in scientific and non-scientific literature. The term MIT commonly refers to countries that have experienced rapid growth, which enabled them to reach the status of a middle-income country but have not been able to finally catch up to the developed countries and achieve high-income status – instead they became caught in the middle-income range (the so-called MIT).

6. **MIT is a development stage that characterizes countries that are squeezed between low-wage producers and highly skilled, fast-moving innovators.** Countries caught in this trap tend to grow more slowly and often fall behind. Cost advantages in labour-intensive sectors, such as the manufactured exports, that once drove growth, start to decline in comparison with lower-wage countries. At the same time, "trapped" countries lack the institutions, capital markets, track record, or critical mass of highly skilled workers to grow through major innovations, like wealthier countries.

7. **Therefore, this paper attempts to examine the Namibian economy patterns since independence to its current position, using the middle-income trap criteria.** The aim of the paper is to ascertain if Namibia is indeed in a trap, or in danger of falling into one. Moreover, this paper goes further ahead in cross-country evidence of how Namibia compares with peer middle-income countries, as well as high-income countries. It further looks at the factors that are known to lead countries into a trap, known as the triggering factors.

8. **This paper is organised in six sections as follows:** The introduction serves as section 1, while section 2 presents the literature review, by outlining the various definitions and concepts on the middle-income trap. Section 3 apply these definitions to the Namibian economy to test for the existence of the middle-income trap. Section 4 presents a comparative analysis between Namibia and other economies (both middle-income and high-income) countries, focusing on factors that increase the probability of a growth slowdown at the middle-income level. Section 5 offers policy options, while section 6 concludes.

2. What does the Middle – Income Trap mean?

2.1 The definition of a Middle-Income Trap (MIT)

9. **There is no universal definition of the MIT.** There are different interpretations of this phenomenon popular among researchers. According to Gill and Kharas (2015), the middle-income trap is more the absence of a satisfactory growth theory to inform development policy in middle-income economies than the articulation of a generalized development phenomenon. Gill and Kharas (2015) set two groups of definitions for the MIT, the theoretical definition; and the empirical/quantitative definition.

10. **The theoretical definition refers to the middle-income trap as an economic environment of policy misdiagnosis when countries fail to match their growth strategies with prevailing structural characteristics of their economies.** There are two common traps identified that middle-income countries could fall into (Gill and Kharas, 2007). First, it is observed when middle-income countries get squeezed between the low-wage countries (particularly China) that dominate in mature industries (such as the manufacturing sector) and the innovators in rich countries that dominate in industries undergoing rapid technological change due to higher wages. The successful transition from low-income to middle-income status tends to increase the wage levels in middle-income countries.

11. **The second trap is caused by a premature leapfrog into knowledge economies, without proper institutional infrastructure in place.** Poor quality universities, low levels of human capital, limited venture capital, regulatory barriers and incomplete rule of law present significant barriers to becoming an innovation-driven economy (Gill and Kharas, 2015). Middle-income countries that invest heavily and prematurely in trying to become "knowledge economies" can find low returns to such investments. The combination of wasted fiscal spending and a faulty growth diagnostic can lead to substandard performance—another example of the middle-income trap.

12. **The empirical MIT definitions uses economic measures to classify economies and are subdivided into absolute and relative approaches (Im and Rosenblatt 2015).** The absolute definitions are based on absolute middle-income thresholds whereas the relative approaches refer to the per capita income relative to a developed country (frequently the US). The absolute MIT definition is based on the observation that many countries remain

in a narrow income band over long periods of time. The relative approach, in contrast, usually refers to the per capita income relative to the US or another developed country. Many authors (e.g., Felipe et al., 2012; Aiyar et al., 2013) that use absolute values for the thresholds refer to the yearly updated country classification of the World Bank. This classification distinguishes between four income categories based on the real per capita gross national income (GNI) calculated based on the Atlas method (Table 2.1).

Table 2.1. Per capita GNI thresholds.

Classification	Income Range
Low-income economies	< $1,025 in 2018
Lower-middle-income economies	$1,026–$3,995 in 2018
Upper-middle-income economies	$3,996–$12,375 in 2018
High-income economies	≥ $12,376 in 2018

Source: World Bank (http://data.worldbank.org/about/country-and-lending-groups)

13. **A large part of the literature on the matter has mainly focused on using absolute measures of income levels or growth rates to characterize income gaps or to measure low- and middle-income traps (Spence, 2011; Felipe et al., 2012; Aiyar et al. 2013, Eichengreen et al., 2014, among others).** Spence (2011) was the first to suggest a fixed threshold for the MIT and proposed a range of between 5,000 USD and 10,000 USD per capita (PPP) income. He argued that this is the stage of development at which the transition to higher-income levels becomes challenging.

14. **The absolute MIT definitions, derived by Felipe, Abdon, and Kumar (2012) calculated the critical threshold for determining the middle-income trap based on the number of years it takes a country to move from one income category to another.** Their definition of MIT says that a country is in the MIT if it stays for more than 28 years in the lower-middle-income range (range between 2,000 and 7,500 USD per capita, PPP, constant 1990 prices; average pace of growth 4.8 percent annually). Furthermore, it states that a country is in MIT if it stays for more than 14 years in the upper-middle-income range (between 7,500 and 11,500 USD per capita, PPP, constant 1990 prices; average pace of growth 3.5 percent annually). According to Felipe, Abdon and Kumar (2012), in their sample of 38 lower-middle-income countries and 14 upper-middle-income countries in 2010, 35 in total could be identified as countries that were stuck in the trap.

15. **Aiyar et al. (2013) also adopted the absolute income approach by treating the MIT as a special case of growth slowdowns and exploring their determinants.** The authors interpreted growth slowdowns as sudden and sustained deviations from the growth path predicted by a basic conditional convergence framework. Based on this assumption, they suggested two thresholds: first at the level of 2,000 USD per capita (Purchasing Power Parity (PPP) adjusted, constant 2005 prices) for low-income countries; and second at the level of 15,000 USD per capita (PPP, constant 2005 prices) for middle-income countries. They argued that the main reason for this choice is that the GDP per capita classification generated by these cutoff points is extremely close to the GNI per capita classification employed by the World Bank.

16. **Eichengreen, Park and Shin (2013) suggested another threshold, drawing on the concept of growth slowdowns.** The study defines a growth slowdown episode as one in which three conditions are satisfied: (i) growth in the preceding period is greater than or equal to 3.5 percent per annum; (ii) the difference in growth between the current and preceding period is greater than or equal to 2 percentage points per annum; and (iii) the country's per capita income exceeds USD10,000 in 2005 constant international prices. As a result, Eichengreen, Park and Shin (2013) identified two peaks between which the likelihood of such slowdowns is most probable: between 10,000 and 11,000 USD per capita (PPP, constant 2005 prices) and between 15,000 and 16,000 USD per capita (PPP, constant, constant 2005 prices).

17. **An advantage of the empirical interpretations is their clarity and the supporting empirical work (Pruchnik and Zowczak, 2017).** By using an absolute threshold, one can easily judge whether a country has managed to escape the MIT. Although per capita income does not completely describe a country's level of development, it has proven to be closely correlated with other important indicators of quality of life, such as life expectancy at birth, child mortality rates, and school enrollment rates (World Bank, 1989).

18. **On the other hand, Woo et al. (2012) is among a few studies that used the relative approach to MIT.** Woo et al. (2012) define the middle-income range between 20 percent and 55 percent of the US per capita income. The study constructed a Catch-Up Index (CUI) by dividing a given country's income level by the US income level. Countries with a CUI over 55 percent are classified as high-income, whereas those with a CUI below 20 percent are classified as low-income, while the rest are classified as middle-income. Woo

et al. (2012) suggested that a country is stuck in the MIT when it shows no tendency to converge to the global economic leader (i.e. the US).

19. **Im and Rosenblatt (2013), also used the relative definition approach.** They focus on the probability of a country entering the next income category. Contrary to most of the other articles, they use a trisection of the middle-income range in “lower-middle”, “middle-middle”, and “upper-middle”. Im and Rosenblatt (2013) use per capita GDP data from Maddison (2010) for 127 countries within the period from 1950 to 2008. They conclude that the transition from upper-middle to high-income status is just as likely as the transition from the lower-middle to upper middle range. Therefore, they doubt the existence of the MIT. However, it is questionable how far these results are due to the trisection of the middle-income range. It would therefore be interesting to see how results change if one only uses two middle-income sub-categories.

3. Is the Namibian Economy in a Middle – Income Trap?

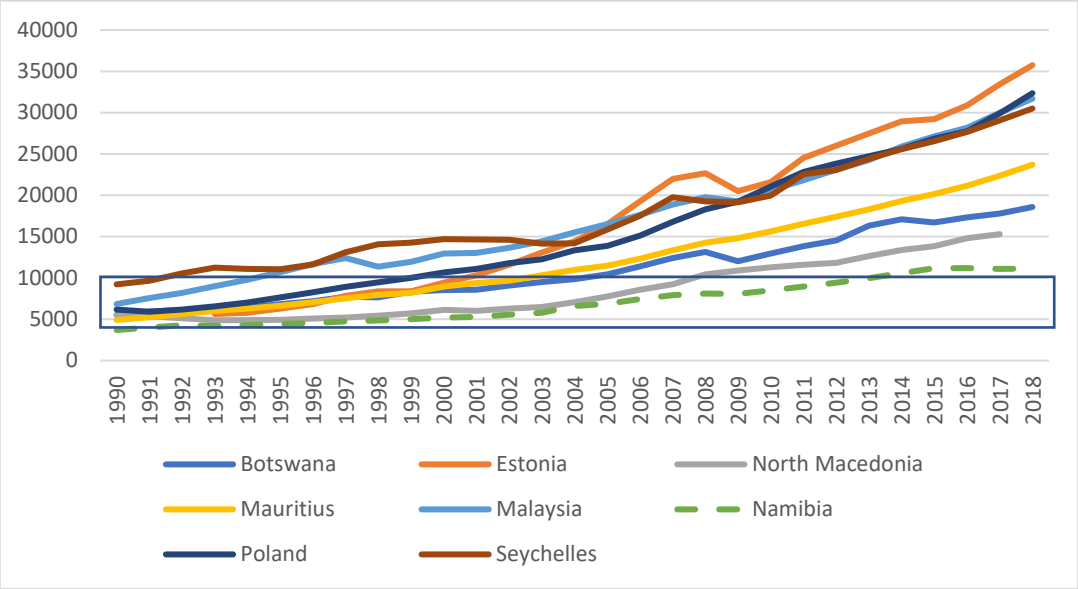
20. **In this section, we apply both the (absolute and relative) empirical MIT definitions to Namibia.** By doing so, we aim to answer the question of whether there are any signs of the Namibian economy being in a middle-income trap or approaching the trap. This approach is followed by a number of studies such as Glawe and Wagner (2017); Cherif and Hasanov (2015); and Csath (2019) among others that focus on country-specific analysis. The empirical MIT definition threshold applied are shown in the Table 3.1 below, as guided by the literature.

21. **It is useful to compare Namibia to selected middle-income countries as well as to economies that transitioned to high income to identify potential barriers to continued high growth in Namibia.** The selected middle-income countries are Botswana, Mauritius, Malaysia, North Macedonia, while the high-income countries are Poland, Seychelles and Estonia as per the World Bank classification. To do so, we obtained the absolute values for the thresholds as per the yearly updated country classifications of the World Bank. The selection of higher-income is informed by countries whose transition from upper-income to high-income after the 1990s to learn from recent economic policies followed by these countries.

3.1 The absolute MIT Definitions

22. **In terms of the absolute MIT definitions, of Spence (2011), which shows that Namibia is above the MIT identified threshold.** The study provides fixed level of income as a threshold for the MIT, GDP per capita ranging between USD 5,000 and USD 10,000. According to Spence (2011), this is the stage of development at which the transition to higher-income levels becomes challenging. Using the data by the World Bank, as a low middle-income country, Namibia entered the threshold of real GDP per capita of USD 5,000 in 1999. The country then succeeded to move to an upper-middle income country status in 2008, with an average GDP per capita growth of 5.3 percent between 1999 and 2008. Between 2009 and 2018, Namibia's real GDP per capita growth slowed to 3.1 percent, despite bridging the USD 10,000 threshold in 2014.

Figure 3.1: An illustration of the MIT based on the definition of Spence (2011)



Source: Authors compilations based on data from the World Bank

23. **Namibia satisfies the definition conditions indicating the problem of slowing growth in middle-income countries, as highlighted by Eichengreen et al., (2013).** Based on the Eichengreen at al., (2013), as a first step, we extend the data series with the IMF forecast, which gives projections until 2023. Thus, we identify the period of a growth slowdown in Namibia as 2016. Namibia and Botswana are the only countries that satisfy conditions (1) – (3), and had, thus experienced a growth slowdown of middle-income according to the Eichengreen et al., (2013) definition. This observation is in line with the "middle-income trap" hypothesis, which refers to the phenomenon of hitherto rapidly growing economies stagnating at middle-income levels and failing to graduate into the ranks of high-income countries.

Table 3.2 MIT based on the Definition of Eichengreen et al., (2013)

	Namibia		Botswana	
GDP per capita (avg 7 years before)	2009-2015	4.7%	2007-2013	5.4%
Year of slowdown	2016	0.4%	2014	4.8%
GDP per capita (avg 7 years after)	2017-2023	1.8%	2015-2021	2.8%

Source: Authors compilations based on data from the World Bank

24. **The study by Felipe, et al., (2012); and Felipe, Kumar and Galope, (2014), also adopted the fixed income approach emphasising the number of years a country spent within the income category.** A country is in a MIT if it stays for more than 28 years in the lower-middle income range (LMIR). From the available data provided by the World

Bank (1989 - 2018), Namibia spent around 19 years as a LMIR country before moving to the upper-middle-income (UMIR) range in 2008. Between 2008 and 2018, Namibia's real GDP capita grew by 3.2 percent per annum which is more or less in line with the definition of Felipe et al., (2014), which calls for 3.27 percent growth rate for upper-middle-income (UMI) to transverse to higher-income (HI) countries. Namibia has been in the middle-income category for a period of 11 years, which is still below the 15 years which is the median of the economies that transition from the upper-middle income category to higher-income (Felipe et al.,2014).

25. **Namibia's recent growth pattern suggests that it could be in danger of becoming part of the slow transition economies.** Given the number of years that Namibia has been upper-middle income and the recent growth performance, there are indications that the economy may be at risk of making a slow transition from UMI to HI. For Namibia to transition into HI within the historical median of 15 years, a growth rate of 3.27 % is required. Therefore, Namibia should implement policies to accelerate growth to avoid the MIT.

Summary

26. **The absolute MIT definitions does not provide conclusive results on Namibia.** This is mainly because the upper middle-income upper bound is straddled around Namibia's present-day GDP per capita. The Spence (2011) and Felipe et al., (2014) thresholds of USD 10,000 and USD11,750 is close to Namibia's GDP per capita of USD 11,135 in 2018. The definition by Eichengreen et al., (2013) does point to a potential growth slowdown for Namibia.

27. **The use of a fixed threshold is straight forward and makes it easy to determine whether a country is or is not in the MIT.** One advantage of these empirical interpretations is their clarity and the supporting empirical work (Pruchnick and Zowczak, 2017). Although per capita income does not completely describe a country's level of development, it has proven to be closely correlated with other important indicators of quality of life, such as life expectancy at birth, child mortality rates, and school enrolment rates (World Bank 1989).

28. **The criticism of fixed threshold definitions of the MIT is that at some point in time all countries will surpass the fixed income thresholds if these thresholds stay**

unchanged. The standard methods to define income status requires regular updates so as not to ignore the evolution of income in other countries.

3.2 The relative approach MIT definition

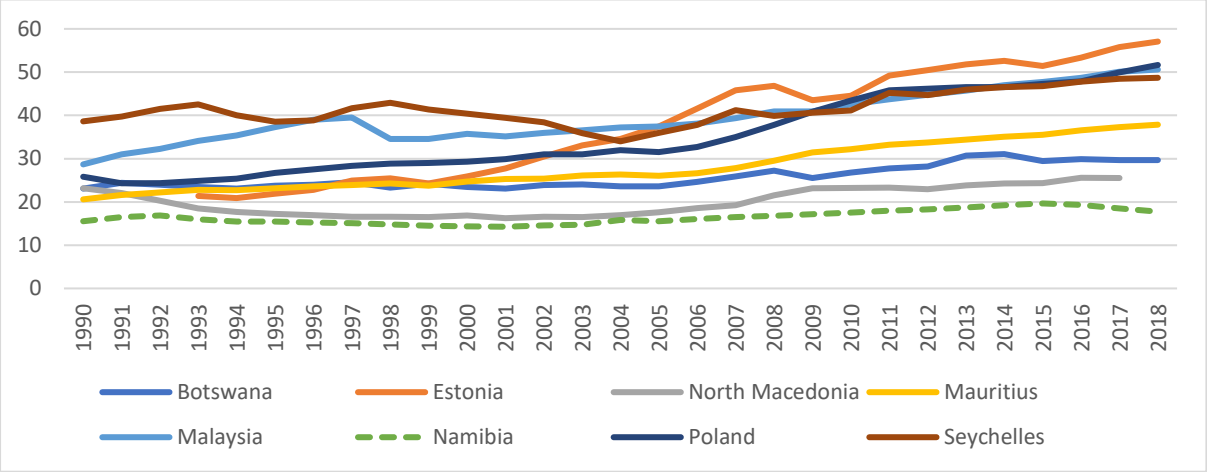
29. **In most empirical work on the middle- income trap, the relative income definition is the preferred approach.** For example, Bulman et al. (2014) suggested the income classification as follows: (i) low-income countries - those whose GDP per capita equals to 10 percent or less of GDP per capita in the USA; (ii) middle income countries - are those with values of 10 percent – 50 percent of GDP per capita in the USA; and (iii) those with values above 50 percent are high income countries. In addition, the authors divided middle income as lower middle-income and upper-middle income. In this division, the rate of 30 percent is accepted as the threshold value. Im and Rosenblatt (2013), also used the relative definition approach. They focus on the probability of a country entering the next income category.

30. **According to the definition of Bulman et al (2014), Namibia remained a middle-income economy for the last 28 years, which can be can be thought of as a "middle-income trap."** Figure 3.2 presents incomes per capita of a few selected small countries as a share of income per capita of the USA. Figure 3.2 shows that, if we use the definition of Bulman et al., Estonia is the only country in the high-income group. Poland, Malaysia, Seychelles and Mauritius are among the upper middle-income countries. Namibia barely makes it into the middle-income category, just above the low-income threshold of 10 percent over the last 28 years, which implies that Namibia could be stuck at this middle-income level and this calls for change in growth strategies. According to Bulman et al (2014), growth determinants at low- and high-income levels may be different and there is a need for countries to transition from growth strategies that are effective at low income levels to growth strategies that are effective at high income levels.

31. **The definition by Woo et. al. shows that Namibia has always been in the low-income category relative to the global economic leader i.e. the US and showed no tendencies of catching up.** The Namibia Catch up Index (CUI) has not moved above 20 per cent for more than 28 years, which is required to be classified as a middle-income country. According to this definition, Seychelles, Malaysia, and Poland are in the upper middle-income category, while Estonia migrated to high-income status in 2017. By this

definition, Namibia is stuck in the low-income level trap and there no clear tendencies of converging to the higher-income level.

Figure 3.2: Per Capita Income relative to the USA (%)



Source: Authors compilation from World Bank data

32. The definition by Im and Rosenblatt (2013) shows that, given Namibia's current GDP per capita growth rate, it will take Namibia 54 years to catch up to the US economy (Table 3.4). By definition, if a country grows faster (in per capita terms) than the rich countries, it will eventually catch up with the high-income countries GDP per capita. Using the catch-up definition of Im and Rosenblatt (2013), assuming the US economy's average growth rate of GDP per capita is 1.8 percent, it will take Namibia another 54 years to converge to high income status, provided that it grows by an average of 4 percent per annum[2]. The interpretation is such that Namibia's average GDP per capita growth rate over the last 50 years is 0.64 percent, at this growth rate, it will take Namibia over six centuries to reach high income status. Im and Rosenblatt took a period of more than 50 years to make a more credible[3] analysis. However, if we take the period after independence, it shows that it will still take Namibia 54 years to reach high income status, however, it will have to grow at 5 percent per annum. Namibia's average GDP per capita growth rate since independence is 2.13 percent, at this growth rate, it will take Namibia over three centuries to reach high income status.

[2] In order to calculate the number of years it will take a country to reach high income status, you divide the average real GDP per capita of the high income by the average real GDP per capita of the middle to get the initial R.

[3] Experience shows that majority of the countries that moved to higher-income levels particularly before the 1950s took quite a longer period to do so.

Table 3.4: Number of years for convergence to the Rich Countries GDP per capita

R	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%
12	1266	212	116	80	61	50	42	36	32	29
11	1222	205	112	77	59	48	41	35	31	28
10	1173	196	108	74	57	46	39	34	30	27
9	1119	187	103	71	54	44	37	32	28	25
7	991	166	91	63	48	39	33	28	25	22
6	913	153	84	58	44	36	30	26	23	21
5	820	137	75	52	40	32	27	24	21	19
4	706	118	65	45	34	28	23	20	18	16
3.2	**593**	**99**	**54**	**38**	**29**	**23**	**20**	**17**	**15**	**13**

Source: Authors compilation based on World Bank data

Summary

33. **We can conclude that the relative approach MIT definition application indicates Namibia is in MIT.** With an average GDP per capita growth rate of about 3.8 percent, Namibia has moved from 16 percent to 18 percent of the U.S. income per capita during the 1990 -2018 period, far below from the high-income threshold. Namibia has been stuck in the “middle-income trap” for the past 2 and half decades, and at that speed, it may take a long time to escape it.

4. Overview of factors contributing to the MIT

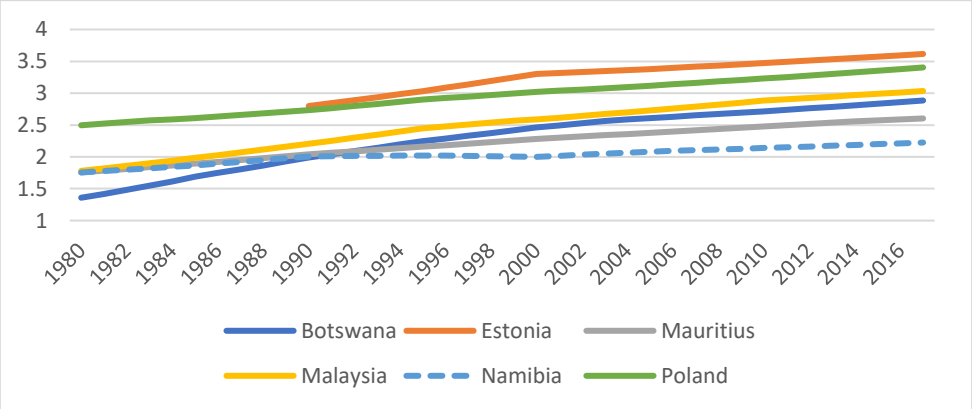
34. Using the triggering factor approach, this section focuses on the factors that increase the probability of an economy's growth slow-down as it reaches a middle-income level[4]. Based on the MIT cited literature, notably the work of Agenor and Canuto (2012), Aiyar et al. (2013), Eichengreen, Park and Shin (2013), and Felipe, Abdon and Kumar (2012), among others, the triggering factor approach analysed the correlations between specific economic factors and the likelihood of a middle-income country being stuck in the trap. This study focuses on five economic factors most often identified as triggering factors (human capital, export structure, total factor productivity (TFP), innovation and infrastructure) in the MIT literature. We discuss whether these factors have or have not triggered an MIT in Namibia.

4.1 Analysis of Indicators associated with MIT: Selected Country Comparison

4.1.1 Human Capital

35. The importance of human capital in the economic development process of a country is emphasized in the standard growth literature, where human capital is an input factor in production. The human capital is further emphasised in the MIT literature as important for escaping the middle-income trap. The MIT literature regards human capital and, closely related to it, the educational system, as an important factor in overcoming the MIT (e.g., Jimenez, Nguyen, and Patrinos 2012; Eichengreen, Park, and Shin 2014; Yilmaz 2014).

Figure 4.1: Human Capital Index



Source: PWT 9.1

[4] This section follows the approach of Pruchnik and Zowczak (2017) to analyze the Namibia case in more detail.

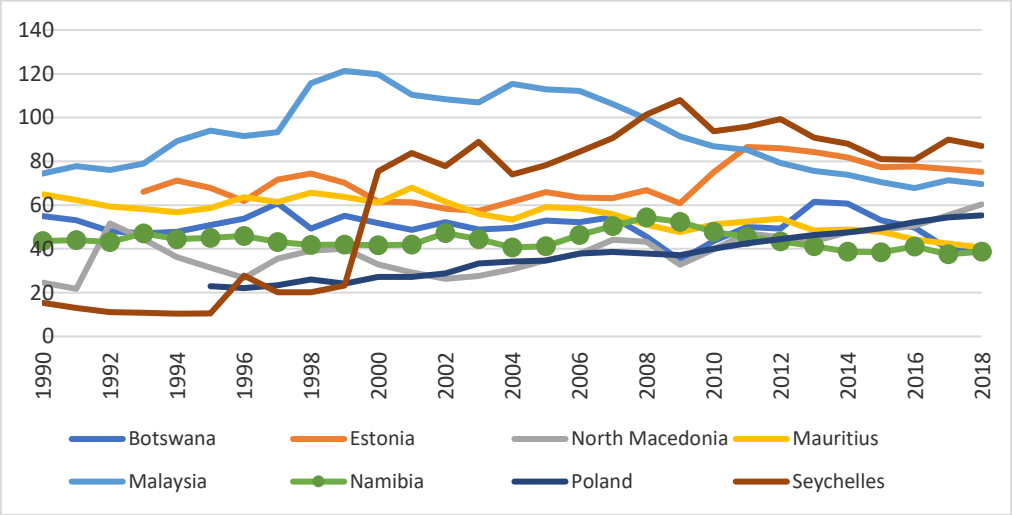
36. **Namibia recorded the lowest indicator level on human capital index compared to all the other countries.** Figure 4.1 shows the human capital index based on years of schooling and returns to education using data from the PWT9.1. As can be seen in figure 4.1, Namibia recorded the lowest indicator levels compared to all the other countries, despite the upward trajectory shown by the index. Estonia and Poland – the two that transitioned to high income countries – are clearly leading in this index. Also, an inadequately educated workforce is listed in The Global Competitiveness Report as among the most problematic factors for Namibia. More advanced education may be especially valuable for Middle-Income countries seeking to avoid a growth slowdown by moving into the production of more technologically sophisticated goods and services. This is evident in the case of Estonia, that has been the leading country in Europe for digital public services for many years. Its citizens are well-skilled in the use of digital technologies and are keen users of a variety of internet services.

37. **A skilled labour force is key in improving productivity levels in any economy.** Knowledge in the economy has clearly become an increasingly important factor in wealth creation than often surpasses the natural resources endowment. We are aware of countries with plenty of natural resources, but that, nevertheless, remain poor and underdeveloped. Knowledge is becoming an important strategy for businesses not only to improve products and services but also to enhance productivity and efficiency. It is therefore, encouraging to note the Namibian Government's efforts to improve the quality of our education through the budget allocation to the education sector. Beyond the budgetary dimension, further efforts, especially in improving the quality of education, are necessary in Namibia to create a well-educated workforce and thus avoid a potential MIT.

4.1.2 Export structure

38. **An important challenge for middle-income countries seeking to maintain their customary high growth rates is to move up the technological ladder.** As shown in Eichengreen et. al., (2014), middle-income countries' biggest challenge in attaining high growth rates is to move up the technological ladder into the production of more technologically sophisticated goods. Partly to get out of the way of lower-cost developing countries beginning to penetrate global markets for low-tech products. Felipe, Kumar and Abdon (2010) provide empirical support for the contention that countries that are unable to upgrade and diversify their exports may become caught in a middle-income trap.

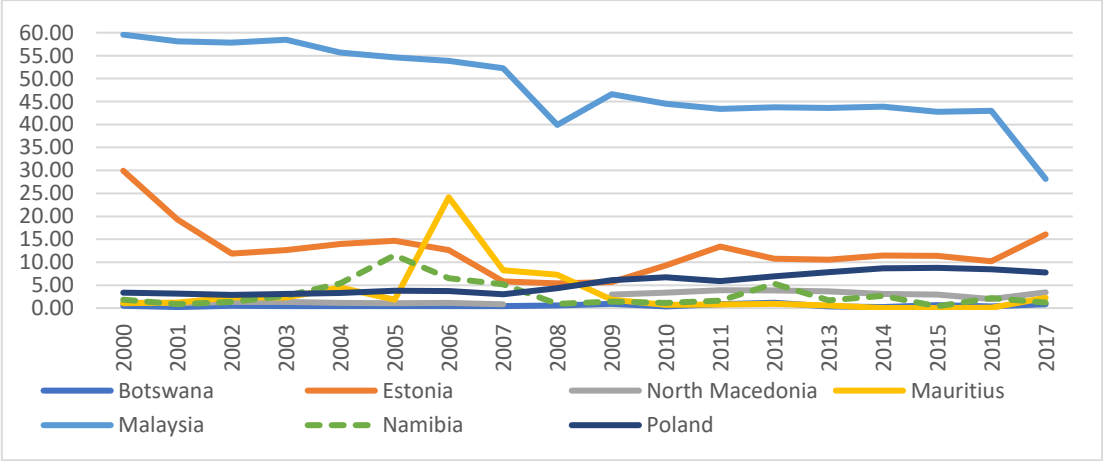
Figure 4.2: Exports of Goods and Services (% of GDP)



Source: World Bank 2018

39. Namibia's exports have averaged 44 percent from the period after independence, which is a decline from the average of 52 percent from the period pre-independence. The figure above depicts the exports of goods and services as percentage of GDP of the selected countries from 1990 – 2018. As shown in Figure 4.2, Namibia's exports have averaged 44 percent from 1990 - 2018, this is a fall from an average of 52 percent during the pre-independence period 1980-1989. According to Bulman, Eden, and Nguyen (2014), countries that managed to escape the MIT have an average export share in GDP of 60 percent whereas those that did not manage to escape the MIT have an average share of around 35 percent. Seychelles and Estonia's exports seem to conform to this threshold, Malaysia's export share – an upper middle-income country – is above all the high-income countries.

Figure 4.3: High-tech exports (as % of manufacturing exports)



Source: World Bank 2018

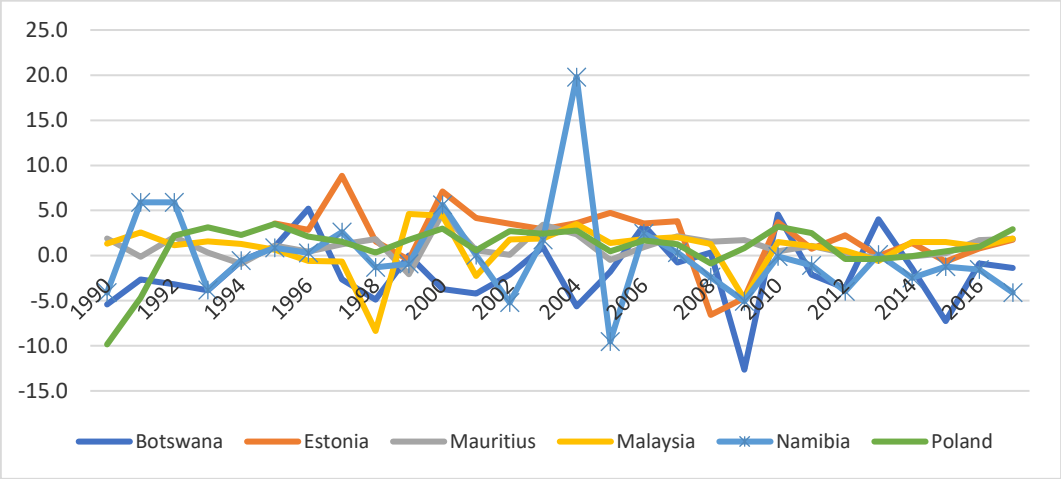
40. **The high-tech exports as a share of manufacturing exports for Namibia surged up between 2004 and 2007 to reach 11 percent and then levelled off at below 5 percent**. Figure 4.3 shows the high-tech exports as a percentage of manufacturing exports for the selected countries for the period 1990 to 2017 (most recent available data). As shown in Figure 4.3 the high-tech exports as a share of manufacturing exports for Namibia surged up between 2004 and 2007 to reach 11 percent and then levelled off at below 5 percent. Interestingly, Figure 4.3 also reveals that Malaysia – a middle-income country - performed significantly better than the high-income countries. However, Estonia and Poland's high-tech exports as a share of manufacturing exports are higher than most of the other countries, which could explain their transition to higher-income level classification.

41. **Namibia performed poorly in both the exports of goods and services as well as the high-tech exports as a percentage of manufacturing exports**. Kohli and Mukherjee (2011) argued that under the current globalized environment, MIT countries are unable to compete with low-income, low-wage economies in manufacturing exports and are unable to compete with advanced economies in high skill innovation. This indicates that export structure indicator could potentially hold back Namibia, in its quest to become an industrialised nation by 2030. The export structure indicator is therefore a trigger for MIT in Namibia.

4.1.3 Total Factor Productivity (TFP)

42. **Total factor productivity (TFP) indicates how efficiently the available production factors are transformed into final output (Daude and Fernández-Arias 2010).** It is not possible to measure TFP directly. Instead, it can be interpreted as a residual that accounts for the portion of output that is not explained by the other inputs, particularly labour and capital (Comin 2008). According to Eichengreen, Park, and Shin (2013) about 85 percent of the growth slowdowns in their sample could be attributed to the drop in the TFP growth rate on average, whereas the decreases in capital and labour growth only play a relatively small role. Bulman, Eden, and Nguyen (2014) and Jitsuchon (2012) argue that countries that managed to successfully to move out of the MIT trap had a relatively high TFP growth. Tho (2013) emphasized that MICs have to master the transition from input-driven to TFP-driven growth.

Figure 4.4: TFP growth rates



Source: Authors' calculation, based on data from PWT 9.1

43. **The potential causes of the middle-income trap are evident in TFP patterns for Namibia.** Figure 4.4 shows the growth rates of TFP of the selected countries, for the period 1990 to 2017 (most recent available data). We use the TFP data from the Penn World Table (Volume 9) (PWT9.1), which depicts the TFP at constant national prices (2011=1), to calculate the TFP growth rates. The data shows that the average growth rate of TFP for Namibia between 1990 to 2017 is -0.1 percent and highly volatile. Comparing the period between 1990 to 2004 and 2005 to 2017, the data shows that the TFP growth rate for Namibia declined from an average of 1.8 percent to an average of -2.2 percent respectively. The average TFP growth rate for Namibia is the lowest amongst all the examined countries. The country with the highest TFP growth rate is Estonia, followed by Mauritius.

44. **Namibia experienced a sharp decline in TFP growth and the literature indicates that MITs may be associated with TFP growth drops.** The PWT9.1 data indicates that Namibia experienced a sharp decline in TFP growth, implying that the country has been slow in adopting new and improved technologies, which is a characteristic of MITs. Thus, we can postulate that TFP could be a potential MIT triggering factor in Namibia. Overall, the literature implies that (i) having a high TFP growth rate in general may help to avoid an MI, and (b) MITs may be associated with TFP growth drops (Glawe and Wagner, 2017). Productivity gains can come from more efficient use of existing resources and technology to produce the same goods and service. However, rising productivity can be sustained only through new and improved technologies and increasing ability to master more sophisticated economic activities.

4.1.4 Low level of innovation

45. **The innovative capacity of a country is the most cited factor associated with escaping the MIT (e.g. Agenor and Canuto 2014).** According to Aghion et. al, (2013) innovations in one sector or one country often build on knowledge that was created by innovations in another sector or country. The process of diffusion, or technology spill-over, is an important factor behind cross-country convergence. As an indicator of a country's innovativeness, we use the innovation component (12th pillar) of the Global Competitiveness Index (World Economic Forum 2018), which, research suggests that a decline in the index is, is negatively associated with the probability of a growth slowdown. The pillar is composed of indicators such as: i) capacity for innovation, ii) spending on R&D, and iii) university-industry collaboration.

46. **Namibia's level of innovation is among the lowest, which is considered among the most important triggering factor of MIT.** The Namibian indicator of 3.2 out of 7, could imply insufficient capacity of the country to innovate. In Namibia, policies aiming at boosting productivity, the absorption of technology and innovation in a broad sense should be prioritised. The priority should be to facilitate technology adoption, as well as the promotion of new economic activities (such as new exports) with high potential spill-overs for the rest of the economy. At the heart of the middle-income trap is the insufficient development of domestic innovation capabilities, which translates into low productivity growth.

4.1.5 Insufficiently advanced infrastructure

47. **The quality of infrastructure plays a major role in escaping the MIT.** Aiyar et al. (2013) and Agenor and Canuto (2012) have indicated that access to advanced infrastructure is necessary to raise productivity in the design sector and stimulate innovations. Particularly important are high-speed communications networks. As a proxy of the quality of infrastructure, the infrastructure component (2nd pillar) of the Global Competitiveness Index (World Economic Forum 2018) is used. Research suggest that a decline in the index is negatively associated with the probability of a growth slowdown. The pillar is composed of indicators such as the quality of: i) electricity infrastructure, ii) transport infrastructure, and iii) telephonic infrastructure.

48. **In terms of the infrastructure pillar, Namibia is the third lowest among the examined countries.** The infrastructure pillar for Namibia for 2017/18 of 4.2 out of 7 is the third lowest among the examined countries. Namibia is compared to countries like Malaysia (middle-income) and Estonia (high-income) whose indicators stands at 5.5 and 5.1 out of 7, respectively. Namibia's indicator is however better compared to Botswana (3.6 out of 7), Botswana being viewed as a solid economic performer in Africa.

5 Policy implications

49. **Namibia's education system needs to be linked with industrial targets.** To ensure that education contributes substantially to economic growth in Namibia, educational policy must be tailored to support the national development strategy, rather than simply increasing literacy rates, average years of schooling or even gross tertiary enrolment. For example, in the case of Singapore, the human resource system was restructured in 1981 when the country decided to shift from import-substitution to export-oriented industrialization. The country adopted formal education focused at specific industrial goals but also upgrading the skills of the existing workforce in the industry through training and vocational education. The literature distinguishes between the quantity, the quality, and the types of skills/education as well as access to education.

50. **Namibia should give priority to niche manufacturing that is employment-intensive and geared to global markets.** A viable export-oriented strategy for Namibia would thus emphasize adding value to agricultural (particularly agro-processing) produce. The aim should be to put fully to work Namibia's most abundant resource, which is unskilled labour. Relevant technology upgrade in the agricultural and agro-processing sector will results in higher output which maximize job creation potential of the value chains. Installing drip irrigation systems would be a possible solution to the persistent drought conditions in the country. Israel is one of the leading countries that provide food security to the world through drip irritation. One example of how Israeli drip irrigation has impacted food supply in foreign countries is through the Tipa (Drop). The Tipa (Drop) is a kit that enables gravity to irrigate when there is no water pressure in rural areas. The Israeli Foreign Ministry has provided Tipa kits to hundreds of famers in Senegal, Kenya, South Africa, Benin and Niger.

51. **Namibia should leverage on the well-developed private sector health provisions to increase exports of goods and services.** Namibia should consider exporting of modern services to the regional market by leveraging on the well-developed private sector health care facilities. Another key service sector with untapped potential is the tourism sector which needs further enhancement to make it competitive. These will increase the value of export share as a percentage of GDP.

52. **For Namibia to avoid the MIT, the focus should be on acquiring foreign technology that build domestic firms technological and business capabilities, to improve productivity gains.** Namibian firms must begin to acquire their own technological and

business capabilities so that the country does not get locked into a low-wage role by exploiting the opportunities presented by the West Africa cable system (WACS)[5]. Namibia should foster private sector participation in the telecom sector and facilitate access to existing infrastructure for new operators by finalizing the infrastructure sharing guidelines. A rising capability to introduce new and improved technologies will enable Namibia to sustain productivity growth over time. For example, the Republic of Korea and Taiwan Province of China, the technological leaders in the developing world, adopted highly interventionist strategies on trade and domestic resource allocation, with a clear preference for promoting indigenous enterprises and deepening local capabilities. They imported technology vigorously from leading transitional corporations.

53. **Government in consultation with the private sector should identify growth-enhancing infrastructure projects for collaboration as well as making public procurement deliver value for money by increasing efficiency.** Pursuing economic transformation and transition to higher-income level requires that the Namibian government to be effective in providing an environment that is conducive for business as well as collaboration with the private sector to develop growth-enhancing infrastructure. Furthermore, the government should put in place efficient procurement systems.

54. **Namibian policy makers need to reassess the regulatory framework as well as all business-related policies to improve its productivity and competitiveness ranking**. Namibia's competitiveness in doing business has been declining for the past years and issues of bureaucratic processes and a cumbersome regulatory framework have been cited as reasons. This inherently implies that creating a friendly business environment for private sector activities, which is free of distortions and underpinned by efficient public institutions and transparent regulatory frameworks will certainly enhance the competitiveness of the Namibian economy. The country should simplify procedures for starting a business by launching the planned platform for online business registration and facilitating trading across borders by expediting the implementation of the National Single Window.

55. **Namibia should invest in Research and Development (R&D)[6] to support innovation and industries in Namibia.** The government should enhance the Research and

[5] WACS is a high capacity broadband undersea cable system that is aimed at connecting Africa through Europe and North America. The WACS submarine fibre optic cable is meant to enhance Telecom's ability to provide cheaper internet services to benefit the customer.

[6] The R&D pillar includes indicators on R&D spending, patents, publications and research institutions

Development capabilities of National Commission on Research Science and Technology (NCRST). The Namibian Government has long recognized the importance of Research, Science and Technology as an engine of economic growth and development, hence the enactment of the Research Science and Technology Act, 2004 (Act no 23 of 2004). Therefore, there is a need for continue support for research and development capabilities to ensure the rights skills, technology and innovation mix needed for the fourth industrial revolution. The top performers in innovation, Sweden and Denmark, have tried to substantially improve their higher education systems, both through marked increases in funding and institutional reforms, which were very substantial in Denmark, involving the concentration of research in a comparatively smaller number of organisations. Private sector investment in R&D Sweden in relation to GDP is among the highest in the world.

56. **Integrating domestic markets into regional and global markets will help increase firm competitiveness in Namibia leveraging on the port expansion.** Namibia should expedite the completion of the logistics hub centre to improve regional infrastructure which link SADC countries and provide cheaper services. This needs to be accompanied by improvements in the railway infrastructure and locomotives to facilitate trade that could promote faster transformation of the Namibian economy. The Ministry of Industrialization, Trade and SME Development should also provide information on foreign markets to domestic enterprises and facilitate their access to those markets. The Ministry of Industrialization, Trade and SME Development should further develop clear targets to support a breakthrough into new exports market and selected value chains.

6 Conclusion

57. There is a consensus that the pace of economic growth in Namibia remains slow relative to the level required to meet the ambitious targets of Vision 2030, which aims to transform the country to a prosperous industrialized nation by 2030.

58. Economic history has shown that few middle-income countries have successfully attained high-income level. Effective transition from middle to high-income level requires an efficient resource use, private sector improvement, productivity enhancement, and technology based rather than labour-based production. Failure of doing so, undoubtedly, leads to income trap, which is a situation where a country is stuck at middle-income level for a long period.

59. The aim of this paper was to study the Namibia economy using a coherent MIT framework, which was inconclusive using the absolute definition, while the relative approach shows that Namibia is in a middle-income trap. The paper conducted an extensive literature review and compared different approaches to the subject. The paper found that the absolute MIT definitions provides inconclusive results for Namibia. This is mainly because the upper middle-income upper bound is closely related to Namibia's present-day GDP per capita. Using the catch-up definition of Im and Rosenblatt (2013), assuming the US economy's average growth rate of GDP per capita is 1.8 percent, it will take Namibia 54 years to converge to high income status, provided that it grows by an average of 4 percent per annum. If we take the period after independence, it shows that it will still take Namibia 54 years to reach high income status, however, it will have to grow at 5 percent per annum.

60. In terms of the triggering factor approach, Namibia is in the MIT, as it is performing poorly in all the factors that should improve Namibia's level from middle income status to high income status. Namibia performed weak in the factors that trigger an MIT, which means that if Namibia wishes to avoid a middle-income trap, or to overcome it, it should take steps at improving these factors. Namibia should align its policies so as to improve its growth.

61. This analysis can be a step towards formulating a more precise definition of the MIT. It can also be a good reference point for future research into the subject.

References

Aiyar S., Duval R., Puy D., Wu Y., and Zhang L. (2013) 'Growth Slowdowns and the Middle-Income Trap.' IMF Working Paper WP/13/71, International Monetary Fund.

Bulman, D., Eden, M., and Nguyen, H. (2014) 'Transitioning from Low-Income Growth to High-Income Growth Is There a Middle-Income Trap?' Policy Research Working Paper 7104, World Bank Group.

Daude, C., and E. Fernández-Arias. (2010) 'On the Role of Productivity and Factor Accumulation in Economic Development in Latin America and the Caribbean'. IDB Working Paper No. 155. Washington, DC: Inter-American Development Bank.

Eichengreen B., Park D., Shin K. (2013) 'Growth Slowdowns Redux: New Evidence on the Middle-income Trap.' NBER Working Paper No. 18673, NBER.

Felipe J., Abdon A., Kumar U. (2012) 'Tracking the Middle-income Trap: What is It, who is in it, and why?' ADB Economics Working Paper Series No. 306 and No. 307, Asian Development Bank.

Felipe J., Kumar U., Galope R. (2014) 'Middle-income Transitions: Trap or Myth?' Asian Development Bank Economics Working Paper Series, (421).

Glawe, L. and H. Wagner. 2016. 'The Middle-Income Trap: Definitions, Theories and Countries Concerned – A Literature Survey.' *Comparative Economic Studies* 58(4): 507–538.

Gill, I. and Kharas, H. (2007) 'An East Asian Renaissance – Ideas for Economic Growth.' Washington, DC: World Bank.

Gill, I. and Kharas, H. (2015) 'The Middle-Income Trap Turns Ten. Policy Research Working' Paper No.7403.

Gokmen, Y and Turen, U. (2013) 'The Determinants of High Technology Exports Volume: A Panel Data Analysis of EU-15 Countries.' *International Journal of Management, Economics and Social Sciences,* Vol. 2(3), pp 217 - 232

Im F., Rosenblatt D. (2013) ‘Middle-income Traps: A Conceptual and Empirical Survey.’ World Bank Policy Research Working Paper No. 6594, The World Bank.

Kharas H., Kohli H. (2011) ‘What is the Middle-income Trap, why do Countries Fall into it, and How Can It Be Avoided?’ *Global Journal of Emerging Market Economies*, 3(3), 281–289.

Lucas, R. E. 1988. ‘On the Mechanics of Economic Development.’ *Journal of Monetary Economics* 22: 3–42.

Pruchnik, K. and J. Zowczak. 2017. ‘Middle-Income Trap: Review of the Conceptual Framework.’ ADBI Working Paper 760. Tokyo: Asian Development Bank Institute.

Woo, W.T., M. Lu, J. D. Sachs and Z. Chen (2012) ‘A New Economic Growth Engine for China: Escaping the Middle-income Trap by Not Doing More of the Same.’ World Scientific Publishing Company, Singapore and Imperial College Press, London.

Annexure

Empirical Literature reviewed

Studies that found evidence of MIT	
Agénor, Canuto, and Jelenic (2012)	The study found that economic growth slows when per capital income reaches around $15,000 to $16,000.
Zhuang, Vandenberg, and Huang (2012)	The study concluded that the troubled global outlook after the Global Financial Crisis poses a serious risk that even dynamic middle-income economies may find themselves trapped in a slow- or no-growth equilibrium.
Eichengreen, Park, and Shin (2014)	The study found new data that suggest the possibility of two modes of growth slowdown, one at $10,000-$11,000 and another at $15,000-$16,0000 purchasing power parity dollars. They found that several countries appear to have experienced two slowdowns, consistent with the existence of multiple modes. They suggest that growth in middle-income countries may slow down in a succession of stages rather than at a single point in time. This implies that a larger group of countries are at risk of a growth slowdown and that middle-income countries may find themselves slowing down at lower income levels than implied by our earlier estimates.
Aghion and Bircan (2017)	They emphasize that high growth rates in earlier periods, unfavourable demographics, very high investment rates, and undervalued exchange rates support a growth slowdown, and hence the probability of getting stuck in an MIT.
Ohno (2009)	The study examined several aspects of the dangers of being stuck at a medium level. He determined that the countries that are most at risk were the ones that were unable to move up the value chain – which ranges from coming up with the product to marketing it –, because they continue to expect growth from assembly plants set up by foreign companies in-country.
Spence (2014)	Spence posed the following question: how is it possible that some countries – like Japan, South Korea and Taiwan – were able to avoid the trap and enter the ranks of high-income countries, while a great majority were stuck? Spence believes that it is those countries that base their economic growth to an excessive extent on foreign capital that have a harder time becoming developed. The countries that are successful in mobilizing their domestic resources are the ones that manage to break out of the trap or avoid it.

Studies that found no evidence of MIT	
Im and Rosenblatt (2015)	The study explored both the absolute and relative thresholds of the trap. With transitional matrix analysis, they found little support for the idea. However, they also stressed that the concept is useful for guiding policy discussions because it accurately defines the challenges faced by countries at that stage of development.
Han and Wei (2015)	Using a transition matrix analysis on decade-level growth rates, the study found that the data rejects the idea that middle-income economies either have a high absolute probability of being stuck where they are or have a higher relative probability of being stuck than the low- or high-income groups.
Bulman, Eden, and Nguyen (2014)	The study refuted the idea of a middle-income trap. They argued that countries that used to grow fast (in general) continued to grow fast and did not get stuck at any specific level of income. However, they also noted that some middle-income countries did remain stagnant with low growth of relative income, and that, in general, transitioning from a middle-income to a high-income country is challenging.
Felipe, Kumar, and Galope (2014)	The study found no evidence of a middle-income trap in their analysis. Instead, they argue that what distinguishes economies in their transition from middle to high income is fast versus slow transitions. Historically, they find that it has taken a "typical" economy 55 years to graduate from lower middle income ($2,000 in 1990 purchasing power parity [PPP] $) to upper-middle income ($7,250 in 1990 PPP $). Moreover, they find that, historically, it has taken 15 years for an economy to graduate from upper-middle income to high income (above $11,750 in 1990 PPP $).

Table 1: Income classification 1987 - 2018

	EST	BWA	MYS	MUS	NAM	MKD	POL	SYC
Number of years spent as low- income country	-	-	-	-	-	-	-	-
Number of years spent as lower middle-income country	3	8	5	5	19	16	9	-
Number of years spent as upper middle- income country	12	23	26	26	10	10	13	27
Number of years spent as high-income country	12	-	-	-	-	-	9	4
Total	**27**	**31**	**31**	**31**	**29**	**26**	**31**	**31**

EST - Estonia, BWA – Botswana, MYS - Malaysia, MUS – Mauritius, NAM – Namibia, MKD – North Macedonia, POL - Poland, SYC - Seychelles

Table 1 shows the situation of countries according to the income classification in the period 1987 - 2018.

Table 2: Absolute MIT Definitions

Absolute MIT Definitions			
Spencer 2011	**Fixed range**	**GDP per capita**	
		U$ 5,000 -U$10,000	
Felipe, Abdon and Kumar (2012)	**Criteria**	**Low-middle-income range**	**Upper-Middle-income**
	Critical MIT Threshold	>28 Years	>14 Years
	Income range	U$ 2,000 - U$7250	U$7250 -U$11750
	GDP per capita growth	4.8%	3.5%
Eichengreen, Park, and Shin (2014)	**Conditions:**	**Growth slowdown episode**	
	(1) Seven-year average GDP per capita	3.5% prior slow down	
	(2) The difference between 7-year average growth rate before and after	> 2 percentage points	
	(3) the GDP p.c. in the year of growth slowdown	> U$ 10,000	

Table 3: Relative MIT Definitions

Relative MIT Definitions		
Bulman, Eden, and Nguyen (2014)	**Income level**	**Low-middle-income range**
	Low income	< 10%
	Middle income	10 - 50 %
	High income	> 50%
Woo, Lu, Sachs, and Chen (2012)	**Income level**	**Low-middle-income range**
	Low income	< 20%
	Middle income	**20 - 55 %**
	--> Lower Middle income	< 30%
	--> Upper middle income	> 30%
	High income	>55%

Table 4: Number of years for convergence to the Rich Countries GDP per capita

R	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%
12	361	149	94	69	55	45	39	34	30	27
11	348	144	91	67	53	44	37	33	29	26
10	334	138	88	64	51	42	36	31	28	25
9	319	132	84	61	48	40	34	30	27	24
7	283	117	74	**54**	43	36	30	27	24	21

Source: Authors compilation based on World Bank data