REPUBLIC OF TURKEY
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Department of Economics and Finance

THE IMPACT OF INTERNATIONAL TRADE ON SUSTAINABLE DEVELOPMENT IN MOROCCO

Master Thesis

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Supervisor
Asst. Prof. Dr. Emrah DOĞAN

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DECLARATION

I hereby declare that in the preparation of this thesis, scientific and ethical rules have been followed, the works of other persons have been referenced in accordance with the scientific norms if used, there is no falsification in the used data, any part of the thesis has not been submitted to this university or any other university as another thesis.

Roqia DRAYF

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SUMMARY

The role and importance of international trade cannot be denied. There is not a single country in the world that does not have international trade. Sustainable development is the need of the future and a must for future generations. This research examines international trade's impact on sustainable development in Morocco from 1990 to 2019. For this purpose, the study analyzes the effects of trade on sustainable development in Morocco with the help of an (ARDL) model. The predicted model shows significant trade, FDI, and GDP per capita, a positive relationship between energy and sustainable development, but a negative relationship between renewable energy sources and sustainable development in Morocco. The study shows that more policy measures are needed to achieve sustainable development.

Keywords: Trade, SDI, FDI, GDP, Energy, Morocco, SDGs, and ARDL.

ÖZET

Uluslararası ticaretin rolü ve önemi inkar edilemez. Dünyada uluslararası ticareti olmayan tek bir ülke yoktur. Sürdürülebilir kalkınma, geleceğin ihtiyacı ve gelecek nesiller için olmazsa olmazdır. Bu araştırma, uluslararası ticaretin 1990'dan 2019'a kadar geçen sürede Fas'ta sürdürülebilir kalkınma üzerindeki etkisini incelemeyi amaçlamaktadır. Çalışma bu amaç doğrultusunda, bir (ARDL) modeli yardımıyla Fas'ta ticaretin sürdürülebilir kalkınma üzerindeki etkilerini analiz etmektedir. Tahmin edilen model sonuçları dış ticaret, DYY ve kişi başına GSYİH ile sürdürülebilir kalkınma arasında pozitif bir ilişki olduğunu göstermektedir, ancak Fas'ta yenilenebilir enerji kaynakları ile sürdülebilir kalkınma arasındaki ilişki negatif bulunmuştur. Çalışmanın bulguları yıllar içinde sürdürülebilir kalkınmayı gerçekleştirmek için için daha fazla politika önlemine ihtiyaç olduğunu göstermektedir.

Anahtar Kelimeler: Ticaret, SDI, DYY, GSYİH, Enerji, Fas ve ARDL.

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ABBREVIATIONS

SDI   **:**   Score in Sustainable development index

FDI   **:**   Foreign Direct Investment

GDP   **:**   Gross Domestic Product

OECD **:**   The organization for Economic Cooperation and Devlopment

WTO   **:**   The world Trade Organization

GNI   **:**   Gross national income

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PREFACE

A unifying framework for peace and prosperity for people and the planet, both now and in the future, is provided by the 2030 Agenda for Sustainable Development, which was accepted by all United Nations Member States in 2015. The 17 Sustainable Development Goals (SDGs), which are an urgent call to action for all nations - developed and developing - in a global partnership, are at the centre of it. They understand that combating poverty and other forms of deprivation requires policies that enhance health and education, lessen inequality, promote economic growth, combat climate change, and fight to protect our seas and forests. Therefore, the purpose of this study is to determine the real link between international trade and sustainable development in case of Morocco .We have used the data as given by WDI and analyzed by using Autoregressive distributed lag (ARDL) approach. The study discovered a strong positive association between these factors. Even though I did my best to ensure that the report was error-free, if any mistakes that were not on purpose are discovered, I apologise. I will consider the goals of the report to be achieved if it can aid even one individual in receiving knowledge.

INTRODUCTION

International trade offers unique opportunities to help address growing environmental challenges while promoting economic and social prosperity. Open, regular, and equitable trade relations between countries can accelerate the worldwide diffusion of environmentally sound technological solutions and facilitate creating and expanding markets for sustainable products. Moreover, the increasing effects of climate change and resource scarcity - which can be felt in varying degrees across different parts of the world trade- play an essential role in enhancing environmental resilience (Dantas et al., 2021).

There are many mechanisms through which the mutual influence between foreign trade and sustainable development occurs. Increasing exports would maximize GDP growth within the identical output by expenditure and reduce imports. The growth of export-oriented industries would maximize job opportunities and wages, thus maximizing output growth within the identical output by income, in addition to the growth of the added value of the industrial sector destined for exports, which would maximize output growth within the value-added identity. Add to this the indirect effects due to the effects on productivity as a significant source of development, the reallocation of resources more efficiently, and other indirect mechanisms (Wang et al., 2018).

Trade is an essential tool for promoting economic growth, but trade integration is not limited to enhancing the exchange of goods between trading partners. Opening up to trade in food and agricultural products can help countries ensure better food security and nutrition, achieve their goals related to the structural transformation of their economies, promote higher incomes and higher living standards in rural and urban areas, and better manage natural resources. Trade is not an end in itself, and there is no single recipe for how to benefit from trade in food and agricultural products to achieve sustainable development, as countries differ significantly from one another (Ward et al., 2016).

But integrating incentives, competition, and market-based provisions into trade and agricultural policies to help protect the environment and labor rights is essential to putting these policies at the service of sustainable development. Integrated policies are also necessary to address potential trade-offs. For example, policies that make it easier for smallholder farmers to access modern inputs in developing countries and develop their skills can improve their productivity and competitiveness. To use trade as a vehicle for sustainable growth, these regional trade agreements must be negotiated and managed inclusively. It is easier to reach a

consensus among a few like-minded countries than multiple parties. Still, when discussing provisions and standards, it is possible to undertake an open and inclusive process involving all relevant stakeholders from the negotiating countries, including environmental advocates and workers. Specifically, to make trade and trade agreements serve sustainable development (Yu et al., 2013).

At the same time, multilateral trade liberalization and harmonization of trade rules increase the gains derived from trade compared to regional trade integration. Multilateral negotiations also allow for greater transparency and inclusion at the global level. However, since countries have different needs for promoting economic growth and preferences regarding environmental and social issues, reaching an international consensus on trade policies can be difficult. While multilateral trade negotiations are at a standstill, the WTO offers a system that encourages debate on border measures and contributes to lower trade costs through trade facilitation and harmonization of rules while recognizing the diversity of preferences and norms among countries, among other things. The WTO promotes transparency, predictability, and enforceability of trade rules and includes a mechanism for settling trade disputes. These mechanisms must be reformed to meet current challenges and strengthen multilateralism (Wang et al., 2018).

Strong cooperation at the multilateral level, along with regional trade integration, is much needed. Market-shaking global shocks such as the COVID-19 pandemic, extreme weather affecting harvests and food prices, and the recent war in Ukraine require multilateral cooperation to ensure better food security and nutrition. In a world where regional trading blocs cannot effectively address such challenges, multilateralism can play a significant role. There are many studies dealing with the issue of foreign trade and its relationship to sustainable development in general in developed countries. Still, they are insufficient for developing countries such as Morocco, especially those considering the variable foreign direct investment and economic growth in addition to renewable energies. It is expected that the results of this study will also contribute to establishing an intellectual framework that other researchers can rely on, as well as for decision-makers in Morocco.

This study examined the impacts of international trade on sustainable development to ensure that trade and a healthy environment are mutually reinforcing. It highlights the need for concerted action, together with fit-for-purpose policies and institutions, to expand the contribution of trade for a better and more resilient environment. On the other side, this study

aims to investigate the impact of foreign trade liberalization on sustainable development in Morocco, where the issue of foreign trade and its role in achieving sustainable development is one of the vital topics in economic and political circles at present at the national and international levels.

This study consists of five chapters. This study will deal in the first chapter with the topic and concepts of sustainable development and foreign trade. The second chapter will highlight the relationship between foreign trade and sustainable development, foreign direct investment and renewable energies. The third chapter will deal with the methodology used in this study. In the fourth chapter, the study and data collection methods will analyze the data and conclude. In the fifth chapter, the researcher will present the results that have been reached in addition to the essential recommendations.

CHAPTER ONE

INTERNATIONAL TRADE

1.1.The Concept Of Foreign Trade and its Importance

Foreign trade is of great importance in the economies of the world as a whole, as through it, goods, services, and even ideas are exchanged between members of societies, no matter how far the distance between them, as countries cannot in any way at present live in isolation from others because if any country chooses isolation Or the lack of contact with other countries, they will suffer from their primitive standard of living because the geographical division of countries made them differ in terms of natural resources and capabilities. This relative difference in production resources led to their specialization in producing certain commodities and providing their remaining needs through foreign trade. The issue of determining the reasons for the establishment of foreign trade has aroused the interest of a different group of economic thinkers. The work of each one of them was a complement to the work of the others to reach the real reasons for the establishment of trade exchange and determine the methods of foreign trade (Yu et al., 2013).

1.2.Foreign Trade Theories

Many theories and schools appeared that tried to answer these questions in a theoretical framework that is compatible with the historical stage and the prevailing economic conditions during the emergence of these theories and the most prominent calls for their adoption with the support of the political authorities in many cases because they are in the interest of the political systems at the time.

1.2.1.Mercantilism theory

Commercial ideas and writings (Mercantilism) began following the discovery of the road leading to India through the Cape of Good Hope in South Africa by the Portuguese at the hands of Magellan in 1488 and Vascodi Kama and their control of trade routes with Asia, and the subsequent discovery of the American continent by the Spaniards at the hands of Christopher Columbus in 1492, which led to the accumulation of large quantities of precious metals, especially gold and silver, which were transferred from America to the hands of the Spaniards, as well as the development of trade between Portugal and East Asia, which also led to the accumulation of quantities of gold, silver, silk, spices, and perfumes, which created a view (Winters, McCulloch, McKay, 2004).

They hold that precious metals and other precious things are the origins of wealth because their possession by any country will create a state of strength, influence, and ability, which will enable them to own anything else. They also believed that what a country earns from foreign trade would be at the state's expense. That is, foreign trade leads to the profit of one state and the loss of the other inevitably, which called the merchants to build a strong nation-state capable of protecting itself through the formation of a strong army and fleet funded by the gold and silver that the state collects, which is what called it the call to build the nation-state (Economic Nationalism), to which the famous Italian Minister (Macaffel) paved the way in his book (The Prince) and his famous saying (the end justifies the means).

These ideas began to spread rapidly among philosophers and thinkers to the extent that they convinced the feudal political authority of them, which called for them to build solid commercial fleets and provide the necessary protection for them, with the necessity of preventing imports from abroad except for the essential things and at the same time encouraging exports to the maximum degree because these two measures guarantee By accumulating gold and silver and preserving them. If the state does not have mines that contain gold and silver, then the only way to obtain them is through international trade, and this requires that the state achieve a surplus in its trade balance, that is, that its exports exceed its imports and pay the difference in the precious metal (Yu, Chen, Zhu& Hu,2013).

The merchants distinguished between three periods in which the theory went through (Rahman, 2017):

The first period is known as the period - the mineral policy - and requires the state to maintain a stock of the precious metal during that period and subject the operations of exporting the precious metal abroad to direct control. This policy was more famous among the Spaniards than others.

The second period: It is the period known as the period of commercial policy. As a result of its experiences, the state contented itself with interpreting its dealings with each country separately. Then there was no longer a need to impose direct control on every process of exporting the precious metal abroad, and the state suffices with supervision. This policy was more famous for the British than others, as they relied on large and powerful commercial fleets to bring precious metals through trade and maritime transport (Gries & Redlin, 2017).

The third period is known as the period of - industrial policy - as it became clear to the state that its final position depends on the total of its exports at the end of the year. Accordingly, its transactions with each country don't need to be in its favor. On craft manufacturing and export of manufactured goods in (manufactories) craftsmanship, which he called for opening, developing, and supervising (Joseph Colbert J. Gilbert.

The logic of the merchants necessitated the need for the state to intervene in foreign trade, so they demanded that the international exchange should be subject to some restrictions, which are represented in taxes on imports, subsidies for exports, and the prohibition of importing some commodities, and so on, to achieve a surplus in the trade balance. One of the methods followed by the merchants was to impose restrictions on the export of foodstuffs to reduce their price and thus lower wage levels, which would reduce production costs in the industry and encourage industrial exports (Gries & Redlin, 2017).

1.2.2. Theory of the Naturalists (Physiocrats)

The Physiocrats raised a slogan saying (Let him work Laser - Faire, let him pass lassoer - Passer) by one of their thinkers, Vincent de Journay, which prompted individuals and groups to practice various economic activities freely, away from restrictions and obstacles, and the signs of the industrial revolution had just begun, which paved the way for the crystallization of the ideas of traditional economists such as Hume, Smith, Ricardo, Mill and others, who attacked all forms of protection, intervention and restrictions on foreign trade (Copeland, & Taylor, 2004).

The doctrine of mercantilism remained prevalent in the European economic arena until new ideas emerged from the School of Naturalists or Physiocrats. It is considered the first new economic school of thought that had a French founder (François F. Kenny 1691 - 1774), who was one of the doctors of the French King Louis V He published the ideas of this school in his book entitled "The Economic Tale" in 1758. The ideas of this school called for freedom of economic activity (commercial in particular) in accordance with the natural laws that govern various activities, including economic activity, which Kenai represented in the blood circulation in the body. An organism that operates automatically without the intervention of the body's owner (Gries & Redlin, 2017). Kenai borrowed the idea of the "economic schedule" from the blood circulation in the human body, as a society (any society) is divided into three classes, the farmers class, which is the only productive class, given that agricultural activity at that time is the main prevailing activity not only in France but also in all parts of the globe

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since the industrial revolution has not yet been born. The class of landowners and the class of artisans and artisans, and the last two classes are called sterile classes (Felbermayr, 2005).

The essential ideas of this school are represented in two main points. The first is "the existence of a natural pattern that leads human societies. It is not useful to define them by legislation, but to leave them to that natural pattern." This is tantamount to the first birth of the idea of the "hidden hand" that directs economic life and the need for the state to step aside from managing the economy. As for the second, "Agriculture is the origin of productive economic activity and is preferred over industry and commerce, and that the land is the source of all wealth, and that the peasants are the only productive class, while the other classes are sterile." Accordingly, the naturalists concluded that the export restrictions imposed by the merchants on foodstuffs were responsible for the increase in supply and, consequently, for the drop in the prices of crops below the natural price, which they called the "just price" that both producers and consumers are satisfied with, which is This greatly affected agricultural production, especially at that time (Felbermayr, 2005).

1.2.3.Classical theories of foreign trade

It was the failure of the Mercantilism ideas in maintaining the high economic and living standard of the countries that followed the commercial policy, especially Spain and Portugal, and the emergence of natural ideas that believe in the spontaneity of economic activity and the presence of hidden hands that guarantee the restoration of balance to the economic system due to the harmony of individual interest. With the public interest, add to this the emergence of the beginnings of the Great Industrial Revolution and the accompanying urgent need for the flow of goods and services to and from the industrialized countries, including raw materials and labor, and the search for appropriate markets to dispose of the productive surplus without restrictions or obstacles. Economic freedom was a natural extension of the principle of economic freedom. They believe the harmony between the individual and the group's interests is clear. In light of this situation, new opinions and ideas began to appear on the surface to explain foreign trade, including(Copeland & Taylor, 2004):

- The theory of automatic balance: "David Hume" spontaneity balance

The theory (David Hume) is summarized that the precious metal is distributed to the countries entering into commercial relations without the need for intervention by the state. Commodity prices in other countries, which leads to a decrease in its exports and an increase in its imports, and then the flow of this precious metal abroad, and vice versa, if it has a quantity

of precious metal less than the size of its economic activity, then the commodity prices in this country decrease in relation to the commodity prices in other countries This leads to an increase in its exports and a decrease in its imports. In the end, a surplus is achieved in the trade balance, which leads to an influx of gold from the outside world into the country.

Thus, Hume was able, by studying the relationship between the amount of precious metal in a country and the price levels in it, and the relationship between the price level in it and the price level in the outside world, to the futility of the restrictions imposed on international trade. Hume's theory is an introduction to the emergence of the most famous monetary theory, which is (the quantitative theory of money), which states that there is a direct relationship linking the amount of money in circulation in a country and the general level of prices in that country, which calls for the uselessness of accumulating large quantities of gold and silver. Inside the country because this quickly leads to a rise in prices and then the exit of these quantities of precious metal outside the country (Aller, Ductor, & Herrerias, 2015).

- The Absolute Advantage Theory "Adam Smith."

Adam Smith believed that the costs of producing commodities are calculated by the amount of labor expended in producing them and that the only factor of production that is taken into account in calculating production costs is the factor of labor. However, this basis on which Smith built his theory represents only a few cases of foreign trade, especially between countries. Developed countries on the one hand, and developing countries on the other, and it is not suitable for explaining trade between developed countries themselves because of the closeness of labor productivity and the diversity of business in them, and this prompted (David Ricardo) to formulate an alternative theory of foreign trade based on the differences in relative costs between countries instead of Absolute costs (Frankel, & Romer,1999).

Adam Smith's ideas were criticized, and his principles were adopted as calling for each country to specialize in producing commodities that it excels in producing, but the country that does not excel in producing any commodity, should it stop production and suffice with imports? Several countries do not enjoy any superiority, and this is subject to economic problems because the superior country's goods will invade its markets when it cannot export any commodity to finance the import (Frankel & Romer,1999).

Adam Smith published his ideas on international trade in a book in 1776 called "Wealth of Nations," which is part of the classical theory. The content of the theory states that the

advantages that result from the division of labor within the state itself are also achieved due to the division of labor. Work on an international scale (Adam Smith measured the advantages achieved by the division of labor among individuals within a single industry in a staple factory), meaning that the country specializes in producing commodities that it expects to increase in production, at lower costs or with higher efficiency, or both, due to the abundance of raw materials. Or trained or cheap labor, machinery, favorable climatic conditions...etc. (Aller, Ductor, & Herrerias, 2015).

The basis on which Adam Smith relied on expanding the scope of applying his views to improve work to include the international field (widening the scope of the market) in exchange. Which are produced at costs less than the cost of their production abroad, and the import of foreign goods that can be produced abroad at costs lower than the costs of their production at home. its production

Although this remark was raised later on so that Smith himself could not respond to it, which prompted Ricardo to make his theory that we will come upon, and in any case, this criticism did not detract much from the value of Smith's theory because the judgment on any theory must take into account Considering the prevailing conditions at the time of its call, freedom of trade was in Britain's favor at that time (the beginning of the industrial revolution). Britain's industry was strong, and there was no fear of competition from other countries (Aller, Ductor, & Herrerias, 2015).

- The Comparative Advantages theory, "By David Ricardo."

David Ricardo stated his international trade theory in his book "Principle of Politic Economics" in 1817 AD. This book mainly deals with the issue of value, distribution, and rent. It deals with the issue of international trade in Chapter VII of it within one of the most critical economic laws up to the present time. It is (The Comparative Advantages Law). Ricardo reviewed what Adam Smith said, that foreign trade between two countries will benefit them and that specialization and international division of labor do not depend on the theory of the absolute advantage of countries but rather on a comparison of the comparative advantage of different countries in The production of the two commodities together, one concerning the other. Ricardo's theory relied on several hypotheses, including (Frankel & Romer,1999):

1. The existence of two states and two commodities in trade.

2. Factors of production move freely within the state, with no possibility of their movement outside its borders.

3. Perfect competition in the market, whether in buying or selling.

4. transportation, insurance, customs tariff, and other expenses are absent.

5. Using the theory of value in work, measuring the value of any commodity is done by the amount of labor expended in its production.

6. There is one technology for manufacturing the commodity within the country, but it differs from one country to another.

7. Full employment of production factors.

Attention should be paid to two essential points on which the hypothesis of realizing gains from trade between the two countries was based: the first is Ricardo's assumption that trade exchange between the two countries takes place based on a unit of fabrics that is exchanged for a unit of wine, and the second is that the commodity in which the country enjoys a comparative advantage in its production is the same commodity Which the other country does not have a comparative advantage in producing.

Although this theory remained as a basis for explaining foreign trade between countries for a long time, criticisms began to be directed at it since the beginning of World War I, especially by Ohn and Frank Graham, and the following are the most important of these criticisms:

1. Exaggeration in simplification: the assumption of the existence of two countries in international exchange and two exchangeable commodities has moved the theory far from the reality in which hundreds of countries exchange for millions of commodities and in which tastes and capabilities are exposed to continuous change and change that affects the status of trading countries. The state that is distinguished by its trade Today, this advantage may be lost tomorrow, to be replaced by another country, and so on. This problem may be solved by assuming that the world is divided into the country concerned with the analysis and the rest of the world. As for commodities, they can also be divided into commodities whose production is distinguished by the country of analysis on the one hand and commodities whose production is distinguished by the world. On the other hand, changing tastes or capabilities may lead to

changing the exporting countries' positions in their international trade sequence (Hdom & Fuinhas, 2020).

2. Assuming that there are no expenses for transportation, insurance, etc.: This is unimaginable. Instead, these expenses sometimes approach the value of the commodity itself or may exceed it. If these expenses are high, the comparative advantage that the state possesses in producing the commodity may be negated with it, which leads to Other countries stopping importing Maha because of the high transportation costs, thus stopping foreign trade between them. If the exporting country is far from the commodity consumption markets, or if the commodity is of a type that needs special conditions in transportation, such as crude oil or perishable commodities, or the like, then the transportation costs may negate the comparative advantage of the producing country (Hdom, & Fuinhas, 2020).

3. The assumption of full exploitation of economic resources: that is, the national economy is in a state of equilibrium, but this assumption is unrealistic, as (Keynes) has proven that the state of equilibrium can occur without the state of total use, that is, a state of equilibrium can occur in time In which the economic resources are idle, which will push the producing country to use these idle resources, which are often of less productive efficiency and thus a decrease in the level of comparative advantage that the state had.

4. Assuming the stability of production expenses per unit, regardless of the volume of production: However, the reality indicates that productive projects are subject, after a specific limit of production, to the law of increasing expenses (or the law of diminishing returns), and this specific limit is when marginal cost is equal to revenue. Marginal, as when production is increased beyond this limit, the marginal cost begins to rise, while the marginal revenue begins to decline, which creates a gap between them that represents a loss for the product that pushes it to limit the increase in production (Kong, Peng, Ni, Jiang, Wang, 2020).

5. Assuming freedom of foreign trade and the predominance of perfect competition between countries: contrary to reality, most countries impose restrictions on the movement of their exports and imports, each according to their economic and resource conditions and commodity production capacities. As for the assumption of the predominance of a state of perfect competition in international markets, it is contrary to the facts. The following international:

A- Most commodities subject to import and export are distinct and not homogeneous.

b- Existence of trade restrictions imposed by countries in most cases.

C - Monopoly or monopolistic competition prevails in most economic activities worldwide.

6. The assumption of bartering for goods: However, the reality of the situation indicates that the modern economy has separated from barter trade and replaced it with the use of money in its various forms and on a large scale as a medium of exchange, just as international exchange takes place with international money with different and variable rates of exchange, which makes the exchange process subject to laws International supply and demand, international commodity prices and foreign exchange rates, not to abstract barter (Hdom, & Fuinhas, 2020).

4- McDougall's comparative costs theory

The (McDoll) test is the first empirical test of Ricardo's theory of relative costs. This test was conducted in 1951, using statistical data for 1937 for several English and American factories that export their products abroad since the wages paid to the English worker are equivalent to half of those paid to the American worker. In some American factories, the productivity of the American worker is more than double that of the English worker. Therefore, Ma states indicated that the costs of American production in these factories are lower than in England. Therefore the United States enjoys these factories a more significant comparative advantage than England so that it can offer these commodities at prices lower than England's. As for other factories, the productivity of the English worker is more significant than half of the productivity of the American worker, with English wages remaining equal to half of the American wages. These factories have a comparative advantage, which allows them to display their products in the global markets at prices less than the prices of commodities. Similar to the US. What countries have been excluded from trade exchanges between the United States and England because of the customs duties imposed by each of the two parties on the other, which often vary significantly from one factory to another, as well as because they are few and constitute only 5% of their foreign trade. In contrast, both countries face the same tariffs in the global markets (Kong, Peng, Ni, Jiang, Wang, 2020).

It was found through the test that there is a direct and transparent relationship between the worker's productivity in the state's factories and exports from those factories, as it was found that this relationship is present in the factories of the United States and England and that 20 factories out of the 25 factories included in the test had the comparative advantage over the factories of America, and that The exports of these American factories to the outside world

were more than their English counterparts. This test received empirical support from several prominent economic researchers, including Bella Plasa using the data of 1950 and Stern using the data of 1959 AD. They reached results close to the results of McDull.

5- Opportunity Cost Theory

In 1936, Haberler was able to solve the problem surrounding Ricardo's theory and rid it of the constraint that was imposed on it as a result of the labor value theory and replace it with the opportunity cost theory, which states that "the cost of producing a particular commodity is not measured by the amount of labor expended in its production, but rather by the amount of the sacrificed commodity." society to produce the first commodity.

This theory is based on its assumption that the opportunity cost is fixed, i.e., that the factors of production of the first commodity are a complete substitute for the factors of production of the second commodity, as well as its assumption that the factors of production ratios for both commodities (labor-to-capital ratio or capital-to-labor ratio) are similar in both countries. While we find that the practical reality differs from that, that is, the factors of production of the two commodities are not a complete substitute, just as the proportions of the factors of production are not similar in the two countries (Kong, Peng, Ni, Jiang, Wang, 2020).

6- International Values Theory, "John Stuart Mill."

The previous theories emphasized the supply side only and neglected the demand side in explaining the establishment of international trade. However, prices are determined as a result of the interaction of supply forces with demand, and after that, the quantities supplied and the quantities required are determined in international trade, i.e., imports (the demand side) and exports (the supply side). Because Ricardo was unable to answer these questions, the English thinker and economist J.S. Mill came to answer them in his book (The Foundations of Political Economy in 1848) with a new theory known as (the theory of international values), and he explained in it that the law of reciprocal demand determines international exchange rates. Demand, that is, the demand of any country for a commodity represents the supply of the second country of the same commodity. At the same time, the demand of the second country for the commodity produced by the first country is equivalent to the supply of the first country of that commodity, meaning that there is mutual demand between the two countries and the exchange rates Between these two countries will be determined at the intersection of the mutual demand of these two countries and that this point of intersection will be located between the

lower and upper limits of the exchange rates between goods internally (Narayan, Narayan, Prasad, 2007).

In cooperation with Marshal & Edgeworth, Marshall drew the mutual demand curves, or as he called them, the offer curves or international demand curves. The first country to obtain it (imports), so the international exchange rate, the term of trade between the two countries, will be determined at the intersection between the quantity that the country demands of the imported commodity and the quantity it offers of the exported commodity. The international exchange rates are balanced when the prices of exports and imports are confined between these extremes. Still, the situation will change when the prices of exports or imports change so that the international exchange rates change with them, so that they are once in favor of the exporting country and once against it, and the same is the case with the importing country (Park, Meng, & Baloch, 2018).

1.3.Trade Openness

Trade openness is an engine for stable economic growth and to reduce poverty. As stated in the 2030 Agenda for Sustainable Development, this will boost sustainable development. The change in trade openness has greatly affected sustainable development, especially in the last decade. It shows economic and social advantages across the globe. It is necessary to consider various economic, social, and environmental requirements during the production process for real, sustainable development. In an open economy, the role and significance of trade openness cannot be unclear. Gaining the advantages of absolute advantage, comparative advantage, specialization, and having sufficient foreign exchange reserves to cover both surplus exports and unavoidable imports is crucial. Foreign trade boosts the economy's productivity, employment, investment, savings, use of cutting-edge technology, international relations, price stability, and more efficient use of resources, research, and knowledge.

Undoubtedly, trade openness has shown an inverse effect on sustainability during the oil crisis in the 1970s, the financial crisis in 2008, and covid-19 at the end of 2019. Now the nature of trade has changed, and products are assembling with the coordination of different countries. The emergence of global value chains allows firms in developing countries to improve their economic conditions through trade openness.

International trade was promoted by the UN Conference on Trade and Development (UNCTAD, 2014) as a possible engine for economic growth. Goals for economic growth have

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grown in importance. They are being targeted at several nations, including the KSA—the relationship between trade liberalization and sustainable development, which has garnered increasing attention in recent years. External trade also lowers manufacturing costs, monopolies, and losses from unpredictable shocks like pandemics, floods, earthquakes, etc. Morocco's trade-to-GDP ratio is 83.5% currently. The total of a country's exports and imports as a percentage of its GDP is the measure of trade openness.

The sustainable development index (SDI) is one of the most recent ideas in economics and other areas that refer to economic development without lessening natural resources to meet human development, along with developing essential ecological services and natural resources for humans. According to Brundtland's Report of the United Nations World Commission on the Environment 1987, "Development is defined as activities and steps that meet current demands while maintaining the possibility of meeting future demands concerning sustainable development. Ecological forestry, which was begun in Europe during the 17th and 18th centuries, is where sustainable development got its start". Sustainable development is necessary for a country to prosper and grow globally (Silvestre & Tirca, 2019). Sustainable development refers to meeting human development goals while striving to preserve ecosystems' ability to provide resources vital to the economy and society. (Dantas et. al., 2021).

This study proposal investigates the connection between global trade and Morocco's sustainable development. Sustainable development is more comprehensive as compared to the HDI and MDGs. This study will help formulate and implement strategies and policies for the more effective and efficient attainment of sustainable development goals by various organizations. Sustainable development goals are 17 compared to 8 in the MDGs in 2015. It has 169 targets to be reached by 2030 or earlier. It only accounted for 21 MDGs, while the SDGs' overall indicators comprise 232, compared to the MDGs' 60. The SDGs involve everyone in the global effort to promote economic growth, inclusion in society, and environmental conservation. These objectives are created for the 193 United Nations members, civil society, and other stakeholders.

1.4. Sustainable Development

Sustainable development is an international socioeconomic term with which the United Nations has drawn a global environmental, social, and economic development map. Its primary goal is to improve the living conditions of every individual in society, develop means and

methods of production, and manage them in ways that do not lead to the depletion of the planet's natural resources; even if We don't overburden the world (UNESCO 2004:7)

Sustainable development is the most significant and complicated problem for future generations and economic development, which is why this research work has been chosen. The proposed research would only employ the life expectancy, expected and mean years of education, GNI per capita, CO_2 emission per capita, and material footprint per capita due to resources constraint.

Life expectancy is the number of years, on average, that a person will live. Morocco's situation is improving, from 64.7 years in 1990 to 76.7 years in 2019; the data indicates an increase. Good health, along with well-being, is the 3rd goal of SDGs. In the globe, Morocco is 62nd in terms of population average life expectancy. The likelihood of making more money is higher for healthy people than for sick people. Those with higher incomes benefit from better nutrition and more straightforward access to healthcare services. Because of this, the processes of economic expansion and health improvement are interdependent (Arif E. G. et al., 2021).

The idea of educational development and the advancement of knowledge is the fourth goal among the 17 that represent sustainable development goals set by the UN for the 2030 vision. Where the expected years to meet the child's primitive scientific needs are defined as the school years up to the university, and this may include the courses and knowledge that he acquires during these years. Today's primary years of education represent the university and post-university education in addition to primary, preparatory, and secondary education. According to the sustainable development goals index by the UN among 193 member countries, Morocco ranks 84th.

In 2020 in South Africa, a conference was held to introduce environmental events to achieve sustainable development, where environmental education was defined as striving for social justice and combating poverty. Solidarity, equity, collaboration, and cooperation were as essential to sustainable development's human and social components as scientific methods for environmental preservation. (UNESCO 2004:7)

The mean years of schooling (MYS) is a typical statistic for evaluating a population's stock of human capital. The average age worldwide is 8.7 years. By spending as a percentage of GDP on the education sector, Morocco's economy ranks 49th out of 198 nations. The utilization of renewable energy sources, a high level of human capital development, and a sizable percentage of individuals with higher education, and these factors all contribute to lower CO_2 emissions, according to another set of researchers.

This proves that a well-informed populace knows the necessity of reducing air pollution and switching to "clean energy." Since most energy is produced using fossil fuels, consumption generally increases CO_2 emissions. Since an educated person is more conscious of air pollution and a skilled worker may contribute to producing clean energy for sustainable development, education will aid in reducing air pollution. (Omri, A., and Kahouli, B. 2014)

One of the conventional methods to estimate economic development is to express per capita gross national income in terms of dollars and purchasing power parity. According to GDP per capita, Morocco's economy ranks 122nd out of 192 nations worldwide. The average amount of carbon dioxide (CO_2) emitted annually per person is known as CO_2 emission per capita. We can calculate the average citizen's contribution by dividing the total emissions of each nation by its population. Affordable and clean energy is the 7th goal of SDGs. The CO_2 emissions per person are now available. Morocco emits 1.64 tonnes of CO_2 per person yearly compared to 4.79 tonnes globally.

Most studies examining the association between energy, the environmental setting, and the economy concentrated on total energy utilization, CO2 emissions, and GDP growth in Nigeria. A few studies also looked at the relationship between electricity and overall growth but with mixed results. (Chibueze, E. N. 2013). The term "per-capita material footprint" refers to the typical material required to satisfy ultimate demand. Morocco ranks 131st out of 188 nations worldwide regarding material footprint per person. Responsible consumption and production are the 12th goals of SDGs. The phrase "material footprint" was first used in a paper by (Lettenmeier et al. 2009), who described it as " the entire earth's input needed for each product from conception to sale" and used it as a synonym for ecological knapsack. We demonstrate that aggregate material consumption often grows as economies become more prosperous. As a result, nations prefer to reduce their country's proportion of material extraction through international trade. The average national MF grows by 6% with each 10% rise in gross domestic output. (Widmann et. al., 2013).

1.5. Moroccan Economy And Foreign Trade

Morocco experienced a sharp slowdown in the economy due to both domestic and international shocks - a bout of drought and high commodity prices. Real GDP growth declined, from 7.9% to an estimated 1.2%, between 2021 and 2022. These shocks increased supply-side inflationary pressures, causing core inflation to rise to 8.5% in February 2023, disproportionately affecting the poorest households. The authorities' anti-inflationary measures included untargeted subsidies, price regulation, and moderate monetary tightening. This policy

package has created significant pressure on public finances. However, the dynamism of tax and non-tax revenues decreased the budget deficit (from 5.5% of GDP to 5.1%), and the debt-to-GDP ratio increased only slightly in 2022 (from 68.9% to 69.4). Morocco is highly vulnerable to climatic shocks, which remain a significant source of macroeconomic volatility. The government has traditionally adapted to water scarcity by building dams and investing in irrigation. But the most recent drought coincided with historically low water reserves, severely reducing water availability for irrigation. The government is accelerating desalination projects while exploring options to improve water valuation and rationalize demand. According to estimates by the World Bank Group, economic growth in Morocco is expected to reach 2.5 percent in 2023, then 3.3 percent in 2024 and 3.5 percent in 2025, compared to a growth rate of 1.1 percent in 2022. The World Bank attributes the expected rise in growth rates to the tourism and automobile sectors. However, at the same time, climate-related crises threaten the return of agricultural production in the country to its usual levels years ago in light of the drought crisis, which leads to a weakening of growth.

The Gross Domestic Product (GDP) in Morocco was worth 134.18 billion US dollars in 2022, according to official data from the World Bank. The GDP value of Morocco represents 0.06 percent of the world economy.
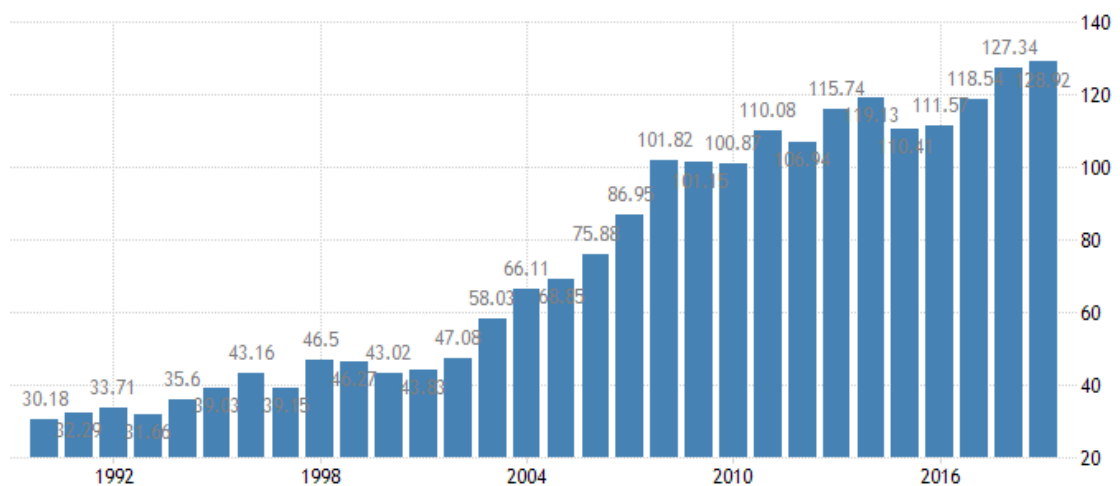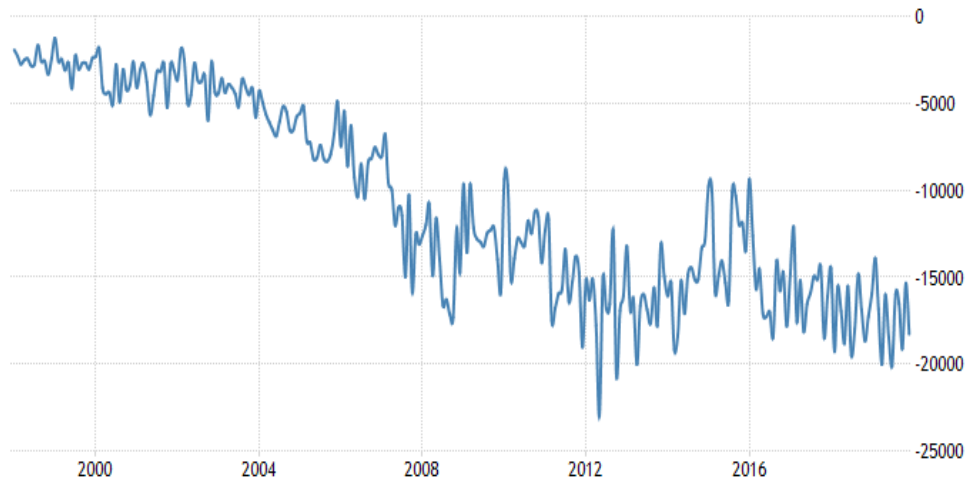

Source : (World Bank data,2022)

Figure 2. GDP of Morocco (1990-2020)

Today, foreign trade is a significant component of economic and social development and a decisive factor in the growth strategies adopted by liberal countries in a context characterized

by an increasing globalization of international exchanges and markets. Morocco is considered one of the leading countries in Africa and the Arab world that chose to liberalize its economy and exchanges since the early eighties. This approach enabled Morocco to join the GATT group in 1987 and to conclude the Marrakesh Agreement in 1994, according to which the World Trade Organization was created in 1995. This policy was reinforced by adopting several proactive reforms, which focused mainly on abolishing non-tariff measures at import and export, simplifying the import tax system, and rationalizing the customs tariff. Morocco adopted the strategy of openness and liberalization resulted in the conclusion of a series of free trade agreements with the most important trading partners, such as the European Union, the European Free Trade Association, the Arab countries, the United States of America, and Turkey. Other partnership agreements are also being negotiated, particularly with the countries of the Arab Maghreb Union and the West African Economic and Monetary Union. These agreements are a fundamental pillar of the openness strategy to enhance the country's integration into the global economy and its regional environment. The option of openness adopted by Morocco is constantly renewed and adapted to the changes in the national and international business climate through a commitment to a set of reforms that have been implemented since the beginning of the third millennium, and this is evident through the preparation and implementation of a new strategy to increase and enhance exports. As a result, the development of foreign trade has become an essential component of Morocco's general economic policy, which aims to modernize production structures in the context of new horizontal and sectoral strategies aimed at enhancing the competitiveness of Moroccan exports, supporting integration into integrated regional dynamic groups, and diversifying international trade relations.

The deficit in the foreign trade balance in Morocco has worsened in recent years, as the volume of the country's imports has doubled the volume of its exports. Currently, Morocco's trade deficit is 23% of GDP, unprecedented in the modern history of Morocco. Therefore, Mohamed Benayad of the National Council for Foreign Trade, Hocine El-Jour of the Exchange Office, and Tohamy Abdel-Khalek of the National Institute of Statistics and Applied Economics joined forces with El Hassan Achy of the Carnegie Middle East Center in Rabat to assess the level of deficit and define policy options in the short term.

Source : (world bank data,2022)

Figure 2. Balance of Trade in Morocco

Morocco's exports achieved 27,702,724.58 in thousands of US dollars in 2020. The total imports in the same year amounted to 44,526,432.15 in thousands of US dollars, which means a deficit in Morocco's trade balance by -16,823,707.56 in thousands of US dollars. On the other hand, the rate of customs duties applied to Morocco was about 3.61 percent, the weighted average tariff in the Most Favored Nation (MFN) is 10.45%, and the percentage of foreign trade growth was -4.05% compared to the global growth of -3.91%. In addition, Morocco's GDP is 112,870,591,694.04 in current US dollars. As for the classification of exports, Morocco's exports of services amounted to 13,855,044,726.29 in the balance of payments, the current value of the US dollar, and the import of services amounted to 7,088,165,789.68 in Bob, in the current value of the US dollar. Morocco's exports of goods and services as a percentage achieved of GDP 35.45%, and imports of goods and services as a percentage of GDP 43.17% (World Bank data,2022)

CHAPTER TWO

LITERATURE REVIEW

Many studies have focused on the relationship between international trade and sustainable development with great interest. Many researches have been conducted in different countries to understand the relationship between sustainable development and foreign exchange. The results of this research will help us better understand the potential effects of foreign trade on economic growth and environmental degradation.

2.1 International Trade and Sustainable Development

Study the relationship between the degree of trade openness and economic development by using a variable that represents the fluctuations in the exchange rate of the Chinese currency (Kong et al., 2020). They contend that openness's long-term and short-term benefits contribute to economic growth.

The decline hampers the uneven economic development in the quality of the factors of production brought on by environmental deterioration and vulnerable social communities. A nation's social, environmental, and economic development are all included in the term "sustainable development." International economic and commercial actions ensure that money is raised, sustainable development plans are exchanged, and countries can access the resources needed to promote social welfare, environmental protection, and steady economic growth. Trade openness alone does not affect sustainable growth; additional elements include real interest rate, FDI, inflation, and currency rate. (Zhao et al., 2019).

Despite the lack of agreement over how trade affects economic growth and environmental degradation, research examining these impacts has revealed that trade linked to sustainable development is not widespread in Saudi Arabia (Winters et al., 2004).

Endogenous growth theory developments refer to the relationship of foreign trade to the state's sustainable development (Taylor, 1993). (Grossman and Helpman, 1990) Examining several studies concerning the links that combine foreign trade with economic growth (Romer, 1986) In this study, the conclusion and results of many international studies will be drawn on, as well as local and regional studies, such as the Kingdom of Saudi Arabia Middle East, North Africa, and the Gulf. (Franke and Romer, 1999).

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2.2 Life Expectancy and Sustainable Development

Suleman et al (2020) indicated that changes to the educational system and policies to mitigate climate change take time to impact the economy. The coefficients are substantial and adverse in the case of health difficulties, showing that more significant health issues have a detrimental effect on economic growth.

A study Shahbaz et al (2019) examined how economic growth, financial development, and globalization affect life expectancy. The authors utilized data from 16 Sub-Saharan African nations between 1970 and 2012 and non-linear time series analytic techniques. Their findings demonstrate that in 14 of 16 Sub-Saharan African countries, economic expansion, financial development, and globalization all have a favorable impact on life expectancy. (Ali and Audi, 2016) also examined how globalization has affected Pakistan's life expectancy. The findings of the ARDL estimate show a positive correlation between more significant levels of globalization and life expectancy.

Tausch (2015) examined how globalization has affected life expectancy across 99 nations. According to the OLS estimates, globalization increases inequality, which lowers health outcomes regarding life expectancy and infant mortality. These findings go counter to optimistic theories about how globalization affects public health. However, globalization improves public health outcomes in 19 out of 99 nations.

In particular, the study of (Khan et al ,2014), focusing on Pakistan, examines the positive long- and short-term causal links between per capita GDP and attributes related to education and health. To create a model, unit root tests, ADF, Phillip Perron test, and ARDL procedures are used to time series data with a 42-year time range from 1972 to 2013. All of the factors indicated a beneficial influence on economic sustainability and health.

The welfare of the underprivileged should also be enhanced if a nation wants to improve its health conditions. Poor people have less access to health care. As a result, the benefits of globalization for health initially became apparent together with those benefits for economic growth (Labonté et al., 2009). It might make getting medical treatments and prescriptions easier, and the economic growth associated with trade liberalization could improve life expectancy. However, when it comes to transmitting contagious illnesses, we need to consider other factors. As previously highlighted, access to affordable and straightforward travel may speed up the spread of infectious diseases (Deaton, 2004).

Bergh and Nilsson (2010) They proposed an alternative viewpoint. Developed nations can create novel treatments and provide cutting-edge medications thanks to significant R&D

expenditures and scientific activities. Only trade and integration between developed and developing countries can give access to that knowledge and these medications.

Bergh and Nilsson (2010) examined the connection between globalization and life expectancy using a panel of 92 nations from 1970 to 2005. They analyzed data on social, political, and economic globalization individually, and the findings indicate that economic globalization significantly increases life expectancy at birth. However, no connection between social globalization, political globalization, and life expectancy was discovered. The effect of economic globalization was still favorable and substantial even after controlling for factors including the number of doctors, urban population, average years of education, and nutrition.

2.3 Schooling Years and Sustainable Development

The empirical link between economic development and education was examined by (Sarwar et al., 2020). They made empirical estimates using information from 179 different nations. The coefficients for carbon emissions and education are negligible in the short term but considerable and favorable in the long term, indicating that changes to the educational system and the use of policies to mitigate climate change take time to impact the economy. With a verified significant and adverse association between education and greenhouse gas emissions, it is clear that education and raising educational standards may decrease greenhouse gas emissions. The report offers policy recommendations for resolving issues with economic growth, health, education, and climate change mitigation as they are connected directly or indirectly. Priority should be given to policies that increase education while having a good impact on health, next, reduce greenhouse gas emissions, and, finally, support sustainable development. (Ahsan, 2023)

Flaherty and Liddy (2018) In researching the implications of education for meaningful development, sustainable development, and improving global well-being. They discovered a strong and positive link between education on the one hand and sustainable development on the other. (Berg and Nelson, 2010) where the relationship between globalization and the improvement of trade between countries of the world was studied, in addition to analyzing the dimensions of social, economic, and political relations. These studies have found a link between economic globalization and an increase in the individual's life expectancy. In contrast, these studies have not found any relationship that reflects the links between social, cultural, and political globalization and life expectancy.

According to (Kabir, 2008), residents of metropolitan areas may take advantage of better medical treatment and convenient access to pharmacies and hospitals with more

advanced equipment. There is positive nexus between socioeconomic situations and higher education. According to (Khan and Haider, 2015), the traditional belief that there is a significant correlation between material capital and economic development has been replaced with the idea of a strong positive connection between schooling and economic prosperity. The GDP per capita was positively correlated with all independent variables; however, primary enrolment had a short-term negative influence on GDP per capita. In Pakistan, less than 5% of economic growth is attributable to intangibles. They strongly advised that the government raise spending on the education sector to more than 4% of GNP instead of merely 2% of GNP based on their results.

Akram et al. (2009) examined the long-term effect of health on Pakistan's economic growth using yearly data from 1972 to 2006. They tried to investigate the connection between Pakistan's economic development and several health metrics. They used Granger Causality, Cointegration, and Error Correction methods on the time series data of the WDI from 1972 to 2006. The outcome demonstrated a long-term positive effect of health indices on per capita GDP.

2.4 GNI Per Capita and Sustainable Development

Their study discusses the synergies and trade-offs between the metrics used to track progress toward the SDG goals (Coscieme et al., 2020). Notably, using the gross domestic product (GDP) per capita as a measure of SDG 8 (decent employment and economic growth) raises issues since unrestricted GDP growth runs that natural resources are finite. They emphasized how focusing on GDP growth fails to meet the SDGs. They demonstrate that in the European Union, GDP has no relationship to employment levels and is adversely connected to well-being and environmental sustainability metrics. As a result, achieving SDG 8 through GDP development prevents the environmental and social equity objectives from being achieved. To improve consistency between the SDGs and other sustainability-related policy efforts, they offer guidance for choosing alternative indicators for SDG 8.

Overall, the findings are contradictory. Although scholars disagree, trade openness may or may not impact economic growth. The multiple periods employed, the various trade openness proxies, the various methodologies used in the preceding studies, etc., might all help to explain this in part (Furuoka, 2017).

Mamun and Nath (2005) Sought to study the relationship between exports and economic expansion in Bangladesh. And he reached significant results that showed that the growth of the economy of Bangladesh and its exports has a long-term causal relationship

through Arranger's test with economic growth. Not Later (Felbermayr, 2005) learned to examine the relationship between per capita income and business liberalization using a dynamic panel data model. He concluded that through trade liberalization, a positive impact could be achieved on countries' revenues and, thus, economic growth.

Hsiao and Hsiao (2006) found that exports and GDP govern a positive relationship between them and are causally linked in both directions. (Narayan et al., 2007) explored the relationship between economic development and exports in Papua New Guinea and Fiji. Their studies found that export-led growth applies to Fiji in the long term but not to Papua New Guinea in the short term. The effects of exports on the real GDP of selected Asian countries between 1976 and 2006 were examined (Rahman, 2007) using the ARDL cointegration approach. The studies found the effect of exports on economic growth.

2.5 CO2 Emissions Per Capita and Sustainable Development

The relationship between energy use, economic growth, and CO_2 emissions on a regional and global scale and across different degrees of development has been thoroughly studied by (Namahoro et al., 2021). There aren't many African-level studies that consider the varying geographies and wealth levels of the participating nations. In this study, from 1980 to 2018, many studies were carried out to know the adverse effects of energy on economic growth through carbon emissions. On the other hand, the impact of using renewable energy on reducing carbon dioxide emissions was studied in several African countries. Time series were used through panel data to explore causal relationships. Whereas, through the results that were reached, it was found that traditional energy and its generation methods negatively affected economic growth, while clean energies had a significant positive impact on economic growth for Africa, which makes the application of clean energy technologies difficult in Africa is the level of income associated with economic growth. (Le et al., 2020) even though many prior empirical studies have contributed to the issue, there is disagreement over the relationship between global trade and environmental quality, according to (Antwieler et al., 2001). While some studies have discovered that international trade has a detrimental impact on the environment, others have found that it has a positive one. (Mangi et. al., 2009) And (Copeland and Taylor, 2004). With a verified significant and adverse association between education and greenhouse gas emissions, it is clear that education and raising educational standards may decrease greenhouse gas emissions. We also confirm the harmful effects of greenhouse gas emissions on human health. (Suleman et. al., 2020)

The effects of foreign trade, information technology development, economic growth, and energy consumption in several European countries on harmful gas emissions were investigated through a research survey (Park et al., 2018). It relied on econometric methods through the time series study to analyze the dashboard data for several European countries between 2000 and 2014. The study results concluded that countries that cannot produce means to reduce toxic gas emissions could import energy resources and technology that help mitigate the harmful environmental impact of industrial production processes if they have commercial openness. That is, trade openness has a positive environmental impact if importing clean energy resources is made simple and easy.

Hdom and Fuinhas (2020) researched the impact of foreign trade through the dimensions of import and export on toxic gas emissions. The researcher studied regression and cointegration techniques in exploring the relationship between foreign trade and economic growth and its impact on mitigating environmental pollution. The study concluded that developing countries should seek more trade liberalization to obtain technologies for generating renewable energy. In contrast, in developing countries that produce tools and means of renewable energy, there is a positive relationship between economic growth and environmental pollution.

To get thorough empirical estimates, they used data from 179 nations that were then separated into three subcategories: income level, OECD level, and regional level. The significant and positive labor and capital coefficients support the Solow growth hypothesis. The coefficients for carbon emissions and education are negligible in the near term but considerable and favorable in a long time. (Copeland and Taylor, 1994)

2.6 Material Footprint Per Capita and Sustainable Development

At both the global and national levels, (Bithas and Kalimeris, 2022) discovered a growing decoupling between total and per capita resource usage and material density. Instead of a decline in resources per unit of GDP, this decoupling results from a quicker increase in capacity and per capita resources. Parallel to this, (Hickel and Kallis, 2020) said there is no worldwide relationship between economic growth and resource usage in the current economic growth process. The authors point out that it is impossible to reduce emissions to the levels needed to keep global warming to 1.5 °C or two °C, even under ideal policy settings. They advise decision-makers that green growth is probably a misplaced objective and that different approaches should be considered.

Ward et al (2016) contrasted the outcomes of historical forecasts (1980-2010) with findings from the present (2015–2050–2150). The results showed that GDP growth and global material and energy usage are intimately linked. Because of this, they are opposed to creating a growth-oriented strategy inside the decoupling framework.

Wang et al. (2018) came to comparable conclusions. At the level of household material consumption, they discovered that wealthy nations had better decoupling conditions than underdeveloped countries. Nevertheless, there is little distinction between developed and developing nations at the MF level. The MF research also shows that emerging nations are better at decoupling than developed countries. These findings apply to three BRICS nations (China, India, and Brazil) and three OECD nations (USA, Australia, and Japan).

Yu et al. (2013) used domestic material consumption analysis for China to carry out comparative research. As a result, China underwent an individual between 1978 and 2010 through material energy efficiency. However, between 2001 and 2010, increased consumption and mineral extraction caused a significant decline in an appropriate decoupling level.

Brizga (2019) Looking at Latvia, the findings show that resource extraction and consumption are growing gradually due to poor material productivity and are not uncoupled from economic growth. The relationship between environmental pressure and GDP at the municipal level was investigated by (Yu et al., 2017). The findings show that between 1999 and 2010, SO_2 and wastewater emissions in Chongqing completely decoupled. The primary cause of the positive nexus is technological advancements.

2.7. The Relation between International Trade and Sustainable Development in Morocco

It should be noted that the development strategies in Morocco were significantly affected by foreign trade and the pursuit of its liberation; however, Morocco was unable in the past years to achieve the aspirations of reducing poverty and unemployment rates, despite the emerging growth rates and the abundance of natural and human resources, highlighted by poverty, where we find continuous differences, in income levels, consumption rates, and the nature of services among citizens in Morocco. It has become necessary in Morocco to change the point of view from the classical development model to a comprehensive and balanced development model that guarantees and meets society's immediate and future needs at the desired level and considers environmental aspects on the one hand. The model expresses sustainable development (Aguenaou, Lahrech, Bounakaya,2017).

As is the case on a global level, Morocco is making efforts to achieve sustainable development. They publish annual reports on the economic situation at the comprehensive level and on the various development sectors, including geographical, social, economic, and environmental indicators. However, the indicators published in those reports do not generally show compatibility with sustainability concepts. For Morocco, institutional, legal, financial, and internal mechanisms have been implemented to ensure the integration of environment and development into the decision-making process. The development and liberalization of Morocco's international trade are expected to increase trade exchange and achieve higher growth rates in the gross domestic product. They are increasing production capacities due to lifting or reducing customs and non-tariff restrictions on imports and strengthening Morocco's ability to compete in global markets(Ferrouhi,2017).

Opening up the markets of developed countries should also allow Morocco to specialize in production and export based on comparative advantage. Studies show that the countries that benefit most from the liberalization of international trade are the most open globally. An index is developed to measure how open a country is to international trade. In other words, it shows the extent to which a country's economic activity depends on the conditions prevailing in the export and import markets.

From the point of view of the WTO, the relationship between trade and labor is complex. Free trade in a stable environment such as Morocco provides the appropriate environment for economic growth, paving the way for job creation and thus reducing the margin of poverty. It is noted that the organization deals with these issues gradually. It calls for a gradual liberalization that allows the necessary adjustment and believes that there are many other factors over which it has no power and is not within its prerogative. These factors are responsible for changes in income or salaries and the unemployment rate, as advanced economies rely on technology that requires skilled and highly qualified workers. This is due to technological changes, their acceleration, and other related factors such as supply and demand. According to theoretical considerations, the liberalization of trade in Morocco will positively impact creating job opportunities and increasing their supply, which will positively affect the empowerment of the poor class together (Aguenaou, Lahrech, Bounakaya,2017).

Trade liberalization in Morocco could provide competitive advantages in labor-intensive export industries, such as the textile and apparel industries. This mode of production led to significant developments in the structure of employment and wages in the industrial sector, with limited development in the agricultural and service sectors. Morocco has sought to

diversify its exports and benefit from the opening up of global markets during the last period. Exports of non-oil commodities in Morocco exceed 12%, which is relatively good compared to neighboring countries such as Algeria and Libya, which are very low; they are less than 5% of the GDP. This indicates that the liberalization of international trade has significantly increased Morocco's export capacity. Thus, it had the effect of increasing employment opportunities (Gao,2020).

Trade liberalization has helped poor people in Morocco find jobs in the export sectors. Manufacturing and production for export increase the demand for labor from the poor class, especially in the export industries sector, which helps create more job opportunities, and the available data indicate that the export-oriented sectors have achieved a remarkable expansion in employment in Morocco, which adopted the industrialization strategy. For example, Morocco's export-oriented textile and clothing industries constituted the main engine for export growth. In Morocco, employment in the textile and clothing industries constitutes about 42% of total employment in the industrial sector. On the other hand, the added value is estimated at 2.4% of the GDP Total, and the share of textiles and clothing in Moroccan exports is about 34% of the GDP. Notably, one of the characteristics of these industries is that they employ unskilled workers, the majority of whom are women and from the rural sector, representing the poor class in Moroccan society (Ferrouhi,2017).

CHAPTER THREE

METHODOLOGY AND RESULTS

3.1 Introduction

This study discovered the improved association between international trade and sustainable development in Morocco. It also has argued the link of sustainable development with trade, FDI, GDP per capita, and renewable energy. After discussing the research topic, detailed introduction, and literature review, we will unpack the methodology used step by step. A high-quality method is necessary for quality design research work.

3.2. Conceptual Framework

This study seeks to investigate the impact of international trade on sustainable development in Morocco, where sustainable development is considered the dependent variable, trade, FDI, GDP per capita, and renewable energy resources as the independent variables. Data were collected electronically from the website of the Central Statistical Organization in Morocco and the World Bank.

Table 1: Variables Of The Study

Independent variables	Dependent variable
Trade	
FDI	Sustainable development
GDP per capita	
Renewable energy	

H1: There is a significant relationship between trade and sustainable development

3.3. Data Analysis Tools.

This study applies the ARDL cointegration method to annual data for Morocco starting in 1990 and ending in 2019. To verify the relationship between the time series in this study, tests will first be conducted to ascertain the stability of the data, which are the unit root tests, the Augmented Dickey-Fowler test (ADF), and the Phillips-Peron test (PP). After conducting

the unit root tests, a cointegration test will be performed when all variables are combined to zero or one (Pesaran et al., 2001).

In this study, the dependence test will be made on the Autoregressive Distributed Lag (ARDL) model, which is suitable for the objectives of this study, as the long- and short-term relationship between the variables will be examined. The ARDL model is one of the most widespread economic methods compared to other models, especially when the variables are fixed at I (0) or an integral of order I (1).

One of the most popular tools used in econometrics is EViews which provides strong analytical capabilities inside a flexible and user-friendly interface. The program for processing and analyzing versatile dates. It may be used for cross-sectional and panel data analysis, time series estimates, and forecasting in econometric and general statistical analyses. It integrates spreadsheet and analytical database technologies with conventional statistics software activities and Windows-based purposes. This program has incredible capabilities for data analysis. Researchers can acquire statistical analysis using straightforward descriptive or intricate multivariate matrix analysis. Frequency tables, histograms, scatter plots, and many more methods of handling data analysis are provided. Many researchers are already using the program for data analysis because of how user-friendly the package is. It is a more versatile data analysis tool that many researchers use to assess the outcomes of their studies.

Descriptive statistics will be used because of quantitative studies. It also will use inferential statistical techniques like correlations and regression analysis. This research work has used the software of EViews for analyzing the data sets and used the following measurement tools:

- Checked the stationarity
- Unit root tests
- Augmented Dickey-Fuller test
- The Phillips-Perron test.
- DF-GLS Test
- ARDL test

3.3.1. ARDL Model

Cointegration tests in econometric analyses are frequently used to determine long-term relationships between economic indicators. The cointegration test developed by (Johansen, 1988) and the cointegration test developed by (Engle and Granger ,1987), which are among the

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tests commonly used as cointegration tests, are tests that do not provide stationarity with level values and are also applied to integrated variables of the same order. In practice, all macroeconomic variables are integrated to the same degree.

It's not uncommon for them to be. It is a method that allows the determination of the relationships between variables that should be included in the research but have different degrees of stationarity (alternatively, they are integrated with different degrees). The fact that the variables to be used and modeled in the econometric analysis are $I(0)$ or $I(1)$, in other words, that they are stationary at the level or stationary at the first difference, does not prevent the application of the ARDL bounds test method, unlike other cointegration tests. In addition, the possibility of using the unconstrained error correction model in the ARDL bounds test method makes this test safer than traditional cointegration tests (Akel & Gazel, 2014).

Models in which the lagged values of the dependent variable are used, as well as the present and past values of the independent variables, are known as "distributed autoregressive models with a lag" or "distributed lag autoregressive models" (ARDL). ARDL is a dynamic model because the previous values of the dependent variable are influential in the model. Also, short and long-term analysis can be performed with the help of the model. In estimating the ARDL model, first, the appropriate lag length of the model is determined using various information criteria. The model is estimated with the OLS-ECK (Least Squares) method and the results are interpreted in the next step. The method in question was first put forward by (Pesaran and Shin ,1998); in the following years, the method was developed by (Pesaran et al. 2001), and bounds tests were also applied for this purpose unrestricted.

In the application of the bounds test, which is based on the unconstrained (unconstrained) error correction model estimation expressed as the Error Correction Model-UECM, the long-term relationship between the variables is established in the first stage if there is prior information about the direction of the long-term relationship, the relationship is established in this direction. In the second step, the cointegration relationship between the variables is determined. If the cointegration relationship is determined, the developed model will estimate the short and long-term parameters. In investigating the long-term relationship, the bounds test will be preferred over other cointegration tests when there is no definite information about whether the series is stationary in level or difference. In addition, the method, which seems to give better results for small samples than other cointegration tests, estimates short and long-term parameters (Çil, 2018:407).

The most important advantage of the ARDL method over traditional methods in determining the short- and long-term relationships between variables is that it can be used to test the level relationships regardless of whether the series analyzed are stationary at the first difference or whether they are stationary or a mixture of them. However, ARDL is not used for second-level integrated series-I(2). The method provides significant advantages since the series used in financial economics are generally I(0) or I(1). In the analyzes made in other cointegration tests, a possible long-term relationship between the variables may be lost if the difference between the level values and the non-stationary variables is taken to remove the unit root and make it stationary. However, the ARDL method

Since the variables can be included in the model and analyzed without the need for such an operation in the included time series, such information is not lost. In addition, the short-term and long-term relationship between the variables can be evaluated simultaneously with the ARDL method. On the other hand, unlike traditional cointegration tests, it is possible to determine different delays for each variable in the model in the ARDL method. While traditional cointegration tests are sensitive to sample size, the ARDL method produces robust and consistent results for small sample sizes (Haq and Larsson 2016:24-25).

It is possible to summarize the application stages of the ARDL method as follows:

• In applying the ARDL method, the stationarity degrees of the variables are determined first. As a result of the stationarity analysis, the ARDL model can be applied if the series is I(0) and/or I(1) stationary at the first difference.

• In the ARDL model, first of all, long and short-term estimations are made for cointegration.

• Bound test is applied (with F statistic).

• If the F statistic is above the limit values determined by Pesaran et al. (2001), the existence of cointegration is accepted.

• In the case of cointegration, an error correction model (ECM) is applied.

• Diagnostic tests are performed. In these tests, autocorrelation, varying variance-heteroscedasticity (heterocesadicity) in the model, whether the normality condition is complied with, and the stability of the model is examined.

• ARDL short and long-run model coefficients are interpreted.

3.4. The Methodological Limitations

No research design or technique is flawless. The potential constraints of the study design come after the justified research design. Only certain factors were employed in this investigation because, like many other studies, it was time and money-constrained. Due to time and financial limitations, it is challenging to incorporate all 17 sustainable development goals. The best possible use of the resources will be made to conduct an insightful study.

The methodology has included the introduction and relationship between available variables. Research design states that it is quantitative research along with positivist philosophy. Only the data of 30 years, from 1990 to 2019, of the chosen factors will be tested in this study. EViews is used for various estimations like the Unit root test, the Augmented Dickey-Fuller test, and The Phillips-Perron test. Quality research will be conducted even in the presence of time and resource constraints. This approach is in line with the aim of the study, which is to investigate the effects of several SDGs on Morocco's GDP growth rate as the nation works to realize a knowledge-based economy following its Vision 2030.

3.4. Empirical Model

To ascertain which variables of the sustainable development goals were significantly impacted by global commerce in Morocco, we set out to evaluate the empirical model in Equation (1) below.

$$SDI_t = \beta_0 + \beta_1 TRADE_t + \beta_2 FDI_t + \beta_3 GDP\_PER\_CAPITA_t + \beta_4 RENEWABLE_t + \varepsilon_t \quad (1)$$

The above variables are explained as follows:

SDI_t = Sustainable Development Indicator (score) for Morocco in year t

β_0 = Intercept

$TRADE_t$ = Foreign trade (% of GDP) in Morocco in year t

FDI_t = Foreign_Direct Investment, Net_Inflows (% of GDP) in Morocco in year t

$GDP\_PER\_CAPITA_t$ = Gross Domestic Product per capita (constant 2015 US$) in Morocco in year t

$RENEWABLE_t$ = Renewable energy in Morocco in year t

ε_t = Error term.

Table 2. Variables Description of the study

Explanatory Variable	Variable Description	Source	Measurement
SDI	Score in Sustainable development index	https://www.sustainabledevelopmentindex.org/	A shared outline for peace and success for individuals and the planet presently and in the long run.
RENEWABLE	Renewable energy	WB	Ensure get reasonable, dependable, maintainable, and cutting-edge vitality for all.
GDP_PER_CAPITA	gross domestic product.per capita in US$	WB	Advanced supported comprehensive and maintainable financial development, full, beneficial, and conventional work for all.
TRADE	Foreign trade as % of GDP	WB	Construct a versatile foundation, advance comprehensive and feasible industrialization, and cultivate development.
FDI	Foreign Direct Investment as % of GDP	WB	Reinforce the implies of usage and revitalize the worldwide association for feasible advancement.

3.5.   Empirical Results and Discussion

Unit root test results

The research computed a unit root test due to the features of our data before performing the multiple regression analysis to ascertain the effect of global trade on different SDG-related variables. Deciding on the off chance that and how regularly time arrangement information ought to be recognized requires testing for unit roots (Caglayan et al., 2020). In time series analysis, the stationarity of the data must be determined using the unit-roots test (Lu and Guegan, 2011). The null hypothesis should be rejected if the test statistic's critical value and the p-value are less than 0.05. This proves that the data's structure is not time-dependent. As there is no unit root, it suggests that the time series data are stationary. The computed results of the said test are reported in Table 3.

Table 3. Augmented Dickey-Fuller (ADF), DF-GLS, and Phillips-Perron (PP) unit root test statistic

Series (Variables)		ADF	PP	DF-GLS
SDI	At level	-1.64	-2.31	-2.26
	First Diffrence	-5.17***	-5.20***	-5.27***
Trade	At level	-2.48	-2.56	-2.45
	First Diffrence	-5.45***	-8.74***	-5.45***
FDI	At level	-6.2637***	-6.244***	-2.74
	First Difference	-	-	-13.13***
GDP Per Capita	At level	-1.71	-1.60	-1.53
	First Diffrence	-6.79***	-9.42***	-4.71***
Renewable	At level	-2.29	-2.294	-1.53
	First Diffrence	-5.09***	-5.13***	-4.71***

Note: ***, **, and * indicate the significance level of 1%, 5%, and 10%, respectively.

According to unit root results, SDI, TRADE, GDP Per Capita, and Renewable variables were stationary after their first differences were taken. At the same time, the FDI variable was determined as stationary at the level. In this context, the SDI, TRADE, GDP Per Capita, and Renewable variables are stationary degrees I (1), and the FDI are stationary degrees I (0).

To verify the stability of the time series in the relationship between foreign trade and sustainable development, the researcher analyzed the stability of the time series through the unit root test. Since if it turns out that the value of p is less than 0.05, the null hypothesis is rejected, and the alternative is accepted, i.e., there is no unit root, and therefore the data are stable. The results of our study indicate that there is no caution and novelty regarding the study variables. In particular, we highlight the key variables influencing Morocco's Sustainable development in keeping with the goals of Vision 2030.

After determining the stationarity levels of the variables, it is necessary to determine the existence of a long-term cointegration relationship between them. Because only if there is a cointegration relationship between the variables in the model is it appropriate to investigate the long-term and short-term relationships. In this context, the ARDL bounds test was applied to investigate the existence of short- and long-term relationships between variables. The reason for preferring the ARDL model is that the analysis can be done without the condition that the

stationarity degrees of the variables used are stationary at I(0) or I(1) degrees. Since the variables used in the study meet this requirement, the ARDL bounds test was applied to investigate the existence of short- and long-term relationships between the variables, and the cointegration results related to this are given in Table 4.

Table 4. ARDL bound test

Test Statistic	Value	Signif	I(0)	I(1)
F-statistic	6.876956	10%	2.2	3.09
K	4	5%	2.56	3.49

Dependent variable: Sustainable Development (SDI)

According to the results of Table 3, it is clear that the bound test F-statistic of 6.876956 is Greater than the value of 3.49 at a 5% level of significance. These results represent the existence.
In the long run, nexus among the used variables. So we can run the ARDL model in the light of given estimations.

Table 5. Autocorrelation Test And Normality Test

Breusch-Godfrey Serial correlation LM Test:			
F-statistic	0.179538	Prob. F(2,2)	0.8478
Obs*R-squared	3.957474	Prob. Chi-Square(2)	0.1382
Jarque-Bera Normality Test	1.77	Prob.	0.41

To perform a more general Breusch-Godfrey test for serial correlation is used. You may test particular regression terms, compare the fits of several models, test the equality of means, and evaluate the overall significance of a regression model using F-statistics and F-tests. The F-test of general centrality decides whether your linear regression show fits the data way better than a show with no free factors. In this piece, I look at how elective relapse insights, like R-squared, fit with the F-test of by and significant centrality. R-squared demonstrates how well your show fits the information, and the F-test relates to it.

F-tests can evaluate the fits of different direct models since they can look at various show terms at once. T-tests, on the other hand, can, as it were, assess one term at a time. Our F-Statistic esteem is 0.179538 in Table 5. In summary, the model has no autocorrelation

problem according to Breusch-Godfrey LM Test. On the other hand, the Jarque-bera Test results in Table 5 show that the error term is normally distributed in the established ARDL model.

Table 6. Breusch-Pagan-Godfrey Heteroskedasticity Test

F-statistic	0.482660	Prob (21,4)	0.8792
Obs*R-squared	18.64283	Prob Chi-Square(21)	0.6080
Scaled explained SS	0.533342	Prob Chi-Square(21)	1.0000

It presumptions that the error terms are ordinarily conveyed and are utilized to test for heteroscedasticity in a straight relapse show. It decides on the off chance that the values of the autonomous factors have any effect on the change of the blunders coming about from a relapse. The f-statistic value in Table 6 is 0.48266. According to the Breusch-Pagan-Godfrey Test, the model has no heteroscedasticity problem.

Table 7. ARDL long run coefficient

Variable SDI is Dependent Variable	Coefficient	Standard Error	T-Statistic	Prob.
TRADE	0.001733	0.000237	7.313420	0.0019***
FDI	0.019862	0.003988	4.980546	0.0076***
GDP PER CAPITA	0.090540	0.034309	2.638922	0.0576*
RENEWABLE	-0.008926	0.002081	-4.289177	0.0128**

Dependent variable: Sustainable Development (SDI)

Note: ***, **, and * indicate the significance level of 1%, 5%, and 10%, respectively.

Based on the results in Table 7, trade and foreign direct investment have a statistically significant and positive effect on sustainable development. Still, it is not statistically significant for the GDP per capita. Furthermore, the results showed that renewable energy has a statistically significant and negative effect on sustainable development. The results also showed that an increase in foreign trade by 1% leads to an increase in the sustainable development index (SDI) by 0.0017%, an increase in FDI by 1% leads to an increase in the

sustainable development index (SDI) by 0.019%, and an increase in renewable energy by 1% leads to a decrease in the sustainable development index (SDI) by 0.008%.

Table 8. Short-Term Elasticities and Error Correction Model Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(SDI(-1))	-0.831331	0.134555	-6.178387	0.0035
D(SDI(-2))	-0.368137	0.138908	-2.650217	0.0570
D(TRADE)	0.000568	6.91E-05	8.227032	0.0012
D(TRADE(-1))	6.41E-05	4.08E-05	1.569355	0.1916
D(TRADE(-2))	0.000214	4.46E-05	4.803218	0.0086
D(TRADE(-3))	0.000178	4.49E-05	3.976815	0.0164
D(FDI)	0.001235	0.000174	7.113695	0.0021
D(FDI(-1))	-0.007019	0.000814	-8.628490	0.0010
D(FDI(-2))	-0.004933	0.000607	-8.123191	0.0012
D(FDI(-3))	-0.000835	0.000394	-2.120529	0.1013
DGDP PER CAPITA	0.016890	0.006916	2.442324	0.0710
D GDPPERCAPITA(-1)	-0.022562	0.005661	-3.985552	0.0163
D(RENEWABLE)	-0.001717	0.000216	-7.937814	0.0014
D(RENEWABLE(-1))	0.003668	0.000381	9.629954	0.0007
D(RENEWABLE(-2))	0.002035	0.000362	5.625032	0.0049
D(RENEWABLE(-3))	0.001737	0.000175	9.920544	0.0006
ECT(-1)*	-0.493163	0.051183	-9.635295	0.0006

Dependent variable: Sustainable Development (SDI)

The estimation of the error correction models is detailed in Table 8. It is shown that the coefficient of the slacked error correction term (ECT (-1)) is negative and significant. This affirms the nearness of cointegration connected among all the factors for demonstration examined. Other than that, the speed of adjustment to the balance is quick since it is more significant than 100% for all models. Overall findings of the table demonstrate that the model has a satisfactory level of explanatory power with an R^2 of 0.968951. Particularly, the independent factors we discovered accounted for 97.8% of the variation in Morocco's growth rate.

3.6. CUSUM and CUSUM of Squares Test

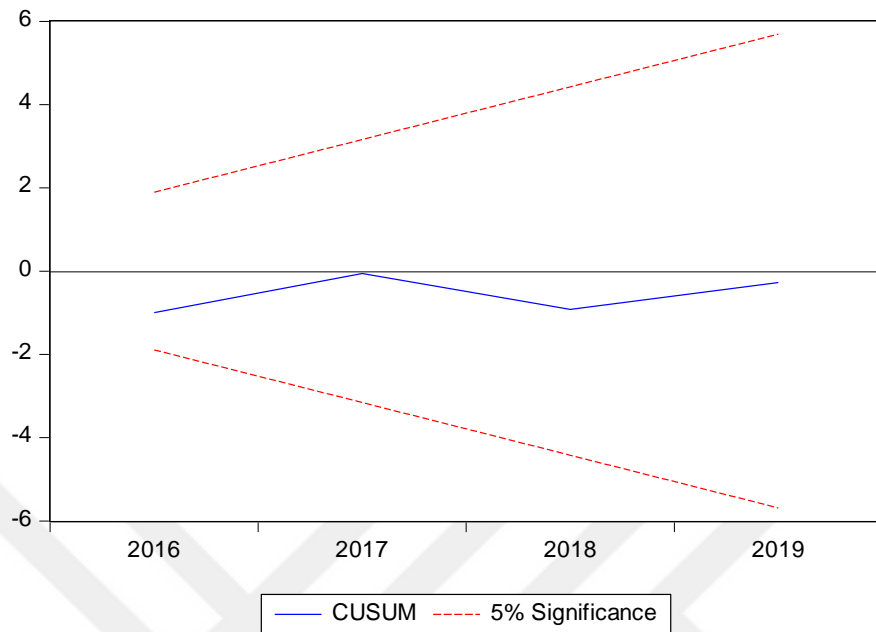This research computed the above-said test, and the following graphs are reported for results:

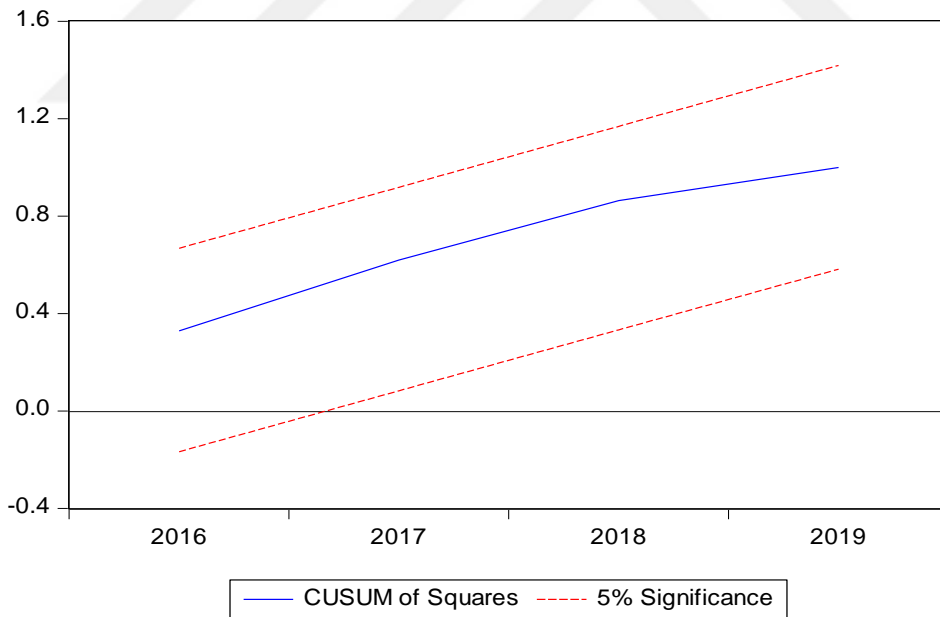**Figure 3.** The (CUSUM) and CUSUM of Squares

Figure 4. The (CUSUM) and CUSUM of Squares

Additionally, we run the CUSUM and CUSUMSQ tests to see if the models are stable. Figures show their outcomes. The blue line typically lies between the two red lines, indicating

that the model coefficients are stable. We can therefore conclude that our calculated models are stable. As a result, our findings are reliable and may be examined without reservation.

3.7.   Hypothesis Acceptance/Rejection

Hypotheses	Accepted/rejected
H1: There is a significant relationship between trade and sustainable development	Accepted

CONCLUSION AND RECOMMENDATIONS

In this thesis, this research investigated the belongings of global trade on Morocco's sustainable development throughout 30 years from 1990 to 2019. Before the empirical investigation, there is a summary of the recent literature in this nexus. The current research used an Autoregressive Distributed Lags (ARDL) model to examine how trade affects Morocco's sustainable development. The estimated model reveals a significant correlation between trade, FDI, and renewable energy with sustainable development in Morocco but not GDP per capita. More policy initiatives are required to grow the GDP per capita over time.

A link between foreign trade and sustainable development is investigated, which is much more critical in the case of Morocco, like all other countries. International trade affects many factors like life expectancy, years of schooling, per capita income, FDI, renewable energy, trade, carbon dioxide emission, and material footprint per capita to achieve sustainability. International organizations, like the World Bank and the World Trade Organisation (WTO), assert that trade and sustainable development are inextricably linked. (Chandia et al.2018) Various trade and sustainable development efforts have received significant attention from these organizations to recommend appropriate trade policies that might boost economic growth and protect the environment for future generations (Balassa, B. 1986).

Sustainable development and international trade are crucial for the current and next generations because they include economic, social, political, administrative, and environmental factors. This study tested the positive affiliation of most of the variables but material footprint per capita and carbon dioxide emission to achieve the objectives of SDI for Vision 2030. (Mamun and Nath, 2005) they looked into the connection between exports and Bangladesh's economic growth. They argue a long-term, unidirectional causal relationship exists between Bangladesh's export and economic growth.

The primary purpose of this study is to explore the impact of trade on sustainability in Morocco to achieve the 2030 vision set by the UN. Their study discusses the synergies and trade-offs between the metrics used to track progress toward the SDG goals (Coscieme et al., 2020). Selected variables like FDI, GDP per capita, renewable energy resources, and trade are used to show their essentials in economic, social, and environmental areas. According to the findings, the FDI, trade, and GDP per capita have shown a positive correlation and significant

impact on sustainability in Morocco. But renewable energy resource has shown an adverse effect in the case of Morocco.

Many studies like this one have discussed the relationship between FDI, GDP per capita, and trade with sustainable development. Technologies using renewable energy play an essential part in Sustainable Development by lowering greenhouse gas emissions, enhancing energy security, and giving formerly energy-deprived areas access to energy; renewable energy technologies play a critical role in sustainable development. But results of this study showed an inverse relationship between renewable energy with sustainability in Morocco.

This research has estimated the followings conclusion:

- International trade, FDI, GDP per capita, education, health, GNI, CO2 emission, and resource availability are necessary for sustainability.
- Trade and sustainability must consider essential for the economy of Morocco.
- International trade is helpful for the development of education, health, per capita income, and sustainability.
- Trade is favorable for environmental quality.

Generally, trade openness does not automatically lead to increased economic growth or improved environmental conditions. Trade openness should be complemented by some policies centered on enhancing investments in technology and innovation, enhancing productivity, and enhancing and consolidating the quality of institutions and the capacity to adapt and learn new skills. So, trade liberalization shouldn't be used alone to promote sustainable development. Openness to trade is essential to sustainable growth. It facilitates access to environmental technologies and aids in the more effective distribution of limited resources. The strictest environmental laws should be implemented to reduce trade-embodied emissions and pollution in Morocco.

International trade and sustainable development in Morocco have received much attention from scholars. Sustainability and trade are essential for the next generation in the short and long term. To safeguard a country and the environment, sustainability is increasingly important. We offer the following suggestions for further study in light of the studies mentioned above:

- Future studies might examine how trade and sustainable development are related by considering the economy's FDI, trade, GDP per capita, renewable energy, health, education, economic, social, and environmental spheres.

- Other areas of Morocco's economy can benefit from the effects of global trade.

- The national institutes must concentrate on numerous techniques that can help to achieve sustainable development. Several institutes should focus the trade by its determinants.

- Morocco should utilize trade to eliminate its numerous regional inequities, poor educational system, and significant unemployment, particularly among the young. Reforms and development in trade may boost the efficacy of this approach.

- It should establish comprehensive strategies to solve the country's socioeconomic challenges is necessary for the country's growth and stability. Also, the lack of more stable jobs in the formal sector risks fostering social discontent.

- The international community, notably the EU, should help the Moroccan government accomplish the 17 SDGs, particularly for migration, education, and employment difficulties.

- Morocco must manage migrant flows from Sub-Saharan Africa and conflict zones in the MENA area to the EU.

- It should reduce the scale of the informal sector, corruption, and lack of coordination amongst EU programs.

- It should improve instruction, teacher, and vocational training by luring foreign instructors.

- The importance of enhancing English language instruction in Morocco should be considered.

- There should be substantial collaboration between the Moroccan government and civil society groups in the creation and execution of a comprehensive education reform. In addition to improving the youthful workforce's employability and competitiveness, this would make it easier for the nation to join regional organizations like the African Union.

- The teacher-centered teaching, a significant component of Morocco's existing educational system, does not inherently promote learning environments that encourage creativity, problem-solving abilities, or a more contextualized knowledge of a particular subject.

- Professional policymakers like the Italian Organization "Progettomondo. MLAL", which has been working in Morocco to generate policy suggestions since 2001, should assist in putting the study's findings into practice.

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- Morocco's current life expectancy in 2023 is 77.43 years, up 0.28% from 2022. Healthcare spending per person in 2017 was $174, or 5.31% of GDP. If the suggested action is taken, it will rise even higher.

- To properly implement these programs, the government must tap into the private sector's capacity to raise per capita income.

- Due to the Ukraine conflict, Morocco has faced high shocks in the prices of various commodities, especially in the food and energy sector. It should implement a replacement import strategy for sustainability.

- To boost the GNI per capita, the government should provide petrol, bread, and sugar subsidies and raise the policy interest rate.

- With the aid of capital investment, reducing the material footprint and improving the environment are essential for human survival. The fundamental change towards sustainable consumption and production patterns must be made possible by well-designed national policy frameworks and tools.

Morocco can use the recommendations mentioned above to perform better in the challenging competitive situation of trade and sustainability. These stated recommendations can contribute to the success and future security of Morocco. Morocco will improve its ranking rapidly in SDI by implementing the suggestions given.

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