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The Impact of the Generalized System of Preferences on Human Development: A Panel Data Analysis

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Abstract

Unilateral trade agreements are trade benefits given to developing countries by developed countries with the aim of boosting their exports and reducing poverty. This study examines empirically whether the EU's Generalised System of Preferences for developing countries has been helpful in raising the Human Development Index. A group of 60 beneficiary countries is employed in this analysis from 2002 to 2021. The analysis shows that a higher degree of utilisation is associated with an increase in the Human Development Index using a panel data regression with fixed effects. More specifically, a 0.009-unit rise in the HDI results from a one percent increase in the GSP utilisation rate. This effect is not different for countries included in the "Everything but Arms" scheme. This analysis demonstrates the significance of the Generalised System of Preferences as an effective tool for policymaking that can lead to a higher HDI.

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1. Introduction

Developing countries face continual challenges in their fight against poverty and the pursuit of a higher Human Development Index (HDI). These issues are primarily brought on by restricted access to resources, undeveloped infrastructure, and low-income levels. The HDI measures the overall well-being of a country by considering elements like income, education, and life expectancy (UNDP, 2022). However, these concerns are not limited to the affected countries; they have far-reaching effects on global well-being and stability. High levels of poverty may severely hinder international collaboration on common issues like climate change and public health problems. Developed countries must address the interconnection of global concerns if they want to contribute to sustainable development on a global scale (United Nations, 2015).

Unilateral trade agreements are an example of developed countries assisting developing countries. These are unilateral, non-reciprocal trade benefits granted by developed countries to developing countries to boost exports, reduce poverty, and advance their economies (European Commission, 2023). The Generalised System of Preferences (GSP) is an example of a unilateral trade agreement that upholds these objectives. The EU's Generalised System of Preferences (GSP) aims to give developing countries preferential treatment in international trade. In accordance with the GSP, certain items from eligible developing nations are allowed preferential tariff rates on the EU market. If a country is classified as having an income level below upper middle income and does not already benefit from other agreements with the EU market, it is eligible for the GSP. The Everything but Arms (EBA) scheme is a part of the GSP and is a unique arrangement for least developed countries (LDCs), which grants them duty-free and quota-free access to the EU market for all goods other than arms and ammunition. The Committee on Development determines which countries are the least developed. Even if they have another arrangement in place, all LDCs are given access to the EBA's benefits. The GSP seeks to promote trade and economic development in these countries, which may then result in the reduction of poverty and the creation of jobs. (European Commission, 2023).

Since the GSP is implemented with the aim of reducing poverty, it is essential to look at the impact the utilisation rate of the GSP has on the Human Development Index. The HDI presents a multifaced view of poverty since it places a strong emphasis on education, health, and income. Understanding the relationship between the Generalised System of Preferences and the Human Development Index is critical for policymakers committed to promoting

sustainable development. Investigating this relationship can provide important information on the efficiency of trade preferences in improving human development outcomes in underdeveloped countries. After that, decision-makers can construct evidence-based policy measures to meet the multifaceted character of development concerns. In addition, policymakers may create an environment that supports the eradication of poverty by understanding the mechanisms by which the GSP affects the HDI. Therefore, the main question addressed in this paper is:

"What is the impact of the utilisation rate of The Generalised System of Preferences (GSP) and the Everything but Arms (EBA) scheme offered by the EU on the Human Development Index (HDI)?"

To answer this research question, a panel data regression with fixed effects analysis with data from 2002 to 2021 will be used. The analysis is taken to have a causal interpretation under the assumption that the GSP utilisation rate is not associated with other factors that affect the Human Development Index. Control variables will be incorporated into the regression model to take potential confounding variables into consideration. Additionally, this analysis will investigate heterogeneous treatment effects by contrasting how the GSP affects the HDI in countries within and outside of the Everything but Arms (EBA) scheme. A one-year lag of the GSP utilisation rate will also be added to the regression model to account for any delayed effects because it might take some time to see improvements in health, education, and living standards. The study will also examine which HDI component is most affected by the Generalised System of Preferences. Furthermore, the mechanism behind this link will be further investigated by examining the correlation between the GSP utilisation rate and the dependent variables of employment, GDP per capita growth, and exports.

In order to contribute to the body of knowledge about economics, this research study will look at how the Generalised System of Preferences (GSP's) utilisation rate affects the Human Development Index (HDI). This study's issue is highly relevant and noteworthy because it has generated a lot of discussion and attention among policymakers and the public. The originality and importance of this investigation are further highlighted by the seeming lack of empirical research on this particular relationship. Furthermore, this study carefully avoids the inclusion of bad controls, which have been found in previous studies, while incorporating control variables that are crucial for reducing potential confounding effects. Next to that, investigating heterogeneous treatment effects is especially helpful in the context

of decision-making and policy development, as it offers decision-makers insightful information for more successfully customising policies for certain groups of countries.

According to this research, a one percent increase in the utilisation rate of the GSP on average is associated with a rise in the Human Development Index by 0.009 units. Moreover, the study reveals the presence of a delayed effect, although the magnitude of this effect is smaller compared to the direct effect. This research demonstrates that life expectancy is the key driver of this relationship because, on average, a 1% increase in GSP utilisation results in a 1.054-year increase in life expectancy. Additionally, there are no significant effects when considering potential mechanisms for this relationship. Overall, the findings indicate that there is a positive relationship between the GSP's utilisation rate and the Human Development Index. This effect does not differ for countries that fall under the EBA scheme of the Generalised System of Preferences.

2. Related Literature

2.1 Theoretical Framework

The relationship between the Generalised System of Preferences (GSP) utilisation rate and the Human Development Index (HDI) can be explained through a theoretical framework that is based on fundamental trade theories. How a country should manage its resources and engage in international trade is explained by the Heckscher-Ohlin model. It identifies an equilibrium between two countries with different resource bases. According to the Heckscher-Ohlin model, countries will specialise and export goods that they have a comparative advantage in (Krugman et al., 2018). Given that developing countries have a relatively abundant supply of workers and few financial resources, these countries are more likely to specialise in producing labour-intensive goods for export (Khondoker & Kalirajan, 2012). In accordance with the Heckscher-Ohlin model, countries that engage in international trade receive a higher price for their export products than they would if they sold the same products domestically. This means that developing countries would earn more money from their labour-intensive export products (Krugman et al., 2018).

Derived from the Heckscher-Olin model, the Stolper-Samuelson theorem suggests that trade liberalisation can lead to changes in factor prices. According to this theorem, as the relative price of a product rises, the real rate of return of the production factor that is employed most frequently to produce that good rises, while the real return of the other factor of production declines. (Krugman et al., 2018). As a result, developing nations with numerous export markets for their labour-intensive products and high export prices may be

able to raise wages in labour-intensive industries. Higher earnings help to improve living conditions and may therefore have a beneficial impact on the HDI as a greater quality of life leads to better education, better social services, etc. This standard theory would suggest that a higher utilisation rate of the GSP would lead to a higher Human Development Index.

The relationship between the utilisation rate of the Generalised System of Preferences and the Human Development Index can be explained through the trade-related development theory, which suggests that trade can contribute to economic growth and development and, in turn, lead to improvements in human well-being (Findlay, 1984). The research by Kabadayi (2013) found a positive association between trade openness and the Human Development Index in developing countries. The utilisation rate of the GSP can be seen as a proxy for a country's participation in international trade. Countries that use the GSP will export more goods to developed countries, which could contribute to improvements in their economic and human well-being.

The relationship between the utilisation rate of the GSP and Human Development is rather complex and can work through a variety of channels. Winters et al. (2004) argue that there are multiple channels through which trade can influence poverty. He states that the main channels are changes in prices, the remuneration of factors, and technological progress. All these factors can contribute to reducing poverty and improving living standards in these countries. Price changes may have an impact on people's income and purchasing power, which in turn affect poverty levels. Factor earnings are referred to as "remuneration of factors" in this context. Trade can influence these rewards, which can have an effect on poverty rates and the distribution of income. These channels are closely related to the Heckscher-Ohlin model and the Stolper-Samuelson theorem. Additionally, trade can help new ideas and knowledge circulate, which in turn can boost economic growth and productivity. These developments can help reduce poverty by generating job possibilities. Particularly, price changes play a significant role, and their final impacts depend on the sources of income and employment of individuals. Similarly, Anderson et al. (2005) forecast that free trade will increase employment, real income, and returns to unskilled labour in sub-Saharan Africa, therefore enhancing human development.

The study by Afzal et al. (2009) suggests that there is a positive relationship between exports and human development in Pakistan, indicating that exports help to advance human development. The authors argue that the mechanism through which trade influences human development is through its impact on economic growth. As the economy grows due to increased export activities, it generates more income and resources, which can be allocated to

social sectors such as education and healthcare. Grossman (2003) asserts that there is convincing evidence proving that trade-related economic growth has a favourable impact on the per-capita income of developing nations. These developing countries typically dedicate extra revenue to improving their environment. All these mechanisms through which trade can influence human development would suggest that the utilisation rate of the GSP has a positive impact on the Human Development Index in developing countries.

2.2 Empirical Research

The literature on the relationship between the GSP and the HDI has been limited; however, there has been extensive literature on the impact of the GSP on exports, where the results have been mixed. The study by Aiello and Demaria (2009) found a positive and significant impact of the GSP offered by the EU on agricultural exports by using a gravity model. The study discovered positive effects connected to the EBA scheme. The authors argue that all eligible countries receiving preferential treatment under the Generalised System of Preferences (GSP) benefit from the system of EU trade preferences. Similarly, Ito and Aoyagi (2019) demonstrate how the Least Developed Countries benefited from duty-free, quota-free access to the Japanese market using a triple difference estimator. The system allowed successful imports into the Japanese market. Next to that, Cirera et al. (2016) discovered that unilateral preferences have been found to be a successful method for boosting export activities to the European Union. This favourable result is the result of two main factors: first, the direct impact of lower tariffs, which enhances trade conditions; and second, the supplementary effects that result from the adoption of preferential regimes.

The study by Klasen et al. (2020) reveals a different outcome. They show that not every system of trade preferences will result in higher export values, as only a number of developed countries and industries will benefit. Additionally, they discover that export levels are overall higher for the Least Developed Countries, particularly for agricultural and light manufacturing goods. Conversely, the study conducted by Borchert (2009) shows that there is a negative relationship between the GSP scheme and export volume. They estimate that the trade volume losses for developing countries range from about 2% to about 20% of their overall trade with the European Community. These losses are primarily brought on by distortions that affect highly substitutable commodities, particularly those that depend on labour-intensive production techniques.

These papers all investigate the effect of the GSP on exports; however, it is also important to look at the effect on human development. Increased export volumes are necessary for sustainable economic growth, but they also involve raising standards of living. Numerous studies have emphasised the connection between economic development and human development, highlighting the significance of inclusive and equitable growth that helps all facets of society. The United Nations Development Programme (UNDP) created the Human Development Index (HDI), which offers a composite metric that includes measures other than economic criteria like living standards, health, and education (United Nations, 2023). With this paper, I add to the existing literature, as this larger approach recognises the value of human well-being and development alongside economic prosperity.

There has not been much empirical research on whether the country's welfare and development have increased as a result of the GSP scheme. In his empirical paper, Gnangnon (2023) investigated the effects of non-reciprocal trade preferences provided by Quad countries on the trajectory of economic growth. According to the author's analysis, the Generalised System of Preferences programme utilisation rate is a key factor in promoting economic growth in countries eligible for these trade preferences. In particular, an increase of 1% in the GSP programme's utilisation rate results in an increase of 0.01% in the beneficiary countries' economic growth rate. Additionally, it has been found that a country's share of its total merchandise exports to Quad countries under preferential tariffs increases in direct proportion to the use of non-reciprocal trade preferences (NRTPs), which have been shown to have higher positive effects on economic growth. The analysis used by the researcher yielded these results using both pooled ordinary least squares and a within-fixed effects estimator. The author also used the two-step systemic generalised method of moments (GMM) approach to address any endogeneity concerns. Instead of concentrating simply on economic growth, this study aims to add to the body of knowledge by employing a human development lens. The study's inclusion of human development enables a thorough comprehension of the GSP's social effects. This method offers a more thorough evaluation of the GSP's contribution to equitable and sustainable development, assisting in the formulation of public policies that place human welfare above economic concerns.

Additionally, Gnangnon (2023) carried out a further empirical investigation to determine the effect of the GSP utilisation rate on poverty levels. The empirical results show that an increase in the utilisation rate of the GSP is associated with a decrease in poverty in beneficiary countries using the two-step generalised method. Notably, compared to other countries in the sample as a whole, the magnitude of this effect is found to be stronger for

Least Developed Countries (LDCs). According to the study's conclusions, a marginal increase in the Generalised System of Preferences (GSP) utilisation rate of 1% results in a statistically significant decrease in the transformed poverty headcount rate at the $1.90 threshold of 0.016%. The analysis also shows that a comparable 1% increase in GSP utilisation is connected to a notable 0.014% decline in the transformed poverty gap rate at the $1.90 threshold. I hope to add to the body of current literature with this study by focusing on the effect of the Generalised System of Preferences (GSP) on the Human Development Index (HDI) as the main outcome variable. I will expand on previous research by excluding specific mechanisms as control variables that may confound the results. In the paper, the author used some control variables that can be seen as mechanisms. For instance, trade openness can bias the results because a higher GSP utilisation rate may result in stronger trade policy liberalisation, which may then result in a reduction in poverty. My goal is to provide a more direct assessment of the relationship between GSP utilisation and HDI by removing these mechanisms as control variables in my study. This will help us better understand how trade preferences affect more general characteristics of human development.

By adopting this approach, this research sheds light on the unique contributions of the GSP to human development outcomes and investigates its potential as a driver for sustainable development. By going beyond traditional measures and focusing on the wider dimensions of well-being reflected by the HDI, this research will expand our understanding of the complex effects of trade preferences. The existing empirical literature would suggest that there is a positive association between the GSP's utilisation rate and the HDI. Next to that, some studies found a stronger effect for the Least Developed Nations, which would suggest that there is a heterogeneous treatment effect. However, not many empirical studies have analysed the influence of the Generalised System of Preferences EBA scheme's heterogeneous treatment effects. It is crucial to take a close look at this, as this method allows you to pinpoint the effects of distributional policy (Xu et al., 2022).

3. Data and Methodology

3.1 Data

Information will be obtained from credible sources to determine how GSP utilisation rates are related to the HDI index. The UNCTAD (2023) database, a trusted source with extensive coverage of pertinent data, will be used to provide data on the utilisation rate of the GSP. The dataset used in this analysis includes statistics on utilisation rates from 2002 to 2021. All

countries eligible for the Generalised System of Preferences are included in this analysis (see Appendix Table A1), with a special distinction made for those that fall under the Everything but Arms provision of the GSP. Notably, four countries, namely, Timor-Leste, Somalia, Niue, South Sudan, and the Cook Islands, are left out of the dataset since information on the GSP utilisation rate or the Human Development Index is missing. We can measure the effectiveness of the Generalised System of Preferences programme by looking at its utilisation rate. This utilisation rate is the proportion of qualifying imports from a beneficiary country that reach the market of the GSP-granting country.

The following formula can be used to determine the Generalised System of Preferences (GSP) utilisation rate: (GSP Received Imports / GSP Covered Imports) * 100. This formula will show how much a recipient country uses its GSP benefits (UNCTAD, 2023). It contrasts the overall value of imports eligible for GSP benefits (GSP Covered Imports) with the value of imports that have obtained GSP treatment (GSP Received Imports). A higher utilisation rate suggests greater use of GSP advantages, which could mean more eligible imports have access to favourable tariffs and exemptions. On the other hand, a lower utilisation rate may point to difficulties or limitations in fully utilising the advantages of the GSP programme. According to Persson and Wilhelmsson (2016), compliance might be one of these problems. This indicates either that the GSP-granting country is applying tight enforcement to the requirements or that a country may have trouble achieving the qualifying requirements. Additionally, high administrative expenses may prevent using the GSP to its maximum potential and result in lower utilisation rates. The GSP programme may not adequately cover some products, which could also be indicated by a low utilisation rate. Utilisation rates can also be explained by uncertainty surrounding eligibility for preferences and the possibility of financial penalties if it is later determined that a country broke the complicated rules (Bureau et al., 2007).

The HDI data will come from the United Nations (2023), an important organisation that monitors international human development benchmarks regularly. The three major facets of human development that make up the Human Development Index are health, education, and standard of living. The health dimension is assessed using the life expectancy at birth. For the education dimension, the United Nations looks at the average number of years spent in school for individuals aged 25 and older and the anticipated number of years spent in school by children who are school-age. The measure of the standard of living is the Gross National Income per person. After that, a composite index is created using the geometric mean by combining the scores from the three HDI dimension indices (United Nations, 2023).

The dataset utilised for this analysis contains data on the Human Development Index from 2002 to 2021. The data for the Human Development Index includes all countries eligible for the Generalised System of Preferences, with the exception of Timor-Leste, Somalia, Niue, South Sudan, and the Cook Islands due to incomplete data (see Appendix Table A1). The HDI serves as a comparative indicator that does not only look at economic data but goes beyond that by looking at a wider view of the general well-being and quality of life in various countries. In this study, the Human Development Index is a useful instrument since it enables a critical analysis of a policy decision and its effects on human development. In particular, the GSP programme serves as the policy choice that is the subject of this study.

There are a number of control variables incorporated into this regression analysis. These variables are Foreign Direct Investment, Population Size, Inflation, Official Development Assistance, Technical Cooperation Grants, and Institutional Quality. Institutional quality consists of Control of Corruption, Government Effectiveness, Political Stability, Regulatory Quality, Rule of Law, and Voice and Accountability. The information regarding these variables will be obtained from the Worldwide Development Indicators in the World Bank database. For additional tests in this analysis, separate variables will be used to measure each element of the Human Development Index, including expected years of schooling, gross national income (GNI) per capita, and life expectancy. While the data on GNI per capita and life expectancy will be drawn from the Worldwide Development Indicators available in the World Bank database, the information on expected years of schooling will come from the Our World in Data database. In order to examine the underlying mechanism of the relationship between the HDI and the utilisation rate of the GSP, this analysis will use employment, GDP per capita growth data, and exports as the dependent variables. The Worldwide Development Indicators dataset, which is available through the World Bank database, will be used as the source for these variables. Logarithmic transformations are applied to Population Size, Official Development Assistance, Technical Cooperation Grants, and exports in order to address issues with interpretability.

3.1.1 Descriptive Statistics

Figure 1 shows the average GSP utilisation rate over time. It reveals an upward trend in the GSP utilisation rate over time. Similarly, Figure 2 shows the average of the Human Development Index over time, which exhibits a consistent linear rise over time. These figures demonstrate a progressive trend for both variables. As shown in Figure 3, there is a positive

correlation between the Human Development Index and the GSP utilisation rate. The figure clearly shows a linear relationship between the two variables. Figure 4 displays a histogram of the utilisation rate of the GSP. This histogram shows a distribution with a peak at 0 percent utilisation, a stable density in the middle, and a modest increase at 80 percent utilisation. This suggests that there is a concentration of observations at the extremes of the utilisation range.

Figure 1: Line Graph GSP Utilisation Rate Average over Time

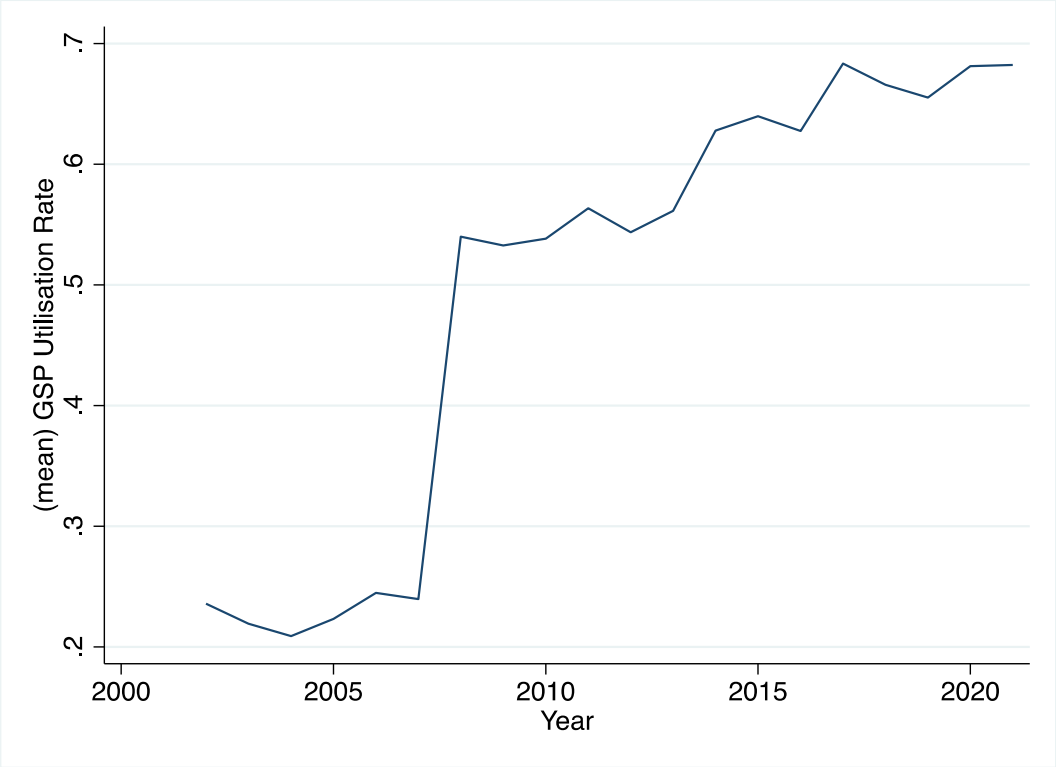


Figure 2: Line Graph Human Development Index Average over Time

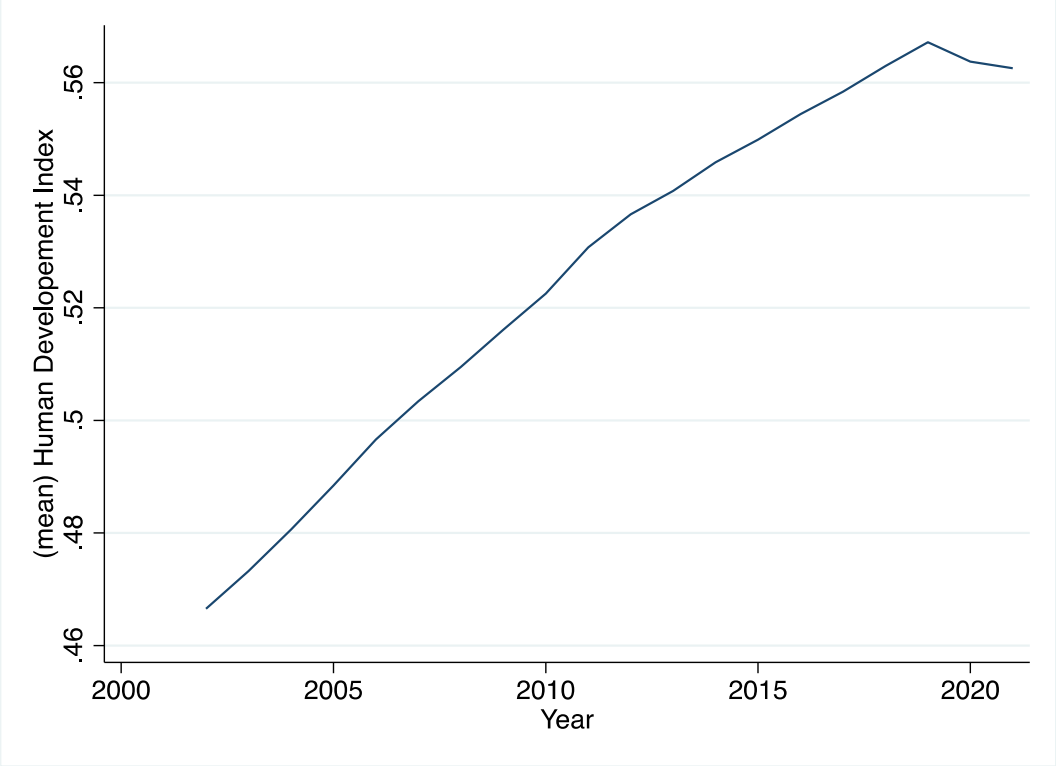


Figure 3: Scatterplot GSP Utilisation Rate and Human Development Index

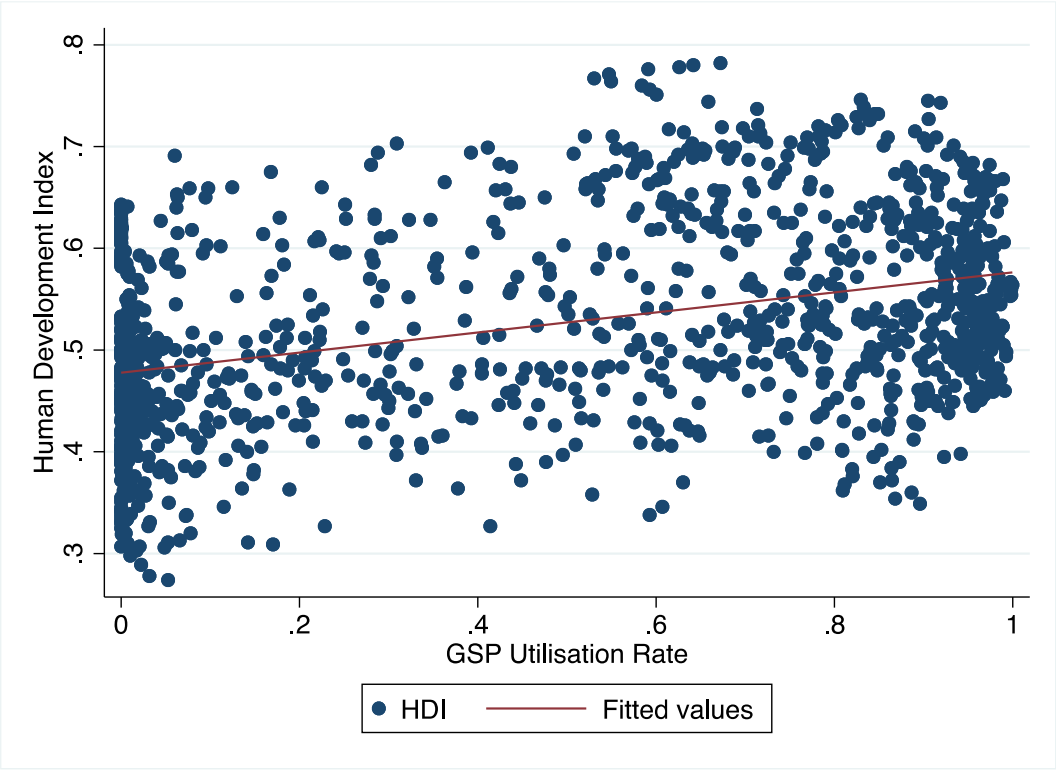
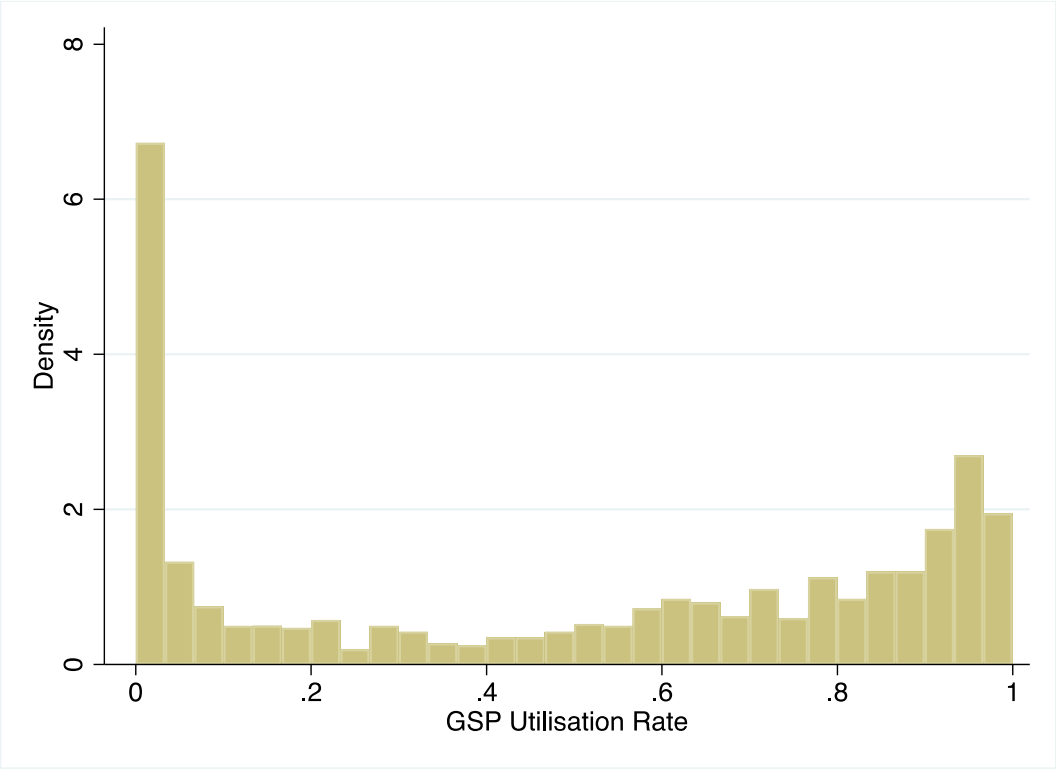


Figure 4: Histogram GSP Utilisation Rate



The correlation matrix for the variables used in the regression analysis is shown in Table A2. The dependent variable, HDI; the independent variable, the Generalised System of Preferences (GSP) utilisation rate; and the control variables make up the variables of interest. Multicollinearity issues arise as the institutional quality indicators are highly correlated with each other. Besides, Official Development Assistance and Technical Cooperation Grants also show a correlation of 0.775. Therefore, a Variance Inflation Factor (VIF) analysis will be used to determine the degree of multicollinearity. According to the rule of thumb, multicollinearity is present when VIF values are greater than 5. However, others argue that a VIF value of 4 or above is too high (Bock, 2020). The VIF values are shown in Table A3, where the variables Rule of Law, Control of Corruption, and Government Effectiveness have a value higher than 4. In order to reduce the problem of multicollinearity, these variables will be removed from the analysis.

Table A4 displays the variables' descriptive statistics. This table contains six additional variables that will be used as dependent variables in additional analyses. There is no concern for multicollinearity because they all act as dependent variables; hence, no correlation matrix is required. The sample counties' utilisation rate of the GSP varies considerably, with an average of 0.496 and a standard deviation of 0.377. With an average of

16.000, a standard deviation of 2.099, and a minimum of 9.170, the population size also shows a wide range of values. The maximum value of 76.593 indicates that life expectancy is rather low. This is not surprising given that all these countries are developing countries. It can also be observed that the GDP per capita growth data points are all quite close to the average value because the standard deviation, 0.047, is relatively low.

3.2 Methodology

A panel data regression analysis will be used to answer the research question. This regression analysis provides two alternatives, namely fixed effects and random effects. The primary distinction between these two is that fixed effects capture time-invariant country-specific characteristics, whereas random effects do not because it is assumed that the unobserved country-level heterogeneity is unrelated to the independent variables. The Hausman test is used to determine which one is better suited for the analysis. Table A6 demonstrates that at a 5% significance level, the null hypothesis that the unique errors are not correlated with the regressors can be rejected. This means that the test suggests that fixed effects are more appropriate.

With the previously mentioned data, a fixed effects panel data regression will be performed, with the Human Development Index acting as the dependent variable and the GSP utilisation rate serving as the independent variable. The following regression equation will be estimated:

$$Y_{it} = \beta_0 + \beta_1 URGSP_{it} + \beta_2 X_{it} + \mu_i + \delta_t + \varepsilon_{it}$$

The outcome variable in this regression analysis is represented by the Y_{it}, which is the Human Development Index for country i and year t. The $URGSP_{it}$ variable denotes the utilisation rate of the GSP for country i and year t. The coefficient of interest, β_1, illustrates the effect of the GSP's utilisation rate on the Human Development Index. Changes in the utilisation rate must be viewed as independent of other factors that affect the Human Development Index but weren't taken into account in the regression in order to interpret this effect as causal. This is often referred to as the conditional independence assumption. X_{it} is a vector of control variables included in the regression analysis to remove some confounding factors.

Next to that, μ_i is a fixed effect that accounts for unobserved, time-invariant, country-specific characteristics for each country. The unobserved and persistent cross-national

heterogeneity, such as institutional, historical, geographical, or cultural factors affecting the Human Development Index, is captured by this fixed effect. These fixed effects help to account for unobserved heterogeneity. δ_t represents the time-fixed effect that accounts for unobserved time-specific variables. The time-fixed effect is employed in this regression model to take unobserved factors into consideration that are unique to each period of time but consistent across all the countries in the dataset. Time-fixed effects, such as changes in the global economy, technological developments, or world events, have an influence on all countries within a certain time frame. The final component, ε_{it}, denotes the error term.

The panel regression model with fixed effects is supplemented with the cluster (id) option to handle the likely presence of autocorrelation and heteroscedasticity within the panel dataset. In this regression analysis, the variable "id" represents the country variable. This method effectively compensates for any potential correlation and heterogeneity that may exist within the observed countries by clustering the standard errors at the level of the 'id' variable. The regression model will also incorporate a one-year lag in the GSP utilisation rate to take into account any potential delayed effects. To determine how trade has affected the Human Development Index, Davies and Quinlivan (2006) also use a lag model given that improvements in health, education, and living standards could take some time. Although this analysis of the effect of the GSP's utilisation rate on the HDI tries to limit potential bias as much as possible, it is vital to recognise the inherent limits of demonstrating a causal association through this research. Endogeneity is introduced by the existence of unobserved confounding variables and potential reverse causality. This creates methodological difficulties in determining a causal relationship.

This fixed-effect panel data regression will give the impact of the GSP on the Human Development Index; however, it is essential to take the Everything but Arms scheme into account as an influential factor. This is due to the fact that the EBA scheme's involvement may help in our understanding of the complex relationship between the HDI and GSP utilisation rate. This enables research into whether countries covered by the EBA scheme experience different effects from countries not included in the scheme. This will demonstrate if the effects of GSP usage on HDI can be generalised to all countries. An interaction effect will be included in the regression analysis to account for this. This interaction term is composed of the GSP utilisation rate multiplied by a dummy variable that denotes eligibility for the EBA programme. If the country is eligible for the EBA programme in that year, this dummy variable takes on the value 1 and 0 otherwise. The following regression will be estimated:

$$Y_{it} = \beta_0 + \beta_1 URGSP_{it} + \beta_2 EBA_{it} + \beta_3 URGSP_{it} * EBA_{it} + \beta_4 X_{it} + \mu_i + \delta_t + \varepsilon_{it}$$

Only the dummy variable EBA_{it} and the interaction term $URGSP_{it} * EBA_{it}$ is added; the regression analysis otherwise remains unchanged. The primary coefficient of interest, in this case, is denoted by β_3.

3.2.1 Control Variables

It is crucial to incorporate control variables in the regression analysis when determining the relationship between the utilisation rate of the Generalised System of Preferences and the Human Development Index in order to reduce any potential biases brought on by confounding variables. Failure to include control variables in the analysis could lead to estimates that are biased because variables that influence the regression model's independent variable, the HDI, and the dependent variable, the utilisation rate of the GSP, aren't taken into account. A more accurate estimate is produced by including these control factors. Table A7 gives an overview of all the control variables included in the sample.

The first control variable added to the model is Foreign Direct Investment (FDI). Direct investment in the reporting economy is referred to as FDI. Investments from wealthy nations are essential since many poor countries struggle with limited resources, large debt levels, and difficulties competing in the global market. The research by Agusty and Damayant (2015) demonstrates the significant impact of FDI on the Human Development Index. The authors credit this benefit to improved employment prospects and increased spending power. Similar to this, Sharma and Gani (2004) used a fixed effects regression model to show that foreign direct investment had a positive effect on human development in middle- and low-income countries from 1975 to 1999. Furthermore, Djulius (2017) shows how FDI in Indonesia facilitates a technology transfer, especially in the form of knowledge spillovers. Local businesses may become more capable as a result of this knowledge transfer, improving their ability to meet the GSP programme's eligibility conditions.

Moreover, population size will be incorporated into the regression model. Birdsall et al. (2001) provide an understanding of the intricate connection between population density and human development in developing countries. The book makes the case that population dynamics significantly affect how developing countries' economies and societies are shaped.

The authors claim that high population density can exacerbate poverty in developing countries. This is due to the impact that a large population can have on available resources and social services. Next to that, Parteka and Tamberi (2008) demonstrate that a large population size increases the potential for diversification. A country can improve its export base and, consequently, its utilisation rate when it can access a variety of market sectors.

Additionally, inflation will also be added to the regression model. The study by Cahyanti and Fevriera (2020) shows that inflation has a positive influence on the Human Development Index in Java. They use a panel data regression model with fixed effects and find that a 0.0935 increase in HDI results from a 1% increase in inflation. The study backs up the quantity theory of money by arguing that mild inflation, with an average annual rate of 21.82% from 2010 to 2019, can help producers by raising their income and promoting increased production, which in turn increases employees' pay and benefits their families. Yolanda (2017) also discovers that inflation has a significantly positive effect on the HDI in Indonesia. Additionally, Purusa and Istiqomah's (2018) research demonstrates how inflation raises input costs, which lowers business productivity. These high manufacturing costs will make exporting to the GSP-granting country more difficult, which will result in a decreased utilisation rate.

In addition, the inclusion of official development assistance as a control variable is crucial. Official Development Assistance, or ODA, is support provided to developing countries in the form of various contributions from developed countries. Development assistance, trade, and security are the three key offers. The objective of this is to alleviate poverty and enhance socioeconomic well-being (Lin Moe, 2008). Agusty and Damayant (2015) reveal with a panel data regression that ODA has a considerable positive impact on the Human Development Index. They support this claim by listing the many advantages that official development assistance (ODA) may offer developing nations, including the creation of job opportunities and an increase in purchasing power. Comparably, Lin Moe (2008) shows that in eight selected countries in Southeast Asia, there is a significant positive association between Official Development Assistance and human development. The study by Lee et al. (2019) demonstrates that ODA can improve the ability of legislative bodies to design and monitor policy more effectively. Because of this, the GSP may be used more frequently.

It is also essential to incorporate technical cooperation grants as a control variable in the regression model. This is monetary assistance given to a developing country in order to improve its managerial and technical capabilities. Sawada et al. (2012) discover that technical

cooperation grants can contribute to global technology transfers, which shows that technical cooperation can be a key factor in assisting developing nations in catching up technologically. This could also improve the GSP utilisation rate of the beneficiary countries. Long-term growth has been seen to be fundamentally dependent on technological advancement (Barro & Sala-i-Martin, 2004). Additionally, empirical evidence by Ranis et al. (2000) suggests that sustained economic growth results in notable improvements in human development.

Lastly, the regression model will include institutional quality as a control variable. However, only three dimensions will be included, namely political stability and the lack of violence or terrorism, regulatory quality, and voice and accountability. The impact of institutional quality on human development outcomes has been consistently shown by a large body of empirical research. Notably, Ullah and Majeed (2023) offer convincing proof of the benefits of supporting inclusive institutional quality in lowering poverty and promoting human development in Pakistan. A method for advancing and improving human development indicators is the deployment of social assistance programmes. In addition, Assadzadeh and Pourqoly (2013) suggest that institutional quality has a significant and positive effect on poverty reduction in MENA countries. The Human Development Index is used as an indicator of poverty reduction in this paper. Moreover, the study by Keefer and Knack (1997) shows that inadequate institutions reduce the protection of property rights, which would prevent businesses from making effective changes to government regulations or technological advancements. The utilisation rate would decline as a result.

3.2.2 Additional Tests

Several further tests will be run as part of this study's main analysis. First, the dependent variable will be changed in order to investigate the impact of the Generalised System of Preferences (GSP) utilisation rate on the Human Development Index (HDI). The three components of which the HDI is composed are life expectancy, education, and GNI (gross national income) per capita. As a result, separate analyses will be performed with each element as the dependent variable to determine the precise HDI component influenced by the GSP utilisation rate. By examining these distinct components, policymakers may gain insight into how exactly the GSP affects human development. This may also provide policymakers with information about how well and effectively the GSP works to improve human development.

The study also intends to investigate the main mechanism causing the association. In order to accomplish this, the dependent variables of employment, GDP per capita growth, and exports will be investigated to determine the main cause of the relationship between GSP utilisation and the HDI. The choice of these mechanisms is informed by previous literature. The studies by Winters et al. (2004) and Anderson et al. (2005) highlight employment as one of the mechanisms by which trade influences the Human Development Index (HDI). Next to that, Afzal et al. (2009) reveal that economic growth is one of the main mechanisms driving the relationship. Besides, the main goal of the Generalised System of Preferences is to enhance exports, so this would be the main mechanism (European Commission, 2023). By helping decision-makers develop focused plans to maximise positive effects and address important issues, identifying the root cause of the relationship between GSP utilisation and the HDI improves the effectiveness of the policy. Determining whether GDP per capita growth, employment or exports mediates the link more prominently can help with assessing the GSP programme's success in fostering sustained economic growth, job creation, and higher living standards.

4. Results

4.1 Main Results

The main regression analysis's findings are presented in Table 1. The OLS findings in column 1 are those without any within-fixed effects. According to the coefficient reported in column 1, an increase of one percent in the GSP's utilisation rate results in an average increase in the Human Development Index of 0.097 units. This result is significant at a 1 percent significance level. Economically speaking, this finding shows that increasing the utilisation rate can, to a small but significant extent, enhance human development. Even if the results are statistically significant, it is obvious that there is bias due to omitted variables. Additional analyses using within-fixed effects are offered to address potential biases resulting from time-invariant omitted variables. This strategy will improve the internal validity of the results.

The regression with country and time-fixed effects is represented in column 2. This coefficient demonstrates that, at a 5 percent level of significance, an increase of one percent in the GSP utilisation rate will, on average, lead to a rise of 0.009 units in the Human Development Index. It is also important to look at the economic significance of this effect in relation to the HDI scale, which has a range of 0 to 1. A change in the HDI of 0.009 units reflects a relatively small increase on this scale. Also, a one standard deviation increase in the GSP's utilisation rate results in an increase in the HDI of 0.003 units. This is a relatively

moderate effect, as this one standard deviation increase in the utilisation rate leads to a 0.034 standard deviation increase in the HDI. However, even a small rise in the utilisation rate could have a large impact on human development and poverty reduction in a country that initially had a low HDI. Additionally, since the utilisation rate might be anywhere between 0 and 100, a one percent increase only makes a little difference. As a result, the effect on the HDI is also somewhat minimal. A number of other studies, like those by Fadilah et al. (2018) and Cahyanti and Fevriera (2020), also demonstrate that the Human Development Index is only marginally impacted by government spending and inflation.

The same regression analysis is shown in Column 3, but this time a lag has been added to the model to see if there is a delayed reaction to raising the GSP's utilisation rate. According to this coefficient, the Human Development Index will rise by 0.005 units for every 1% increase in GSP usage from a year prior. This result is statistically significant at a 5 percent significance level. This result reveals that the Human Development Index (HDI) is influenced by the Generalised System of Preferences (GSP) utilisation rate not only in the present year but also in the next year. This delayed effect on the HDI is smaller than the immediate effect of the GSP's utilisation rate. Here, a one standard deviation increase in the lag of the GSP's utilisation rate leads to a 0.019 standard deviation increase in the HDI. This also shows that the magnitude of the lag is smaller than the direct effect. However, the lag has a high correlation with the independent variable, and therefore it is important to proceed with caution when interpreting these results as this relationship can be influenced by autocorrelation.

The last column gives the results of the regression analysis with an interaction effect between the utilisation rate of the GSP and the Everything but Arms scheme. This interaction effect will reveal if there is a heterogeneous treatment effect present for countries that fall under the EBA scheme. The coefficient in column 4 shows that the interaction effect is not significantly different from zero at a 5 percent level of significance. This indicates that the impact of the utilisation rate of the GSP on HDI does not differ depending on whether a country is covered by the EBA scheme or not. This is somewhat surprising, as theory would suggest a significant relationship. It may be challenging to identify a significant overall effect since the magnitude and direction of the interaction effect may vary for each country. The non-significant effect could also be due to sample characteristics or omitted variables. For example, if the sample leaves out relevant data points or variables, it may limit the ability to detect a significant result.

Table 1: Results of the Effect of the Utilisation Rate of the GSP on HDI with Fixed Effects

	(1) HDI_{it}	(2) HDI_{it}	(3) HDI_{it}	(4) HDI_{it}
Utilisation Rate GSP_{it}	0.097***	0.009*	0.007	-0.006
	(0.007)	(0.004)	(0.003)	(0.008)
Utilisation Rate $GSP_{i, t-1}$			0.005*	
			(0.002)	
EBA_{it}				-0.005
				(0.009)
Utilisation Rate GSP_{it}*EBA_{it}				0.018
				(0.009)
Foreign Direct $Investment_{it}$	0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Log(Population $Size_{it}$)	-0.008***	0.030	0.016	0.026
	(0.002)	(0.036)	(0.028)	(0.036)
$Inflation_{it}$	0.034***	0.002	0.000	0.002
	(0.006)	(0.002)	(0.002)	(0.002)
Log(Official Development $Assistance_{it}$)	-0.023***	-0.002	0.000	-0.002
	(0.003)	(0.002)	(0.002)	(0.002)
Log(Technical Cooperation $Grants_{it}$)	0.035***	0.004	0.004	0.004
	(0.004)	(0.003)	(0.003)	(0.003)
Political $Stability_{it}$	0.001***	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Regulatory $Quality_{it}$	0.001***	0.000*	0.000**	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Voice and $Accountability_{it}$	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Constant	0.351***	-0.061	-0.055	0.010
	(0.057)	(0.532)	(0.531)	(0.532)
Observations	1016	1016	1016	1016
R-squared	0.321			
Within R-squared		0.879	0.880	0.881
Year FE	NO	YES	YES	YES
Country FE	NO	YES	YES	YES

Standard errors in parentheses and are clustered at the country level.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

4.2 Additional Results

Table 2: Results of the Effect of the Utilisation Rate of the GSP on every component of the HDI with Fixed Effects

	(1) Expected Years of Schooling$_{it}$	(2) Life Expectancy$_{it}$	(3) GNI per capita$_{it}$
Utilisation Rate GSP$_{it}$	-0.214	1.054**	1.480
	(0.225)	(0.365)	(83.79)
Foreign Direct Investment$_{it}$	0.004	0.007	-1.487
	(0.006)	(0.007)	(0.958)
Log(Population Size$_{it}$)	-0.986	8.016**	-2978.8***
	(1.517)	(2.911)	(725.7)
Inflation$_{it}$	-0.018	0.307	-105.3
	(0.074)	(0.174)	(67.84)
Log(Official Development Assistance$_{it}$)	-0.186	-0.150	-209.2*
	(0.120)	(0.228)	(83.27)
Log(Technical Cooperation Grants$_{it}$)	0.024	0.072	75.52
	(0.149)	(0.303)	(123.5)
Political Stability$_{it}$	0.000	0.026*	8.285*
	(0.005)	(0.012)	(3.457)
Regulatory Quality$_{it}$	-0.003	0.020	4.560
	(0.008)	(0.017)	(4.587)
Voice and Accountability$_{it}$	0.013	-0.022	-6.958
	(0.014)	(0.016)	(4.452)
Constant	29.49	-68.48	50406.4***
	(24.31)	(47.95)	(12030.5)
Observations	1025	989	1012
Within R-squared	0.626	0.777	0.558
Year FE	YES	YES	YES
Country FE	YES	YES	YES

Standard errors in parentheses and are clustered at the country level.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2 shows the findings when we examine the GSP's utilisation rate across each HDI component to see which component it most significantly affects. Expected years of schooling is the dependent variable in column 1, but the coefficient is not significant. At a 1% level of significance, the life expectancy coefficient in column 2 does exhibit a significant effect. On average, a one percent increase in the GSP's utilisation rate results in an increase in life expectancy of 1.054 years. In this case, a one standard deviation increase in the GSP's utilisation rate leads to a 0.060 standard deviation increase in life expectancy. This shows that the utilisation rate of the GSP has a noticeable impact on life expectancy. Lastly, the effect of the utilisation rate of the GSP on GNI per capita in column 3 shows a non-significant effect. Therefore, the results imply that among the components, the GSP's utilisation rate has the greatest impact on life expectancy. One possible explanation for this could be that the GSP programme has a more immediate impact on the variables affecting life expectancy, such as healthcare infrastructure or public health efforts.

The findings from an investigation into the mechanisms that underlie this relationship are displayed in Table 3. The dependent variable in column 1 is employment; in column 2, the dependent variable is GDP per capita growth; and in column 3; this is exports. The coefficients, however, do not indicate a significant effect. This is not surprising, as it is difficult to find the underlying mechanism because you need to consider several factors and contexts. The absence of significant effects shows that the relationship between the GSP's utilisation rate and employment or GDP per capita growth may not be straightforward. This may also be because other variables that are not included in the model as control variables have an impact on the relationship.

Table 3: Results of the Effect of the Utilisation Rate of the GSP on Employment, GDP per capita growth and Exports with Fixed Effects

	(1) Employment$_{it}$	(2) GDP per capita growth$_{it}$	(3) Log(Exports$_{it}$)
Utilisation Rate GSP$_{it}$	-0.310	-0.005	0.126
	(0.627)	(0.008)	(0.124)
Foreign Direct Investment$_{it}$	0.013	0.001	-0.003
	(0.009)	(0.000)	(0.003)
Log(Population Size$_{it}$)	0.173	-0.010	-0.347
	(3.563)	(0.054)	(0.607)
Inflation$_{it}$	0.306	-0.014*	-0.064
	(0.237)	(0.006)	(0.056)
Log(Official Development Assistance$_{it}$)	0.144	0.003	0.078**
	(0.263)	(0.005)	(0.027)
Log(Technical Cooperation Grants$_{it}$)	0.292	0.015*	0.026
	(0.460)	(0.007)	(0.089)
Political Stability$_{it}$	0.023	0.000	0.000
	(0.017)	(0.000)	(0.004)
Regulatory Quality$_{it}$	-0.002	-0.000	0.001
	(0.021)	(0.000)	(0.003)
Voice and Accountability$_{it}$	-0.039	0.001	-0.011*
	(0.027)	(0.000)	(0.005)
Constant	50.43	-0.142	24.39*
	(58.85)	(0.808)	(9.879)
Observations	969	1018	908
Within R-squared	0.275	0.202	0.699
Year FE	YES	YES	YES
Country FE	YES	YES	YES

Standard errors in parentheses and are clustered at the country level.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5. Discussion

A fixed effects panel data regression was used in this analysis. This is advantageous because time- and country-fixed effects can account for unobserved variation over time and between countries. This estimating technique does, however, have certain drawbacks. The main limitation of this approach is its inability to infer causal relationships. The two main issues that endogeneity poses are reverse causality and omitted variable bias (Hill et al., 2020). Reverse causality results from a two-way relationship between the two variables. In this case, the HDI can influence the utilisation rate, as a higher level of human development can lead to increased capacities and awareness. Therefore, countries with higher HDI scores might benefit more from the GSP system. This can lead to a spurious association between the utilisation rate of the GSP and the HDI.

The relationship could also suffer from omitted variable bias if significant time-variant variables are left out of the analysis. The fundamental assumption in this analysis is the conditional independence assumption. However, this assumption is not likely to hold as there is no way to account for all relevant variables. Examples include a country's productivity, changes in the environment, or urbanisation rates. Leaving out these variables could lead to a biased estimate. However, complete data availability is not always achievable, and it is fundamentally impossible to account for all unobservable time-varying variables. Next to that, there are some variables that cannot be included as they are bad controls. An example of this is the export diversification and quality index. This reveals the composition and quality of an exporting country's goods. This would serve as a useful control variable as it affects the HDI, and the index may serve as a proxy for programme awareness. However, the utilisation rate of the GSP also influences the diversification and quality index, so it cannot be included in the analysis. Another example of a bad control could be the terms of trade. Therefore, even though these factors represent a good explanation for the dependent variable, using them as a control variable could result in estimates that are biased.

Furthermore, there could be selection bias present. The omission of four countries and certain data points due to missing data could bias the results. This exclusion could cause a non-random selection of countries and data points, which can bias the estimated results and limit the generalizability of the findings. It is therefore important to emphasise that this paper only focuses on the countries that are included in the sample. It is also worth mentioning that the lag used in the regression analysis should be interpreted with caution. This lag is used to examine the potential delayed effects that the GSP may have on the HDI. However, the lag

experiences a high correlation with the independent variable. Since the utilisation rate of one period influences the utilisation rate of the following period, the high correlation is not surprising. The strong correlation makes it difficult to separate each factor's impact on the HDI, which raises concerns about endogeneity.

To overcome all these constraints, a randomised trial would be the ideal estimation strategy. Here, you would choose the countries' GSP utilisation rates at random. As you will be able to precisely determine the magnitude of the effect, this will provide better evidence of a causal relationship. A randomised experiment, however, has logistical and moral problems. It would be more practicable to do a quasi-experimental design or a natural experiment. This would include comparing variations in utilisation rates and HDI across different countries with comparable economic and social characteristics. This approach would allow for a more extensive analysis of the relationship between the Generalised System of Preferences and the Human Development Index.

Next to that, intra-country differences are far outside the scope of this research paper. Intra-country differences acknowledge that a country is not homogenous, and therefore it is crucial to recognise the presence of intra-country differences for effective policy formulation. However, this analysis does not for example, look at inequality or differences between industries. Consequently, the findings may be limited in their robustness and generalizability. Besides, it is important to consider the presence of heterogeneous treatment effects. This analysis did not find that countries falling under the EBA scheme experience a different effect on human development than countries that do not fall under that scheme. However, this paper's focus does not extend to the exact reasons why. As a result, the findings might not accurately reflect the complex interactions between the GSP's utilisation rate and human development throughout different countries.

The results of this paper show that raising the GSP utilisation rate improves the Human Development Index. This finding suggests that making use of the GSP's advantages, such as lower tariffs, may help advance human development. Thus, the Generalised System of Preferences would be a useful policy instrument for contributing to a higher HDI. This would imply that policymakers should focus on identifying and implementing strategies that increase the utilisation rate of the GSP in the beneficiary countries. Policymakers should use caution nonetheless, when making decisions based on these findings because the estimated effect cannot be causally interpreted.

6. Conclusion

This paper examines the effect of the EU's GSP on beneficiary countries' Human Development Index. According to this analysis, there is evidence that implies that there is a positive relationship between the utilisation rate of the GSP and the Human Development Index. After adjusting for confounding factors, it has been observed that on average, a one percent increase in the utilisation rate will result in an increase in the HDI of 0.009 units. This effect becomes weaker when you look at the lag of one year, as the magnitude changes to 0.005. There is not a heterogeneous treatment effect present for countries covered by the EBA programme. According to this research, the main channel through which the GSP scheme influences the HDI is life expectancy. Life expectancy rises by 1.054 years on average for every 1% increase in the GSP's utilisation rate. The investigation into which mechanism influences this relationship leads to non-significant results. From this, it follows that raising the utilisation rate of the GSP could help increase the Human Development Index. The estimated effect, however, cannot be interpreted causally because there may be other factors influencing the relationship.

Further research should investigate the underlying mechanisms by which the GSP's utilisation rate affects the Human Development Index. This might be done using qualitative techniques like case studies or interviews. As contextual aspects and in-depth information are captured by qualitative methods, this can lead to a better understanding. Additionally, an investigation of industry-specific differences would help find sectors where trade preferences have a significant impact on human development. More investigation into heterogeneous treatment effects may help policymakers more successfully raise the Human Development Index. Although the interaction effect between the GSP utilisation rate and the EBA scheme was not found to have a significant overall impact in the study, it is nevertheless crucial to examine any potential heterogeneity within the treatment effect. If there are specific characteristics that make some EBA beneficiary countries more receptive to GSP use in terms of HDI improvement, that could be the subject of further research. Additionally, future studies might concentrate on other indicators. Other indicators, rather than just the HDI, could potentially offer insightful information. These metrics could include environmental sustainability or income inequality. The long-term consequences of the GSP should also be further researched. Although there is only a one-year lag in this research, it would be interesting to observe what the programme does for a country after ten years. Policymakers must comprehend the long-term implications to evaluate the GSP's overall effectiveness.

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Appendix

Table A1: List of all Countries Included in the Sample

Afghanistan	Guinea-Bissau	Pakistan
Angola	Haiti	Philippines
Bangladesh	India	Rwanda
Benin	Indonesia	Sao Tome and Principe
Bhutan	Kenya	Senegal
Bolivia	Kiribati	Sierra Leone
Burkina Faso	Kyrgyz Republic	Solomon Islands
Burundi	Lao PDR	Sri Lanka
Cabo Verde	Lesotho	Sudan
Cambodia	Liberia	Syrian Arab Republic
Central African Republic	Madagascar	Tajikistan
Chad	Malawi	Tanzania
Comoros	Mali	Togo
Congo, Dem. Rep.	Mauritania	Tuvalu
Congo, Rep	Micronesia, Fed. Sts.	Uganda
Djibouti	Mongolia	Uzbekistan
Eritrea	Myanmar	Vanuatu
Ethiopia	Nepal	Vietnam
Gambia, The	Niger	Yemen, Rep.
Guinea	Nigeria	Zambia

Table A2: Correlation Matrix of all the Relevant Variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) HDI	1.000						
(2) GSP Utilisation Rate	0.391	1.000					
(3) Foreign Direct Investment	-0.022	-0.008	1.000				
(4) Log(Population Size)	-0.068	0.212	-0.117	1.000			
(5) Inflation	0.069	0.036	0.067	0.214	1.000		
(6) Log(Official Development Assistance)	-0.062	0.231	-0.111	0.654	0.135	1.000	
(7) Log(Technical Cooperation Grants)	0.111	0.222	-0.150	0.675	0.128	0.775	1.000
(8) Control of Corruption	0.240	0.159	0.002	-0.346	-0.171	-0.231	-0.176
(9) Government Effectiveness	0.464	0.304	-0.082	0.127	-0.065	0.050	0.212
(10) Political Stability	0.304	0.072	0.094	-0.560	-0.191	-0.479	-0.382
(11) Regulatory Quality	0.303	0.182	-0.032	0.094	-0.142	0.096	0.232
(12) Rule of Law	0.311	0.197	-0.045	-0.171	-0.163	-0.123	-0.018
(13) Voice and Accountability	0.257	0.134	0.007	-0.242	-0.120	-0.189	-0.073

	(8)	(9)	(10)	(11)	(12)	(13)
(8) Control of Corruption	1.000					
(9) Government Effectiveness	0.686	1.000				
(10) Political Stability	0.655	0.436	1.000			
(11) Regulatory Quality	0.528	0.741	0.289	1.000		
(12) Rule of Law	0.845	0.787	0.658	0.662	1.000	
(13) Voice and Accountability	0.664	0.504	0.551	0.488	0.713	1.000

Table A3: VIF Analysis

Variable	VIF	1/VIF
Control of Corruption	4.25	0.235
Government Effectiveness	4.35	0.230
Political Stability	3.00	0.333
Regulatory Quality	2.69	0.372
Rule of Law	7.09	0.141
Voice and Accountability	2.50	0.400
Log(Official Development Assistance)	3.06	0.327
Log(Technical Cooperation Grants)	3.32	0.302

Table A4: Descriptive Statistics

Variables	N	Mean	Std.dev.	Min	Max
Human Development Index	1,184	0.527	0.099	0.274	0.782
GSP Utilisation Rate	1,200	0.496	0.377	0	1.000
Foreign Direct Investment	1,163	3.828	7.248	9.170	21.065
Log(Population Size)	1,200	16.000	2.099	9.170	21.065
Inflation	1,087	0.761	0.422	-0.999	2.584
Log(Official Development Assistance)	1,193	19.939	1.313	15.637	23.160
Log(Technical Cooperation Grants)	1,200	17.948	1.128	14.031	20.784
Political Stability	1,197	31.942	25.174	0	99.029
Regulatory Quality	1,190	25.078	14.595	0	65.174
Voice and Accountability	1,200	32.021	20.795	0	88.889
Expected Years of Schooling	1,195	12.560	3.194	3.549	23.089
Life Expectancy	1,140	62.567	6.677	42.914	76.593
GNI per capita	1,165	1359.039	1203.912	110	10330
Employment	1,117	59.035	13.632	22.126	85.866
GDP per capita growth	1,173	0.021	0.047	-0.368	0.278
Log(Exports)	1,007	21.592	2.227	14.307	27.190

Table A6: Hausman Test Results

Test Summary	**Chi-Sq Statistics**	**Chi-Sq d.f.**	**P-value**
Cross-section random	69.27	20	0.0000

Table A7: List of all Control Variables included in the Sample

Variables	Definition	Source
Human Development Index	A summary indicator of the average level of achievement in three important areas of human development: living a long and healthy life, education, and having a fair standard of living	United Nations (2023)
Utilisation Rate GSP	Utilization rates of trade preferences under the Generalized System of Trade Preferences (GSP)	UNCTAD Database (2023)
Foreign Direct Investment	Equity flows from direct investments in the reporting economy (% of GDP)	World Development Indicators
Population Size (expressed in logarithmic value)	Population as a whole, which includes all residents, regardless of citizenship or legal status	World Development Indicators
Inflation	Consumer prices (annual %)	World Development Indicators
Official Development Assistance (expressed in logarithmic value)	Net official development assistance and official aid received (current US$)	World Development Indicators
Technical Cooperation Grants (expressed in logarithmic value)	Technical cooperation funds designed to support the transfer of managerial and technical expertise (BoP, current US$)	World Development Indicators
Political Stability	The likelihood of political unrest and/or political-motivated violence, including terrorism: percentile rank	World Development Indicators
Regulatory Quality	Perceptions of the government's capacity to create and carry out sound policies: percentile rank	World Development Indicators
Voice and Accountability	Perceptions of the degree to which the citizens of a country can choose their government and freedom of expression: percentile rank	World Development Indicators
Expected Years of Schooling	How many years a child entering school can anticipate receiving if the present age-specific enrolment rates hold true throughout the child's years of schooling	Our World in Data Database
Life Expectancy	The number of years that a newborn baby could live if current mortality trends from the moment of its birth persisted throughout its life	World Development Indicators

GNI per capita	Gross National Income divided by midyear population (current LCU)	World Development Indicators
Employment	Employment to population ratio, 15+, total (%) (modeled ILO estimate)	World Development Indicators
GDP per capita growth	GDP per capita growth rate in percentage terms annually based on constant local currency (annual %)	World Development Indicators
Exports of Goods and Services (expressed in logarithmic value)	General merchandise, net exports of items under merchanting, nonmonetary gold, and services dealings between citizens of a country and the rest of the world (BoP, current US$)	World Development Indicators