

Name: Lars Kreisel
Student Number: 649727
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The Impact of Foreign Aid on Happiness in Recipient Countries
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Abstract: 17 Sustainable Development Goals have been adopted in 2015 by all 193 United Nations (UN) member states to end poverty, seen as an indisputable goal to bring about well-being and happiness to people worldwide. Since then, world leading nations have been pledging to support the poorest countries and to establish better living conditions. This paper examines this context and looks at whether foreign aid has had a significant effect on happiness in the Least Developed Countries (LDCs) of the world. The analysis covers 41 countries over the period 2006 to 2021. This paper uses an Ordinary Least Square (OLS) Fixed Effects Model and an Instrumental Variable (IV) estimation. The participation in Human Right Treaties (HRT) of the UN is used to exploit the exogenous variation in foreign aid in order to identify a causal effect of aid on happiness. The findings imply, that total (aggregate) foreign aid is ineffective at promoting happiness. Nevertheless, there is evidence to suggest that targeted aid to specific sectors such as education and health is positively correlated with happiness in the LDCs. Although this has yet to be confirmed with economic relevance, this paper believes it has made a first contribution to examining the issue of foreign aid and happiness in detail. A main contribution to the existing happiness literature is the attempt to take a disaggregated view on foreign aid.

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Supervisor: Dr. (Sacha) SV Kapoor
Second Assessor: Andrea Pogliano

Erasmus School of Economics
Erasmus University Rotterdam

1. Introduction

Since 2012, March 20th marks the International Day of Happiness. The resolution was initiated by the United Nations (UN) General Assembly and adopted by 193 UN member states (Sorensen, 2022). With this resolution, the UN adopted principles, that prioritizes happiness as a 'Fundamental Human Goal' for people worldwide. The UN further emphasizes the importance of an "inclusive, equitable and balanced approach to economic growth that promotes the happiness and well-being of all people (United Nations, n.d.-a). At the High Level Meeting on Happiness and Well-Being in 2012, the former Secretary General Ban Ki-moon of the UN stated that the world "needs a new economic paradigm that recognizes the parity between the three pillars of sustainable development. Social, economic and environmental well-being are indivisible. Together they define gross global happiness" (United Nations, n.d.-b). In response to this call, the UN launched the 17 Sustainable Development Goals, which aim to end poverty, reduce inequality and protect the planet. According to the UN, these are three indisputable goals to bring about well-being and happiness (United Nations, 2023). Already at the United Nations Summit in 2000, world leading nations pledged to help the least developed countries in the world and create better living conditions by 2015 (Global Policy Forum, n.d.).

Foreign aid is seen as an inevitable means to achieve these goals and continues calls for action by public authorities have emphasized the importance of foreign aid for development purposes. The main reason being, that poor countries' incomes are too low to generate the savings needed for investment and sustainable growth. Indeed, development aid reached a new record of \$204 billion in 2022, which presents an increase by 13.6% in real terms from \$186 billion in 2021 (OECD, n.d.). The link between foreign aid and the promotion of better living conditions in less developed countries as well as human development has been studied in a large number of scientific publications. However, what has yet to be examined in detail is the role of foreign aid in generating happiness in recipient countries.

While it has to be acknowledged that this paper is not the first to examine the impact of foreign aid on happiness, it is the first study of the few to address this topic in depth, both conceptually and methodologically. The topic of foreign aid and happiness is characterized by

limited amount of research that dates back to the early 2010s. Even more striking is that this literature only allows for correlative conclusions, given its methodological approaches. Therefore, a new approach to examine this relationship is overdue. This paper first runs an OLS Fixed Effects Model followed by an Instrumental Variable (IV) approach. The IV approach is inspired by Magesan (2016), where exogenous variation in foreign aid is exploited through the participation in 18 Human Right Treaties (HRT) of the UN. This will allow us to draw causal inferences about the impact of foreign aid on happiness.

The aim of this paper is to bring clarity to the topic of foreign aid and happiness by examining 41 UN-classified Least Developed Countries (LDCs). The first hypothesis that this paper will address is therefore whether foreign aid has a positive effect on happiness (H1). Based on concise results from previous literature, two further hypotheses are tested that seem to be inevitable for the question of the effectiveness of foreign aid. The second hypothesis questions, whether foreign aid has a more positive effect on happiness in presence of good political institutions (H2). Lastly, the third hypothesis examines whether foreign aid has a more positive effect on happiness when military spending in recipient countries is low (H3). Once these insights are attained, this will allow us to address the research question: “What is the effect of foreign aid on happiness in recipient countries?” The findings of this study, despite a different methodological approach, are consistent with previous findings that total (aggregate) foreign aid is ineffective at promoting happiness in recipient countries.¹ What is hopeful, nonetheless, is that indications are found that more specific foreign aid to sectors such as education and health may have positive effects on reported happiness. Since these results were found with statistical significance but missing economic significance, comprehensive further research is required. This paper contributes to existing literature by taking a more advanced methodological approach to provide more robust results, focusing on the world’s least developed countries.

The organization of this paper is as follows: Section 2 provides an overview of the theoretical and empirical literature to derive the above mentioned hypotheses. Section 3 presents information on the data used to conduct the analysis. Next, section 4 will introduce the

¹ Total foreign aid is referred to as the aggregate of many types of aid components (e.g. humanitarian aid, infrastructure aid, educational aid etc.)

econometric specification and introduce the Instrumental Variable (IV) approach. Section 5 will provide the findings and additional robustness checks to examine how the regression coefficient for foreign aid behaves in response to modifications of the baseline equation. This is followed by a discussion of the main findings in section 6. Lastly, section 7 concludes the paper and comments on the paper's implications.

2. Literature Review

2.1 Happiness Economics

In the context of economics, the empirical study of happiness has experienced a surge in awareness in recent years. Empirically, happiness is usually examined in terms of life satisfaction or subjective well-being² (Duncan, 2008). As an economic phenomena happiness reflects people's feelings (Kimball and Willis, 2006) and therefore has an impact on the utility, which reflects people's choice. Although the economic literature on happiness has gained considerable momentum throughout the last decade, a first important contribution was already made in the mid 1970s by Easterlin (1974). What came to be known as the Easterlin Paradox was Richard Easterlin's observation that happiness levels vary directly with national income (GDP) both across nations and within nations, but that above a certain threshold of wealth and the satisfaction of basic needs, average happiness no longer increases with rising income (Easterlin, 1974). Researchers such as Lane (2000) have argued that once income rises above the poverty line (subsistence level), the main source of an increase in happiness is no longer the increase in income, but other areas of life such as partnerships and family.

Contrary, Veenhoven and Vergunst (2014) argue that the Easterlin Paradox resembles an illusion: They found a positive correlation between GDP growth and happiness levels, even beyond low-income countries. The researchers studied data from 67 nations and found that in countries where the economy has grown the most, average happiness has increased more. Already before similar studies have challenged Richard Easterlin's view by providing evidence

² Subjective wellbeing is generally referred to "the moods or feelings that people have of joy or elation", while life satisfaction often refers to the qualities or circumstances of life, such as personal wealth, health, employment, goal achievement etc. that determine satisfaction or dissatisfaction (Duncan, 2008).

that several higher income countries have continuously experienced rises in happiness despite economic growth (Hagerty and Veenhoven, 2003; Inglehart et al., 2008; and Stevenson and Wolfers, 2008).

Regardless of which of the two camps may be right, they support the idea that low-income countries have immense potential for a sharp rise in happiness levels in response to rising national income. In fact, studies have found proof, that an increase in income has a larger effect on happiness in developing- and emerging countries than in developed ones (Clark et al., 2005). Therefore, it is reasonable to further examine the literature that studies the relationship between foreign aid and happiness.

2.2 Foreign Aid & Happiness

Research on the specific relationship between foreign aid and happiness is still in its infancy and, to the best of the author's knowledge, is limited to three studies of Arvin and Lew (2010, 2011, 2012) at the time of writing. The researchers have examined foreign aid and happiness combined with topics of bilateral aid flows between donor and recipient countries, ecological outcomes and corruption. The study of Arvin and Lew (2010) examined the supply of aid and found, that happier donors provide higher levels of aid to recipient countries. In terms of recipient countries' happiness, they find that happiness per se has no statistically significant effect on aid receipt. The second study detected that the effect of foreign aid on happiness is influenced by the amounts of remittances received by the developing country. It was found that aid had a pernicious effect on happiness at lower amounts of remittances, this effect however disappeared at higher amounts of remittances. A possible explanation put forward is that with higher remittances, the economic and political climate may improve, providing less room for corruption and unproductive uses of aid (Arvin and Lew, 2011). In response to acknowledging a major drawback of the researchers' earlier work, Arvin and Lew (2012) introduced the concept of corruption in their work. Corruption is considered a major factor in the general efficacy of aid (Arvin and Lew, 2012). With this study, the two scientists were able to put some of their earlier findings into perspective, namely that they still find a negative marginal effect on happiness, but only in countries where corruption is most rampant.

Despite the novelty of this research, the scarce literature is plagued with methodological concerns that may call into question its meaningfulness. The main concern being the unaccounted endogenous nature of foreign aid. The three studies only alternately include important controls, but particularly in the last study they, for instance, omit Foreign Direct Investment (FDI). This can be fatal as FDI is considered to play an important role in economic development (Zhang, 2001), but is biasing the coefficient of foreign aid in case of omission. Moreover, not considering the potential problem arising from reverse causality may influence the causal significance of those studies. As the idea of reverse causality in this regard has not been conclusively investigated, it does not seem to be excludable and in any case plausible. Hence, it is therefore possible that foreign aid may not only influence happiness levels, but possibly also vice versa.

Given the shortcoming of literature on foreign aid and happiness combined with unsubstantiated results, this paper takes a step back and first looks at the much broader research field of foreign aid and its impact on economic growth. Thereby it is recognized that one of the objectives of foreign aid is to contribute to economic growth and development in recipient countries. With this knowledge at hand, we can better understand that foreign aid, when properly used and absorbed, can contribute to better conditions that can possibly be essential for promoting happiness. The following section will therefore provide insights which will be used to develop hypotheses that relate directly to the concept of foreign aid and its impact on happiness.

2.3 Foreign Aid & Economic Growth

Despite the all-time high of foreign aid, the effectiveness of foreign aid for economic growth has been controversially discussed, both theoretically and empirically, since the beginning of its study. On a purely *theoretical* basis, according to Williamson (2008), two camps have emerged in recent years. The first camp states that aid can and should be used to promote the development of poorer countries to enable them to escape from poverty (Sachs et al., 2005). Following Ekanayake (2010), foreign aid can enable recipient countries to stimulate

economic growth by supplementing recipient countries' domestic sources of finance in the form of savings, thereby increasing the level of investment and hence the capital stock. Morrissey (2001) mentions further mechanisms through which aid can have an effect on economic growth. This includes increases in quality of human capital and increases in the capacity to import capital goods and technology which eventually can promote endogenous technological changes. In contradiction, the second camp argues that foreign aid is ineffective and has the potential to impair future growth opportunities (Easterly et al., 2001). Ouattara (2006) provides reasoning for such perceptions that a major portion of foreign aid is used for debt reduction in recipient countries as well as for government consumption, without investment in critical sectors of the economy to generate economic gains and promote economic development.

Also *empirical* research has not been able to reach a consensus either on the short- or long-term effects of foreign aid on economic development, nor on the channels through which aid influences development. Two generations have emerged over the years, with differing views on the effectiveness of development aid and its potential to enable poorer countries to prosper. The first consequential empirical studies examined the impact of aid on economic growth in the 1960s, with analysis based on models referred to as "gap models." These models assume that economic growth in developing countries is hampered by inadequate levels of savings, foreign exchange or lack of a governments' revenue raising capacity (McGillivray et al., 2006). Accordingly, such gap models have been divided into three main divisions. First, the savings gap assumes, that there is an excess supply of labour in developing countries and that economic growth is constrained by the lack of capital and its productivity (McGillivray et al., 2006). According to the model, developing countries must increase their level of savings or increase their productivity of capital in order to increase the productivity of excess labour and in turn achieve a target growth rate. Second, the foreign exchange gap model by Chenery and Bruno (1962) entailed that developing countries generally have less capacity for export earnings which are required for the import of technology and capital goods needed to invest in the economy. Thus, with higher export earnings a larger trade deficit can be achieved due to higher imports of capital goods, which in turn can benefit the economy in developing countries (Taylor, 1994). A third gap model was later on referred to as the fiscal gap, which stated that governments lack the revenue to attain a desired level of investment to stimulate

the economy (Bacha, 1990; Taylor, 1990). For all three gap models, foreign aid theoretically can overcome these deficits, which in turn should lead to a higher level of investments and hence to more economic growth. In general, until the late 1990s, researchers' empirical findings were rather inconclusive whether foreign aid was an effective tool for promoting a recipient's country's development (Mosley et al., 1987; Boone, 1996). One possible explanation dates back to Griffin and Enos (1970): The two researchers challenged the notion that funds for aid lead to a one-to-one increase in savings — thus, unless a country's marginal propensity to save equals 1, some aid will go to consumption rather than to savings. The idea of a negative association between capital inflows to recipient countries and domestic saving rates is supported by a later study by Weisskopf (1972), who examined 44 underdeveloped countries in the post-war period. More contemporary explanations for the ineffectiveness of foreign aid on economic growth are provided by Easterly (2006), who argues that aid is often used for unintended and unproductive purposes, and resources often end up on the black market without further impact on a country's development. The studies from this first research epoch are subject to justified criticism. According to McGillivray et al. (2006), these are mainly the confounding of omitted variables and the failure to distinguish between foreign aid and other capital inflows. A revolutionary contribution at this time was made by Mosley (1980), who, as far as is known, was the first to consider possible endogeneity. Mosley was one of the few to find a positive effect between foreign aid and growth when he limited his analysis to the 30 poorest countries and lagged aid by five years.

This approach of empirical work initiated the second generation in the 1990s which is ongoing till present and is likely to have lasting implications for aid research. In this epoch, more studies based their empirical analysis on general equilibrium models and have sought to account for the endogeneity associated with aid, while also addressing nonlinear effects of aid (McGillivray et al., 2006). Since then, several studies have found evidence for a positive effect of foreign aid on economic growth (Burnide and Dollar, 2000; McGillivray 2005; Magesan, 2016). For instance, Magesan (2016) examined 88 developing countries and found that a one percentage point increase in foreign aid (as a share of GDP) has a positive impact on the annual growth rate in developing countries, by roughly 0.6 percentage points. A more tailored study was conducted by Reidy (2016), who examined the relationship between foreign aid to countries in Sub-Saharan Africa and real GDP per capita growth and found that aid has a

positive effect on growth, provided that the simultaneity of aid and growth was taken into account.

In order to arrive at the main hypothesis of this study, the following statements have to be summarized: Based on the studies by Mosley et al. (1980) and those conducted in subsequent years, a causal relationship between aid and economic growth in LDCs was found. Together with the literature on economic growth and happiness in section 2.1, we arrive at the following hypothesis:

H1: Foreign aid has a positive effect on happiness in Least Developed Countries (LDCs).

What marks the second generation of literature is, that not only does it examine whether foreign aid has an effect on economic factors. Additionally, to what extent these funds are absorbed and what factors play a role in this. One of the most influential publications of this kind was the study *Assessing Aid: What Works, What Doesn't and Why* by the World Bank in 1998 (Dollar and Pritchett, 1998). This publication found that aid was associated with higher growth rates in recipient countries, but highly dependent on a countries' policy regime. The later study by Burnside & Dollar (2000) builds on this approach by analysing 56 countries in the time period 1970 to 1993. The researchers used an index of three policies to interact with foreign aid and found evidence for a positive effect of aid on growth in countries with good policy environments. These were specified as good fiscal, monetary and trade policies. Thus, aid can have a more potent effect for poor countries with good political institutions that set the climate for aid funds to prosper and not being wasted for unproductive uses. Hence, this research takes a similar approach regarding political institutions:

H2: Foreign aid has a more positive effect on happiness in presence of good political institutions.

Another sticking point in the absorption of foreign aid funds, according to Kono and Montinola (2012), is their fungibility. That means, that even if aid funds are earmarked for a specific purpose, it allows domestic governments to shift own resources away from sectors target by foreign aid and put these resources to different uses. If these other uses do not contribute to economic development, foreign aid will not fulfil its intended purpose (Kono and Montinola,

2012). The study finds evidence that autocratic governments divert aid to economically unproductive military expenditures while democratic governments do not. The reason being that autocracies maintain in power by suppressing popular demands which in turn requires coercive forces, thus spending money on military expenditure. Democratic governments on the other hand remain in power by serving popular demands that benefit society and thus have less remaining money to spend on military expenditures. The two researchers thus argue, that aid funds do promote economic growth given that the recipient country is a democracy instead of an autocracy. This conclusion finds support in the early work of Svensson (1999), who noted that the success of aid in promoting economic growth depends largely on the democratization of the recipient countries. To remain closely to the guiding literature of Kono and Montinola (2012), military expenditure will be used as an indicator in this paper and used to make inferences about the type of government of foreign aid recipient countries. Combined with the knowledge from Clark et al., (2005), that developing countries can face an increase in happiness levels in response to increases in income, the following third hypothesis is constructed:

H3: Foreign aid has a more positive effect on happiness when military spending is low.

3. Data Sample

This study examines 41 Least Developed Countries (LDCs), under the UN classification, over the time frame of 2006 until 2021. The regional composition of countries reads as follows: 32 countries from Sub Saharan Africa (SSA), 7 countries from Asia, 1 from the Middle East and 1 from North America (table A1 -Appendix A). In the following sub-sections, the main variables of interest for the investigation are identified and explained:

3.1 Outcome Variable (Happiness)

The happiness panel data employed for the analysis is taken from the World Happiness Report 2023 (Helliwell et al., 2023), which is a yearly report since 2012 published by the Sustainable Development Solutions Network, a global initiative of the UN powered by the Gallup World Poll Data. This study follows many widely recognized research that also obtains their data from

the Gallup World Poll Data (e.g. Diener et al., 2013; Zweig, 2015). For reasons of accessibility, the data for happiness by the Gallup World Poll is attained through the World Happiness Report 2023. The report contains data of 137 countries with more than 100,000 respondents. A representative sample of people in each country is questioned on subjective wellbeing in form of *life satisfaction* using a so called life ladder scheme.³ The life ladder “asks respondents to think of a ladder, with the best possible life for them being a 10 and the worst possible life being a 0. They are then asked to rate their own current lives on that 0 to 10 scale” (Helliwell et al., 2023). The data is provided in terms of national and regional averages for every year.

3.2 Independent Variable (Foreign Aid)

The independent variable is a continuous variable, whose indicator of *Net official development assistance and official aid received (current US\$)* is obtained from The World Bank Data (World Bank, 2023a). Furthermore, the aid indicator for every country and each year is divided by the corresponding population for each year, which is also obtained by The World Bank Data (World Bank, 2023g). The motivation for using foreign aid per capita is to normalize foreign aid in terms of size of recipient countries. The rationale for using population as a factor for normalizing aid instead of the widely used GDP is that changes in aid per capita reflect changes in foreign aid itself, while changes in aid adjusted to GDP may reflect shocks or discrepancies in a country's economy (Magesan, 2016). Moreover, population size is a lot less volatile than GDP, which is particularly the case in developing countries. In conjunction with the HRT Instrumental Variable approach used in this study, per capita aid seems to be a more appropriate factor for normalizing aid. (Magesan, 2016).⁴

³ For the rest of this paper, changes in happiness refer to changes in the life satisfaction indicator that occur through movements along the life ladder (measured from 0 to 10).

⁴ The reason that foreign aid per capita is more practical for a research design that relies on instrumental variables is that the relationship between HRT and the ratio to GDP is poorly understood, but population is unlikely to be correlated with participation in HRT (Magesan, 2016). This makes aid per capita more appropriate with the use of an IV approach than foreign aid as a percentage of GDP.

3.3 Control Variables

GDP Per Capita: Following the above discussion on the importance of GDP and its correspondence to happiness, especially in developing countries, the indicator of *GDP per capita (current US\$)* is taken from The World Bank Data (World Bank, 2023b). Similar to the argument of foreign aid per capita, dividing the total GDP of a country by its population allows for standardization across countries with varying population sizes. Especially when examining the relationship between foreign aid and happiness, this approach can account for differences in economic development and living standards across the recipient countries.

Foreign Direct Investment (FDI): FDI is included in form of the *Foreign direct investment, net inflows (% of GDP)* indicator, obtained from The World Bank (World Bank, 2023c). FDI acts as a covariate for confounding factors related to foreign investment and economic development. In this way, the impact of foreign aid on happiness can be examined independently of other FDI inflows on economic and social aspects of recipient countries.

Military Expenditure: The reason for including military expenditure in the analysis follows a similar argumentation by Kono and Montinola (2012): Spending funds on the military causes opportunity costs when diverted from other economic sectors. This may lead to lower investments in areas directly associated with human wellbeing and development. Thus, by including military expenditure, a potential trade-off between military spending and investment in social and economic development can be controlled for. With respect to happiness levels, higher expenditure can be used to suppress citizens, which generally takes place in autocracies (Kono and Montinola, 2012). The indicator *Military expenditure (% of GDP)* is obtained from The World Bank Data (World Bank, 2023d).

Policy Index: Based on the findings of Burnside and Dollar (2000), who stress the importance of policy environment on aid effectiveness, a similar policy index is built as a control variable. The policy index is a weighted index of policy indicators.⁵ The weights are established according to the policy indicators' impact on happiness. Similarly to Burnside and Dollar

⁵ Burnside & Dollar (2000) have constructed a policy equation in their research and have found evidence that exogenous changes in aid had no systematic effect on the index of policy. Thus, Burnside and Dollar (2000) treat policy as exogenous. Therefore, the policy variable will likewise be treated as exogenous in this paper.

(2000), this will allow us to discuss aid effectiveness in so-called "good" and "bad" policy environments, with both terms having a precise meaning (defined by sign of impact on happiness).

Different to the approach of the two researchers above, only indicators for fiscal and monetary policy are included in the policy index constructed in this research. The reason for dropping the indicator of trade openness is due to poor data availability, as the number of observations for the studied countries in the sample would shrink drastically. Moreover, instead of using government expenditure as an indicator for fiscal policy, corruption will be drawn upon. The reasoning for using corruption is that it reflects the misuse of public funds and resources for personal gains and thus allows to capture the extent to which fiscal resources are mismanaged or diverted, providing more accuracy than government expenditure. The indicator *control of corruption, estimate* is obtained from The World Bank Data (World Bank, 2023e). The World Bank defines the variable as an indicator that "captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests" (World Bank Data, 2023e). Estimates range from -2.5 corresponding to higher levels of corruption to 2.5 associated with lower levels of corruption. For the second policy indicator for monetary policy, the choice of an inflation indicator closely follows Burnside and Dollar (2000). *Inflation, GDP deflator (annual %)* obtained from The World Bank Data (World Bank, 2023f) is used.

Equation (1) presents the OLS regression for which happiness is the dependent variable and inflation and corruption are the main independent variables. The OLS regression is run with no foreign aid term to determine the coefficients of the fiscal- and monetary policy indicators that in turn determine the weights in the policy index:

$$H_{it} = \beta_0 + \beta_p p'_{it} + \beta_k X_{it} + \gamma_i + \Phi_t + \varepsilon_{it} \quad (1)$$

where p'_{it} represents the coefficients for the fiscal- and monetary indicators for country i at time t separately. X_{it} represents a set of control variables for country i at time t . Moreover, γ_i represents the country-fixed effect for country i and Φ_t is the time fixed effect for time t . ε_{it} captures the standard error term. More detailed explanations of the variables are given in the following section when the baseline equation for the study is presented. A correlation matrix for variables in equation (1) is provided in the Appendix A (table A2). The coefficients for the

happiness regression on the two policy indicators are provided in Appendix B (table B1). Those coefficients are used to construct the policy index consisting of the weighted inflation and corruption indicators on their impact on happiness:

$$\text{Policy Index}_{it} = (-0.003 \times \text{Inflation}_{it}) + (0.317 \times \text{Corruption}_{it}) \quad (2)$$

3.4 Variable Descriptions

In table 1, the descriptive statistics for the dependent variable (life satisfaction), main independent variable (foreign aid per capita) and the control variables are provided. The average value for life satisfaction studied across the 41 least developed countries is 4.21 (measured on a life ladder from 0-10). The minimum value for life satisfaction takes the value 2.375 and the maximum 5.982. The mean value is significantly lower than in the study by Arvin and Lew (2012), who recorded a mean value of 5.89, which is very similar to the maximum value found in this study. In addition to an earlier time period studied by the two researchers, they have examined 118 countries which goes beyond the study of LDCs. Therefore, a higher mean value found in their study might be due the consideration of more developed countries and does not question the data at hand in this paper.

Foreign aid per capita takes a mean value of \$70.89 with the minimum being \$0 and the maximum \$352.27. This mean is higher than the \$34.66 recorded by Magesan (2013). However, the researcher measured foreign aid per capita in 2008 US dollars while this study uses current US dollars. In addition, the amount of foreign aid has peaked substantially in the last decade. Another important piece of information that emerges from table 1 is that the policy index has a mean value of -0.287. This indicates that the majority of the countries studied are subject to poor political institutions. The remaining variable values follow expected values from past literature. A correlation Matrix for all variables is provided in Appendix A (table A3). In addition, table A5 in the Appendix provides an overview of all data sources.

Table 1 – Descriptive Statistics

Variable Indicators	Observations	Mean	Standard Deviation	Min.	Max.
Life Satisfaction	430	4.206	0.613	2.375	5.982
Foreign Aid per capita (current US\$)	656	70.892	49.785	0	352.27
GDP per capita (current US\$)	638	1057.597	749.914	166.276	5101.984
Foreign Direct Investment , net inflows (% of GDP)	634	4.557	8.69	-18.918	103.337
Military Expenditure (% of GDP)	525	1.771	1.325	0.005	10.561
Policy Index	627	-0.287	0.21	-2.224	0.514

Table Notes: The table above displays the descriptive statistics for all variables used in the analysis for 41 countries between the years 2006-2021. Life satisfaction is measured from a scale of 0 to 10, where respondents are asked to rate their own current lives. Foreign aid per capita is the amount of net official development assistance and official aid received (current US\$) to a given country divided by its corresponding population size for a given year. The Policy Index resembles the weighted sum of inflation, GDP deflator (annual %) and control of corruption, estimate for which inflation is weighted with -0.003 and control of corruption with 0.317 (see section 3.3 for further details for the weights). The variables for foreign direct investment and military expenditure follow the definitions given in the table.

4. Econometric Model & Methodology

This section presents the empirical specification to investigate the effect of foreign aid on happiness in 41 recipient countries. Given the nature of the data, which provide annual and country-specific observations, the investigation is conducted with an Ordinary Least Squares (OLS) Fixed Effects Model. The underlying reason for using a country fixed effects model is that it allows to avoid unobserved bias due to time-invariant characteristics of recipient countries. In addition, time fixed effects will eradicate biases due to time varying effects and at the same time eliminate correlation biases in the error terms in the cross section. A fixed effects model therefore allows for more valid conclusions. This approach is further confirmed by a Hausman test in Appendix C (table C1).

4.1 Econometric Model

This empirical work attempts to answer the following three questions: (1) Is the effect of foreign aid on happiness positive?; (2) Is the effectiveness of aid conditional on economic policies? and (3) does the effectiveness of aid depend on military spending?

To answer these questions several variations of the following model will be investigated:

$$H_{it} = \beta_0 + \beta_1 \log(\text{FA_C}_{it}) + \beta_k X_{it} + \gamma_i + \Phi_t + \varepsilon_{it} \quad (3)$$

where i_t denotes country i at time t . Therefore, H_{it} is the happiness level (measured in terms of life satisfaction) in country i at time t . FA_C_{it} is foreign aid per capita to country i at time t . The logarithm of foreign aid per capita is taken to capture its non-linear relationship with happiness levels.⁶ Moreover, the logarithm of foreign aid per capita may help to account for the unequal variance of residuals across different levels of aid and thus address the concern of heteroscedasticity. X_{it} are characteristics of country i at time t that are chosen to be controlled for including: logarithm of GDP per capita, Foreign Direct Investment (FDI), military expenditure and a policy index for fiscal and monetary policy. Moreover, γ_i serves as the country fixed effect for country i and Φ_t captures the time fixed effect for year t . The final term ε_{it} represents the error term which captures all factors associated to happiness that are not controlled for. Equation (3) is designated to answer the first of the above questions (H1). Another variant of equation (3) is used to provide answers for questions two (H2) and three (H3):

$$H_{it} = \beta_0 + \beta_1 \log(\text{FA_C}_{it}) + \beta_2 \log(\text{FA_C}_{it}) * p_{it} + \beta_3 \log(\text{FA_C}_{it}) * \text{mili_exp} + \beta_k X_{it} + \gamma_i + \Phi_t + \varepsilon_{it} \quad (4)$$

where the previous mentioned terms are given the same meaning. Two interaction terms distinguish equation (4) from the previous equation. Both of these interaction terms are part of X_{it} , but for reasons of visibility and their importance to test (H2) and (H3) are presented separately. $\text{FA_C} * p_{it}$ captures the interaction effect of foreign aid per capita and the policy index. In this way, it can be examined whether the slope of the relationship between foreign aid per capita and happiness changes with the quality of economic policy. $\text{FA_C}_{it} * \text{mili_exp}$ serves as an interaction effect of foreign aid and military expenditure. Likewise, this interaction effect allows us to examine whether the slope of the relationship between foreign aid per capita and happiness changes with lower values of military spending.

⁶ The relationship between aid and happiness levels may not be linear. For instance, if one would increase foreign aid per capita from \$0 to \$150 may have a greater effect on happiness levels than an increase from \$200 to \$350. Section 3.2 states the motivation for using foreign aid in terms of per capita.

4.2 Endogeneity & Two-Stage Least Square (2SLS) Estimation Model

Endogeneity and Monotonicity

The endogeneity bias in this field of research may be attributed to two underlying reasons. First, the impact of foreign aid on happiness is most certainly of heterogeneous nature (i.e. differences in governance in recipient countries, absorptive capacities etc.). Secondly, foreign aid and happiness are likely to be driven by reverse causality. For instance, lower levels of happiness in recipient countries may prompt donor countries to provide additional aid to address social and economic problems that contribute to discontent. Alternatively, happier recipient countries might be signalling more efficient government or better socio-economic conditions that could attract more foreign aid.

The use of weak instruments, or even the failure to address the problem of endogeneity at all, is one of the main reasons for the lack of consensus in the literature of foreign aid and its impact on happiness (McGillivray et al., 2006). With regards to foreign aid and economic growth, Imbens and Angrist (1994) emphasise that the impact of aid is most likely of heterogeneous nature due to different absorptive capacities, i.e. different domestic governance. Therefore, the researchers argue that a valid instrument should show different average causal effects, with the direction of the response being the same for all recipients. More recent work of Magesan (2016) acknowledges this idea and argues that large amounts of research on aid with instrumental variable approaches violate this assumption of monotonicity. This work takes a similar stance and sees no reason for divergence when it comes to the promotion of happiness rather than growth in response to aid.

Instrument: Human Right Treaties (HRT)

The instrument therefore employed in this study is based on the two different approaches of Magesan (2016) and Yogo (2017). To the best of the author's knowledge it has not yet been used in this constellation, but appears to be an extremely powerful and valid instrument. To capture exogenous variation in foreign aid, participation in Human Right Treaties (HRT) from the UN is utilized. Conceptually research has argued, that HRT have the purpose to constrain the behaviour of governments with respect to their domestic citizens. In return, for respecting human rights, developing countries are rewarded with foreign aid from the developed world

because they have a genuine interest in improving human rights abroad and see HRT as a means to achieve this goal (Magesan, 2013). This argument was substantiated in the work of Magesan (2013), where the researcher found that HRT participation has a significant positive effect on a recipient country's foreign aid transfers. The Data for HRT participation is obtained from OHCHR Indicators from the United Nations (OHCHR, 2023). A summary of all 18 HRT contracts covered by the analysis can be found in Appendix A (table A4).

To build the most effective instrument it is constructed in several steps:

$$hrt_{it} = \sum_r h_{irt} \quad (5)$$

where h_{irt} is a binary variable that takes value 1 if country i ratified a given treaty r at year t or before, and 0 otherwise. hrt_{it} is therefore the measure of the cumulative sum of a country participation in the 18 treaties. Magesan (2016) points out that the number of treaties in which a country participates should be considered as a relative number instead of an absolute number as given in equation (5). The underlying reason for this is what was considered a high level of participation in the early days of HRT is no longer considered as such today. Despite the time fixed effects accounting for part of this problem, the researcher's analysis followed the approach of constructing a relative measure that is considered more meaningful than an absolute measure. The relative measure of treaty participation by developing countries is therefore shown as follows:

$$HRT^*_{it} = hrt_{it} - hrt_{jt} \quad (6)$$

HRT^*_{it} represents the instrument used in this research, where:

$$hrt_{jt} = \sum_{j \neq i} \omega_{jt}^i h_{jrt} \quad (7)$$

HRT^*_{it} follows the same interpretation of Magesan (2016), where it is a measure of *Human Rights Treaty Capital* that shows how the stock of HRT in developing countries depreciates over time if they do not stock up their portfolio of treaties (ratify treaties). To reach the term of *Treaty Capital*, the cumulative sum of treaty participation of the developing country i at

time t (hrt_{it}) is subtracted from the cumulative sum of treaty participation of the developed country j at time t (hrt_{jt}). The latter term is adjusted by the importance of country j 's HRT participation in determining the current standard of HRT participation indicated by ω_{jt}^i . With regard to the developed countries' treaty participation, the top 12 migration destination countries based on the number of migrants hosted from 1960 are considered: USA, Germany, Saudi Arabia, Russia, UK, United Arab Emirates, France, Canada, Australia, Spain, Italy and Turkey (MPI, 2021). The weight for developed countries' treaty participation at time t is inspired by Yogo (2017), where ω_{jt}^i is the bilateral migration share of country i . Bilateral migration of country i is measured as "the number of country i migrants living in country j divided by the total number of country i migrants living abroad (Combes et al., 2014)". Past literature such as Magesan (2016) often uses geographical distance as a variable to weigh the instrument. However, as migrants often tend to migrate to countries with which they have historical or cultural links, the weight of bilateral migration is more appropriate (Yogo, 2017). Moreover, Bermeo and Leblang (2015) find evidence that the number of migrants from recipient countries residing in foreign aid donor countries tends to be a strong determinant of aid commitments by destination countries. The migration data is obtained in form of international migration from UN Department of Economic and Social Affairs (2020) and adjusted to bilateral migration manually (United Nations, 2020).⁷

The first stage of the Two-Stage-Least-Square (2SLS) estimation model therefore takes the following form:

$$FA_c^*_{it} = \beta_0 + \beta_1 \sum (HRT^*_{it}) + \beta_k X_{it} + \gamma_i + \Phi_t + v_{it} \quad (8)$$

where $FA_c^*_{it}$ is the predicted foreign aid per capita to country i at time t . v_{it} serves as the error term for the first stage regression. All other variables follow the above definitions. In the first stage of the 2SLS model, HRT participations is used to create a new predicted variable to

⁷ The data of international migration from the United Nations is available at 5-year windows. Following Yogo (2017) the migration stocks for subsequent years following the year of reporting are the same. For instance data reported in 2010 were used for the years 2010-2014.

replace the endogenous variable of foreign aid per capita. The predicted variable of aid is then introduced in the original specification (equation 3) shown.

One possible criticism of HRT as an instrument is that it does not meet the exclusion criteria, i.e. that participation in HRT treaties has a direct impact on the welfare of citizens in poorer countries. This argument is invalidated with the following reasoning: Human rights are generally difficult to monitor and HRTs are often used superficially by governments of developing countries to suggest compliance, yet often not implemented in practice. Several studies are drawn on as evidence for this statement, showing that many countries under international pressure for their human rights behaviour use participation in HRT as an excuse to divert attention from their misconduct (Hathaway, 2002; Neumayer, 2005). Magesan (2013) notes that after HRT participation, the situation in developing countries with regard to human rights sometimes even deteriorates. With regards to the monotonicity criterion Magesan (2013) provides a detailed description of how HRT meets this criterion.

5. Results & Robustness Checks

The following section presents the results of the empirical analysis of the effect of foreign aid on happiness in recipient countries. Estimates for the baseline specification (equation 3) of section 4.1 are provided first, followed by the IV analysis using the 2SLS model mentioned in section 4.2. The last section will provide three robustness checks which estimate how the regression coefficients behave when the baseline equation is slightly modified. All estimates throughout the analysis are regressed with robust standard errors, which make it possible to reduce the dispersion of the residuals over the range of measured indicators.⁸ This approach is taken in response to the Modified Wald Test for groupwise heteroskedasticity shown in Appendix C (table C2). Given the standardization with logarithm of foreign aid per capita, the interpretation throughout the section will be as follows: a one percent increase in foreign aid per capita increases/decreases reported happiness by x (multiplied by $\ln(1.01)$) units on the life ladder, where x represents the coefficient reported in the following regression output

⁸ Robust standard errors are deliberately chosen over clustered standard errors, because most LDCs are from the African region and are expected to have rather similar levels of cultural, social and economic factors. In addition, most variables take the form of aggregated data at the country level, which can smooth idiosyncratic variation, thereby reducing the need for clustered standard errors.

tables. For the interpretation of the coefficients in this section, apart from the interaction terms, the condition *ceteris paribus* is implicitly assumed.

Fixed Effects Model

Table 2 shows five different specifications of the baseline equation (3) assessing the impact of foreign aid per capita on happiness. Column 1 shows a simple OLS regression, for which the estimated coefficient of aid per capita is slightly positive (*Model 1.1*). Thus, a one percent increase in foreign aid per capita increases reported happiness by 0.0002 units on the life ladder.⁹ Statistically this effect is insignificant. Column 2 re-estimates the coefficient for foreign aid per capita with a smaller sample size that corresponds to a sample size that would be observed if control variables and fixed effects were added. With the smaller sample size, the coefficient is now reported to be negative. This effect remains statistically insignificant (*Model 1.2*). In column 3 all control variables are added including the indicators of GDP per capita, FDI, military expenditure, and the policy index (*Model 1.3*). The estimated coefficient of aid per capita remains negative and insignificant. The coefficients for GDP per capita, FDI and the policy index show a positive and statistically significant effect on life satisfaction, implying that GDP per capita, FDI and “good” policy environments have a positive impact on reported happiness. GDP per capita and FDI being significant at the 5% significance level and the policy index at the 1% level. For instance, a one percent increase in GDP per capita, increases reported happiness by 0.002.¹⁰ Similarly, a one percent increase in FDI in net inflows as a percentage of GDP increases reported happiness by 0.007 points. Column 4 (*Model 1.4*) proceeds with adding a time fixed effects on top of *Model 1.3*. The coefficient for aid per capita turns more negative but remains insignificant. With the introduction of time fixed effects the control variables GDP per capita, FDI and the policy index become more positive. GDP per capita and the policy index remain significant at the 5% and 1% level, respectively. FDI is now significant at the 1% level. Lastly, column 5 reveals the same regression with a country fixed effect added (*Model 1.5*). The estimated coefficient for aid per capita is reported to be again slightly positive, yet insignificant. GDP per capita no longer reports significance with the inclusion of country fixed effects, while FDI coefficient loses significance and the

⁹ With a Level-Log specification we take: $0.0218 \times \ln(1.01) = 0.00022$

¹⁰ With a Level-Log specification we take: $0.195 \times \ln(1.01) = 0.00194$

policy index remains significant at the 1% significance level. Thus, the clear result emerging from table 2 is that foreign aid does not significantly impact the reported happiness in recipient countries.

Table 2 – Fixed Effects Model for the Impact of Foreign Aid per Capita on Happiness (Life Satisfaction)

	(1)	(2)	(3)	(4)	(5)
Life Satisfaction	Model 1.1	Model 1.2	Model 1.3	Model 1.4	Model 1.5
Log (Foreign Aid per capita)	0.0218 (0.0953)	-0.00693 (0.0764)	-0.0456 (0.0754)	-0.112 (0.0813)	0.0640 (0.154)
Log(GDP per capita - current US\$)			0.195** (0.0792)	0.223** (0.0989)	0.0271 (0.270)
Foreign Direct Investment (% of GDP)			0.00690** (0.00304)	0.00922*** (0.00335)	0.00610** (0.00299)
Military Expenditure (% of GDP)			0.0319 (0.0339)	0.0321 (0.0328)	0.0608 (0.0732)
Policy Index			0.671*** (0.251)	0.757*** (0.292)	0.970*** (0.216)
Constant	4.131*** (0.384)	4.229*** (0.306)	3.173*** (0.653)	3.203*** (0.788)	3.754** (1.704)
Controls	No	No	Yes	Yes	Yes
Time (Year) Fixed Effect	No	No	No	Yes	Yes
Country Fixed Effects	No	No	No	No	Yes
Observations	430	372	372	372	372
Number of countries	41	37	37	37	37

Table Notes: Table 2 shows the coefficients of a fixed effects model for the effect of foreign aid per capita and control variables on life satisfaction (measured on a life ladder between 0 and 10). The logarithm of foreign aid per capita and GDP per capita is taken. All regressions are run with robust standard errors. Column 1 regresses life satisfaction on foreign aid. The succeeding columns add controls, time fixed effects and country fixed effects respectively. The ceteris paribus condition is assumed for the interpretation of all coefficients. All coefficients are measured according to the following significance levels: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are shown in parentheses.

Table 3 shows a further specification of the baseline equation including the interaction terms between foreign aid per capita and the policy index as well as military expenditure. The table is constructed so that column 1 shows the interaction effect with the policy index. This interaction term is of relevance to test whether foreign aid has a more positive effect on happiness when good political institutions are in place (H2). Column 2 incorporates the interaction term with military spending instead of policy, which can be used to test whether foreign aid has a more positive effect on happiness when military spending is low (H3). Column 3 considers both interaction terms at once. All models in table 3 include control variables. The

ceteris paribus assumption holds for the interpretation of all coefficients, except the ones of the interaction effects.

As in the previous analysis without interaction effects, there is no evidence that per capita aid has a positive impact on reported happiness. Quite contrary does column 2 (*Model 2.2*) show that a one percent increase in foreign aid per capita lowers the reported happiness level by 0.0021 points, when military spending is zero (once the interaction of aid on military expenditure is removed from the aid coefficient).¹¹ This effect is found to be significant at the 10% significance level. In all three models, the coefficients for the interaction effects fail to show significance. Therefore, no evidence is found that the effectiveness of foreign aid per capita on reported happiness is moderated by the amount of military expenditure or good policy environments. The significance of the aid per capita coefficient disappears in column 3 (*Model 2.3*), once the policy index interaction term is introduced again. Therefore, there is no evidence that foreign aid has a significant impact on reported happiness when the amplifying effects of military spending and the policy index are removed from the coefficient of foreign aid. The coefficients for GDP per capita and FDI, again report a positive impact on happiness across all models of table 3, with significance levels of 5% and 1%, respectively.

¹¹ With a Level-Log specification we take: $-0.207 \times \ln(1.01) = -0.00206$

Table 3 – Fixed Effects Model with Interaction Effects for the Impact of Foreign Aid per Capita on Happiness (Life Satisfaction)

	(1)	(2)	(3)
Life Satisfaction	Model 2.1	Model 2.2	Model 2.3
Log(Foreign Aid per capita)	-0.266 (0.273)	-0.207* (0.113)	-0.304 (0.272)
Log(GDP per capita - current US\$)	0.236** (0.106)	0.239** (0.0968)	0.246** (0.105)
Foreign Direct Investment (% of GDP)	0.00977*** (0.00308)	0.00979*** (0.00328)	0.0100*** (0.00309)
Military Expenditure (% of GDP)	0.0309 (0.0329)	-0.131 (0.147)	-0.102 (0.157)
Policy Index	2.600 (3.001)	0.738** (0.299)	2.151 (3.140)
For. Aid (per capita) x Military Expenditure		0.0393 (0.0326)	0.0322 (0.0348)
For. Aid (per capita) x Policy Index	-0.445 (0.729)		-0.338 (0.764)
Constant	3.769*** (1.153)	3.484*** (0.796)	3.856*** (1.142)
Controls	Yes	Yes	Yes
Time (Year) Fixed Effect	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes
Observations	372	372	372
Number of countries	37	37	37

Table Notes: Table 3 shows the coefficients of a fixed effects model for the effect of foreign aid per capita and control variables on life satisfaction (measured on a life ladder between 0 and 10). The logarithm of foreign aid per capita and GDP per capita is taken. All regressions are run with robust standard errors. All columns include control variables, time fixed effects and country fixed effects. Column 1 regresses life satisfaction on foreign aid with the policy index interaction term. Column 2 shows the regression with the military expenditure interaction term. Column 3 contains both interaction terms. The ceteris paribus condition is assumed for the interpretation of all coefficients, except the ones of the interaction terms. All coefficients are measured according to the following significance levels: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are shown in parentheses.

Instrumental Variable Model (2SLS Estimation)

After obtaining the findings for the fixed effects model, the 2SLS model results are now used to determine the results more precisely. Additionally, the problem of endogeneity due to reverse causality is taken into account. As discussed in section 4.2, the participation in HRT is used to capture the exogenous variation in foreign aid. The 2SLS model is run with country and time fixed effects. The first stage results are presented in table B2 (Appendix B). The first stage results show that aid responds significantly to participation in HRT at the 10% level of

significance and is therefore considered a valid and relevant instrument for addressing the endogeneity of foreign aid per capita.

Table 4 shows the regression estimates of the 2SLS model for the impact of the predicted foreign aid per capita (HRT) on happiness. Table 4 is constructed in the same manner as table 2, where column 1 and 2 present the regression of happiness on participation in HRT with the original and adjusted sample size. Column 3 to 5 then add control variables, time fixed effects and country fixed effects. The ceteris paribus condition is implicitly assumed for the interpretation of all coefficients in table 4. Column 1 to 3 report varying levels of magnitude of foreign aid per capita estimates of -1.960, 5.397, -0.796, respectively. All coefficients are found to be insignificant. With the inclusion of the time fixed effect in column 4 (*Model 3.4*), the estimate for foreign aid per capita reports -0.615, being significant at the 10% level. This implies, that a one percent increase in foreign aid per capita decreases reported happiness by 0.00615 points on the life ladder. However, once country fixed effects are included in column 5 (*Model 3.5*), the reported estimate for foreign aid per capita is 2.927, but is found to be statistically insignificant. The results of the IV approach thus confirm the previous general findings of the OLS estimates, according to which foreign aid does not seem to significantly improve reported happiness in recipient countries. The estimates for FDI and policy report are highly significant in column 4 (*Model 3.4*) at the 1% level. However, the significance of those estimates disappears once time and country fixed effects are included.

Table 4- Instrumental Variable (IV) Estimation: 2SLS Regression

	(1)	(2)	(3)	(4)	(5)
Life Satisfaction	Model 3.1	Model 3.2	Model 3.3	Model 3.4	Model 3.5
Log(Foreign Aid predicted)	-1.960 (1.714)	5.397 (16.14)	-0.796 (0.540)	-0.615* (0.364)	2.927 (3.345)
Log(GDP per capita - current US\$)			0.139 (0.116)	0.176* (0.101)	-1.614 (1.961)
Foreign Direct Investment (% of GDP)			0.0174** (0.00782)	0.0164*** (0.00591)	-0.00675 (0.0161)
Military Expenditure (% of GDP)			-0.0272 (0.0353)	-0.0184 (0.0286)	0.101 (0.0934)
Policy Index			0.830*** (0.284)	0.833*** (0.222)	0.716 (0.525)
Constant	12.13* (6.914)	-17.21 (64.09)	6.655** (2.874)	5.519*** (1.957)	-1.399 (5.557)
Controls	No	No	Yes	Yes	Yes
Time (Year) Fixed Effect	No	No	No	Yes	Yes
Country Fixed Effect	No	No	No	No	Yes
Observations	406	352	352	352	352
Number of countries	39	35	35	35	35

Table Notes: Table 4 shows the coefficients of a 2SLS model with the participation in HRT of the UN as an instrument and life satisfaction (measured on a life ladder between 0 and 10) being the dependent variable. The logarithm GDP per capita is taken. Column 1 regresses life satisfaction on HRT (For. Aid (predicted)). The succeeding columns add controls, time fixed effects and country fixed effects, respectively. The ceteris paribus condition is assumed for the interpretation of all coefficients. All coefficients are measured according to the following significance levels: *** p<0.01, ** p<0.05, * p<0.1. Standard errors are shown in parentheses.

Robustness Check 1: Educational Aid & Health Aid

According to Asiedu (2014), a limitation of previous research on foreign aid's effectiveness is that foreign aid is mostly studied at the aggregate level and assumed to be similarly effective across all types of aid categories (e.g. educational aid, health aid, infrastructure aid, etc.). Harms and Lutz (2004) even go as far to argue that using aggregate aid to examine the impact on growth can explain inconsistent findings in aid effectiveness. With regards to happiness economics, Rizal and Fitrianto (2021) show that efforts to improve human development, and education in particular, are important and significant for increasing happiness. Therefore, with knowledge of such findings, the same analysis of the baseline equation will be conducted by exchanging the previously used indicator of *Net Official Development Assistance and Official*

Aid Received (Current US\$) first with *Total Aid to Education (Current US\$)*. Secondly the indicator is exchanged for *Total Aid to Health (Current US\$)*. Both indicators are obtained from OECD's Credit Reporting System (OECD, 2023a). As in the previous analysis, educational and health aid are transformed to per capita terms.

Aid to Education

The structure of table 5 follows the same structure as before in table 3. A simple regression of happiness on foreign aid to education is conducted (column 1), followed by the same analysis with the adjusted sample size (column 2). This is followed by control variables (column 3), time fixed effects (column 4) and country fixed effects (column 5) being added one after the other. Column 6 adds the two interaction terms of aid (military expenditure and the policy index). In column 1 (*Model 4.1*) foreign aid per capita to education has a positive and significant effect on life satisfaction. The estimated coefficient implies, that a one percent increase in educational aid per capita increases reported happiness by 0.00134 points on the life ladder.¹² However, this effect turns insignificant once the sample size is adjusted to the sample size corresponding with the following models (*Model 4.2*). The estimated coefficient for aid remains insignificant for the following models. Different to the previous findings of the OLS Fixed Effects Model, with the introduction of the interaction terms in column 6 (*Model 4.6*), the military expenditure coefficient as well as the estimate for the interaction term of military expenditure turn out significant at the 1% level. This implies, that a one percent increase in military expenditure as a percentage of GDP increases reported happiness by 1.893 points on the life ladder, when foreign aid is zero. This effect is significant at the 1% significance level. Moreover, the significant estimate for the military interaction terms suggests that foreign aid to education has a positive effect on reported happiness conditional on military expenditure. In other words, despite the educational aid coefficient being slightly negative and insignificant, the impact of educational aid on reported happiness is a positive function of the level of military spending. Thus, a one percentage increase in military expenditure as a percentage of GDP increases the effectiveness of foreign aid per capita to education on reported happiness by 0.00137 points.¹³ The policy interaction term turns out

¹² With a Level-Log specification we take: $0.134 \times \ln(1.01) = 0.00133$

¹³ With a Level-Log specification we take: $0.137 \times \ln(1.01) = 0.00136$

insignificant, implying that the effectiveness of educational aid on reported happiness is not conditional on the policy environment.

Table 5 - Robustness Check 1: Fixed Effects Model with Foreign Aid per Capita to Education

	(1)	(2)	(3)	(4)	(5)	(6)
Life satisfaction	Model 4.1	Model 4.2	Model 4.3	Model 4.4	Model 4.5	Model 4.6
Log (Foreign Aid to Education (per capita))	0.134** (0.0595)	0.0997 (0.0629)	0.0622 (0.0536)	0.0360 (0.0492)	0.110 (0.0693)	-0.0852 (0.136)
Log(GDP per capita -current US\$)			0.186** (0.0799)	0.218** (0.0964)	0.0176 (0.256)	0.0304 (0.262)
Foreign Direct Investment (% of GDP)			0.00618* (0.00333)	0.00810** (0.00377)	0.00603* (0.00318)	0.00573* (0.00289)
Military Expenditure (% of GDP)			0.0369 (0.0345)	0.0380 (0.0332)	0.0622 (0.0683)	1.893*** (0.577)
Policy Index			0.622** (0.258)	0.710** (0.302)	0.907*** (0.207)	3.357 (4.722)
For. Aid to Educ. (per capita) x Military Exp.						0.137*** (0.0422)
For. Aid to Educ. (per capita) x Policy Index						0.167 (0.323)
Constant	5.936*** (0.770)	5.485*** (0.819)	3.833*** (0.820)	3.248*** (0.801)	5.450*** (1.782)	2.851 (2.628)
Controls	No	No	Yes	Yes	Yes	Yes
Time (Year) Fixed Effect	No	No	No	Yes	Yes	Yes
Country Fixed Effects	No	No	No	No	Yes	Yes
Observations	430	372	372	372	372	372
Number of countries	41	37	37	37	37	37

Table Notes: Table 5 shows the coefficients of a fixed effects model for the effect of foreign aid per capita to education and control variables on life satisfaction (measured on a life ladder between 0 and 10). The logarithm of foreign aid per capita to education and GDP per capita is taken. All regressions are run with robust standard errors. Column 1 regresses life satisfaction on educational aid. The succeeding columns add controls, time fixed effects and country fixed effects, respectively. Column 6 adds the interaction effects for military expenditure and policy index. The ceteris paribus condition is assumed for the interpretation of all coefficients, except for the ones of the interaction terms. All coefficients are measured according to the following significance levels: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are shown in parentheses.

Aid to Health

Table 6 presents the same analysis conducted above with an indicator specific to health aid and follows the same structure as table 5. Concerning health aid, only column 5 (*Model 5.5*) shows a positive and significant effect on reported happiness levels. The estimated coefficient implies, that a one percent increase in foreign aid per capita to health leads to an increase in

reported happiness of 0.0007 points on the life ladder.¹⁴ This effect however disappears when the interaction terms for military spending and the policy index are included in column 6 (*Model 5.6*). As in the previous analysis on educational aid, the coefficient for military expenditure and its interaction term are positive and significant at the 5% significance level. The significant estimate for the military interaction term shows that foreign aid to health has a positive effect on reported happiness conditional on positive military expenditure (the impact of health aid on reported happiness is a positive function of the level of military spending). Thus, a one percentage increase in military expenditure as a percentage of GDP increases the effectiveness of foreign health aid per capita on reported happiness by 0.0007 points on the life ladder.¹⁵ The policy interaction term reports insignificantly, implying that the effectiveness of health aid on reported happiness is not conditional on the policy environment.

¹⁴ With a Level-Log specification we take: $0.0735 \times \ln(1.01) = 0.00073$

¹⁵ With a Level-Log specification we take: $0.0708 \times \ln(1.01) = 0.00070$

Table 6- Robustness Check 1: Fixed Effects Model with Foreign Aid per Capita to Health

	(1)	(2)	(3)	(4)	(5)	(6)
Life satisfaction	Model 5.1	Model 5.2	Model 5.3	Model 5.4	Model 5.5	Model 5.6
Log(Foreign Aid to Health per capita)	0.0358 (0.0366)	0.0254 (0.0396)	0.0230 (0.0376)	0.0337 (0.0455)	0.0735* (0.0405)	0.00862 (0.103)
Log(GDP per capita - current US\$)			0.185** (0.0786)	0.231** (0.0984)	0.0284 (0.266)	0.0534 (0.252)
Foreign Direct Investment (% of GDP)			0.00645** (0.00328)	0.00829** (0.00388)	0.00635* (0.00323)	0.00582* (0.00297)
Military Expenditure (% of GDP)			0.0377 (0.0367)	0.0401 (0.0351)	0.0722 (0.0768)	1.031** (0.400)
Policy Index			0.672*** (0.256)	0.727** (0.315)	0.985*** (0.217)	3.759 (3.961)
For. Aid to Health. (per capita) x Military Exp.						0.0708** (0.0297)
For. Aid to Health. (per capita) x Policy Index						0.224 (0.319)
Constant	4.689*** (0.479)	4.534*** (0.520)	3.350*** (0.553)	3.153*** (0.538)	4.956*** (1.582)	3.865* (2.284)
Controls	No	No	Yes	Yes	Yes	Yes
Time (Year) Fixed Effect	No	No	No	Yes	Yes	Yes
Country Fixed Effects	No	No	No	No	Yes	Yes
Observations	430	372	372	372	372	372
Number of countries	41	37	37	37	37	37

Table Notes: Table 6 shows the coefficients of a fixed effects model for the effect of foreign aid per capita to health and control variables on life satisfaction (measured on a life ladder between 0 and 10). All regressions are run with robust standard errors. The logarithm of foreign aid per capita to health and GDP per capita is taken. Column 1 regresses life satisfaction on health aid. The succeeding columns add controls, time fixed effects and country fixed effects respectively. Column 6 adds the interaction effects for military expenditure and policy index. The ceteris paribus condition is assumed for the interpretation of all coefficients, except for the ones of the interaction terms. All coefficients are measured according to the following significance levels: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are shown in parentheses.

Robustness Check 2: Economic Freedom Indicator

To check the robustness of the self-constructed policy index which was inspired by the work of Burnside and Dollar (2000), the following analysis will follow the study of Williamson et al. (2008), who include the Fraser Freedom Index to capture the quality of economic institutions. This index is published annually by the Fraser Institute and is a widely used measure that assesses economic freedom in countries based on various factors such as government size, property rights, currency stability, trade freedom and regulatory environment (Economic Freedom, 2023). The index evaluates institutional environments and policy frameworks by

ranking countries from a scale of 0 to 10, for which higher scores indicate more economic freedom. Table 7 shows the analysis, where column 1 (*Model 6.1*) presents a fixed effects model (*Model 6.1*). Column 2 adds to *Model 6.1* the interaction term between aid per capita and the Economic Freedom Indicator. Similar to the previous analysis with the OLS Fixed Effects model and the 2SLS model no evidence is found that foreign aid per capita has a significant effect on reported happiness. The coefficient for the Economic Freedom Index and the estimate for the interaction term shows no sign of significance, suggesting that the quality of economic institutions has no significant impact on reported happiness nor does it impact the effectiveness of foreign aid on reported happiness in recipient countries.

Table 7 – Fixed Effects Model with Economic Freedom Indicator (Fraser Freedom Index)

	(1)	(2)
Life satisfaction	Model 6.1	Model 6.2
Log(Foreign Aid per capita)	0.0222 (0.142)	-0.0917 (0.108)
Log(GDP per capita -current US\$)	-0.0638 (0.251)	-0.0854 (0.255)
Foreign Direct Investment (% of GDP)	0.00615*** (0.00217)	0.00718*** (0.00256)
Military Expenditure (% of GDP)	0.0699 (0.0829)	0.0667 (0.0822)
Policy (Econ. Freedom)	0.0393 (0.0257)	-0.0633 (0.117)
For. Aid (per capita) x Policy (Econ. Freedom)		0.0252 (0.0291)
Constant	4.013*** (1.466)	4.616*** (1.559)
Controls	Yes	Yes
Time (Year) Fixed Effect	Yes	Yes
Country Fixed Effects	Yes	Yes
Observations	341	341
Number of countries	36	36

Table Notes: Table 7 shows the coefficients of a fixed effects model for the effect of foreign aid per capita and control variables on life satisfaction (measured on a life ladder between 0 and 10). All regressions are run with robust standard errors, control variables, time fixed effects and country fixed effects. The logarithm of foreign aid per capita and GDP per capita is taken. Column 1 regresses life satisfaction on foreign aid with the Fraser Freedom Index and other control variables. Column 2 adds the interaction effect of foreign aid and the Freedom Index. The ceteris paribus condition is assumed for the interpretation of all coefficients, except for the interaction term. All coefficients are measured according to the following significance levels: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are shown in parentheses.

Lastly a third robustness check is provided in table B3 in Appendix B, where foreign aid is introduced with lags. This approach follows the early work of Mosley (1980), who found a positive effect of foreign aid on economic growth, once he limited his analysis to the 30 poorest countries and lagged aid by five years. Table B3 shows foreign aid per capita being lagged by one, three, four and five years. Lagged variables allow to account for the idea that happiness levels may be impacted by foreign aid of previous years. As can be seen, the estimated coefficient for foreign aid lagged by 5 years in column 4 (*Model 7.4*) is the only coefficient for aid that shows significance. Unlike Mosley (1980) the estimated coefficient has a negative sign, none of which was expected. This means that a one percent increase in foreign aid per capita leads to a decrease in life satisfaction by 0.0017 points five years after.¹⁶ Once the military expenditure and policy index interaction terms are included (*Model 7.5*), this effect remains significant with a coefficient of -0.340, with both interaction terms being insignificant. Thus, a one percent increase in foreign aid per capita leads to a decrease in life satisfaction by 0.003438¹⁷ points 5 years after, in the case of military expenditure being zero and a neutral policy environment being present. FDI remains significant at the 10% level throughout all specifications, implying that FDI has a positive effect on reported happiness levels. The policy index also reports a positive and highly significant effect on reported happiness levels for columns 1 to 4, but its effect turns insignificant upon the introduction of the interaction terms in column 5.

6. Discussion & Evaluation of Limitations

This section discusses the four main results of this investigation and puts the findings into contexts with previous investigations on the topic: (i) Total (aggregate) foreign aid has no effect on reported happiness in recipient countries¹⁸; (ii) Total (aggregate) foreign aid does not have a more positive effect on reported happiness conditional on low military spending; (iii) Total (aggregate) foreign aid does not have a more positive effect on reported happiness in presence of good policy environments; (iv) The findings of aid tailored to the education and

¹⁶ With a Level-Log specification we take: $-0.172 \times \ln(1.01) = -0.00171$

¹⁷ With a Level-Log specification we take: $0.340 \times \ln(1.01) = 0.00338$

¹⁸ Total foreign aid is referred to as the aggregate of many types of aid components (e.g. humanitarian aid, infrastructure aid, educational aid etc.).

health sector suggest that a causal relationship with happiness might exist. Here a corresponding dichotomy between statistical and economic relevance needs to be discussed. Moreover, to derive greater value of these findings, it is crucial to understand the validity of these findings and acknowledge some limitations that might affect their validity. This concerns the following four factors in particular: The measure of foreign aid, military expenditure, the policy index and the methodology.

The finding, that total (aggregate) foreign aid is ineffective at promoting happiness in recipient countries is consistent with the limited previous evidence on this topic (Arvin and Lew, 2010, 2011, 2012). Despite Arvin & Lew (2012) using a different methodological approach, similar results are obtained. Akin to the coefficients found in this paper, coefficients in their study are small in magnitude and turn out to be non-significant for the impact of foreign aid on reported happiness. A plausible explanation for such results is that foreign aid is a sum of many financial transactions given for a variety of purposes that do not all contribute to the promotion of happiness. For instance, humanitarian Official Development Assistance (ODA) alone accounted for \$22.3 billion of a total of \$204 billion in 2022 (OECD, 2023b). Humanitarian aid is first and foremost about repairing destruction in response to man-made or natural disasters (e.g wars, famine, floods etc.) and is therefore primarily about alleviating suffering and at best restoring happiness rather than promoting it. In fact, depending on the duration of happiness restoration, negative correlations between foreign aid and happiness may even be observed. These correlations would then not be of causal nature. In a paper by Harms and Lutz (2004), the two researchers are even surprised that foreign aid, composed by 'such diverse' components (e.g. emergency food aid, military aid etc.), has at all produced results. In response, the two researchers stress the importance of a more disaggregated view on foreign aid and its individual components. With this in mind, foreign aid as an aggregate could lead to the one-sided notion that aid is ineffective and should not be used by developed countries as a tool to improve life satisfaction of the poorest.

This paper believes it has made a first contribution to this matter in the context of happiness research by introducing robustness checks for education and health aids. The results reveal modest but positive effects on reported happiness. As this paper has only considered disaggregated aid as a robustness check, further in-depth research is needed to endorse these

findings, provide clarity for the mechanisms and identify other happiness-enhancing areas of foreign aid. A deeper understanding in this area could help to better target the impact of foreign aid on happiness. At the same time, one should not lose sight of the dichotomy between statistical significance and economic relevance in the supposedly positive effects of health and education aid on happiness. For instance, the revealed effect of a one percentage change of foreign aid per capita to health was found to have an effect on life satisfaction on the life ladder (scaled from 0-10) at the fourth decimal place of the coefficient (0.0007). In the case of these findings, there was indeed a statistical significance found, but this is questionable on closer examination due to the magnitude of the coefficients. Nonetheless, the statistical significance suggests that there is a correlation, but the economically insignificant dimension of the effects found here requires that further influencing factors be sought and investigated.

Moreover, this paper has not found any evidence that the effectiveness of total foreign aid on reported happiness varies as a function of military expenditure. This turns out contrary to the expectations that foreign aid is more effective when military spending is low. More unexpectedly, the results show that the impact of education and health aid on reported happiness is a modest positive function of the level of military spending. A plausible explanation for such findings points towards the fungibility of foreign aid mentioned by Kono and Montinola (2012). Thus, foreign aid earmarked by the developed world for education and health purposes allows LDCs to divert funding from these sectors to military sectors. Contrary to their view, it is plausible to argue that occupations in the military are acknowledged sources of income in developed countries (Deger, 1986). Combined with the knowledge that developing countries may face an increase in happiness in response to income rises (Clark et al., 2005), foreign aid and the interaction with military spending could explain why foreign aid appears slightly more effective in presence of military spending. This fungibility of aid may be less likely for humanitarian aid in response to disasters, as the withdrawal of money intended for mitigating disasters is more difficult to justify. Hence, this could explain why no effect of the interaction between total foreign aid and military expenditure is found. As these are only logical conjectures, further empirical research on this topic is required.

Furthermore, there are doubts about the findings of Burnside & Dollar (2000) that the aid effectiveness on economic growth is dependent on the policy environment. For instance, Hansen and Tarp (2001) find evidence, that the results of Burnside and Dollar (2000) mainly reflect diminishing returns to aid. They show that phenomena such as the Dutch Disease¹⁹ can explain the concave aid-economic growth relationship. In this case, the policy interaction term with aid no longer appears significant. Given the insignificant findings of this study and the many conflicting studies on the effectiveness of foreign aid conditional on policy environment (e.g. Collier and Dehn, 2001; Hansen and Tarp, 2001, Chauvet and Guillaumont, 2002), it is rather difficult to draw conclusions at this stage on the extent to which foreign aid responds to the political environment. This also makes it unclear what further impact this has on happiness. The initial motivation for using a policy index and combining several indicators for a country into one value, was that this index would allow conclusions to be drawn about how good and bad policy environments impact the effectiveness of foreign aid on happiness. In hindsight, it has to be acknowledged that this resembles more of a simplistic view to acquire a general snapshot of a country's political quality. It is worthwhile for future studies to capture other important core parameters that resemble the reality of policy environments. This includes recognising that the policy settings are more complex than adopted in this study (e.g. by considering threshold effects for policy indicators etc.). Nonetheless, the paper believes that it has made an initial contribution to the empirical study of happiness with regards to policy environments. Yet, future research is needed to confirm those indications.

The robustness check with lagged aid suggests that aid that is lagged by 5 years has a pernicious effect on happiness. Thus, contrary to expectations, the results suggest that the impact of foreign aid on happiness may not be immediate and aid may have delayed negative effect on happiness. Since previous literature has found that lagged aid has a positive effect on economic growth (Mosley, 1980), it is unclear what the driving forces for the negative impact on happiness might be. Conceivable reasons for the negative impact could include dependency on aid. Foreign aid could create a sense of dependence on external aid, which can hinder domestic efforts to achieve self-sustaining development and lead to a perceived

¹⁹ In the context of foreign aid, Dutch Disease refers to the phenomenon that large inflows of foreign aid lead to an appreciation of the real exchange rate of recipient countries and consequently to a contraction of the tradable sector (UNU Wider, 2012).

loss of control over one's own development path. Further this could lead to a sense of disempowerment among citizens, which may have a negative impact on happiness in the long run. Along with such distortions of the local economy, the aforementioned Dutch Disease can additionally promote trends towards unhappiness. However, in order to validate this finding and the derived conjectures, future research is also needed to address the issue of lagged foreign aid and its mechanism.

Finally, the methodology used in this study might not comprehensively reflect the complex interrelationship of foreign aid and recipients' happiness. For instance, the cultural awareness of happiness and the effort to incorporate happiness in the daily life as well as the economic attainment vary between different countries and influence the here investigated effects. To account for such a cultural aspect demands sociological considerations how to define a measurable indicator. Furthermore, there is a widespread field of mediator variables such as life expectancy or school enrolment, which themselves may affect happiness, which are not considered here. Such a comprehensive research project on the effect of foreign aid and happiness is far beyond the scope of this study.

7. Conclusion

The purpose of this paper is to assess the effectiveness of foreign aid on promoting happiness in 41 least developed countries. To reach a reliable statistical conclusion, an Ordinary Least Square (OLS) Fixed Effects estimation as well as a Two- Stage Least Square (2SLS) estimation model is drawn upon. The findings of both models imply, that total (aggregate) foreign aid has no effect on promoting happiness in recipient countries. This conclusion is reached across various methods of estimation and is robust to changes in the policy indicator. This result follows findings of previous research, according to which foreign aid is ineffective at promoting happiness in developing countries. Moreover, the findings in this study of tailored aid for the educational and health sector are of little economic significance, but may represent an extremely important topic for future research. In contrast to our expectations, this study also concludes that aid with a lag of 5 years can have a pernicious impact, albeit minor, on happiness levels.

The final conclusion of this study is therefore that foreign aid generally does not promote happiness, and if anything, it does so only marginally through tailored aid in happiness promoting sectors. Nonetheless, achieving happiness for people worldwide is a central theme of the UN and is included as a "Fundamental Human Goal" (United Nations, n.d.-a). The approach that, according to the UN, social, economic and environmental well-being are jointly defined in Gross Global Happiness (GGH) also demonstrates the efforts of key organisations to enter a new economic paradigm of sustainable development (United Nations, n.d.-b). Bhutan, one of the least developed countries in the world, has taken an important step in this direction. The country has surprised several times as a reasonably happy country. In 2008, the country largely abandoned the well-known economic measure GDP and replaced it with Gross National Happiness (GNH), to fully capture national progress. The question remains what makes such a poor country so much happier than so many other far more developed countries? In the public debate in Bhutan, the GNH indicator, which goes far beyond the conventional GDP measure, has made residents aware of the issue of happiness and well-being in a very different way. It is supposedly not aid from the Western world that has made Bhutan a happier country, but a self-fulfilling prophecy. Future research is needed that addresses the issue of foreign aid and happiness both sector specific and country specific. The above-mentioned topics such as mediator variables and threshold levels of parameters should not be overlooked. However, this is probably not done with just a few studies, but requires a comprehensive project, which is beyond the scope of this paper.

Appendix A

Table A1: Least Developed Countries (LDCs) by Geographical Region

<u>Sub-Sharan Africa (32)</u>		<u>Asia (2)</u>
Angola	Mauritania	Cambodia
Benin	Mozambique	Myanmar
Burkina Faso	Niger	
Burundi	Rep. Congo –	<u>Middle East (1)</u>
Central African	Brazzaville	Yemen
Republic	Rwanda	
Chad	Senegal	<u>North America (1)</u>
Comoros	Sierra Leone	Haiti
Dem. Rep. Congo –	Somalia	
Kinshasa	South Sudan	<u>South Asia (4)</u>
Djibouti	Sudan	Afghanistan
Ethiopia	Tanzania	Bangladesh
Gambia	Togo	Bhutan
Guinea	Uganda	Lao PDR
Lesotho	Zambia	
Liberia	Zimbabwe	
Madagascar		
Malawi		
Mali		

Table A2: Correlation Matrix for the Construction of the Policy Index

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) Life satisfaction	1.000					
(2) Inflation, GDP deflator (annual %)	-0.144	1.000				
(3) Control of corruption, estimate	0.026	-0.089	1.000			
(4) GDP per capita	0.162	0.058	-0.185	1.000		
(5) Foreign Direct Investment	0.108	-0.033	-0.008	-0.007	1.000	
(6) Military expenditure	0.045	-0.132	-0.281	0.137	-0.110	1.000

Table A3: Correlation Matrix for Variables of Analysis

Variables	(1)	(2)	(3)	(4)	(5)	(6)
(1) Life satisfaction	1.000					
(2) Foreign aid per capita	-0.145	1.000				
(3) GDP per capita	0.161	-0.171	1.000			
(4) Foreign Direct Investment	0.108	0.283	-0.007	1.000		
(5) Military expenditure	0.045	-0.087	0.137	-0.110	1.000	
(6) Policy Index	0.075	0.068	-0.187	0.005	-0.207	1.000

Table A4: United Nations 18 Human Right Treaties (HRT)**Treaty (Date of Entry into Force)**

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1. International Convention on the Elimination of All Forms of Racial Discrimination (1965)
 2. International Covenant on Civil and Political Rights (1976)
 3. Optional Protocol to the International Covenant on Civil and Political Rights
 4. Second Optional Protocol to the International Covenant on Civil and Political Rights, aiming at the abolition of the death penalty (1989)
 5. International Covenant on Economic, Social and Cultural Rights (1976)
 6. Optional Protocol to the International Covenant on Economic, Social and Cultural Rights (2013)
 7. Convention on the Elimination of All Forms of Discrimination against Women (1981)
 8. Optional Protocol to the Convention on the Elimination of All Forms of Discrimination against Women (2000)
 9. Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (1984)
 10. Optional Protocol to the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (2002)
 11. Convention on the Rights of the Child (1990)
 12. Optional Protocol to the Convention on the Rights of the Child on the involvement of children in armed conflict (2002)
 13. Optional Protocol to the Convention on the Rights of the Child on the sale of children, child prostitution and child pornography (2000)
 14. Optional Protocol to the Convention on the Rights of the Child on a communications procedure (2011)
 15. International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families (2003)
 16. International Convention for the Protection of All Persons from Enforced Disappearance (2006)
 17. Convention on the Rights of Persons with Disabilities (2008)
 18. Optional Protocol to the Convention on the Rights of Persons with Disabilities (2008)

Table A5: Data Sources

Variable	Source
Happiness (Life Satisfaction)	World Happiness Report 2023
Foreign Aid - Net Official Development Assistance and Official Aid Received (current US\$)	World Bank Data 2023
GDP per Capita (current US\$)	World Bank Data 2023
Foreign Direct Investment (% of GDP)	World Bank Data 2023
Military Expenditure (% of GDP)	World Bank Data 2023
Control of Corruption, estimate	World Bank Data 2023
Inflation, GDP Deflator (annual %) - FDI	World Bank Data 2023
Population, Total	World Bank Data 2023
Human Right Treaties (Instrument)	OHCHR 2023
International Migration	United Nations 2023
Aid to Education (current US\$)	OECD 2023
Aid to Health (current US\$)	OECD 2023
Fraser Freedom Index	Fraser Institute 2023

Appendix B

Table B1: Happiness Regression: Policy Variables

Life satisfaction	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Inflation, GDP deflator (annual %)	-0.003	0.001	-3.60	0.000	-0.005	-0.001	***
Control of corruption, estimate	0.317	0.173	1.83	0.068	-0.024	0.657	*
GDP per capita (current US\$)	0.000	0.000	-0.80	0.425	0.000	0.000	
Foreign Direct Investment (% of GDP)	0.006	0.004	1.56	0.121	-0.002	0.014	
Military Expenditure (% of GDP)	0.066	0.048	1.39	0.166	-0.028	0.160	
Constant	4.225	0.217	19.51	0.000	3.799	4.651	***
Mean dependent var		4.210	SD dependent var			0.595	
Number of obs		372.000	Prob > F			0.000	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B2: Instrumental Variable (IV) Estimation: First Stage (2SLS)

For. Aid (per capita)	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
Human Right Treaties	2.610	1.464	1.78	0.084	-0.366	5.585	*
Log (GDP per capita) (current US\$)	13.432	7.862	1.71	0.097	-2.546	29.409	*
Foreign Direct Investment (% of GDP)	0.373	0.209	1.78	0.084	-0.053	0.798	*
Military Expenditure (% of GDP)	0.672	2.624	0.26	0.799	-4.661	6.005	
Policy Index	-1.833	9.668	-0.19	0.851	-21.482	17.815	
Constant	31.194	13.107	2.38	0.023	4.558	57.830	**
Mean dependent var.		0.125	SD dependent var.			43.734	
Number of observations		484.000	Prob. > F			0.000	

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table B3: Robustness Check 3: Regression of Happiness on Lagged Foreign Aid per Capita

Life satisfaction	(1) Model 7.1	(2) Model 7.2	(3) Model 7.3	(4) Model 7.4	(5) Model 7.5
Lag -1: For. Aid (per capita)	0.0663 (0.0930)				
Lag -3: For. Aid (per capita)		-0.0549 (0.0841)			
Lag -4: For. Aid (per capita)			-0.105 (0.0826)		
Lag -5: For. Aid (per capita)				-0.172** (0.0702)	-0.340* (0.186)
Log (GDP per capita) (current US\$)	0.0218 (0.267)	0.118 (0.271)	0.166 (0.259)	0.198 (0.258)	0.187 (0.268)
Foreign Direct Investment (% of GDP)	0.00658** (0.00322)	0.00668** (0.00311)	0.00668* (0.00345)	0.00691* (0.00356)	0.00677* (0.00369)
Military Expenditure (% of GDP)	0.0617 (0.0732)	0.0548 (0.0737)	0.0526 (0.0696)	0.0485 (0.0608)	-0.112 (0.191)
Policy Index	0.960*** (0.216)	1.002*** (0.203)	1.024*** (0.195)	1.053*** (0.195)	2.477 (2.213)
Lag -5: For. Aid (per capita) x Military Exp.					0.0359 (0.0469)
Lag -5: For. Aid (per capita) x Policy Index					-0.350 (0.562)
Constant	3.756** (1.711)	3.661** (1.651)	3.570** (1.603)	3.636** (1.567)	4.414** (1.791)
Controls	Yes	Yes	Yes	Yes	Yes
Time (Year) Fixed Effect	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	372	371	369	367	367
Number of country1	37	37	37	36	36

Table Notes: Table B3 shows the coefficients of a fixed effects model for the effect of foreign aid per capita and control variables on life satisfaction (measured on a life ladder between 0 and 10). All regressions are run with robust standard errors, control variables, time fixed effects and country fixed effects. The logarithm of foreign aid per capita and GDP per capita is taken. Column 1 regresses life satisfaction on foreign aid lagged by one year. Column 2 to 4 replace lag foreign aid by three, four and five years respectively. Column 5 adds both interaction terms of military expenditure and policy index to the five year lag regression. All coefficients are measured according to the following significance levels: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors are shown in parentheses.

Appendix C

Table C1: Hausman Test**Hausman (1978) specification test**

	Coef.
Chi-square test value	11.79
P-value	.037

The results show that the null hypothesis is rejected that the coefficients in the random effects model and fixed effects model are not systematically different. The difference in the coefficients is therefore systematic and unobserved heterogeneity influences foreign aid. A fixed effects model is therefore preferable as it takes into account the correlation between unobserved heterogeneity and foreign aid.

Table C2: Modified Wald Test for groupwise Heteroskedasticity

Modified Wald Test for groupwise Heteroskedasticity in Fixed Effect Regression Model

H0: $\sigma(i)^2 = \sigma^2$ for all i

chi2 (37) = 5.8e+30

Prob>chi2 = 0.0000

The Modified Wald Test for groupwise heteroskedasticity reports a p-value of 0.00 which allows us to reject the null hypothesis, that there exists a constant.

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