

Success Attribution and Support for Income Equality: Evidence from the United States and Germany

Xinyi Bai

Faculty of Economic Sciences, National Research University Higher School of Economics,
Moscow, Russia Federation

bxyxncj@outlook.com

ABSTRACT

Income inequality within countries is a pressing global issue, and understanding its determinants is crucial for informing policies aimed at fostering economic fairness. In this paper, we use individual data from World Values Survey (WVS) wave 7 data (2017-2022) to study how the attribution of success to different (luck or effort) factors affects the views on income distribution (specifically, whether to support income equality or inequality). Our main hypothesis is that attributing success to effort rather than luck leads to a larger and statistically significant increase in the acceptance of inequality in the indulgent country – the United States. We indeed find that attributing success to effort is significantly and positively correlated with supporting income inequality in the United States, while this correlation is significantly weaker in Germany. But from the regression results, the country does not significantly change the relationship between success attribution and supporting income equality. Therefore, we reject our main hypothesis and conclude luck rather than effort as the source of success can't lead to a more substantial and statistically significant increase in support in income equality in indulgent countries.

KEYWORDS

Income Equality; Success Attribution; Comparative Study

1. INTRODUCTION

Contemporary global inequalities are currently approaching levels reminiscent of the early 20th century, at the peak of Western imperialism. Despite a reduction in global inequalities between nations over the past two decades, there has been a concurrent rise in inequality within most countries (World Inequality Report 2022). Income inequality within countries is a pressing global issue, and understanding the determinants of support for income equality is crucial for informing policies aimed at fostering economic fairness. The role of individual beliefs about the sources of success—whether attributed to luck or hard work—has received limited attention in the literature, especially in a cross-country comparative context. This study seeks to fill this gap by exploring how success attribution patterns contribute to support for income equality, with a specific focus on the divergent cases of the United States and Germany. The high indulgence and low risk-aversion in the United States and the comparatively lower indulgence and higher risk-aversion Germany present an opportune setting for investigating the potential connections between success attribution and support for income equality. Therefore, the study's findings may provide valuable insights for policymakers and researchers striving to address income inequality on national scales.

Stefan Svallfors (1997) concludes that patterns of attitudes towards redistribution are essentially the same across welfare-state regimes. But Linos and West (2003), based on Svallfors' work, collect

questionnaires in Norway, Germany, Australia and USA and then regress the data for each country separately. They find that the effects of beliefs about the determinants (luck or effort) of social mobility on support for redistribution across welfare states vary in degree. By leveraging data from the United States and Germany, we can provide empirical evidence for the relationship between success attribution and support for income equality and try to fill this gap.

In this paper, we use individual data to study how the attribution of success to different factors affects the views on income distribution (specifically, whether to support income equality or inequality). Our central hypothesis posits that the divergent cultural dimensions of the United States and Germany act as moderators in the relationship between the attribution of success and the endorsement of income inequality. Specifically, Germany, which ranks high in uncertainty avoidance and is characterized as a restrained society, contrasts with the United States' openness to new ideas and classification as an indulgent society (Minkov, M., & Kaasa, A., 2022). We hypothesize that in the United States, attributing success to personal effort rather than to luck is associated with a larger and statistically significant increase in the acceptance of income inequality compared to Germany.

2. LITERATURE REVIEW

2.1. Success Attribution

Weiner (1985) identified three basic dimensions for causal attribution: locus, stability, and controllability. Locus refers to whether individuals attribute their performance to internal causes (such as ability) or external causes (such as difficulty of the task). Stability refers to whether the causes are constant or variable over time (such as ability and luck). Controllability refers to whether the causes can be influenced or not (such as effort and luck). According to attribution theory (Weiner, 1985, Weiner, 2010, Graham, 2020), attributing success to stable causes increases one's effort and persistence in subsequent achievement situations, thus enhancing the likelihood of success. Attributing success to internal causes boosts one's self-esteem.

This paper focuses on the dimensions of locus and controllability for success attribution, and examines effort and luck as two main causes of success. The main point is whether the respondents believe that success depends on their own actions and to what degree.

2.2. Success Attribution and Support for Income Equality

Piketty (1995) argued that the persistent differences in social mobility perceptions cause lasting disparities in redistribution across countries, that is, in the long term, less belief in individual effort (or, alternatively, more belief in luck) results in more redistribution. Many empirical studies on this topic have followed the theoretical foundation of Piketty's paper, and this paper does the same.

The empirical analysis also revealed some findings that are inconsistent with Piketty's theory. Stefan Svallfors (1997) concludes that patterns of attitudes towards redistribution are essentially the same across welfare-state regimes. But Linos and West (2003), based on Svallfors' work, collect questionnaires in Norway, Germany, Australia and USA and then regress the data for each country separately. They find that the effects of beliefs about the determinants (luck or effort) of social mobility on support for redistribution across welfare states vary in degree. Alesina, Glaeser, and Sacerdote (2001) explore why redistribution is much higher in Europe than in the United States from three perspectives: economic, political and behavioral. In studying the behavior of reciprocal altruism, they use the mean belief that income differences across individuals are driven by luck from Persson Tabellini (PT) cross country data as the main independent variable to conduct econometric regression and find that the more people believe that luck drives success, the larger is the share of supporting for income equality. Aarøe and Petersen (2014) use free-association tasks and experiments embedded in large-scale, nationally representative surveys collected in the United States and Denmark. They find

that individuals in two highly different welfare states have different default stereotypes about whether welfare recipients are lazy or unlucky and that these differences in stereotypes create differences in support for welfare benefits to a recipient when no clear information about the recipient is available. Alesina, Stantcheva, and Teso (2018) develop detailed, quantitative survey questions and a randomized perception treatment to collect information on perceptions of mobility, fairness, government, and support for redistributive policies for five countries on both sides of the Atlantic. They conclude that Americans are too optimistic relative to the actual mobility in the U.S., while Europeans are too pessimistic. More pessimistic respondents tend to favor more generous redistributive policies, especially equality of opportunity policies.

In addition to cross-national comparisons, some studies also focus on within-country research. For example, Fong (2001) examines the redistribution preferences of Americans and finds that those who attribute success to luck, inheritance, or dishonesty tend to favor more redistribution, that means favor more income equality. However, within-country research is beyond the scope of this paper and will not be discussed further.

2.3. Sex, Education, Income and Support for Income Equality

Almås, I., Cappelen, A. W., & Tungodden, B. (2020) find that high-education spectators in the United States are more accepting of inequality than low-education spectators, but there is no such association in Norway. Additionally, female spectators are systematically less accepting of inequality than males. Kim, H., & Lee, Y. (2018) report that the more the people can earn, the less supportive people are of income equality.

2.4. United States and Germany

We examine how and why the link between success attribution and support for income equality differs across two countries. Almås, Cappelen, and Tungodden (2020) found that attributing inequality to effort rather than luck causes a larger and statistically significant increase in inequality acceptance in the United States than in Norway. They suggested that this was due to systemic differences, but when they added the country variable as a moderator, they found that it was not significant. On the other hand, Aarøe and Petersen (2014) found a difference in the link between the United States and Denmark, which they attributed to the deeper cultural aspects of the two countries, such as individualism and collectivism (Nelson and Shavitt 2002).

Following the logic of these papers, we choose the United States and Germany as our comparison countries, as both are western, educated, industrialized, rich, and democratic (WEIRD) societies (Henrich, Heine, and Norenzayan 2010). According to the cultural data report by Hofstede Insights Ltd. (2023), Germany is among the uncertainty avoidant countries, scoring 65 points in Uncertainty Avoidance, which reflects the degree to which people feel uncomfortable with ambiguity and unpredictability. Germany also scores low in Indulgence with 40 points. These scores indicate that the German culture is restrained and risk-averse. As a contrast, the United States scores as an indulgent society, with 68 points in Indulgence. The US also scores below average, with a low score of 46, on the Uncertainty Avoidance dimension. Americans tend to be more tolerant of ideas or opinions from anyone and allow the freedom of expression.

We propose that the distinct cultural dimensions of the United States and Germany may serve as a moderating factor. Specifically, Germany, which ranks high in uncertainty avoidance and is characterized as a restrained society, contrasts with the United States' openness to new ideas and classification as an indulgent society (Minkov, M., & Kaasa, A., 2022). Gärtner, Mollerstrom, and Seim (2017) suggest that redistribution policies act as insurance against future economic downturns. Therefore, even if German respondents believe that personal effort is a greater determinant of success, they may still support policies promoting income equality. This suggests that in the United States,

where inequality is more likely to be attributed to effort rather than luck, there may be a larger and statistically significant increase in the acceptance of inequality compared to Germany.

2.5. Hypotheses

In the United States, characterized as an indulgent society, there exists a stronger positive correlation between the perception of luck—as opposed to effort—as the source of success and the support for income equality.

This contrasts with Germany, where, as a restrained society, the correlation between the attribution of success to luck and the support for income equality is comparatively weaker.

Here, the divergent cultural dimension of the United States and Germany act as a moderator in the relationship between the attribution of success and the support for income equality. Luck rather than effort as the source of success leads to a more substantial and statistically significant increase in support in income equality in indulgent countries.

Besides, there are also some hypotheses about the control variables: women are more likely to support income equality; people with higher education levels are more likely to support income equality; people with higher income levels are more likely to support income inequality.

3. DATA AND METHODS

The data for this paper comes from the final (5.0) version of the World Values Survey (WVS) wave 7 data (2017-2022). Samples from the United States and Germany are extracted, totaling 4124, of which 2596 are from the United States and 1528 are from Germany. Regarding missing values, if a sample has a missing value for a variable, we delete that sample. We use direct deletion instead of reasonable filling, because the number of missing values is not large, totaling 161, accounting for 3.90% of the total sample size, of which 76 are from Germany, accounting for 4.97% of the German sample; 85 are from the United States, accounting for 3.27% of the American sample. And because all variables are ordinal or categorical data (with natural upper and lower limits), we do not need to perform logarithmic or outlier processing on them.

Finally, we obtained a complete sample of 3963 without missing values, of which 2596 were from the United States and 1528 were from Germany.

Table 1. Variables

Problem	Statement	Type	Original Description	After Recoding
Q106 equal	Income equality vs larger income differences	Ordinal From 1-10	1 - support for income equality 10 - support for income inequality	0 - support for income inequality 1 - support for income equality
Q110 sus	Success: hard work vs luck	Ordinal From 1-10	1 - hard work usually brings a better life 10 - more a matter of luck and connections	0 - hard work usually brings a better life 1 - more a matter of luck and connections
Q260 sex	Sex	Nominal	1 - Male 2 - Female	0 - Male 1 - Female
Q275R edu	Highest educational level 0.- Early childhood education (ISCED 0) / no education 1.- Primary education (ISCED 1) 2.- Lower secondary education (ISCED 2) 3.- Upper secondary education (ISCED 3) 4.- Post-secondary non-tertiary education (ISCED 4) 5.- Short-cycle tertiary education (ISCED 5) 6.- Bachelor or equivalent (ISCED 6) 7.- Master or equivalent (ISCED 7) 8.- Doctoral or equivalent (ISCED 8)	Nominal	1 - Lower: ISCED 0, ISCED 1, ISCED 2 2 - Middle: ISCED 3, ISCED 4 3 - Higher: ISCED 5, ISCED 6, ISCED 7, ISCED 8	0 – Lower and middle 1 – Higher
Q288 income	Scale of incomes	Ordinal From 1-10	1 - Lower step 10 -Tenth step	0 - Lower step 1 -Tenth step

Source: WVS wave 7 data (2017-2022)

Note: 1. I have rescaled all the ordinal variables to range from 0 to 1; 2. Because Germany has a lower education level of only 43 samples, accounting for only 1.71% of Germany, in order to solve the problem of small number of observations, I combined lower and middle into a category. 3. The table shows the data before and after recoding. There are no missing values in our sample.

4. RESULTS

4.1. Dependent Variable and Main Independent Variable

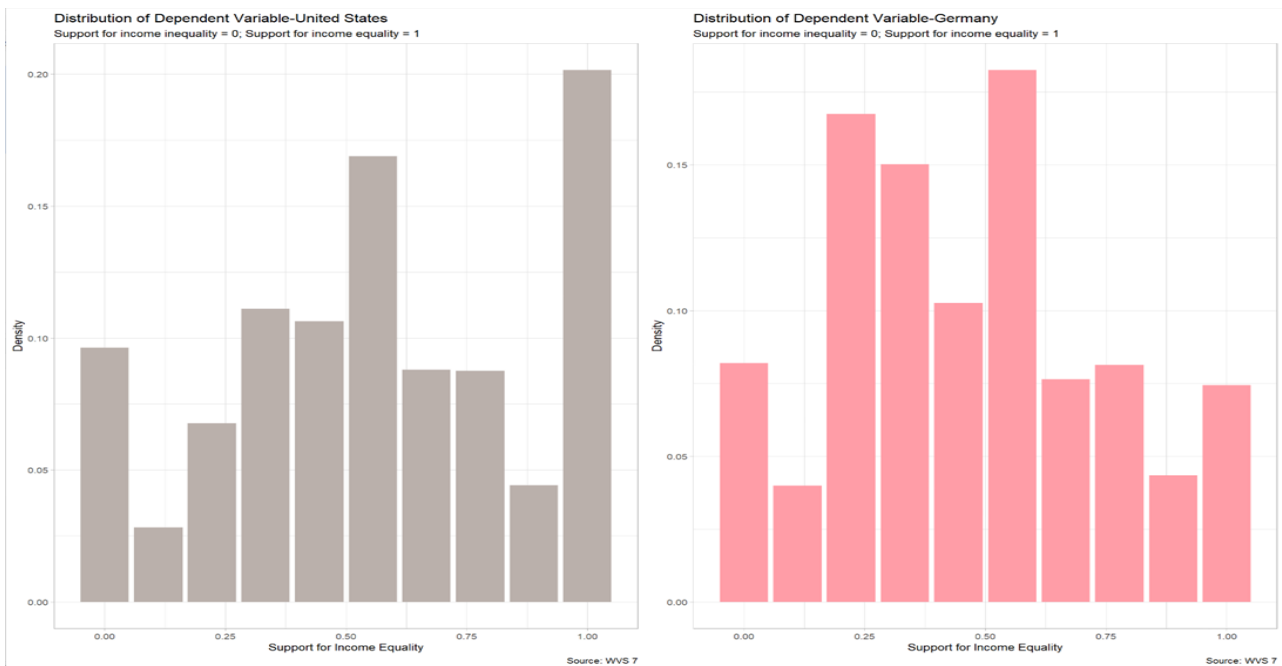


Figure 1. Levels of Dependent Variable across Two Countries

The percentage of Americans who desire more income equality (option 1) is over 20%, significantly higher than that of Germany, whereas the percentage of Germans who prefer income inequality (options 0.22 and 0.33) is significantly higher than that of the US, with 15.01% and 16.74% respectively, and the two countries have similar situations in terms of the remaining values of the dependent variable. In the United States, support for income equality averaged 0.56, higher than support for income equality in Germany (0.47). The distribution of dependent variable in two countries are not normal. According to the result of Wilcoxon rank sum test ($p\text{-value} < 2.2e-16$), we can say that their mean ranks of support for income equality among USA and Germany are significantly different.

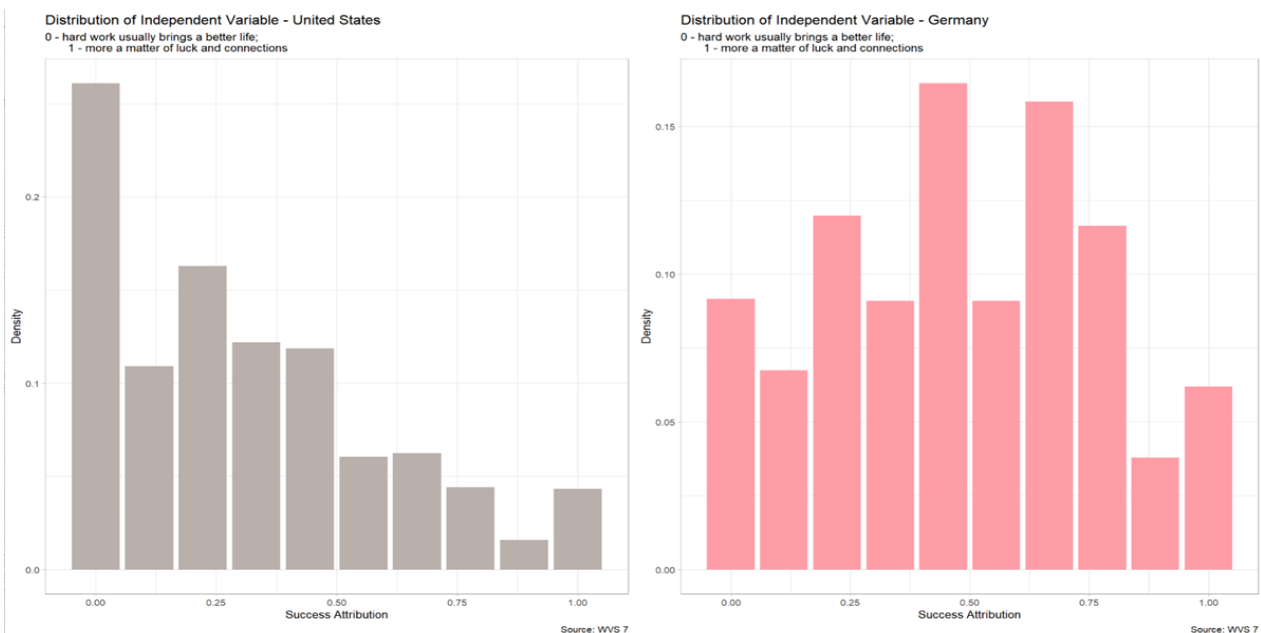


Figure 2. Levels of Main Independent Variable across Two Countries

Americans attribute success to hard work, and more than 25% of the American sample believe that in the long run, hard work usually brings a better life (choose 0), while only 22.65% think that luck plays a bigger role than effort in success (choose 0.5-1), which is even lower than the proportion of choosing 0. In general, more than 75% of Americans believe that success is more due to effort than luck. In contrast, among Germans, the highest percentage of those who choose 0.44, which implies that they consider that effort is slightly greater than luck, is 16.46%, followed by those who choose 0.67, suggesting that they think that luck is slightly greater than effort, with 15.84%. In general, Germans' attribution of success is close to normally distributed, without any particular preference. This reflects that Germans have a more balanced and diverse attribution of success and Americans have a very different distribution of success attribution than Germans.

On the variable of success attribution, the average value of Germans was 0.48 and the median was 0.44. The average for Americans is 0.31, and the median is 0.22. On average, Americans are more likely to believe that success is achieved through hard work, while Germans believe that success requires both hard work and luck. The distribution of main independent variable in two countries are not normal. According to the result of Wilcoxon rank sum test ($p\text{-value} < 2.2e-16$), we can say that their mean ranks of success attribution among USA and Germany are significantly different.

4.2. Control Variables

The number of men and women in Germany is roughly equal, accounting for 49.31% and 50.69% respectively. The proportion of men in the United States is 53.92%, higher than that of women, which is 46.08%. Therefore, controlling this variable is still meaningful, to avoid the different gender ratios affecting the final results.

Only 34.85% of Germans have tertiary education or above, while the United States has as high as 51.61%. This may be related to the professional streaming in Germany, where many German students do not choose to go to university but instead learn vocational skills.

The income distribution of the United States and Germany is basically consistent, where the low-income group (20.51%) and the high-income group (8.12%) in the United States account for a higher proportion than in Germany (16.46% and 6.34% respectively). The medium-income group in Germany accounts for 77.2%, higher than that of the United States (71.37%).

4.3. Associations

We are interested in the association between the dependent variable and the main independent variable. We already know that the distributions of both our dependent variable (support for income equality) and our main independent variable (success attribution) do not conform to normal distributions in Germany and in the United States, because the null hypothesis is rejected in the Shapiro-Wilk normality test ($P < 2.2e-16$). Therefore, we use Spearman's rank correlation here.

In the United States, these two variables have significantly weak positive correlation 0.1, $p\text{-value} = 5.079e-07 < 0.01$, which means that the more success is attributed to luck, the more support income equality. However, in Germany, there is no significant correlation between these two variables at 0.05 significant level, $p\text{-value} = 0.05313 > 0.05$. If we relax the significant level to 0.1, then the correlation between the two variables in Germany is 0.05, a very weak positive correlation. This is consistent with our previous hypothesis. Luck rather than effort as the source of success leads to a larger and statistically significant increase in support in income equality, and the correlation in the indulgent country – the United States is higher than in Germany.

4.4. Regression

$$equal_i = \beta_0 + \beta_1sus_i + \beta_2country_i + \beta_3sus_i \times country_i + \beta_4sex_i + \beta_5edu_i + \beta_6income_i + e_i \quad (1)$$

According to the main research purpose of this paper, we need to compare how two countries with different cultures affect the relationship between success attribution and support for income equality, so our basic model is incorporated into interaction (table 4 model1). We could see that model 1 is significant ($P < 0.01$), while interaction was insignificant ($P = 0.0554 > 0.05$). When we add control variables gradually, we can see that adjusted R^2 is gradually increased from 0.029 in the base model to 0.047 in the final model. Although the models are all significant, in terms of adjusted R^2 , the model does not explain well, and even the final model only explains 4.7% of the variance of the dependent variable. From the insignificance of interaction, it can be seen that the countries have no influence on the relationship between success attribution and support for income equality. We can just say that the US is more supportive of income equality than Germany.

Table 2. Regressions

	Dependent variable: Support for Income Equality			
	(1)	(2)	(3)	(4)
Success Attribution: Luck	0.054* (0.028)	0.050* (0.028)	0.050* (0.028)	0.037 (0.028)
Country: United States	0.094*** (0.018)	0.094*** (0.018)	0.095*** (0.018)	0.086*** (0.018)
Sex: Female		0.029*** (0.010)	0.029*** (0.010)	0.024** (0.010)
Education: Higher			-0.003 (0.010)	0.019* (0.010)
income				-0.195*** (0.025)
Success Attribution × Country (USA)	0.043 (0.035)	0.045 (0.035)	0.045 (0.035)	0.045 (0.035)
Constant	0.440*** (0.016)	0.427*** (0.016)	0.428*** (0.017)	0.520*** (0.020)
Observations	3,963	3,963	3,963	3,963
R2	0.03	0.032	0.032	0.047
Adjusted R2	0.029	0.031	0.031	0.046
Residual std. Error	0.301 (df=3959)	0.301 (df=3958)	0.301 (df=3957)	0.299 (df=3956)
F statistic	40.611*** (df=3; 3959)	32.868*** (df=4; 3958)	26.302*** (df=5; 3957)	32.656*** (df=6; 3956)
Note: *p<0.1; **p<0.05; ***p<0.01				

Now let's discuss in detail the effects of independent variables on the support for income equality in the final model. Success attribution does not have a significant effect on the dependent variable ($P = 0.1822 > 0.05$), and the country does not change the relationship between success attribution and supporting income equality ($P = 0.1983 > 0.05$). But Americans are significantly more in favor of income equality than Germans, women are significantly more in favor of income equality than men, and higher education is significantly more in favor of income equality than lower education. With each unit up the income class, support for income equality decreases by 0.195, keeping other factors

constant. Of all the significant dependent variables, income class has the largest impact on support for income equality, and education has the smallest.

5. CONCLUSION AND DISCUSSION

In this paper, we use individual data from World Values Survey (WVS) wave 7 data (2017-2022) to study how the attribution of success to different factors affects the views on income distribution (specifically, whether to support income equality or inequality). Our main hypothesis is that attributing success to effort rather than luck leads to a larger and statistically significant increase in the acceptance of inequality in the indulgent countries. We indeed find that attributing success to effort is significantly and positively correlated with supporting income inequality in the United States, while this correlation is weaker in Germany. But from the regression results, the country does not significantly change the relationship between success attribution and supporting income equality. Therefore, we reject our main hypothesis and conclude luck rather than effort as the source of success can't lead to a more substantial and statistically significant increase in support in income equality in indulgent countries.

Unlike most empirical papers, this paper confirms Svallfors's (1997) view that effects of success attribution on attitudes towards redistribution are essentially the same across welfare-state regimes, but contradicts Piketty's (1995) theory that in the long term, less belief in individual effort (or, alternatively, more belief in luck) results in more redistribution. Because this paper, like Svallfors (1997), is an empirical paper, it is limited to one point in time, and it covers only a small subset of various attitudes towards distribution.

This paper selects two countries, the United States and Germany, which have a lot in common and their different characteristics are not extreme, so there is a lack of comparison at the national level. Data from the Nordic countries are usually used in research on this topic, but WVS7 has very little data for the Nordic countries, and even if the Nordic countries are looked at as a cluster, there are very few observations, and the results may not be ideal. More data can be collected through questionnaires or cross-border experiments, under which the variables will be more easily controlled and the results more convincing.

REFERENCES

- [1] Aarøe, L., & Petersen, M. B. (2014). Crowding out culture: Scandinavians and Americans agree on social welfare in the face of deservingness cues. *The Journal of Politics*, 76(3), 684-697.
- [2] Alesina, A., Stantcheva, S., & Teso, E. (2018). Intergenerational mobility and preferences for redistribution. *American Economic Review*, 108(2), 521-554.
- [3] Alesina, Alberto, Edward L. Glaeser, and Bruce Sacerdote. (2001). Why doesn't the United States have a European-style welfare state? *Brookings Papers Econ. Activity*, (1), 187-254.
- [4] Almås, I., Cappelen, A. W., & Tungodden, B. (2020). Cutthroat capitalism versus cuddly socialism: Are Americans more meritocratic and efficiency-seeking than Scandinavians? *Journal of Political Economy*, 128(5), 1753-1788.
- [5] Fong, C. (2001). Social preferences, self-interest, and the demand for redistribution. *Journal of Public Economics*, 82(2), 225-246.
- [6] Gärtner, M., Mollerstrom, J., & Seim, D. (2017). Individual risk preferences and the demand for redistribution. *Journal of Public Economics*, 153, 49-55.
- [7] Graham, S. (2020). An attributional theory of motivation. *Contemporary Educational Psychology*, 61, 101861.
- [8] Haerpfer, C., Inglehart, R., Moreno, A., Welzel, C., Kizilova, K., Diez-Medrano, J., Lagos, M., Norris, P., Ponarin, E., & Puranen, B. (2022). World Values Survey Wave 7 (2017-2022) Cross-National Data-Set. Version: 4.0.0. World Values Survey Association. DOI: doi.org/10.14281/18241.18
- [9] Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and brain sciences*, 33(2-3), 61-83.

- [10] Hofstede Insights Ltd.-Culture Factor Group. (2023, October 16). Country comparison tool: Germany vs United States. Retrieved from <https://www.hofstede-insights.com/country-comparison-tool?countries=germany%2Cunited+states>
- [11] Kim, H., & Lee, Y. (2018). Socioeconomic status, perceived inequality of opportunity, and attitudes toward redistribution. *The Social Science Journal*, 55(3), 300-312.
- [12] Linos, K., & West, M. (2003). Self-interest, social beliefs, and attitudes to redistribution. Re-addressing the issue of cross-national variation. *European Sociological Review*, 19(4), 393-409.
- [13] Minkov, M., & Kaasa, A. (2022). Do dimensions of culture exist objectively? A validation of the revised Minkov-Hofstede model of culture with World Values Survey items and scores for 102 countries. *Journal of International Management*, 28(4), 100971.
- [14] Nelson, M. R., & Shavitt, S. (2002). Horizontal and vertical individualism and achievement values: A multimethod examination of Denmark and the United States. *Journal of cross-cultural psychology*, 33(5), 439-458.
- [15] O'Sullivan, Arthur; Sheffrin, Steven M. (2003). *Economics: Principles in Action*. Upper Saddle River, New Jersey 07458: Pearson Prentice Hall.
- [16] Piketty, T. (1995). Social mobility and redistributive politics. *The Quarterly journal of economics*, 110(3), 551-584.
- [17] Svallfors, S. (1997). Worlds of welfare and attitudes to redistribution: A comparison of eight western nations. *European sociological review*, 13(3), 283-304.
- [18] Weiner, B. (1985). Attributional theory of achievement motivation and emotion. *Psychological Review*, 92, 548–573.
- [19] Weiner, B. (2010). The development of an attribution-based theory of motivation: A history of ideas. *Educational psychologist*, 45(1), 28-36.
- [20] World Inequality Lab. (2022). *World Inequality Report 2022*. Retrieved from <https://wir2022.wid.world>