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Meritocratic beliefs and economic growth: A mediating effect of economic inequality

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ABSTRACT

Meritocratic beliefs are defined as people's beliefs in the importance of hard work in societal success relative to other structural factors. As economic inequality grows, the plausibility of fair meritocracy has been called into a question, especially by those left behind by the supposedly meritocratic systems. Using data from the inequality module of International Social Survey Programme (*ISSP*), we find that a stronger belief in meritocratic values is associated with higher levels of inequality. Furthermore, our findings demonstrate a positive link between meritocratic beliefs and economic growth, with some indications that this relationship is mediated by inequality. From a policy perspective, this suggests that when efforts to engineer more equal outcomes in societies undermine the rewards of meritocracy, it has the potential to impede economic growth.

1. Introduction

The term "meritocracy" originated from Michael Young's (1958) book, "The Rise of Meritocracy," where he envisioned a future societal framework where the distribution of wealth, jobs, and power would be contingent on merit, combining intelligence and effort. Young's conceptualization, initially defined as a society where merit equaled IQ plus effort, came with warnings about potential pitfalls and the risk of fostering a demoralized underclass (Young, 1958). Despite these concerns, contemporary discourse has enthusiastically embraced the pursuit of meritocratic ideals, regarding it as positive, fair, and desirable (Allen, 2011; Breen and Goldthorpe, 2001; Kunovich and Slomczynski, 2007).

However, challenges to the meritocratic ideal have surfaced recently as economies experience a slowdown in growth. When the rate of economic growth lags behind the average return on capital, personal wealth among capital owners accumulates faster compared to the general populace, which exacerbates societal inequality (Piketty, 2014). Examining data from 50 countries, Brada and Bah (2014) also sheds light on this concerning trend, where there is a global shift in factor shares favoring capital. Driven by enduring forces rather than cyclical factors, the shift towards a worldwide decrease in labor's share of income since the late 1970s will further fuel the exponential growth of inherited wealth relative to earned wealth (Brada, 2013), which poses a threat to the very promise of meritocracy.

In a society that embraces meritocracy, individuals tend to perceive inequalities based on individual merits as more justified than other forms of inequalities. With the role meritocratic beliefs play in the justification of one's accomplishment or failure in modern societies (Feng et al., 2013; Markovits, 2020; Sandel, 2021), there is a fear that meritocracy will become an unfulfilled promise and what dominates it instead is a landscape of perpetuating income inequality (Goldthorpe, 2003; Mijs, 2015; Sandel, 2021). For policy makers, inequality is a concern as inequality may negatively affect growth (Stiglitz, 2015; Van der Weide and Milanovic, 2014) and further exacerbates the wedge between the returns to capital and growth. This concern is not unfounded as there are extensive research documenting the trend of spiraling upward inequality even among developed nations (Atkinson et al., 2011; Piketty, 2014).

A meritocratic system, rooted in the societal belief that hard work will be justly rewarded, holds the potential to stimulate economic growth. However, if policymakers prioritize narrowing outcome disparities resulting from individual efforts and hard work, it could diminish individuals' dedication to exert effort. Consequently, policies aimed at engineering more equal outcomes within society may present a challenge to the foundational principles of meritocracy that foster

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growth. The aim of this paper is to examine the relationship between meritocratic beliefs and economic growth and explore the degree to which this relationship is mediated by economic inequality.

To assess meritocratic beliefs, we employ two measures. First, we transform the *ISSP* variable into a scale ranging from 0 to 100, following the methodology of Reynolds and Xian (2014), where a higher score indicates a stronger belief in meritocracy. Second, we incorporate the '*HardWork*' measure from Mijs (2020), representing the percentage of individuals who perceive hard work as a significant factor in achieving success on the *ISSP* questionnaire. This measure captures the universality of the perspective that meritocracy is rewarded. While the *ISSP* measure is more comprehensive, encompassing education, ambition, talent, and effort, '*HardWork*' specifically centers on effort as the driving force behind a successful meritocracy.

This study will follow the 3-step mediation analysis from Baron and Kenny (1986). First, we confirm the significance of the relationship between meritocratic beliefs and economic growth (Step 1).[1] Second, we establish the impact of meritocratic beliefs on the proposed mediator, inequality (Step 2). Finally, we assess whether the mediator influences the association between meritocratic beliefs and economic growth (Step 3). From Step 3, whether inequality mediates the relationship between meritocratic beliefs and economic growth depends on whether it has any influence on the p-value associated with meritocratic beliefs in the growth equation. If the p-value of meritocratic beliefs becomes less significant (i.e. increase) once a measure of inequality is included as a control, this would imply that inequality partially mediates the relationship between meritocratic beliefs and growth.

Our analysis reveals a positive correlation between economic growth and meritocratic beliefs, as measured by the *ISSP* variable. The association has the expected positive sign, which suggests that more meritocratic societies are associated with greater levels of GDP growth. Interestingly, once inequality is controlled for, not only the magnitude of the effect of meritocratic beliefs on growth, but also its statistical significance, are weakened. This suggests that inequality partially mediates the relationship between meritocratic beliefs and economic growth.[2] This result is not surprising as meritocratic efforts are less rewarded in societies that focus on equalizing outcomes, which in turn, may reduce effort and productivity. However, meritocratic beliefs as measured by *HardWork* are only weakly correlated with economic growth. This suggests that other aspects of meritocratic beliefs beyond hard work are important in explaining the association between meritocracy and economic growth.

The rest of the paper is organized as follows. Section 2 provides a comprehensive literature review covering topics such as the measurement of meritocratic beliefs, relationship between meritocratic beliefs and income inequality, as well as the relationship between GDP growth and income inequality. Section 3 describes data sources and variables, as well as outlining the descriptive statistics and methodologies employed to test the hypotheses. In Section 4, the findings are presented and analyzed in relation to the research question. Finally, Section 5 concludes the research, highlighting the social implications of the findings, discussing limitations, and making recommendations for future research.

2. Literature review

2.1. Measuring meritocratic beliefs

There has been a considerable effort by researchers in conceptualizing and measuring meritocratic beliefs. In social science research, a common practice of measuring abstract or difficult-to-quantify concepts to construct a scale, which is ordinal ranking of this concept, through surveys and questionnaires.

Meritocracy scales also have been developed by various researchers to measure meritocratic beliefs. One example is the 15-item Preference for the Merit Principle Scale created by Davey et al. (1999), which was later re-tested by Son Hing et al. (2011). This scale measures the extent to which individuals believe that people have equal opportunities in life and that ability and merit are actually rewarded in life (Appendix A-1). Another example is the 7-item scale developed by Ho and Lloyd (1984), which measures the belief that hard work leads to success (Appendix A-2). Reyna and Zimmerman (2013)'s study built upon these scales to develop an adapted scale to measure beliefs in meritocracy and added an 8-item Descriptive Beliefs Scale for Meritocracy (Appendix A-3) that gauged whether they believe that hard work actually leads to success (e.g., "In America, people get rewarded for their effort"). Participants rated these questions on a 5-point scale from 1 (strongly disagree) to 5 (strongly agree).

In more recent work, Castillo et al. (2021) pointed out that despite meritocracy being an increasingly popular concept among societies, there is still a limited understanding of how meritocracy is perceived and valued by individuals. To address this gap, their study measured perceptions and preferences for meritocracy separately. They found that while most people support the idea of meritocracy, their understanding of what it entails varied widely. They proposed to differentiate the usage of the term meritocratic perceptions ("what is"), and meritocratic preferences ("what should be"), as it helps to avoid the confusion caused by the generic term "belief" and better define the two sides of meritocracy under scrutiny. Meritocratic perceptions are defined as people's beliefs about the current system of meritocracy, while meritocratic preferences are defined as people's beliefs about how the system of meritocracy should work (Appendix B).

Several other research (Larsen, 2016; Mijs, 2021; Reynolds and Xian, 2014) have used the secondary data from "Getting ahead" section in the International Social Survey Programme (*ISSP*) to quantify meritocratic belief or similar concepts. 'Getting ahead' section (Appendix C) comprises questions that ask individuals about their attitudes towards getting ahead in society. The purpose of these questions is to gauge people's beliefs about the relationship between hard work and social mobility, and to understand how these beliefs vary across different countries and social groups.

For instance, Larsen (2016) measured the beliefs in the narrative of procedural justice with a set of five questions that aimed to gauge the level of significance participants assigned to various factors that influence getting ahead in society. These factors included "knowing the right people", "having well-educated parents", "coming from a wealthy family", "giving bribes", and "having political connections". Participants rated the importance of each factor on a scale from 0 (essential for getting ahead), indicating the lowest level of procedural justice, to 100 (not important at all). Reynolds and Xian (2014) used similar scores for both meritocratic belief measures and non-meritocratic belief measures, which included discrimination measures. The researchers derived an overall meritocratic perception score by subtracting the respondents' score on the non-meritocratic elements from the score of meritocratic elements.

Mijs (2021) defined meritocratic beliefs as individuals' beliefs in the importance of hard work in success compared to structural factors. In Mijs and Savage's (2020), meritocratic beliefs were measured by the percentage of respondents believing that societal success is determined by hard work, which is also based on data from the *ISSP* "Getting ahead" section. Their research has shown an obvious correlation between meritocratic beliefs and the rise of income inequality in England from 1930 to 2010.

Schroder (2017) also used the secondary data from *ISSP* survey responses, however, utilized different questions to quantify the measure of tolerance for income inequality. Specifically, the study assessed respondents' estimations of the income of a doctor in general practice and

[1] If meritocratic belief is statistically insignificant for economic growth, the concern that their relationship is mediated by inequality is redundant.

[2] Another expression for mediation is mechanism.

a chairman of a large national company relative to that of an unskilled worker. Schroder's findings revealed that highly unequal countries tend to tolerate nearly four times more income inequality than otherwise-similar, more egalitarian countries.

In this paper, we follow Reynolds and Xian (2014) in adopting the *ISSP* survey as a measure of meritocratic beliefs and transforming the scores in the survey into scale ranging from 0 to 100. We also adopt a second measure of meritocratic beliefs based on "*HardWork*" from Mijs (2020), which assesses percentage of individuals who answered hard work is a significant factor in achieving success on *ISSP* questionnaire. The *ISSP* and Hard Work variables, selected as measures of meritocratic beliefs, will be further discussed in the Section 3, providing clarity on the rationale behind their selection.

2.2. Meritocracy and income inequality

Under the assumption of meritocracy, every achievement and failure are viewed as a reflection of an individual's own worth and virtue. The belief that individuals' accomplishments and setbacks are the result of their efforts, talents or lack thereof was bolstered by the neoliberal policies implemented in the West since the 1980 (Hall and Lamont, 2013; Mijs et al., 2016; Somers and Block, 2005). Such notion legitimates economic inequality into personal superiority, and failures become sign of personal defects, justifying why those at the bottom of the society deserve to remain in the same position (Stiglitz, 2015). While meritocracy is often used as a justification for income inequality, it fails to account for the impact of social advantages and luck on an individual's success and opportunities. Some scholars (Dworkin, 2000; Lerner, 1980) argue that meritocracy is a misconception that perpetuates the status quo by attributing outcomes solely to individual merit and effort, while ignoring systemic factors such as structural inequalities. Schwartz and Thompson (1990) pointed out that even if it was possible to use meritocracy to reduce inequality, pure meritocracy may not be feasible or desirable. This is because it could result in a lack of social mobility and an excessive focus on individual achievement, potentially neglecting community and social responsibility.

In today's knowledge-based economy and society, education is becoming increasingly crucial, as the skills and knowledge required for success are more complex and specialized. As argued by Appold (2001), meritocracy may intensify income inequality even further in this environment because individuals with better access to education and opportunities are more likely to succeed than those without such advantages.

Furthermore, sociologists have demonstrated how high-status individuals naturally take an interest in sustaining their advantages with self-justification (Kluegel and Smith, 2017), which allows them to foster beliefs that legitimate closure between them and those below (Lamont, 1992; Lamont et al., 2014). Bernardo (2019)'s research in the Philippines suggested that those who strongly believed in meritocracy were more tolerant towards wealth inequality, and this relationship was stronger among those who identified themselves as having a higher social status. The study contends that this implies a justification for the maintenance of the status quo and may prevent collective action against inequality. Furthermore, even though people tend to believe that income inequality is unjust, their support for policies aimed at reducing it is often influenced by factors such as their own socio-economic class and political affiliation (Janmaat, 2015).

2.3. GDP growth and income inequality

The relationship between income inequality and economic growth has been a topic of much debate in the field of economics. One perspective suggests that unequal distribution of resources can promote investment and innovation, which in turn drives economic growth. However, another viewpoint posits that inequality and credit market constraints can hinder entrepreneurship. Moreover, if society is widely perceived as unfair, it may cause political and social unrest that imposes high macroeconomic volatility, which can eventually translate into slower GDP growth.

The empirical evidence on the relationship between income inequality and economic growth is mixed. A comprehensive review of the literature conducted by Naguib (2017) exhibits that out of 30 studies since 1994 examining the relationship between economic growth and inequality, 18 studies reported a negative association between inequality and economic growth, 8 studies found mixed or unclear relationships, and 4 studies showed a positive relationship between inequality and economic growth. Another literature review by Mdingi and Ho (2022) included 20 studies, of which 9 found a negative relationship between income inequality and economic growth, 7 found a positive relationship, 4 found inconclusive results, and 2 found no relationship.

According to the OECD (2015), countries experiencing a decline in income inequality tend to have faster economic growth compared to those with higher levels of inequality. Furthermore, the OECD report highlights that policies targeting the reduction of inequality can contribute to economic growth. Stiglitz (2015) also emphasizes the positive relationship between reducing income inequality and promoting economic growth, noting that such measures can benefit both the affluent and the less privileged members of society. Taken together, these studies suggest that income inequality can have adverse effects on economic growth, and implementing appropriate policies to address and diminish income inequality can foster sustainable long-term economic development.

Though there is evidence to suggest that income inequality negatively impacts economic growth, there are also studies that point to the opposite or present more complex relationships. Forbes (2000) argued that income inequality can have positive effects on economic growth through the incentive effects of higher income for high-skilled workers. These discrepancies in results highlight the complexity of the variables involved and the significance of model specifications. Campos and Nugent (2002) noted that the relationship between inequality and economic growth may depend on various factors, such as the level of economic development, degree of democracy, and sectoral composition of the economy. Subsequent studies have also emphasized the importance of considering contextual factors.

For example, Van der Weide and Milanovic (2014)'s study found that the negative effect of income inequality on economic growth is concentrated among the poorest segments of the population. They find that reducing income inequality can lead to higher economic growth for the poorest segments of the population. Other studies (Persson and Tabellini, 1994; Alesina and Rodrik, 1994; Berg and Ostry, 2017) have demonstrated that the hindrance is attributed not only to inequality itself but also to factors such as detrimental policies, distributive polices, and social instability stemming from such inequality. They conclude that the optimal policy mix will depend on country-specific factors and the specific context in which policies are implemented.

Kuznets (1955) famously proposed the inverted-U shape hypothesis, suggesting that income inequality first rises with the economy and then drops as an economy develops, and that the early stages of development can benefit from income inequality. However, the more recent study from Banerjee and Duflo (2003) argued that changes in inequality, in any direction, are associated with reduced growth in the next period. The inverted U-curve pattern may align with a basic economic model, but it could also be just an indication of measurement errors. Nonetheless, this non-linearity can explain why previous research results of the relationship between the level of inequality and growth are so different from one another.

In conclusion, while numerous studies have investigated the impact of income inequality on economic growth, yielding a range of findings from negative associations to potential positive effects in specific contexts, a significant research gap exists. The current literature has mainly explored the relationship between meritocratic beliefs and income

inequality as a separate subject, just as it has examined the relationship between GDP growth and income inequality as distinct areas of study. However, there is a lack of research that integrates these three critical elements—meritocratic beliefs, income inequality, and GDP growth—into a unified framework.

This research gap highlights the need to examine how meritocratic beliefs influence a nation's economic growth, mediated through the lens of income inequality. Exploring these intricate connections has the potential to enhance our understanding of these complex dynamics and their broad implications for societies and economies.

3. Data & methodology

3.1. Data

This study utilizes secondary data from the International Social Survey Programme (*ISSP*), Standardized World Income Inequality Database (Solt, 2020), and World Data Indicators to measure meritocratic beliefs, economic inequality and economic growth, respectively.

The *ISSP* dataset includes a large number of observations from 34 countries collected in five different years (1987, 1992, 1999, 2009 and 2019).[3] Since the 1999 survey data only pertained to anti-meritocratic beliefs, and this study employs a measure of pro-meritocratic belief, the 1999 data was not applicable for use in this study. A list of participated countries and their respective survey years can be found in Appendix D-1. To quantify meritocratic beliefs, we utilized a section from the social inequality module of the *ISSP*, commonly used as a measure of meritocratic beliefs, and average the survey responses at the country-year level. Key questions from this section included inquiries such as 'How important is having a good education yourself?,' 'How important is having ambition?,' 'How important is having natural ability?,' and 'How important is hard work?' These questions served as integral components in assessing and measuring meritocratic beliefs within our analysis.

We follow Reynolds and Xian (2014) in transforming the survey average scores for each individual into a scale of 0 to 100, where higher scores reflect higher levels of meritocratic beliefs. Survey questions from the social inequality module of the *ISSP* that are related to pro-meritocratic beliefs are chosen for computing our average scores for meritocratic beliefs. Questions regarding non-meritocratic elements, such as coming from a wealthy family or having well-educated parents, were excluded from our measure.

Beside the *ISSP* based measure, we employ another measure of meritocratic belief, "*HardWork*". The "*HardWork*" measure was derived from the question "<Getting Ahead> how important is hard work?" included in the *ISSP* questionnaire and calculated as the percentage of individuals who answered hard work is a significant factor in achieving success. This measure was also adopted by Mijs (2020).

The *ISSP* measure comprehensively assesses various aspects of meritocratic belief, including education, ambition, talent, and effort. In contrast, the "*HardWork*" measure specifically focuses on one dimension — effort. Mijs (2020) acknowledges that while it does not address 'talent,' it is considered preferable for its emphasis on a more 'democratic' rendering of meritocracy. The "*HardWork*" measure prioritizes the universal aspect of effort, as anyone can work hard, and avoiding a potentially elitist interpretation that might arise when considering varying levels of 'talent' among individuals (Mijs, 2020). This distinction is essential for understanding the nuanced dimensions and democratic nature of meritocratic beliefs within the context of the study.

The Gini Coefficient from Standardized World Income Inequality Database (Solt, 2020) is used to measure income inequality. The SWIID provides income inequality data for 198 countries, covering all available years from 1960 to 2020. This database is composed of data from various sources, including the OECD Income Distribution Database, the World Bank, Eurostat, the UN Economic Commission for Latin America and the Caribbean, the Socio-Economic Database for Latin America and the Caribbean generated by CEDLAS, as well as national statistical offices, which enable a more accurate estimation of income inequality while reducing reliance on a single source of data. To examine the sources of income inequality in different countries over time without the effect of government policies, this study has adopted the measure of "Gini index of market income", which captures the distribution of income before any government intervention and includes all income earned from labor and capital before taxes and transfers. This measure, referred to as *Gini_mkt*, was preferred over the "Gini coefficient of disposable income" measure, which incorporates government transfers and taxes that may introduce distortions in the relationship between income inequality and other variables of interest.

Gross Domestic Product (GDP) per capita (current US$) from 1980 to 2020 as a metric for economic growth, referred to as *GDPpc,* was sourced from the World Data Indicators. Any missing values of *Gini_mkt* and *GDPpc* were replaced with proxy, where possible, using data from the nearest available year within a three-year range. A list of missing years that were replaced with proxy year data, as well as any remaining missing data, is available in Appendix D-2.

To address confounding variables, this research considered various social and political factors while maintaining a parsimonious model to avoid overfitting and multicollinearity issues. Some potential confounding variables, such as political freedom, public expenditure, and corruption index, were examined; however, they either lacked the necessary data points or did not have a significant impact on the study's findings. Consequently, the Human Capital Index (*HumCap*) was kept in the analysis to mitigate its impact on the relationship between meritocratic belief, economic inequality, and economic growth.

The *HumCap* metric assesses the level of human capital that a child can expect to achieve by the age of 18 in a specific country by considering factors such as education and health within the country. A higher HCI reflects greater investment in the population's education and health, which can lead to enhanced productivity and long-term economic growth. This study relied on the Penn World Table (PWT, 2020) as the source of HCI.

Table 1 presents the descriptive statistics of the variables utilized in the analysis.

3.2. The model

We study the association between meritocratic beliefs and economic growth and the extent to which this association is tempered by inequality (see, Baron and Kenny 1986). Mediation analysis is a statistical method utilized to study the underlying mechanism or process by which an independent variable impacts a dependent variable. It investigates whether the relationship between the independent and

Table 1
Descriptive statistics for all variables.

Variable	Obs	Mean	Std. Dev.	Min	Max
GDPpc	78	28,062	20,374	936	84,122
Gini_mkt	82	46.16	5.42	30.60	71.00
HumCap	81	3.24	0.36	2.27	3.89
ISSP	82	57.89	4.23	48.91	69.17
HardWork	82	0.73	0.13	0.38	0.96

[3] The surveys conducted between 1987 and 2009 were compiled by the *ISSP*, with the correct question numbers and scales matched. However, the dataset did not yet include the 2019 survey. Therefore, the 2019 data was manually added to the set using the *ISSP* Codebook as a reference. In addition, *ISSP* Germany data was collected separately for Western and Eastern Germany until 2009; it was subsequently aggregated for this research to represent the whole Germany because other measures used in the study were not available at the East/West Germany level.

dependent variables is direct or indirect and whether the intermediate variables, referred to as mediators, partially or fully mediate the relationship.

To be specific, this mediation analysis is comprised of three steps as follows.

Step 1. *ISSP → GDPpc (GDPpc =a0+b1 ISSP + e)*

The first step is to confirm that *b1* is significant, as without a significant relationship between meritocratic beliefs and economic growth, there is nothing to mediate.

Step 2: *ISSP → Gini_mkt (Gini_mkt =b0+b2 ISSP +e)*

The second step aims to confirm that meritocratic beliefs affects the suggested mediator, which in this case is inequality (*Gini_mkt*). This step will confirm whether higher levels of meritocratic beliefs correspond to higher levels of inequality.

Step 3*: ISSP + Gini_mkt → GDPpc (GDPpc =c0 +b3 Gini_mkt +b4 ISSP +e)*

The final step involves testing whether meritocratic beliefs (*ISSP*) still predicts economic growth (*GDPpc*) when economic growth is regressed on both meritocratic beliefs (*ISSP*) and the mediator. If the effect of *ISSP* on *GDPpc* completely disappears, *Gini_mkt* fully mediates between *ISSP* and *GDPpc*. If *ISSP* completely predicts *GDPpc*, it suggests that there are no mediation effects. To gauge the mediation effect, we will particularly focus on the p-value associated with the *ISSP* coefficient in the presence of the mediator. If the p-value for *ISSP* is larger (less significant) when economic growth is regressed on both *ISSP* and *Gini_mkt* compared to when regressed only on *ISSP*, it suggests that *Gini_mkt* partially mediates the relationship between *ISSP* and *GDPpc*. In this scenario, the initial impact of meritocratic beliefs on economic growth is still evident, but the presence of the mediator alters the statistical significance, aligning more closely with the complexities observed in real-life data.

4. Findings and analysis

We first establish if meritocratic beliefs are associated with growth. This is affirmed by the results from Model (1) in Table 2, which show a positive and significant relationship between meritocratic beliefs and economic growth, which is measured at both the current time period (t) and one-year later (t+1). Similarly, a significant and positive relationship between meritocratic beliefs and Gini coefficients measured at both time period t and time period t+1 is found from results in Model (2), suggesting that stronger meritocratic beliefs are associated with higher levels of income inequality within societies. Specifically, a 1 % increase in the *ISSP* measure of Meritocratic Belief corresponds to a 0.334 % or 0.305 % increase in *Gini_mkt*, a measure of income inequality at either t or t+1 period.

Now that we have established the association between meritocratic beliefs and growth, we next examine if inequality has a mediating effect on this relationship. In Model (3), we introduce inequality, as measured by *Gini_mkt*, as a control variable to see if doing so would weaken the relationship between meritocratic beliefs and growth. The results show that the effect of meritocratic belief on economic growth is still significant, but its magnitude is smaller than what is reported in Model (1). This suggests that inequality partially mediates the relationship between meritocratic belief and economic growth. The regression results for the lagged year ($t + 1$) also supported the partial mediation of economic inequality in the relationship between meritocratic beliefs and the economy. Our results suggest that inequality plays a role in explaining why meritocratic beliefs are associated with growth. This aligns with the notion that when efforts to engineer more equal outcomes in societies undermine the rewards of meritocracy, it has the potential to diminish individual productivity and, consequently, impede economic growth.

As an aside, we have conducted several diagnostic tests for our regression, where the results are omitted to save space (and available upon request). First, we have conducted the Jarque-Bera test (Jarque and Bera, 1987), which confirms that the normality assumption of the error terms is reasonable and thereby validating the regression analysis results. We have also conducted the VIF test, which shows that our explanatory variables have low levels of multicollinearity and therefore are not highly correlated. Finally, we have implemented the White's (1980) test and find that our error can reasonably be approximated by the assumption of homoskedasticity.

Finally, as an alternative to log*ISSP* - a measure of meritocratic beliefs, we consider a subset measure of such beliefs based on *HardWork*, where it represents the percentage of individuals who perceive hard work as a significant factor in achieving success on the *ISSP* questionnaire. The results from Model (1) in Table 3 indicate that the relationship between *HardWork* and economic growth was not statistically significant at time t. Although there was a slight improvement in significance at time $t + 1$, the level of significance remained relatively low. Results from Model (2) provide additional evidence for the positive association between meritocratic beliefs and income inequality, both at time t and $t + 1$. This finding confirms the notion that meritocratic beliefs have a positive impact on income inequality. Since the coefficient of *HardWork* in Model (1) is insignificant at the 5 % significance level, further investigation into the mediating impact in Model (3) was deemed less meaningful for both time t and $t + 1$; the mediation effect of income inequality found in Table 2 is therefore not supported here.

Table 2
Meritocratic Belief measured by log*ISSP*.

Variables	Model (1)		Model (2)		Model (3)	
	log*GDPpc* (t)	log*GDPpc* ($t + 1$)	log*Gini_mkt* (t)	log*Gini_mkt* ($t + 1$)	log*GDPpc* (t)	log*GDPpc* ($t + 1$)
log*ISSP*	2.657**	2.971***	0.334**	0.305**	2.006**	2.019**
	(1.046)	(1.02)	(0.155)	(0.143)	(0.996)	(0.948)
	[0.011]	[0.004]	[0.031]	[0.033]	[0.044]	[0.033]
log*Gini_mkt*					2.414***	
					(0.732)	
					[0.001]	
log*Gini_mkt*_lead1						4.190***
						(0.843)
						[0.000]
HumCap	2.101***	2.013***	0.161***	0.155***	1.768***	1.447***
	(0.206)	(0.2)	(0.0316)	(0.0294)	(0.218)	(0.216)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Constant	−7.636 *	−8.628 **	1.955***	2.093***	−13.2 ***	−19.1 ***
	(4.081)	(3.977)	(0.596)	(0.551)	(4.082)	(4.098)
	[0.061]	[0.030]	[0.001]	[0.000]	[0.001]	[0.000]
Observations	77	77	81	75	77	71
Number of Countries	34	34	36	34	34	32

Note: Standard errors in parentheses. p-value in square parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 3
Meritocratic Belief measured by *HardWork*.

VARIABLES	Model (1)		Model (2)		Model (3)	
	log*GDPpc* (t)	log*GDPpc* ($t+1$)	log*Gini_mkt* (t)	log*Gini_mkt* ($t+1$)	log*GDPpc* (t)	log*GDPpc* ($t+1$)
HardWork	1.049	1.321*	0.188**	0.207**	1.377	2.127*
	(0.800)	(0.784)	(0.094)	(0.084)	(1.055)	(1.053)
	[0.190]	[0.092]	[0.044]	[0.014]	[0.199]	[0.051]
log*Gini_mkt*					3.021***	
					(1.038)	
					[0.006]	
log*Gini_mkt*_lead1						4.068***
						(1.199)
						[0.002]
HumCap	2.170***	2.082***	0.165***	0.156***	1.725***	1.403***
	(0.211)	(0.207)	(0.031)	(0.029)	(0.321)	(0.332)
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Constant	2.145***	2.226***	3.158***	3.175***	−8.315**	−11.84***
	(0.775)	(0.760)	(0.102)	(0.092)	(3.311)	(3.845)
	[0.006]	[0.003]	[0.000]	[0.000]	[0.016]	[0.004]
Observations	77	77	81	75	77	71
Number of Countries	34	34	36	34	34	32

Note: Standard errors in parentheses. p-value in square parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

These findings underscore the complexity of the interplay between meritocratic beliefs, income inequality, and economic growth. While meritocratic beliefs may contribute to income inequality, their impact on economic growth is less clear. Additional research is needed to explore this relationship comprehensively.

5. Conclusion

Meritocracy is a belief system that posits individual's worth and virtue as the primary determinants of their successes and failures. However, this ideology can exacerbate income inequality since those who succeed are perceived as deserving of their high incomes, while those who do not succeed are viewed as undeserving. This viewpoint can lead to a situation where income inequality is seen as a natural outcome of individual differences, rather than as a societal problem that needs to be addressed. Through its impact on income inequality, meritocracy may eventually affect economic growth of the society.

Using data from 34 countries for four survey years spanning from 1987 to 2019, this study provides evidence supporting the positive association between meritocratic beliefs and income inequality. This suggests that meritocratic ideals correlate with higher levels of inequality in societies. Additionally, we also observe some evidence that the association between meritocratic beliefs and economic growth is mediated by inequality.

In light of the observed connection between meritocratic beliefs, inequality, and economic growth, policymakers should carefully consider certain factors. From a practical standpoint, it is crucial to understand the potential impact of promoting a highly meritocratic system on economic growth. Nevertheless, policymakers must strike a delicate balance between promoting meritocracy and ensuring equality to avoid undermining societal stability.

Furthermore, addressing the challenges posed by meritocratic beliefs and reducing inequality involves a multifaceted approach. This includes promoting collective goals, fostering teamwork and collaboration, emphasizing social responsibility, and increasing awareness of external factors influencing individual success. Critical to this effort is the implementation of equal opportunity policies, such as investments in public education, healthcare, social services, and fair labor practices. However, it is important to recognize that changing mindsets and transforming societal values is a complex undertaking. Achieving meaningful change requires a comprehensive approach that involves collaboration across various sectors of society.

This study has several limitations that should be acknowledged. Firstly, due to the imbalanced participation of countries across survey years, the resulting 77 country-level observations reflect the constrained availability of comprehensive data points. This limitation arises from the inherent challenge of evaluating and measuring meritocratic belief, inequality and economic growth, and thus may lead to results of not providing a fully representative picture of the broader and complex relationship between these variables over time.

Secondly, results from two measures of meritocratic beliefs did not provide compelling evidence to support the hypothesis that meritocratic beliefs have an effect on a country's economic growth through mediating effect of inequality. This could be potentially attributed to the limitations of the *HardWork* measure, which relies on a single question and may not fully capture the breadth of meritocratic beliefs and their impact on economic growth. Moreover, as elaborated in Section 2, the intricate relationship between income inequality and economic growth complicates the analysis further.

Thirdly, the study relied solely on the *ISSP* secondary data, which restricted the inclusion of additional survey questions beyond what was available in the original survey, and limited the consideration of other relevant variables, such as the Corruption Perception Index and the Global Innovation Index, due to the lack of data for the study years.

While this study presents statistical evidence of an association between meritocratic beliefs and economic inequality, it is crucial to recognize that it does not establish a causal relationship. Factors such as GDP and inequality could potentially influence meritocratic beliefs in the opposite direction, leading to a bidirectional relationship. For example, high levels of inequality or economic growth may shape individuals' perceptions and attitudes toward meritocracy, rather than meritocratic beliefs influencing inequality. Furthermore, other factors such as physical capital that are important determinants to GDP are not included in the model as well. Therefore, caution should be exercised when drawing any policy implications.

To enhance our understanding of the causal relationship between meritocratic beliefs and economic inequality, future studies should consider exploring rigorous experimental designs to establish stronger evidence for causal connections. Another direction for future research is to include additional measures such as tolerance for inequality and by incorporating more recent data via primary data collection. By employing a combination of experimental designs and comprehensive data collection, researchers can enhance our understanding of the complex relationship between meritocratic beliefs, inequality, and economic growth and enable policymakers to devise effective strategies that promote economic growth and social justice concurrently.

Declaration

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Appendices

Appendix A-1: 15-item Preference for the Merit Principle Scale (Davey et al., 1999)

1. In work organizations, each employee ought to be named employee of the month at least once, even if he or she is not deserving (R).
2. In organizations, people who do their job well ought to rise to the top.
3. It is wrong for an employee to give a job to someone they know without advertising the job to other candidates.
4. In life, people ought to get what they deserve.
5. The effort a worker puts into a job ought to be reflected in the size of a raise he or she receives.
6. When students are working on a group project, each member of the group ought to receive the same grade regardless of the amount of effort each team member puts in (R).
7. Promotion decisions ought to take into account the effort workers put into their job.
8. Members of a work team ought to receive different pay depending on the amount each person contributed.
9. Sometimes it is appropriate to give a raise to the worker who most needs it, even if he or she is not the most hard working (R).
10. Qualifications ought to be given more weight than seniority when making promotion decisions.
11. Between two equally smart students applying for the same job, the one who is the harder worker ought to always get the job.
12. When a bonus is given to a work team for good performance, the money ought to always be divided equally among the group members (R).
13. It is never appropriate to choose which student to hire by how much the student needs the job.
14. People ought to be able to get away with poor quality work under some circumstances (R).
15. If every person in an office has the same abilities, the promotion ought to always be given to the person who puts in the most effort.

Notes. Items indicated with an (R) are reverse-keyed.

Instructions state: "Please indicate the extent to which you agree or disagree with each of the following statements by circling the appropriate number on the scale below."

Items are to be rated on a 7-point scale with the following anchors (1) strongly disagree, (2) moderately disagree, (3) slightly disagree, (4) neither disagree nor agree, (5) slightly agree, (6) moderately agree, (7) strongly agree.

Appendix A-2: 7-item scale developed on hard work leads to success (Ho and Lloyd, 1984)

1. People who work deserve success.
2. Hard work is fulfilling in itself.
3. Nothing is impossible if you work hard enough.
4. If you work hard you will succeed.
5. You should be the best at what you do.
6. By working hard an individual can overcome most obstacle that life presents and make his or her own way in the world.
7. Hard work is not a key to success. (R)

Note. R = reverse scored.

Appendix A-3: 8-item Descriptive Beliefs Scale for Meritocracy (Reyna and Zimmerman, 2013)

1. In American society, working hard does not automatically lead to success. (R)
2. Employed individuals are responsible people.
3. People who work really hard might not become successful. (R)
4. In America, people get rewarded for their effort.
5. Low-status groups do not work as hard as high-status groups do.
6. Discrimination limits some people's ability to succeed. (R)
7. People get ahead when they know the "right" people rather than when they work hard. (R)
8. There is not a clear link between hard work and success. (R)

Note. R = reverse scored.

Appendix B: Items of the meritocratic perceptions and meritocratic preferences (Castillo et al., 2021)

Component	Dimensions	Item
Perception	Meritocratic	Those who make more effort get greater rewards than those who work less.
		Those with more talent get greater rewards than those who have less talent.
	Non meritocratic	Those who have rich parents manage to get ahead.
		Those who have good contacts manage to get ahead.
Preference	Meritocratic	Those who make more effort should get greater rewards than those who make less effort.
		Those who have more talent should get greater rewards than those who have less talent.
	Non meritocratic	It is fine it those with rich parents get ahead.
		It is fine if those with good contacts get ahead.

Appendix C: ISSP social inequality – "Reasons to get ahead" (2019)

Please tick one box for each of these to show how important you think it is for getting ahead in life.

	Essential	Very important	Fairly important	Not very important	Not important at all	Can't choose
<Getting Ahead>how important is coming from a wealthy family?	1	2	3	4	5	8
<Getting Ahead> how important is having well educated parents?	1	2	3	4	5	8
<Getting Ahead> how important is having a good education yourself?	1	2	3	4	5	8
<Getting Ahead> how important is hard work?	1	2	3	4	5	8
<Getting Ahead> how important is knowing the right people?	1	2	3	4	5	8
<Getting Ahead> how important is having political connections?	1	2	3	4	5	8
<Getting Ahead> how important is having ambition	1	2	3	4	5	8
<Getting Ahead> how important is having natural ability	1	2	3	4	5	8

Appendix D-1: ISSP survey participating countries by year

Participating countries	**1987**	**1992**	**1999**	**2009**	**2019**
Australia	X	X	X	X	X
Austria	X	X	X	X	X
Bulgaria		X	X	X	X
Canada		X	X		
Chile			X	X	X
Croatia					X
Cyprus			X	X	
Czech Republic		X**	X	X	X
Denmark					X
Finland					X
France			X	X	X
Germany	X*	X	X	X	X
Great Britain	X	X	X	X	X
Hungary	X	X	X	X	
Iceland					X
Israel			X	X	X
Italy	X	X		X	X
Japan			X	X	X
Latvia			X	X	
Lithuania					X
New Zealand		X	X	X	X
Norway		X	X	X	X
Philippines		X	X	X	X
Poland	X	X	X	X	
Portugal			X	X	
Russia		X	X	X	X
Slovak Republic		X**	X	X	
Slovenia		X	X	X	X
South Africa					X
Spain			X	X	
Suriname					X
Sweden		X	X	X	X
Switzerland	X			X	X
Taiwan					X
Thailand					X
USA	X	X	X	X	X
Venezuela					X

*: In 1987 Germany was still divided in West and East Germany and only the Western part of Germany is part of the cumulation in this year.
**: In 1992 it was Czechoslovakia (CSFR) participating in the Social Inequality module. Since in 1993 Czechoslovakia split into Slovakia and Czech Republic, the data of 1992 was assigned to the respective regions of both countries.

Appendix D-2: missing data replaced with proxy year data & remaining missing data

Measure	Country	Missing year	Proxy year
Gini_mkt	Iceland	2018	2017
Gini_mkt	Iceland	2019	2017
Gini_mkt	Japan	2019	2018
Gini_mkt	Philippines	2019	2018
Gini_mkt	South Africa	2019	2017
Gini_mkt	South Africa	2018	2017
Gini_mkt	Suriname	2017	2016
Gini_mkt	Suriname	2018	2016
Gini_mkt	Suriname	2019	2016
GDPpc	Slovenia	1992	1995
GDPpc	Slovenia	1993	1995
GDPpc	Slovenia	1994	1995
GDPpc	Hungary	1987	Not available
GDPpc	Poland	1987	Not available
GDPpc	Taiwan	2019	Not available
GDPpc	Venezuela	2019	Not available

References

Alesina, A., Rodrik, D., 1994. Distributive politics and economic growth. Q. J. Econ. 109 (2), 465–490.

Allen, A., 2011. Michael young's the rise of the meritocracy: a philosophical critique. Br. J. Educ. Stud. 59 (4), 367–382.

Appold, S.J., 2001. Is meritocracy outmoded in a knowledge-based economy? Singap. Econ. Rev. 46 (1).

Atkinson, A.B., Piketty, T., Saez, E., 2011. Top incomes in the long run of history. J. Econ. Lit. 49 (1), 3–71. https://doi.org/10.1257/jel.49.1.3.

Banerjee, A.V., Duflo, E., 2003. Inequality and growth: what can the data say? J. Econo. Growth 8 (3), 267–299.

Baron, R.M., Kenny, D.A., 1986. The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. J. Pers. Soc. Psychol. 5, 1173–1182.

Berg, A.G., Ostry, J.D., 2017. Inequality and unsustainable growth: two sides of the same coin? IMF Econ. Rev. 65, 792–815.

Bernardo, A.B.I., 2019. Meritocracy beliefs and intolerance towards wealth inequality among higher subjective social status Filipinos (Creencias meritocráticas e intolerancia ante la desigualdad económica entre la población filipina de nivel socioeconómico subjetivo alto). Rev. Psicol. 27 (2), 295–325.

Brada, J.C., 2013. The distribution of income between labor and capital is not stable: but why is that so and why does it matter? Econ. Syst. 37 (3), 333–344.

Brada, J.C., Bah, E.M., 2014. Growing income inequality as a challenge to 21st century capitalism. *Italian Association for the Study of Economic Asymmetries*, 1402. Working Paper.

Breen, R., Goldthorpe, J.H., 2001. Class, mobility and merit: the experience of two British birth cohorts. Eur. Sociol. Rev. 17, 81–101.

Campos, N.F., Nugent, J.B., 2002. Who is afraid of political instability? Income inequality, democracy, and the resource curse. Econo. Politics 14 (3), 225–252. https://doi.org/10.1111/1468-0343.00100.

Castillo, J.C., Iturra, J.C., Meneses, F.J., Maldonado, L., & Atria, J. (2021). Measuring perceptions and preferences for meritocracy. 10.31235/osf.io/mwk52.

Davey, L.M., Bobocel, D.R., Son Hing, Zanna, M.P., 1999. Preference for the Merit Principle Scale: An individual difference measure of distributive justice preferences. Soc. Justice Res. 12, 223–240.

Dworkin, R., 2000. Sovereign Virtue: the Theory and Practice of Equality. Harvard University Press.

Feng, C., Luo, Y., Gu, R., Broster, L.S., Shen, X., Tian, T., Luo, Y.J., Krueger, F., 2013. The flexible fairness: equality, earned entitlement, and self-interest. PLoS One 8 (9). https://doi.org/10.1371/journal.pone.0073106.

Forbes, K., 2000. A reassessment of the relationship between inequality and growth. Am. Econ. Rev. 90 (4), 869–887.

Goldthorpe, J., 2003. The myth of education-based meritocracy. New Econ. 10 (4), 234–239. https://doi.org/10.1046/j.1468-0041.2003.00324.x.

Hall, P.A., Michèle, Lamont, 2013. Social Resilience in the Neoliberal Era. Cambridge University Press.

Ho, R., Lloyd, J.I., 1984. Development of an Australian work ethic scale. Aust. Psychol. 19 (3), 321–332.

Janmaat, J.G., 2015. Subjective inequality: a review of international comparative studies on people's views about inequality. J. Educ. Work 28 (5), 454–472. https://doi.org/10.1080/13639080.2013.853342.

Jarque, C.M., Bera, A.K., 1987. A test for normality of observations and regression residuals. Int. Stat. Rev. 55 (2), 163–172.

Kluegel, J.R., Smith, E.R., 2017. Beliefs About Inequality: Americans' Views of What is and What Ought to be. Taylor and Francis.

Kunovich, S., Slomczynski, K.M., 2007. Systems of distribution and a sense of equity: a multilevel analysis of meritocratic attitudes in post-industrial societies. Eur. Sociol. Rev. 23, 649–663.

Kuznets, S., 1955. Economic growth and income inequality. Am. Econ. Rev. 45 (1), 1–28.

Lamont, M., 1992. Money, morals, and manners: The culture of the French and the American upper-middle class. University of Chicago Press. https://doi.org/10.7208/chicago/9780226922591.001.0001.

Lamont, M., Beljean, S., Clair, M., 2014. What is missing? cultural processes and causal pathways to inequality. Socio Econ. Rev. 12 (3), 573–608. https://doi.org/10.1093/ser/mwu011.

Larsen, C.A., 2016. How three narratives of modernity justify economic inequality. Acta Sociol. 59 (2), 93–111. https://doi.org/10.1177/0001699315622801.

Lerner, M.J., 1980. The Belief in a Just world: a fundamental Delusion. Plenum Press.

Markovits, D., 2020. The Meritocracy Trap. Penguin Books.

Mdingi, K., Ho, S.Y., 2022. Literature review on income inequality and economic growth. Int. J. Soc. Econ. 49 (1), 40–58. https://doi.org/10.1108/IJSE-10-2020-0553.

Mijs, J.J.B., Savage, M., 2020. Meritocracy, elitism and inequality. Political Quart. 91 (2), 397–404. https://doi.org/10.1111/1467-923x.12828.

Mijs, J.J., 2015. The unfulfillable promise of meritocracy: three lessons and their implications for justice in education. Soc. Justice Res. 29 (1), 14–34. https://doi.org/10.1007/s11211-014-0228-0.

Mijs, J.J., Bakhtiari, E., Lamont, M., 2016. Neoliberalism and symbolic boundaries in Europe. Socius Sociol. Res. Dyn. World 2. https://doi.org/10.1177/2378023116632538, 237802311663253.

Mijs, 2021. The paradox of inequality: income inequality and belief in meritocracy go hand in hand. Socio Econ. Rev. 19 (1), 7–35. https://doi.org/10.1093/ser/mwy051.

Naguib, C., 2017. The relationship between inequality and growth: evidence from New Data. Swiss J. Econ. Stat. 153 (3), 183–225. https://doi.org/10.1007/bf03399507.

Organisation for Economic Co-operation and Development (OECD), 2015. In it Together: Why less Inequality Benefits All. OECD Publishing.

Persson, T., Tabellini, G., 1994. Is inequality harmful for growth? Am. Econ. Rev. 84 (3), 600–621.

Piketty, T., 2014. Capital in the twenty - first century Thomas Piketty; translated by Arthur Goldhammer. Belknap Press, London.

Reynolds, J., Xian, H., 2014. Perceptions of meritocracy in the land of opportunity. Res. Soc. Stratif. Mobil. 36, 121–137. https://doi.org/10.1016/j.rssm.2014.03.001.

Sandel, M.J., 2021. The Tyranny of Merit. Penguin.

Schwartz, M.A., Thompson, A., 1990. Divided We Stand: Redefining politics, technology, and Social Choice. Harvester Wheatsheaf.

Solt, F., 2020. Measuring income inequality across countries and over time: the Standardized World Income Inequality Database. Soc. Sci. Q. 101 (3), 1183–1199. https://doi.org/10.1111/ssqu.12795. SWIID Version 9.2, December 2021.

Somers, M.R., Block, F., 2005. From poverty to perversity: ideas, markets, and institutions over 200 years of welfare debate. Am. Sociol. Rev. 70 (2), 260–287. https://doi.org/10.1177/000312240507000204.

Son Hing, L.S., Bobocel, D.R., Zanna, M.P., Garcia, D.M., Gee, S.S., Orazietti, K., 2011. The merit of meritocracy. J. Pers. Soc. Psychol. 101 (3), 433.

Stiglitz, J.E., 2015. The Great Divide: Unequal Societies and What We Can Do About them. WW Norton & Company.

Van der Weide, R., Milanovic, B., 2014. Inequality is bad for growth of the poor (but not for that of the rich). J. Econ. Growth 19 (4), 351–384.

White, H., 1980. A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. Econometrica 48 (4), 817–838.

Young, M., 1958. The Rise of Meritocracy. Oxford University Press.

Zimmerman, J.L., Reyna, C., 2013. The meaning and role of ideology in system justification and resistance for high- and low-status people. J. Pers. Soc. Psychol. 105 (1), 1–23. https://doi.org/10.1037/a0032967.