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Norunn Hornset & Indra de Soysa

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Does Empowering Women in Politics Boost Human Development? An Empirical Analysis, 1960–2018

Norunn Hornset^a and Indra de Soysa^b

^aDepartment of Geography, Norwegian University of Science and Technology, Trondheim, Norway;

^bDepartment of Sociology and Political Science, Norwegian University of Science and Technology, Trondheim, Norway

ABSTRACT

Does the political empowerment of women increase human development? Using equality of access to schooling and health as indicators of pro-poor development policy and objective measures of female school completion and child mortality under the age of five as measures of human capital development, pooled ordinary least square (OLS) fixed effects regressions show robustly that the political empowerment of women associates positively with higher human capital. These results are statistically significant and substantively large, and the effects of gender empowerment trump those of democracy and good governance. Since the political empowerment of women is driven by structural conditions underlying democracy and economic development, the independent effect of gender empowerment relative to effects of democracy and institutional quality suggests a powerful role for the former. Interactions between gender empowerment and factors associated with higher child mortality; namely, strict autocracy and the Middle East and North Africa region, suggest that empowerment conditions these known adverse factors in the direction of lower child mortality. For addressing endogeneity, we use 10- and 20-year lagged values of gender empowerment as instruments for current empowerment, which pass both instrument relevance and instrument exclusion criteria. Two-stage least square regressions confirm our basic results. While the causal effects of gender empowerment remain somewhat speculative, a barrage of tests on our data suggests a powerful role for gender empowerment for increasing human capital.

KEYWORDS

gender empowerment;
human capital; democracy;
modernisation; education;
health

I am dreaming to see my children as doctors and engineers. That is my desire. (A woman who recently moved out of poverty. Chennampalle, Andhra Pradesh, India. Cited in Narayan (2009, 32))

CONTACT Indra de Soysa indra.de.soysa@svt.ntnu.no Department of Sociology and Political Science, Norwegian University of Science and Technology, Trondheim 7491, Norway

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Introduction

Nobel laureate in economics, Esther Duflo, argues that female empowerment can be a powerful force for development (Duflo 2012). Several decades earlier, another Nobel laureate, Amartya Sen, argued that development is driven by the institutional environment that allows “freedoms” to flourish, where people have “agency” to follow their desire for doing well, also termed the “capability” approach to development (Sen 1999). Sen highlights how development is held back due to the lack of agency among the poor, especially women, hurting economic development. Over the last several decades, scholars have attacked the question of gender and development from a variety of angles (Klasen 2017; King and Mason 2001). First, many try to explain why women’s positions in society remain subordinate to men and how they might advance in order to bring about greater social justice (Htun and Weldon 2018). Others highlight the ways in which women disproportionately bear the burdens of underdevelopment and suffer the consequences of poverty, disease, and violence (Momsen 1991; Htun and Jensenius 2020). Indeed, it is now taken as a truism that female empowerment is not just intrinsically valuable but that it promotes development, particularly by redirecting the allocation of resources towards enhanced capabilities that may drive endogenous economic and political change (Hossain, Asadullah, and Kambhampati 2019). This paper empirically examines how female empowerment affects human capital, which is both an objective of successful development (enhanced capability) and a vital input.

Using novel data on the political empowerment of women, assessed as the freedoms and civil liberties available to women and the extent of their participation in civil society, as well as data on the equality of access of the poor to health and education, and objective measures of under-five mortality rates and female school completion, we find extremely robust evidence to suggest that gender empowerment associates with higher human capital. These effects are independent of several relevant controls, including formal electoral democracy, where people participate freely in electing their governments and a measure of government corruption. In other words, the effect of women’s empowerment on our indicators of human capital is independent of two strong direct underlying causes of gender empowerment. Moreover, empowerment’s effects are also independent of several control variables, such as the level of economic development (income per capita), another strong indirect way in which gender empowerment occurs. While we cannot fully rule out endogeneity, both from omitted variables and reverse causality, we use historical values (10- and 20-year lagged values of gender empowerment) as instruments in instrumental variables regressions, which also suggest that current gender empowerment matters for reducing child mortality. Further, gender empowerment conditions known adverse effects of autocracy on human development in

a positive direction, signifying a powerful role for the political empowerment of women for achieving better human development outcomes despite adverse conditions of governance. Not only are the effects statistically significant, but they are substantively quite large and persistent across a number of estimating techniques, sample sizes, and alternative models. The rest of the paper discusses theory, previous empirical findings, our data and methods, the results, and finally we conclude with a discussion of our main findings.

Theory

Models of democratic governance suggest that the quality of elected officials determines the effectiveness of governance, and that these policies reflect better the wishes of the voters, especially the nature and extent of the allocation of public goods (Rothstein 2011; Besley and Persson 2011). Providing high-spillover public goods, such as schooling and health, which increase human capital, thus, might be viewed as “productive” public policy. Human capital formation in developing countries is thought to be critical for sustainable economic growth and development (Barro 2001; Galor and Weil 1996). Such factors as health and education are not simply intrinsically valuable for individuals, but they collectively boost returns to investment because of productivity increases. Human capital determines technological change and innovation through productivity enhancement (Romer 1993). If neoclassical growth theory suggested that poor nations will catch up with the rich through the process of convergence, where poor countries grow faster than the rich because of diminishing returns to capital, new growth theory suggests that convergence is conditional on initial levels of human capital. Indeed, rather than convergence, what we have seen is divergence, where the gaps between the rich and poor world have increased, and there are no signs that the rich world slows down (Pritchett 1997). Why do some societies prioritise human development and others don't? As some other argue, however, what matters for development are the institutions that underlie the incentives that make people invest in human capital, which in turn drives the innovation and technical progress required for sustained economic development (Acemoglu and Robinson 2012). What role then might the political empowerment of women play for predicting higher human capital accumulation?

As Acemoglu and Robinson (2012) argue, inclusive political institutions are likely to encourage inclusive social and economic institutions, so that broad-based development can occur, creating a virtuous circle of development and freedom. Conversely, extractive political and social institutions that benefit some over others can persist in vicious circles of poverty and exploitation. Institutional change towards greater inclusivity is unlikely to occur, however, where relative power between a status quo (wealthy elites, men, militaries etc.) are skewed in the direction of those with much to lose, if indeed institutional

and technological change upsets the balance of power. While Acemoglu and Robinson (2012) have little to say about inclusive institutions relative to gender, or directly address the question of human capital growth, the general thrust of their argumentation is that greater political openness can drive change towards inclusivity, which in turn minimises particularistic “captured” governance that reduces broad-based human development.

Institutions, however, are both formal and informal, where gender-based discrimination potentially excludes roughly half of any given society. Even in formal democracies, such as India, Pakistan, and many other poor democracies, political and social processes that are exploitative can persist at subnational levels on a *de facto* and *de jure* basis, where women’s empowerment is highly circumscribed by formal laws and informal barriers, despite high levels of formal democracy. Indeed, when it comes to human capital gains for the poor, there is a great deal of disagreement about whether or not democratic freedoms alone matter (Ross 2006). Democracy could just as well empower local elites and ethnic majorities that would favour private goods rather than public goods that increase broad-based human capital (Bardhan 2005). Contrarily, dictators, who are generally free from having to please any particular electoral interest, may have great incentives to provide human capital broadly to ensure economic growth and productivity required to satisfy key supporters and secure political survival (Bueno de Mesquita and Smith 2011). Indeed, there seems to be a great deal of heterogeneity even within democracies when it comes to the provision of public goods, generally unrelated to the general quality of governance. Even when educated leaders are elected to office, micro-level evidence from India suggests that education improves only in the instance of wealthier states, not in the poorer states where better educational outcomes are most needed (Lahoti and Sahoo 2019). Can the difference in outcomes, then, be explained by the differing ways in which women, who make up large majorities of populations, are empowered to influence the political system? Several studies show that, indeed, when women gain positions of power in politics and when women’s standing in society are generally equal to that of men, there are better outcomes in terms of governance and the allocation of public goods (Clots-Figueras 2012; Chattopadhyay and Duflo 2004; Jha and Sarangi 2018; Dollar, Fisman, and Gatti 1999).

Empowering women increases their life satisfaction and feelings of self-worth and efficacy (Hossain, Asadullah, and Kambhampati 2019). The political emancipation of women, thus, is intrinsically valuable for women. Achieving gender parity in political and economic rights, which is one of the 17 sustainable development goals of the United Nations, is not just instrumentally valuable, but it is also moral.¹ While many states and global agencies pay lip service to gender equality, however, currently only 27% of managerial positions globally are occupied by women, and as many as 104 countries have laws that actively prevent women from taking part in social and political life, including

engaging in occupations of their choice. Consider also that roughly two thirds of the world's illiterate population is female (World Bank 2018). By improving the lot of women, thus, not only is one actually engaging in meaningful social development, but one is simultaneously increasing the prospects of accelerating other processes of development, such as broad human capital development (Asadullah, Alim, and Hossain 2019). As the World Bank puts it, addressing the gender gap in development is “smart economics” (World Bank, IEG 2010). This would be particularly true if women's participation meaningfully in politics increases human capital development and reduces the ill effects of governance, such as corruption and political violence (Clots-Figueras 2012; Jha and Sarangi 2018; Thompson 2006).

Empowerment of women differs from empowerment of society broadly because women are not just one group among different small, disempowered groups in society that most times are geographically segregated, such as ethnic and religious groups, but they are a cross-cutting category of single individuals that overlap these other smaller groupings (Malhotra, Schuler, and Boender 2002). Paying attention to gender, thus, might be one way to address exclusionary processes across a variety of social divisions, broadly empowering society so that the distribution of public goods by governments reflects the distribution of power in society. The emancipation of women from the confines of social institutions that constrict their agency is, thus, a potentially powerful force for development through private means associated with household decisions and through impacts on public institutions (Clots-Figueras 2012; Jha and Sarangi 2018).

What then are the different bases of the instrumental value of female empowerment? Women's participation on an equal basis with men in society could be transformative on many levels. First, gender parity in schooling can pave the way for women entering the workforce and engaging in economic life as entrepreneurs and innovators (Chattopadhyay and Duflo 2004; De Vita, Mari, and Pogessi 2014). More economic activity generates higher growth. The real value addition from women, however, can come with how women view the world and their roles in it. Feminists have long argued that women are likely to make better decisions at the level of the household (Sundström et al. 2017; Seguino 2000). Unlike values that encourage masculinity, territoriality and dominance, women might be more inclined towards sharing, caring, and projecting peaceful attitudes towards others, especially the weak and needy, thereby, demanding greater public goods and services of political leaders (Chattopadhyay and Duflo 2004). Studies show that women prioritise public goods, such as clean water and children's health, perhaps leading to better child survival rates and higher school attainment scores (Swiss, Fallon, and Burgos 2012). When women are empowered through access to education, household decisions will be based on knowledge affecting how resources in the family are invested (Klasen 2017). Education and health, it is argued, might be

prioritised if women made household decisions. Moreover, when women enter the workforce, fertility rates go down because of better family planning and delayed marriage, leading to higher human capital accumulation per child (Becker and Barro 1988). Next, we discuss the conceptualisation of gender empowerment and its measurement before discussing out identification strategy and postulating the hypotheses to be tested.

Female Empowerment

The definition of female empowerment is not entirely unproblematic (Sundström et al. 2017; Klasen 2017; Kabeer 1999). One reason for confusion is the ways in which different terminologies are used in different contexts (Malhotra, Schuler, and Boender 2002, 4). For example, gender inequality, gender gaps, and empowerment are used interchangeably. Inequality between men and women might be based on wages or legal rights, while others focus on the gaps in access to schooling etc., often comparing the situation of women to men within a society. We follow Sundström et al. (2017), the originators of the Varieties of Democracy's (VDEM) indicator on female empowerment. According to them, empowerment is a process of increasing capacity for women, that gives women greater choice, agency and participation in societal decision-making, seen in terms of universal standards rather than just in relative terms to the men in any given society. Agency is said to be the closest way of capturing what a majority of scholars believe is the essence of empowerment. By agency they mean the ability to create strategic choices and have control over resources and decisions that will have an important effect on life. Agency also implies that an agent should have the possibility to create goals and act upon those goals. In relation to agency, it is also important that women themselves are significant actors in the process of change. This implies that women have to be part of the change from being unempowered to being empowered (Sundström et al. 2017, 6–7). The element of choice is related to the access to power because power allows the capacity and potential to make choices. To be unempowered implies that a person is denied the means to act on choice.

Empowerment is then the power one possesses to autonomously make choices that are in one's interest to make (Kabeer 1999, 437). Some choices are of greater importance than others. Examples of such choices are the ability to decide between livelihoods, family size, and deciding autonomously who one should marry, including the right to file for divorce. The ability to make important life choices will affect a woman in different ways, for example, in terms of freedom of movement, access to property and justice. Women should be able to make important and meaningful decisions on critical areas that affect their lives (Sundström et al. 2017, 4–6). The element of participation is the third criteria for women to be empowered. The ability to

participate meaningfully in societal decision-making allows women the means to realise their choices. Such participation includes direct political participation, as civil society actors, voters, candidates etc. Sundström et al. (2017, 7–8) describe how it is important that women are not just formally politically equal, but that they must also participate in the decision-making processes within society, where women's interests are represented in policy decisions. These processes should lead to change and improvement in indicators of gender equality and drive outcomes determined by women's preferences. We feel, thus, that the VDEM data allow us to understand the importance of gender empowerment over time on outcomes, such as the progress of human capital formation over time.

Human Development and Gender Empowerment

Human capital formation, or human development, is generally understood to be both an *objective* of development and an *input* towards development (Ranis, Stewart, and Ramirez 2000). Endogenous growth theory discussed above views human capital as an input to sustained growth through technological change and productivity enhancement. The capabilities approach to development views human capital primarily as an objective of development, but it also views capabilities as opening up increased opportunities and frontiers of development (Ranis and Stewart 2006). Human capital development is indeed a continuous investment in the capabilities of individuals and societies for taking advantages of the technological frontiers that drive economic growth and development. Like empowerment, human capital formation is the process of increasing human capacities and enlarging people's choices (Gerring, Thacker, and Alfaro 2012). Human capital increases the quality of life, which depends on various physical and social conditions often related to different welfare functions performed by a state, such as the provision of health care services and education broadly (Sen 1999). The intertwined nature of gender empowerment and the empowerment of society through political freedoms and the progress of human development present complications for any empirical analysis. However, the contested nature of empirical findings linking democracy to human capital growth, usually measured in terms of child mortality rates, allow us to compare the effects of formal democracy relative to female empowerment on human capital formation.

One might argue that there is nothing inherently valuable about female empowerment, but that broad societal empowerment might matter more. Those who argue that inclusive political institutions lead to inclusive economic institutions suggest that human capital, physical capital and technological development work as important forces to increase development through technological change (Acemoglu, Johnson, and Robinson 2001). The open nature of institutions can encourage individuals to invest time and effort in productive

activity because the payoffs to their efforts are not threatened and harmed by predatory processes. Inclusive economic institutions, thus, form the complex incentive structure to generate investment in human and physical capital, and the rational and productive organisation of markets (Acemoglu and Robinson 2006). The influence of economic institutions is closely linked to political institutions. Economic institutions are a result of collective choice, and different groups will have conflicting interests. How political power is distributed is decided by political institutions. Inclusive political institutions are here defined as centralised states that are pluralistic, where states are uncaptured by particularistic interests and powerful individuals (Acemoglu and Robinson 2012). While democratic institutions determine the formal nature of political participation of individuals and groups in society, social institutions, what some might even call informal institutions, matter greatly in terms of various political and economic outcomes (Klasen 2017; Jütting et al. 2007). Indeed, despite a great deal of theorising about why democracies are better at providing public goods relative to autocracies, the empirical evidence for the link between democracy and economic development and democracy and the provision of public goods is highly mixed (Bueno de Mesquita and Smith 2011; Ross 2006; Gerring, Thacker, and Alfaro 2012). We examine, thus, the extent to which gender rights, which are codetermined by formal and informal institutions, predict higher human capital gains relative to formal electoral democracy and good governance. Can it be that the indeterminate results on democracy and human capital are explained by the nature of social institutions within democracies?

As many political economy models suggest, if the quality of the people's representatives improves, then outcomes may reflect more effective policy-making (Besley and Persson 2011). Thus, one might expect that as women gain political power, the priorities of women described above might be better reflected in policy. Such factors can add up to generating higher investment in human capital (Duflo 2012; Narayan 2009). We investigate this connection by contrasting the effects of gender empowerment against broad-based political inclusivity and good governance, measured in terms of democracy and political corruption. However, how might we assess the purely gender empowerment effect from other underlying factors that might drive both gender empowerment and human capital outcomes? Gender empowerment occurs because of conscious societal decisions, such as changes in marriage and inheritance laws etc., perhaps also as a result of structural changes occurring due to economic development; i.e. mobility due to changes in economic structure. Indeed, such theories are subsumed under "modernization theory", which suggests that structural changes, such as industrialisation, fundamentally restructure social relations in the direction of emancipation for individuals and groups that were previously tradition-bound, relegated to

predetermined roles (Ross 2008; Lipset 1994; Inkeles and Smith 1974; Smelser and Swedberg 1994).

Women's empowerment understood as political empowerment, thus, is fundamentally related to broad democratic political development and social change associated with economic development. Indeed, women's political empowerment is predicted strongly by both political democracy and economic development (Sundström et al. 2017). Our identification strategy is, thus, to compare the independent effects of gender empowerment on human capital accumulation, holding constant democracy and the level of economic development proxied by the level of per capita income. In many ways, thus, income levels and democracy are akin to lagged values of gender empowerment since they both spring from conditions that generate empowerment. Additionally, by interacting gender empowerment with strict autocracy, which is argued to affect human capital adversely, as well as with the Middle East and North Africa region, also argued to be detrimental to human capital because of the so called "natural resource curse" and the cultural effects of Islam, we identify how gender matters by assessing the conditional effects of gender empowerment for predicting child mortality.² In other words, we assess the extent to which gender empowerment condition these two known adverse effects on child mortality, holding constant factors that powerfully explain gender empowerment and child mortality?

Admittedly, properly addressing the issue of endogeneity, particularly emanating from reverse causality, can be daunting. The progress of human capital might increase gender empowerment so that the relationship might be really working in the opposite direction. Indeed, as discussed above, modernisation theory does expect economic development (human development) to increase democracy (Burkhart and Lewis-Beck 1994). Finding valid instruments that are truly exogenous, thus, is extremely challenging. We argue, however, that lagged values of our main variable of interest instruments well for current values (instrument relevance criteria), but there is no reason to believe that current values of child mortality (our main proxy for human capital accumulation) explain gender empowerment in the distant past (lagged 10 and 20 years), or that gender empowerment in the distant past increases human capital directly (instrument exclusion criteria), except through gender empowerment currently. Such a strategy is utilised by others, but we present these results provisionally since not all assumptions for valid instruments might be met (de Soysa and Vadlamannati 2013). Regardless, we test the following main hypothesis to address these broad concerns – first with using our pooled OLS fixed effects analyses followed by an instrumental variables approach.

H1. Gender empowerment increases human capital (access and outcomes) independently of democracy and economic development.

Method and Data

Method

We use a cross-sectional, time-series (TSCS) dataset that employs essentially 4 dependent variables measuring human capital (discussed below) and a measure of gender empowerment (discussed in detail below) taken from the VDEM dataset.³ The data are annual and cover the time period 1960–2018 (58 years). The dataset is unbalanced in that some countries have fewer data points over time than others. TSCS data typically suffer from serial correlation. We employ the Wooldridge test to check for 1st order serial correlation, and the null hypothesis of “no autocorrelation” could not be rejected. Thus, following many others, we employ OLS with Driscoll–Kraay standard errors that are heteroscedasticity consistent and robust to first-order serial correlation and spatial autocorrelation (Sundström et al. 2017; Hoechle 2007). Additionally, pooled TSCS data can suffer from omitted variables bias due to country heterogeneity, where country-level, time-invariant fixed factors, such as culture and geography that are unmeasured in the model (Wilson and Butler 2007). Thus, we estimate two-way fixed effects models. We lag each of our independent variables by one year to avoid bias from simultaneity. The basic regression model is:

$$H_{it} = \phi + I_{it-1} + Z_{it-1} + \lambda_t + c_t + \omega_{it}$$

where ϕ is the intercept, I_{it-1} is our key independent variable of interests, Z_{it-1} are control variables, and λ_t is time fixed effects, c_{it} country fixed effects, and ω_{it} is the error term. To this main model, we also add interactive terms of gender empowerment and strict autocracy and the MENA region (described below).

As discussed above, we also use instrumental variables analyses to address the question of endogeneity by instrumenting gender empowerment with gender empowerment $t-10$ and gender empowerment $t-20$ in the basic model above. For instruments to be valid, they must essentially be correlated with the independent variable (instrument relevance) and not generally correlated directly with the dependent variable (instrument exclusion). To assess instrument validity, we rely on the Cragg–Donald F statistic, which should be above the threshold of 10 and the Kleibergen–Paap F -statistic, both of which assess how well the instruments account for the endogenous variable (Staiger and Stock 1997; Baum, Schaffer, and Stillman 2007). Likewise, the Hansen- J statistic is used to assess the instrument exclusion criteria, and it tests the null hypothesis that the results are biased from overidentification. In other words, there should not be a direct relationship between the instruments and y . Our instruments show strong instrument relevance and meet the instrument exclusion criteria.

Dependent Variables

There are myriad ways in which to measure human capital, both in terms of stock (total accumulated skills) as well as flows (the process of accumulating

skills). Most studies addressing human capital focus on education and health as typical markers of human capital development (Barro 1991). Such measures as school enrolment, which mostly capture access, do not capture qualitative dimensions of education or achievement (Asadullah, Alim, and Hossain 2019; Asadullah and Chaudhury 2015). We are interested in measuring human capital as an attribute that people are in possession of as well as an indicator of a priority of government, both of which are captured by the VDEM's equality of access to schooling and health because these expert-coded data consider both the breath of access as well as quality. Our first two measures for the dependent variable are somewhat subjective, which are access to education and health measured as "the equality of access to quality health and education" that measure a priority directly and an attribute indirectly (VDEM 2019). Education equality measures people between the ages 6 and 16 that have access to high quality education. The expert coders are asked: *To what extent is high quality basic education guaranteed to all, sufficient to enable them to exercise their basic rights as adult citizens?* The data are recorded on an ordinal scale from 0 to 4 where 0 represents extreme unequal and 4 represents equal access to good quality education and then converted to an interval scale by the measurement model, making the variable more suitable for statistical analysis across space and over time (Pemstein et al. 2018). Similarly, equal access to health is also taken from the VDEM dataset. This variable measures access to health services. The coders answer the question: *To what extent is high quality basic healthcare guaranteed to all, sufficient to enable them to exercise their political rights as adult citizens.* This variable too is coded similarly as above and transferred from ordinal to interval scale by the measurement model. To assess the reliability of this variable, we correlated equality of access to health from VDEM with the equality of access to health variable from the Global Burden of Disease project, which creates its index by assessing the incidence of over two-dozen childhood diseases (IHME 2018). This correlation is $r = 0.82$, which is high, suggesting that there is a great deal of reliability of the VDEM coding.

We also measure available human capital as attribute directly, which also captures priority indirectly, by utilising the more objective measure of under-five mortality within a society as well as school completion rates of females. Under-five mortality can be thought of as the stock of human capital, given that the prevention of child death would be a societal priority where the human and physical resources for preventing such death are available. The correlation between the under-five mortality rate taken from the World Bank's *World Development Indicators* (WDI) online database and the access to health from the VDEM is $r = -0.76$, which is high and in the expected direction.⁴ As some report, the under-five mortality rate correlates extremely well with an expanded measurement of the Human Development Index (HDI), and as Ranis and Stewart (2006, 346) suggest, "the under-five rate has advantages ... since it is more precise in terms of changes over time and less

complicated to calculate”. Additionally, we use the school completion rates at lower-secondary for females sourced from the *World Development Indicators* online database. The correlation between the under-five mortality rates and female school completion rate at the lower-secondary level is high ($r = -0.82$). We use all four indicators as dependent variables because they capture the idea of human capital very well, both as access to human capital enhancement and as changes in observed human capital stock. [Figure 1](#) displays the average global trend in the under-5 mortality rate graphed against equality of access to health care. As seen there, the under-5 mortality rate has decreased along with the equality of access to health.

Main Independent Variable

The main independent variable, women’s political empowerment, is taken from the VDEM dataset. This variable is coded on the basis of expert opinion based on the composite of 3 indicators that essentially capture the following definition:

Women’s political empowerment is defined as a process of increasing capacity for women, leading to greater choice, agency, and participation in societal decision-making. It is understood to incorporate three equally-weighted dimensions: fundamental civil liberties, women’s open discussion of political issues and participation in civil society organizations, and the descriptive representation of women in formal political positions. (VDEM 2019, 268)

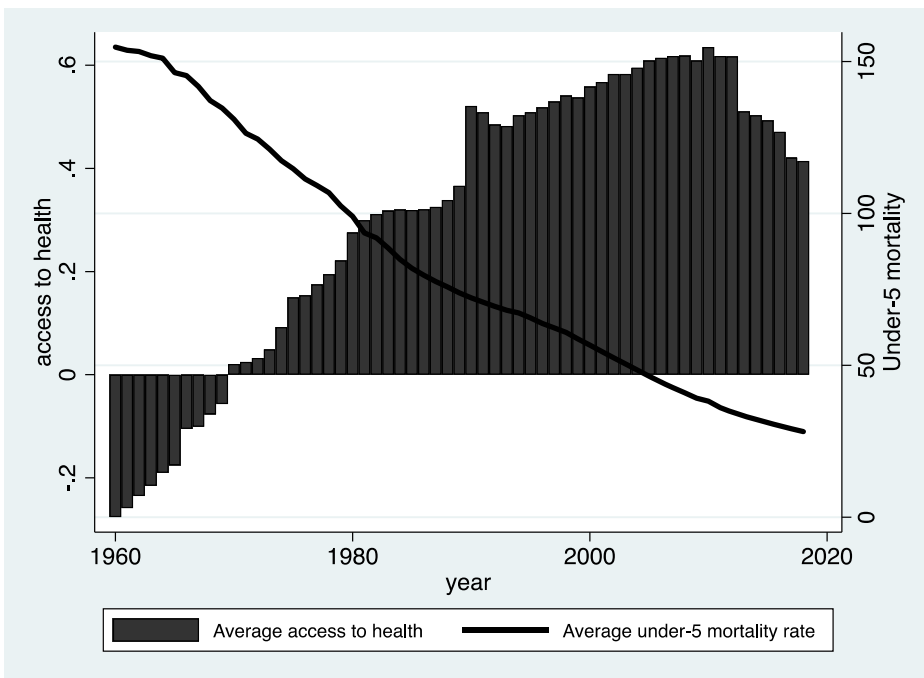


Figure 1. The trend in the average access to health and under-5 mortality rate, 1960–2018.

The three indicators of women’s political empowerment are based on the following question: *How politically empowered are women?* In terms of women’s access to civil liberties, women’s civil society participation, and women’s political participation. It is important to note, thus, that health and education access or levels are not directly considered in the empowerment measure. In order to compare the relative effects of gender empowerment, we also estimate a measure of “electoral democracy” or polyarchy, which assesses the extent to which people elect their own governments in free and fair elections, where there is a competitive party system, and where people’s choices are not coerced by violence or other means (Coppedge et al. 2011). As Figure 2 suggests, both electoral democracy and the political empowerment of women have progressed pretty much in tandem.

Control Variables

We control for four important confounding factors, avoiding the problem of overfitting our models (Achen 2005). Clearly, the effect of women’s political empowerment on human capital formation are both affected by the level of per capita income, which we measure as GDP per capita in constant 2010\$ taken from the WDI dataset. Additionally, we compare the effects of women’s empowerment with that of the degree of government (political) corruption because corruption too captures aspects of formal and informal

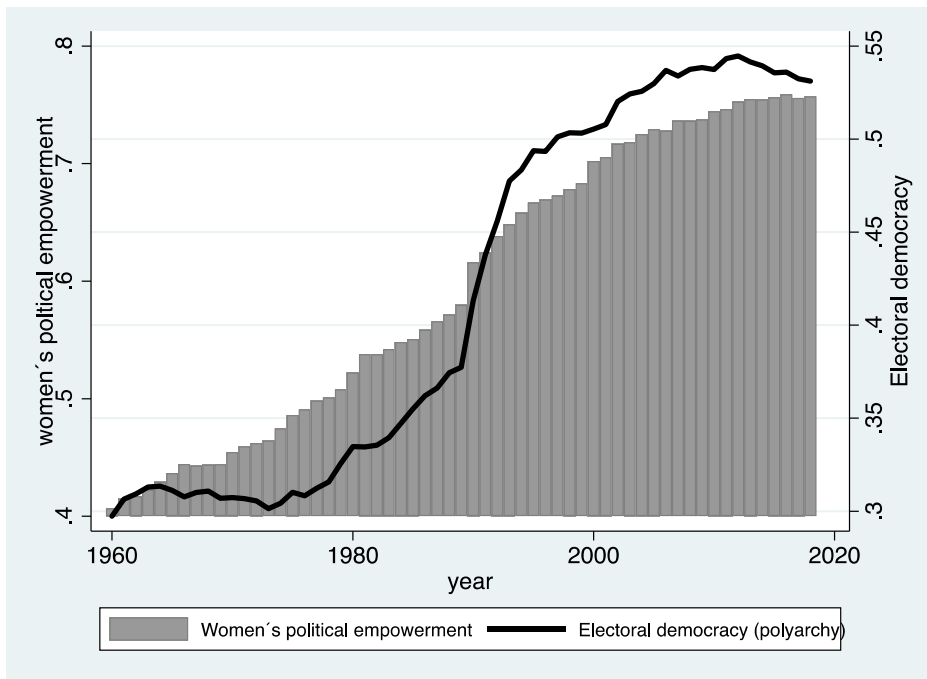


Figure 2. The trends in women’s political empowerment and electoral democracy, 1960–2018.

institutions that relate to how women are empowered in society (Chattopadhyay and Duflo 2004). The VDEM's corruption index essentially measured the degree to which the executive, judicial, legislative and public sector branches of government are plagued by corrupt practices. We also enter a term for population size because demographic factors can matter to how access to health and education progresses due to economies of scale and other factors. We take total population from the WDI. Additionally, both human capital and gender empowerment are affected by ongoing violent armed conflict and the history of peace in a country. We use the Uppsala Conflict Data Project's civil war data defined as an armed conflict between a state and rebel organisation (allowing also for international actors to be involved), where at least 25 battle-related deaths have occurred in a single year (Gleditsch et al. 2002). Finally, our sample of developing countries is defined as any country that is *not* geographically in Western Europe (excluding former Warsaw Pact countries), North America (excluding Mexico), Oceania, plus Japan. The data yield roughly 148 countries with populations above 250,000 for which we have data on all variables. The descriptive statistics are presented in the appendix with full list of variables.

Results

In Table 1, we provide results for the basic pooled OLS models with two-way fixed effects. First, we test the effects of women's political empowerment on the equality of access to quality education. Secondly, we add corruption to the model. Third, we estimate this pair of specifications for equality of access to health and our two objective indicators: namely, school completion rates of females (lower secondary) and the mortality rate of children under the age of 5 years.

As seen in column 1 of Table 1, the effect of women's empowerment is positive and statistically highly significant on equality of access to education, a result independent of all the controls in the model. Interestingly, electoral democracy, our proxy for broad societal empowerment, has a negative effect that is also statistically significant. Substantively, a standard deviation (within) increase in women's empowerment increases the equality of access to education by 57% of a standard deviation (within) of access to education.⁵ These effects are independent of both time and country fixed effects. Comparatively, electoral democracy seems to reduce equality of access to education, a finding that may not be so surprising after all given that many of the former communist states and East Asian dictatorships, such as China, provided high levels of equality of access. Later on, we will see that democracy matters positively on objectively measured outcomes, such as lower child death, suggesting that the level of access and outcomes may not always coincide. Nevertheless, substantively, a within standard deviation increase in electoral democracy only reduces equality

Table 1. Fixed effects regression estimates of the effect of women’s political empowerment on indicators of human development, 1960–2018.

Dependent variables	(1) Equal access to education	(2) Equal access to education	(3) Secondary education completion	(4) Secondary education completion	(5) Equal access to health	(6) Equal access to health	(7) Under 5 mortality rate	(8) Under 5 mortality rate
Government corruption		-0.88*** (0.11)		-2.63 (3.04)		-1.40*** (0.08)		0.19*** (0.06)
Women’s political empowerment	2.06*** (0.25)	2.09*** (0.25)	10.57** (4.08)	9.53** (4.22)	2.03*** (0.14)	2.07*** (0.14)	-0.05 (0.05)	-0.07 (0.05)
Electoral democracy	-0.20*** (0.07)	-0.44*** (0.07)	-9.91*** (2.41)	-9.98*** (2.56)	-0.16** (0.08)	-0.54*** (0.08)	-0.09** (0.04)	-0.03 (0.03)
Income per capita (log)	0.25*** (0.04)	0.22*** (0.04)	12.47*** (1.02)	12.33*** (1.06)	0.29*** (0.04)	0.24*** (0.04)	-0.24*** (0.02)	-0.24*** (0.02)
Population size (log)	0.45*** (0.06)	0.47*** (0.06)	10.24** (4.01)	11.80*** (4.24)	0.17*** (0.05)	0.20*** (0.05)	0.17*** (0.03)	0.18*** (0.03)
Civil war ongoing	-0.03 (0.03)	-0.03 (0.03)	0.25 (0.82)	0.28 (0.83)	-0.02 (0.02)	-0.02 (0.02)	0.01 (0.01)	0.01 (0.01)
Years of peace since last war	0.00	-0.00	0.00	0.00	0.00***	0.00**	-0.00	-0.00
Constant		(0.00)	(0.03)	(0.03)	(0.00)	(0.00)	(0.00)	(0.00)
		-9.52*** (1.02)	-207.62*** (68.14)	0.00 (0.00)	0.00 (0.00)	-5.36*** (0.88)	4.20*** (0.50)	3.96*** (0.52)
Observations	6396	6370	2483	2467	6396	6370	6173	6147
Number of countries	148	148	141	141	148	148	146	146

Notes: (a) Driscoll–Kraay standard errors robust to spatial and temporal autocorrelation in parentheses. (b) *** $p < .01$, ** $p < .05$, * $p < .1$. (c) Two-way fixed effects estimated. (d) All explanatory variables specified using one year lagged value.

of access by 6% of a standard deviation of y , which is comparatively fairly small. Income per capita, too, is positive and significantly related to greater access to education, an expected outcome. Substantively, however, a standard deviation increase in income per capita increases access to education by only 19% of a standard deviation (within) of access to education, 38 percentage points lower than the substantive impact of gender empowerment. These results support those who argue that economic growth is important for human capital gains and increased welfare (Jones and Klenow 2016), but for our interests, one of the strongest indicators of development (modernisation) has a significantly lower impact compared with a much more easily affected policy change, such as enhanced political rights for women. Neither of the two conflict variables predicts equality of access to education. However, gender empowerment matters independently of the level of development and political democracy.

In column 2, we estimate the same model as in column 1, but include political corruption. As seen there, the effect of political corruption reduces human capital as expected. This effect is substantively much smaller than the effect of gender empowerment, which remains independently positive and statistically significant relative to both corruption and the level of development. Again, democracy has a negative effect on access to schooling. Once again, the reader should note that we are estimating electoral democracy, which is a minimum definition of this complex phenomenon, and access does not always translate into some measurable human capital gain because access to schools is often used by dictators for social control (Bueno de Mesquita and Smith 2011). Regardless, the substantive effect remains very small. In the next columns, we examine the actual outcome related to access to education, which is female school completion rates. As seen there, gender empowerment continues to have statistically significant effects. Substantively, a standard deviation (within) increase in gender empowerment increases school completion rates by 7% of a standard deviation. Comparatively, raising income by a within standard deviation of income increases school completing by 23% of a within standard deviation of school completing. In this instance, while income has a stronger impact, gender empowerment's independent effect remains positive and significant relative to electoral democracy and political corruption (column 4).

In Table 1, columns 5 and 6, we examine the equality of access to health, which is a harder public good to provide given the costs and the expertise needed. Again, the effect of women's empowerment is positive on the equality of access to a public good. Again, electoral democracy is negative and statistically significant, as it was before with access to education. Per capita income levels increase access to health, as expected. Substantively, a standard deviation increase (within) in women's political empowerment increases access to health by 57% of a standard deviation of access to health, which is double the effect of a

standard deviation within increase in the level of development. In column 6, political corruption reduces access to health, a result that is substantively half the impact relative to gender empowerment. Again, gender empowerment trumps the effects of institutional quality, level of economic development, and formal electoral democracy when predicting higher human capital measured as a policy priority indicated by equal *access* to health care for the poor.

Next, we assess our second objective human capital indicator measured as the mortality rate of children under the age of 5 years (columns 7 and 8). As seen there, the effect of women's political empowerment, although negative, is not statistically different from zero. Thus, while gender empowerment increases equitable access to health, there does not seem to be a direct effect on lowering mortality, despite the high correlation between the mortality rate and equitable access to health. These results are in line with studies in public health that show a varying effect of gender empowerment on objective child health outcomes (Besnier 2020). Gender empowerment might still have indirect effects via its effects on the control of corruption and income growth (Chattopadhyay and Duflo 2004). Indeed, electoral democracy now shows a negative and statistically significant effect on child mortality as does per capita incomes. However, as column 8 reveals, this effect seems to be mostly driven by political corruption. Why our results differ slightly when assessing equitable access to health and child mortality remains an interesting question. We speculate that actual health outcomes are likely to be affected by many exogenous factors, such as varying foreign aid efforts, geographic locations and disease vectors, and weather shocks, such as droughts and floods, not to mention cultural factors in some societies that lead to many female infants that may die at birth due to neglect, or abortions (Sen 2003). We believe like others, however, that equitable access for the poor to health and education ultimately translates into higher levels of human capital accumulation (Ranis, Stewart, and Ramirez 2000). Thus, we continue our analyses of robustness using the health access dependent variable. Subsequently, we test our conditional models and instrumental variables analyses using the under-5 mortality rate since gender empowerment shows the weakest independent effects on this outcome. First, however, we test the robustness of gender empowerment effects to alternative models.

We subject our basic model to a barrage of robustness tests, beginning with the estimation of several alternative models including, one-by-one, a number of confounding factors. Note that we are estimating fixed effects models, or the within-country variance, estimating the country heterogeneity by including unit fixed effects.⁶ First, we enter the per capita economic growth rate, but growth has a negative and significant effect. Gender empowerment remains positive and statistically highly significant. Secondly, we enter a demographic variable capturing the share of the population living in urban areas.⁷ Women's political empowerment might be capturing these urbanisation

dynamics associated with easier access to health. The effect of the urban share of the population increases access to health, a result that is statistically significant at conventional levels, but the basic result of women's empowerment remains little changed. Thirdly, we enter whether or not a country is dependent on the extraction of oil, which relates to the idea of the "natural resource curse" where rulers that have access to oil neglect public goods, and at the same time, oil wealth erodes women's political rights because of the lack of industrialisation (Ross 2012; de Soysa and Gizelis 2013).⁸ The effect of oil reduces access to health, a result that is statistically significant, but again, women's empowerment remains positive and statistically highly significant. Fourth, we enter the share of the population that is Muslim because the degree of women's empowerment is likely to be affected by religious and cultural mores attached to the Middle East and African regions, and these regions might be disproportionately burdened by questions of low access (Norris 2011; Donno and Russett 2004).⁹ The share of the population that is Muslim shows a negative effect on access to health, but again, the effect of women's empowerment remains solidly robust independently, suggesting that gender right's effect on human capital is not dependent on its association with Muslim societies. Indeed, when we add both oil and the share of the population that is Muslim, both variables are independently negative on equitable access to health, suggesting as we intimated above, that the MENA region is likely to be plagued by both factors, not to mention the lack of democracy. Fifth, we enter the size of government consumption sourced from the WDI dataset, which captures all government spending relative to GDP. Since an activist government might be engaged in reducing inequalities of all sorts, perhaps access to health and gender empowerment are both caused by large government. Government consumption to GDP is indeed positively correlated with greater access to health care, a result that supports others who argue that inequalities fall with government consumption (Tanzi 2011), but the effect of women's empowerment remains independently positive and statistically significant.¹⁰

Women's political empowerment, thus, proves to be robustly related to increasing access to health, results that survive differing sample sizes, estimating techniques, and alternative models. Next, we test the basic model for multicollinearity. On the surface, if our models suffered from multicollinearity, we would not get a statistically significant effect on our variable of interest because of inflated standard errors. However, testing for such effects formally by estimating the Variance Inflation Factor (VIF) scores did not show that we had cause for concern. None of the VIF values were even close to the problematic value of 10. Next, we examine if our results are sensitive to influence points based on leverage, or how influential values affect the estimate of the slope plus the size of the residuals, which would bias our results. We estimate such undue influence by examining Cook's *D* values for our basic model. Re-estimating our model without roughly 380 data points out of 7689 made no

difference to the basic results reported above. Thus, our basic finding on women's political empowerment and access to health are unbiased by influential datapoints, and the effect size of women's political empowerment remains extremely stable. We ran our basic OLS models with time and country fixed effects estimating clustered standard errors robust to heteroscedasticity and serial correlation, but unsurprisingly, the results remain essentially the same. Finally, we lagged the dependent variable, and interestingly, only women's political empowerment remained statistically significant and positive, but none of the other controls that were statistically significant before retained their significant effects, further strengthening our confidence in the effect of women's political empowerment.

Our results are relatively free from bias emanating from country heterogeneity due to fixed local-level factors, which are accounted in the country dummies. We cannot, however, account for endogeneity bias stemming from reverse causality or some other time varying omitted variable that may be causing empowerment and higher human capital. We do not believe, however, that strict autocracies have the structural conditions to empower women and reduce child mortality. Thus, the conditional effect of gender empowerment and strict autocracy relative to the effect of electoral democracy could very well mean that gender empowerment and not underlying structural factors drive both outcomes. We have already seen that electoral democracy reduces the under-5 mortality rate. Repressive dictatorships are generally unresponsive to the needs of the population, ignoring public goods (Olson 1993; Bueno de Mesquita and Smith 2011). At a minimum, strict dictatorships should have no effect on mortality (Ross 2006; Gerring, Thacker, and Alfaro 2012). We measure strict autocracy by creating a dummy variable utilising the VDEM's electoral democracy measure. The dummy takes the value 1 at the value of polyarchy below a standard deviation from the mean value, which is roughly 0.20 points on the polyarchy scale, and 0 if above that. This variable should be mostly time invariant although some countries might reach above, or fall below, this threshold over the time period of our study. Since democracy is independently held constant in the model, the interaction effect should mostly reflect the independent variation of gender empowerment on the dependent variable.

Alternatively, we use the Middle East and North Africa region (MENA) conditional on the level of women's political empowerment given the well-established negative effects of the MENA region on women's rights and the effects of the "resource curse" on under-5 mortality emanating from the oil wealth and the majority religious population associated with, Islam. As we saw above in our robustness tests, both oil and the share of the population Muslim independently showed a positive effect on the under-5 mortality rate, which means countries in the MENA region should under perform on human capital. The basic model contains two-way fixed effects where

country heterogeneity is accounted. Clearly, the MENA region is exogenous to the under-5 mortality rate in terms of reverse causality and is time invariant, varying only in terms of gender empowerment. As seen in Table 2, column 1, the conditional effect between women's political empowerment and strict autocracy on the under-5 mortality rate is negative and statistically significant. Strict autocracy (non-democracy) when gender empowerment is 0 is positive and statistically significant, and gender empowerment when strict autocracy is 0 is statistically not significant (as also reported in Table 3). The fact that the interactive effect of gender empowerment and strict autocracy is negative and statistically highly significant is telling. Even among the most autocratic regimes, when women are more empowered, the under-5 mortality rate is reduced, after controlling for income levels and democracy, given that those conditions that maintain strict autocracy will also encourage less human capital and fewer rights for women. This very same effect is seen in column 2, when we examine the conditional effect between the MENA region and women's empowerment. While the MENA region at gender empowerment 0 is positive on the under-5 mortality rate, the joint effect between the two on the under-5 mortality rate is negative and highly significant. In other words, higher gender empowerment among the MENA countries predicts lower child mortality, independently of income levels and democracy. The results

Table 2. Fixed effects regression estimates of the effect of women's political empowerment on under-five mortality rate, conditional on regime type and the MENA region, 1960–2018.

Dependent variable = under 5 mortality rate	(1)	(2)
Women's political empowerment	0.03 (0.06)	0.07 (0.05)
Autocracy	0.08** (0.04)	
Women's political empowerment × autocracy	−0.22*** (0.08)	
MENA geographic region		0.39** (0.15)
Women's political empowerment × MENA region		−1.18*** (0.16)
Electoral democracy	−0.14*** (0.04)	−0.14*** (0.04)
Income per capita (log)	−0.24*** (0.02)	−0.24*** (0.02)
Population size (log)	0.18*** (0.04)	0.24*** (0.04)
Civil war ongoing	0.02 (0.01)	0.02* (0.01)
Years of peace since last civil war	−0.00 (0.00)	−0.00 (0.00)
Constant	5.19*** (0.43)	3.40*** (0.56)
Observations	6,173	6,173
R-squared	0.961	0.962
Number of groups	146	146

Notes: (a) Driscoll–Kraay standard errors robust to spatial and temporal autocorrelation in parentheses. (b) *** $p < .01$, ** $p < .05$, * $p < .1$. (c) Two-way fixed effects estimated. (d) All explanatory variables specified using one year lagged value.

Table 3. Two-stage least square estimates of the effect of female empowerment on child mortality, 1960–2018.

Dependent variable = under 5 mortality rate	(1) No controls	(2) With controls
Gender empowerment	-0.47*** (0.11)	-0.99*** (0.23)
Electoral democracy		0.34*** (0.09)
Income per capita (log)		-0.18*** (0.02)
Population size (log)		0.23*** (0.03)
Civil war ongoing		0.03** (0.01)
Years of peace since last war		0.00* (0.00)
Observations	4936	4431
R-squared	0.812	0.808
Number of countries	146	141
Cragg–Donald F-statistic	297.4	124.8
Kleibergen–Paap rk Wald F statistic	167.5	79.7
Hansen overidentification test p value	0.13	0.14

Notes: Instruments for current gender empowerment = gender empowerment lagged 10 years and gender empowerment lagged 20 years. (a) Robust standard errors in parentheses. (b) *** $p < .01$, ** $p < .05$, * $p < .1$. (c) Year fixed effects estimated.

taken together suggest strongly and robustly that women’s political empowerment has direct effects on human capital gains, even when estimated conditional on factors that generally predict child mortality outcomes adversely. We are able, thus, to accept the hypotheses that the political empowerment of women matter positively for human capital formation, and that these effects are independent of broad-based structural factors associated with gender empowerment and the dependent variables, such as formal democracy and the level of economic development.

Indeed, even we are to assume that our results are not driven by endogeneity, which is that some unmeasured factor Z drive both X and Y , we cannot fully reject the possibility that the causal relationship might be backwards. Increases in access to health and education, or the reduction of child mortality might indeed be determining the degree of women’s political empowerment. We turn to the instrumental variables analyses, using the one- and two-decade lagged gender empowerment as instruments.

In Table 3, we first estimate the equation without any of the controls and then add the controls in column 2. As seen there, with or without controls, the effect of gender empowerment remains statistically significant and negative on child mortality, even after instrumenting empowerment with lagged values of empowerment. In both instances, the F -statistic testing for instrument relevance is above the required threshold, suggesting that they pass the instrument relevance test. Moreover, the Hansen- J statistic rejects the null hypothesis of instrument exogeneity, or that there is a direct effect of the instruments on Y (the instrument exclusion criteria). Substantively, holding all the other variables

at their mean values, a within standard deviation increase in gender empowerment reduces the under 5 mortality rate by roughly 27% of a within standard deviation of the under 5 mortality rate. In real terms, this effect amounts to 8 children per 1000 live births. The same tests using equality of access to health lead to very similar results (not shown but available upon request). Thus, the effect of gender empowerment reducing child mortality and increasing access to human capital are strong and consistent, even if we still only accept the causal effects with some caution because of lingering issues concerning potential endogeneity. Our results, with newer data and alternative testing methods support a growing body of empirical literature showing human capital gains, particularly in child health and education outcomes, when women are empowered politically (Swiss, Fallon, and Burgos 2012; Besnier 2020; Jha and Sarangi 2018; Clots-Figueras 2012; Banerjee and Duflo 2012; Klasen 2017).

Conclusions

The connection between the empowerment of women and development is generally taken to be a truism. Empowering women is intrinsically valuable, as are freedoms for all social groups in general. Indeed, the empowerment of all people should be an *objective* of development beyond economic growth and the accumulation of physical capital (Sen 1999; Ranis and Stewart 2006). Such freedoms apparently are at the heart of economic growth and development and contain instrumental value, because freedoms allow people to make choices that are superior to governments, bureaucrats, and technocrats (Easterly 2013). Many others argue that empowering women in particular may matter, especially for raising human capital, or the health and education of a society that ultimately determines a society's productivity and technological adaptive capacities for sustainable growth and development. Empowering women, thus, is both a development objective and an investment because empowered women make choices that are value added, such as demanding greater services and public goods delivery from politicians and investing in health and education (Chattopadhyay and Duflo 2004; Klasen 2017). We have addressed this question by contrasting a novel measure of the political empowerment of women with formal democracy and other relevant controls on dependent variables indicating both equal access to health and education as well as an objective human capital outcome, namely the under-5 mortality rate.

Our results show robustly and consistently that women's political empowerment associated with equality of access to health and education, which should broaden the accumulation of human capital. We are also able to show that women's political empowerment is particularly valuable where the conditions of empowerment for human capital formation are known to be unusually poor, such as among strict autocracies and the MENA geographic region. To

address endogeneity concerns, we instrument for gender empowerment with lagged gender empowerment, and two-stage least square IV regressions show that gender empowerment still reduces child mortality. While we cautiously conclude that these effects might indeed be causal, a barrage of alternative models including variables that strongly predict our main variable of interest and the dependent variable are included, an independent effect of gender empowerment persists. These results are robust to several estimating techniques, differing sample sizes, and alternative models.

Notes

1. See <https://www.undp.org/content/undp/en/home/sustainable-development-goals.html> (last accessed 17 February 2020).
2. On the issue of Islam, gender and development (see Wuthnow 1994; Ross 2008; Norris 2009). On the issue of a resource curse explaining lower human capital (see Cockx and Francken 2014; de Soysa and Gizelis 2013).
3. The latest VDEM data can be obtained here: <https://www.v-dem.net> (last accessed 20 February 2020).
4. The WDI data are available at: <https://databank.worldbank.org/reports.aspx?source=world-development-indicators&preview=on#> (last accessed February 21 2020).
5. The substantive impacts are calculated as the standardised coefficients, where we multiply the coefficient of x by a standard deviation of x and then divide the product by a standard deviation of y , expressed as a percentage.
6. Results are not shown, but they are available upon request.
7. This variable is obtained from the WDI online database.
8. We use oil rents per GDP as reported by the WDI data, which are available from 1970 onwards.
9. The Muslim share of the population is obtained from Brown and James (2019) (last accessed 24 January 2020).
10. The robustness tests are not reported out of space consideration and available on request.

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No potential conflict of interest was reported by the author(s).

Notes on contributors

Norunn Hornset is a PhD candidate at the Department of Geography, Norwegian University of Science and Technology (NTNU), Trondheim, Norway. She has a MA degree in Political Science from NTNU and is interested in questions of inequality and social development. Her PhD is focused on social inequalities among youth and social welfare services.

Indra de Soysa (PhD) is Professor of Political Science at the Norwegian University of Science and Technology. He is currently interested in political, economic and social outcomes of economic liberalisation, the effects of institutions, and the causes of peace and prosperity. He has published widely on the subject of Foreign Direct Investment, the causes of civil and political violence, the natural resource curse, globalisation, and

environmental politics. His recent articles appear in *Journal of Peace Research*, *International Studies Quarterly*, *Energy Policy*, *Business & Society* among several others. He is a member of the Royal Norwegian Academy.

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Appendix

Variable	Obs	Mean	Std. Dev.	Min	Max	Short description
Women's political empowerment	7927	0.6438	0.2218	0.072	0.975	The extent of women's rights and political participation
Equality of access to health	7927	0.3998	1.5048	−3.271	3.689	The extent of access to health for the poor relative to the rich
Equality of access to education	7927	0.3529	1.4892	−3.102	3.634	The extent of access to schooling for the poor relative to the rich
Political corruption	7901	0.4944	0.3011	0.006	0.976	The extent of neo-patrimonialism and nepotism in government
Electoral democracy	7902	0.4709	0.2832	0.009	0.948	Access to free and fair competitive elections without violence and coercion
Income per capita (log)	7927	8.162	1.5183	4.8851	11.663	GDP per capita in 2010 constant dollars
GDP per capita growth rates	7774	2.1575	6.1654	−64.99	140.37	The annual growth rate of GDP per capita
Population size (log)	7927	15.868	1.6927	10.638	21.055	Total population size
Urban population share	7920	50.477	24.533	2.077	100	Share of people living in agglomerations of 100,000 or more people
Civil war ongoing	7714	0.162	0.3685	0	1	A civil war is ongoing with at least 25 deaths that have occurred in a single year

(Continued)

Continued.

Variable	Obs	Mean	Std. Dev.	Min	Max	Short description
Years of peace since last war	7714	18.492	16.879	0	57	A count of the number of years since the last civil war ended or the year 1946/year of independence
Developed countries (dummy)	7927	0.166	0.3721	0	1	Discrete variable taking the value 1 if Western Europe, North America or Oceania, plus Japan; 0 if not
Strict Autocracy (dummy)	7902	0.2504	0.4333	0	1	Takes the value 1 if a country scores below 0.2 on electoral democracy and 0 if not
Under-five mortality rate (log)	7665	3.6841	1.2398	0.5306	5.9674	The number of children that die before the age of 5 out of 1000 live births
MENA region (dummy)	7927	0.0983	0.2977	0	1	Countries that belong to North Africa and the Middle East take the value 1 and 0 if not
Oil rents per GDP	6545	3.517	9.2538	0	81.128	Rents from hydrocarbon extraction accruing to a state relative to GDP
Muslim share of the population	7341	23.008	34.607	0	99.736	The share of the population that identifies with adhering to Islam within a country
Government consumption per GDP	6989	15.642	6.7635	0	125.74	Total government consumption as a share of total GDP
ODA% of central govt. expenditure	2002	29.73	94.691	-4.163	1452.4	Total overseas development assistance received as a share of a government's total expenditure