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From the home to the polls: Investigating the role of parenthood in shaping political participation in developing countries

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From the home to the polls: Investigating the role of parenthood in shaping political participation in developing countries.

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Abstract: Demographics and political behaviour are intricately connected, with significant life transitions, such as becoming a parent, shaping patterns of political participation. Interest and resource mechanisms work simultaneously, with parenthood heightening interest in public services but also introducing resource constraints. Previous studies failed to analyse this phenomenon in the contexts of developing democracies. Employing a large-N quantitative analysis over 10,000 individuals across 11 developing democracies from 2004 to 2008, this study aims to increase the generalisability of previous findings. The results indeed confirm that parenthood increases voting, particularly for fathers, while specifically motherhood decreases protest participation. The time scope of these effects could not be measured with the available data, highlighting avenues for future primary data-collecting studies. Nonetheless, this study contributes to the understanding of the effect of parenthood on political participation.

Keywords: political participation, voting, protests, parenthood, motherhood, developing countries, interests, resources, social networks

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1. Introduction

Demographics and politics are deeply interrelated, with pivotal life transitions leaving a lasting imprint on political behaviour (Bellettini et al., 2023; Burlacu & Lühiste, 2021). As couples experience becoming a parent for the first time, understanding the role of parenthood in shaping political participation is highly relevant to gaining a nuanced perspective of the life cycle of political participation. Parenthood increases reliance on and self-interest in public services like childcare and schooling (Dahlgaard & Hansen, 2021). However, the demands of child rearing can limit time and financial resources, depressing sustained participation.

Though there has been plenty of research on how parenthood affects work, income, leisure time or happiness (Bonke & Browning, 2009; Nelson et al., 2014), academia has overlooked the role of parenthood in shaping political participation until recently (Bellettini et al., 2023; Bhatti et al., 2019; Grechyna, 2023). Improving this oversight would further politicians' understanding of how different demographics make political decisions and better inform their targeted campaigns. The growing scholarship on the topic is concentrated in a singular or a few developed countries (Bellettini et al., 2023; Bhatti et al., 2019; Dahlgaard & Hansen, 2021; Elder & Greene, 2012; Grechyna, 2023; Naurin et al., 2023; Quaranta & Dotti Sani, 2018). Since differing development levels have been linked to differing voter turnout levels, the extant literature does not readily permit generalisable conclusions about the effects of parenthood on political participation (Stockemer, 2015). There is yet to be a robust large-N quantitative study on the relationship between parenthood and political participation in developing countries. It is this lacuna that this research purports to fill, posing the following question:

What is the effect of parenthood on political participation in developing democracies?

It should be stressed from the outset that the subsequent paper addresses only the decision of participating in political activities. Other features associated with political participation, namely whether individuals succeed in making a policy impact is beyond the scope of the paper. Nevertheless, participation in itself is important, capturing the perceived importance that individuals give politics while constrained. The declining global voter turnout, for example, signals a potential citizen apathy or distrust in politics (Solijonov, 2016). Lastly, the model adopted does not explain an individual's direction of vote or protest issue, just the decision to vote and attend a protest.

Based on a theoretical framework combining literature on political participation and parenthood, this research posits that the initial shift of becoming a parent increases the likelihood of political participation in low-cost political activities such as voting through an *interests* mechanism. A second hypothesis follows, arguing that this effect is not observed when individuals have subsequent children. A third hypothesis asserts that, due to a stronger *resources mechanism*, parenthood does not have a positive impact on costlier forms of political participation such as attending a protest. Finally, it is hypothesised that gender interacts with parenthood, resulting in a different effect for mothers and fathers.

The paper begins with conceptualising political participation and parenthood, and proposes four theoretical mechanisms to understand their relationship, subsequently applied to mothers and fathers within the context of developing democracies. The ensuing four hypotheses are tested through a large-N quantitative study with a regression analysis on a sample of over 10,000 individuals across 11 countries from 2004 to 2008. The resulting empirical evidence supports the hypotheses, linking parenthood to political participation. Specifically, becoming a parent increases participation in elections, with the effect higher for fathers. Parenthood, in general, does not appear to influence peaceful protest attendance, however, for women, motherhood decreases participation in protests. Finally, a discussion of the research's limitations follows the analysis of its findings, and suggestions for future research are presented.

2. Theoretical framework

2.1. Political participation

Political participation encompasses a broad range of activities that make up an individual's political behavioural profile. It includes "manifest" activities such as voting, participation in demonstration and boycotting, and "latent" activities such as taking a political interest or perceiving that politics is important (Grechyna, 2023; Naurin et al., 2023; Verba et al., 1997). These elements are deeply intertwined, for instance, detaching voting from political interest does not make sense, with the latter intuitively affecting the former.

Participation enables individuals to exercise their political power and shape the political agenda, making it an important political tool. Voting, for instance, offers a low-cost but direct way to influence decision-making within democratic systems. Political participation is highly contextual, hence, conceptualising it as purely voting is not useful in contexts where democratic institutions are not as reliable. In such contexts, alternative forms of participation such as

attending protests become vital mechanisms of accountability. The cost incurred to individuals by these activities also differs per political environment; protesting in an autocratic country is costlier than attending a protest in a democratic country. This study focuses on the participation of manifest political activities, distinguishing low-cost activities such as voting from high-cost activities such as attending protests as the mechanisms outlined have differing impacts within the context of democracies.

2.2. Parenthood

Unlike other life transitions such as age, which occur gradually, or characteristics such as race which remain unchanged, parenthood is uniquely immediate in its nature. This immediacy stems from the direct reliance parents have on public services such as healthcare and education. Becoming a parent not only changes political preferences but also entails direct financial, emotional and time commitments (Burlacu & Lühiste, 2021).

The literature yields a narrow conceptualisation of parenthood as an individual's state after the birth of one's child or simply having a child (Bellettini et al., 2023; Bhatti et al., 2019). This ignores diverse family structures such as adopted children, stepchildren or experiences of stillbirths. Parenthood is also frequently understood through a heteronormative perspective, overlooking unique experiences of queer parents, such as facing societal taboos. Importantly, the initial psychological transition to parenthood with a first child also differs from the experience of expanding parenthood with additional children. Consequently, viewing parenthood as purely a binary phenomenon is insufficient.

There is not a perfect conceptualisation of parenthood as interest-forming and social pressure begin influencing parental participation during pregnancy, for example, through interactions with the state during prenatal healthcare. Some individuals, especially mothers, also perceive themselves as parents during the pregnancy, however, pinpointing the onset of this perception is difficult, as it varies across individuals (Darvill et al., 2010). Although parenthood does not have an end point in its social or psychological influence, its direct effect on political participation may diminish as children leave home and parental responsibilities lessen. Thus, this study understands parenthood as a continuous variable, while recognising that the initial step of the first child disproportionately impacts individuals. The relationships between the two concepts will be subsequently outlined.

2.3. Resources

Building on Downs' (1957) classic calculus of voting, which stipulates that increased cost of voting should reduce voter turnout, this section examines political participation using a rational choice framework. Rational choice theory posits that self-interested individuals maximise benefits while minimising costs (Downs, 1957). Within this framework, participation only occurs when the perceived benefits outweigh the costs.

The literature conceptualises the costs of political activities as the expenditure of resources such as *time* (e.g. attending protest or working on a campaign), *money* (e.g. contributions to campaign) and *cognitive energy* (Brady et al., 1995; Nikolayenko, 2021; Wiltfang & McAdam, 1991, p. 989). Individual-level political activities differ in the intensity of resources that they require as well as their potential political impact. For instance, voting demands minimal time and income compared to protesting or campaigning, but the potential impact of the latter can be greater. While parenthood may not, in itself, increase the cost of participation, raising children puts a strain on the resources available to individuals, with additional children accumulating costs.

Firstly, since time is a limited resource, individuals must make choices regarding its allocation, considering the opportunity costs of alternatives. Brady et al. (1995) observed a positive relationship between free time and political activities such as voting, campaigning and protesting (p. 283). Parenthood as a "life circumstance" reduces free time (Brady et al., 1995, p. 274), thereby increasing the opportunity cost of going to vote. In a quasi-experimental research conducted in Denmark, for instance, this effect was observed as reducing turnout among parents of twins, with the effect exacerbated in the postpartum period as parents adapt to additional domestic responsibilities (Dahlgaard & Hansen, 2021, p. 1176). Extending this theory to high time-intensive activities such as attending a protest, the expectation is that participation would be impacted even more severely. However, this may only be relevant in the short term as older children can help with housework, saving time (Gager et al., 1999). Alternatively, if parents stay at home rather than commute to work, then participation in local political activities such as going to local polling stations or attending community meetings may be increased.

Second, activities such as contributions to political campaigns require individuals to have excess monetary resources, and participating in all political activities has the opportunity cost of lost income (Brady et al., 1995; Laurison, 2016). During pregnancies and especially after childbirth, individuals incur additional monetary costs. These expenses, which include necessities such as nappies and food, reduce the amount of disposable income available for

political activities. The extent of costs differs per country and prior household income, depending, for example, on the healthcare and education system and potential government subsidies for lower-income households. Countries such as Hungary are completely subsidising young families, completely alleviating them from this burden (*Safe in Hungary*, 2023-2024), potentially increasing the incentive to participate for new parents. Political activities that do not require a monetary contribution, such as voting, accordingly remain unaffected by a change in income (Brady et al., 1995). Additionally, using an individual-level longitudinal research design, van Wijk and Billari (2024) observed a strong relationship between income and the conception of a first child, making income a likely confounding factor, affecting both participation and parenthood.

Lastly, self-motivation or cognitive energy is essential for participation. Travelling to polling stations or protests and making political decisions deplete these resources. Parenthood introduces physical and mental exhaustion from childcare, thereby reducing the ability to participate in politics. Nikolayenko (2021) found that parenthood of a preschool child had a negative effect on out-of-town protest participation but no measurable effect of local protest (p. 454). Applied to lower cost political activities such as voting, the expected effect should be neutral or less negative. However, especially in the postnatal period demobilising effects are observed even on voting and are attributed to short-term exhaustion which make trips to the polling station and queueing more burdensome (Bhatti et al., 2019). Furthermore, Kool et al. (2010) observed that individuals rationally avoid making cognitively intensive decisions, implying that the cognitive strain of making political decisions is higher when parents are already exhausted.

2.4. Interests

Continuing with the rational choice framework, individuals from the same socioeconomic background, with similar resource endowment can still exhibit differing levels of participation. A different explanation is interests, relating to dynamic concerns that drive participation. Specifically within the framework, parents for example have a heightened stake in public services, which shapes their political priorities.

For this mechanism, the initial ideological shift to parenthood directly shapes political interests. Having children extends an individual's time horizon as they consider their child's future. As exemplified by climate justice movements, parents exhibit a higher concern for climate change due to its implications for their children's future, albeit with mixed results across countries (Ekholm & Olofsson, 2017; Milfont et al., 2020; Shrum et al., 2023).

Additionally, parents embody the interests of their children, illustrated in their priority towards children's issues and related subfields, such as government spending on education or healthcare (Bellettini et al., 2023; Bhatti et al., 2019; Burlacu & Lühiste, 2021; Elder & Greene, 2012, p. 422). This is reinforced through new interactions during the various stages of parenthood. For example, young parents are likely to have more knowledge of policies related to parental leave and day-care provision while parents of older children will know more about the shortcomings in education. The regular interaction with public institutions exposes parents to the successes and failures of public services, providing them with firsthand insights into state functionality. Compared to nonparents, this heightened interaction with public institutions can amplify parents' political awareness and interest (Bhatti et al., 2019).

Moreover, while parenthood may heighten motivation to participate due to increased reliance on public services such as education, it also reshapes interests in other areas, such as taxation. Before parenthood, individuals may have prioritised keeping taxes low, whereas parents may be more accepting of taxes that support services benefiting their children. If these simultaneous shifts balance out, the net change in motivation to participate might remain the same.

2.5. Social networks

Unlike the previous section, which focuses on political interests, this section looks at private interests. Explaining participation as influenced by social pressures rather than driven by what is politically at stake.

Society is composed of social networks in which individuals can express ideas, attitudes, and mutually exert influence within their social relations. If a group of individuals place positive value on political participation and disseminate this belief throughout their social links, which in turn exert their influence over their social links, a domino effect of social relations is created, increasing participation (Amaro de Matos & Barros, 2004). Similarly, individuals who exhibit political cynicism, believing they cannot affect politics, perceive their politicians as corrupt or regard participation in politics as socially undesirable, are likely to disseminate these attitudes within their social networks, contributing to a demobilising effect. The norms created through these interactions form a sense of civic duty, with a social stigma if individuals do meet this and social esteem when this expectation is met (Funk, 2010). Certain political activities are more easily observable, such as voting or protesting, and thus create stronger signals about whether civic duty is met. This social pressure is also observed to be

stronger in smaller, close-knit communities as individuals know each other on a personal level and they can gossip more easily (Funk, 2010).

The interactions that create these social networks are different for parents compared to their childless counterparts due to the unique situations parents encounter. Even early during pregnancy, parents may attend antenatal seminars, which exposes them to a network of expecting parents. Later in parenthood, parents can become friends with other families, meeting them through school events, for example. These parent-specific networks create more opportunities for political discussions, sharing costs of babysitting and companions for going to vote. All these factors might stimulate desire or pressure to participate politically (Bhatti et al., 2019, p. 64).

2.6. Political opportunity

Individuals across countries may have similar resources, interests and social networks, yet their participation may still differ. The previous theories missed the political environment that individuals participate in. Kitschelt (1986) introduced the concept of political opportunity structure to delineate how resources, institutional arrangements and historical precedents, making up the political regime, shape the conditions for participation. The more open the political regime, the more likely it is for individuals to believe they can make a difference, leading them to engage in political activities such as voting or protesting. Key elements of the political opportunity structure include:

- The **number of political parties** which create opportunities to feel represented.
- **Legislative and judicial independence** ensures checks and balances that enable effective advocacy and accountability.
- The **interaction between interest groups and executive** facilitates policy coalitions
- **Government control over market participation** which influences the balance of state and private power in decision-making.

Applied to parenthood, intuitively parents do not experience a unique political regime compared to their counterparts, suggesting that this theory may have limited relevance in explaining differences in political participation. However, there is variation across countries, for example, in closed political regimes, such as in autocracies, political participation is suppressed, rendering the interests mechanisms less relevant. Parents, along with nonparents are less likely to participate if they believe their actions have no tangible impact. Therefore, to

avoid confounding the relationship between parenthood and political participation, within-country comparison is essential.

This study, therefore, focuses on democracies, where the openness of the political regime can promote participation.

In sum, while parenthood constrains the availability of excess resources available to political activities, it activates through changing interests and creating new social networks. These theories will be subsequently applied to mothers and fathers before placing them within the context of developing countries.

2.7. Mothers and fathers

As parenthood affects women and men differently, a gender sensitive approach is needed. While societal influences, such as narratives of the "biological clock" (Yopo Díaz, 2021), 'prepare' women for the pressures of home life, potentially making them more adaptable compared to men, this is not observed in practice. For instance, in Denmark, mothers spend "50% more time than fathers on primary care for their children", a gendered disparity that persists despite relatively equal parental expectations for fathers (Dahlgaard & Hansen, 2021, p. 1176). This is likely exacerbated in countries where there is little societal expectation of men to help with domestic labour. There is also plenty of literature observing the gendered impact of parenthood on income, with women facing a motherhood wage penalty and men gaining a fatherhood wage premium (Bari, 2024). Additionally, mental and physical recovery time is longer for women after giving birth, impacting their cognitive energy level. Another demobilising mechanism of motherhood is maternal distress relating to the physiological response to being a mother, including health problems, weight-related stress, role conflict or having a difficult infant (Bhatti et al., 2019; Emmanuel & St John, 2010). These factors reasonably impair both the ability and motivation to participate.

The initial ideological shift of becoming a parent also has a gendered dimension, with women adopting caretaker roles and men taking provider roles, reflecting differing understandings of being a good parent (Burlacu & Lühiste, 2021; Elder & Greene, 2012; Lynn & Flora, 1973). This not only influences potentially how much free time mothers have, but also their political behaviour. In Sweden, however, there is no observable gendered difference in concern for the future (measured using climate change worry as a proxy), potentially negating this mechanism (Ekholm, 2020). However, these results could be partially explained by Sweden's unique socialised expectation for fathers. If societal expectations place the primary child-rearing responsibilities on mothers, as discussed earlier, then mothers are likely to

develop a deeper understanding of state capabilities through higher exposure to public institutions. Alternatively, women may 'always' be thinking about children and the future responsibilities, making the ideological shift to parenthood greater for men (Yopo Díaz, 2021). Lastly, while there is evidence that suggests changes in political priorities due to parenthood affect men and women differently, this reprioritisation does not subsequently affect the level of participation (Elder & Greene 2012; Bhatti et al., 2019, pp. 65-66; Banducci et al., 2016; Teney et al., 2023).

Similarly, if mothers are the only ones attending school events for example, they gain unique opportunities to develop new social networks. However, in practice, Lowndes (2004) qualitatively observed that men and women have similar levels of social networks, differing only in use. Women were more embedded in neighbourhood-specific networks of informal sociability, using them as a resource in "getting by", such as helping them balance competing demands of home and work (Lowndes, 2004, p. 55). While women expended this resource on their own and their family's lives, men invested more in formal political activities (Lowndes, 2004). A last point worth mentioning is that for some political activities such as participation in protest, safety may be a concern for mothers if they are responsible for the primary care of the child.

As argued previously, parenthood does not impact the openness of the political opportunity structure. Extending this conclusion for mothers and fathers, one element that could impact the sexes differently is potentially systematic barriers to entry for women. For example, certain societal gender stereotypes discourage women from joining a political party, constructing their role in society as wives and mothers (Clavero & Galligan, 2005).

In brief, there are differences between resource allocation between the genders, mothers and fathers are socialised differently in their childcare roles, mothers do not use their social networks to increase their political participation, and the political opportunity structure may discourage women from participating.

2.8. In developing countries

Notably, the majority of the studies reviewed were conducted in developed countries. Accordingly, little is known about how these findings might generalise to developing countries.

Applying the general literature to developing countries, starting with resources, individuals in developing countries have the identical initial time endowments. However, their "life circumstances" differ, for example, working hours are usually longer (Giattino et al., 2024). For mothers in developing countries, the brunt of the domestic work falls on them

(Hatch & Posel, 2018), intuitively closer to the Italian context outlined in Bellettini et al. (2023) where there has been a historically gendered division of tasks within the households. Also, the negative effects of parenthood on voting could be magnified depending on the proximity to voting stations, individuals in rural areas might have to commute to participate politically, impacting their free time. That being said, sometimes childcare is the shared responsibility of the extended family (Hatch & Posel, 2018), implying that individuals may have more time to do other activities. However, this shared childcare still burdens the female members of the family, grandmothers or other female relatives (Hatch & Posel, 2018). In terms of income, due to an overall lower income endowment, overall participation should be lower in developing countries. There is also evidence suggesting that the cognitive load caused by financial concerns impedes cognitive function, potentially making political decisions more costly (Mani et al., 2013). However, looking at the evidence, poorer citizens with less time were more likely to participate in elections and attend community meetings in a sample of twenty African emerging democracies (Isaksson, 2014, p. 250). Additionally, Isaksson et al. (2014), did not find evidence that showed that the gender gap in political participation was explained through individual resource endowment such as income, education and access to information, suggesting that the resource mechanism is not the only factor at play.

A noteworthy addition to the theory of interests in developing countries is the role of ethnic politics. Ethnic marginalisation can create distrust between ethnic groups (Arriola & Grossman, 2021), leading to a demobilised electorate if individuals feel underrepresented. For parents, the stakes of political participation may heighten as they consider the implications of ethnic representativity on their children's futures. Another missing element is the role of clientelism in political participation. Jensen and Justesen (2014) observed that poor voters were significantly more likely to be targeted for vote buying in 18 African countries. Theoretically, vote-buying incentivises individuals to vote by providing them material benefit. However, in Latin America, increased electoral turnout from vote-buying appears driven by turnout monitoring rather than material benefits (Carreras & İrepoğlu, 2013). Moreover, Bratton (2008) observed in Nigeria that individuals that experienced vote buying offers were less likely to vote than those who did not, caught between complying with wishes of the vote buyer or acting consciously. For parents, this conflict could be intensified, reflecting their desire to act as ethical role models for their children.

The mechanism for social networks is reasonably stronger within the context of developing countries. Funk (2010) noted that, in smaller communities, individuals can observe each other more easily and socially sanction or reward each other more easily. There is strong

evidence that social networks are important in developing countries. In Latin America, mothers meeting together to exchange information about the disappearance of their children turned into "supermadres" demonstrating, sustaining political development, and challenging military dictatorships (Franceschet, Piscopo & Thomas, 2015; Krause, 2004). This is contrary to Lowndes (2004) who noted that the social networks of women rarely spilled over to the political domain. However, the case in Latin America is potentially also explained by the fact that the stakes were higher, implying that these mothers had a heightened interest in participation due to their personal connection to the cause.

In theory, the political opportunity structure will be less open in emerging democracies as the institutional rules will be less established, however, within a given country, it is unlikely that parents and non-parents experience this political opportunity structure differently.

To reiterate, explaining participation requires using the mechanisms to calculate the individual costs and benefits. Parenthood increases the resource cost, making overall participation costlier, however, it directly shifts interests and has the potential to expand social networks. Collectively, implying that net participation increases when the cost of the activity remains sufficiently low. To operationalise and test this, the following hypothesis:

> *H1a: the initial shift of becoming a parent has a positive effect on low-cost political participation such as voting.*

I argue that only the initial shift into parenthood is impacted by the interests mechanism. The continuous effect only increases the cost of participation but for participation in low-cost activities the expectation is minor, represented in the following hypothesis:

> *H1b: the continuous effect of becoming a parent has a neutral effect on low-cost political participation such as voting.*

The potential impact of high-cost political activities, such as attending a protest, is higher than with voting, however, the associated costs are also higher. I argue that in such cases, the resource mechanism plays a stronger role, while remaining insufficient to fully offset the positive effects of interests and social networks. This is tested through the following hypothesis:

H2: parenthood, both binary and continuously, does not have a positive effect on costlier political activities such as attending protests.

Lastly, participation is argued to be costlier for mothers and the ideological shift into parenthood is argued to be greater for men, meaning the associated gain is reasonably higher. This is tested through the following hypothesis:

H3: Motherhood has a lower positive effect on low-cost political participation compared to fathers, and a negative effect on high-cost political participation.

3. Research design

Improving external validity is prioritised as previous quantitative methodologies analysed one or a few developed countries (Bellettini et al., 2023; Bhatti et al., 2019; Dahlgaard & Hansen, 2021; Grechyna, 2023; Naurin et al., 2023; Quaranta & Dotti Sani, 2018) or used qualitative process-tracing for Latin America (Franceschet, Piscopo & Thomas, 2015; Krause, 2004). Thus, a quantitative research design, consisting of a multi-country cross-individual regression, is used to answer the research question. This is suitable because a regression determines the presence and direction of association between parenthood and political participation while controlling for potential confounding factors, making it easier to draw precise and convincing conclusions. The limited ability to examine mechanisms with this research design is a reason to be mindful when including control variables to rule out alternative explanations.

3.1. Data

The data is collected from the World Values Survey (WVS), allowing for a reliable, representative, and unbiased operationalisation of the variable since randomly selected individuals are interviewed (Inglehart et al., 2018). Previous studies also used the European equivalence (European Social Survey) for large-N analyses (Banducci et al. 2016). The dataset utilises standardised procedures across countries, allowing for accurate cross-country comparisons, with sample sizes between 1000 and 3051 respondents per country. The focus was exclusively on wave 5 of the WVS data (2004-2008) as it was the only one to include a question about participation in *recent* political activities. To test that the results of this wave were not unique, the last two waves of the WVS trend data were used along with a less precise measure of political participation; the results are displayed in Appendix A.

Case selection prioritised continental diversity and representativity. Countries were filtered by their income level based on the World Bank (WB) classifications as a proxy for their development status. I considered countries that the WB defined as lower-middle income and lower (approximately $4,500 Gross National Income per capita) during wave 5 (Stockemer, 2015, p. 9). Additionally, countries with a minimum status of "party free" given by the Freedom House during wave 5 were considered (Piano & Puddington, 2005). After removing influential cases, the final sample comprises four countries from the Americas, three countries from Africa and four countries from Asia from 2004-2008, the full list is available in Appendix B and is visualised in Figure 1 and 2. The range of countries, across contexts lends to the aim of this research to increase the generalisability of the results previously observed in the literature.

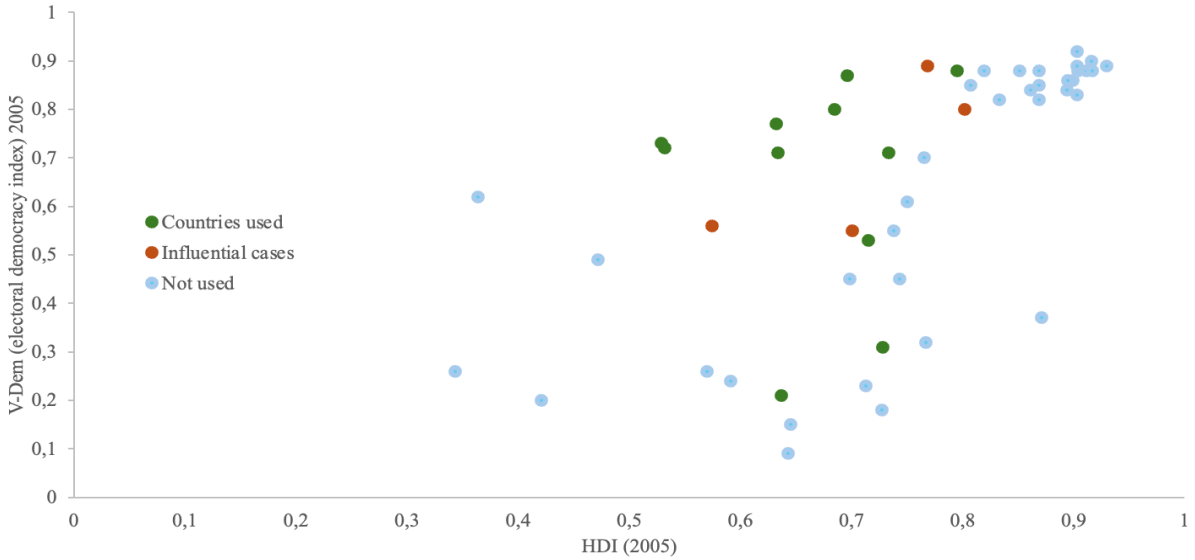

Figure 1: All countries in dataset, categorised. Own compilation from data from V-Dem (Coppedge et al., 2024) and UNDP (2024).

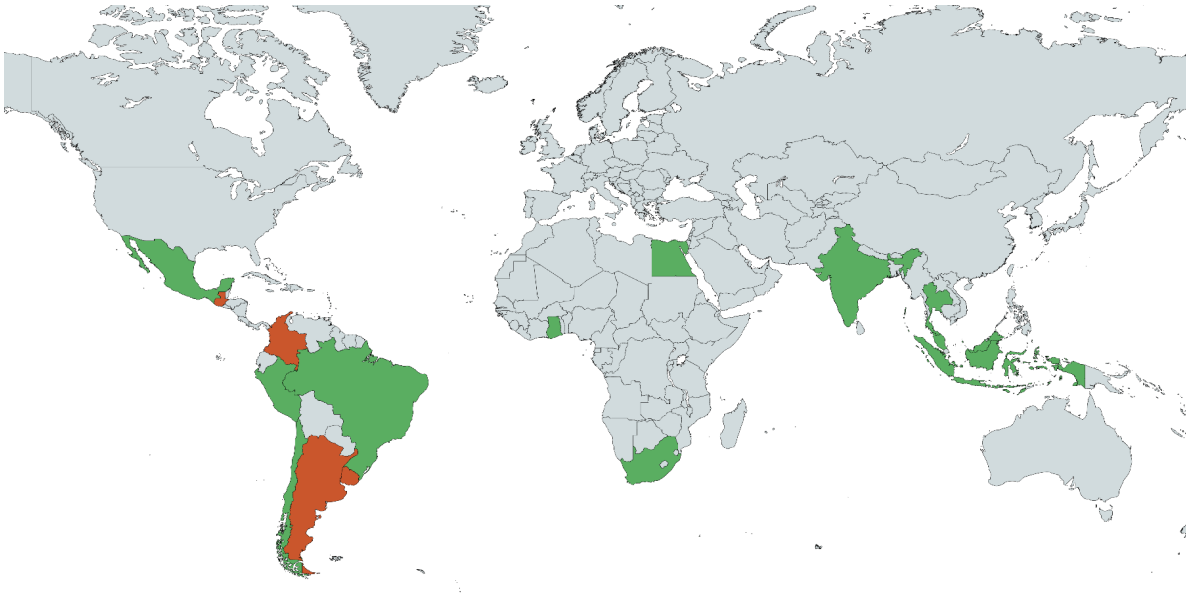

Figure 2: Map of countries analysed and the influential cases.

The main disadvantage of the data concerns its cross-sectional character. Previous studies utilised panel data to detangle long term from short term effects (for example: Grechyna, 2023). However, this was not available for a large-N study focused on developing countries, as was the goal of this study. There was also no possibility to merge two household survey datasets because the individuals surveyed by different agencies were not the same. Nevertheless, the data lends itself to testing the effect of both the initial ideological shift into parenthood and the expansion of parenthood with subsequent children, thereby answering the research question.

3.2. Dependent variable: political participation

As the theory showed the cost associated with political participation mattered, the dependent variable is split in two. Low-cost political participation is operationalised as whether participants voted in the recent parliamentary election and attending a recent peaceful protest is taken as participating in a high-cost political activity. This is an appropriate operationalisation as elections are held either on weekends or made into public holidays in the sample countries, while protests can be unsafe, tiring and often far from home.

Both variables are binary 0 (did not vote/ did not attend protest) and 1 (did vote/ attended protest). A potential limitation is that the answers are self-reported so there is potentially a social conformity bias. This is unlikely to be a serious problem as parents and nonparents are impacted similarly. Lastly, the dependent variable does not quantify what is meant by "recent", limiting the nuance of the results; the full survey questions are presented in Appendix B.

3.3. Independent variable and interaction term: parenthood and motherhood

Previous studies relied on the number of children in a household as a proxy measure for parenthood, however, this is unreliable in developing countries where multi-family, multi-generational homes are common (Banducci et al. 2016). The WVS dataset included a variable asking participants how many children they have, ranging from none to eight. To assess the initial impact of becoming a parent the variable was recoded into a binary variable 0 (no children) and 1 (children). To analyse the effect of additional children the ordinal variable was treated as continuous, as it has more than four categories, and the N is sufficiently large (Johnson, & Creech, 1983).

Similarly to previous studies, to test H3, the effect of gender, the dummy variables for parenthood and sex (1 for female) were used to create an interaction term that captures the

effect for mothers (Banducci et al. 2016). The interaction term enables direct statistical testing of the gendered effect of parenthood on political participation, offering a more robust approach compared to using separate regressions for women and men, as done in different studies looking at political attitudes (Elder & Greene, 2012).

3.4. Control variables

In an attempt to isolate the relationship when random assignment is impossible, parents' demographic characteristics, such as age, education and income, are treated as confounding variables and will be controlled for their influence on political participation and parenthood.

Including age and age-squared account for life-cycle effects, as political participation and parenthood vary across different age groups (Grechyna, 2023). Income serves as a proxy for the resource-based theories of participation, accounting for example, that poorer individuals were more likely to vote in developing countries (Isaksson, 2014). Similarly, education level captures basic cognitive resources that can facilitate political decision-making. Both the education level and income were ordinal variables, with higher values indicating higher levels, but are treated as continuous because there were 10 categories, and the N is sufficiently large (Johnson, & Creech, 1983). Marital status (married or living with a partner) reflects one of the social networks available to individuals, with married citizens potentially motivated to participate by politically active partners (Bellettini et al., 2023; Grechyna, 2023). Sex is used to account for the gender gap in political participation (Isaksson et al., 2014).

Lastly, each country is only measured once during each wave, however there is variation in which year the countries were surveyed. Including country fixed effects allows for individuals within the country to be compared, thus, holding the political climate constant. This further helps isolate the effect of parenthood on political participation as unobservable heterogeneity between the countries and general time trends are unvaried between within-country comparisons.

While it is impossible to include every potential confounder, the selected controls reflect the primary mechanisms identified in the literature. This enables a robust analysis of the relationship between parenthood and political participation.

3.5. Model specification

A logit model will be used to analyse the research question, which is ideal for estimating whether there is a relationship between parenthood and political participation, a binary variable. Logistic regressions are more precise than a linear probability model (LPM) which

assumes that the relationship is linear, resulting in the predicted probabilities potentially outside the interval of 0 and 1, potential heteroskedasticity and less reliable approximations due to the error term only taking two values. The number of individuals is above 10,000, constituting a large sample and further justifies utilising a logit model rather than LPM, as there is no concern for substantial bias away from zero (Rainey & McCaskey, 2021).

$$Pr\left(Polpart_{i,c} = 1\right) = \alpha_c + \delta_1\, parent_{i,c} + \delta_2\, numchild_{i,c} + \beta_1\, sex_{i,c} + \beta_2\, parent_{i,c} \times sex_{i,c} + \beta_3\, control_{i,c} + \xi_{i,c}$$

$Pr(Polpart_{i,c} =1)$ is the probability that individual *i* participated in the political activity (voted in recent parliamentary elections or attended a peaceful protest) in country *c*. $Parent_{i,c}$ is a dummy variable taking the value 1 if individual *i* has children in country *c*, and 0 otherwise. The coefficient on the treatment indicator, δ_1, is the treatment effect of parenthood, representing the change in the average marginal effect of participation between parents and nonparents, ceteris paribus. According to the aforementioned hypotheses, $\delta_1>0$ is the expectation for voting and $\delta_1=0$ or $\delta_1<0$ for protests, namely, becoming a parent positively influences voting and does not positively influence attending a protest. $Control_{i,c}$ includes the controls outlined above, α_c accounts for the country-fixed effects and $\xi_{i,c}$ is the error term.

All assumptions for logistic regression were verified, except for multicollinearity and influential cases. As expected, both the higher-order age and interaction terms had a VIF above 5. These variables were essential to answering the research question and could not be removed. The influential cases were removed. The diagnostic tests are available in Appendix C.

4. Results and Analysis

Descriptively, the hypothetical average respondent is a 39-year-old father (but only marginally, 50.1% male) with two children, has completed middle school but not highschool, is on the fourth income scale point (out of 10) and is married or living with their partner.

The four models are subsequently presented in Table 1. Models 1 and 2 test the effect of parenthood and motherhood, respectively, on participation in a low-cost political activity, namely, voting in the recent parliamentary election. While models 3 and 4 test the effect of parenthood and motherhood on participation in a high-cost political activity, specifically, attending peaceful protests.

Table 1: Logistic regression analysis of the effect of parenthood on the likelihood of participating in political activities.

	Model 1: Voting	**Model 2: Voting**	**Model 3: Protest**	**Model 4: Protest**
(Constant)	-11.925 (0.275)***	-12.052 (0.277)***	-4.219 (0.250)***	-4.313 (0.252)***
Parent	0.538 (0.096)***	0.808 (0.114)***	-0.057 (0.095)	0.109 (0.106)
Number of children	0.058 (0.026)*	0.062 (0.026)*	0.033 (0.024)	0.033 (0.24)
Sex (Ref. = male)	-0.545 (0.055)***	-0.243 (0.086)**	-0.461 (0.053)***	-0.188 (0.094)*
Mother (parent X sex)		-0.521 (0.114)***		-0.396 (0.114)***
Age	0.379 (0.012)***	0.381 (0.012)***	0.034 (0.011)**	0.035 (0.011)**
Age squared	-0.003 (0.000)***	-0.003 (0.000)***	0.000 (0.000)**	0.000 (0.000)**
Education level	0.149 (0.013)***	0.141 (0.013)***	0.162 (0.013)***	0.159 (0.013)***
Income level	-0.038 (0.013)**	-0.037 (0.013)**	-0.013 (0.013)	-0.14 (0.013)
Married or living with partner (Ref. = No)	0.764 (0.078)***	0.721 (0.078)***	-0.018 (0.074)	-0.039 (0.074)
Country fixed effects	Yes	Yes	Yes	Yes

-2LL	9122.225	9109.245	10062.195	10050.189
Pseudo R^2 (Nagelkerke)	0.653	0.654	0.139	0.141
N	17289	17289	12898	12898

Note: Logistic regression coefficients with standard errors in brackets.

***p < 0.001, **p < 0.01, *p < 0.05

In model 1, parenthood positively affects participation with statistical significance at the 99.9% threshold (p<0.001). Exponentiating the coefficient of parenthood (B= 0.538, SE= 0.096) yields the odds ratio of 1.712 ($e^{0.538}$). This indicates that the odds of parents going to vote in the recent parliamentary elections compared to nonparents are 71.2% higher, ceteris paribus. There is, thus, evidence in support for H1a that becoming a parent positively impacts voter turnout, rejecting the null hypothesis. There is also a positive coefficient for the number of children (B= 0.058, SE = 0.026), indicating a 6% ($e^{0.058}$) increase in the odds of going to vote per additional child, significant at the 95% threshold, contrary to the expectations of H1b. Together, these results imply that the initial shift into parenthood accounts for the biggest substantive increase in participation with additional children mildly influencing participation.

All the control variables are significant. The direction of the coefficients is consistent with the existing literature. Notably, the coefficient for income is negative, indicating that lower income individuals have a higher likelihood of voting, consistent specifically with the literature in developing countries (Isaksson, 2014).

Model 2 adds the interaction term for motherhood. Similarly to model 1, there is a positive coefficient for parenthood. In this model it represents the effect that being a father has on voting in the recent parliamentary elections. The odds of voting in the recent parliamentary elections increased by 124.3% ($e^{0.808}$), significant at the 99.9% threshold, for fathers compared to men without children. The coefficient for parenthood combined with the negative coefficient for the interaction term of motherhood (B_{parent}=0.808 + B_{mother}=-0.521) is positive (B=0.287), and the subsequent odds ratio of 1.332 ($e^{0.287}$) indicates that the odds of voting increased by 33.2% for mothers compared to childless women, significant at the 99.9% threshold. This means that parenthood, regardless of gender, has a positive effect on political participation, however, the effect is higher for fathers. One possible explanation is that there is a ceiling effect for the participation of women. However, evaluating the significant negative sex coefficient

indicates that the odds of voting decreased by 21.6% ($e^{-0.243}$) for childless women compared to men. This supports part of H3 that motherhood has a lower positive effect on participation compared to fathers. This can be attributed to the greater ideological shift that men require when becoming a father, compared to women who are primed from younger to think of children and the future. Again, the effects of the control variables are expected and confirm the findings of other studies.

Turning to high-cost political activities, attending protests, model 3 finds a negative coefficient for the parenthood variable and positive coefficient for the number of children variable. However, neither were significant, indicating no evidence of a relationship between these variables. This provides evidence supporting H2 that parenthood does not positively affect costly political activities. Notably, income level was not significant aligning with literature on protest participation (Schussman & Soule, 2005), suggesting that a pure resource model does not fully explain participation.

Model 4 investigates the effect of gender in shaping protest attendance among parents. Similar to model 3, there is a non-significant relationship between parenthood, number of children and participation in a recent peaceful protest. However, the negative interaction term of motherhood is significant at the 99.9% threshold ($p<0.001$). Combining the interaction term with the positive coefficient of parenthood (B_{parent}= 0.109 + B_{mother}= -0.396) yields the subsequent odds ratio of 0.751 ($e^{-0.287}$), indicating that the odds of attending a protest decreased by 24.9% for mothers compared to childless women. Intuitively, even peaceful protests are not as safe, and mothers cannot leave their child at home for the whole day. This provides support for H3 that motherhood has a negative effect on high-cost political participation. This demobilising effect was not present for fathers as the coefficient for parenthood is not significant, suggesting that protest attendance remains unaffected when men become fathers.

Table 2 presents the results of mechanism-testing regressions.

Table 2: Regression analysis testing proposed mechanisms.

	OLS: Model 5: Resources	**OLS: Model 6: Interest**	**LOGIT: Model 7: Social networks**
(Constant)	2.489	3.279	1.825
	(0.113)***	(0.069)***	(0.157)***
Parent	-0.101	-0.043	-0.036

	(0.60)	(0.036)	(0.074)
Number of children	-0.069	0.017	-0.011
	(0.012)***	(0.007)	(0.014)
Sex	0.087	-0.070	-0.080
(Ref. = male)	(0.053)	(0.032)	(0.070)
Mother	-0.058	0.063	-0.287
(parent X sex)	(0.063)	(0.038)	(0.081)***
Age	0.015	-0.013	0.030
	(0.005)**	(0.003)***	(0.006)***
Age squared	0.000	0.000	0.000
	(0.000)	(0.000)***	(0.000)***
Education level	0.299	-0.045	0.153
	(0.006)***	(0.004)***	(0.008)***
Income level		-0.003	0.052
		(0.004)	(0.008)***
Married or living	0.294	-0.064	-0.109
with partner	(0.039)***	(0.024)**	(0.046)
(Ref. = No)			
Country fixed effects	Yes	Yes	Yes
R^2/ -LL	0.253	0.071	21293.672
Adj. R^2/ Pseudo R^2 (Nagelkerke)	0.252	0.070	0.116
N	20307	18745	19312

Note: OLS/Logistic regression coefficients with standard errors in brackets.

***p < 0.001, **p < 0.01, *p < 0.05

Model 5 tests the effect of parenthood on income level as a proxy for resource endowment. The coefficient for parenthood is insignificant while the coefficient for the number

of children is significant, indicating that subsequent children reduce the income level by 0.069 units. These results provide tentative evidence that the resource mechanism operates through the continuous understanding of parenthood, rather than the initial ideological shift of becoming a parent, regardless of gender, aligning with prior research (Dahlgaard & Hansen, 2021). Together with the results of Table 1, in which both explanatory variables had a positive effect on voting, it is unlikely that a resource constraint is the primary mechanism that influences political participation in developing democracies. Nonetheless, the effect of additional children on electoral turnout might be greater if not for the influence of this mechanism. Neither of the operationalised political activities directly require an income, so other political activities such as monetary donations to political parties may still be affected (Brady et al., 1995).

The literature primarily theorised that the (opportunity) costs of political activities can inhibit participation. The results from this model may suggest that overall resource level plays a role, as opposed to disposable income or opportunity costs. Parents, for instance, may work less due to time constraints, thereby reducing their total income level. The focus in the theory, therefore, may need to shift from costs to overall resource levels. Surprisingly, the sex and motherhood coefficients are insignificant, converging from the literature. However, this could be due to the perception that income level is homogenous within the household.

Model 6 investigates the effect of parenthood on concern for the environment, with lower values signifying a higher concern, as a proxy measuring the interest shift towards an extended time horizon similarly to previous studies (Ekholm, 2020). Both the explanatory variables of parenthood are insignificant, implying that parents, regardless of gender, are not more concerned for the environment. Lo and Chow (2013) observed a positive relationship between a country's economic position and perceived importance of climate change, suggesting that individuals in developing countries generally perceive climate change as less important. Given the low overall concern, implying the climate is not a politically salient issue, this measure may not accurately capture whether parenthood extends an individual's time horizon in developing countries.

Lastly, model 7 uses whether individuals use conversations with their friends or colleagues as an information source as a proxy to estimate the effect of parenthood on individuals' social networks. Similarly to model 6, the effect of both parental explanatory factors are not significant. Interestingly, the negative coefficient of motherhood is significant, implying that the odds of women using their friends and colleagues as an information source is 27.7% lower (B_{parent}= -0.036 + B_{mother}= -0.287= -0.323, $e^{-0.323}$) compared to childless women.

This suggests that mothers rely on their network as a resource less than has been previously suggested in the literature (Lowndes, 2004; Franceschet, Piscopo & Thomas, 2015; Krause, 2004). These findings parallel model 4, in which protest attendance decreased when women became mothers but not for men becoming fathers. This may indicate that social networks are important for mobilising individuals to participate in high-cost political activities such as protests.

5. Conclusion

This quantitative study investigated the effect of parenthood on political participation in developing democracies, with the primary logistic regression results demonstrating that becoming a parent increases participation in low-cost activities such as voting. Notably, the initial transition to parenthood appears to be most impactful, with additional children slightly amplifying this effect. While the literature anticipated the voting boost from the first child due to a shift of interests, the positive effect of additional children was unexpected. Theoretically, this can be explained by subsequent children reinforcing interests through renewed interactions with public institutions, while resource endowments mildly damper this. These results specifically pertain to voting in parliamentary elections and may not accurately extend to presidential elections, where personalistic politics and ethnic preferences may play a larger role.

Interestingly, the positive effect of parenthood on voting participation was stronger for men becoming first time parents than women. One possible explanation is that the resource mechanism is less impactful on men, lowering the cost of participation for them. However, when testing the effect for parenthood on resources, the coefficient representing the effect for fathers is insignificant, making this less likely. Alternatively, men may experience a greater ideological shift when transitioning to parenthood. This did not appear to be the case from testing the perceived concern for the climate, however, as aforementioned this proxy measure might not be the most accurate within the context of developing countries. The extant literature does suggest that women are conditioned to think about motherhood and the future from earlier on (Yopo Díaz, 2021). Future qualitative studies can investigate this mechanism further through longer-form interviews with new fathers.

Conversely, a positive effect was not observed for high-cost political activities such as attending protests. Parenthood, in general, did not significantly affect protest attendance. However, when investigating the interaction effect of gender, motherhood was found to negatively affect protest attendance, possibly due to a decreased social network. The

demobilising effect of motherhood may reflect rational considerations of safety and logistical challenges of leaving children for extended periods. Motherhood, thus, imposes distinct constraints on participation in high-cost political actions, contrasting with the stable participation levels observed among fathers. This implies that parents are not a homogeneous group and that other demographic features intersect with parenthood to influence political participation.

The results were anticipated by the literature but have so far not been tested on developing countries. This work, therefore, extends the literature on parenthood and participation by increasing the generalisability of the findings. Furthermore, they demonstrate that parenthood could serve as a catalyst for increasing voter turnout, thereby granting parents disproportionate influence in elections, effectively, prioritising policies that align with their interests. The results also indicate that alternative means of accountability such as protests are not as representative, with protest composition lacking women and particularly mothers. Protests involving women emphasising their motherhood or wife roles are often perceived to be less violent, reducing the need for police intervention (Naunov, 2024). Protest planning should, therefore, consider ways to make participation more accessible to women and mothers, such as holding them locaing and scheduling them during weekends.

The strength of this research lies in its external validity, as the model was tested in a range of political contexts. However, there are also certain limitations. Quantitative studies are contingent on the quality of the data. While the WVS contains comprehensive trend data, it only collected data on recent political participation in one wave, rendering the study cross-sectional. Therefore, while the results presented here show compelling relationships between parenthood and voting, controlling for selection into parenthood or demonstrating individual-level change over time was not possible. The age of the children was also not available in the data, making it impossible to test whether the effects of parenthood decrease with time, as older children become self-sufficient and potentially leave home. When panel data on election turnout and births is available in developing countries, future studies should test these possibilities. Future research should also consider using clustered standard errors to account for potential within-cluster correlation. This was considered, however, technical limitations prevented implementation in this study. Lastly, mechanism-testing was attempted to understand *how* parenthood influences political participation. As the dataset lacked variables precisely measuring the relevant mechanisms, such as how much free time individuals have, future qualitative studies could interview parents in developing countries to better understand the motivations behind shifts in participation.

Ultimately, while parenthood increases low-cost forms of political participation, its effects do not extend to more demanding activities, emphasising the heterogeneity of political participation. Nuancing the results further, motherhood had a negative effect on protest attendance while fatherhood only increased electoral turnout. These results open promising avenues for future research.

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Appendix A: Supplementary details, results

Table 1: Logistic regression analysis of the effect of parenthood on the likelihood of participating in political activities during wave 6 and 7 of WVS

	Model 1: Voted local	Model 2: Voted local	Model 3: Peaceful protest	Model 4: Peaceful protest
Constant	-4.316 (0.157)***	-4.312 (0.157)***	-1.520 (0.122)***	-1.541 (0.122)***
Parent	0.506 (0.062)***	0.487 (0.073)***	-0.086 (0.046)	-0.036 (0.053)
Number of children	-0.065 (0.021)**	-0.065 (0.021)**	-0.013 (0.014)	-0.013 (0.014)
Sex	-0.204 (0.037)***	-0.223 (0.053)***	-0.451 (0.027)***	-0.378 (0.046)***
Mother (parent X sex)		0.037 (0.074)		-0.111 (0.057)
Age	0.191 (0.007)***	0.191 (0.007)***	0.021 (0.005)***	0.021 (0.005)***
Age-squared	-0.002 (0.000)***	-0.002 (0.000)***	0.000 (0.000)***	0.000 (0.000)***
Education level	0.069 (0.010)***	0.069 (0.010)***	0.102 (0.007)***	0.101 (0.007)***
Income level	0.002 (0.009)	0.002 (0.009)	0.006 (0.007)	0.005 (0.007)
Regional fixed effects	yes	Yes	Yes	yes
-2LL	19849.497	19849.247	33528.163	33524.391
Pseudo R^2	0.345	0.345	0.183	0.183

(Nagelkerke)				
N	67340	67340	67340	67340

Note: Logistic regression coefficients with standard errors in brackets.

***p < 0.001, **p < 0.01, *p < 0.05

It should be noted that the direction of some coefficients differ, this could be due to the less precise measurement of political participation (“do you vote in local elections”), the regional fixed effects instead of country fixed effects or the different countries included.

Appendix B: Supplementary details, research design

Americas	Africa	Asia
Argentina (2006) Removed: *Influential case* Compulsory voting	Egypt (2008) Compulsory voting	India (2006)
Brazil (2006) Compulsory voting	Ghana (2007)	Thailand (2007)
Chile (2006) Compulsory voting	South Africa (2006)	Malaysia (2006)
Colombia (2005) Removed: *Influential case*		Indonesia (2006)
Guatemala (2004) Removed: *Influential case*		
Mexico (2005)		
Peru (2006) Compulsory voting		
Uruguay (2006) Removed: *Influential case* Compulsory voting		

Countries analysed:

Full survey questions:

V102: Political action recently done: attending peaceful/lawful demonstration (1 have done, 2 not done)

V234: Voted in recent parliament elections (1 yes, 2 No)

Appendix C: SPSS syntax

<table>
<tr><th>Description</th><th>Syntax</th><th>Output</th><th>Interpretation and additional information</th></tr>
<tr><td>Descriptive statistics</td><td>descriptives votedrecentparlia recentpeaceprotest parent v56 mother v237 sex v238 v253 v56 livtogether.</td><td>
Descriptive Statistics
<table>
<tr><th></th><th>N</th><th>Minimum</th><th>Maximum</th><th>Mean</th><th>Std. Deviation</th></tr>
<tr><td>votedrecentparlia</td><td>17306</td><td>.00</td><td>1.00</td><td>.7613</td><td>.42631</td></tr>
<tr><td>recentpeaceprotest</td><td>12920</td><td>.00</td><td>1.00</td><td>.1551</td><td>.36197</td></tr>
<tr><td>parent</td><td>17306</td><td>.00</td><td>1.00</td><td>.7165</td><td>.45069</td></tr>
<tr><td>How many children</td><td>17306</td><td>0</td><td>7</td><td>2.05</td><td>1.820</td></tr>
<tr><td>mother</td><td>17306</td><td>.00</td><td>1.00</td><td>.3751</td><td>.48416</td></tr>
<tr><td>Age</td><td>17306</td><td>15</td><td>94</td><td>38.54</td><td>15.133</td></tr>
<tr><td>sex</td><td>17306</td><td>.00</td><td>1.00</td><td>.4925</td><td>.49996</td></tr>
<tr><td>Highest educational level attained</td><td>17306</td><td>1</td><td>9</td><td>4.89</td><td>2.547</td></tr>
<tr><td>Scale of incomes</td><td>17306</td><td>1</td><td>10</td><td>4.43</td><td>2.282</td></tr>
<tr><td>Married or living with partner</td><td>17306</td><td>.00</td><td>1.00</td><td>.6366</td><td>.48100</td></tr>
<tr><td>Valid N (listwise)</td><td>12920</td><td></td><td></td><td></td><td></td></tr>
</table>
</td><td></td></tr>
<tr><td>Recoding variables</td><td colspan="3">recode v55 (1 thru 2= 1)(else =0) into livtogether.
recode V235 (2=1)(1= 0) into sex.
recode v234 (2=0)(1=1) into votedrecentparlia.
recode v102 (2=0)(1=1) into recentpeaceprotest.
recode v56 (0 = 0)(1 thru 7=1) into parent.
compute mother = parent*sex.
compute agesquared = v237*v237.
recode v229 (1= 1)(2=0) into informationFriends.

SPSSINC CREATE DUMMIES VARIABLE=v2
ROOTNAME1=Country
/OPTIONS ORDER=A USEVALUELABELS=YES USEML=YES OMITFIRST=NO.</td></tr>
</table>

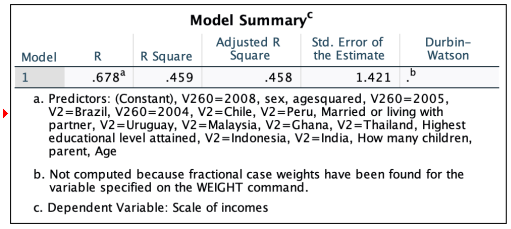
<table>
<tr>
<td>Checking for multicollinearity</td>
<td>regression
/missing listwise
/STATISTICS COEFF OUTS R ANOVA COLLIN TOL
/CRITERIA=PIN(.05) POUT(.10) TOLERANCE(.0001)
/NOORIGIN
/dependent votedrecentparlia
/method enter parent V56 sex mother v237 agesquared v238 V253 livtogether
/SCATTERPLOT=(*ZRESID ,*ZPRED)
/RESIDUALS DURBIN.</td>
<td>
<table>
<tr><th></th><th colspan="2">Collinearity Statistics</th></tr>
<tr><th></th><th>Tolerance</th><th>VIF</th></tr>
<tr><td>)8</td><td></td><td></td></tr>
<tr><td>)1</td><td>.266</td><td>3.764</td></tr>
<tr><td>)1</td><td>.408</td><td>2.454</td></tr>
<tr><td>)2</td><td>.270</td><td>3.706</td></tr>
<tr><td>'6</td><td>.204</td><td>4.893</td></tr>
<tr><td>)1</td><td>.029</td><td>34.887</td></tr>
<tr><td>)1</td><td>.032</td><td>31.736</td></tr>
<tr><td>)1</td><td>.762</td><td>1.312</td></tr>
<tr><td>)5</td><td>.882</td><td>1.133</td></tr>
<tr><td>)1</td><td>.554</td><td>1.804</td></tr>
</table>
</td>
<td>The only variables with high correlation between them are the interaction term (VIF= 4.89) and Age/Age squared (VIF>30). The sample size is very large and the interaction remains significant, so this is not a major concern.</td>
</tr>
<tr>
<td>Checking for outliers and influential cases and then removing influential and missing data from the dataset</td>
<td>REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT votedrecentparlia
/METHOD=ENTER parent V56 sex mother v237 agesquared v238 V253 livtogether</td>
<td>
Casewise Diagnostics[a]
<table>
<tr><th>Case Number</th><th>Std. Residual</th><th>votedrecentparlia</th><th>Predicted Value</th><th>Residual</th></tr>
<tr><td>1006</td><td>-2.326</td><td>.00</td><td>.7265</td><td>-.72655</td></tr>
<tr><td>1011</td><td>-2.127</td><td>.00</td><td>.6644</td><td>-.66442</td></tr>
<tr><td>1068</td><td>-2.073</td><td>.00</td><td>.6474</td><td>-.64742</td></tr>
<tr><td>1125</td><td>-2.491</td><td>.00</td><td>.7781</td><td>-.77809</td></tr>
<tr><td>1222</td><td>-2.002</td><td>.00</td><td>.6254</td><td>-.62536</td></tr>
<tr><td>1281</td><td>-2.266</td><td>.00</td><td>.7078</td><td>-.70779</td></tr>
<tr><td>1288</td><td>-2.399</td><td>.00</td><td>.7493</td><td>-.74930</td></tr>
<tr><td>1373</td><td>-2.054</td><td>.00</td><td>.6417</td><td>-.64166</td></tr>
<tr><td>1399</td><td>-2.397</td><td>.00</td><td>.7489</td><td>-.74887</td></tr>
<tr><td>1410</td><td>-2.422</td><td>.00</td><td>.7567</td><td>-.75668</td></tr>
<tr><td>1417</td><td>-2.292</td><td>.00</td><td>.7158</td><td>-.71584</td></tr>
<tr><td>1428</td><td>-2.131</td><td>.00</td><td>.6655</td><td>-.66555</td></tr>
<tr><td>1433</td><td>-2.117</td><td>.00</td><td>.6613</td><td>-.66131</td></tr>
<tr><td>1457</td><td>-2.443</td><td>.00</td><td>.7633</td><td>-.76330</td></tr>
<tr><td>1466</td><td>-2.245</td><td>.00</td><td>.7013</td><td>-.70126</td></tr>
<tr><td>1491</td><td>-2.073</td><td>.00</td><td>.6475</td><td>-.64747</td></tr>
<tr><td>1512</td><td>-2.112</td><td>.00</td><td>.6598</td><td>-.65975</td></tr>
<tr><td>1658</td><td>-2.223</td><td>.00</td><td>.6945</td><td>-.69446</td></tr>
<tr><td>1679</td><td>-2.393</td><td>.00</td><td>.7476</td><td>-.74759</td></tr>
<tr><td>1695</td><td>-2.022</td><td>.00</td><td>.6317</td><td>-.63169</td></tr>
<tr><td>1770</td><td>-2.564</td><td>.00</td><td>.8009</td><td>-.80094</td></tr>
<tr><td>1909</td><td>-2.596</td><td>.00</td><td>.8109</td><td>-.81087</td></tr>
<tr><td>1916</td><td>-2.403</td><td>.00</td><td>.7505</td><td>-.75052</td></tr>
</table>
</td>
<td>There were some influential cases</td>
</tr>
</table>

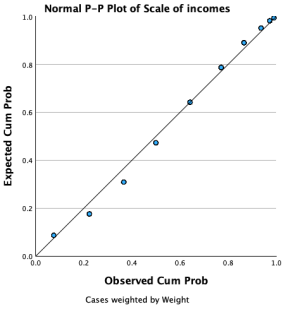
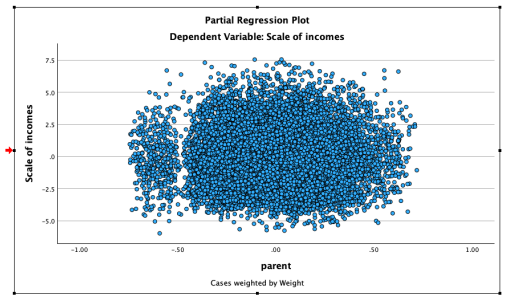
	country_2 country_3 country_6 country_9 country_11 country_14 country_15 country_17 country_18 country_23 country_25 country_29 country_33 country_35 country_37 country_38 country_41 country_44 year_1 year_2 year_3 year_4 year_5 year_6 /SCATTERPLOT=(*ZRESID ,*ZPRED) /RESIDUALS DURBIN /CASEWISE PLOT(ZRESID) OUTLIERS(2) /SAVE PRED ADJPRED MAHAL COOK LEVER RESID ZRESID SRESID DRESID SDRESID DFBETA SDBETA DFFIT SDFIT COVRATIO. COMPUTE filter_$1=(ZRE_1 < 2 & ZRE_1 > - 2).		

	VARIABLE LABELS filter_$1 'ZRE_1 < 2 & ZRE_1 > - 2 (FILTER)'. VALUE LABELS filter_$1 0 'Not Selected' 1 'Selected'. FORMATS filter_$1 (f1.0). FILTER BY filter_$1. Execute.		
Running regression. Here model 2 is run, same applies for model 1 (just without the mother interaction term)	LOGISTIC REGRESSION votedrecentparlia /method enter parent V56 sex mother v237 agesquared v238 V253 livtogether country_2 country_3 country_6 country_9 country_11 country_14 country_15 country_17 country_18 country_23 country_25 country_29 country_37 country_38 country_41 country_44 year_1 year_2 year_3 year_4 year_5 year_6.	**Variables in the Equation** B S.E. Wald df Sig. Exp(B) Step 1[a] parent .808 .114 50.493 1 <.001 2.244 How many children .062 .026 5.783 1 .016 1.064 sex -.243 .086 8.037 1 .005 .784 mother -.521 .114 20.922 1 <.001 .594 Age .381 .012 1081.685 1 <.001 1.463 agesquared -.003 .000 813.703 1 <.001 .997 Highest educational level attained .141 .013 114.733 1 <.001 1.152 Scale of incomes -.037 .013 8.237 1 .004 .963 Married or living with partner .721 .078 84.481 1 <.001 2.057 V2=Brazil 7.004 .190 1362.757 1 <.001 1100.905 V2=Chile 3.386 .127 712.546 1 <.001 29.560 V2=Ghana 5.809 .138 1784.289 1 <.001 333.133 V2=India 6.202 .196 997.122 1 <.001 493.774 V2=Indonesia 6.556 .158 1716.931 1 <.001 703.191 V2=Malaysia 2.896 .112 663.221 1 <.001 18.094 V2=Mexico 3.292 .107 943.829 1 <.001 26.903 V2=Peru 6.567 .176 1387.711 1 <.001 710.883 V2=South Africa 4.253 .105 1654.959 1 <.001 70.347 V2=Thailand 7.364 .301 596.861 1 <.001 1577.979 Constant -12.052 .277 1888.297 1 <.001 .000 a. Variable(s) entered on step 1: parent, How many children, sex, mother, Age, agesquared, Highest educational level attained, Scale of incomes, Married or living with partner, V2=Brazil, V2=Chile, V2=Ghana, V2=India, V2=Indonesia, V2=Malaysia, V2=Mexico, V2=Peru, V2=South Africa, V2=Thailand.	

<table>
<tr>
<td>Running regression. Here model 4 is run, same applies for model 3 (just without the mother interaction term)</td>
<td>LOGISTIC REGRESSION recentpeaceprotest
/method enter parent V56 sex v237 agesquared v238 V253 livtogether
country_2 country_3 country_6 country_9
country_11 country_14 country_15 country_17 country_18
country_23 country_25 country_29
country_37 country_38 country_41 country_44
year_1 year_2 year_3 year_4 year_5 year_6.</td>
<td>
Variables in the Equation
<table>
<tr><th></th><th></th><th>B</th><th>S.E.</th><th>Wald</th><th>df</th><th>Sig.</th><th>Exp(B)</th></tr>
<tr><td>Step 1[a]</td><td>parent</td><td>.109</td><td>.106</td><td>1.042</td><td>1</td><td>.307</td><td>1.115</td></tr>
<tr><td></td><td>How many children</td><td>.033</td><td>.024</td><td>1.927</td><td>1</td><td>.165</td><td>1.034</td></tr>
<tr><td></td><td>sex</td><td>-.188</td><td>.094</td><td>4.004</td><td>1</td><td>.045</td><td>.829</td></tr>
<tr><td></td><td>mother</td><td>-.396</td><td>.114</td><td>12.118</td><td>1</td><td><.001</td><td>.673</td></tr>
<tr><td></td><td>Age</td><td>.035</td><td>.011</td><td>10.650</td><td>1</td><td>.001</td><td>1.035</td></tr>
<tr><td></td><td>agesquared</td><td>.000</td><td>.000</td><td>10.129</td><td>1</td><td>.001</td><td>1.000</td></tr>
<tr><td></td><td>Highest educational level attained</td><td>.159</td><td>.013</td><td>152.490</td><td>1</td><td><.001</td><td>1.172</td></tr>
<tr><td></td><td>Scale of incomes</td><td>-.014</td><td>.013</td><td>1.221</td><td>1</td><td>.269</td><td>.986</td></tr>
<tr><td></td><td>Married or living with partner</td><td>-.039</td><td>.074</td><td>.271</td><td>1</td><td>.603</td><td>.962</td></tr>
<tr><td></td><td>V2=Brazil</td><td>3.535</td><td>.188</td><td>354.565</td><td>1</td><td><.001</td><td>34.310</td></tr>
<tr><td></td><td>V2=Chile</td><td>1.600</td><td>.158</td><td>102.711</td><td>1</td><td><.001</td><td>4.952</td></tr>
<tr><td></td><td>V2=Ghana</td><td>.927</td><td>.164</td><td>32.082</td><td>1</td><td><.001</td><td>2.527</td></tr>
<tr><td></td><td>V2=India</td><td>1.415</td><td>.150</td><td>89.527</td><td>1</td><td><.001</td><td>4.118</td></tr>
<tr><td></td><td>V2=Indonesia</td><td>1.111</td><td>.148</td><td>56.635</td><td>1</td><td><.001</td><td>3.036</td></tr>
<tr><td></td><td>V2=Malaysia</td><td>-.136</td><td>.191</td><td>.503</td><td>1</td><td>.478</td><td>.873</td></tr>
<tr><td></td><td>V2=Mexico</td><td>1.600</td><td>.148</td><td>116.201</td><td>1</td><td><.001</td><td>4.953</td></tr>
<tr><td></td><td>V2=Peru</td><td>1.773</td><td>.150</td><td>140.031</td><td>1</td><td><.001</td><td>5.889</td></tr>
<tr><td></td><td>V2=South Africa</td><td>.990</td><td>.145</td><td>46.643</td><td>1</td><td><.001</td><td>2.692</td></tr>
<tr><td></td><td>Constant</td><td>-4.313</td><td>.252</td><td>293.143</td><td>1</td><td><.001</td><td>.013</td></tr>
</table>
a. Variable(s) entered on step 1: parent, How many children, sex, mother, Age, agesquared, Highest educational level attained, Scale of incomes, Married or living with partner, V2=Brazil, V2=Chile, V2=Ghana, V2=India, V2=Indonesia, V2=Malaysia, V2=Mexico, V2=Peru, V2=South Africa.
</td>
<td></td>
</tr>
<tr>
<td>Checking for outliers and influential cases and then removing influential and missing data from the dataset model 5 and 6</td>
<td>REGRESSION
/MISSING LISTWISE
/STATISTICS COEFF OUTS R ANOVA
/CRITERIA=PIN(.05) POUT(.10)
/NOORIGIN
/DEPENDENT V253
/METHOD=ENTER parent V56 sex mother v237 agesquared v238 livtogether
country_2 country_3 country_6 country_9</td>
<td>
Casewise Diagnostics[a]
<table>
<tr><th>Case Number</th><th>Std. Residual</th><th>Scale of incomes</th><th>Predicted Value</th><th>Residual</th></tr>
<tr><td>1006</td><td>2.260</td><td>9</td><td>5.12</td><td>3.880</td></tr>
<tr><td>1037</td><td>2.127</td><td>8</td><td>4.35</td><td>3.652</td></tr>
<tr><td>1057</td><td>2.078</td><td>7</td><td>3.43</td><td>3.568</td></tr>
<tr><td>1063</td><td>2.055</td><td>8</td><td>4.47</td><td>3.528</td></tr>
<tr><td>1068</td><td>2.279</td><td>8</td><td>4.09</td><td>3.912</td></tr>
<tr><td>1119</td><td>2.068</td><td>7</td><td>3.45</td><td>3.550</td></tr>
<tr><td>1123</td><td>2.225</td><td>8</td><td>4.18</td><td>3.820</td></tr>
<tr><td>1140</td><td>2.235</td><td>8</td><td>4.16</td><td>3.837</td></tr>
<tr><td>1158</td><td>2.228</td><td>8</td><td>4.18</td><td>3.825</td></tr>
<tr><td>1191</td><td>-2.011</td><td>1</td><td>4.45</td><td>-3.453</td></tr>
<tr><td>1233</td><td>2.276</td><td>8</td><td>4.09</td><td>3.906</td></tr>
<tr><td>1301</td><td>-2.032</td><td>1</td><td>4.49</td><td>-3.488</td></tr>
<tr><td>1325</td><td>2.196</td><td>8</td><td>4.23</td><td>3.770</td></tr>
<tr><td>1368</td><td>-2.007</td><td>2</td><td>5.44</td><td>-3.445</td></tr>
<tr><td>1408</td><td>2.281</td><td>7</td><td>3.08</td><td>3.916</td></tr>
<tr><td>1415</td><td>2.114</td><td>7</td><td>3.37</td><td>3.629</td></tr>
<tr><td>1448</td><td>2.347</td><td>7</td><td>2.97</td><td>4.029</td></tr>
<tr><td>1463</td><td>-2.224</td><td>2</td><td>5.82</td><td>-3.817</td></tr>
<tr><td>1499</td><td>2.230</td><td>9</td><td>5.17</td><td>3.828</td></tr>
<tr><td>1514</td><td>2.362</td><td>7</td><td>2.95</td><td>4.055</td></tr>
<tr><td>1547</td><td>2.292</td><td>7</td><td>3.07</td><td>3.934</td></tr>
<tr><td>1568</td><td>2.093</td><td>7</td><td>3.41</td><td>3.593</td></tr>
<tr><td>1569</td><td>2.007</td><td>7</td><td>3.56</td><td>3.445</td></tr>
<tr><td>1590</td><td>2.247</td><td>7</td><td>3.14</td><td>3.857</td></tr>
</table>
</td>
<td>There were some influential cases</td>
</tr>
</table>

	country_11 country_14 country_15 country_17 country_18 country_23 country_25 country_29 country_33 country_35 country_37 country_38 country_41 country_44 year_1 year_2 year_3 year_4 year_5 year_6 /SCATTERPLOT=(*ZRESID ,*ZPRED) /RESIDUALS DURBIN /CASEWISE PLOT(ZRESID) OUTLIERS(2) /SAVE PRED ADJPRED MAHAL COOK LEVER RESID ZRESID SRESID DRESID SDRESID DFBETA SDBETA DFFIT SDFIT COVRATIO. COMPUTE filter_$1=(ZRE_1 < 2 & ZRE_1 > - 2). VARIABLE LABELS filter_$1 'ZRE_1 < 2 & ZRE_1 > - 2 (FILTER)'.		

	VALUE LABELS filter_$1 0 'Not Selected' 1 'Selected'. FORMATS filter_$1 (f1.0). FILTER BY filter_$1. Execute.		
Autocorrelation model 5 and 6	regression /missing listwise /STATISTICS COEFF OUTS R ANOVA /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /dependent V253 /method enter parent v56 sex mother v237 agesquared V238 livtogether country_2 country_3 country_6 country_9 country_11 country_14 country_15 country_17 country_18 country_23 country_25 country_29 country_33 country_35 country_37 country_38 country_41 country_44 year_1 year_2 year_3 year_4 year_5 year_6 /RESIDUALS DURBIN.		Unable to test for autocorrelation (durbin-watson) due to the data being weighted. However, the model does not rely on time-series data so this is not the biggest concern.

Checking for normality model 5 and 6	PPLOT /VARIABLES=v253 parent /ln /NOSTANDARDIZE /TYPE=P-P /FRACTION=BLOM /TIES=MEAN /DIST=NORMAL.		Assumption of normality is met.
Checking heteroskedasticity model 5 and 6	REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA COLLIN TOL /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /dependent V253 /method enter parent v56 sex mother v237 agesquared V238 livtogether country_2 country_3 country_6 country_9 country_11 country_14 country_15 country_17 country_18 country_23 country_25 country_29 country_33 country_35 country_37 country_38 country_41 country_44		There is no funnel shape, so this assumption is not violated.

	year_1 year_2 year_3 year_4 year_5 year_6 /PARTIALPLOT ALL /SCATTERPLOT=(*ZRESID ,*ZPRED) /RESIDUALS DURBIN.		
Running model 6	REGRESSION /MISSING LISTWISE /STATISTICS COEFF OUTS R ANOVA /CRITERIA=PIN(.05) POUT(.10) /NOORIGIN /DEPENDENT v88 /METHOD=ENTER parent V56 sex v237 agesquared v238 V253 livtogether country_2 country_3 country_6 country_9 country_11 country_14 country_15 country_17 country_18 country_23 country_25 country_29 country_33 country_35 country_37 country_38 country_41 country_44 year_1 year_2 year_3 year_4 year_5 year_6	**Coefficients[a]** Unstandardized Coefficients: B, Std. Error; Standardized Coefficients: Beta; t; Sig. Model 1 (Constant) 3.054 .063 48.370 <.001 parent -.014 .029 -.006 -.478 .633 How many children .013 .007 .023 1.914 .056 sex -.020 .016 -.010 -1.260 .208 Age -.016 .003 -.245 -5.403 <.001 agesquared .000 .000 .168 3.891 <.001 Highest educational level attained -.042 .004 -.104 -10.686 <.001 Scale of incomes .008 .005 .016 1.594 .111 Married or living with partner -.086 .022 -.041 -3.942 <.001 V2=Brazil -.499 .035 -.132 -14.253 <.001 V2=Chile -.393 .042 -.081 -9.310 <.001 V2=Ghana -.724 .036 -.185 -19.903 <.001 V2=India -.322 .036 -.084 -8.888 <.001 V2=Indonesia -.368 .033 -.107 -11.048 <.001 V2=Malaysia .356 .037 .090 9.576 <.001 V2=Peru -.041 .036 -.011 -1.135 .256 V2=Thailand .449 .036 .122 12.580 <.001 V2=Uruguay .014 .040 .003 .366 .714 V260=2005 -.387 .039 -.087 -9.841 <.001 V260=2008 -.356 .029 -.132 -12.277 <.001 a. Dependent Variable: Schwartz: Important to this person looking after environment

	/SCATTERPLOT=(*ZRESID ,*ZPRED) /RESIDUALS DURBIN /CASEWISE PLOT(ZRESID) OUTLIERS(2).	