



# Radicalizing and Conservatizing: Ageing Effects on Political Trust in Asia, 2001–2016

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Accepted: 11 November 2021

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## Abstract

Previous studies on political trust found ageing leads to support for authority, while education encourages a critical view of governments. We speculated the two effects would moderate each other and complicate the story. By applying Hierarchical age-period-cohort (HAPC) modelling to the Asian Barometer Survey (2001–2016) data, we found significant interaction effects of age and education in shaping political trust. During the transition from youth to middle age, ageing reinforces people's original disposition formed in the early years. From middle to old age, ageing mainly plays a conservatizing role. Ageing also conditions the educational gap in political trust: people with little education's political trust increases as they age; well-educated individuals' political trust decline until middle age and conservatize later. In sum, ageing has a variant effect during the life course; we found evidence of ageing's radicalizing and conservatizing effects on political trust in the context of Asia.

**Keywords** Political trust · Ageing · Education · Age-period-cohort analysis · Multilevel models · Asia

## 1 Introduction

Political trust has important implications for political order and social development, and its determinants have attracted scholarly attention for decades. Age and education have been singled out as two critical predictors of trust. Conventional wisdom says ageing is

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associated with higher support for authority (Christensen & Laegreid, 2005) and conservative values (Peterson et al., 2020), while increased education leads to a critical mindset and lower political trust (Fitzgerald & Wolak, 2016; Zhang et al., 2021). We believe the roles played by ageing and educational attainment are more complex. Although many empirical studies have found ageing is associated with value conservatization, such as less critical of authority, intolerance of outgroups, among others (Christensen & Laegreid, 2005; Fitzgerald & Wolak, 2016; Zhang & Brym, 2019), we speculate that ageing effect is two-folds: radicalizing in the early life course and conservatizing in the later stage.

To test our argument, we turned to Asian societies for empirical evidence. East and Southeast Asia societies have a long history of authoritarian and Communist rule. Many share a Confucian cultural background, which encourages the values of loyalty and compliance and fosters trust in political authorities (Inoguchi, 2005; Ma & Yang, 2014). Despite some basic similarities, however, Asian societies differ in their processes of modernization and democratization. Demographics such as age structure and educational attainment also differ (Croissant, 2004; Jiang & Zhang, 2021a; Kim, 2010; Wang, 2005, 2008). These variations led us to expect that, while broadly comparable, the societies would show important differences in levels of political trust and thus shed more light on how the value change processes work.

We applied Hierarchical age-period-cohort (HAPC) modelling to the four waves of Asian Barometer Survey data (2001–2016) from 14 East and Southeast Asian societies. Our HAPC models yielded the following findings. First, education erodes political trust, a finding that agrees with the literature and supports the critical citizen thesis (Norris, 1999). Second, age's role is more complex than previous work has found (Alwin & Krosnick, 1991; Krosnick & Alwin, 1989; Peterson et al., 2020). Instead of monotonically leading to higher political trust, age is moderated by education. For people with little education, ageing processes conservatizes their opinion, which is consistent with the literature. For better-educated individuals, ageing plays a radicalizing role during the transition from youth to middle age; after that, ageing conservatizes the attitudes and results in higher political trust. Our findings add to public opinion research, especially the role of ageing on political attitudes. In the next section, we discuss the political trust literature, especially noting the roles of age and education. We then turn to our region of interest and discuss how political trust may appear in the Asian context. The following section describes the data and methods we used to examine levels of political trust. After presenting the results, we conclude with the importance of our findings and suggest how future research could build on them.

## 2 Education and Ageing in Shaping Political Trust

The literature has identified several determinants of political trust, including gender (Cook & Gronke, 2005; Du et al., 2021), marital status (Abrajano & Alvarez, 2010), class and occupation (Christensen & Laegreid, 2005), religious affiliation (Hwang, 2017), income, and other SES indicators (Jiang & Zhang, 2021a; Rice, 2001). Of these, education is one of the most frequently mentioned, as it directly affects ideology and beliefs (Du et al., 2021; Fitzgerald & Wolak, 2016). First, education is associated with knowledge dissemination and skill training (Jiang & Zhang, 2021a). It is also said to cultivate cognitive sophistication and critical thinking (Kingston et al., 2003; Zhang & Brym, 2019).

Second, both the developing and the developed societies have undergone a rapid expansion of school education especially higher education since the World War II (McEneaney

& Meyer, 2000). Asia, especially East Asian societies have been emphasizing modern education on science and technology and their students have been performing well in international competitions such as IMO (Cheng, 2011). Some scholars have argued that the cultivation of critical thinking in Eastern countries may be eroded by the Confucian, Buddhist, Hindu, or Islamic cultures (Inoguchi, 2005; Wang, 2008), but with the expansion of modern education and the remarkable homogeneity in educational practices around the world (McEneaney & Meyer, 2000), many believe that education is breeding critical citizenry in Asia just like elsewhere (Kim, 2010; Wang & You, 2016). Third, education, especially higher education, usually means exposure to different people, values, and lifestyles (Jiang & Zhang, 2021b; Zhang et al., 2017). As such, education may generate a group of “critical citizens” or “informed citizens,” arguably holding more skeptical attitudes about political systems (Norris, 1999). This line of thinking leads to our first hypothesis:

**H1** People who receive more education will trust the government less (critical citizen thesis)

Age is another variable that widely considered a predictor of political opinions (Burden & Ono, 2020). Most public opinion research has identified age as a variable positively associated with the support of mainstream views, the intolerance of alternative lifestyles (Botwinick, 2013), the support of traditional values for family and gender issues (Snyder & Spreitzer, 1976; Zhang & Brym, 2019), a conservative political stance, and the support of authority (Riemann et al., 1993). However, the role played by age is up for debate (MacInnes & Spijker, 2014; Peterson et al., 2020). Some scholars argue ageing itself does not lead to certain attitudinal changes. In other words, the observed association between seniors and political conservatism and authoritarianism may be a cohort or period effect in disguise. When empirical studies fail to control the cohort or period effects, this critique is particularly compelling. The ageing process does not necessarily lead to higher confidence in government or a dislike of certain policies. Instead, conservative attitudes among seniors may reflect generational differences: baby-boomers would disagree with millennials on immigrants, LGBTQ, and global warming, which can be understood as being socialized in different school, media and social contexts (Inglehart, 2008).

Another school of thought argues ageing itself leads to changes in attitudes. From a psychological perspective, ageing degrades cognitive skills; this is accompanied by a decline in energy and information processing, which hurts the ability to adopt new values and opinions. As a result, senior groups are less adaptable to political and social change, less tolerant of ideological nonconformity, and more supportive of authority and obedience (Glenn, 1974). From a sociological perspective, ageing entails major life-course events (e.g., marriage, having children) that may affect attitudes. Ageing is also associated with an established social status and lifestyle, which, in turn, encourages people to defend the status quo (Abrajano & Alvarez, 2010; Gelepithis & Giani, 2020). It is more so in East and Southeast Asia, where ageing associates with established social status, more respect from the younger cohorts, and more resources and power from the social network and the community (Chan, 1999); in return, seniors in Asian would have more incentive to support the paternalistic and authoritarian rule, as they are beneficiaries themselves. In sum, ageing may affect political orientation, especially political trust in institutions and authorities in the Asian and Confucian context. Therefore, our second hypothesis can be expressed as:

**H2** Ageing leads to higher trust in governments (conservatizing thesis)

Some scholars disagree with this hypothesis (Andersen & Fetner, 2008). For them, ageing consolidates people's original dispositions, instead of driving everyone towards the same direction of conservatizing (Danigelis et al., 2007). In other words, liberals will remain liberal and conservatives will remain conservative, if not becoming more radical in their camps. Why does ageing make the incorporation of new attitudes difficult? One explanation is the degrading of cognitive skills and information processing ability. Another explanation is that human being's personality is formed at youth and will lose the plasticity after middle age (Terracciano et al., 2006). Moreover, information that challenges an ageing individual's existing attitudes is rarely likely to be carefully considered, as ageing entails a decreased interest in events that are not immediately relevant (Petty & Cacioppo, 1979). Peer influences reinforce this trend, as the support network of seniors is mainly composed of other seniors. This argument, known as the "age-stability" thesis (Alwin & Krosnick, 1991; Krosnick & Alwin, 1989), has been supported by empirical works in social psychology and public opinion research.

Though the age-stability thesis makes sense and has been supported by empirical evidence on various values and issues, its role in shaping political trust has not been examined well. One problem is data accessibility. The ideal research design would be to determine a young person's political disposition and then track changes over time. However, not many panel surveys in Asia cover a long enough period and focus on political opinions. We avoided this problem by combining age-period-cohort analysis and introducing education as a moderator. Public opinion and psychological research have pointed out that youth (early adulthood) comprise a person's "impressionable years" (Krosnick & Alwin, 1989; Osborne et al., 2011). The impressionable years hypothesis argues the social environment of a young adult deeply shapes the values, attitudes, and world views formed in these years; what people learn and experience in early adulthood has a profound impact on their thinking throughout the life span (Krosnick & Alwin, 1989). The hypothesis also argues individuals' attitudes and core orientations are unlikely to change, once the impressionable years have ended.

Although previous research highlights the social environment's effect on shaping attitudes, we were interested in how education plays a role in shaping attitudes and values. On the one hand, with the universalizing of education in recent decades, school has become the primary setting for value socialization of young people as most people attend school education in their teenage years. On the other hand, education shapes a person's mindset and world views, including political attitudes at one's early life stages. Therefore, we speculated education, as a moderator, could help to indirectly measure political orientation in the early years. Hence, we should see how education and age interact, and how ageing would affect an individual's early disposition. If the conservatizing thesis is valid, we should expect to see value convergence in senior groups; if the radicalizing thesis holds, we should see value stagnation or even polarization. Hence, the last hypothesis reads as follows:

**H3** Ageing reinforces or enhances an individual's original political orientation formed in the early years (radicalizing thesis)

### 3 Data and Methods

#### 3.1 Asian Barometer Survey (ABS) Data, 2001–2016

The data used for this study came from the Asian barometer survey (ABS). The ABS is an international survey project in East and Southeast Asia. So far, the ABS project has

conducted four waves of surveys (2001–2003, 2005–2008, 2010–2012, and 2014–2016) in 14 Asian societies: Cambodia, China (the mainland), Hong Kong S.A.R., Indonesia, Japan, Korea, Malaysia, Mongolia, Myanmar, Philippines, Singapore, Taiwan (R.O.C.), Thailand, and Vietnam. Since not all 14 societies were surveyed in all four waves, there are 48 “region by survey year” (hereafter region-year) observations at the aggregate level. In each region, the ABS project collects data from a representative sample.

The aggregate-level statistics for the 48 region-year observations are displayed in Table 1. We can see from Table 1 that the number of observations in each country-year case ranges from nearly 1000 (in smaller societies such as the Philippines and Hong Kong SAR) to around 4000 (in more populous societies such as Mainland China). The cases include both developed and developing societies. We included GDP per capita statistics retrieved from the World Bank (<http://data.worldbank.org/indicator/NY.GDP.MKTP.KD>; constant USD in 2010). The figures can be as high as 57,271 (Singapore, 2014) and as low as 741 (Cambodia, 2008). We applied a log transformation to the GDP per capita variable in later modelling procedures to ensure the normality assumption’s conformity. The logged term of GDP per capita ranged from 6.61 to 10.96. In addition to GDP per capita which denotes the economic development levels, we also included a control of political environment, which is the Freedom House Index. This indicator provided by Freedom House (2020) measures the political freedom and civil liberty in a society, which could capture the variation across democratic and authoritarian societies.

The ABS project collects demographic and SES variables and information about people’s opinions, attitudes, and value orientations. We selected a few important variables to be summarized at the aggregate level and report them in Table 1. For continuous variables, we report the means, and for categorical variables, we report the modes. There are several noteworthy patterns. First, these societies differ greatly in terms of age and education. Developing societies tend to have a younger but less educated population. Second, the societies have varying degrees of political freedom and democratic developments, as reflected by the Freedom House Index. Lastly, political trust has a wide range, from a low of 3.62 (South Korea, 2006) to as high as 8.30 (China, 2002 and Viet Nam, 2006). From the descriptive statistics, we can be confident the ABS data suit our research goal of comparatively investigating age and education’s effects in shaping political trust in Asia.

### 3.2 Dependent Variable

The outcome variable was people’s political trust. The ABS data contain a series of variables related to trust in political institutions. We excluded variables concerning non-governmental entities (e.g., media, NGOs) and looked at those directly concerning government-related institutions. The chosen variables were “trust in national/central government,” “trust in local government,” “trust in elections,” “trust in congress,” “trust in the court system,” “trust in political parties,” “trust in civil services,” “trust in the army,” and “trust in police.”

We coded all nine variables in the same manner: respondents were asked, “I’m going to name a number of institutions. For each one, please tell me how much trust do you have in them? They were given four possible responses: “Not at all,” “Not very much,” “Quite alot,” and “A great deal of trust.” We coded responses on a scale of 1–4, where a higher value represents more trust in the institution. We then conducted Exploratory factor analysis (EFA). The EFA analysis showed one latent factor was sufficient to capture the nine

**Table 1** Descriptive statistics of aggregate-level observations

Region	Year	Age	Years of education	Freedom house index (1–7)*	GDP in constant usd	Political trust (0–10)	<i>N</i>
Cambodia	2008	38.66	5.35	5.5	741.86	6.00	1000
	2012	38.72	5.55	5.5	945.70	6.73	1200
	2015	40.68	5.48	5.5	1163.41	5.82	1200
China (Mainland)	2002	44.26	7.48	6.5	1150.23	8.30	3183
	2008	47.10	7.11	6.5	3467.03	7.34	5098
	2011	45.30	5.82	6.5	5582.89	7.32	3473
	2015	49.24	7.21	6.5	8166.76	6.69	4068
Hong Kong (SAR)	2001	43.87	9.42	4.0	25,166.90	5.48	811
	2007	47.39	9.89	3.5	30,494.55	5.94	849
	2012	51.64	9.72	3.5	36,619.81	5.97	1207
	2016	48.27	9.98	3.5	43,496.30	5.07	1217
Indonesia	2006	39.41	8.53	2.5	1764.79	5.60	1598
	2011	41.80	8.06	2.5	3688.53	5.50	1550
	2016	44.69	8.57	3.0	3605.72	5.72	1550
Japan	2003	50.97	12.31	1.5	34,831.20	4.38	1418
	2007	54.56	12.45	1.5	35,342.87	4.51	1067
	2011	55.73	12.83	1.5	48,168.80	4.56	1880
	2016	56.43	13.12	1.0	38,804.86	4.87	1081
Korea	2003	41.74	11.91	2.0	14,209.34	4.28	1500
	2006	42.66	10.40	1.5	20,888.38	3.62	1212
	2011	45.34	12.30	1.5	24,079.79	3.92	1207
	2015	45.73	12.68	2.0	27,105.08	4.09	1200
Malaysia	2007	38.86	9.97	4.0	7378.59	6.02	1218
	2011	41.39	9.77	4.0	10,252.59	6.54	1214
	2014	41.63	10.27	4.0	11,008.87	6.37	1207
Mongolia	2003	45.94	11.45	2.0	747.09	5.20	1144
	2006	39.58	11.20	2.0	1321.61	5.20	1211
	2010	40.62	11.53	2.0	2602.37	4.06	1210
	2014	40.77	11.78	1.5	4081.02	4.60	1228
Myanmar	2015	41.74	6.21	6.0	1219.48	4.99	1620
Philippines	2002	39.22	9.12	2.5	1013.42	4.92	1200
	2005	42.61	9.24	2.5	1208.93	4.54	1200
	2010	40.85	9.60	3.5	2155.41	4.99	1200
	2014	43.06	9.25	3.0	2849.27	5.02	1200
Singapore	2006	45.37	10.26	4.5	33,579.16	6.86	1012
	2010	41.48	11.45	4.5	46,569.40	6.41	1000
	2014	40.84	12.30	4.0	57,271.72	6.51	1039
Taiwan	2001	43.50	11.07	1.5	13,408.38	4.78	1415
	2006	45.27	11.34	1.0	16,984.54	4.63	1587
	2010	46.07	11.72	1.5	19,261.67	4.51	1592
	2014	47.85	11.87	1.5	22,638.92	4.29	1657
Thailand	2002	45.16	7.25	2.5	2133.12	6.02	1546

**Table 1** (continued)

Region	Year	Age	Years of education	Freedom house index (1–7)*	GDP in constant usd	Political trust (0–10)	N
Vietnam	2006	43.05	9.24	3.0	3442.39	5.93	1546
	2010	46.98	7.86	4.5	5174.53	5.63	1512
	2014	45.58	9.34	4.0	6079.69	5.68	1200
	2006	42.05	8.83	6.0	796.93	8.30	1200
	2010	43.71	9.86	6.0	1297.23	7.97	1191
	2015	36.04	10.91	6.0	2085.71	7.41	1200

Average for numeric variables, modes for categorical variables, sorted ascendingly by region names and survey year.

\*For Freedom House Index (ranging from 1 to 7), higher values denote less freedom

items' commonality. Cronbach's alpha was 0.87, which indicated we could generate one measure (Costello & Osborne, 2005) of political trust.<sup>1</sup>

We constructed this measure by adding the nine items; since the original items were between 1 and 4, the summed value ranged from 9 to 36. Then, we rescaled the summed values to a 0–10 index, where higher values stand for higher confidence in political systems. We report the dependent variable items and the political trust index's mean and standard deviations in Table 2, together with other individual-level predictors discussed next.

### 3.3 Independent Variables

Table 2 reports the predictors in our modelling. We first controlled for waves' effects, a categorical variable with "ABS Wave 1" as the reference group. Similarly, other categorical variables were converted to a series of dummy variables. For example, we set females = 0 and male = 1 for the gender variable; we used urban/rural residence as a dummy variable, with the rural category the reference group (= 0), and urban residents coded as 1. Religious beliefs included "Non-religious" (reference group), "Buddhist," "Christian," "Islamic," and "Other Beliefs." Finally, we used a self-reported income-level variable, with the lowest quintile serving as the reference group (= 0).

The focal variables were cohort, age, and education. Cohorts were categories generated from birth years. We used the following eight categories: 1900–29, 1930–39, 1940–49, 1950–59, 1960–69, 1970–79, 1980–89, and 1990 or after. We built the cohort variable in this way to ensure the relatively even distribution of cases within each category. This suited the subsequent Hierarchical Age-Period-Cohort analysis.<sup>2</sup> In the ABS data, age is measured in years, and most respondents are adults (age > = 18). However, a small number of

<sup>1</sup> Codes and details of the EFA analysis and Cronbach's alpha are available upon request.

<sup>2</sup> We constructed cohort in alternative ways for sensitivity analysis and robustness checks, for example, merging the earliest two categories, separating cohorts at mid-decade points (e.g. 1935–1944, 1945–1954), using 20 years or five years as the intervals, and so on. These alternative constructions did not change our main findings. Further details are discussed in the modelling procedure section. Data, codes, and results are available upon request.

**Table 2** Descriptive statistics of individual-level variables (frequency and percentages for categorical; mean and SD for continuous)

	Summary
Independent variables	
wave (%)	
ABS1	12,217 (16.94%)
ABS2	19,798 (27.45%)
ABS3	19,436 (26.95%)
ABS4	20,667 (28.66%)
Society (%)	
Japan	5446 (7.55%)
HK	4084 (5.66%)
Korea	5119 (7.10%)
Mainland China	15,822 (21.94%)
Mongolia	4793 (6.65%)
Philippines	4800 (6.66%)
Taiwan	6251 (8.67%)
Thailand	5804 (8.05%)
Indonesia	4698 (6.51%)
Singapore	3051 (4.23%)
Vietnam	3591 (4.98%)
Cambodia	3400 (4.71%)
Malaysia	3639 (5.05%)
Myanmar	1620 (2.25%)
Male = 1 (%)	35,501 (49.3%)
Cohort (%)	
1900–39	5244 (7.41%)
1940–49	7636 (10.79%)
1950–59	12,726 (17.98%)
1960–69	15,889 (22.45%)
1970–79	14,596 (20.62%)
1980–89	11,320 (16.00%)
1990–now	3358 (4.75%)
Religion	
None	26,042 (36.11%)
Buddhist	22,613 (31.36%)
Christian	9266 (12.85%)
Islamic	7364 (10.21%)
Other	6833 (9.47%)
Income level (%)	
1st lowest quintile	14,221 (23.79%)
2nd quintile	15,371 (25.71%)
3rd quintile	12,765 (21.35%)
4th quintile	8786 (14.70%)
5th top (richest) quintile	8645 (14.46%)
Urban = 1 (%)	40,459 (56.15%)
Age (mean (SD))	44.68 (15.66)
Years of education (mean (SD))	9.35 (4.59)
<b>Dependent variables</b> (mean (SD))	



**Table 2** (continued)

	Summary
Trust in central Gov't(1–4)	2.79 (0.91)
Trust in local Gov't (1–4)	2.74 (0.81)
Trust in elections (1–4)	2.75 (0.88)
Trust in congress (1–4)	2.68 (0.95)
Trust in court system (1–4)	2.72 (0.87)
Trust in political parties (1–4)	2.56 (0.97)
Trust in civil services (1–4)	2.70 (0.80)
Trust in army (1–4)	3.02 (0.83)
Trust in police (1–4)	2.77 (0.85)
<b>Summed political trust (Rescale to 0–10)</b>	<b>5.82 (2.08)</b>
<b>Num. of total observations</b>	<b>72,118</b>

individuals report being younger than 18 or older than 99. We truncated the value range of age to 18 and 99 by rounding up the juniors to 18 and rounding down the seniors to 99 to avoid problems created by outliers. Education was measured in years, ranging from 0 to 20. A very few individuals claimed to have more than 20 years of education; we rounded their values down to 20 years to avoid outliers.

### 3.4 Hierarchical Age-Period-Cohort (HAPC) Models

Since age was one of our foci, we needed to model to predict the age effects on political trust. In other words, if we found an age effect, we needed to be sure it was not a cohort or period effect in disguise. However, when modelling age, period, and cohort variables in the same model, there is always an identification problem (Yang & Land, 2006), as there is an exact linear relationship between the variables: “age = period—cohort” (Bell & Jones, 2014). To deal with this problem, we adopted a Hierarchical age-period-cohort (HAPC) modelling strategy proposed by Yang and Land (2006, 2008).

Following their recommendations, we re-centered age and used both its linear and its quadric terms. We also set the period and cohort to unequal width intervals (each wave of survey/period approximately covered three years, while each cohort covered ten years). Then, we generated the period by cohort cells and treated them as Level2 units in multi-level modelling. The eight cohorts and four waves of surveys eventually generated 31 cells at Level2, as there was one empty cell for the youngest cohort in ABS Wave 4. Therefore, we cross-classified the data by both periods and cohorts. Table 3 shows the frequency distribution of the cross-classified categories.

We treated the respondents as Level 1 (the individual level) and the cross-classified groups as Level 2 (the aggregate level) in our multilevel modelling. Individual respondents were nested within the period-cohort cells. We had a total of 72,118 observations at the individual level and 31 observations at the period-cohort level.

We fitted the models with random intercepts and fixed effects of predictors. As discussed, the individual level predictors included the wave of the survey, cohort, gender, religion, income level, location of residence (urban/rural), and our focal variables: age and years of education. At the national level, we introduced logged GDP per capita (with purchase power parity adjusted) as a control variable. We built the regression models in the following sequence, giving us two models to test the three hypotheses:

**Table 3** Frequency distribution of cross-classified cohort and period (waves of survey) Groups

		Cohort						
		1900–39	1940–49	1950–59	1960–69	1970–79	1980–89	1990–now
Period (Wave of Survey)	ABS1	1787	1684	2607	3071	2396	672	0
	ABS2	1746	2453	3655	4599	4253	3017	75
	ABS3	1316	2078	3393	4139	3943	3599	968
	ABS4	646	1637	3311	4338	4249	4166	2320

Model 1: Controls + Period and Cohort + Education + Age (Linear and Quadric) (H1).

Model 2: Controls + Period and Cohort + Education \* Age (Linear and Quadric) (H2 & H3).

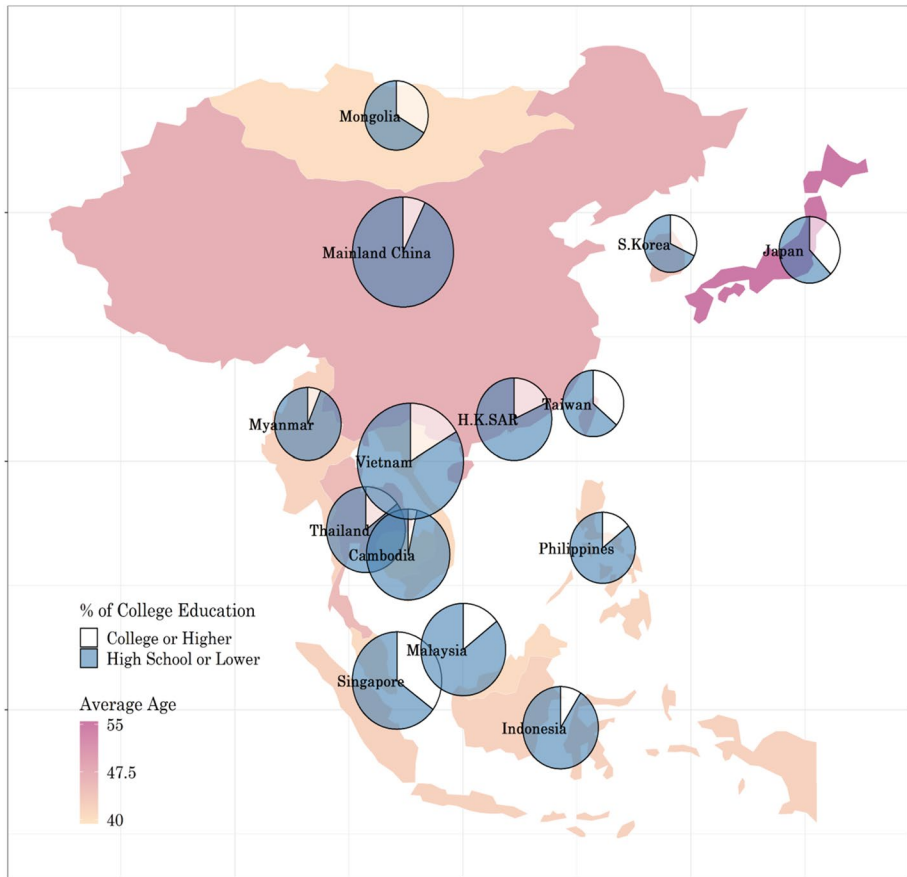
## 4 Results

### 4.1 Descriptive Results

The descriptive information of the relevant variables from the ABS data is given in Table 2. First, we notice the sample size increases as more waves are carried out. Only eight countries are included in Wave 1; in Waves 2 and 3, the number rises to 13, and in the last wave, 14 societies are surveyed. We also see that all 14 societies have several thousands of respondents, with Myanmar being the smallest country-level observation ( $N=1620$ ), only surveyed once in Wave 4.

The data are representative in terms of other demographic variables as well. Males compose 49.3% of all respondents. The average age for respondents is 44.7 ( $SD=15.7$ ). Just over a third, 36.1%, claim to have no religious affiliation; this is mainly in the populous Communist countries, such as China and Vietnam. For the rest, 31.4% claim to be Buddhists, 12.9% Christians, 10.2% Muslims, and 9.5% Other Beliefs. The distribution of the five categories of the self-rated income level is quite even as well. For the focal predictors, the average length of completed education is 9.35 years ( $SD=4.59$ ); 56.1% of the respondents reside in an urban area. People tend to have high trust in political systems. In the original nine items for constructing the dependent variable, most measures had mean values between 2.5 and 3 on a 1–4 scale. After we averaged and rescaled the index to 1–10, the grand measure of political trust had a mean value of 5.82 ( $SD=2.08$ ), showing an overall positive perception of government trustworthiness.

To learn more about the societal-level statuses, we plotted the focal variables by societies on a map. In Fig. 1, pink colours represent the average age, with darker colours denoting an elderly population. Out of all countries, we see Japan has the oldest population. We use pie slices to represent the rate of higher education; Japan, Korea, Singapore, and Taiwan are obviously ahead of the others in this regard. The sizes of the pies show the overall trust people have in their political institutions; Chinese, Vietnamese, and Singaporean governments are the most trusted.



**Fig. 1** Age, Education, and Political Trust in Asia. Note: Sizes of pies represent levels of political trust; larger pies mean high confidence in political institutions. Slices of pies represent the population of different educational attainment (college degree vs. lower). Filled color in each society represent the average age, where darker pink indicates an older population

## 4.2 Modelling Results

Our HLM modeling results are displayed in Table 4. In Fig. 2, we visualize the focal interaction effects between age and education from the final models.

We first report some overall patterns consistent to both Model 1 and Model 2. Compared with Waves 1, respondents from Waves 2, 3 and 4 gradually lower their political trust in each survey. This trend is consistent with previous arguments of enlightenment and critical citizens, and could be explained by cohort replacement and expansion of higher education and mass media (Zhang et al., 2021).

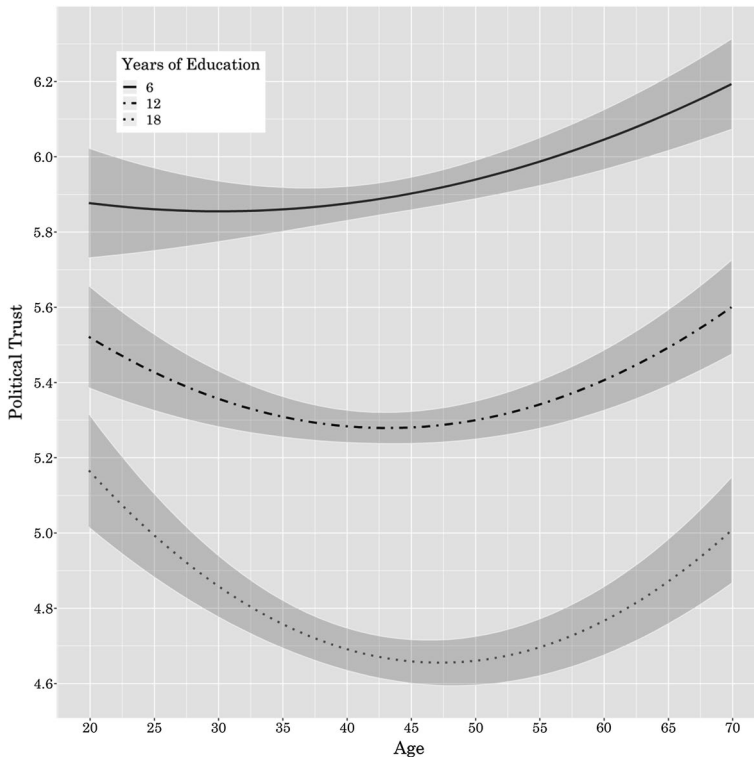
For cohorts, early generations do not show any significant differences from each other, while the younger generations (after the 1970s) became more critical against the governments. This suggests that only after the economic development and democratization reach certain threshold could value change takes place (Huntington, 1993; Inglehart & Baker, 2000). The gender effect is significant but the effect size is marginal

**Table 4** Multilevel models predicting political trust (s.e. in Parentheses)

	Model 1	Model 2
(Intercept)	4.216 (0.095)***	4.201 (0.095)***
Wave of survey (ABS1=0)		
ABS 2	− 0.284 (0.027)***	− 0.286 (0.028)***
ABS 3	− 0.385 (0.031)***	− 0.388 (0.032)***
ABS 4	− 0.630 (0.037)***	− 0.634 (0.038)***
Birth cohort (pre-1940=0)		
1940–49	0.035 (0.048)	0.032 (0.050)
1950–59	− 0.062 (0.064)	− 0.053 (0.065)
1960–69	− 0.145 (0.080)	− 0.121 (0.081)
1970–79	− 0.289 (0.095)**	− 0.261 (0.096)**
1980–89	− 0.450 (0.114)***	− 0.429 (0.114)***
1990–now	− 0.522 (0.134)***	− 0.507 (0.135)***
Male = 1 (Female = 0)	− 0.069 (0.013)***	− 0.068 (0.013)***
Religion (none as reference)		
Buddhist	− 0.148 (0.018)***	− 0.148 (0.018)***
Christian	− 0.130 (0.024)***	− 0.128 (0.024)***
Islamic	0.560 (0.026)***	0.559 (0.026)***
Other beliefs	0.322 (0.025)***	0.323 (0.025)***
Income levels (lowest as reference)		
2nd quintile	− 0.051 (0.019)**	− 0.052 (0.019)**
3rd quintile	− 0.071 (0.020)***	− 0.071 (0.020)***
4th quintile	0.071 (0.022)**	0.072 (0.022)**
5th richest quintile	0.342 (0.024)***	0.345 (0.024)***
Urban (Rural = 0)	− 0.367 (0.016)***	− 0.367 (0.016)***
GDP per capita (Logged term)	0.058 (0.007)***	0.057 (0.007)***
Freedom house index (1–7)	0.566 (0.005)***	0.565 (0.005)***
Age in years (18–99)	− 8.617 (9.025)	2.335 (10.032)
Age square	35.275 (3.468)***	22.407 (4.899)***
Years of education(0–20)	− 0.029 (0.002)***	− 0.029 (0.002)***
Interaction effects		
Age * Years of education		− 0.697 (0.423)
Age Square * Years of education		1.543 (0.405)***
AIC	287,528.54	287,517.28
BIC	287,776.57	287,783.68
Log likelihood	− 143,737.271	− 143,729.641
Num. obs	72,118	72,118
Num. groups: period_cohort	27	27
Var: period_cohort (Intercept)	0.001	0.001
Var: Residual	3.152	3.152

\*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$ 

(− 0.069 on a 0–10 scale,  $p < 0.001$ ). Interestingly, religions have a more salient impact on political trust. Compared to non-religious individuals, Buddhists and Christians are



**Fig. 2** Interaction Effects of Age and Education in Predicting Political Trust. Note: Fitted values are from Model 2. All other variables are set to typical values (i.e., means for quantitative variables and proportions for categorical variables)

more critical of political authorities, while Muslims and people of other religions tend to have a higher political trust. This “atheist-authoritarian” link is somewhat surprising, as previous works in other contexts often find religious people are also more traditional, conservative and supportive of political authorities (Brossard & Nisbet, 2007; Zhang & Brym, 2019). However, in the context of East and Southeast Asia, it could be explained by the fact that two populous Asian countries—China and Vietnam—are authoritarian societies, featuring a generally higher trust in government among the populace (Li, 2016); in the meantime, they are also non-religious societies: people are discouraged from following a religion, especially since the Communist rule was established (Lai, 2006).

In terms of income levels, those in the top two quintiles trust their political systems the most. This is reasonable, as they may enjoy the best services. Compared to their rural counterparts, urban residents tend to be more judgmental of the political system; this supports the critical citizen thesis, as urban residents are argued to have more citizen awareness and information access (Ceron, 2015; Van Deursen & Van Dijk, 2014). Lastly, GDP per capita is negatively associated with political trust, corroborating previous findings on development and civil society.

We now turn to Model 1, testing H1 and H2: the main effects of education and age. We see both hypotheses are supported. Education is negatively associated with political

trust. Each additional year of education means a drop of 0.029 points ( $p < 0.001$ ) on the 0–10 scale of political trust. The age quadratic term is significant and positive, indicating the effect of age is a U-shaped curve: from early adulthood to middle age, political trust moderately declines but with only marginal significance; starting at age 50, political trust increases more quickly. To sum up, during early adulthood to middle age, political trust remains relatively stable and low; after that, ageing leads to increased political trust, confirming Hypothesis 2.

When we add the age-education interaction to test Hypothesis 3, Model 2 tells a complex and detailed story. In this model, the previous findings stay the same, except for age. We use Fig. 2 to illustrate the interaction effects between age and education. In Fig. 2, the x-axis displays age from 20 to 70 (i.e., most respondents); the y-axis is the outcome variable of political trust. The three lines represent different levels of education: 6 years (elementary school completed), 12 years (high school completed), and 18 years of formal education (post-graduate degrees). The top solid line is the group with only six years of education. As we can see, this group has the highest confidence in political systems, and confidence increases with age, supporting both the Hypothesis 1 and 2. The bottom dotted line shows the group with 18 years of education. This group has the lowest political trust early on (around age 20), and its members' political trust keeps dropping over time. From age 20–50, the diverging lines between the different educational levels support Hypothesis 3: there is a radicalizing effect from ageing between youth and middle age. However, after age 50, all three lines show a somewhat parallel pattern: all of them become more conservative at a similar pace. In other words, from middle to old age (age 50–70), age shows a conservatizing effect. In sum, ageing effect on political trust is more complex than before; both conservatizing and radicalizing theses are accurate to some extent, and their validity is dependent on the specific stage of individual's life course.

## 5 Summary and Conclusion

Educational and ageing effects on political trust are commonly examined determinants of political trust, but relevant findings are far from conclusive. Especially for ageing, scholars are unsure whether it leads to conservative attitudes, or reinforces one's original dispositions formed early on in the life course. We turned to East and Southeast Asia, where the diverse economic and political environments and authoritarian cultural backgrounds provide an excellent opportunity to comparatively study political trust and its determinants. We specifically paid attention to the effects of ageing and education and their interaction effects.

We used the four waves of the ABS project (2001–2016) as the primary data source to reveal how education and age influences political trust. Though the ABS is not a panel dataset, we got around this by applying age-period-cohort analysis and using education as a moderator to reveal value changes within the life course. We found evidence for the following effects. First, high education and urban residence all lead to less political trust, consistent with previous findings and supporting the critical citizen thesis (Van der Meer & Hakhverdian, 2017). Our findings challenge the “Asian exceptionalism” thesis (Croissant, 2004; Ma & Yang, 2014; Shi, 2001). It turns out that Asian residents are also becoming critical of their governments, as reflected by the findings on wave variables. They are not held back by a Confucian culture or a history of authoritarianism, both of which are theorized to prevent people from judging political authority (Shi, 2001).

Second, we find the effects of ageing show a complex pattern. When we only look at its main effect, ageing seems to shift political attitudes towards a direction in favor of political authority. However, when we look at the interaction terms, we find that ageing effect varies across different educational levels. For people from the low education group, their political trust monotonically rises as they age, which is consistent with the conservatizing thesis. However, for mid- and well-educated groups, their political trust declines during age 20–50 and then rises from age 50 to 70. In other words, for these groups, ageing firstly plays a radicalizing effect which consolidates their previously established view during the transition from youth to middle age; after age 50, ageing's role becomes similar to that of the category with little education: a conservatizing effect. Our finding of ageing's mixed roles has implications for the research of ageing and public opinion. It helps to reconcile the debates regarding the role of age; the existing arguments of "age stability", conservatizing and radicalizing are all somewhat valid, but only applicable to certain stages in one's life course.

The limitations of this study should be acknowledged. As the ABS data are longitudinal cross-sectional surveys without a panel design, the findings can only be interpreted as suggestive for causality. Specifically, we have no evidence to support speculations on dynamics of events that occur within an individual's lifetime, such as a rural resident moving to the city, and how that would change political trust over time. Second, we examined a relatively short period and did not consider the temporal dimension. Since the ABS project (2001–2016) mainly took place after the "Third Wave" of democratization (the 1990s), we cannot see how changes over time have resulted from the social transformations. Future research can broaden the comparative scope to discover how mechanisms work in other cultural and social contexts, with appropriate data sources and methods. However, our study suggests a promising way to keep track of the impact of the ongoing education expansion and urbanization in Asia and in the developing world more generally.

**Funding** This work is supported by the Startup Research Grant (SRG-2019-00171-FSS) funded by the Faculty of Social Sciences, University of Macau.

## Declarations

**Conflict of interests** The authors declare no conflict of interests.

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