**Theoretical introduction and previous findings**

Variation among individuals in personality, social attitudes, political orientation and religiosity displays numerous correlational and causal patterns. In developed countries, individuals who score low on the openness to novelty factor of personality (Bakker & Lelkes 2018; Bakker et al., 2021) and who prefer an intuitive as opposed to analytic cognitive style are more likely to be highly religious (Ksiazkiewicz & Friesen, 2021) and attached to dominant cultural traditions, displaying a socially conservative attitudinal orientation and supporting right-wing parties (Cuevas & Dawson 2021). The patterns discovered by researchers by studying populations from developed countries with a long tradition of democratic governance may not replicate in the context of countries that lack the aforementioned features.

Like the typical package of attitudes measured by various models about the political spectrum, attitudes toward science are a very important component of public opinion. They impact the adoption of policies that can save lives (as was the case during the COVID-19 pandemic) as well as the capacity of societies to cope with long-term threats to their well-being like global warming. In the United States (the most studied country in the social sciences), highly religious individuals are more likely to distrust both scientists and scientific principles. However, McPhetres et al. (2021) failed to find a negative correlation between religiosity and support for science in many countries other than the United States. By contrast, Hoogeveen et al. (2022) found that in most countries included in their sample, higher religiosity predicted a weaker preference for statements issued by scientists in comparison with statements issued by religious preachers.

The aim of the present study is to investigate in cross-cultural perspective the patterns of interrelationships that characterizes six categories of social and political attitudes (freedom – restriction, social progressivism – social conservatism, socialism – capitalism, religiosity, attitudes toward science, attitudes toward foreign countries & foreign influence) as well as third relationship with demographic factors (age, gender, income, and education). GDP per capita, average level of education, cultural heritage (Western or non-Western dummy variable), and level of democracy as measured by V-Dem’s Liberal Democracy Index will be used as predictor variables at the country level of analysis.

Ideologies are systems of socially shared beliefs, values and practices, including two major components, one cognitive and one social. The cognitive component consists in a system of beliefs and values regarding desirable respectively undesirable types of social order. The social component consists in a shared group identity built around the values and beliefs that constitute an ideology’s cognitive component (Zmigrod, 2022). Ideological groups have shared symbols (like the red rose for socialism, respectively the hammer and sickle for communism). Dogmatism and prejudice, referring to the tendency to disregard facts that do not conform to one’s ideological beliefs (Washburn & Skitka, 2018), respectively to discriminate against those who subscribe to a different ideology than oneself are common features of ideological communities (Ditto et al., 2019).

Theoretical models for the political attitudes of citizens include uni-dimensional models like the left-right and open – closed political spectra as well as models with more than one dimensions like the Nolan chart. The most common model for classifying political attitudes is the left-right spectrum. The meaning of “left” and “right” have changed over time. These two designations originated during the French Revolution, when those who supported the absolute monarchy, the hereditary privileges of the nobles and the established Church positioned themselves in the right part of the National Assembly while those who desired a new social and political order based on the ideals of secularism, freedom and equality positioned themselves on the left side of the National Assembly. During the first half of the 19th century, the left was associated with liberal and radical groups while the right was associated with conservative and reactionary groups. The meaning of the political spectrum changed dramatically in the latter half of the 19th century, when the voting franchise in most Western countries was expanded to the working class. Socialism emerged as a major political movement on the left and the left came to be associated with economic equality and working class politics ever since. The meaning of the left-right political spectrum changed once again in developed countries toward the end of the 20th century, when the empowerment of women, racial & ethnic minorities and LGBT individuals, along with environmentalism, become the most important political movements on the left, replacing traditional socialism.

Malka et al. (2019) found that in most countries, right-wing economic attitudes (support for free markets and free trade) relate positively to socially progressive attitudes like gender equality or openness toward immigrants. By contrast, in developed democracies , adherents of economic right-wing ideology are more likely to support social conservatism and ethnic nationalism. Apart from economic development, the past history of political regimes in a country influences the structure of its political spectrum. In former communist countries, economically right-wing attitudes are correlated with socially progressive attitudes, in stark contrast with Western democracies. In developing and/ or former communist countries, the social and political orientations of citizens form an open – closed or freedom – protection spectrum, as opposed to a right-left spectrum.

**Contextual openness theory**

Countries and societies can be divided into early modernizers and late modernizers. In early modernizing countries like Britain and its main settler colonies (the United States, Canada, and Australia), modern market economies are seen as evolved organically from the cultural traditions of the respective nations. By contrast, in late modernizing countries which include most countries in the world, market economies are often associated with foreign influence as well as viewed as encouraging selfishness and threatening traditional morality.

In the early 20th century, socialist parties in industrialized countries gained widespread support from the newly enfranchised working-class voters and entered national legislatures, sometimes replacing liberal parties in the process. The most extreme example is that of the Liberal Party of the United Kingdom. Despite being one of the two main British political parties of the late 19th century along with the Conservative Party, the Liberal Party faded into obscurity after the 1924 elections, while the Labor Party took its place as the main party of British progressives. The rise of socialism within the political systems of rich countries coincided with the rise of anticolonial nationalist movements in the rest of the world. Socialist intellectuals and activists supported the anticolonial movement, leading to a long-lasting alliance between socialists and nationalists within most non-Western countries, especially in Eastern Europe, the Middle East, Sub-Saharan Africa, India, and China. The fusion between socialism and nationalism led to the apparition of a wide variety of new political ideologies specific to certain countries or regions. Most had an authoritarian character and served as the justification for dictatorial power. Such ideologies include Soviet patriotism/ socialism in one country, Titoism (Yugoslav socialism), Ba’athism/ Arab socialism, Islamic socialism, African socialism, Nehruvian socialism (India), Burmnese Way to Socialism, socialism with Chinese Characteristics, Ho Chi Minh Thought (Vietnam), and Juche (North Korea).

**Data**

**Methods and results**

**Research questions**

* Are attitudes supportive of individual freedom more likely to be positively associated with attitudes supportive of economic equality in economically developed countries (as measured by GDP per capita and the average level of education) and democratic countries?
* Do economic development and democracy remain a significant predictor of the association between liberal and socialist attitudes after controlling for Western cultural heritage?
* Are socially progressive attitudes like support for gender equality, open-borders immigration policy or tolerance for LGBT individuals and lifestyles more likely to be positively correlated with social – political attitudes related to individual freedom and economic equality in countries that are more economically developed and/ or more democratic?
* Is the correlation between pro-science attitudes and religiosity more negative in developed and/ or democratic countries?
* Are age differences in social and political attitudes more pronounced in countries that experienced a higher level of economic growth during the past generation (taken as 30 years)?
* Are education and income more strongly predictive or social and political attitudes is countries that are more developed and/ or more democratic?

**Data and indicators**

The main data source for social and political indicators is the seventh wave of the World Values Survey, conducted between 2017 and 2020 (Haerpfer et al., 2022).

Variables relevant for the freedom – restriction index are found mainly in the sections called “POSTMATERIALIST INDEX” and “POLITICAL CULTURE & POLITICAL REGIMES”. The “POSTMATERIALIST INDEX” section contains questions about the priority that respondents give to protecting freedom of speech and increasing the participation of ordinary citizens in government decisions. The “POLITICAL CULTURE & POLITICAL REGIMES” section includes items about respondents’ preferred political regimes (democracy, authoritarian regime led by a strong-leader, authoritarian regime led by a military junta, technocratic regime or theocratic regime), definitions given by the general public to the concept of “democracy”. Using items measuring a liberal understanding of democracy (based on free elections and civil liberties for all citizens) in order to adjust the variables about support for democracy, an index of support for liberal democracy will be construed. Respondents who score highly on this index will be considered as people who prefer individual freedom over restrictions imposed by the state.

Social progressivism vs. social conservatism will be measured using items about gender equality, acceptance of immigrants, as well as tolerance for LGBT lifestyles. Such items can be found in the “SOCIAL VALUES, ATTITUDES & STEREOTYPES” respectively “ETHICAL VALUES AND NORMS” sections of the master questionnaire.

There is a special section dedicated to measuring support for economic equality and income redistribution, which is called “ECONOMIC VALUES”. Respondents were asked if they think the government should own a greater share of businesses than it does today, if they consider that individuals who are poor are responsible for their own conditions and if they believe that anybody who works hard enough will be able to succeed in life, no matter what social background that person has. Items from this section will be used in order to construct the index measuring support for free market capitalism vs. economic equality.

The section called “SCIENCE & TECHNOLOGY” is dedicated to the measurement of attitudes toward science and technology, especially whether respondents view science and technology as beneficial or harmful to humanity. There are two types of questions. One involves asking directly if they think the world has become a better or a worse place due to science and technology. The other involves asking respondents if they think future generations will have more opportunities in life due to scientific and technological progress.

Religiosity is measured in a separate section of the master questionnaire called “RELIGIOUS VALUES”. It includes questions about belief in God, heaven, hell and life after death as well as questions about religious identity and the frequency with which respondents attend religious services.

In the “DEMOGRAPHICS” section can be found items about the age, education and income levels of each respondent.

**Method**

The methods that could be used range from simpler to more complex and this distinction can be applied to the measurement of individual – level indices (such as freedom vs. restriction) as well as to the prediction of individual - level correlations using country – level aggregate indicators such as the GDP per capita or the average level of education. In the first case, the simplest method is construing an additive or multiplicative index, while the relatively more complex method is using confirmatory factor analysis. In the second case, the simplest method is to introduce individual – level correlations from each country as a dependent variable in a regression in which the country – aggregate indicators like the GDP per capita or the average level of education act as independent variables. The more complex method would be to employ multilevel modeling.

**Countries and territories by region (102, 6)**

**Americas (18, 1):** United States, Brazil, Mexico, Colombia, Argentina, Canada, Peru, Venezuela, Chile, Ecuador, Guatemala, Bolivia, Haiti, Bolivia, Dominican Republic, Nicaragua, El Salvador, Uruguay, Puerto Rico;

**Western Europe (18, 1):** Germany, France, Italy, Spain, Netherlands, Belgium, Sweden, Portugal, Austria, Switzerland, Denmark, Finland, Norway, Ireland, Northern Ireland, Luxemburg, Malta, Iceland, Andorra;

**Eastern Europe (25, 1):** Russia,Ukraine,Poland, Romania, Greece, Czech Republic, Hungary, Belarus, Serbia, Bulgaria, Slovakia, Croatia, Georgia, Bosnia and Herzegovina, Armenia, Lithuania, Albania, Moldova, Slovenia, North Macedonia, Latvia, Kosovo, Estonia, Cyprus, Montenegro, Northern Cyprus;

**MENA (16):** Egypt,Iran, Turkey, Algeria, Iraq, Morocco,Saudi Arabia, Yemen, Tunisia**,** Jordan, Israel, Libya, Lebanon, Palestine,Kuwait,Qatar;

**Sub-Saharan Africa (12):** Nigeria, Ethiopia, Tanzania, Uganda, South Africa, Kenya, Mali, Ghana, Burkina Faso, Rwanda, Zambia, Zimbabwe;

**Central Asia (6):** Uzbekistan,Kazakhstan, Azerbaijan, Tajikistan, Kyrgyzstan, Mongolia;

**South and South-East Asia (8):** India, Indonesia,Pakistan, Bangladesh, Philippines, Thailand, Myanmar, Malaysia;

**East Asia (5, 3):** China, Japan, Vietnam, South Korea, Taiwan, Hong Kong SAR, Singapore, Macau SAR;

**Oceania (2):** Australia, New Zealand;

**Expected results**

As a country’s level of economic development and democratic freedom increases, the individual – level correlation between variables measuring social and political attitudes, respectively variables measuring education and income will increase too. The individual - level correlation between social-political attitudes related to economic equality, individual freedom and social progressivism (gender equality, tolerance for LGBT individuals, openness to immigration) is higher in developed and democratic societies. The correlation between age and social & political attitudes will vary according to the past economic history of each country. In countries with strong economic growth during the past generation (approximated as 30 years), young people will be more likely to value freedom over restriction, to adopt socially progressive orientations, and to be less religious. On the other hand, in countries with weak economic growth during the past generation, I expect that the pastern will reverse, young people being instead more authoritarian, socially conservative and religious. I expect attitudes toward science to be more favorable among the younger, better educated and richer respondents in most countries as well as stronger correlations in countries with a higher level of average education and GDP per capita.

**Hypotheses involving correlations among individual-level indices about social and political attitudes**

|  |  |  |
| --- | --- | --- |
| Individual – level correlations between | Aggregate predictors | Empirical relationship |
| Restriction vs. freedom and social conservatism vs. social progressivism | average education level, GDP per capita | Positive |
| Restriction vs. freedom and free market capitalism vs. economic equality | average education level, GDP per capita, Western heritage, country without communist history | Positive |
| Restriction vs. freedom and religiosity vs. secularism | average education level, GDP per capita | Positive |
| Social conservatism vs. social progressivism and free market capitalism vs. economic equality | average education level, GDP per capita, Western heritage, country without communist history | Positive |
| Social conservatism vs. social progressivism and religiosity vs. secularism | average education level, GDP per capita | Positive |
| Free market capitalism vs. economic equality and religiosity vs. secularism | average education level, GDP per capita, Western heritage, country without communist history | Positive |
| Pro-science attitudes and religiosity | average education level, GDP per capita | Negative |

**Hypotheses involving correlations between individual-level indices about social and political attitudes and demographic variables**

|  |  |  |
| --- | --- | --- |
| Individual – level correlations between | Aggregate predictors | Empirical relationship |
| Restriction vs. freedom and age | average education level, GDP per capita | Negative |
| Restriction vs. freedom and education | average education level, GDP per capita | Positive |
| Restriction vs. freedom and income | average education level, GDP per capita | Positive |
| Social conservatism vs. social progressivism and age | average education level, GDP per capita | Negative |
| Social conservatism vs. social progressivism and education | average education level, GDP per capita | Positive |
| Social conservatism vs. social progressivism and income | average education level, GDP per capita | Positive |
| Free market capitalism vs. economic equality and age | average education level, GDP per capita, country without communist history | Negative |
| Free market capitalism vs. economic equality and education | average education level, GDP per capita, country without communist history | Positive |
| Free market capitalism vs. economic equality and income | average education level, GDP per capita | Positive |
| Religiosity vs. secularism and age | average education level, GDP per capita | Negative |
| Religiosity vs. secularism and education | average education level, GDP per capita | Positive |
| Religiosity vs. secularism and income | average education level, GDP per capita | Positive |
| Pro-science attitudes and age | average education level, GDP per capita | Negative |
| Pro-science attitudes and education | average education level, GDP per capita | Positive |
| Pro-science attitudes and income | average education level, GDP per capita | Positive |

**Conclusion and discussion**

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