

What Individual-Level Factors Are Associated with Public Attitudes Towards Government Responsibility for Social Welfare? A Systematic Review

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Abstract

Based on a quantitative systematic review design, this present study aims to synthesize the relationships between individual-level factors and welfare attitudes as guided by prevalent theoretical perspectives on welfare attitudes. In addition, this study also examined these perspectives in terms of validity and generalizability.

Eight studies were included in this review. Synthesis of findings of these studies gave the following results: (a) more positive self-interest factors such as higher social class, higher income, and higher education level are associated with more negative welfare attitudes; (b) more left and/or liberal political values are associated with more positive welfare attitudes; (c) vulnerable, underrepresented, and marginalized social identities such as racial minority status and immigration status are associated with more positive welfare attitudes; (d) stronger perception of individualism-related values is associated with more negative welfare attitudes; and (e) stronger perception of collectivism-related values is associated with more positive welfare attitudes.

This review supports mainstream theoretical and conceptual frameworks in welfare attitudes, including the self-interest framework, political ideology, social identity theory, and theory of cultural values. This review acknowledges lack of comparison of the explanatory power of different individual-level factors. Overall, in line with prior theoretical and empirical evidence, this review argues for inclusion of multidimensional individual-level variables in examination of welfare attitudes.

Keywords: welfare attitudes, government responsibility, social welfare, systematic review,

meta-analysis, self-interest, political values, social identity

1. Introduction

Public attitudes towards government responsibility for social welfare is not a new issue (Cook & Barrett, 1992; Emerson & Van Buren, 1992; Hasenfeld & Rafferty, 1989). There is a wealth of literature examining why and how people show different attitudes towards government responsibility for social welfare policies, services, and programs (Andreß & Heien, 2001; Arikan and Bloom, 2015; Bean & Papadakis, 1998; Blekesaune & Quadagno, 2003; Calzada et al., 2014; Cheng & Ngok, 2020; Linos & West, 2003; Lipsmeyer & Nordstrom, 2003; Rehm, 2011; van Oorschot, 2000; Yang et al., 2019). Theoretical perspectives for welfare attitudes include self-interest, political ideology, theory of cultural values, welfare regime theory, social identity theory, citizenship theory, and socio-cultural orientation (Aspalter, 2011; Cheng & Ngok, 2020; Jæger, 2006; Linos & West, 2003; Yang et al., 2019). However, results based on these theoretical perspectives across studies were scattered, and the existing systematic reviews about studies on welfare attitudes did not synthesize the findings in accordance with those perspectives specifically (Sundberg, 2014; Sundberg & Taylor-Gooby, 2013). This manifests an urgent need for researchers to examine the validity and generalizability of these perspectives through a systematic synthesis of relevant findings.

1.1 Objectives

Based on a quantitative systematic review design and the meta-analysis method, this present study aims to synthesize the relationships between individual-level factors and welfare attitudes as guided by four specific theoretical perspectives on welfare attitudes. In addition, this study will examine these perspectives in terms of validity and generalizability based on the synthesis results. Detailed research questions and corresponding hypotheses are outlined below.

1.2 Research Questions

- a. Are self-interest factors associated with welfare attitudes?
- b. Are political ideology factors associated with welfare attitudes?
- c. Are social identities associated with welfare attitudes?
- e. Is perception of socio-cultural orientation associated with welfare attitudes?

1.3 Hypotheses

H₁: More positive self-interest factors such as higher social class, higher income, and higher education level are associated with more negative welfare attitudes.

H₂: More left and/or liberal political values are associated with more positive welfare attitudes.

H₃: Vulnerable, underrepresented, and marginalized social identities such as disability status, racial minority status, and immigration status are associated with more positive welfare attitudes.

H_{4a}: Stronger perception of individualism-related values is associated with more negative

welfare attitudes.

H_{4b}: Stronger perception of collectivism-related values is associated with more positive welfare attitudes.

2. Methods

2.1 Types of Studies

This study only reviewed and synthesized quantitative literature about welfare attitudes. These two existing systematic reviews about welfare attitudes did not include any qualitative studies based on their search of literature (Sundberg, 2014; Sundberg & Taylor-Gooby, 2013). Specifically, according to a preliminary literature search conducted on December 10th, 2019, only two qualitative studies were identified. Given the overwhelming ratio of quantitative literature to qualitative literature and the epistemological and ontological nature of the research questions of this study, an approach of quantitative systematic review instead of mixed-methods systematic review was adopted.

2.2 Search Strategy

This review adopted both exhaustive and sensitive search strategies. In quantitative systematic reviews, adopting an exhaustive search framework is the easiest way of identifying all relevant studies (Gough et al., 2017). In addition, based on the pilot review, it was found that the number of studies directly related to the research questions was limited. Thus, this review aimed to identify as many relevant studies as possible (Gough et al., 2017). To avoid retrieving a high number of irrelevant studies for screening, which is a possible consequence of the sensitivity strategy, the Boolean operators “AND”, “OR” and “NOT” were used to combine key concepts and narrow the scope of admissible studies. With this strategy, the current study achieved both sensitivity and precision in the search process. All searches were performed on July 6th, 2021. A reference list for included and excluded studies was provided.

2.3 Key Concepts and Keywords

According to the preliminary literature search, there was an extremely limited number of research with causal inference. Thus, this study will only include cross-sectional studies. Based on the research questions, population, independent variables, and dependent variables were identified and operationalized and searched for in this review. Key concepts and keywords were connected with reference to these corresponding hypotheses. The operationalization of key concepts was presented in Table 1. The keywords to be used in the search were presented in Table 2.

Table 1. Key Concepts and Operationalization

Concepts	Operationalization
Population	The population under study is the population of each country. These populations in included studies are not limited by nationality, age, or language.
Independent Variables (Individual Level Factors)	This study will include individual-level factors as independent variables based on the hypotheses.
Dependent Variable	The outcome features welfare attitudes. The pilot review indicates that there are mainly four types of operationalizations of this construct, based on the General Social Survey, the European Social Survey, the World Values Survey, and the European Values Survey respectively.

Table 2. Keywords by Categories*

Category	Keywords
Independent Variables (Individual Level Factors)	“self-interest” OR “social class” OR “socio-economic status” OR “SES” OR “income” OR “earning” OR “wage” OR “salary” OR “education” OR “socio-political orientation” OR “political values” OR “political ideology” OR “left” OR “right” OR “liberal” OR “conservative” OR “identity” OR “identities” OR “race” OR “races” OR “racial” OR “ethnicity” OR “ethnicities” OR “ethnic” OR “immigrant” OR “immigrants” OR “immigration” OR “socio-cultural orientation” OR “individualism” OR “collectivism”
Dependent Variable	(“attitude” OR “attitudes” OR “support” OR “perception” OR “perceptions” OR “opinion” OR “opinions” OR “view” OR “viewpoint” OR “viewpoints”) AND (“social welfare” OR “welfare state”)
Survey	“General Social Survey” OR “European Social Survey” OR “World Values Survey” OR “European Values Survey” OR “International Social Survey Programme”
Exclusion	NOT (“religion” OR “religious” OR “religiosity” OR “animal” OR “animals” OR “pet” OR “pets” OR “domestic violence” OR “child welfare” OR “mental health” OR “trauma” OR “cancer” OR “AIDS” OR “HIV” OR “depression” OR “homeless” OR “homelessness” or “substance” OR “alcohol” OR “smoking” OR “disabled” OR “disability” OR “ecology” OR “ecological” OR “experiment” OR “experimental” OR “quasi-experiment” OR “quasi-experimental” OR “RCT” OR “clinical”)

Note. *All categories will be connected by the Boolean operator “AND”.

2.4 Inclusion and Exclusion Criteria

This study did not follow the PICO framework (Schardt et al., 2007) which was tailored specifically for systematic reviews of interventions. Instead, it specified a set of inclusion and exclusion criteria. These criteria were developed based on research questions of this study as well as applicability considerations. The detailed inclusion and exclusion criteria were presented in Table 3.

Table 3. Inclusion and Exclusion Criteria

	Inclusion	Exclusion
Population	Based on the research questions, this systematic review will only include studies based on the whole population(s) of one or multiple countries.	Studies based on specific groups, such as immigrants, students, senior citizens, etc. will not be included.
Independent Variables (Individual Level Factors)	Based on the hypotheses, this systematic review will only include studies involving individual-level factors such as (a) self-interest factors including social class, income, and education, (b) political values including left-right and liberal-conservative preferences, (c) social identities such as race and immigration status, and (d) socio-cultural orientation including individualism and collectivism.	Studies based on higher level factors such as welfare regime type will not be included.
Dependent Variable	The dependent variable features welfare attitudes. Studies which operationalized this construct based on the General Social Survey, the European Social Survey, the World Values Survey, and the European Values Survey will be included.	Studies based on other outcomes, such as attitudes towards poverty, healthcare, the poor, redistribution, labor policies, the basic income regime will not be included in this review.
Source	Journals	Books, Book Chapters, Reviews, and Presentations
Type of Article	Peer-Review	Non-Peer Review
Research Design	Cross-Sectional	Longitudinal
Data Source	Secondary Datasets	Primary Datasets
Methodology	Quantitative	Qualitative
Language	English	All Other Languages
Publication Date	Not Limited	N/A

2.5 Databases

This review limited the search to electronic databases only, considering that most studies related to these research questions were presented as academic journal articles. A total number of four primary online databases were included as potential sources of literature: PsycINFO, SocINDEX with Full Text, Academic Search Ultimate, and PAIS Index. All these databases cover a spectrum of literature including social policy, social welfare, public policy, political science, and sociological research and are able to cover relevant studies published in all of the major journals in these disciplines. PsycINFO, SocINDEX with Full Text, and Academic Search Ultimate were accessed via the Library Masked while the PAIS Index was accessed via Library Masked. Retrieved articles were stored in a reference management software, Citavi version 6.10.0. References were then imported into a systematic review service provider, Covidence (<https://www.covidence.org/>), and duplicates were automatically removed.

2.6 Data Collection and Analysis Methods

2.6.1 Selection of Studies

The screening process was done on Covidence which is designed to facilitate literature screening and data extraction. Only the author was involved in the screening process. Retrieved articles were first screened for appropriateness and relevance based on their titles and abstracts. Further, relevant studies were screened for inclusion based on their full texts. Reasons for exclusion were explicitly specified.

2.6.2 Data Extraction and Management

A specific data extraction form adapted from the Literature Review Summary Table composed by Buhi and Goodson (2007) was used to extract data from included articles. This form included the following information: study id, authors (date), research design, theory, research questions/hypothesis, population, sample characteristics/size, independent variables, dependent variables, analysis, findings, strengths, limitations, and conclusions/implications. The column of findings highlighted the following information: the regression coefficient (b) regarding the association between individual-level factors and welfare attitudes and the corresponding statistical significance test results. For studies based on multi-level linear regression models, only statistics of the fixed-effects portion were reported, i.e., the random effects related to clusters were not reported. Studies based on ordered logistic regression were included but the statistical findings were not compared with those of the rest articles. The author extracted the data from eligible studies independently.

2.6.3 Quality Assessment

Several quality assessment tools were examined and considered for use in this current review (Fitzpatrick-Lewis et al., 2009; Harris et al., 2012; Wong et al., 2008). Considering that all studies included in this review were based on cross-sectional designs, the quality appraisal checklist (quantitative studies reporting correlations and associations) developed by National Institute for Health and Clinical Excellence (2012) was adapted and used for quality assessment. The checklist includes five sections: population, methods, outcomes, analyses, and summary.

Based on the checklist, the quality of included studies was examined, and an overall study quality grading for internal validity and a separate one for external validity were awarded for each study. The quality of each individual study was assessed mainly in terms of validity and susceptibility to different sources of bias (Littell et al., 2008). The adapted quality assessment instrument was presented in Appendix A.

2.6.4 Missing Data

In addition, information about how each study dealt with missing data on participant characteristics or outcomes were reviewed and presented in the data extraction form. Reporting, handling, and assessing the risk of bias associated with missing data is of critical importance in systematic reviews (Akl et al., 2015). However, such information was not evaluated in the quality assessment procedure of this review due to lack of specific appraisal measures in the quality appraisal checklist adopted. Due to time constraints and applicability issues, no revisions of the checklist in terms of appraisal of missing data remedies were made. Remedy attempts and specific methods such as listwise deletion, pairwise deletion, and multiple imputation techniques were recorded and reported in Table A1.

2.6.5 Assessment of Bias

Several tools for assessing risk of reporting biases were reviewed (Page et al., 2018). Considering that this review aimed to examine associations derived in cross-sectional studies, the author referred to the Item Bank for Assessment of Risk of Bias and Precision for Observational Studies of Interventions or Exposures (Viswanathan & Berkman, 2011) for information only. This tool was presented in Appendix B. Due to limitations in dependent and independent variables across studies, only two preliminary funnel plots were provided to check for the existence of publication bias.

2.6.6 Data Synthesis

This review also performed preliminary meta-analyses. A random-effects model with restricted maximum likelihood estimation (REML) was adopted. Meta-analyses were only performed on studies sharing identical outcome measures and independent variables.

2.6.7 Sensitivity Analysis

This review performed a sensitivity analysis to examine whether review conclusions were robust to decisions made during the review process. Specifically, in the meta-analyses, both fixed-effects and random-effects estimates were obtained to check for small-study effects, i.e., whether the associations between individual-level factors and welfare attitudes were systematically different in smaller studies compared with larger ones. If the estimates are similar, then any small-study effects have little effect on the estimates of associations.

3. Results

3.1 Results of the Search

Details regarding the search and screening process were illustrated based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Page et al., 2021)

Statement and presented in Figure 1. The electronic search yielded 123 potential articles for screening after 37 duplicates were removed. The titles and abstracts of these articles were then examined for relevance and inclusion, resulting in an additional 94 articles excluded. The remaining 29 articles were further sought for retrieval, with three articles excluded due to access issues. Consequently, a total number of 26 studies were assessed for full-text review and eligibility, resulting with eight studies included in the final synthesis.

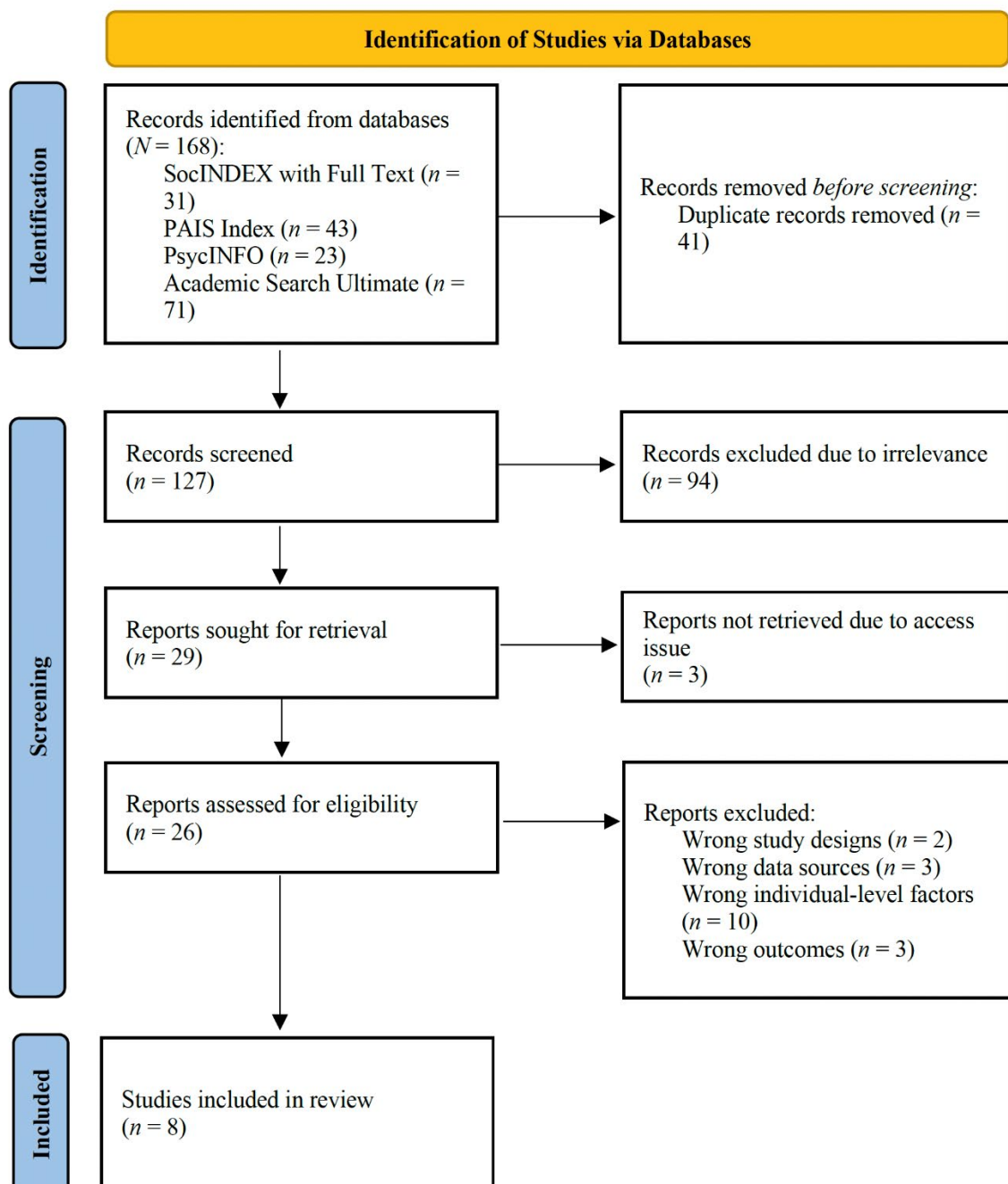


Figure 1. PRISMA 2020 Flow Diagram

3.2 Excluded Studies

Eighteen studies were excluded due to various reasons. Specifically, two studies were excluded due to wrong study designs (Cavaillé & Trump, 2015; Munro, 2017). Three studies were excluded due to wrong data sources, i.e., they were not based on the pre-specified four surveys (Holm & Geys, 2018; Kevins et al., 2019; Sumino, 2014). Ten articles were excluded due to wrong individual-level factors (André & Dewilde, 2016; Andreoli & Olivera, 2020, Blekesaune, 2013, Finseraas, 2012, Jaime-Castillo et al., 2016, Jaime-Castillo & Marqués-Perales, 2019, Kevins et al., 2018, Marx, 2014, VanHeuvelen, 2017, Wehl, 2019). Three articles were excluded due to wrong outcomes (Goossen, 2020; Roosma et al., 2014; van Oorschot et al., 2012). In addition, three studies were not available from both libraries (Meuleman, 2019; Owens & Pedulla, 2013; Reeskens & van Oorschot, 2013). The full list of studies excluded after full text review and respective justification for exclusion was presented in Table 4.

Table 4. Reasons for Exclusion of Studies

Study	Reasons for Exclusion
André & Dewilde, 2016	Wrong individual-level factor
Andreoli & Olivera, 2020	Wrong individual-level factor
Blekesaune, 2013	Wrong individual-level factor
Cavaillé & Trump, 2015	Wrong study design
Finseraas, 2012	Wrong individual-level factor
Goossen, 2020	Wrong outcome
Holm & Geys, 2018	Wrong data source
Jaime-Castillo et al., 2016	Wrong individual-level factor
Jaime-Castillo & Marqués-Perales, 2019	Wrong individual-level factor
Kevins et al., 2018	Wrong individual-level factor
Kevins et al., 2019	Wrong data source
Marx, 2014	Wrong individual-level factor
Munro, 2017	Wrong study design
Roosma et al., 2014	Wrong outcome
Sumino, 2014	Wrong data source
van Oorschot et al., 2012	Wrong outcome
VanHeuvelen, 2017	Wrong individual-level factor
Wehl, 2019	Wrong individual-level factor

3.3 Description of Included Studies

The eight studies included in this review were published in seven different journals

representing disciplines including sociology, political science, and social welfare. Publication dates ranged from 2006 to 2016. Four articles were published before 2010 and four were published after 2010. There were three studies based on the European Social Survey (ESS; Baslevant & Kirmanoglu, 2011; Breznau & Eger, 2016; Calzada et al., 2014), three studies based on the International Social Survey Programme (ISSP; Blekesaune & Quadagno, 2007; Bolzendahl & Olafsdottir, 2008; Glass & Marquart-Pyatt, 2008), one study based on both the ESS and the ISSP (Arikan & Bloom, 2015), and one study based on the General Social Survey (GSS; Yang & Barrett, 2006). The population under investigation in the study by Yang and Barrett (2006) was the US population while the populations in other studies were populations of multiple countries. See Table A1 for detailed characteristics of included studies.

3.3.1 Research Designs

All eight studies included in this review were based on cross-sectional research designs, i.e., data used in all studies were collected at single points in time. All studies were based on secondary data which were collected using complex survey designs such as weights, cluster, stratum, and primary sampling units (PSU). Only one study examined the effects of data collection methods on the findings (Blekesaune & Quadagno, 2007), but all these studies did not provide any concrete information on data collection or survey administration. Similarly, none of these studies reported the use of compensation or a token of appreciation for participants. All these studies did not provide any information on ethics, consent, anonymity, or confidentiality.

3.3.2 Samples

Valid sample sizes ranged from 1,157 to 86,325. Notably, there was one study which did not specify the sample size (Glass & Marquart-Pyatt, 2008). All studies used samples from large-scale social surveys: the ESS, the ISSP, and the GSS. All samples were also nationally representative of the populations of corresponding countries. Only one study provided details of sample demographics, such as statistics about age, gender, and race. Four studies provided details of statistics about age and/or gender (S1, S3, S4, and S5). All the rest studies did not provide any information on sample characteristics (S2, S6, and S7). The means of age across included studies ranged from 38 to 47 years, and all samples had more females than males with the percentages of females ranging from 52% to 58%.

3.3.3 Independent Variables

The main independent variables of interest to this review were classified into four categories: self-interest factors, political ideology factors, social identities, and perception of socio-cultural orientation. Within the samples of studies included in this systematic review, these independent variables were measured in different ways. Because differences in how these constructs were conceptualized and measured will impact interpretation of the results, descriptive information regarding these measures was presented in Table A1. Detailed information about these independent variables were as follows.

Self-Interest Factors. All studies included some variables reflecting self-interest factors. However, due to different conceptual models utilized in these studies, these variables varied

greatly across studies. Specifically, employment status was included as a self-interest factor in S1, S2, S3, S4, and S7. Education level was included in S1, S2, S4, S6, and S8. Household income was included in S1, S2, and S4. Besides, S1 and S4 included parental status as one self-interest variable. In addition, S5 included socio-economic status as one independent variable while S7 included working class status as a self-interest factor. Further, S1 included retirement while S7 included pensioner status as self-interest factors. Notably, S8 included occupational prestige and wealth as self-interest variables.

Political Ideology Factors. Three studies included political ideology factors as independent variables. Specifically, S1, S2, and S5 included subjective left-right political orientation as political ideology factors. S8 used both party affiliation and political ideology to operationalize the independent variable of political predispositions.

Social Identities. Several studies in this review included various independent variables of social identities. Notably, some self-interest factors may also be treated as social identities. For example, S1 included disability status and union member status as social identities. In addition, S1, S2, S4, and S8 included religion as social identities, though S8 treated religious affiliation as an ideological variable. Further, S8 included race as a social identity, specifying white, black, and other races.

Perception of Socio-Cultural Orientation. Endorsement of latent socio-cultural values were vastly different across studies included in this review. Specifically, S1 included interpersonal trust as one value variable. S2 included openness and interests dimension score as two values variables. S3 included endorsement of egalitarian ideology as a value variable. Last, S6 included egalitarianism, multiculturalism, generalized trust, gender traditionalism, authoritarianism, and merit as six values variables.

3.3.4 Dependent Variables

Studies in this review also varied in terms of dependent variables. Specifically, S1 used both support for government responsibility in providing social welfare services (SSWS) and support for increased welfare spending (SIWS) to operationalize welfare attitudes. S3 used the index of attitudes towards the sick and the old and the index of attitudes towards the unemployed to measure the dependent variable of welfare attitudes. Relatively different from all other studies, S4 only paid attention to welfare attitudes in terms of childcare. Specifically, S4 used (a) support for the statement that working women should receive paid maternity leave when they have a baby and (b) support for the statement that families should receive financial benefits for childcare when both parents work to measure the construct of interest. S7 used (a) support for redistribution including job guarantees, equal opportunities, and economic redistribution and (b) state-sponsored guarantees linked with quality-of-life issues for the elderly, the sick, and low-income households to operationalize the construct of welfare attitudes. S8 also measured the construct of welfare attitudes differently. It conceptualized welfare attitudes as support for social security and measured this construct with (a) perceptions about how serious the problems with the social security system are and (b) attitudes towards whether the social security programs should continue much as it is now or be phased out and replaced by the privatization of social security accounts.

Notably, S1, S2, S5, and S6 measured the dependent variable in a consistent way. Specifically, these four studies measured support for the welfare state using six question items from the ESS questionnaire asking about the role of the government in providing for basic needs and insurance against social risks. These question items asked respondents how much responsibility governments should have to (a) ensure a job for everyone who wants one, (b) ensure adequate healthcare for the sick, (c) ensure a reasonable standard of living for the old, (d) ensure a reasonable standard of living for the unemployed, (e) ensure sufficient childcare services for working parents, and (f) provide paid leave from work for people who temporarily have to care for sick family members. Both S2 and S5 used the average of the aforementioned six scores while S6 merged them into a single indicator – a weighted average of the answers to the six questions ranging from 0 to 10. S2 used all single item scores as dependent variables.

3.3.5 Data Analysis

Descriptive Statistics. All of these eight included studies provided descriptive information regarding all independent and dependent variables in their samples. However, means and standard deviations provided by some authors were difficult to interpret due to the absence of information regarding the properties of measures used. In addition, only one study specified that design weights rather than population weights available in the data set were used to obtain nationally representative figures so that the results would not be dominated by the patterns in large-population countries while others did not report any decision related to weights.

Multivariate Regression Statistics. Three regression techniques, namely multi-level linear regression, ordinary least squares regression, and ordered logistic regression, were used by these studies. Specifically, S1, S3, S5, and S6 used multi-level linear regression to estimate the associations between individual-level factors and welfare attitudes while adjusting for the variation in welfare attitudes across countries. Notably, S3 adopted the Markov chain Monte Carlo method with Gibbs sampling to obtain less biased estimates, since only 24 nations were included as clusters. Both S1 and S5 failed to acknowledge and address this issue of small samples in their methodology, considering that they had less than 30 nations in their samples. In addition, S5 presented some statistics about factor loadings of the dependent variable of support of the welfare state, but no information on the detailed factor analysis approach and estimation method was provided.

S2, S7, and S8 used ordinary least squares regression to estimate the associations between individual-level factors and welfare attitudes. Besides, S7 also performed a confirmatory factor analysis and constructed a measurement model of welfare state attitudes, revealing the factor loadings and covariances of these two included dependent variables. Notably, both S2 and S7 failed to control the family-wise error rate or false discovery rate, since six regressions with the same set of predictors were performed in S2 and two regressions were performed for each of these six countries in S7.

S4 used ordered logistic regression to estimate the associations between individual-level factors and welfare attitudes. This decision was related to its choice of dependent variables, i.e., the dependent variables of S4 – welfare attitudes in terms of childcare – were different from those of the rest studies. Notably, S4 also failed to control the family-wise error rate or false discovery

rate, since two regressions with the same set of predictors were performed for each of these four countries. In addition, S8 conducted multivariate analyses using both ordinary least squares regression and ordinal regression, but only presented the results of the ordinary least squares regression analysis statistics since the results based on both regression methods were very similar to each other. The authors also indicated that the results of ordinal regression are available upon request, which may enlighten the methodology decisions of future studies.

3.4 Methodological Quality

This section summarized the general quality of included studies as well as variability in qualities across studies. In addition, important flaws in individual studies were discussed. All studies exhibited some limitations in methodological quality and/or reporting, although wide variability was evident across studies. No studies were excluded due to methodological flaws. Detailed appraisal of the methodological quality of these studies were provided in the following sub-sections. Table 5 showed showing how each study was rated on each of the following criterion.

Table 5. Summary of Quality Assessment Criteria

Study ID	Study Design	Population			Variables		Outcomes		Analyses				Summary	
		1.1	1.2	1.3	2.1	2.2	3.1	3.2	4.1	4.2	4.3	4.4	5.1	5.2
S01	Cross-Sectional	NR	+	+	++	+	+	–	NR	++	++	++	++	+
S02		NR	+	++	++	+	+	–	NR	++	++	++	++	++
S03		NR	++	+	++	–	+	NR	NR	+	++	++	++	+
S04		NR	+	+	+	++	+	NR	NR	++	++	+	++	+
S05		NR	++	++	++	+	+	+	NR	++	++	++	++	++
S06		NR	+	+	++	+	+	+	NR	++	++	++	++	+
S07		++	+	+	+	NR	+	+	NR	++	++	NR	++	+
S08		NR	+	++	+	+	+	NR	NR	++	++	++	++	++

3.4.1 Population

Of all included studies, only S4 mentioned that the ISSP sampled from the adult, noninstitutionalized population within each country. This is somewhat understandable considering that all eight studies were based on large-scale social surveys which have very detailed sampling and survey methodology. Thus, though the source population or source area was not well described, researchers generally do not have difficulties in understanding the populations under study. In addition, the characteristics of countries especially population demographics were not described in all eight studies. Further, the recruitment of respondents were not defined in all eight studies. Similarly, information such as whether important groups were underrepresented was not available in all eight studies. Also, only S2, S5, and S8 explicitly specified that the samples were nationally representative of the populations. Not

surprisingly, the method of selection of participants from the populations as well as specific inclusion and exclusion criteria of respondents were also not described in all studies, nor were the response rates available in all studies. Last, since the samples of all eight studies were only representative of noninstitutionalized populations and excluded those living in congregate settings, bias in terms of generalizability may exist.

3.4.2 Selection of Variables

Most studies clearly specified their selection of explanatory and control variables. Specifically in terms of explanatory variables, S1 and S2 were based on Schwartz's (1992) theory of basic personal values. S3, S5, S6, and S8 were also based on sound theoretical bases such as the cognitive consistency theory, the group dynamics theory, the socio-economic status theory, the moral institutionalism theory, and Walter Korpi's power resources theory, the social location theory, and the political predisposition theory. Notably, S3 was based on the self-interest explanatory framework, which should be regarded as a conceptual model rather than a theoretical framework. Similarly, S7 was based on the decline-of-class argument as well as the enlightenment model of attitude formation which were mainly based on empirical – rather than theoretical – evidence.

In addition, it was also found that most studies provided enough information in terms of inclusion and exclusion of confounding factors. Specifically, S1 included ten individual-level control variables besides those which were of interest to this review; however, the authors failed to provide any substantive empirical support for their decision. S2 failed to differentiate independent variables and control variables clearly in their study, though there were likely no other confounding factors not identified and controlled for. S3 did not include any control variables; even though this decision was justified by applicability issues, it has to be acknowledged that the fixed-effects regarding individual-level factors had been impaired, i.e., the decision was probably sufficient to cause important bias. Similarly, S7 did not present any information related to control variables; this decision may lead to severe bias in its findings. S5, S6, and S8 only included four control variables without any discussion or justification; S5 did not even report their effects. Such decisions of these three studies were also susceptible to bias. Last, S4 considered and adjusted for eight confounding factors based on empirical evidence, which was least liable to bias.

3.4.3 Outcomes

Overall, the outcome measures in these eight included studies were of satisfactory reliability. All measures were used as they were in previous studies and were not assessed for content validity, thus validity information were extremely limited. In addition, all outcome measures were based on self-report question items and thus were subjective. Specifically, the dependent variables in S1, S2, S5, and S6 were based on the same measure which consisted of six question items from the ESS. In addition, S1, S5, and S6 performed factor analyses to examine the factor loadings of this measure. S2, S4, S6, and S8 reported Cronbach's alpha statistics of .81, .83, .85, and .81 respectively, reflecting sufficient internal consistency of these corresponding outcome measures. In contrast, S3, S5, and S7 did not report any reliability statistics. Last, it has to be acknowledged that all outcome measures were not adequately conceptualized and

operationalized based on theoretical or empirical evidence. Though there was sufficient literature on the outcome measure adopted by S1 and S2, they failed to connect those existing studies to theirs. Similarly, S3, S4, and S8 did not provide any justification for their conceptualization and operationalization of their outcome measures. In contrast, S5 and S6 conceptualized and operationalized their outcome measure based on empirical evidence. S7 mainly used narrative arguments to assist its conceptualization and operationalization of the outcome measure.

3.4.4 Analyses

Power. All eight included studies did not present any information regarding statistical power in their analyses. Specifically, no a priori or post hoc power analyses were performed. Therefore, this review cannot conclude whether these studies were sufficiently powered to detect associations between individual-level factors and welfare attitudes.

Variables. Multiple explanatory variables were considered and included in the analyses of all studies. The number of explanatory variables in the analyses of each study varied across studies, but all studies except S3 considered sufficient explanatory variables in theory analyses based on their theoretical or conceptual frameworks. S3 only included three individual-level explanatory variables, which was probably insufficient.

Analytical Methods. The analytical methods used in all studies were appropriate given the structure of data and the level of measurement of their outcome variables. Specifically, S1, S3, S5, and S6 used multi-level linear regression to adjust for the variation in the interval variable of welfare attitudes across countries. S2, S7, and S8 adopted ordinary least squares regression because their outcome measures were also of interval-level measurement. S8 also performed an ordinal regression for the purpose of sensitivity test. Last, S4 used ordered logistic regression because its outcome measure of family policy preferences was of ordinal measurement.

Precision. All studies provided concrete measures of precision. Specifically, S1, S2, S3, S5, S6, and S8 presented standard errors as estimates of the precision of associations. S4 provided z statistics which could be used to calculate the precision of its estimates of regression parameters. In comparison, S7 did not specify whether the values alongside regression coefficients were associated standard errors or not. In addition, all reported associations were meaningful in terms of hypothesis testing, i.e., statistical significance tests results were sufficient to answer the research questions of this review. Notably, though confidence intervals and exact p values for effect estimates were not given in all studies, it was possible to calculate confidence intervals based on the given precision measures and regression coefficients. This review calculated CIs of all regression coefficients using Stata/SE 17.0 (StataCorp, 2021); they were sufficiently precise to aid decision-making in terms of answering the research questions of this review. CIs were presented in Table 7.

Table 7. Comparison of Associations Between Individual-Level Factors and Welfare Attitudes

Study ID	Outcome Measure	Type of Independent Variables	Independent Variable	<i>b</i>	<i>SE</i>	95% CI	
S2	Support for the welfare state	Self-Interest Factors	Employment Status	-.044	.048	-.138	.050
S7	Support for redistribution including job guarantees, equal opportunities, and economic redistribution	Self-Interest Factors	Employment Status	.221	.078	.068	.374
S5	Support for the welfare state	Self-Interest Factors	Education	-.040	.010	-.060	-.020
S6	Support for the welfare state	Self-Interest Factors	Education	-.052	.006	-.064	-.040
S7	Support for redistribution including job guarantees, equal opportunities, and economic redistribution	Self-Interest Factors	University Education	-.252	.074	-.397	-.107
S8	Support for social security	Self-Interest Factors	Years of Schooling	-.063	.035	-.132	.006
S1	Support for the welfare state	Self-Interest Factors	Household Income	-.035	.002	-.039	-.031
S2	Support for the welfare state	Self-Interest Factors	Household Income	-.037	.225	-.478	.404
S8	As support for social security	Self-Interest Factors	Household Income	-.046	.016	-.077	-.015
S1	Support for the welfare state	Political Ideology Factors	Right-Wing Political Ideology	-.039	.003	-.045	-.033
S2	Support for the welfare state	Political Ideology Factors	Left-Right Political Value Endorsement	-.070	.000	-.070	-.070
S8	As support for social security	Political Ideology Factors	Affiliation with the Democrat party	.266	.148	-.024	.556

S1	Support for the welfare state	Social Identities	Being Religious	.011	.002	.007	.015
S2	Support for the welfare state	Social Identities	Being Protestants	-.118	.012	-.142	-.094
S8	As support for social security	Social Identities	Being Protestants at the age of 16	-.263	.145	-.547	.021
S3	Attitudes towards the sick, the old, and the unemployed	Perception of Socio-Cultural Orientation	Egalitarian	.765	.008	.749	.781
S6	Support for the welfare state	Perception of Socio-Cultural Orientation	Egalitarian	.337	.008	.321	.353

Note. For studies with multiple dependent variables, only the first one was included in this table.

3.4.5 Summary

In summary, the results of all studies were both internally and externally valid. There were no significant flaws in the research designs of all studies. With various measures to adjust for potential confounders, these studies minimized sources of bias satisfactorily. In addition, though there were limited details given about samples in most studies (except S2, S5, and S8), it was determined that these findings were generalizable to the source populations. Further, only S2, S4, and S8 provided substantive implications for decision-making regarding social policies.

3.5 Main Findings

Main statistical findings of all included studies were discussed in detail in this section. Since the outcome measure of welfare attitudes differed greatly across studies, to address objectives of this review better, this section classified findings into four categories in accordance with independent variables of interest: self-interest, political ideology, social identities, and perception of socio-cultural orientation. These findings revealed a relatively consistent pattern of the associations between individual-level factors and welfare attitudes. Notably, independent variables were also operationalized in different ways in most studies even if they were intended to measure the same construct. Thus, this review only performed two meta-analyses of which each was based on two studies; these two studies for each meta-analysis shared identical outcome measures and independent variables. Both fixed-effects and random-effects models were adopted, but no substantive differences were observed. This review only reported meta-analysis estimation results based on random-effects models. A statistical summary table including regression coefficients, standard errors, and 95% CIs of each independent variable

of interest in all studies was presented in Table 7. The meta-analyses statistics and the forest plots regarding the associations between education and welfare attitudes and those between household income and welfare attitudes were presented in Figure 2 and Figure 3.

3.5.1 Self-Interest

All studies revealed significant associations between self-interest factors and welfare attitudes, such as employment status, education level, household income, parental status, socio-economic status, working class status, etc. Most associations between each type of self-interest factor and welfare attitudes were consistent across studies. Such findings were organized and synthesized in the following sub-sections.

Employment Status. Only two studies (S2 and S7) revealed significant associations between employment status and welfare attitudes. Specifically, S2 found that the employed were less in favor of government intervention in welfare ($b = -.044, p < .05$). Similarly, S7 found that the unemployment status was associated with greater support for state responsibility for redistribution for disadvantaged groups ($b = .221, p < .01$).

Education Level. Five studies (S1, S2, S5, S6, and S8) revealed significant associations between employment status and welfare attitudes. Specifically, S1 found that higher education was associated with less support for government responsibility in providing social welfare services ($b = -.001, p < .001$; $b = -.001, p < .001$) and less support for increased welfare spending ($b = -.005, p < .001$). Similarly, S2 found that higher education indicated a diminished role for government provision ($b = -.020, p < .001$). S5 found that education was associated with people's support for the welfare state among exclusive ($b = -.04, p < .001$) and conditionally inclusive groups ($b = -.01, p < .001$). In addition, S6 also found that education has a negative effect on welfarism ($b = -.052, p < .01$) while S7 found that university education was associated with support for state responsibility for redistribution for all three disadvantaged groups ($b = -.252, p < .001$). Further, S8 found that years of schooling was associated with support for social security ($b = -.063, p < .05$).

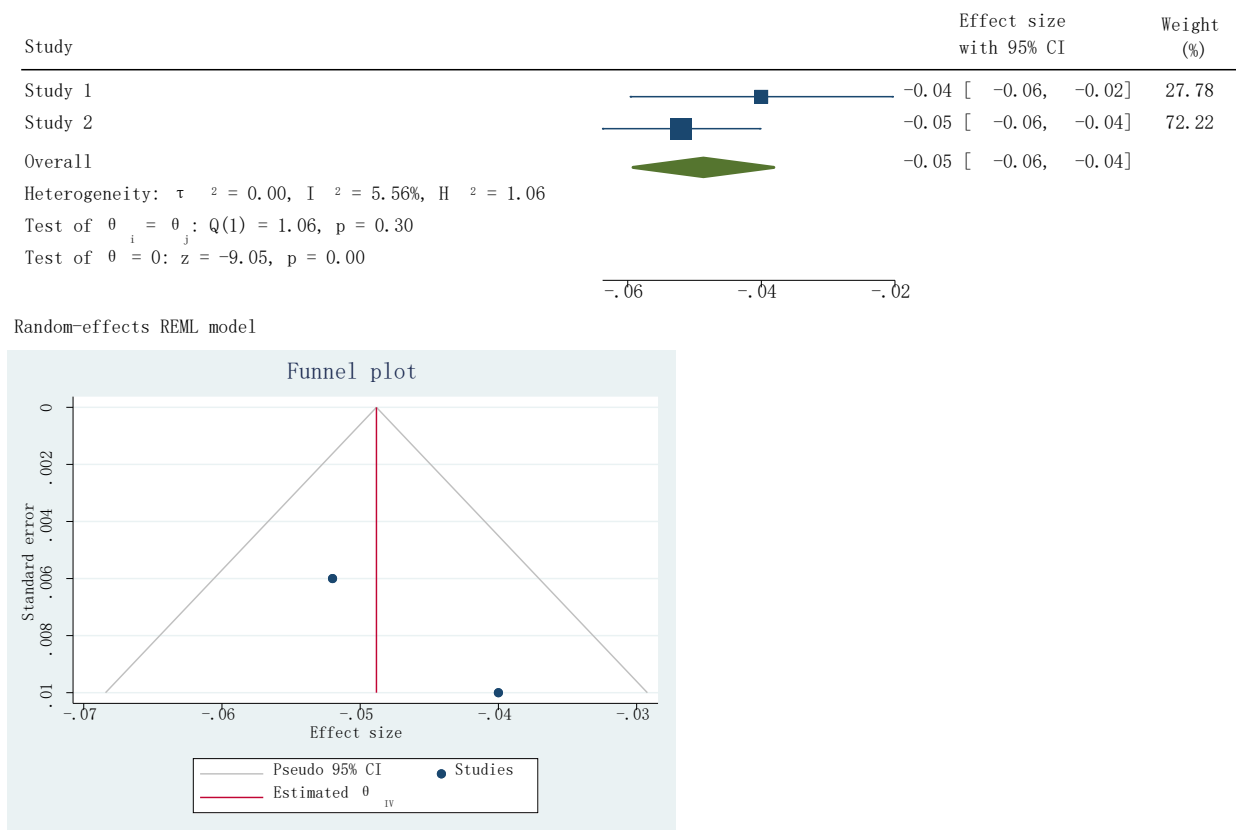


Figure 2. Forest Plot and Funnel Plot Regarding the Association Between Education and Welfare Attitudes Based on S5 and S6

Note. The meta-analysis statistics and the funnel plot are for reference only.

Household Income. Three studies (S1, S2, and S8) revealed significant associations between household income and welfare attitudes. Specifically, S1 found that income was associated with support for government responsibility in providing social welfare services ($b = -.035$, $p < .001$; $b = -.019$, $p < .001$) and support for increased welfare spending ($b = -.021$, $p < .001$). Similarly, S2 found that the higher the income, the less respondents believed that government should be involved in welfare provision ($b = -.037$, $p < .001$). In addition, S8 found that family income was negatively associated with respondents' support for social security ($b = -.046$, $p < .01$).

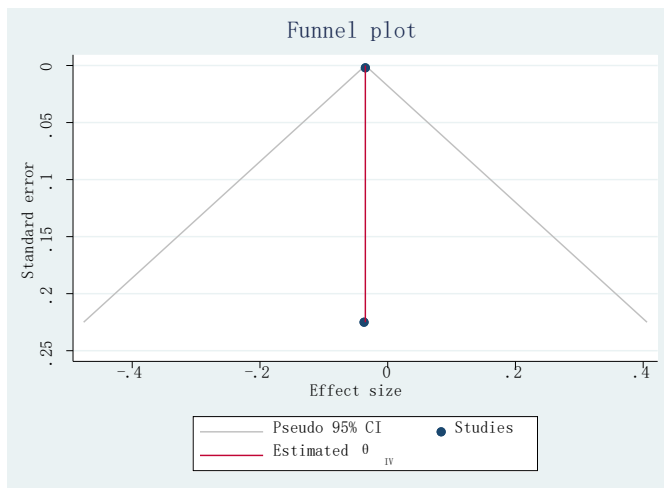
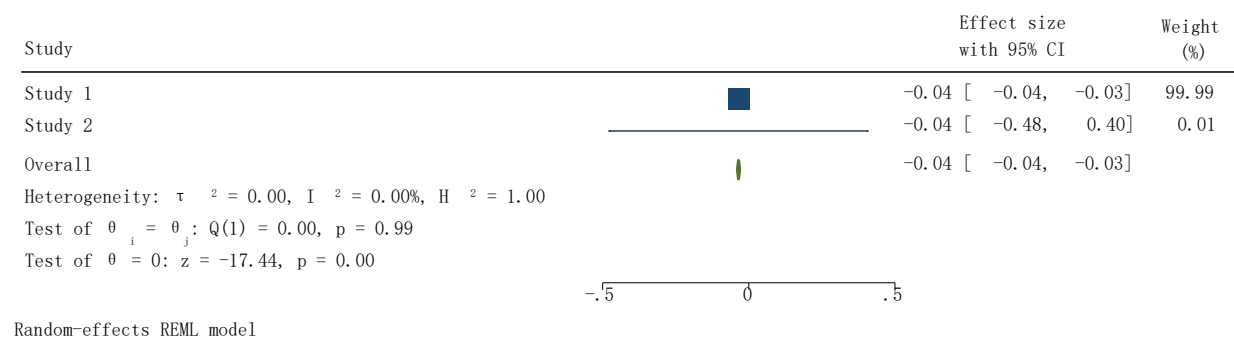


Figure 3. Forest Plot and Funnel Plot Regarding the Association Between Household Income and Welfare Attitudes Based on S1 and S2

Note. The meta-analysis statistics and the funnel plot are for reference only.

Other Self-Interest Factors. The associations between some other self-interest factors and welfare attitudes were also synthesized, such as parental status, occupational status, working class status, pensioner status, and occupational prestige. First, S4 found that in the United States, those who are parents were more supportive of family policy ($b = .31, p < .01$; $b = .25, p < .05$). Second, S5 found that higher occupational status, which reflected higher social class, was associated with lower support for the welfare state among exclusive ($b = -.03, p < .05$) and conditionally inclusive groups ($b = -.02, p < .001$). Third, S8 found that working class status was associated with more support for state responsibility for redistribution for all three disadvantaged groups ($b = .182, p < .001$) and for guarantees linked with quality-of-life issues ($b = .092, p < .01$). Fourth, S7 found that pensioner status was associated with higher support for state responsibility for redistribution for all three disadvantaged groups ($b = .141, p < .01$). Fifth, S8 found that occupational prestige was associated with greater support for social security, contrary to the original hypothesis ($b = .018, p < .05$).

3.5.2 Political Ideology

Three studies examined the associations between political ideology factors and welfare attitudes (S1, S2, and S8). Specifically, S1 found that right-wing political ideology was

associated with less support for government responsibility in providing social welfare services ($b = -.039, p < .001$; $b = -.022, p < .001$) and less support for increased welfare spending ($b = -.023, p < .001$). Besides, S2 found that individuals' self-placement on the left-right ideological scale was linked to welfare attitudes ($b = -.070, p < .001$). In addition, S8 found that affiliation with the Democrat party was associated with higher support for Social Security ($b = .266, p < .05$). Notably, S5 utilized the subjective left-right political ideology scale only to control for the known overlap between partisan or political ideology and welfare policy preferences and therefore did not disclose the associations between political ideology and welfare attitudes.

3.5.3 Social Identities

Several studies examined the associations between social identities and welfare attitudes (S1, S2, and S8). Of all social identities, religion was found to be one major social identity which was associated with welfare attitudes. Other social identities were also closely examined in this review.

Religion. S1, S2, S4, and S8 examined the associations between religion and welfare attitudes. Specifically, S1 found that being religious was associated with greater support for government responsibility in providing social welfare services ($b = .011, p < .001$) among ESS respondents. S2 found that being Protestants was associated with more negative welfare attitudes ($b = -.118, p < .001$) while being Orthodox or Muslims was associated with more positive welfare attitudes ($b = .230, p < .001$; $b = .358, p < .001$). In addition, no significant associations between religion and welfare attitudes were found in S4. Last, S8 found that being Protestants at the age of 16 was associated with less support for Social Security ($b = -.263, p < .05$).

Other Social Identities. Specifically, S1 found that disability status was associated with greater support for government responsibility in providing social welfare services ($b = .019, p < .001$) and greater support for increased welfare spending ($b = .043, p < .001$) among ISSP respondents. S1 also found that union member status was associated with greater support for government responsibility in providing social welfare services ($b = .009, p < .001$; $b = .004, p < .001$) and greater support for increased welfare spending ($b = .012, p < .001$) among ISSP respondents. In addition, S8 found that race, as a social location variable, was also associated with welfare attitudes. Being Black or of other races were associated with greater support for Social Security ($b = .549, p < .01$; $b = .522, p < .05$).

3.5.4 Perception of Socio-Cultural Orientation

Several studies examined the associations between endorsement of latent socio-cultural values and welfare attitudes. Specifically, S1 found that interpersonal trust was associated with greater support for government responsibility in providing social welfare services ($b = .009, p < .001$) among ESS respondents, less support for government responsibility in providing social welfare services among ISSP respondents ($b = -.063, p < .001$), and less support for increased welfare spending among ISSP respondents ($b = -.091, p < .001$). In addition, S2 found that openness to change was associated with less favorable attitudes to welfare ($b = -.100, p < .001$) while interest in others was associated with more favorable attitudes to welfare ($b = .122, p < .001$). Further, S3 found that egalitarian ideology was associated with greater support for welfare state

policies regarding (a) the unemployed ($b = .765, p < .01$) and (b) the sick and the old ($b = .368, p < .01$). Last, S6 found that five values were positively or negatively associated with welfare attitudes: (a) egalitarianism ($b = .337, p < .01$); (b) multiculturalism ($b = .072, p < .01$); (c) gender traditionalism ($b = -.073, p < .01$); (d) authoritarianism ($b = .168, p < .01$); and (e) merit ($b = -.044, p < .01$).

4. Discussion

4.1 Summary of Main Results

This review of eight studies presents consistent results with regards to welfare attitudes; all research questions were answered, and research hypotheses accepted. Specifically, the findings suggest that more positive welfare attitudes are associated with (a) more negative self-interest factors such as lower social class, lower income, and lower education; (b) more left and/or liberal political values; (c) vulnerable, underrepresented, and marginalized social identities such as disability status and racial minority status; (d) weaker perception of individualism-related values; and (e) stronger perception of collectivism-related values. The evidence regarding these four types of individual-level factors are consistent, i.e., studies that conducted multivariate regression analyses found that such individual-level factors predicted more positive welfare attitudes after controlling for a variety of control variables. Effect sizes (R^2) across all studies ranged from .02 to .18 which is acceptable considering that .2 was recognized as the minimum effect size representing a “practically” significant effect in social sciences (Ferguson, 2009); after excluding S7, effect sizes ranged from .13 to .18, which is more consistent with findings of the general literature on welfare attitudes.

However, such results should be interpreted with caution due to the possibility of Type II errors associated with potentially low powers, inappropriate statistical analyses, lack of adjustment and correction measures, and partial redundancy of variables. Differences in effect sizes may also be explained in part by variations in different outcome measures of welfare attitudes used in these studies and differences in welfare attitudes as well as their underlying predictive patterns across countries. Such differences should be considered mild, but more research on the conceptualization and operationalization of welfare attitudes is needed.

4.2 Overall Completeness and Applicability

Though this study does not include all retrieved studies, it manifests completeness both internally and externally. Specifically, this review has included a sufficient number of studies which were based on all mainstream theoretical and conceptual frameworks used in welfare attitudes, and the findings have confirmed these frameworks in a consistent way. In addition, this review has included studies based on various populations with distinct socio-economic and socio-political characteristics. Thus, it has satisfactory generalizability which will provide relatively precise and robust estimates of the associations between individual-level factors and welfare attitudes among heterogeneous populations or in different contexts.

This review also has satisfactory applicability in terms of both policy and research. Though only S2, S4, and S8 provided direct and substantive implications for decision-making in social policy, this review can still enlighten future revision of social welfare policies in terms of

applicability. Specifically, these different types of demographics, values, and identities are highly identifiable characteristics based on which policymakers can make evidence-based or evidence-informed decisions. Further, with clear patterns of associations between individual-level characteristics and welfare attitudes, this review may help future studies to adapt existing theoretical and conceptual frameworks in welfare attitudes to different populations and societies based on the findings.

However, this review also acknowledges several concerns. First, in terms of outcome measures, though four studies measured welfare attitudes in a consistent way, the other four had different outcome measures, especially S4 which paid special attention to welfare attitudes in terms of childcare. This review included these studies despite the discrepancies due to lack of appropriate and eligible studies. This issue not only restrains the comparability of studies but also diminishes the generalizability of this review.

Second, a concern exists regarding potential sources of sampling and non-sampling error. By the pre-specified search strategy, all studies were based on one of these four social surveys. However, there may be slight differences between the characteristics of the “nationally representative” samples and the characteristics of true populations from which respondents were selected (Engel & Schutt, 2009). Specifically, institutionalized populations such as prisoners and people living in congregate settings may not have the chance to be selected as participants; such concerns may be even more concerning in welfare studies based on primary data. Thus, the slight differences between participants and the true population in terms of welfare attitudes are overlooked. In addition, all studies did not report the response rate, suggesting a threat to internal validity. People who refused to participate in the survey or answer certain questions may have differed from these included respondents in a systematic way.

Third, sampling bias is another potential source of error. Not a single included study presented any information on over-sampling of certain populations. In other words, if the samples over- or under-represent some populations which are closely related to the study topic, significant biases may be introduced in not only these studies, but also this review. This issue needs to be examined and addressed in future studies, especially in those involving the associations between social identities and welfare attitudes.

Fourth, response biases such as extreme responding and social desirability bias are also concerns. Due to the sensitivity of certain question items, participants may report extreme scores requesting the most social welfare from the government or do not wish to show that they are in need of social welfare which may be socially desirable in some societies. This issue is particularly common in surveys utilizing self-report measures.

Fifth, this review cannot establish any causal inference due to lack of temporal precedence in cross-sectional studies. This concern is prevalent in studies based on large-scale social surveys of which most do not have panel data. Longitudinal studies and qualitative studies such as vignette studies or deliberative forums may provide researchers with more insights into the underlying causal mechanism of welfare attitudes.

4.3 Quality of the Evidence

In summary, the quality of the evidence in these studies is satisfactory. With no significant flaws in (a) research designs, (b) populations, (c) independent and dependent variables, (d) statistical analyses, and (e) precision, these studies showed a high level of internal and external validity. With sources of bias minimized satisfactorily, it can be concluded that the review findings are generalizable to source populations.

4.4 Potential Biases in the Review Process

Results of this review should be interpreted with caution due to several potential biases in the review process. First, due to applicability issues, the identification, selection, and retrieval of articles as well as the extraction and synthesis of data was completed by a sole independent reviewer. Second, only five large-scale social survey programs were included in the search strategy, thus studies based on other surveys and those based on primary data were excluded. To balance both comparability and generalizability, these studies may need to be included so as to reduce reporting bias. Third, this review only examined the associations between individual-level factors and welfare attitudes and overlooked the effects of clusters such as countries, welfare regimes, and cultures. Thus, the synthesis findings may be biased due to lack of controlling for such effects. This bias may affect how the data was interpreted, i.e., differences in welfare attitudes as well as the associations between individual-level factors and welfare attitudes across countries were neglected.

4.5 Agreements and Disagreements With Other Reviews

The objective of this study was to determine whether a set of associations exist between particular individual-level characteristics and welfare attitudes. Although many studies examined these associations, only two systematic reviews exist (Sundberg, 2014; Sundberg & Taylor-Gooby, 2013). One only discussed the association between immigration and welfare attitudes (Sundberg, 2014) while the other only presented a general picture of studies on welfare attitudes, featuring database and biases (Sundberg & Taylor-Gooby, 2013). Unfortunately, no studies in this review discussed the association between immigration and welfare attitudes. In summary, despite that this review is not a systematic review of literature on welfare attitudes, results of this study are highly consistent with existing empirical evidence.

4.6 Limitations

This study acknowledges several retrieval limitations. First, the exclusion of grey literature, non-English publications, and locally collected primary data may have introduced publication bias. Second, the search was cut off in 2021, and subsequent literature has not been incorporated. This means that recent and current international discussions about welfare attitudes, especially in the overwhelming context of political polarization, were not included and presented. This certainly limits people's deductions about welfare attitudes in relevance to political values. Third, this review has a few methodological, sampling, measurement, and causal-inference limitations as detailed in *4.2 Overall Completeness and Applicability*.

5. Conclusions

Despite several methodological limitations, the results of this review provide substantive support for the associations between individual-level factors and welfare attitudes. In addition, though the outcome measures of included studies were not highly consistent with each other, their patterns of associations are resonant with each other. Moreover, the findings are expected to hold across various countries, welfare regimes, cultures, and societies. Further, such findings will probably hold when alternative measures of welfare attitudes are used, considering that the outcome measure of welfare attitudes may be expanded to include other dimensions such as the quality of social welfare.

These review findings answered research questions of this review adequately, i.e., they supported mainstream theoretical and conceptual frameworks in welfare attitudes, including the self-interest framework, political ideology, social identity theory, and theory of cultural values. Although causal inference was not established in this review, the findings will lay a solid foundation for future studies, such as survey experiments, longitudinal studies, and vignettes. This review acknowledges lack of comparison of the explanatory power of different individual-level factors; such comparison will definitely need more advanced statistical methodology. Overall, in line with prior theoretical and empirical evidence, this review argues for inclusion of multidimensional individual-level variables in the examination of welfare attitudes. Several implications for social welfare policy as well as recommendations for next steps in research are provided below.

5.1 Implications for Policy

A few ways in which the results may facilitate revision of existing social welfare policies are envisioned. First, considering the negative association between employment status and welfare attitudes, more measures should be taken to encourage employment. Second, both self-interest variables and social identities have revealed the high-level support of socio-economic and racial minorities for social welfare. Thus, the revision of existing and design of new social welfare policies and programs should center around social justice and equity, so that these underrepresented populations may be rescued from underserved situations. Third, considering that certain societal status such as retirement is associated with welfare attitudes, social welfare and labor departments should explore more options for the employed to invest for their future well-being.

5.2 Implications for Research

Several implications for future research on welfare attitudes are also proposed. First, more research is needed to conceptualize the construct of welfare attitudes. This construct should consist of three aspects: government responsibility, social welfare domain, and perceptual and attitudinal patterns. Critical reflection on existing theoretical and empirical evidence and reference to sociological, political science, and psychological literature may facilitate such research. Similarly, more exploratory and fundamental work in the construction and validation of instruments of welfare attitudes will help to improve the validity of future research. Notably, well-validated instruments and indices which measure attitudes towards government

responsibilities for other aspects may enlighten such endeavors.

Second, future research should concentrate on the variances of welfare attitudes across countries and take the variability of the associations between individual-level factors and welfare attitudes into consideration. Specifically, the country-specific baselines of welfare attitudes may suggest a more fractionated distinction of welfare attitudes beyond the traditional classification of three worlds of welfare states. In addition, this current review also calls for more conceptual and empirical justification for and exploration of the correlations of country-specific baselines of welfare attitudes and the regression coefficients of individual-level factors as illustrated in Calzada et al. (2014).

Third, based on the complex nature of the construct of welfare attitudes as well as the variability of theoretical and conceptual frameworks, it is worthy of consideration to adopt other advanced statistical methodologies to model both aggregate-level and individual-level factors in future studies. Specifically, multi-level structural equation modeling is well-positioned to deal with such intricacies as well as potential moderation and mediation effects. In addition, as an alternative to the frequentist methods in handling complex statistical models, the Bayesian approach is very promising in providing much more flexibility and adaptability to model or account for the massive variabilities of variables in different levels in predicting people's welfare attitudes.

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Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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Appendix

Table A1. Detailed Characteristics of Included Studies

Study ID	Authors (Date)	Research Design	Theory	Research Questions/Hypothesis	Population, Sample Characteristics/Size (groups if relevant)	Independent Variables	Dependent Variables	Missing Data	Analysis	Findings	Strengths	Limitations	Conclusions/Implications
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S01	Arikan and Bloom (2015)	Cross-Sectional	Schwartz's theory of cultural values	✓ Values of embeddedness, security, and obedience are associated with greater individual support for welfare policies. ✓ In egalitarian societies, individuals are expected to be more supportive of the welfare state and increased spending on social welfare programs. ✓ Embeddedness orientations affect right-wing and centrist identifiers more than left-wing identifiers.	✓ Populations of 27 countries from the ISSP ✓ Populations of 23 countries from the ESS ✓ N (ISSP) = 86,325 ✓ N (ESS) = 58,538 ✓ 48% Male and 52% Female ✓ Lowest 25th Percentile in Income: 42.6% ✓ 51.8% Right-Wing Ideology ✓ 64.5% Satisfied with Life ✓ 54.7% Satisfied with Financial Situation ✓ 25.4% Interpersonal Trust ✓ 45.7% Interest in Politics ✓ 74.4% Religious Belief ✓ 38.8% Religious Social Behavior ✓ 35.8% Minority Status	✓ Age ✓ Gender ✓ Marital Status ✓ Child At Home ✓ Employment Status ✓ Disability ✓ Retirement ✓ Ideology ✓ Income ✓ Education ✓ Union Member ✓ Satisfaction with Economy ✓ Interpersonal Trust ✓ Religiosity ✓ Attendance to Religious Services	✓ Support for government responsibility in providing social welfare services (SSWS) ✓ Support for increased welfare spending (SIWS)	✓ Full Information Maximum Likelihood ✓ Multiple Imputation	✓ Multi-Level Linear Regression	✓ Gender is associated with SSWS ($b = -.007, p < .001; b = -.021, p < .001$) and SIWS ($b = -.033, p < .001$). ✓ Education is associated with SSWS services ($b = -.001, p < .001; b = -.001, p < .001$) and SIWS ($b = -.005, p < .001$). ✓ Income is associated with SSWS services ($b = -.035, p < .001; b = -.019, p < .001$) and SIWS ($b = -.021, p < .001$). ✓ Ideology is associated with SSWS services ($b =$	✓ None	✓ None	✓ Individuals in societies that emphasize equality and social justice, as well as social order and collective responsibility, are overall more supportive of government provision of welfare services and tend to evaluate the societal effect of welfare policies more positively. ✓ Future research could focus on the effect of socially held values on cross-national differences in elite opinions and party positions. ✓ Future research should also consider the role of social and cultural values in affecting attitudes towards redistribution. ✓ Future studies of welfare and social policy preferences should thus not only consider the role of personal predispositions and social environment, but also the interaction between them.
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										-0.039, p < .001; b = -.022, p < .001) and SIWS (b = -.023, p < .001).			
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S02	Baslevant and Kirmanoglu (2011)	Cross-Sectional	Schwartz's (1992) theory of basic personal values	✓ This paper aims to examine the influence of several individual characteristics on opinions regarding the degree of government responsibility for various welfare-related tasks.	✓ Populations of 18 countries from the ESS ✓ N (ESS) = 26,044 ✓ Characteristics of the samples were not available.	✓ Socio-Demographic Variables ➤ Age ➤ Age Squared ➤ Gender ➤ Years of Education Completed ➤ Employment Status ➤ Household Income ✓ Ideological Variables ➤ Position on the Left–Right Political Spectrum ➤ Religious Affiliation ✓ Values Variables ➤ Openness ➤ Interests Dimension Scores	✓ How much responsibility governments should have to: ➤ Ensure a job for everyone who wants one ➤ Ensure adequate healthcare for the sick ➤ Ensure a reasonable standard of living for the old ➤ Ensure a reasonable standard of living for the unemployed ➤ Ensure sufficient childcare services for working parents ➤ Provide paid leave from work for people who temporarily have to care for sick family members ✓ The average of the aforementioned six scores	✓ Not Specified	✓ Ordinary Least Squares Regression	✓ Demographic Relationships ➤ The older the person, the more he or she believed the government should provide essential welfare services ($b = .012, p < .001$). ➤ Women believed government should provide services related to 'women's work' ($b = .088, p < .001$). ➤ Higher education indicated a diminished role for government provision ($b = -.020, p < .001$). ➤ The employed were less in favor of government intervention in welfare ($b = -.044, p < .05$). ➤ The higher the income, the less	✓ None	✓ First, it was difficult to say how much of the observed patterns were the result of self-interest or group loyalty. ✓ Second, this study did not perform in-depth analyses of the findings with respect to basic personal values and religious affiliations. ✓ Third, this project did not examine cross-level effects.	✓ The variation in the effects of the socio-demographic variables across the issues could be interpreted as evidence of self-interested behavior.
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										government should be involved in welfare provision ($b = -.037, p < .001$). ✓ Ideological Factors ➤ Individuals' self-placement on the left-right ideological scale was found to be linked to welfare attitudes ($b = -.070, p < .001$). ➤ Religious affiliation was found to be linked to welfare attitudes (See Table 2 for details.). ✓ Personal Values ➤ Openness to change indicated less favorable attitudes to welfare ($b = -.100, p < .001$). ➤ Interest in others indicated more favorable attitudes to welfare ($b = .122, p < .001$).			
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S03	Blekesaune and Quadagno (2007)	Cross-Sectional	✓ Self-Interest ✓ Ideological Beliefs (Cognitive Consistency Theory)	✓ We hypothesize that the stronger the egalitarian ideology, the more positive will be public attitudes toward welfare policies.	✓ Populations of 23 countries from the ISSP ✓ N (ISSP) = 26,406 ✓ Age Range: 20 to 70 years ✓ Mean of Age: 38.04 years ✓ Mean of Support for the Sick and Old: 6.19 out of 7.0 ✓ Standard Deviation of Support for the Sick and Old: 1.07 ✓ Mean of Support for the Unemployed: 5.04 out of 7.0 ✓ Standard Deviation of Support for the Unemployed: 1.54 ✓ 51% Women and 49% Men ✓ 7% Unemployed ✓ Mean of Egalitarian Ideology: -.03	✓ Age ✓ Gender ✓ Employment Status ✓ Egalitarian Ideology	✓ Index of attitudes towards the sick and the old ✓ Index of attitudes towards the unemployed	✓ Not Specified	✓ Multi-level Linear Regression with Markov chain Monte Carlo Method with Gibbs Sampling	✓ Women hold more positive attitudes toward welfare state policies regarding the unemployed ($b = .140, p < .01$) and the sick and the old ($b = .085, p < .01$) than men. ✓ Public support for the age-specific programs vary only slightly by age of the respondent ($b = .018, p < .01$). ✓ Old people are as positive to welfare policies toward the unemployed as young adults ($b = -.003, p > .05$). ✓ Egalitarian ideology is associated with support for welfare state policies regarding the unemployed ($b = .765, p < .01$) and the sick and the old ($b = .368, p < .01$).	✓ None	✓ Individual level characteristics have been kept to a minimum, and emphasis has been on national comparisons. ✓ Survey data may have inherent biases that complicate interpretation, such as response style, response set, tendency of 'yea-saying' or acquiescence, cultural differences, and variation of data collection methods.	✓ The national level is important in shaping public attitudes toward welfare state policies in industrialized nations ✓ Both situational and ideological factors play a role in this process.
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S04	Bolzenda hl and Olafsdottir (2008)	Cross-Sectional	Not Specified	✓ Populations of US, UK, Australia, and New Zealand from the ISSP ✓ N (ISSP) = 10,213 ✓ N (Complete Cases) = 8,198 ✓ N (US) = 2,108 ✓ Mean of Attitudes Towards Paid Maternity Leave (US): 3.89 in 1994 and 4.27 in 2002 ✓ Mean of Attitudes Towards Financial Benefits (US): 3.23 in 1994 and 3.56 in 2002 ✓ 58% Female in 1994 and 56% Female in 2002 in the US ✓ Mean of Work/Family Attitudes: 7.05 in 1994 and 7.34 in 2002 in the US ✓ Range of Age: 18 to 89 years ✓ Mean of Age: 45.09 years in 1994 and 43.90 years in 2002 in the US ✓ 65% Married in 1994 and 55% in 2002 in the US ✓ 17% Divorced in 1994 and 20% in 2002 in the US ✓ 73% Parent in 1994 and 64% Parent in 2002 in the US ✓ 32% With College Education in 1994 and 25% in 2002 in the US ✓ 24% in Relative Poverty in 1994 and 2002 in the US ✓ 19% in Relative Affluence in 1994 and 20% in 2002 in the US ✓ 57% Employed Full-Time in 1994 and 54% in 2002 in the US	✓ Gender ✓ Work/Family Attitudes ✓ Age ✓ Marital Status ✓ Parental Status ✓ Education ✓ Income ✓ Employment Status ✓ Religion ✓ Church Attendance	✓ Support for the statement that working women should receive paid maternity leave when they have a baby ✓ Support for the statement that families should receive financial benefits for childcare when both parents work.	✓ Listwise Deletion	✓ Ordered Logistic Regression	✓ In the United States, women are more supportive of family policy ($b = .46, p < .01$; $b = .36, p < .01$). ✓ In the United States, those with more egalitarian work/family attitudes are more supportive of family policy ($b = .06, p < .01$; $b = .06, p < .01$). ✓ In the United States, those who are parents are more supportive of family policy ($b = .31, p < .01$; $b = .25, p < .05$).	✓ None	✓ None	✓ Both gender group interests and gender ideology matter regarding support for these policies. ✓ For the United States, this confirms the importance of social location over ideological commitment in support for family policy. ✓ More research could be done to test comparative differences in ideology and implementation across domains such as health care, old age services, and education. ✓ More work could be done to test and control for racial and ethnic differences in the United States and extend the
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					✓ 12% Employed Part-Time in 1994 and 13% in 2002 in the US ✓ Mean of Church Attendance: 3.73 in 1994 and 4.35 in 2002 in the US								focus to ties between racism, gender attitudes, and family policy support. ✓ Future work should pursue a more thorough understanding of the meaning of gender egalitarianism.
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S05	Breznau and Eger (2016)	Cross-Sectional	✓ Group Dynamics Theory ✓ Socio-Economic Status Theory	✓ The negative impact of immigrant presence on support for the welfare state will be largest for individuals with exclusive group boundaries. ✓ The negative impact of immigrant presence on support for the welfare state will be moderate for individuals with conditionally inclusive group boundaries. ✓ Immigrant presence has no effect on support for the welfare state among individuals with inclusive group boundaries. ✓ The negative impact of socioeconomic status on support for the welfare state will be largest for individuals with exclusive group boundaries. ✓ Among those with exclusive	✓ Populations of 14 countries from the ESS ✓ N (ESS) = 24,604 ✓ Range of Support for the Welfare State: -4.92 to 1.70 ✓ 52% Female ✓ Range of Age: 15 to 85 years ✓ Mean of Age: 47.74 years ✓ Standard Deviation of Age: 17.90 years ✓ Mean of Political Orientation: 5.00 ✓ Standard Deviation of Political Orientation: 1.97 ✓ Range of Welfare Policy Outcomes: -4.92 to 1.70 ✓ Mean of Education in Years: 12.70 ✓ Standard Deviation of Education in Years: 3.95 ✓ Mean of Occupational Status: 4.59 ✓ Standard Deviation of Occupational Status: 2.49 ✓ 5% Capitalist ✓ 30% Supervisor ✓ 29% Vulnerable	✓ Quality Assessment of Current Welfare Provisions ✓ Socio-Economic Status ✓ Gender ✓ Age ✓ Age-Squared ✓ Subjective Left-Right Political Orientation	✓ Support for the Welfare State	✓ Stochastic Single Hierarchical Linear Imputation	✓ Multi-Level Linear Regression	✓ Education is associated with people's support for the welfare state among exclusive ($b = -.04, p < .001$) and conditionally inclusive groups ($b = -.01, p < .001$). ✓ Occupational status is associated with people's support for the welfare state among exclusive ($b = -.03, p < .05$) and conditionally inclusive groups ($b = -.02, p < .001$). ✓ Capitalist status is associated with people's support for the welfare state among conditionally inclusive groups ($b = -.15, p < .001$). ✓ Supervisor status is associated with people's support for the welfare state among inclusive groups ($b = -.07, p < .05$). ✓ Vulnerable status is associated with people's support for the welfare state among conditionally	✓ None	✓ In-Group Bias ✓ Subjectively Exclusive Boundaries	✓ Material self-interest is associated with support for the welfare state and is the highest for those in the exclusive and conditionally inclusive categories.
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				group boundaries, the negative impact of immigrant presence on support for the welfare state will be largest for individuals with higher socioeconomic statuses.						inclusive groups ($b = .09, p < .001$).			
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S06	Calzada et al. (2014)	Cross-Sectional	Moral Institutionalism Theory	✓ Do multiculturalism, generalized trust, gender traditionalism, authoritarianism, and merit have statistically significant effects on welfare attitudes across all European countries? ✓ Do these subjective factors remain important after controlling for each other, self-interest and egalitarianism? ✓ Is there a correlation between the values and beliefs associated with support for the welfare state and the guiding principles of the welfare system in each country?	✓ Populations of 26 countries from the ESS ✓ N (ESS) = 50,082 ✓ Mean of Multiculturalism: 4.77, 5.40, and 4.82 ✓ Standard Deviation of Multiculturalism: 2.32, 2.57, and 2.45 ✓ Mean of Generalized Trust: 4.77, 5.36, and 4.58 ✓ Standard Deviation of Generalized Trust: 2.53, 2.41, and 2.41 ✓ Mean of Gender Traditionalism: 3.14, 2.39, and 2.39 ✓ Standard Deviation of Gender Traditionalism: 1.18, 1.23, and 1.27 ✓ Mean of Authoritarianism: 4.05, 3.97, and 4.07 ✓ Standard Deviation of Authoritarianism: .94, .97, .99 ✓ Mean of Merit: 2.38 and 2.24 ✓ Standard Deviation of Merit: .67 and .63	✓ Sex ✓ Age ✓ Education ✓ Egalitarianism ✓ Multiculturalism ✓ Generalized Trust ✓ Gender Traditionalism ✓ Authoritarianism ✓ Merit	✓ Support for the Welfare State	✓ Pairwise Deletion	✓ Multi-Level Linear Regression ✓ Ordinary Least Squares Regression	✓ Education has a negative effect on welfarism ($b = -.052, p < .01$). ✓ Age has a small positive effect on welfarism ($b = .001, p < .01$). ✓ Women are slightly more prone to support the welfare state than men are ($b = .128, p < .01$). ✓ Four out of the five values correlate with welfare attitudes after controlling for each other, self-interest, and egalitarianism. ➤ Multiculturalism ($b = .072, p < .01$) ➤ Gender traditionalism ($b = -.073, p < .01$) ➤ Authoritarianism ($b = .168, p < .01$) ➤ Merit ($b = -.044, p < .01$)	✓ None	✓ None	✓ This set of values and beliefs are part of the factors that citizens use to elaborate opinions on the desirability of social policies.
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S07	Glass and Marquart-Pyatt (2008)	Cross-Sectional	✓ Walter Korpi's Power Resources Theory ✓ Decline-of-Class Arguments ✓ The Enlightenment Model of Attitude Formation	✓ Women, the unemployed, pensioners and members of the working class will demonstrate stronger support for social rights compared to men, those currently working and those in higher income brackets. ✓ There will be a weak or absent relationship between working class status and gender, on the one hand, and support for redistributive policies, on the other. ✓ Those with a university education will demonstrate stronger support for social rights than those without higher education.	✓ Populations of six former state-socialist countries (Bulgaria, Czech Republic, Hungary, Poland, Russia, and Slovenia) based on the ISSP ✓ N (ISSP) = N/A ✓ Characteristics of the samples were not available.	✓ Power Resources Model ➢ Gender ➢ Employment Status ➢ Pensioner Status ✓ Class-Based Explanations ➢ Working Class ✓ Enlightenment ➢ University Education	✓ Support for redistribution that represents latent levels of support for ➢ Job Guarantees ➢ Equal Opportunities ➢ Economic Redistribution ✓ State-sponsored guarantees linked with quality-of-life issues for ➢ The Elderly ➢ The Sick ➢ Low-Income Households	✓ Not Specified	✓ Confirmatory Factor Analysis ✓ Ordinary Least Squares Regression	✓ Gender is associated with support for state responsibility for redistribution for all three disadvantaged groups ($b = .238$, $p < .001$) and for guarantees linked with quality-of-life issues ($b = .068$, $p < .05$). ✓ Employment status is associated with support for state responsibility for redistribution for all three disadvantaged groups ($b = .221$, $p < .01$). ✓ Pension status is associated with support for state responsibility for redistribution for all three disadvantaged groups ($b = .141$, $p < .01$). ✓ Working class status is associated with support for state responsibility for redistribution for all three disadvantaged groups ($b = .182$, $p < .001$) and for guarantees linked with quality-of-life issues ($b = .092$, $p < .01$). ✓ University education is	✓ None	✓ None	✓ Those most economically vulnerable are more likely to support a strong role for the state in redistributing resources and guaranteeing a basic standard of living. ✓ Those who are best educated demonstrate the weakest support for redistributive and quality-of-life policies. ✓ Longitudinal data would allow for a deeper analysis of change over time. ✓ Future research may also link changes in political attitudes to different patterns of economic and social reform.
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										associated with support for state responsibility for redistribution for all three disadvantaged groups ($b = -.252, p < .001$).			
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S08	Yang and Barrett (2006)	Cross-Sectional	✓ Social Location Theory ✓ Political Predisposition Theory	✓ All else being equal, racial minorities are more likely to hold supportive attitudes towards the Social Security program than are whites. ✓ Women are more likely than men to favor Social Security than men, ceteris paribus. ✓ In general, people with a higher-class status (i.e., higher levels of income, education and occupational status) are less likely to support the Social Security system than are those with a lower-class position. ✓ There is a positive relationship between age and support for Social Security. ✓ Democrats are more likely to support Social Security than	✓ US Population Based on the GSS ✓ N (GSS) = 1,157 ✓ Mean of Age: 45.4 years ✓ Standard Deviation of Age: 16.9 years ✓ 43.4% Male and 56.6% Female ✓ 80.3% White, 13.6% Black, and 6.1% Other ✓ Mean of Years of Schooling: 13.4 ✓ Standard Deviation of Years of Education: 5.2 ✓ Mean of Occupational Prestige Score: 44.6 ✓ Standard Deviation of Occupational Prestige Score: 13.6 ✓ 77.4% Ever Married and 22.6% Never Married ✓ 34.0% in South Region and 66/0% in Other Regions	✓ Social Locations ➢ Age ➢ Race ➢ Class ➢ Education ✧ Occupational Prestige ✧ Wealth ✧ Gender ✓ Political Predispositions ➢ Party Affiliation ➢ Political Ideology ✓ Controls ➢ Marital Status ➢ Work Status ➢ Religion ➢ Region	✓ Support for Social Security ➢ Perceptions about how serious the problems with the Social Security system are ➢ Attitudes towards whether the Social Security programs should continue much as it is now, or be phased out and replaced by the privatization of Social Security accounts	✓ Imputation	✓ Ordinary Least Squares Regression ✓ Ordinal Regression (Not Presented)	✓ All social location variables are associated with support for Social Security. ➢ Age: $b = .037, p < .001$ ➢ Female: $b = 1.402, p < .05$ ➢ Race: for Black, $b = .549, p < .01$; for Other, $b = .522, p < .05$ ➢ Years of Schooling: $b = -.063, p < .05$ ➢ Occupational Prestige: $b = .018, p < .05$ ➢ Family Income: $b = -.046, p < .01$ ✓ One political predisposition variable is associated with support for Social Security. ➢ Democrat: $b = .266, p < .05$ ✓ Three out of four control variables are associated with support for Social Security. ➢ Status of Ever Married: $b = -.321, p < .05$	✓ Non	✓ This individual level analysis did not take macro factors into consideration. ✓ Adopted from political science, political predisposition theory contends that individuals' attitudes towards Social Security are outcomes of their deeply held political orientations.	✓ Extending the self-interest model, our social location theory argues that people's social structural positions determine their attitudes towards the Social Security system because of their varying degrees of dependency on Social Security and their protection of self-interest.
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				Republicans and other parties. ✓ In general, the more conservative individuals are, the less likely they are to support Social Security.						➤ Status of Working: $b = 1.027, p < .05$ ➤ Protestant: $b = -.263, p < .05$			
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