

# Impact of Residential Area Characteristics and Political Group Participation on Depression Among Middle-Aged and Older Adults: Results of an 11-Year Longitudinal Study

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## Abstract

**Background and Objectives:** The claim that political group attendance is associated with poor mental health among older adults may be conditioned on geographic conditions. This study examined the geographical context in which political group participation may be associated with depression.

**Research Design and Methods:** The 11-year follow-up data from the Taiwan Longitudinal Study on Aging, covering 5,334 persons aged  $\geq 50$  years, were analyzed using random-effects panel logit models. Depression was assessed using 10 items on the Centre for Epidemiologic Studies Depression scale. Participants were asked to indicate whether they belonged to different social groups. We modeled depression as a function of political group participation (the independent variable) and geographical region (moderators), adjusting for individual-level characteristics.

**Results:** Respondents in political groups were more likely to report depression than those in nonpolitical groups (adjusted odds ratio [AOR] = 1.90, 95% confidence interval [CI] = 1.34–2.68). Between urban and rural settlements, there were no statistically significant differences in mental health outcomes among older adults engaged in political groups (AOR = 1.72, 95% CI = 0.81–3.67). For those who remained politically engaged, living in areas with lower levels of electoral competition was associated with a lower likelihood of depression (AOR = 0.92, 95% CI = 0.86–0.98); this conditional effect was not prevalent among those who were solely engaged in nonpolitical groups (AOR = 1.02, 95% CI = 0.99–1.03).

**Discussion and Implications:** Political group participation is associated with poor mental health among older adults living in politically competitive regions.

**Translational Significance:** This is the first study to quantify the relationship between political group attendance, residential area characteristics, and depression in older adults. Our findings suggest that political group participation is associated with poor mental health among older adults living in politically competitive regions. This conditional effect was not prevalent among those solely engaged in nonpolitical groups or both types. These findings imply a dimension of successful aging: life should not be entirely about politics. The government should promote nonpolitical group engagement to improve the mental health of older adults who are politically engaged and live in increasingly competitive political environments.

**Keywords:** Depression, Geographical regions, Older adults, Political groups

Depression is the leading cause of the disease burden in older adults. The global prevalence of major depression in older persons was 13.3% (Abdoli et al., 2022). Given that antidepressants might pose a risk of potentially dangerous drug–drug interactions among older adults due to polypharmacy (Ishtiak-Ahmed et al., 2023), public health scientists need to develop more social intervention measures to prevent the development of depression among older persons.

Broader literature confirms that various forms of social group participation in old age are associated with decreased

depression (Amagasa et al., 2017; Guo et al., 2018; Tomioka et al., 2017). Greater community involvement, including volunteer activities, community events, and clubs, has been associated with a lower risk of psychological distress among older adults (Amagasa et al., 2017). Additionally, frequent participation in sports groups and hobby clubs may influence mental health more positively than nonparticipation (Tomioka et al., 2017). However, previous studies have found the opposite effect concerning the association between engagement with political groups and depression, with higher engagement

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being associated with depression (Croezen et al., 2015; Lin & Yan, 2022). These mechanisms involve party-based trust biases, which result in a weaker sense of political community that can raise the possibility of increased levels of hostility between people with different political orientations and promote feelings of uncertainty about who can represent their views (Lin & Yan, 2022). In this context, a growing body of evidence supports the resulting phenomenon of “the health cost of politics” (Smith, 2022; Smith et al., 2019), “political depression,” and “election stress disorder” (Chang & Meyerhoefer, 2023; Hoyt et al., 2018; Krupenkin et al., 2019; Pitcho-Prelorentzos et al., 2018; Roche & Jacobson, 2019; Simchon et al., 2020; Tashjian & Galván, 2018). As older people have stronger feelings of psychological attachment to an ideological in-group upon accepting relevant party cues (Devine, 2015), those engaged in political groups are more likely to be influenced by politics, thereby developing depression, compared to those who engage in nonpolitical groups.

Epidemiologists and public health researchers are studying the effects of residential area characteristics on depressive moods in older populations. Previous research has suggested urban–rural differences in mental health among older adults (Friedman et al., 2007; Purtle et al., 2019; Sasaki et al., 2021; Srivastava et al., 2021; Sun & Lyu, 2020; Tang et al., 2020), but the evidence is mixed. The pathways through which urban–rural residences influence depression risk among older adults might differ by country. According to a meta-analysis, urban dwellers in developed countries were significantly more likely to experience depression than those residing in rural areas; however, this association was not observed in developing countries (Purtle et al., 2019). Recent studies have been conducted on the neighborhood environment and the mental health of older adults was identified (Barnett et al., 2018; Guo et al., 2020; Joshi et al., 2017; Miao et al., 2019; Stahl et al., 2017). Generally, neighborhood socioeconomic status, social cohesion, crime-related safety, recreational services, and walkability were negatively associated with depressive outcomes.

Little is known about how the interplay between political group participation and geographic conditions influences older adults’ mental health. Politically organized areas may be an important moderator variable. There are several reasons to expect electorally competitive regions to contribute to poor mental health outcomes among older adults engaged in political groups. First, highly competitive pressures tend to facilitate the ideological indoctrination of older adults who engage in political groups, thereby leading to polarized expressions of support for certain political values, which may weaken political community belonging. Recent research indicates that intense political competition serves to mobilize partisan identities and increase partisan animus, thus creating polarized evaluations of political actors because politicians tend to increase electoral fortune by evoking citizens’ partisan feelings (Carlin & Love, 2018; Singh & Thornton, 2019). Additionally, the existing evidence suggests that countries with a high degree of political polarization may pose a challenge to governance, and citizens may experience a sense of alienation and reduced willingness to cooperate and compromise if their adversaries are elected to power (McCoy et al., 2018).

The second potential interpretation is that the negativity of the campaign, defined as any criticism leveled by one candidate against another during a campaign, in contrast to the use of messages intended to promote one’s policy positions

and record, increases with the competitiveness of the race (Auter & Fine, 2016; Banda, 2022; Hassell, 2021; Maier & Nai, 2022; Nai, 2020; Yan, 2022). There is a greater likelihood of depression among older adults in political groups living in areas where candidates rely heavily on negative campaigning, as it can create an environment of hatred in which individuals may attack major ideological differences held by friends or family members, resulting in a weaker sense of community belongingness that can lead to depression. Studies suggest that politics have resulted in lost friendships, ruined family reunions, and disrupted workplaces (Smith et al., 2019). Evidence suggests that exposure to negative campaign messages and political rhetoric is associated with psychological distress, especially when vulnerable populations perceive themselves as being targeted (Chavez et al., 2019; Frost & Fingerhut, 2016; Niederdeppe et al., 2021; Williams & Medlock, 2017).

Third, electoral competitiveness increases political uncertainty regarding who will win an election. This certainly promotes feelings of uncertainty regarding whether the newly elected government will act according to its wishes and meet its needs. After elections, a government rife with opposing ideologies reflects a general departure from the concept of long-standing individual political beliefs, thus contributing to the personal loss of meaning and purpose. A pre-2016 United States presidential election national survey reported that the majority of both Democrats and Republicans reported stress about the country’s uncertain future (American Psychological Association, 2017). There is also evidence that there were significant increases in stress, depression, anxiety, and poor sleep quality among groups with high levels of opposition to President Trump such as Democrats, liberals, racial minorities, and students in the aftermath of the 2016 election (Hoyt et al., 2018; Krupenkin et al., 2019; Pitcho-Prelorentzos et al., 2018; Roche & Jacobson, 2019; Simchon et al., 2020). Those who were politically interested and engaged were also more likely to report negative effects on their mental health (Smith, 2022). We expected a similar effect to be observed among older adults engaged in political groups.

The study hypothesized that for older adults who remained politically engaged, living in areas with higher levels of electoral competition will be associated with a higher likelihood of depression. By contrast, this conditional effect will not be prevalent among those who were solely engaged in nonpolitical groups. For the purpose of comparison, other residential characteristics, such as urban–rural residences, are expected to have no impact on the likelihood of depression among older adults who are involved in political groups.

Given that political competition is a crucial factor, it is reasonable to anticipate that those residing in the capital city and those engaged in political groups will have significantly higher odds of reporting depression. Research has found that elections are more competitive in heterogeneous districts than in their homogenous counterparts (Aistrup, 2004; Koetzle, 1998) and larger districts than in smaller ones (Gerring et al., 2015). Greater diversity should make incumbents more vulnerable by offering more heterogeneous groups in the electorate so that the opposition can adequately represent their views. A larger size should increase the challenger supply and reduce the personal connections between representatives and their constituents, thereby encouraging greater contestation. Capital cities are likely to be sociologically, economically, and ideologically diverse, and highly populated because they

create employment opportunities, leading to a population shift (Dascher, 2000). Thus, this study hypothesized that there is a pathway linking capital city status, electoral competition, and mental health among older adults engaged in political groups.

This study used panel data covering 5,334 persons aged 50 years and older across four waves from 1996 to 2007 to examine the geographical contexts in which political group participation could be associated with depression. Using the same sample, we further investigated the association of participation in multiple social groups and residential area characteristics with depression.

## Method

### Study Population

The unit of analysis was “individual-year.” This study used data collected from the Taiwan Longitudinal Study on Aging (TLISA), which was conducted by the Health Promotion Administration of Taiwan, thus offering a nationally representative sample of the Taiwanese population. This longitudinal study was based on a three-stage equal-probability sampling design using household registration data and information collected during face-to-face interviews. Data were collected across six waves from 1989 to 2007. We collected a sample of 15,053 pooled time series and cross-sectional observations from four of the six survey rounds: 1996, 1999, 2003, and 2007. This study examined individual differences in the same year, as well as potential temporal trends in how political and social engagement relate to the depression likelihood by comparing subsequent years to the results obtained in 1996.

### Study Variables

Depression was assessed using 10 items from the Centre for Epidemiologic Studies Depression scale (CES-D). The respondents rated how frequently each item was applied to them over the preceding week. The ratings were based on a 4-point scale ranging from 0 (rarely or none of the time) to 3 (most or all of the time). Thus, this short form of the CES-D generates total individual scores ranging from 0 to 30, with higher scores indicating greater depressive symptoms. A dummy variable was created such that 1 = *respondents with depression* ( $\geq 10$  points) and 0 = *otherwise* (0–9 points).

As for the independent variables representing the type of engagement in social groups, participants were asked to indicate whether they were members of community friendship groups, religious groups, business associations, political groups, volunteer groups, clan associations, and/or senior groups (0 = “no”; 1 = “yes”). We created a categorical variable for specific types of group participation: 0 = *those who did not participate in social groups*, 1 = *those who were solely engaged in political groups*, 2 = *those who were solely engaged in nonpolitical groups*, and 3 = *those engaged in both types*.

The three moderating variables were measured as follows: First, urban and rural settlements were obtained using the item “area of residence.” The question has five answer options (large city = 1, big city = 2, small city = 3, township = 4, and rural area = 5, with options 1, 2, and 3 were combined into “urban,” options 4 were “suburban,” and options 5 were “rural”). Second, we divided the administrative regions according to capital city status (binary, 1 = *Taipei City*) and special municipality status (binary, 1 = *Kaohsiung City*).

Third, the disparity between the political bases of parties reflects the level of political competition in electoral regions (electoral competition). We calculated the level of political competition in electoral regions by comparing the percentage of votes won by candidates formally nominated by the two major parties in the four local elections to elect county magistrates (city mayors) between 1993 and 2005. The narrow margin between the two candidates indicates a high level of political competition. Three points merit further investigation. First, we did not analyze presidential elections because a presidential candidate with more votes in county-level electoral districts, unlike a county magistrate candidate, does not necessarily guarantee victories. Second, competition between the two electorally dominant parties has intensified since democratization. Small parties either endorse a candidate from the major parties or, with a main party, nominate a joint candidate for the office of a county magistrate (city mayor). Taiwan’s political structure is divided into two camps—the pan-green coalition and the pan-blue coalition—so that bipolar competition still creates party-coalition-based trust biases for individuals who identify with small parties. Third, it is common for the two major parties to send a candidate to run for mayor or county magistrate. However, some candidates may violate party discipline and participate in elections without party approval. These nonnominated aspirants may potentially entice supporters of their own parties. Thus, only considering the difference in votes between formally nominated candidates from the two major parties may underestimate or overestimate the differences between party bases. We computed the average of the differences between party nominees’ vote shares in the four local elections to eliminate occasional bias from nonnominated aspirants when coding for single electoral outcomes.

This operationalization also shows whether the electoral region has been dominated by one of the two major parties for a long time or if their basic bases are quite close. For example, consider a constituency dominated by two major parties that alternately win by 10 percentage points. A 10% gap in the percentage of votes will be considered a constituency with low levels of political competition when coding single electoral outcomes. However, this should be viewed as a constituency characterized by intense political rivalry because the two major parties alternately win by 10 percentage points. The average will be more in line with the actual party strength gap if used. Data were collected from the Central Election Commission.

Individual-level characteristics were set as control variables, including gender (binary, 1 = *male*), age, education level (0, 1–6, 7–9, 10–12, and  $\geq 13$  years), frequency of exercise (0, 1–2, and  $\geq 3$  times per week), and current living status (binary, 1 = *living alone*). Furthermore, chronic diseases (hypertension, diabetes, heart disease, stroke, lung disease, arthritis, gastrointestinal disease, hepatobiliary disease, and renal disease) were recorded based on self-reported data. A count of conditions was created based on the total number of chronic conditions for each participant (ranging from 0 to 9), while the number of morbidities was treated as a categorical variable (0: *absence of disease*, 1–4: *mild to moderate*, and  $\geq 5$ : *severe*). Older adults were also asked to indicate whether financial difficulties had occurred in their families during the past 12 months (i.e., answers of *no*, *somewhat difficult*, and *very difficult*). Finally, self-rated economic situations were obtained using the question, “In general, are

you satisfied with your current economic status?" This was answered on a 5-point Likert scale (very satisfied = 1, satisfied = 2, neither = 3, unsatisfied = 4, and very unsatisfied = 5, with options 1 and 2 combined into "satisfied" and options 4 and 5 combined into "not satisfied"). [Supplementary Table 1](#) summarizes the characteristics of the study participants in the total sample.

### Statistical Analysis

This study tracked 5,334 older adults over 11 years, covering 15,053 pooled time-series and cross-sectional observations. It encompasses the characteristics of cross-sectional data and time-series data, making it panel data. Fixed-effects and random-effects models can be used with panel data, the choice of which is affected by several factors. A fixed-effects model may not prove efficacious if the participants exhibit minimal or no variation over time, as there needs to be within-subject variations in the variables. In other words, the standard errors from the fixed-effects models may be too large to tolerate if there is a limited degree of variability within subjects, thereby rendering the random-effects models more suitable. This study applied a random-effects panel logit model as the vast majority of older adults changed little over time.

To verify our hypothesis that political group participation is associated with poor mental health among older adults, which may be conditioned on geographic conditions, we computed three interaction terms: "group participation  $\times$  urban and rural settlements," "group participation  $\times$  administrative divisions," and "group participation  $\times$  the level of political competition in electoral regions." An interaction effect occurs when the effect of one variable on an outcome depends on the value of a second variable.

A mediation model was used to explain the mechanisms linking capital city status and mental health among older adults involved in political groups. A mediation model aims to identify and explicate the mechanism underlying the observed relationship between independent and dependent variables by incorporating a third hypothetical variable, commonly referred to as a mediator. A mediator explains the process through which independent and dependent variables are related. The mediator was the level of electoral competition. A mediation effect was found to exist if the effect of capital city status on the increased depression likelihood for older adults engaged in political groups disappeared (or was at least weakened) when the level of electoral competition was included in the regression. However, the mediator still exerted an effect on the likelihood of depression among older adults engaged in political groups. Statistical analyses were performed using the Stata software.

### Robustness Tests

For the robustness tests, we changed the cutoff score for the determinants of depression from 10 to 9 or 11. Moreover, we ran additional robustness tests that regarded the outcome variable as a continuous variable. Furthermore, participants were asked to provide additional information on whether they were members of learning clubs for older adults in the 1999 survey to code their type of social group engagement. The analysis also compared the percentage of votes won by the two major parties in the magistrate and mayor elections as an alternative measure of political competition. In other words, we added the percentage of votes won by party nominees and nonnominated aspirants for each party to indicate

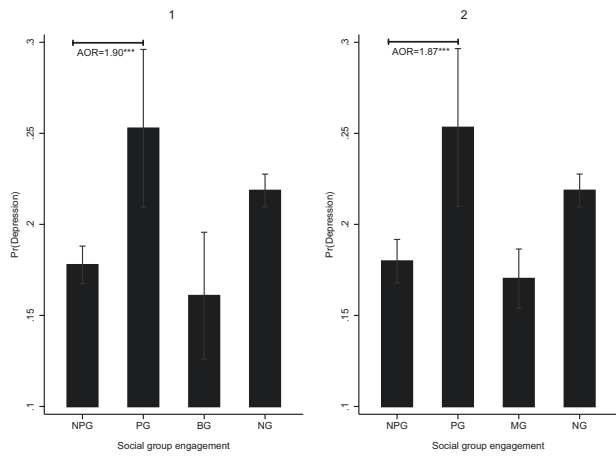
the political bases of the parties in each election. It is possible that notable electoral events during this period may have led to different conclusions regarding depression. If older adults who participate in political groups encounter an additional county magistrate or a mayoral by-election during the survey period, it may adversely affect their mental health. This is because additional electoral campaigns may increase out-party hostility. To exclude this alternative explanation, we included the interaction term "group participation  $\times$  by-election" in the regression model. Finally, individuals who lived alone were excluded from the analysis. This was because they were both more prone to depression and more likely to engage in political groups without pressure from their family members of different ideological orientations. The analysis also excluded individuals who did not receive much social support because it is likely that older adults in political groups only were primarily those who were isolated from other forms of social interactions. To allege that political group engagement affects depression implies a spurious interrelationship. Social support was measured by asking, "How much do you feel that your family, relatives or friends care for you? Would you say a great deal, quite a bit, some, very little, or not at all?" Participants were perceived as receiving less social support if they chose the response "some, very little or not at all."

### Results

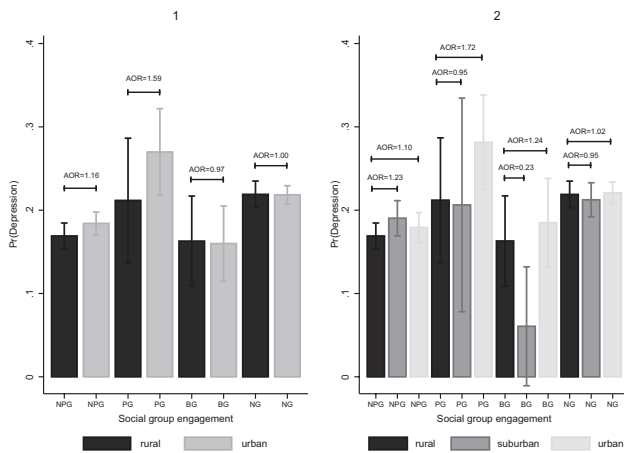
Respondents in political groups were more likely to report depression than those in nonpolitical groups (adjusted odds ratio [AOR] = 1.90, 95% confidence interval [CI] = 1.34–2.68; [Figure 1-1](#)). Respondents who did not participate in social groups also had a higher likelihood of depression than those who reported engagement in nonpolitical groups (AOR = 1.44, 95% CI = 1.28–1.62). Respondents in both political and nonpolitical groups were less likely to be depressed than those who were only engaged in political groups (AOR = 0.45, 95% CI = 0.28–0.72). However, there were no statistically significant differences in depression likelihood between those engaged in both types and those in nonpolitical groups only (AOR = 0.85, 95% CI = 0.58–1.22). The results were consistent with our primary analysis if respondents were reclassified into nonpolitical groups (those who were solely engaged in a nonpolitical group), political groups, multiple groups (those who were engaged in at least two group types), or no groups ([Figure 1-2](#)).

Between urban and rural settlements, there were no statistically significant differences in mental health outcomes among older adults engaged in political groups (AOR = 1.59, 95% CI = 0.76–3.33; [Figure 2-1](#)). The results were obtained after reclassifying the area of residence into urban, suburban, and rural areas (*urban vs rural*: AOR = 1.72, 95% CI = 0.81–3.67; *suburban vs rural*: AOR = 0.95, 95% CI = 0.26–3.44; [Figure 2-2](#)). Similarly, results revealed no statistically significant urban–rural differences in mental health in older adults who reported participating in nonpolitical groups (*urban vs rural*: AOR = 1.10, 95% CI = 0.88–1.39; *suburban vs rural*: AOR = 1.23, 95% CI = 0.96–1.57) or both types (*urban vs rural*: AOR = 1.24, 95% CI = 0.59–2.59; *suburban vs rural*: AOR = 0.23, 95% CI = 0.04–1.23).

Among those who remained politically engaged, living in areas with higher levels of electoral competition was associated with a higher likelihood of depression. A one percentage point increase in the difference in the percentage of



**Figure 1.** The effects of social group engagement on the probability of depression among older adults, Taiwan, 1996–2007. AOR = adjusted odds ratio; BG = both groups; MG = multiple groups; NG = no groups; NPG = nonpolitical groups; PG = political groups; Pr(Depression) = the predicted probability of depression. All results were based on random-effects panel logit models. The data points represent the mean ± standard error. Results correspond to models 1 and 2 of [Supplementary Table 2](#). Source: the author. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .



**Figure 2.** The effects of social group engagement and living communities on the probability of depression among older adults, Taiwan, 1996–2007. AOR = adjusted odds ratio; BG = both groups; NG = no groups; NPG = nonpolitical groups; PG = political groups; Pr(Depression) = the predicted probability of depression. All results were based on random-effects panel logit models. The data points represent the mean ± standard error. Results correspond to models 1 and 2 of [Supplementary Table 3](#). Source: the author. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

votes won by candidates formally nominated from the two major parties indicated an 8% lower depression likelihood for older adults engaged in political groups (AOR = 0.92, 95% CI = 0.86–0.98; [Figure 3-1](#)). This conditional effect was not prevalent among those who were solely engaged in nonpolitical groups (AOR = 1.02, 95% CI = 0.99–1.03) or both types (AOR = 1.02, 95% CI = 0.96–1.10). The association of an additional percentage point increase in the disparity in the proportion of votes obtained by candidates with the depression likelihood for older adults was more prevalent in political groups than in nonpolitical groups (AOR = 0.90, 95% CI = 0.85–0.96; [Figure 3-2](#)). However, the gap between

nonpolitical groups and both types in terms of the association between the difference in the percentage of votes that the candidates won and the depression likelihood for older adults was not statistically significant (AOR = 0.99, 95% CI = 0.92–1.06).

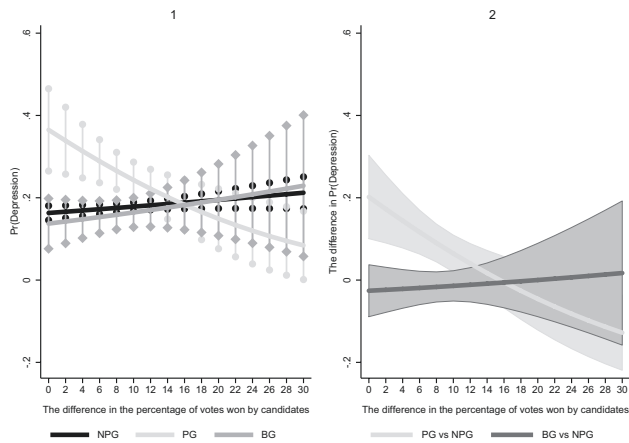
Those living in the capital city and engaged in political groups were more likely to report depression, compared to their counterparts in the noncapital city (AOR = 3.22, 95% CI = 1.57–6.59); in contrast, the effects were reduced for those in nonpolitical groups (AOR = 1.66, 95% CI = 1.14–2.42; [Figure 4-1](#)). When the explanatory variable and the mediator were included, the effect of living in the capital city on the depression likelihood for older adults engaged in political groups weakens (AOR = 2.66, 95% CI = 1.28–5.52 compared to AOR = 3.22, 95% CI = 1.57–6.59; [Figure 4-2](#)). However, indirect effects were found to be statistically significant: a one percentage point increase in the difference in the percentage of votes won by candidates formally nominated from the two major parties indicated a 7% lower depression likelihood for older adults engaged in political groups (AOR = 0.93, 95% CI = 0.87–0.99; [Figure 4-3](#)). [Supplementary Table 6](#) presents the results of robustness tests.

## Discussion

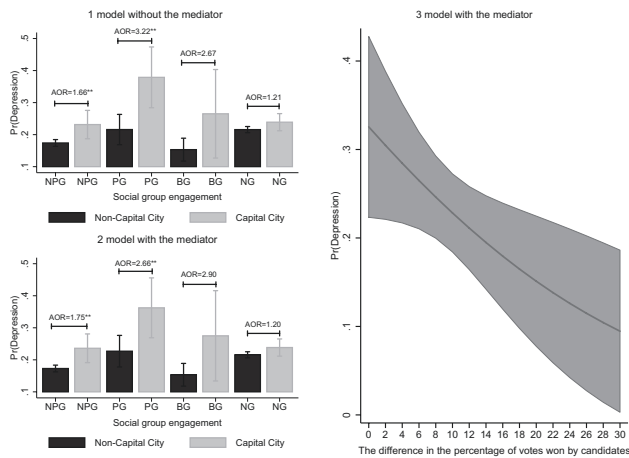
This study examined the geographical context in which participation in political and nonpolitical groups may be associated with depression among older adults in Taiwan. First, there was a greater likelihood of depression among older adults who were solely engaged in political groups than among those who were engaged in nonpolitical groups only. Second, for older adults who remained politically engaged, living in areas with higher levels of electoral competition was associated with a higher likelihood of depression; this conditional effect was not prevalent among those who were solely engaged in nonpolitical groups or both types.

It is universally accepted that social participation benefits mental health for older adults ([Amagasa et al., 2017](#); [Croezen et al., 2015](#); [Guo et al., 2018](#); [Lin & Yan, 2022](#); [Tomioka et al., 2017](#)). Existing research confirms that various forms of social group participation can exert a positive impact on mental health in older adults ([Amagasa et al., 2017](#); [Guo et al., 2018](#); [Tomioka et al., 2017](#)), which is consistent with our findings. However, political group engagement has been associated with increased depression ([Croezen et al., 2015](#); [Lin & Yan, 2022](#)). This is also in line with the findings of this study.

Geographical conditions may influence the claim that political group attendance is associated with poorer mental health among older adults. Urban and rural settlements are potential conditions; abundant literature indicates urban–rural differences in mental health among older adults, but the evidence is mixed. Some studies have indicated that poor mental health is positively associated with residence in rural areas ([Sasaki et al., 2021](#); [Sun & Lyu, 2020](#); [Tang et al., 2020](#)), whereas others have confirmed that older adults in urban areas exhibit worse mental health than their rural counterparts ([Friedman et al., 2007](#); [Purtle et al., 2019](#); [Srivastava et al., 2021](#)). Overall, we found no statistically significant urban–rural differences in the likelihood of depression among older adults who reported participating in nonpolitical groups. This is consistent with previous findings that social networks and participation eliminate mental health disparities between urban and rural older adults ([Sun & Lyu, 2020](#); [Tang et al., 2020](#)). The results also



**Figure 3.** The effects of social group engagement and electoral regions on the probability of depression among older adults, Taiwan, 1996–2007. BG = both groups; NPG = nonpolitical groups; PG = political groups; Pr(Depression) = the predicted probability of depression. All results were based on random-effects panel logit models. Results correspond to model 1 of [Supplementary Table 5](#). *Source:* the author.



**Figure 4.** The effects of social group engagement and administrative divisions on the probability of depression among older adults, Taiwan, 1996–2007. AOR = adjusted odds ratio; BG = both groups; NG = no groups; NPG = nonpolitical groups; PG = political groups; Pr(Depression) = the predicted probability of depression. All results were based on random-effects panel logit models. The data points represent the mean  $\pm$  standard error. Results correspond to model 1 of [Supplementary Table 4](#) and model 2 of [Supplementary Table 5](#). *Source:* the author. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

showed no definite pattern of urban and rural settlements affecting depression among older adults engaged in political groups. This indicates that politically organized areas other than the urban–rural divide may play a moderating variable role.

Political group participation is associated with poor mental health among older adults living in politically competitive regions. The effect was not statistically significant among those who were solely engaged in nonpolitical groups or both groups. We speculate that there are several possible explanations for this. First, competitive pressure causes rival parties to expedite the ideological indoctrination of older adults who engage in political groups, thereby leading to polarized expressions of support for certain political values that may

weaken community belonging (Carlin & Love, 2018; McCoy et al., 2018; Singh & Thornton, 2019). Second, research indicates the link between negative campaign messages and psychological distress (Chavez et al., 2019; Frost & Fingerhut, 2016; Niederdeppe et al., 2021; Williams & Medlock, 2017). It is plausible that higher levels of electoral competition inform candidates' decisions to level criticism against competitors (Auter & Fine, 2016; Banda, 2022; Hassell, 2021; Maier & Nai, 2022; Nai, 2020; Yan, 2022), and exposure to negative messages may have negative consequences for the psychological well-being of older adults involved in political activities. Finally, electoral competitiveness increases political uncertainty about who will win the elections (American Psychological Association, 2017) and whether elected officials represent their views and political beliefs (Hoyt et al., 2018; Krupenkin et al., 2019; Pitcho-Prelorentzos et al., 2018; Roche & Jacobson, 2019; Simchon et al., 2020), which, in turn, can adversely affect opportunities to voice opinions through political networks and further likely contribute to increased odds of depression. Given the limited data available, the present study is unable to examine these mechanisms.

Mediation analyses revealed that the level of electoral competition mediated the effect of capital city status on the likelihood of depression among older adults who reported engagement in political groups. It suggests a pathway linking capital city status, electoral competition, and mental health among older adults engaged in political groups. Through systematic review and meta-analysis, Purtle et al. (2019) found that depression prevalence was significantly higher among older adults in urban areas. This study argues that the capital city is different from other cities in that its intense electoral competition adversely affects the mental health of older adults who participate in political groups. Our empirical investigation found that Taipei, instead of Kaohsiung, revealed the existence of conditional effects related to place of residence ([Supplementary Tables 4 and 5](#)). Future research should explore the role of the capital city in the physical and mental health of older adults.

This study has several limitations. First, additional types of social engagement (e.g., sports clubs and cultural groups) should have been employed to examine the predicted relationship. However, the TLSA data (the most comprehensive data available for social group engagement) allowed us to analyze the given group types. Second, participants were asked to indicate their involvement in political groups. There was no assessment of party type (ideological, elite-based, mass-based, democratic, antisystem, etc.) or the time spent on each political group, thus causing bias. Future research should test the validity of the proposed arguments using additional measurements. Third, no data exist for the analysis of village- and town-level electoral competition. However, the influence of elections held to elect the mayors of townships and village chiefs on mental health outcomes among older adults may be much smaller than that of elections to elect the magistrates of counties and cities. More detailed data may enable an examination of the theoretical expectations. Fourth, no data exist to ensure that respondents have the same perception of electoral outcomes across survey time points. We believe that long-term differences in the strength of party bases are voters' common perceptions, which may be reflected in their voting behavior. For example, an electoral region that has long been dominated by a pan-blue or pan-green coalition will have a lower

voter turnout than one with similar party strength. Future research should use questionnaires to examine their assessments of and perspectives on the outcomes of each election. Fifth, the observed phenomenon may be linked to specific characteristics of older adults that precipitate their involvement in political groups. To avoid a spurious interrelationship, we excluded individuals with specific characteristics (e.g., living alone) that may synchronously lead to political group attendance and a greater likelihood of depression. However, it is plausible that older adults who only engage in political groups possess a strong political orientation. In such a scenario, their depression may be attributed to other factors, rather than being a result of their involvement in political groups. Future studies should identify valid instrumental variables to eliminate endogeneity. Finally, 1,879 participants who completed the questionnaire after 1996 were lost to follow-up because of death. The patients who died were more likely to represent a subpopulation. Thus, selection bias due to loss of follow-up threatens the internal validity of the estimates derived from the longitudinal data. Nevertheless, the inverse probability weighting models that accounted for the participants lost to follow-up revealed robust results.

The findings of this study contribute to insights on successful aging. Successful aging involves active engagement with life (Rowe & Kahn, 1997). Political activity may have a profound positive impact on well-being and life satisfaction (Lühr et al., 2022; Pavlova & Lühr, 2023). However, political group attendance may also be associated with poor mental health among older adults, particularly those residing in politically competitive regions. This does not imply that older adults' political rights should not be protected because the impact of political group participation on depression depends on other forms of social group participation and the political circumstances of their locality. Instead of encouraging older adults to abstain from politics, the government should promote nonpolitical group engagement to improve the mental health of older adults who are politically engaged and live in increasingly competitive political environments. These findings imply a dimension of successful aging: life should not be entirely about politics.

## Supplementary Material

Supplementary data are available at *Innovation in Aging* online.

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## Conflict of Interest

None.

## Data Availability

Data are available from the corresponding author upon reasonable request ([politicshtyan@gmail.com](mailto:politicshtyan@gmail.com)).

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## Author Contributions

H.-T. Yan and Y.C. Lin planned the study, and H.-T. Yan designed the methods. Y.C. Lin contributed to the literature review and extracted the data. H.-T. Yan did the statistical analyses. Y.C. Lin prepared the first draft with modifications from H.-T. Yan. All authors interpreted the results, commented on drafts of the article, and approved the final version.

## Ethics Approval and Consent to Participate

The use of data in the study was exempted from institutional review board approval of the Research Ethics Committee by China Medical University and Hospital, Taichung, Taiwan (CMUH-109REC1-154).

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