Split-Voting in Taiwan's Concurrent Election and Referendum: An Exploratory Test of Social Context*

HSIN-HAO HUANG

Exploring the issue of referendum voting has become an important aid to understanding the development of democracy in Taiwan. Three referendums on six issues have been held since 2004, and each of them has been held in conjunction with a nationwide election. This paper uses the approach of straight/split-ticket voting to explore Taiwan’s referendum voting behavior. Through a case study of the 2008 presidential election, this paper draws ecological inferences from aggregate data and examines the effects of different social contexts on split voting by KMT and DPP voters. By using Wakefield’s hierarchical method, it is shown that whether Taiwanese voters picked up referendum ballots in 2008 depended mostly on which party they voted for in the presidential election. This finding indicates that partisanship remained influential in referendum voting of Taiwan. However, social context also matters from the viewpoint of information transmission. This paper examines split-voting behavior by region

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and addresses different contextual measurements of the political support, economic development, and ethnic cohesion as exploratory factors. By using aggregate data to probe local opinion, this paper provides an alternative approach to explaining voting behavior by regional difference.

**KEYWORDS:** referendum turnout; split voting; social context; Taiwan; ecological inference.

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The referendum, a form of direct democracy, is broadly defined as a decision-making process during which citizens participate in public affairs and decide on public issues. Since it is an important mechanism for expressing and collecting public opinions, topics such as voting behavior in referendums and voters' evaluations of referendum practice increasingly engage the attention of scholars. As an emerging democracy, Taiwan has held three nationwide referendums on six issues alongside nationwide elections since 2004. These referendums have encompassed issues of domestic legislation, foreign policy, and even national sovereignty. Therefore, exploring referendum voting in Taiwan has become an important subject for researchers who seek to understand the development of democracy in Taiwan.

Previous studies have demonstrated that partisan confrontation over referendums risks increasing divergences in public opinion; that is, citizens make up their minds how to vote in referendums according to the recommendations of their preferred political party. If this is the case, where and

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how do voters draw cues when deciding their referendum votes, especially regarding voting action that is incompatible with the voter's preferred party? Although voting behavior constitutes an individual activity, it is inevitably embedded within structured patterns of social interaction. Specifically, individuals probably integrate and interpret political information by actively or passively referencing their ideology or party identification. However, such political information originates not from isolated individuals but from the constraints of social structure. In this sense, the social environment, that is, the social context, plays a crucial role in affecting the social flow of political information.

This paper attempts to explain how different types of social context influence Taiwan's referendum voting from the perspective of information transmission, focusing especially on the third referendum held in conjunction with the 2008 presidential election. Because the referendum and the nationwide election were held simultaneously, a binary voting decision can be classified as either straight or split-ticket voting according to whether an individual voting in the referendum adhered to his or her preferred party's stated position on the subject at hand. To address the possible effects and take regional representation into account, the study uses integrated aggregate data to draw ecological inferences for straight and split voting in each township of Taiwan. Based upon a multivariate analysis of this data, the paper demonstrates the effects of politically supportive, economic development, and ethnically cohesive contexts on split-voting behavior. For most Taiwanese voters, their voting decision in the referendum reflected their choice in the presidential election, and those voters who engaged in split voting were apparently persuaded to do so by various social-context forces. The contexts of political support and ethnic cohesion were strongly associated with the direction of mainstream public opinion in local areas;

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5 Burden and Kimball have advocated that researchers explore split voting. Their study appears to be the first to explore individual straight and split-ticket voting by means of aggregate data. See Barry C. Burden and David C. Kimball, "A New Approach to the Study of Ticket Splitting," *American Political Science Review* 92, no. 3 (September 1998): 533-44.
meanwhile, the economic development context reflected the different levels of the self awareness and capacities for information updating among voters across different regions. After all, different social contexts shape a variety of information flows in a society, and contextual effects impose social sanctions on split-voting behavior via interpersonal interactions. Using aggregate data to draw inferences, this paper provides a practical way to probe local opinion and an alternative approach to explaining voting behavior by regional difference.

This paper begins by presenting an overview of the development of referendums in Taiwan. The theoretical framework of referendum voting, as discussed in the second section of this paper, draws on the approach of opinion formation, with a special focus on the effects of social context. The third and fourth sections of the paper address research design, including a typology construction, a series of exploratory hypotheses concerning social context, and data manipulation of ecological inferences. Based upon a series of data analyses in the fifth section, the sixth section draws conclusions and identifies implications.

Referendums in Taiwan: An Overview

Despite the spread of liberal democracy around the world, referendums are still relatively rare events in representative democracies. This section briefly sketches the background of referendums in Taiwan since 2004, shows how the holding of referendums has become a significant area for political struggle, and presents patterns of referendum voting and the recent literature on the subject.

Party Division and Its Development Relative to the Referendum in Taiwan

On November 27, 2003, the Legislative Yuan (立法院) passed a politically charged referendum bill. According to Article 17, which had been

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inserted into the bill by the ruling Democratic Progressive Party (DPP, 民主進步黨), the president may hold a referendum on issues of national security on occasions when the country faces external threats that could interfere with its national sovereignty. Two days later, President Chen Shui-bian (陳水扁) accordingly announced that he would hold a referendum on the issue of national sovereignty on the same day as the 2004 presidential election.

The first referendum in 2004 introduced many changes into Taiwan politics in terms of agenda setting. Referendums not only became an important issue during election campaigns from this moment forward, but they also to varying degrees affected the results of the elections because of party mobilization during the referendum campaign. On January 16, 2004, President Chen unveiled two defense-related questions to be put to a referendum, later called the "defense referendum."\(^7\) This referendum also turned out to be part of a campaign strategy undertaken by the DPP against their electoral rival—the Pan-Blue (泛藍) camp, which consisted of the Kuomintang (KMT, 國民黨) and the People First Party (PFP, 親民黨). In its election propaganda, the DPP sold the referendum as an example of popular self-governance at the grassroots level, and portrayed the KMT's opposition to the defense issue as in essence anti-referendum and consequently anti-democratic.\(^8\) In this way, the DPP exploited the concurrence of referendum and election, and manipulated the referendum momentum in the party's favor. In the end, the DPP won a second term after a tight race with the Pan-Blue camp, after the defense referendum had grown into a

\(^7\)The first question was: "The people in Taiwan demand that the Taiwan Strait issue be resolved through peaceful means. Should Mainland China refuse to withdraw the missiles it has targeted at Taiwan and to openly renounce the use of force against us, would you agree that the government should acquire more advanced anti-missile weapons to strengthen Taiwan's self-defense capabilities?" The second question was: "Would you agree that our government should engage in negotiation with mainland China on the establishment of a 'peaceful and stable' framework for cross-Strait interactions in order to build a consensus and for the welfare of the people on both sides?"

Following its success in the election, the DPP continued to initiate referendums in conjunction with subsequent legislative and presidential elections in 2008, and used them to tackle politically sensitive and ideologically divisive issues, namely, the return of the KMT's illegally acquired party assets to the people (issue no. 3) and whether the country should join the United Nations under the name of "Taiwan" (issue no. 5).

The difference between the two camps' handling of the referendum issue during the presidential election campaign sharpened inter-party divisions regarding Taiwan's use of the referendum. In 2004, the leaders of the Pan-Blue camp urged their supporters to boycott the defense referendum. However, having learnt from the failure of this campaign, the Pan-Blue camp subsequently proposed two more issues for referendums themselves in 2008: the return of the (DPP) incumbents' wasted/pilfered national assets to the people (issue no. 4) and return to the UN under the name of "Republic of China" (issue no. 6). On March 22, 2008, Taiwan held its third referendum, on membership of the United Nations, which consisted of two differently formulated questions (those in issues no. 5 and no. 6, above). However, the KMT's proposal was an electoral strategy aimed at demonstrating that the pursuit of referendum was not the exclusive privilege of the DPP, which appeared to be the case in 2004; the KMT wanted to prove that it could also embrace the practices of direct democracy. So the KMT initiated its own referendum proposal in 2008, but


10The full text of the questions in the two referendums is as follows: "In 1971, the People's Republic of China joined the United Nations, replacing the Republic of China and causing Taiwan to become an orphan in the world. To strongly express the will of the people of Taiwan to enhance Taiwan's international status and participate in international affairs, Do you agree that the government should apply for UN membership under the name 'Taiwan'?” (issue no. 5); and "Do you agree that our nation should apply to return to the United Nations and join other international organizations based on pragmatic, flexible strategies with respect to the name under which we apply to and participate in them? Do you approve of applying to return to the United Nations and to join other international organizations under the name 'Republic of China' or 'Taiwan' or other name that is conducive to success and preserves our nation's dignity?” (issue no. 6).
encouraged its supporters to boycott the DPP-sponsored referendum issue and pushed for a two-step voting procedure that would separate referendums from elections.\footnote{After several rounds of political flights in the Legislative Yuan, the Central Election Commission (中央選舉委員會) nevertheless declared that the 2008 referendums would take place simultaneously with national elections in a one-step voting process. See Hsiu-chuan Shih and Shu-ling Ko, “Two-step Voting against the Law: Chang,” \textit{Taipei Times}, November 29, 2007, http://www.taipeitimes.com/News/front/archives/2007/11/29/2003390308 (accessed September 29, 2008).} Finally, elements within the KMT implicitly encouraged the party's supporters to boycott the proposals of both the KMT and the DPP, in protest against alleged "procedural injustice." Finally, the KMT leadership was split over whether or not such a boycott was advisable. While the presidential candidate Ma Ying-jeou (馬英九) and KMT chairman Wu Po-hsiung (吳伯雄) supported the presence on the referendum ballot of the KMT-sponsored issue, other KMT leaders, such as chairman emeritus Lien Chan (連戰), refused to accept any referendum ballot.

So far in this section, I have summarized how the two main political camps in Taiwan handled the referendum issue beginning in 2004. It is found that the DPP consistently treated referendums as a way of highlighting the party's perceived role as the leading promoter of democracy, whereas the KMT's position underwent a slight change, from advocating an overall boycott to either supporting the initiation of referendums or passively resisting them—the goal being to eliminate the shocks that DPP-led referendums triggered in general elections. Referendums in Taiwan have indeed become yet another arena for political struggle, and inter-party divisions have defined the referendum debate often along procedural rather than substantive lines concerning serious problems in public affairs.

\textit{Results of Taiwan's Referendum Voting and Recent Literature on the Subject}

Although the major parties finally approved, at least on the surface, the practice of referendums in 2008, all of Taiwan's post-2004 referendums were declared void. Voter turnout for these polls ranged from 26.08 to 45.17 percent (see Table 1), below the required minimum of 50 percent of
the entire electorate, as stated in Article 30 of the Referendum Act.

A cursory glance at the pattern of voting results suggests that among voters who picked up the referendum ballots, there was a consensus on the issues. With the exception of issues no. 4 and no. 6, initiated by the KMT, the approval rates for the DPP's referendum proposals either exceeded or approximated 90 percent; meanwhile, there was a consistent and large gap between the turnout rate for the referendums and the turnout rate for the elections, although the two events took place at the same time. In this sense, we can identify that the most meaningful point of difference characterizing Taiwan's recent voting behavior in referendums has been not so much voters' actual positions on the substantive issues as their decision

Table 1
Referendums in Taiwan: Results and Statistics

<table>
<thead>
<tr>
<th>Topic No.</th>
<th>Concurrent election</th>
<th>Issue</th>
<th>Turnout Rate (%)</th>
<th>Invalid Votes (%)</th>
<th>Valid Votes (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2004 presidential election</td>
<td>Strengthening self-defense capabilities</td>
<td>45.17</td>
<td>2.18</td>
<td>Yes 39.47 (91.80) No 3.52 (28.20)</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Negotiating with China on an equal basis</td>
<td>45.12</td>
<td>3.51</td>
<td>Yes 38.31 (92.05) No 3.31 (7.95)</td>
</tr>
<tr>
<td>3</td>
<td>2008 legislative election</td>
<td>Returning the KMT's illegally acquired party assets to the people</td>
<td>26.34</td>
<td>1.17</td>
<td>Yes 22.52 (91.46) No 2.10 (8.54)</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Returning (DPP) incumbents' wasted/pilfered national assets to the people</td>
<td>26.08</td>
<td>3.15</td>
<td>Yes 13.34 (58.17) No 9.59 (41.83)</td>
</tr>
<tr>
<td>5</td>
<td>2008 presidential election</td>
<td>Joining the UN under the name of &quot;Taiwan&quot;</td>
<td>35.82</td>
<td>1.85</td>
<td>Yes 31.94 (94.01) No 2.04 (5.09)</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Returning to the UN under the name of &quot;Republic of China&quot;</td>
<td>35.74</td>
<td>2.89</td>
<td>Yes 28.66 (87.27) No 4.18 (12.73)</td>
</tr>
</tbody>
</table>


Note 1: The numbers outside the parentheses represent percentages of votes or turnout based on the total electorate; those in parentheses in the last two columns are percentages of valid votes.
whether or not to vote on the basis of partisan politics.

Recent studies have used survey data to show how party cleavage plays a crucial role in referendum turnout. Huang noted that in the case of the defense referendum of 2004, referendum issues were engulfed in partisan politics and electoral manipulation owing to the referendum being held at the same time as the presidential election. Thus, referendum voting in 2004, both in terms of participation and results, was consistent with the voters' choice of presidential candidate and was along partisan lines.\(^\text{12}\)

Tsai's study focused on the socio-psychological factors underlying the voting, and his results show that the effects of individual political orientation (e.g., democratic belief, political trust, and political efficacy) on referendum participation were not as influential as those of party identification and one's position on the unification-versus-independence issue.\(^\text{13}\) Hsu and his colleagues found that on the question of whether or not one should vote in the referendum, people were divided by their perceptions of national identity. This line of demarcation means that the practice of referendums in Taiwan has become a new way of defining and categorizing people's national identity, reinforcing Taiwanese identity in particular.\(^\text{14}\) In addition to providing an explanation of political predisposition drawing on the factor of individual agency, Huang's analysis employed aggregate data to uncover preliminary findings concerning related regional differences.\(^\text{15}\)

\(^{12}\)Chi Huang, "Explaining Referendum Voting Choices in Taiwan," Issues & Studies 40, no. 3 (September 2004): 316-33.

\(^{13}\)Chia-hung Tsai, "Minzhu shenhua huo zhengdang jingzheng? Chutan Taiwan 2004 nian gongmin toupiao canyu" (Democracy Deepening or party competition? a primary analysis of Taiwan's 2004 referendum), Taiwan zhengzhi xuekan (Taiwanese Political Science Review) (Taipei) 11, no. 1 (June 2007): 109-45.

\(^{14}\)They found that people who identified as Taiwanese tended to vote in the referendum, and those who identified as Chinese tended to abstain. Moreover, people with dual identity (Chinese and Taiwanese) would probably swing toward their Taiwanese identity if they were to participate in a referendum. See Yung-ming Hsu, Chia-hung Tsai and Hsin-tin Huang, "Referendum: A New Way of Identifying National Identity," in Kau, ed., Direct Democracy Practices in Taiwan, 59-75.

\(^{15}\)David W. F. Huang, "Cong xuanpiao quwei jiegou shitan yingxiang 2004 nian 'heping gong-tou' zhi xiangguan yinsu" (Exploring factors influencing the 2004 "peace referendum" in Taiwan: an analysis of aggregate data at township/district level), Taiwan minzhu jikan (Taiwan Democracy Quarterly) (Taipei) 1, no. 3 (September 2004): 73-98.
However, using aggregate data without any statistical measure is inappropriate for drawing inferences about voting behavior at the individual level. This paper addresses this point in the next section by applying the approach of opinion formation to referendum voting and highlights the influence of social context therein. This is followed by a presentation of the research design of this paper.

Referendum Voting, Partisanship, and Social Context

Voting in referendums is, on the one hand, different from voting in general elections since no candidate or party is listed on the ballot, but on the other hand, it is similar to election voting because voters in a referendum also have to decide whether to participate and what choice to make.\(^\text{16}\) Voting behavior in referendums, given its issue-oriented nature, is more unpredictable than voting behavior in party- or candidate-oriented elections.\(^\text{17}\) This section identifies how the perspective of opinion formation can help uncover patterns of voting behavior in referendums by exploring the nature of opinion collection within social contexts.

As with research on voting behavior in general elections, the first determinant that should be systematically discussed to explain voting be-


\(^\text{17}\)For example, Butler and Ranney found that the turnouts over a large number of referendums in various nations were, on average, 15 percent lower than those found in general elections within the same country. Also, some other cases show that the turnout rates in referendums are higher than those of elections. For instance, the turnout in the 1995 Quebec sovereignty referendum reached 94 percent, a full 12 percent higher than that of the provincial election held one year earlier. Moreover, turnout rates in cases like the 1992 Canadian constitutional referendum, the 1994 Norwegian European Union membership referendum, and the Danish referendums on the European currency in 2000, were higher than the election turnouts in these countries. See David Butler and Austin Ranney, "Practice," in Referendums around the World: The Growing Use of Direct Democracy, 5; Lawrence LeDuc and Jon H. Pammett, "Referendum Voting: Attitudes and Behavior in the 1992 Constitutional Referendum," Canadian Journal of Political Science 28, no. 1 (March 1995): 3-33; and Lawrence LeDuc, "Opinion Formation and Change in Referendum Campaigns," in The Dynamics of Referendum Campaigns, ed. Claes H. DeVreese (New York: Palgrave Macmillan, 2007), 28.
behavior in referendums is political predisposition. Tonsgaard proposed that the extent to which basic values and beliefs are linked to a referendum in public debate is a key starting point for probing referendum voting behavior.\(^{18}\) Strong political predisposition symbolizes a kind of psychological connection between individuals and social groups, such as political parties and ethnic groups. Thus, like the effect of party identification on voting in elections, citizens’ choices in referendums also rely on a variety of cues provided by group endorsements.\(^{19}\) However, referendums are not always connected to social or political cleavages. Referendums on some economic and social issues might be less the product of held political beliefs than of more mutable opinions taken from the persuasive argument of the referendum campaign. Therefore, Tonsgaard’s argument is not sufficient because it neglects the various circumstances of referendums, such as the differences among issues and the varied explicit or implicit positions of equally varied social groups.

If a referendum can be regarded as a mechanism for collecting public opinion, Zaller’s model for opinion formation may be well suited for studies on referendum voting.\(^{20}\) In essence, the process of opinion formation as suggested by that model would proceed from the interaction of information and predisposition. According to Zaller’s "RAS model," public opinion reflects considerations that people have received, accepted, and sampled from.\(^{21}\) During this process, an individual’s prior beliefs can be


\(^{19}\) For example, some cases, such as the referendums on Quebec sovereignty and European integration, strongly reflect fundamental beliefs about political identity.


\(^{21}\) The RAS model is constructed upon four basic premises: (1) individuals differ substantially in their attention to politics and therefore their exposure to elite sources of political information; (2) people react critically to political communication only to the extent that they are knowledgeable about political affairs; (3) people rarely have fixed attitudes on specifics issues; rather, they construct preference statements on the fly as they confront each issue raised; and (4) in constructing these statements, people make the greatest use of ideas that are the most immediately salient to them. See John R. Zaller, *The Nature and Origins of Mass Opinion* (New York: Cambridge University Press, 1992), 58.
identified as mediators that an individual possessing a stable political predisposition would use to regulate his or her acceptance or non-acceptance of received political communication. Extending Zaller's model, LeDuc further generalized and formalized the stability or volatility of voting behavior in referendums. And he argued that the voting pattern would depend on the causal combination of the characteristics of referendum issues and some specific background factors, such as social cleavages, interest groups, government actions, and the media. Specifically, while a referendum involves a cleavage or ideological issue and political parties take well-known and predictably opposite positions, the result will reflect the characteristics of general elections because the referendum voting mobilized by party politics and referendum campaigns would simply reinforce voters' predetermined choices built upon their party identification or ideological orientation.\(^{22}\) By contrast, when one involves a new or previously un-discussed issue, or when parties line up in a non-traditional manner, the short-term variables like campaigns are more likely to impact the result because the parties do not play an important role in delivering the voting cues to individuals.\(^{23}\) LeDuc's framework not only highlights the importance of campaign dynamics in the process of referendum promotion, but also notes various social agents that transmit voting cues to voters in referendums.

LeDuc's framework actually reveals the significance of social context. In essence, the various agents of information transmission should be embedded in a social environment. Social environments, from the social-context perspective, reflect the various characteristics of internally varied information flows. Social context, to put it more specifically, is structurally imposed on and external to individuals, yet it can be generalized and characterized by individual-level attributes since the contextual composition depends on the makeup of the individuals who are involved in it.\(^{24}\)


\(^{23}\)Ibid., 714-15.

\(^{24}\)Huckfeldt and Sprague defined social context as "external to individuals even though the
Social context thus refers to various geographic, organizational, and situational factors. In general, the theory of contextual effects on individual behaviors and attitudes is based upon the following assumptions. First, people tend to reduce information costs by obtaining political messages from personal contacts; and second, the political information that individuals choose and receive reflects an extension of personally based political predisposition and preference, such as information screening by party identification. In this sense, the contextual effect is that a particular social environment location within the social structure provides the specific information chosen and received by individuals and imperceptibly constrains individuals by means of regional interpersonal interaction. Thus, the effect of the particular social context could be analogous to a kind of social sanction, and the direction and intensity would be mediated by the strength of one's political or ideological position.

In summary, although political attitudes and behaviors usually originate in and project from deeply rooted predispositions or ideologies, social contexts remain essential when it comes to the issue-oriented topic of voting behavior in referendums. Having introduced a general theory of social context, the paper will now go on to describe how to apply this theory to explain voting behavior in Taiwan's referendums.


27 To present an extreme example, if a person, without any particular passion for politics and ideology, resides in a context where all others support Party A, it is very likely that he would become a follower of Party A owing to peer pressure from the environment to which he is exposed. In contrast, if a Party B follower resides in a context surrounded by supporters of Party A, he would probably grow alienated from political affairs and avoid discussing politics with others. However, the exception in the latter case is that if the minority individual is an extremely strong supporter of Party B, residing in a pro-Party-A context might make him more assertive in expressing his political and ideological position.
This paper explores how different types of social context have affected voting behavior in referendums in Taiwan. To explain social context from the perspective of opinion formation, we should first clarify whether the referendum-related decisions of voters are consistent with the views of their preferred party in a given presidential election: this clarification would control for the situation in which a voting decision relies on the cues provided by parties. Because the aforementioned Taiwanese referendums were held on the same day as the presidential election in 2008, voters had to choose a set of voting actions combining the choice of a presidential candidate with choices on the referendum questions. As noted, the most significant division characterizing the Taiwanese vote in the referendums was not actual positions on substantive issues, but the turnout/non-turnout choice driven by partisan politics. Therefore, it is possible to construct a typology by referring to the choice of presidential candidate and to turnout or non-turnout in the referendums as the four different combinations of voting action: there being two possible choices for president and two possible choices—turnout or non-turnout—in the referendums (see Table 2).

This paper classifies the straight voting behavior of KMT and DPP voters according to two scenarios: "voting for the KMT candidate and non-
turnout in the referendum" and "voting for the DPP candidate and turnout in the referendum." In these cases, the choice of presidential candidate and the decision on referendum participation could be assumed to depend on voters' party identification. The DPP had consistently supported the holding of referendums, but the KMT leaders, having proposed their own referendum issue in 2008, subsequently called for a boycott of the referendum process and this possibly had the effect of dissuading KMT supporters from participating in them. Despite the ambiguous position of the party in 2008, the KMT was supposed to have been trying to impress voters when it called for a boycott of referendums in 2004. Moreover, Split-voting behavior occurs when a voter's decision to vote in a referendum is inconsistent with the position of the party for which the voter has cast a ballot, as in the situations of "voting for the KMT candidate and voting in the referendum" and "voting for the DPP candidate and not voting in the referendum." Under these circumstances, voters probably drew their voting cues, passively or actively, from the surrounding social context, either because they lacked clear guidance from their preferred party or because the voters intended to separate the referendum from the election.

A constructed typology can help reconfirm inter-party division within the referendum turnout. From the perspective of opinion formation, voting cues in referendums guided by two main camps may be expected to play an important role. Thus, voters who voted for the DPP presidential candidate would be more likely to pick up referendum ballots, whereas those who voted for the KMT presidential candidate would be less likely to do so. Also, one should consider the inconsistent positions within the KMT leadership during the latter period of the presidential campaign. Taking this into consideration, we would expect there to be more split voting than straight voting among both KMT and DPP voters, and for there to be more split voting among KMT voters than among DPP voters.

We then consider how the different types of social contexts could push, pull, and mold split-voting behavior. The previous literature indicates that the political orientation and behavior of voters in Taiwan is likely to vary according to where they live—as demonstrated by such concepts as "southern politics," "high-DPP-empowerment areas," and
"rational calculation based on economic structure"; however, existing studies have not systematically addressed the various types of social context and their relative effects. A major goal of this paper is to identify several aspects of social contexts, including political support, economic development, and ethnic cohesion in Taiwan.

With regard to political support, the social context would shape a particular environment that possesses the function of information transmission and determines mainstream public opinion in a region. When a region's population leans heavily in favor of a particular party, support for that party would likely be the local mainstream of opinion and voters would find it much easier to access messages that are supportive of that party. Therefore, voters are more likely to take consistent political action when they support the same party as most other voters in their region. In the case under examination here, such a phenomenon means that the effects of politically supportive contexts would weaken split-voting behavior. Consequently, I would expect that the greater the support for a particular party in a given context, the lower the proportion of split voting among that party's voters in that region, regardless of which party that region prefers, the KMT or the DPP.

Lee and Hsu showed that regional disparities have significant effects on voting behavior in Taiwan. As their results reveal, the steady support for the DPP has often come from southern counties and cities. See Pei-shan Lee and Yung-ming Hsu, "Southern Politics? Regional Trajectories of Party Development in Taiwan," Issues & Studies 38, no. 2 (June 2002): 61-84. Moreover, using the theory of political empowerment, Wu, Tan, and Lee demonstrated that voters who live in high-DPP-empowerment areas have tended to vote for DPP candidates. See Chung-li Wu, Yin-yin Tan, and Shin-hung Lee, "Fuquan lilun yu xuanmin toupiao xingwei: yi 2001 nian xianshizhang yu diwujie lifa weiyuan tuichou" (Empowerment theory and voting behavior: the 2001 county magistrate/city mayoral and Legislative Yuan elections in Taiwan), Taiwan zhengchi xuekan (Taiwanese Political Science Review) (Taipei) 7, no. 1 (June 2003): 91-156. Keng and Chen illustrated the contextual effects of the economy. According to their interpretation, voters living in northern counties and cities have tended to favor the Pan-Blue camp because they benefit most from the cross-Strait economic interaction advocated by Pan-Blue politicians; likewise, voters living in southern counties have drawn upon rational calculations of their own economic benefits when tending to favor the Pan-Green camp (the DPP and the Taiwan Solidarity Union [TSU]). See Shu Keng and Lu-huei Chen, "Liang'an jingmao hudong yu Taiwan zhengchi bantu: nanbei gukuai chayi tuishou" (Formation of Taiwan's regional blocs: cross-Strait economic interactions and Taiwan's domestic politics), Wenti yu yanjiu (Issues and Studies) (Taipei) 42, no. 6 (November 2003): 1-27.
Looking at the economic dimension, Keng and Chen's study has noted that, on the basis of rational calculations of economic benefits, voters have tended to favor the party whose position or policy is likely to contribute to the promotion of local industries. Given that referendum voting implies the practice and achievement of direct democracy, an alternative perspective that takes into account modernization theory might be more appropriate.\(^{30}\) This is, in essence, that the progress of modernization helps satisfy higher and higher levels of human needs. After the needs necessary for survival are satisfied, higher-order needs such as self-actualization needs can emerge.\(^ {31}\) Thus, holding a presumption similar to one based on the theory of "post-materialism," this paper expects that voters exposed to an environment with pronounced levels of economic modernization would be more likely to develop self-expression values, such as an emphasis on individualism and political rights.\(^ {32}\) This statement indicates that voters in a well-modernized environment would be more independent and autonomous in their involvement in public affairs owing to their relatively comfortable living conditions. In this sense, Taiwanese voters in more developed regions would be more likely to perceive a referendum as party-neutral and issue-oriented than would Taiwanese voters in more underdeveloped regions. The former voters would therefore be quite likely to exercise their right to participate in a given referendum, regardless of which presidential candidate they might support. Another crucial consequence stemming from economic modernization is improved educational attainment.\(^ {33}\) From the point of view of information flow, political information might be better transmitted and circulated among better-educated

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\(^{30}\) For the connotations and implications of modernization, see Cyril E. Black, ed., *Comparative Modernization: A Reader* (New York: Free Press, 1976).


people because of their better ability to receive and to interpret it. In 2008, a Taiwanese region populated by relatively well-educated people might have been more likely than a less well-educated region to receive and circulate information about the KMT's or the DPP's position. Because of the rise in individual awareness and the accelerating rate at which political information is updated, it is reasonable to expect that a higher degree of economic development in a region would result in an increase in the proportion of split voting among KMT voters, and conversely decrease the proportion of split voting among DPP voters.

The final contextual characteristic in Taiwan is ethnic diversity. There are four major ethnic groups in Taiwan—Minnanren (閩南人), Hakka (客家人), mainlanders, and aborigines. Ethnic background in Taiwan is the most salient demographic factor determining voting behavior at the individual level. Among the four ethnic groups, the Minnanren overwhelmingly outnumber the others and are generally included, along with Hakka and aborigines, in a broader category of "Taiwanese," in contrast to mainlanders. This is the fundamental ethnic division in Taiwan. The contextual difference between ethnic groups may be a reflection less of partisanship than of differences in Taiwan's ethnic consciousness. In general, "ethnic consciousness" is defined as a kind of identification that separates "us" from "them" and that reveals itself in the form of relative between-group characteristics. At the aggregate level, ethnicity-based

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34Wang and his colleagues defined some DPP supporters as "deep-green supporters" and noted that having a Minnan background is one of their demographic characteristics. These scholars argued that deep greens have relatively low levels of political tolerance because of their extreme nationalism. See T. Y. Wang, Su-feng Cheng, and Lu-huei Chen, "Deep-Green Supporters and Political Tolerance in Taiwan: An Analysis of Kennedy's Hypothesis," Issues & Studies 45, no.1 (March 2009): 1-30.

35Thanks are owed to an anonymous reviewer for the comment that the effects of ethnic contexts should be separated from those of political contexts, especially because the statistical models can control for partisanship.

36As Wang suggests, ethnic consciousness usually originates from a set of three kinds of cognition: ethnic difference, inequity, and collective necessary action. For the formation and evolution of ethnic groups in Taiwan, see Fu-chang Wang, Dangdai Taiwan shehui de zuqun xiangxiang (Ethnic imagination in contemporary Taiwan) (Taipei: Socio Publishing Co., 2003), 9-51.
contexts to some extent reflect both how differently individuals interact with within-group peers and what between-group relations are.

In this sense, the ethnic context reflects the differences among ethnic groups in their levels of internal and external cohesion. With respect to internal peer interaction, the Hakka are usually regarded as an ethnic group with a higher region-based cohesion in Taiwan. The populations of fifty-nine recognized Hakka villages have in recent year still been found to be over 80 percent Hakka. These high concentrations of population by region might strengthen the likelihood that a single acknowledged stream of political information circulates either exclusively or almost exclusively and as a result, imposes stronger social sanctions on individuals of a common background. Therefore, individuals who reside in a township with a high concentration of Hakka would probably make political decisions that exhibit a community-wide consistency. If this is true, then regardless of whether the voters are KMT or DPP supporters, there is likely to be less split voting in Hakka townships than in other communities because of the Hakka group's internal characteristic of cohesion.

The increased ethnic cleavage between mainlanders and Taiwanese reveals another source of an ethnically cohesive context in terms of the external dimension. Mainlanders are those who came to Taiwan along with the Nationalist government after the civil war fought between the KMT and the Chinese Communist Party. During the years of KMT rule starting in the late 1940s, the minority mainlanders were usually regarded as the most advantaged segment of the island's population, and their historical background helps explain their loyalty to the KMT. More importantly, the DPP's efforts to emphasize Taiwanese consciousness since the party came to power in 2000 has probably strengthened the mainlanders' sense of self-protection and awareness of ethnic division, and made them more likely to oppose the DPP. Individuals residing in regions with high concentrations of mainlanders would be more likely to receive messages from other mainlanders advocating self-protection. Thus, for KMT voters, residence

37Ibid., 131.
in a mainlander township would strengthen the likelihood that they would abstain from voting in a referendum: the palpable mainlander context and the equally palpable anti-DPP atmosphere would help explain this tendency. I accordingly assume that split voting by KMT voters in townships with a high concentration of mainlanders would be lower than that by KMT voters in other types of townships, because concentrated communities of mainlanders would typically respond defensively to perceived threats stemming from external environments.

These exploratory hypotheses addressing the relationship between regional difference and split-voting behavior try to capture how various types of social contexts influence referendum voting behavior in Taiwan, from the viewpoint of information transmission in particular. With these points in mind, we now consider how to test the hypotheses using the aggregate data, focusing especially on the problems of ecological inference and their solutions.

Making Ecological Inferences and Data Manipulation

Ecological Inference: Problems and Solutions

This paper's main aim is to show how Taiwan's split-voting behavior varies across regions. In general, individual-level survey data can directly clarify issues concerning voter behavior. But the problem of representation arises when we use national survey data to analyze local public opinion because there are insufficient cases at the local level. Consequently, I employ aggregate-level data in order to get a more complete picture of regional variation in referendum turnout.

It is necessary to address a methodological problem before we apply and analyze the aggregate-level data. In essence, data at the aggregate level constitute a collection of individual records sorted by a specific geographic

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38In general, cases involving nationwide survey data should not exceed 2,000. Since there are just over 350 townships in Taiwan, there would be on average fewer than 10 cases in each region if every town were covered.
Split-Voting in Taiwan's Concurrent Election and Referendum

Table 3
El Problem: Known and Unknown Information

<table>
<thead>
<tr>
<th></th>
<th>$Y_i = 1$</th>
<th>$Y_i = 0$</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$X_i = 1$</td>
<td>$n_{Y_i} (\hat{Y})$</td>
<td>$n_{X_i} - n_{Y_i} (1 - \hat{Y})$</td>
<td>$n_{X_i} (P_{X_i})$</td>
</tr>
<tr>
<td>$X_i = 0$</td>
<td>$n_{W_i} (1 - W_i)$</td>
<td>$n_i - n_{X_i} - n_{W_i} (W_i)$</td>
<td>$n_i - n_{X_i} (1 - P_{X_i})$</td>
</tr>
<tr>
<td>Total</td>
<td>$n_{Y_i} (P_{Y_i})$</td>
<td>$n_i - n_{Y_i} (1 - P_{Y_i})$</td>
<td>$n_i (1)$</td>
</tr>
</tbody>
</table>

Notes:
1. The notations outside parentheses represent frequencies; those in parentheses represent proportions, while both $\hat{Y}$ and $W_i$ are conditional probabilities.
2. The gray cells indicate unknown information.

unit, such as the district, township, or county. As Robinson noted, the ecological correlations generated from aggregate data would not represent the individual correlations at all. Miller even referred to such an improper inference as the "ecological fallacy theorem." Indeed, the process of data aggregation necessarily causes information losses, a phenomenon that King terms "aggregation bias." Table 3 presents the known and unknown information when researchers use aggregate data to draw inferences about individual correlations or associations. In this study, suppose $Y$ represents whether voters pick up the referendum ballot or not (Yes = 1, No = 0), while $X$ represents voters’ choices of presidential candidate (KMT = 1, DPP = 0). As the table shows, from aggregate data we obtain only the respective individual proportions for referendum turnout and voting choice, not the joint proportion of these two actions. However, the primary research in-

39For more details about the structure and the process of data aggregation, see Chi Huang, "Yizhi yu fenlie toupiao: fangfa lun zhi tantao" (Straight- and split-ticket voting: methodological reflections), Renwen ji shehui kexue jikan (Journal of Social Sciences and Philosophy) (Taipei) 13, no. 5 (December 2001): 541-74.
Interest here is the joint proportion of election voting and referendum turnout, which stands for the straight and split voting of KMT ($f_i$) and DPP ($W_i$) voters.

Even though aggregate data are usually unsuitable for the testing of individual-level hypotheses, it is fortunate that statisticians and political methodologists never stop formulating solutions to the problems that beset ecological inference. Since Gary King proposed the "EI model" (ecological inference model), which uses prior probability distribution to parameterize the unknown coefficients, improved estimation in ecological inference has proceeded to the next step.\textsuperscript{43} To help yield estimated coefficients that are more precise than those resting on King's model, the recent literature suggests that the model should relax the distribution assumption, modify the setting of functional form, and impose a hierarchical structure, all of which taken together are termed hierarchical methods.\textsuperscript{44} A series of simulations has proven that hierarchical methods perform better than King's EI model in predicting quantities of interests about individual associations ($f_i$ and $W_i$).\textsuperscript{45} This study, therefore, applies Wakefield's hierarchical method to generate the joint proportion of split voting in each township in Taiwan. The likelihood function generates coefficients according to the binomial convolution model and is weighted according to the number

\textsuperscript{43}For the specifications of King's EI model, see ibid., 91-157.


of cases in each cell.\textsuperscript{46} The results estimated by this function are thus more reasonable and fit the known information better. The likelihood function of Wakefield's hierarchical method is given by\textsuperscript{47}

\[ L(\beta, W_i) = \beta_i^{n_{pi}} (1 - \beta_i)^{n_{pi} - n_{pi}} \]

\[ W_i^{N_i - n_{pi} + n_{pi}} \]

Data Manipulation

The data set consists of official statistics, including voting records from presidential elections and local statistical abstracts.\textsuperscript{48} The descriptive statistics of all independent variables can be accessed in this paper’s appendix.\textsuperscript{49} Based on the above framework for ecological inference, the data analysis here will proceed in two steps that involve parameter generating and hypothesis testing. First, I apply Wakefield's hierarchical model and

\textsuperscript{46}For the likelihood function of Wakefield's hierarchical method, see Jon Wakefield, "Ecological Inference for 2x2 Tables," \textit{Journal of the Royal Statistical Society, Series A} 67, no. 3 (2004): 390.

\textsuperscript{47}The applied software is R. For the syntax, see Kosuke Imai, King Gary, and Olivia Lau, "Zelig: Everyone's Statistical Software," The Comprehensive R Archive Network (CRAN), http://gking.harvard.edu/zelig/ (accessed December 24, 2006).

\textsuperscript{48}All voting records for previous elections in Taiwan can be found on the website, http://vote.nccu.edu.tw/cec/vote4a.asp (Online Categories and Results of Elections in Taiwan); again, \textit{The Statistical Abstract of Individual Cities and Counties} (各縣市統計要覽) can be accessed from the website of Directorate-General of Budget, Accounting and Statistics, Executive Yuan, http://www.dgbas.gov.tw/mp.asp?mp=1.\textsuperscript{49}

\textsuperscript{49}For the measurements of various contexts, I employ the 2005 census of primary industries (agriculture, forestry, fisheries, and animal husbandry) as a measurement of modernization/development in the local economic context, as it is expected that higher degrees of primary-industry activity represent lower levels of modernization. Also, statistics on college-level education in different townships are provided. For the 2005 census of primary industries, see the website of National Statistics, R.O.C. (Taiwan), http://www.stat.gov.tw/ct.asp?xItem=18472&ctNode=55; again, for the political context captured by the concept of political blocs, I use the results of the 2004 presidential election to serve as an indicator of the degree of KMT or DPP support in each township; finally, I employ Fu-chang Wang’s definitions and measurements to identify “ethnic” townships in Taiwan. According to his criteria, there are 42 townships with a high concentration of Hakka, 193 with a high concentration of Minnanren, and 21 that are predominantly mainlanders. By his definition, the Minnan areas are those where Minnan people constitute more than 90 percent of the entire population or where the population of the other ethnic groups is lower than the national average. The mainlanders (or Hakka) areas are defined as those that are more than 20 percent mainlanders (or Hakka). See Fu-chang Wang, "A Survey of the Social Foundation of Ethnic Relations in Taiwan" (Report to the National Science Council by the Institute of Sociology, Academia Sinica, in Chinese, 2000), 10.
the MCMC (Markov Chain Monte Carlo) method to generate the parameters, which are the percentages of split voting conditioned on the choice of presidential candidate in each township. Second, I set these region-based parameters as the dependent variable, and conduct multiple regression analyses with the independent variables for social contexts so as to compare the regional variance of split-voting behavior across the townships. Finally, it should be noted that this paper, while focusing chiefly on referendum issue no. 5 (joining the UN under the name of "Taiwan"), presents the results of referendum issue no. 6 for cross reference, so as to display the consistency of characteristics for referendum voting in 2008.

**Findings**

How do Taiwanese make a decision on a referendum? With regard to the case of the 2008 presidential election, which involved a referendum as well, did partisan politics cause the large gap in turnout between the referendum and the election? In seeking to answer these questions, this paper first presents estimates of the percentages for the scenarios of straight and split voting by using Wakefield's hierarchical method of ecological inference. In order to confirm the estimated consistency of the aggregate data, the results from the survey data are also displayed in Table 4.

In the 2008 case, there is an obvious association between Taiwanese voters' choice of presidential candidate and their choice in the referendum. According to the estimation results from the aggregate data, about 7.9 percent of voters who voted for the KMT candidate picked up a referendum ballot, while around 3.2 percent of voters who voted for the DPP candidate did not participate in the referendum. By definition, these voters exhibited

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50 The author does not provide the standard error for the estimation of ecological inference, because the standard errors estimated are across township. Namely, every two estimated parameters in one township by means of the MCMC simulation generate standard errors by themselves. Moreover, the estimated parameters under the hierarchical methods generate the joint frequencies rather than the joint proportions. Therefore, it is meaningless to combine the standard errors across township for statistical analysis.
Table 4  
**Straight & Split Voting: A Comparison of Aggregate Data and Survey Data**

<table>
<thead>
<tr>
<th></th>
<th>Turnout</th>
<th>Non-turnout</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KMT</td>
<td>7.9%</td>
<td>92.1%</td>
<td>7,658,725 (7,658,724)</td>
</tr>
<tr>
<td>DPP</td>
<td>96.8%</td>
<td>3.2%</td>
<td>5,445,237 (5,445,329)</td>
</tr>
<tr>
<td>Total</td>
<td>5,881,621 (5,881,589)</td>
<td>7,222,341 (7,222,374)</td>
<td>13,103,962 (13,103,963)</td>
</tr>
<tr>
<td>Survey Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KMT</td>
<td>17.5%</td>
<td>82.5%</td>
<td>884</td>
</tr>
<tr>
<td>DPP</td>
<td>92.0%</td>
<td>8.0%</td>
<td>525</td>
</tr>
<tr>
<td>Total</td>
<td>45.3 (638)</td>
<td>54.7 (771)</td>
<td>1,409</td>
</tr>
</tbody>
</table>

**Notes:**
1. Total cases of aggregate data are 368, and those of survey data are 1,905.
2. In the aggregate data, total frequencies are estimated; frequencies in parentheses represent actual statistics.

split-voting behavior. In contrast, the percentages of straight voting among KMT and DPP voters were 92.1 and 96.8, respectively. Again, we find that DPP voters seemed to be more consistent than KMT voters in following their party's line on the referendum, as demonstrated by the lower percentage of split voting among DPP voters. Even so, over 90 percent of KMT voters decided not to pick up a referendum ballot and followed their party's call (dating back to 2004) for a boycott, although some KMT elites took an ambiguous position on the referendum in the final stages of the 2008 campaign.

A similar pattern of referendum voting is apparent from the evidence of the survey data.51 Although about one-fourth of the survey respondents are missed by the exclusion from the questionnaires of voting choices and

51I use data from the survey conducted after the 2008 presidential election, delivered from the project of Taiwan's Election and Democratization Study (TEDS). It is the 2008 sub-project for the 2008 presidential election (TEDS2008P) (NSC 96-2420-H-004-017). The coordinator of the multi-year TEDS project is Professor Chi Huang (National Chengchi University). More information can be found on the TEDS website (http://www.tedsnet.org).

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referendum participation, whether the respondents decided to pick up a referendum ballot or not was still significantly conditioned on the presidential candidate for whom they voted. Besides, the higher percentage of split-voting behavior among KMT voters than among DPP voters (the same finding as that from the aggregate data) also highlights the reliability of ecological inference. In short, the results as anticipated show that inter-party division was indeed the main cause of low turnout rates in the 2008 referendums.

In order to further compare the patterns of referendum voting among KMT and DPP voters, Figure 1 plots the distribution of townships relative to the conditional percentages of split voting. The median percentages (middle values) of split voting for the KMT and the DPP are 5.0 and 2.4 percent, while the standard deviations are 3.4 and 16.1 respectively. The percentages of DPP voters are, as mentioned above, lower on average, but less concentrated than those of KMT voters by region. In other words, the referendum turnout of DPP voters seems to have varied across regions much more than that of KMT voters.

How can one rigorously explain these variations in split voting? Rather than relying on individual-level arguments from survey data, this paper asserts that social context tends to capture how split-voting behavior among KMT and DPP voters varies according to regional differences. The author has constructed two multiple regression models, specified by the aforementioned exploratory hypotheses. The continuous independent variables (primary industries, attainment of college-level education, and the degree of KMT or DPP support in the geographical regions) have been weighted by centering, so as to make the intercept more meaningful.\textsuperscript{52} Taking KMT voters’ split-voting behavior for example, j represents the number of independent variables, while there are k number of continuous variables among them. After centering, the intercept thus represents the mean percentage for split voting in townships that are average in terms of

Figure 1
Split Voting of KMT and DPP Voters across Townships

Split voting of KMT voters (percentage)

Split voting of DPP voters (percentage)
primary industries, educational attainment, and KMT support. The equation is given by

$$Y_i = \beta_0 + (X_{ij} - \bar{X}_j) \beta_j + e_i$$

Table 5 presents multiple-regression-model estimates of KMT and DPP voters' responses to referendum issue no. 5, "joining the UN under the name of 'Taiwan'." By and large, the model specification based on the characteristics of social context can significantly explain the regional variation in split voting among both KMT and DPP voters, and the goodness of fit statistics (Adjusted $R^2$) show that the specification fits the data fairly well.\(^{53}\) Across all the townships in Taiwan, the intercepts confirm the ex-

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\(^{53}\)Statistically speaking, $R^2$ is a measure that represents the degree of variation of the dependent variable that the model can explain. In social science research, 0.376 and 0.722 are identified as acceptable.
pectation that the percentage of DPP voters who split their votes was lower than the percentage of split-voting KMT voters. The mean percentages of split voting among KMT and DPP voters are estimated at 8.57 and 3.74 percent respectively while all the contextual variables are controlled.

Various types of social context are included in the analysis. First, no matter which candidate is chosen, the politically supportive context strengthens voters' consistent political actions on referendum turnout. Holding constant all other variables, if in the 2004 presidential election, regional votes had increased 1 percent for the KMT and the DPP, the percentages of split voting in 2008 would have decreased 0.06 and 0.64, respectively, on average across the townships. That indicates that the increasingly politically supportive context helped decrease the degree of split voting regardless of whether the voters were KMT or DPP supporters. Indeed, the context of political support determines the direction and the intensity of mainstream public opinion in a region and constrains what kinds of information the voters can access in local areas. The results support the assertion of a politically supportive context as indicated.

The effects of economic development contexts on referendum voting highlight the consequences of economic modernization. The coefficient of agriculture and forestry is negatively correlated with split voting in the KMT voters model, but it is positively correlated with split voting in the DPP voters model. In other words, in a region with relatively high levels of industrial modernization, voters would have been more likely to pick up referendum ballots in 2008, regardless of which presidential candidate they preferred. As anticipated, industrial modernization not only represents changes of social production, but also leads to a rise in self expression among individuals. Therefore, an individual residing in an industrial area with high living standards would be more independent and autonomous in exercising his or her political right to participate in referendums than would an individual residing in a non-industrial area with low living standards.

Economic modernization also leads to higher educational attainment, which in turn improves people's ability to receive and interpret political information. In this sense, the consequences of whether or not party leaders held consistent positions during the 2008 campaign would be more likely
to surface in a region populated by well-educated people than in a region populated by people with low levels of educational attainment. As the results of this study show, when region-based attainment of college-level education increases by 1 percent, KMT voters split voting increases by 0.15 percent and DPP's voters split voting decreases by 0.53 percent. In summary, the effects of economic development context contributed to split voting by KMT voters but to straight voting by DPP voters. A rise in self expression and an improvement in information updating might account for this.

Compared to the diffused effects of political and economic contexts, ethnic context accents the characteristics of ethnic-based clusters in Taiwan. The author has set up ethnic-neutral townships as a reference group to present the influence of ethnic concentration on referendum voting. Holding constant all other variables, on average, split voting among KMT and DPP voters in Hakka townships is 1.60 and 2.86 percent lower than in ethnic-neutral townships; meanwhile, KMT voters' split voting in main-

### Table 6

**Multiple Regression Models of Issue No. 6 "Returning to the UN"**

<table>
<thead>
<tr>
<th></th>
<th>Model 1 KMT voters</th>
<th>Model 2 DPP voters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>6.25</td>
<td>4.37</td>
</tr>
<tr>
<td>Political support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KMT &amp; DPP</td>
<td>-0.03</td>
<td>-0.43</td>
</tr>
<tr>
<td>Economic development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture and forestry</td>
<td>-0.04</td>
<td>0.06</td>
</tr>
<tr>
<td>College attainment</td>
<td>0.15</td>
<td>-0.59</td>
</tr>
<tr>
<td>Ethnic cohesion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hakka townships</td>
<td>-1.36</td>
<td>-1.85</td>
</tr>
<tr>
<td>Minnan townships</td>
<td>0.18</td>
<td>0.36</td>
</tr>
<tr>
<td>Mainlander townships</td>
<td>-2.88</td>
<td>-0.07</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>0.529</td>
<td>0.678</td>
</tr>
<tr>
<td>F-value</td>
<td>67.766***</td>
<td>126.167***</td>
</tr>
<tr>
<td>Cases</td>
<td>358</td>
<td>358</td>
</tr>
</tbody>
</table>

**Note:** ***p < .001; **p < .01; *p < .05 (Two-tailed test).**
lander townships is lower than in ethnic-neutral townships. In other words, the Hakka context decreases the incidence of split-voting behavior among both KMT and DPP voters, while the mainlander context has a significant effect only on KMT voters. As indicated, the Hakka communities in Taiwan are generally thought to have a high level of cohesion. It is assumed that the more intensive personal interactions are within a community, the greater the social sanctions on individuals. The results indicate that the effects of internally cohesive Hakka contexts might strengthen the likelihood of voters in that context making generally consistent decisions about political actions. In this sense, one would expect to find a similar pattern with regard to politically supportive context. Also, given the historical roots of ethnic difference and changes in Taiwan's political landscape after 2000, the DPP platform's emphasis on Taiwanese consciousness might be expected to have heightened mainlanders' awareness of a threat from within Taiwan but from outside the mainland ethnic group. In these circumstances, mainlanders would be likely to intensify their opposition to the DPP on the basis of perceived self-protection and ethnic division. Thus, the effects of cohesive context help create a situation where KMT supporters in a mainlander township would be more likely to abstain from a referendum. This situation not only reflects how political parties mobilize their supporters to actively participate in or passively boycott a referendum, but also implies how the rise of Taiwanese consciousness contributes to an increasing sense of group distinction by ethnicity, especially among mainlanders.

For cross reference, I also present estimates on another issue—referendum issue no. 6, "returning to the UN under the name of the 'Republic of China'." Comparing the results presented in Table 5 and Table 6, we find that the coefficients for the two referendum issues are fairly consistent with each other. Although the coefficient of DPP voters' split voting in Hakka townships is insignificant in Table 6, the negative value still corresponds to the result in Table 5 in terms of the coefficient's direction. In general, with the research focus being on split voting, the empirical findings lend strong support to the assertion that different types of social context affect Taiwan's referendum-voting behavior.
Conclusions and Reflections

This paper employs aggregate data to assess voting behavior in Taiwan’s referendums, via a case study of the 2008 presidential election/referendum and with a particular focus on regional differences in referendum turnout. Voters practiced straight or split-ticket voting in these polls indicates whether they tend to follow the position taken by the party they support. Using Wakefield's hierarchical method, this paper finds that the percentages of split voting are higher than those of straight-voting overall, because a significant partisan division has taken hold regarding referendum turnout since 2004. Moreover, adopting the approach of social context, this paper probes split-voting behavior by region and uses politically supportive context, economic development context, and ethnically cohesive context as the exploratory factors. It is found that the context of strong support for a particular party, or the context of specific ethnic cohesion (Hakka or mainlander groups) can systematically decrease the percentage of split voting. Meanwhile, the contextual factor of economic development highlights how people's levels of self-awareness and information updating differ across townships, a phenomenon that leads to regional variation in split-voting behavior.

Although this paper proves its exploratory hypotheses through a series of empirical analyses, it cannot avoid the basic limitations of such an approach. Regarding split-ticket behavior, scholars wonder whether, at the individual level, voters in general split their ballots intentionally.

Given the lack of local survey data, this paper has used aggregate data to draw inferences regarding voting in the referendum in question and to examine regional differences, so we cannot totally exclude theoretical individual-level disturbances from the estimated models. For example, we should not take it for granted that the higher proportion of KMT voters exhibiting split-voting behavior in well-developed regions was not at all

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54“Intentionally” here means voters consciously creating checks and balances through the result of an election. Unintentional factors are variables that affect voting behavior, such as weakening party identification and candidate evaluation.
intentional, because economic modernization and the rise in educational attainment that usually accompanies it could have sharpened voters' political sophistication. In this sense, the exploratory types of social context employed in this paper mostly emphasize the ways in which contextual effects strengthen an individual's voting behavior based upon his or her pre-determined political predispositions from the perspective of information transmission.

Even so, the above findings have important implications for our understanding of referendum-voting behavior and of ethnic politics in Taiwan, and indeed for future research into social contexts. Recently, the Executive Yuan's Referendum Review Committee (行政院公投審議委員會) rejected a proposal for a referendum on the Economic Cooperation Framework Agreement (ECFA, 兩岸經濟合作架構協議), requested by the Taiwan Solidarity Union (TSU, 台灣團結聯盟). The positions of the two main camps still reflect the debate over referendum-related procedural problems that have been simmering constantly since 2004.\(^{55}\) Even though referendum voting in Taiwan is engulfed in partisan politics, this paper reveals how contextual effects can encourage voters to participate in referendums, with the paper's special focus being on split-voting behavior.

Again, most previous studies on voting behavior chiefly examine the relationships between attitudes and behaviors—and do so by means of survey data; however, using aggregate data to make inferences is another practical way to probe local opinion. Based upon an examination of different types of social contexts, this paper provides an alternative approach to explaining voting behavior by regional difference. Such an approach is useful in light of recent developments. For instance, Taiwan's ethnically based political cleavage has recently grown more entrenched, due to a

\(^{55}\)Specifically, the DPP has argued that major policy changes should be subject to referendums, as specified in the constitution, and the DPP accused the KMT of pressurizing committee members to reach a certain decision in this case. The KMT responded by saying that its government would respect the people's right to participate in referendums as long as they were held legally and constitutionally. See Iok-sin Loa and Vincent Y. Chao, "ECFA referendum proposal rejected," Taipei Times, June 4, 2010, http://www.taipeitimes.com/News/front/archives/2010/06/04/2003474657 (accessed June 28, 2010).
myriad DPP-inspired measures and activities that have served to "de-Sinicize" Taiwan. These measures not only encourage the Minnanren to embrace an identification that shifts them toward the DPP camp on the basis of ethnic identity, but also sharpens mainlanders' sense that they need to ratchet up their pursuit of self-protection to oppose the DPP's maneuvers. This paper reveals yet more evidence of the sharpened ethnic divisions in Taiwan. Finally, we should also note that, rather than constituting a new concept, social context is a widely acknowledged fact—but it is rarely addressed in relation to voting patterns because the magnitude of its effect usually depends on the direction and strength of individuals' predispositions. This paper provides a basic presentation of the various types of contextual effects that play important roles in Taiwan.
Appendix
Descriptive Statistics of Contextual Effects

<table>
<thead>
<tr>
<th>Region</th>
<th>Economic development</th>
<th>Ethnic cohesion</th>
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Notes:
1. For ease of presentation, the descriptive statistics of contextual effects listed here are sorted by city/county, rather than by township as estimated in the multiple regression models.
2. The context of political support is measured by means of the results of the 2004 presidential election as this is an indicator of the degree of KMT or DPP support in each township. The context of ethnic cohesion here is the number of townships with a high concentration of one of the three ethnic groups of Taiwan in each county/city.
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