Taiwan elections predicted with computer simulations led by Shiping Tang
Jan. 11, 2016

A research team led by Shiping Tang, 2015-2016 Fulbright visiting professor at the UC San Diego School of Global Policy and Strategy's 21st Century China Program, released its computer simulation-based predictions for Taiwan's upcoming presidential and legislature elections. The results? The Democratic Progressive Party (DPP) is predicted to win 56.4 percent of the popular votes while Kuomintang (KMT) is predicted to hold 41.1 percent of the votes and the People First Party is left with 2.5 percent of the votes.

The predictions are the outcome of a yearlong computer simulation project conducted by Tang's team at Fudan University in Shanghai, where he is the Fudan Distinguished Professor and Director of the Center for Complex Decision Analysis.

In addition to the voting percentages, the findings also allude to two scenarios for Taiwan's legislative elections. Under a more optimistic scenario for the KMT, it is projected to win 48-53 seats out of a total 113 seats in the Legislative Yuan, while the DPP will win 50-55 seats. Under a less optimistic scenario for the KMT, the party is projected to win only 36-40 seats out of 113 while the DPP will win 63-67 seats.

While predicting presidential elections is relatively easy, predicting legislative elections with local complications and numerous seats contested has always been more challenging. This is so even when the polling data is of a high quality.

The method developed by Tang and his colleagues circumvents the need of having to rely on polling data. By creatively integrating several computer-based techniques, his team has developed an original agent-based modeling simulation platform that combines micro-level data about the voters and macro-level demographic, economic, political and social data. The whole simulation process does not need any input from public opinion polls. Tang is optimistic that with further refinement and improvement, their approach may one day transform the field of election prediction and electoral studies worldwide.
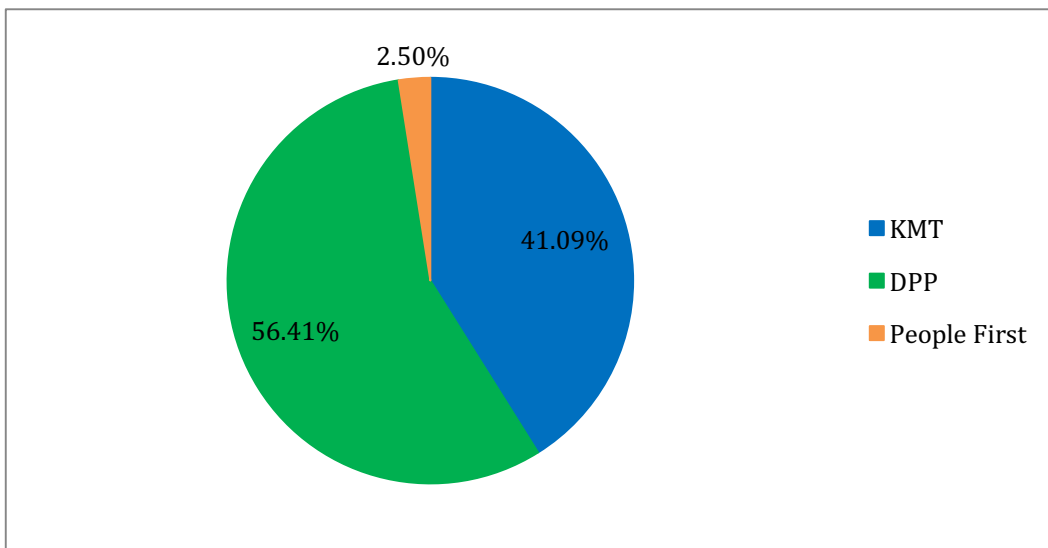
The team is releasing its predictions to the public domain several days before Taiwan's election on Jan. 16, 2016, providing students of elections the opportunity to check the predictions against actual voting results.

Computer simulation-based predictions
for Taiwan's 2016 presidential and legislature election

Presidential Election

Party	KMT (Kuomintang)	DPP (Democratic Progressive)	People First (Qinmintang)
Votes (%)	41.09%	56.41%	2.50%

Legislative "Li-Fa-Yuan" Elections

Scenario A (a more optimistic scenario for KMT)

Party or camp	KMT (Kuomintang)	DPP (Democratic Progressive)	Other parties	Total
No. of seats	48-53	55-50	10	113

Scenario B (a more pessimistic scenario for KMT)

Party or camp	KMT (Kuomintang)	DPP (Democratic Progressive)	Other parties	Total
No. of seats	40-36	63-67	10	113

Fig. 1: A Snapshot of the Simulation Platform in Action