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*Research article*

# Political Dynasties and Local Spending in Indonesia

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**Abstract:** Does political dynasty affect local spending in Indonesia? Only a few articles have taken up the political economy issues in Indonesia This study provides empirical analysis that focuses on explaining the effect of the political competition through dynasty winning in the mayoral election to the local spending that focuses on functional-classified expenditure at the district level. Using the Regression Discontinuity Design (RDD) estimation, this study examines whether the dynasty mayor has different trends in the way to spend local expenditure compared to the non-dynasty mayors. Due to the limited political competition, this study finds the magnitude effect of the dynasty mayor on local spending that used to drive the regional economy. Compared to the non-dynasty mayors on a separate sub-dataset, this study finds different effects of a dynasty between the incumbent and the non-incumbent dynasty mayor on local spending. The incumbent dynasty mayor negatively affects 'visible' expenditure' e.g., grant and social assistance expenditure, social protection expenditure, housing and public amenities expenditure, education expenditure, dan current expenditure. This study also finds negative effects of the political dynasty on local spending from the dynasty mayor elected during the period of simultaneous mayoral election (2015-2018).

**Keywords:** political dynasty, local spending, mayoral election, regression discontinuity design

**JEL Classification:** H11, H72, P43

**Abstrak:** Apakah kepemimpinan dinasti politik berdampak pada belanja daerah? Tidak banyak studi literatur yang mengangkat isu ekonomi politik di Indonseia. Studi ini menyajikan analisis empiris yang berfokus untuk memaparkan pengaruh kompetisi politik melalui terpilihnya kepala daerah dinasti dalam Pilkada terhadap belanja daerah menurut fungsi tingkat kabupaten/kota. Dengan menggunakan metode *Regression Discontinuity Design* (RDD), studi ini menguji apakah kepala daerah dinasti dibandingkan dengan kepala daerah non-dinasti memiliki kecenderungan yang berbeda dalam membelanjakan anggaran belanja daerah. Dengan adanya keterbatasan kompetisi politik, studi menemukan adanya pengaruh atas kepemimpinan kepala daerah dinasti terhadap belanja daerah yang digunakan untuk menggerakkan perekonomian. Estimasi pada sub-dataset terpisah, kepemimpinan kepala daerah dinasti petahana berdampak negatif pada belanja '*visible',* seperti belanja hibah dan sosial, belanja perlindungan sosial, belanja perumahan dan fasilitas umum, belanja pendidikan, dan belanja barang. Studi ini juga menemukan dampak negatif dari kepemimpinan kepala daerah dinasti yang terpilih Pilkada serentak (2015-2018).

**Kata kunci:** dinasti politik, belanja daerah, pemilihan walikota, desain diskontinuitas regresi

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## 1. INTRODUCTION

Decentralization emerges with the rise of political families in Indonesia. Delegated authorities and functions from central to local government motivate incumbent mayors to inherit their power in regions. Regulation that limits incumbent the mayor's reign to two terms encourages the incumbents to prepare their successors in the upcoming election. During the election year from 2005-2020, there are 444 pairs of dynasty candidates competing to be elected in the mayoral election in Indonesia. Setyaningrum & Saragih (2019) stated that political dynasty is related to

corruption because of the power to undertake the resources which can interfere with the checks and balances process in governance.

Susanti (2017) found on regional Indonesia's regional election that low regulation to restricts political dynasty is taking part on the rise of poitical dynasty in Indonesia. Rusnaedy et al. (2021) revealed the survey of public opinion about political dynasty in Indonesia. About 60% of respondents thought that was something identically bad when they heard about political dynasty. The result also describes that was about 58% of respondents agreed to restrict the families of officials/public figures running in regional elections. Formerly, The Indonesian government has attempted to reduce the negative impact of political dynasties by prohibiting incumbent dynasty families from participating in the upcoming elections. However, this regulation was challenged and canceled to provide political rights mandated by the Constitution (Aspinall, & As' ad, 2016). Family politics term is widely known among young democratic nations as stated in Yadav (2020). Political dynasties have intentions to use their authority to align their political agendas by power inheritance. A study by Garces et al. (2021) found higher expenditure in the local region led by dynasty officers before an election year. Liddle et al. (2022) found that the political dynasty does not require any better democratic performance in Indonesia.

Kenawas (2023) makes a qualitative description of the main factors that support the existence of political dynasties in Indonesia. This study found that the sequence of institutional changes over the democratic transition in 1998 is related to the massive growth of political dynasties in Indonesia. Fitriyah (2020) pointed out the imperfect political parties' recruitment system that requires funds and kinship that emerge from the political dynasties in Indonesia. Related to political dynasty issues, Guritno et al. (2018) observe that most dynasty mayors have fulfilled the local budget allocation compliance that is associated with poverty reduction in their region. In other studies, political dynasties have negative impacts on local government financial accountability (Setyaningrum & Saragih, 2019). The government's decision to create a local budget policy reflects the local government's performance in decentralization. The local budget is a consensus of revenue, expenditure, development plan, performance indicator, and coordination tools in government which is stated in local regulations approved by local legislative. Since a political dynasty can be found both at the executive and legislative levels of a district, it could interfere with the 'check and balance' process that keeps local budget planning accountable.

As their right to vote is exercised during the election, people can request improved public service delivery. Rowley (1997) said that Wittman's theory showed how democracy produces efficient results considering the voters' choice, political party competition, and government in policymaking. Policy assumed to maximize welfare as the equilibrium of voters' preference policy and the political agenda of candidates. The democratic system prevents the candidates' self-maximizing motivation that can reduce the welfare of society. The more political competition, the more optimal policy will be. In the political system, the candidates offer different interests by gaining electoral incentives in the mayoral election that will be implemented as a policy after being elected. Higher political competition leads to an optimum policy made by the government, that increases public spending for public good provision and leads to lower tax revenue in the short term because of higher tax incentives (Rezki, 2022). Related to political economy, Sjahrir et al. (2013) describe the political budget cycle at the district level during the direct mayoral election. Higher local expenditures and revenue are found as positive impacts of direct election in Indonesia to meet public demands, especially in the health sector (Skoufias et al., 2014). Related to the local budget that was commonly used as a political tool before the election, the Corruption Eradication Commission (KPK) in 2014 found a trend of the larger share of grant and social expenditure in the local budget during the mayoral election in 2011-2013.

This study questions: what are the effects of the dynasty status of the mayor on local spending at the district level? Compared to the non-dynasty mayor, do the dynasty mayors make optimum local spending in public good provision? These questions have not received certain empirical results in Indonesia. Previous studies that focus on this specific question have yielded quite various results. This study is conducted to enrich previous literature by observing the case of the political dynasty in Indonesia, one of the world's most decentralized and the third-largest

democratic country. This study constructs a unique database on direct mayoral elections and applies Regression Discontinuity (RD) methods to identify causal effects. To the unclear result of the effects of political dynasties on local spending in Indonesia, we take the dynasty status as treatment compared to the non-dynasty politician that is defined by winning margin in the mayoral election. This study chooses local spending as a variable to describe policy output.

This study examines a detailed sub-dataset to capture the heterogeneity of characteristics that may vary the estimation result. The study by Lewis et al. (2020) found that the incumbent dynasty is related to lower spending and has no effect on public service access, this study takes the incumbency status of the dynasty mayor to be estimated on the sub-dataset. The study from George & Ponattu (2018); Besley et al. (2010) resumed that the descendants of the former dynasty in the office have different effects on their office performance. Their study predicts that the descendants underperformed in office since they inherited electoral incentives from the former dynasty. This study uses a sub-dataset based on the implementation of simultaneous mayoral elections to capture the heterogeneity in the dataset. Solihah (2016) found that the implementation of the simultaneous direct mayoral election in Indonesia is related to transactional politics e.g., money politics or even pork-barrel politics leading to non-optimum public policy.

The facts that political dynasty is commonly found in Indonesia and have uncertain empirical results on local spending from the previous study, this study gives main contribution to political economy literature that focused on how the political dynasty affects the local spending in the districts level in Indonesia. Moreover, this study applies recently developed econometric techniques, Regression Discontinuity-Design (RDD), that play a significant role in studying cause and effect of relationship on the research. This study aims to observe the impact of dynasties on regional spending using direct mayoral election data from 2005 to 2018 which captures more of the impact of political dynasties on regional budget spending.

## 2. RESEARCH METHODS

Utilizing direct mayoral election data from 2005 to 2018, which better reflects the influence of political dynasties on regional budget spending, to examine the effect of political dynasties on regional spending, this study utilized the Regression Discontinuity Design (RDD) method, we keep 222 elections at the district level which consisted of the dynasty and the-non dynasty at the winner and runner-up position. This running variable takes values between -1 and 1, which indicates the dynasty candidate as a mayor elected for the positive value, and the non-dynasty candidate as a mayor for the negative value. We use the second-year after-election (t+2) local consisted of total expenditure, capital expenditure, current expenditure, grant, and social assistance expenditure, and functional-classified regional expenditures e.g., (1) general public services; (2) defense; (3) public order and safety; (4) economic affairs; (5) environment protection; (6) housing and community amenities; (7) health; (8) recreation, culture, and religion; (9 )education; and (10) social protection expenditure as outcome variables in the estimation.

To get robust RDD estimation, we occupy covariates related to districts and mayoral characteristics using the pre-election year $(t-1)$ value. Covariates used in this study are: age of mayor, dummy incumbency status (1 = for incumbent dynasty, and 0 for non-incumbent dynasty), the role of dynasty politician in the districts (1 = for the mayor, and 0 = for the vice mayor), population area, poverty rate, GRDP per capita, transfer to local government per capita, local own-source revenue per capita, party affiliation (1 = if mayor affiliated with political parties in government coalition; 2 = if mayor elected affiliated with political parties non-government coalition; 3 = if mayor elected affiliated with combined political parties in government coalition and non-government coalition; 4 = if mayor elected was independent candidate; and 5=if mayor elected affiliated with local political party), audit opinion (1 = disclaimer; 2 = adverse; 3 = qualified; 4 = unqualified with explanatory paragraph and 5 = unqualified), java (dummy variable for district located in Java = 1, otherwise is 0), and average of public services access (average of five variables: junior and senior secondary school net enrolment rates, percentage of births attended by a health professional, and household access to water and sanitation).

### *2.1. Data*

The presentation of data describes it systematically (with sub-section headings), starting with the research data (making a table that presents symbols, descriptions, measurements, and data sources (if secondary data) or if proxy data, ratios, or dummy data must be mentioned source of the article). After that, describe the research location and/or object, if the data type is primary data (please mention the sampling technique, how to determine it, and the number of samples. There were 12 rounds of the mayoral election that consisted of 1,828 mayoral elections held in Indonesia. As a focus, there are 1,732 direct mayoral elections held at the district level around the period. The list of candidates and the election vote shares results are compiled from the General Election Commission (KPU) and Constitutional Court statement.

**Figure 1.** Political Dynasty by Districts on Mayoral Election 2005-2008
**Source:** Authors' calculation

This study defined political dynasty that focused on family relationships by marital, vertical lineage, or extended member of the family as stated by Kenawas (2023). Published data from the media, previous studies, and candidates' profile data from the KPU and Ministry of Home Affairs of Indonesia are compiled to get the dynasty data in the mayoral election. In 2013, Prof. Djohermansyah Djohar, former Director General of Regional Autonomy - the Ministry of Home Affairs, stated that 58 mayors in Indonesia were identified as dynasty politicians from 2005-2014. Fadhillah et al. (2020) from Nagara Institute conducted published research that identified 124 candidates participating in the mayoral election in 2020. As a result, this study found that 444 candidates who identified as dynasty politicians participated in the mayoral election on the province and district levels.

**Figure 2**. Political Dynasty by Districts on Mayoral Election 2010-2013
**Source:** Authors' calculation

Figure 1 shows 27 districts that are identified as the districts with dynasty politicians taking part in mayoral elections from 2005-2008 located in Aceh, North Sumatera, South Sumatera, Jambi, Lampung, Banten, West Java, Central Java, East Java, East Kalimantan, Central Sulawesi, South Sulawesi, Southeast Sulawesi, and West Nusa Tenggara. The number of candidates identified as dynasty is increased by the time the implementation of local democracy in Indonesia. Figure 2 identifies the increasing number of candidates in the mayoral election from 2010-2013. There are 75 candidates identified as dynasty politicians who took part in 74 mayoral elections at the district level. Kediri has two candidates identified as dynasty who competed as s rival in the election.

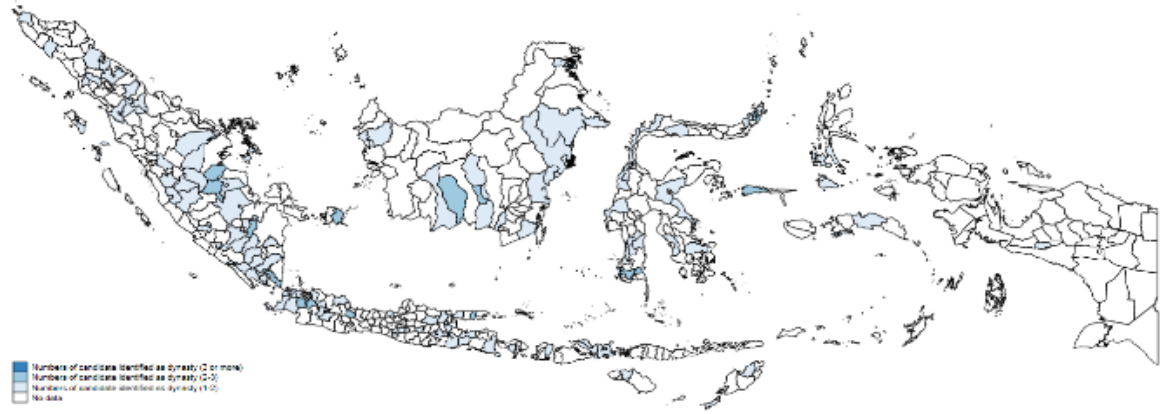

**Figure 3.** Political Dynasty by Districts on Mayoral Election 2015-2018
**Source:** Authors' calculation

From the mayoral election held in 2015-2018, Figure 3. Political Dynasty by Districts on Mayoral Election 2015-2018 shows 160 candidates identified as dynasty politicians that took part in 144 mayoral elections at the district level in all provinces in Indonesia, except West Papua. From the latest mayoral election held in 2020, there are 135 candidates identified as dynasty politicians to compete in 105 mayoral elections at the district level. About 24 districts have more than one dynasty candidate competing as rivals described with darker shades in Figure 4.

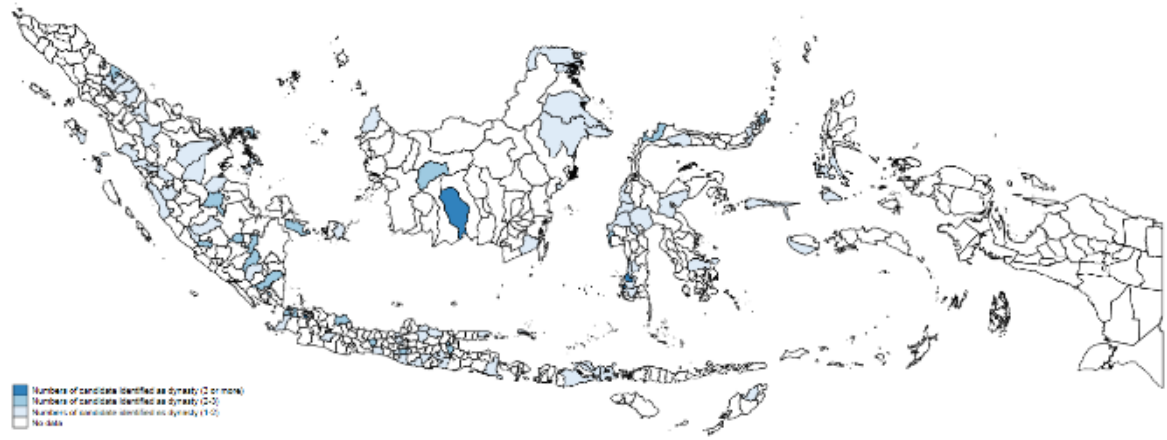

**Figure 4.** Political Dynasty by Districts on Mayoral Election 2020
**Source:** Authors' calculation

Data on local spending is collected from the Ministry of Finance. Total expenditure, capital expenditure, current expenditure, grant, and social assistance expenditure, and functional-classified (Classification of the Functions of Government-COFOG) regional expenditures are used in the estimation. Outcome variables used in this study are the second year after the election $(t + 2)$ value to keep the optimum size of observation and get the unbiased outcome from previous term governance on $(t + 1)$ budget realization value. From the preliminary estimation, this study finds no significant effect of political dynasties on first-year local spending.

### 2.2. Model

The specification of general model in Regression Discontinuity Design (RDD) estimation used in this study as follows:

$$y_{ij} = \tau d_{ij} + g(x_{ij}) + \mu_{ij} \quad (1)$$

where, $y_{ij}$ explains the outcome variable composed by the effect of the dynastic mayor on outcome variables; $\tau$ is a treatment where value is 1 if the candidate subjected to treatment (dynastic) wins the election; $d_{ij}$ is a polynomial function of some (yet) unspecified degree of winning margin (running variable $g(x_{ij})$, and $\mu_{ij}$ is error term).

The treatment effect estimation model describes the causal impact of dynastic mayor status in the region. Statistically, a significant value is expected if the dynasty status affects the outcome variables. RD-Design estimation requires a running variable and a cut-off which divides the sample into treatment and control groups (Cattaneo et al., 2020). This method assumed the assignment units in the neighborhood around the cut-off were as good as random. The running variable in this study is set as the difference of vote shares between the winner and runner-up of each election which can take any value between −1 and 1 at cut-off $(c) = 0$. The positive value is set for the dynasty candidates elected as mayor, and the negative value is for dynasty candidates who lose the election. Dynasty politicians are randomly set to have positive and negative values based on the published election results. Negative margin share on the estimation refers to the non-dynasty mayor who gets elected as mayor.

Since $y_{ij}$ (0) is the potential outcome for candidate $i$ in district $j$ which is placed in the control group or left (non-dynastic) and $y_{ij}$ (1) is the potential outcome for candidate $i$ in district $j$ which placed in treatment group/right (dynastic). The dummy variable differentiates if the dynastic candidate is elected (valued as $d_i$ = 1). Hence $x_i$ is stood for the margin of the best dynastic candidate, therefore,

$$d_i = 1[x_i > 0] \quad (2)$$

Since $y_{ij}$ (0) is the outcome variable of lead the region by the non-dynastic mayor and $y_{ij}$ (1) is the outcome variable of lead the region by the dynastic mayor, the treatment effect ($\tau$) at the threshold (cut-off),

$$\text{where, } x_i = c = 0 \text{ is } \tau = \mathrm{E}[y_{ij}(1)] - y_{ij}(0)|x_i = c] \quad (3)$$

Assumed that the threshold cannot be manipulated where $E\,[y_{ij}(1) \mid x_{ij}]\; and\; E\,[y_{ij}(0) \mid x_{ij}]$ are continuous as running variables at the cut-off (threshold of 0) and there is no discontinuity in other potential confounding factors around the threshold, the effect of the dynasty can be estimated as a Local Average Treatment Effect (LATE), corresponding to the discontinuity of the observed variable at the threshold using RDD. Generally, estimation in this study is adopted from Garces et al. (2021); Dulay & Go (2021); and Lewis (2020) use polynomials of degrees one and two with optimal data-driven bandwidth to minimize the Mean-Square Error (MSE) around the threshold.

## 3. RESULTS AND DISCUSSION

### 3.1. Descriptive Statistics

The observation of objects on the dataset identifies about 78.4 percent of dynasty candidates were elected as winners of the election. Table 1 provides the descriptive statistics for district data grouped by dynasty and non-dynasty status. Column 4 shows the different means groups of districts led by dynasty and non-dynasty mayors. The significant difference was found 54.5 percentage points higher in log grant and social assistance expenditure per capita of districts led by dynasty mayor, corresponding to 4.6 percent higher relative to the mean (0.545/11.844 ≈ 4.6

percent). Districts led by dynasties have fewer incumbent mayors than non-dynasties districts. Though a significant difference was found in grant expenditure per capita, this difference does not represent the causal effects of the dynastic mayor in outcome variables.

**Table 1.** Mayor Descriptive Statistics

| Variables | Mayor type | | | Diff. |
|---|---|---|---|---|
| | all | dynasty | non-dynasty | (2)-(3) |
| | (1) | (2) | (3) | (4) |
| | mean (sd) | mean (sd) | mean (sd) | est. (s.e) |
| **main explanatory variable** | | | | |
| *dynasty mayor* | 0.784 | 1.000 | 0.000 | -1.000 |
| | (0.413) | (0.000) | (0.000) | (0.000) |
| **running variables** | | | | |
| *winning margin on election* | 0.148 | 0.207 | -0.064 | -0.271*** |
| | (0.245) | (0.226) | (0.188) | (0.032) |
| **outcome variables** | | | | |
| *log total expenditure per capita* | -8.112 | -8.141 | -8.007 | 0.134 |
| | (.717) | (0.695) | (0.790) | (0.126) |
| *log general and public service expenditure per capita* | -9.470 | -9.499 | -9.364 | 0.135 |
| | (0.831) | (0.829) | (0.836) | (0.136) |
| *log local own-source revenue per capita* | -10.424 | -10.449 | -10.331 | 0.119 |
| | (0.867) | (0.835) | (0.977) | (0.155) |
| *log capital expenditure per capita* | -9.591 | -9.640 | -9.413 | 0.227 |
| | (0.823) | (0.838) | (0.745) | (0.125) |
| *log current expenditure per capita* | -9.439 | -9.485 | -9.269 | 0.216 |
| | (0.952) | (0.953) | (0.939) | (0.154) |
| *log grant and social assistance expenditure per capita* | -11.884 | -12.002 | -11.458 | 0.545** |
| | (1.184) | (1.162) | (1.180) | (0.192) |
| *log education expenditure per capita* | -10.096 | -10.127 | -9.983 | 0.144 |
| | (0.926) | (0.932) | (0.905) | (0.148) |
| *log health expenditure per capita* | -11.938 | -11.989 | -11.756 | 0.233 |
| | (1.311) | (1.295) | (1.365) | (0.220) |
| *log social protection expenditure per capita* | -13.236 | -13.276 | -13.092 | 0.184 |
| | (1.255) | (1.266) | (1.219) | (0.207) |
| *log public order and safety expenditure per capita* | -10.149 | -10.145 | -10.166 | -0.021 |
| | (1.631) | (1.654) | (1.565) | (0.259) |
| *log recreation and culture expenditure per capita* | -10.891 | -10.874 | -10.953 | -0.079 |
| | (1.874) | (1.841) | (2.006) | (0.322) |
| *log house & public amenities expenditure per capita* | -10.844 | -10.885 | -10.697 | 0.188 |
| | (0.907) | (0.923) | (0.838) | (0.140) |
| *log economic affair expenditure per capita* | -11.886 | -11.953 | -11.643 | 0.309 |
| | (1.555) | (1.483) | (1.787) | (0.281) |
| *log environment expenditure per capita* | -12.554 | -12.586 | -12.438 | 0.148 |
| | (0.971) | (0.999) | (0.865) | (0.146) |
| **Covariates** | | | | |
| *age of mayor* | 47.689 | 48.414 | 45.063 | -3.351* |
| | (9.675) | (9.882) | (8.466) | (1.433) |
| *years of education (mayor)* | 16.629 | 16.682 | 16.500 | -0.182 |
| | (2.461) | (2.428) | (2.550) | (0.315) |
| *Incumbency* | 0.378 | 0.425 | 0.208 | -0.217** |
| | (0.486) | (0.496) | (0.410) | (0.070) |
| *role (position) as mayor* | 0.901 | 0.914 | 0.854 | -0.060 |
| | (0.299) | (0.281) | (0.357) | (0.056) |
| *log population* | 4.746 | 4.730 | 4.806 | 0.076 |
| | (0.953) | (1.000) | (0.765) | (0.134) |
| *log area* | 7.155 | 7.184 | 7.050 | -0.134 |
| | (1.472) | (1.483) | (1.441) | (0.237) |
| *poverty rate (p0)* | 0.115 | 0.114 | 0.117 | 0.003 |
| | (0.064) | (0.063) | (0.067) | (0.011) |
| *log grdp per capita* | -3.992 | -4.013 | -3.914 | 0.099 |
| | (0.955) | (0.991) | (0.820) | (0.140) |

| Variables | Mayor type | | | Diff. |
|---|---|---|---|---|
| | all | dynasty | non-dynasty | (2)-(3) |
| | (1) | (2) | (3) | (4) |
| | mean (sd) | mean (sd) | mean (sd) | est. (s.e) |
| *log transfer to local government per capita* | -7.928 | -7.913 | -7.982 | -0.068 |
| | (1.463) | (1.554) | (1.078) | (0.195) |
| *opinion (BPK)* | 3.618 | 3.591 | 3.708 | 0.117 |
| | (1.196) | (1.223) | (1.110) | (0.187) |
| *log own source revenue per capita* | -10.814 | -10.695 | -11.244 | -0.549 |
| | (1.735) | (1.049) | (3.139) | (0.460) |
| *Java* | 0.239 | 0.259 | 0.167 | -0.092 |
| | (0.427) | (0.439) | (0.377) | (0.064) |
| *party affiliation* | 2.635 | 2.580 | 2.833 | 0.253 |
| | (0.865) | (0.827) | (0.975) | (0.253) |
| *average of public service access* | 76.164 | 75.579 | 78.270 | 2.691 |
| | (12.938) | (13.631) | (9.889) | (1.764) |
| *observations (N)* | 222 | 174 | 28 | 222 |

**Note:** Standard errors in parentheses; significance level*** p<0.01, ** p<0.05, * p<0.1
**Source:** Authors' calculation

The dynasty winning margin in the mayoral election in Indonesia is convinced to be random since the election system in Indonesia facilitates the suits for any manipulative vote share to be judged by the Constitutional Court. Data used in this study also used the final Constitutional Court statement vote share result to calculate the final winning margin share. To provide an unbiased RDD estimation for the treatment, density tests are conducted to observe potential sorting around the cutoff.

**Table 2.** Pre-determined Covariates Balanced test

| Variables | MSE-Optimal bandwidth | Effective Obs. | RD Estimator (τ) | Robust Inference | | |
|---|---|---|---|---|---|---|
| | | | | p-value | Conf. Interval | |
| log area | 0.168 | 132 | 0.545 | 0.514 | -1.027 | 2.053 |
| log population | 0.095 | 89 | -0.258 | 0.424 | -1.099 | 0.462 |
| poverty rate | 0.206 | 150 | 0.028 | 0.583 | -0.067 | 0.119 |
| Age | 0.100 | 94 | 3.400 | 0.344 | -4.141 | 11.880 |
| position (role) | 0.100 | 94 | 3.400 | 0.168 | -0.159 | 0.912 |
| Incumbency | 0.086 | 82 | 0.273 | 0.168 | -0.290 | 0.712 |
| log grdp per capita | 0.098 | 91 | -0.426 | 0.442 | -1.123 | 0.490 |
| log transfer per capita | 0.112 | 89 | 0.704 | 0.352 | -0.587 | 1.651 |
| opinion (BPK) | 0.101 | 87 | 0.275 | 0.417 | -0.690 | 1.667 |
| Java | 0.091 | 84 | -0.039 | 0.284 | -0.562 | 0.405 |
| party affiliation | 0.116 | 104 | -0.669 | 0.284 | -1.892 | 0.554 |
| log revenue per capita | 0.097 | 91 | -1.403 | 0.223 | -4.367 | 1.017 |
| access of public service | 0.100 | 94 | -3.985 | 0.784 | -16.551 | 12.497 |

**Note:** Standard errors in parentheses; significance level*** p<0.01, ** p<0.05, * p<0.1
**Source:** Authors' calculation

As suggested by (Cattaneo et al., 2018), this observation uses rddensity as a test to manipulate using Local Polynomial Density Estimation on the dataset. In RDD estimation, rddensity implements manipulation testing procedures using the local polynomial density estimators, as proposed in Cattaneo et al (2020). This tool also implements graphical procedures with valid confidence bands using the results as used in Cattaneo et al (2022). The command provides complementary manipulation testing based on finite sample exact binomial testing following the results. The rddensity test and plot are conducted to check the validity of the hypothesis that the running variable continues around the cut-off. In this observation, the rddensity test gives an estimated difference (T) of 1.2481 in the density at the cutoff (p-value 0.2120), therefore RDD can be used as the estimation method in this study.

We also conducted a pre-determined balanced test of covariates which is described in Table 2. The pre-determined balance test shows that all point estimates are small and robust at 95%

confidence, with p-values ranging from 0.168 to 0.975. It is confirmed that these pre-determined covariates have no discontinuity at the cut-off (c=0).

### *3.2. Empirical Results*

RDD is set as the primary method to estimate the impact of the dynasty status of the mayor at the district level on local spending as outcome variables. Due to the limitation of local spending data for the latest election, observation is kept for the election from 2005-2018 including the dynastic candidates and two-years-after (t+2) spending data from 2007 to 2020. The latest mayoral election held in 2020 is excluded from the dataset since the second year after the election (t+2) data of outcome variables for 2022 are not available yet. As standard practice in the RDD method, we present visual evidence of discontinuities around the cut-off before conducting the RDD estimation.

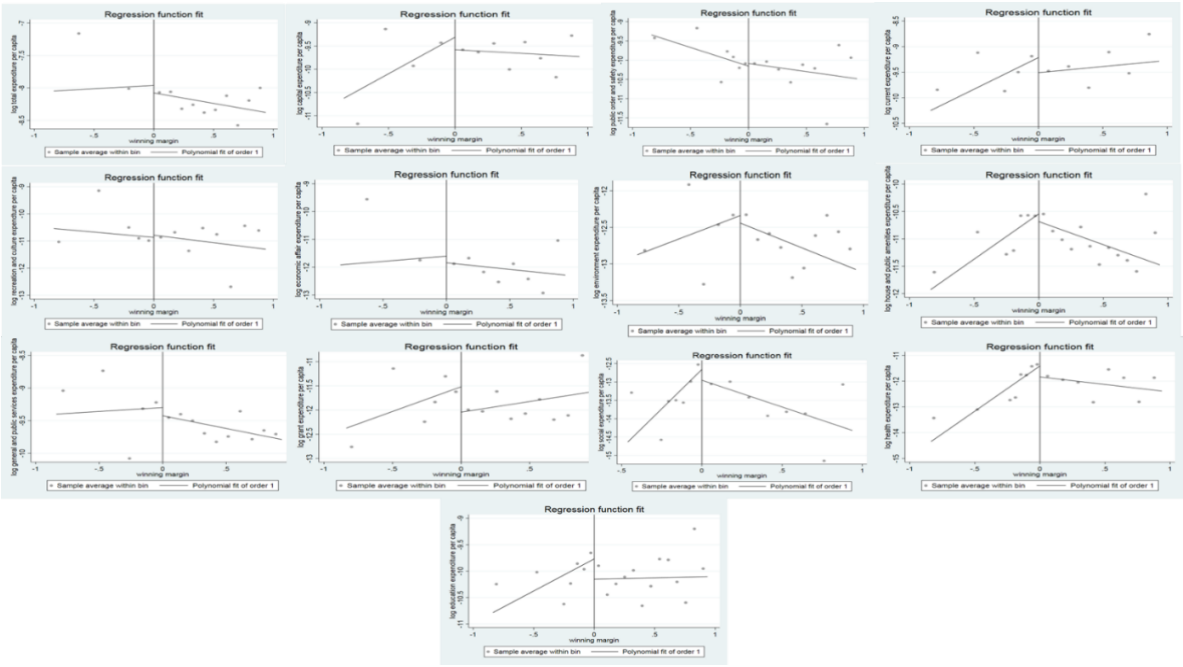


**Figure 5**. The results of RD-Plot of outcome variables
**Source:** Authors' calculation

Figure 5 shows a negative jump around the cutoff for most outcome variables to dynasty winning margin (excluding public safety and order per capita and recreation and culture expenditure per capita). For the left variables, public order, and safety expenditure per capita and recreation and culture expenditure per capita, positive jumps are found around the cutoff. Estimation is established to capture the treatment of having a dynasty mayor to the local spending at the district level.

To compare the impact of outcome variables captured on the number of observations, Table 3 shows the OLS estimation for the average treatment effect of observations and the RDD estimation for the Local Average Treatment Effect of the observations. The RDD estimation is expected to perform better than the OLS estimation since the conventional OLS confidence interval ignores the bias term (Cattaneo et al., 2018). Table 2 shows no significant result found consistent with the OLS and the RDD estimation. Significant results are found separately in both regression methods. Starting with the OLS regression, the significant negative coefficient is found on the education expenditure as (-0.251) as the difference between the outcome mean of the treatment (dynasty) group: (-10.145) and the outcome mean of the control (non-dynasty) group: (-9.893). Thus, the impact of the dynasty mayor represents 2.54% (-0.251/-9.893x100≈2.54) lower relative to the control mean. From the RDD estimation, the negative significant RD effect in the total expenditure at p(2) estimation is -0.585 representing 7.87% (-0.585/-7.432x100≈7.87) lower relative to the control mean.

**Table 3**. Dynastic Impact on Local Spending

| Outcome var (log p.c) | obs. | OLS | | | RDD-Estimation | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | p(1) | | | p(2) | | |
| | | bw(h) | τ | p | bw(h) | τ | p | bw(h) | τ | p |
| total exp. p.c. | 222 | 1.000 | -0.156 | 0.123 | 0.108 | -0.185 | 0.590 | 0.108 | -0.585 | 0.082* |
| | | | (0.113) | | | (0.286) | | | (0.384) | |
| capital exp. p.c. | 222 | 1.000 | -0.130 | 0.328 | 0.107 | 0.143 | 0.743 | 0.149 | 0.177 | 0.781 |
| | | | (0.119) | | | (0.400) | | | (0.505) | |
| current exp. p.c. | 222 | 1.000 | -0.100 | 0.154 | 0.12 | -0.100 | 0.930 | 0.15 | (0.111) | 0.79 |
| | | | (0.139) | | | (0.458) | | | (0.596) | |
| grant & social assistance | 222 | 1.000 | -0.350 | 0.202 | 0.12 | 0.084 | 0.802 | 0.153 | 0.267 | 0.814 |
| | | | (0.212) | | | (0.762) | | | (1.033) | |
| education exp. p.c. | 222 | 1.000 | -0.251 | 0.020** | 0.115 | -0.105 | 0.829 | 0.175 | (0.082) | 0.774 |
| | | | (0.134) | | | (0.285) | | | (0.335) | |
| health exp. p.c. | 220 | 1.000 | -0.164 | 0.122 | 0.113 | -0.178 | 0.862 | 0.132 | (0.090) | 0.966 |
| | | | (0.231) | | | (0.560) | | | (0.745) | |
| social protection exp. p.c. | 209 | 1.000 | -0.125 | 0.307 | 0.088 | -0.194 | 0.794 | 0.129 | (0.103) | 0.943 |
| | | | (0.206) | | | (0.542) | | | (0.662) | |
| general and public services | 222 | 1.000 | -0.176 | 0.381 | 0.108 | -0.325 | 0.476 | 0.131 | (0.526) | 0.254 |
| | | | (0.136) | | | (0.398) | | | (0.512) | |
| public order and safety | 220 | 1.000 | -0.099 | 0.783 | 0.101 | -0.511 | 0.351 | 0.122 | (0.731) | 0.255 |
| | | | (0.099) | | | (0.577) | | | (0.698) | |
| economic affair exp. p.c. | 221 | 1.000 | -0.277 | 0.679 | 0.122 | -0.273 | 0.839 | 0.116 | (1.391) | 0.16 |
| | | | (0.256) | | | (0.817) | | | (1.203) | |
| housing and public amenities | 221 | 1.000 | -0.109 | 0.532 | 0.144 | 0.151 | 0.539 | 0.135 | 0.091 | 0.965 |
| | | | (0.143) | | | (0.328) | | | (0.501) | |
| environment exp. p.c. | 218 | 1.000 | -0.147 | 0.751 | 0.106 | 0.226 | 0.399 | 0.133 | 0.204 | 0.646 |
| | | | (0.145) | | | (0.293) | | | (0.330) | |
| recreation and culture. | 217 | 1.000 | -0.049 | 0.778 | 0.101 | -0.627 | 0.398 | 0.121 | (0.925) | 0.237 |
| | | | (0.321) | | | (0.662) | | | (0.861) | |

**Note:** Standard errors in parentheses; significance level*** p<0.01, ** p<0.05, * p<0.1
**Source:** Authors' calculation

This result confirms the previous study of political dynasties in developing countries, which is related to negative spending (Tusalem & Pe-Aguirre, 2013; Ali, 2016; George & Ponattu, 2018; Rehman et al., 2022). However, these significant negative results of total expenditure per capita in the RDD estimation indicate the weak effect of the dynasty effect on the local spending that is sensitive to polynomial usage on the estimation.

### *3.3. Robustness test*

As suggested in the common RD literature and the previous study about political dynasties, a robustness check is conducted for this study using a set of covariates. Using thirteen covariates, the estimation of dynastic mayor treatment shows the robust result of how dynasty politics impacts local spending in Indonesia. Table 4 shows still no significant result is found consistent from the OLS and the RDD regression. Significant results are found separately in both regression methods. The estimation shows that the RD-effects of dynasty mayor are negative on the general and public services per capita and public safety and order expenditure per capita. According to Law of the Republic of Indonesia, the general and public service expenditure consists of general administration, operation, and maintenance expenditures (e.g., capital and development expenditures), which are all used to support activities with outputs, benefits, and impacts that are directly enjoyed by the society. While the public order and safety expenditure is used to fund the administration of order and security as the government's responsibility, including the expenditure of the disaster management unit it is partially aligned with Ali (2016), who found a negative effect of dynasty on development expenditure in Pakistan.

The significant negative result on the number of expenditures spent by dynastic mayors confirms the theory about political dynasties as a barrier to political competition. The network relationship and power inheritance issue in a political dynasty cause a problem in political competition. The increase in political competition is related to higher public spending at the district level of Indonesia, which is related to public goods provision (Rezki, 2022; Sari & Prastyani,

2021). The lower spending found in the result is also probably related to outcome variables used in this study as local spending value in the second year after the election. Previous studies concluded that political budget cycle behavior is detected by less spending on expenditure in the early year after the election that will increase gradually by the year before the election is held. The general and public service expenditure and the public order and safety expenditure have a negative correlation with the pre-election year as the result of a study about the political budget cycle in Slovakia (Maličká, 2019).

**Table 4.** Dynastic Impact on Local Budget Policy Using Covariates

| Outcome var (log p.c) | obs. | OLS | | | RDD-Estimation | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | p(1) | | | p(2) | | |
| | | bw(h) | τ | p | bw(h) | τ | p | bw(h) | τ | p |
| total exp. | 208 | 1.000 | -0.128 | 0.347 | 0.108 | -0.577 | 0.185 | 0.123 | -0.681 | 0.001*** |
| | | | (0.078) | | | (0.211) | | | (0.296) | |
| capital exp. | 208 | 1.000 | -0.109 | 0.411 | 0.091 | 0.123 | 0.817 | 0.120 | 0.214 | 0.582 |
| | | | (0.106) | | | (0.309) | | | (0.389) | |
| current exp. | 208 | 1.000 | -0.111 | 0.222 | 0.095 | 0.006 | 0.986 | 0.127 | 0.111 | 0.814 |
| | | | (0.129) | | | (0.397) | | | (0.495) | |
| grant and social | 208 | 1.000 | -0.362 | 0.112 | 0.082 | 0.176 | 0.571 | 0.102 | 0.809 | 0.253 |
| | | | (0.201) | | | (0.571) | | | (0.758) | |
| education exp. | 208 | 1.000 | -0.234 | 0.003*** | 0.096 | -0.234 | 0.462 | 0.114 | -0.343 | 0.383 |
| | | | (0.102) | | | (0.286) | | | (0.394) | |
| health exp. | 206 | 1.000 | -0.117 | 0.052* | 0.110 | -0.340 | 0.448 | 0.128 | -0.157 | 0.998 |
| | | | (0.180) | | | (0.394) | | | (0.557) | |
| social protection | 195 | 1.000 | -0.187 | 0.108 | 0.073 | -0.315 | 0.884 | 0.092 | -0.132 | 0.978 |
| | | | (0.156) | | | (0.441) | | | (0.606) | |
| general and public | 208 | 1.000 | -0.122 | 0.278 | 0.106 | -0.499 | 0.045** | 0.135 | -0.722 | 0.019** |
| | | | (0.084) | | | (0.233) | | | (0.317) | |
| public order | 207 | 1.000 | 0.047 | 0.437 | 0.083 | -0.578 | 0.043** | 0.108 | -1.354 | 0.002** |
| | | | (0.247) | | | (0.396) | | | (0.462) | |
| economic affair exp. | 207 | 1.000 | -0.271 | 0.453 | 0.095 | -0.689 | 0.290 | 0.110 | -1.733 | 0.047** |
| | | | (0.197) | | | (0.707) | | | (0.970) | |
| housing amenities | 207 | 1.000 | -0.170 | 0.063* | 0.101 | 0.161 | 0.619 | 0.118 | -0.185 | 0.528 |
| | | | (0.112) | | | (0.261) | | | (0.283) | |
| environment exp. | 204 | 1.000 | -0.134 | 0.684 | 0.101 | 0.104 | 0.813 | 0.119 | -0.108 | 0.361 |
| | | | (0.108) | | | (0.193) | | | (0.223) | |
| recreation and culture | 204 | 1.000 | 0.092 | 0.480 | 0.105 | -0.682 | 0.151 | 0.110 | -1.549 | 0.009*** |
| | | | (0.308) | | | (0.484) | | | (0.621) | |

**Note:** Standard errors in parentheses; significance level*** p<0.01, ** p<0.05, * p<0.1
**Source:** Authors' calculation

### *3.4. Discussion*

Table 5 describes the effects of incumbent dynastic mayor status on local spending at the district level. Consistent significant results from OLS and RDD estimation are found in grant and social assistance expenditure, social protection expenditure, housing, and public amenities expenditure. RD effect result shows that the RD effect of the incumbent dynasty mayor on the dataset is quite sensitive to the degree of polynomial use. For the non-incumbent dynasty observations on the dataset, table 5 shows the non-incumbent dynasty's major effects on local spending. This table shows that no significant result is found consistent with the OLS and the RDD regression. Significant results are found separately in both regression methods.

**Table 5.** Impact of Dynasty Politicians on Local Spending: Incumbent Status on Dynastic Mayor

| Outcome var (log p.c) | obs. | OLS | | | RDD-Estimation | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | p(1) | | | p(2) | | |
| | | bw(h) | τ | P | bw(h) | τ | p | bw(h) | τ | p |
| total exp. | 78 | 1.000 | 0.353 | 0.331 | 0.135 | -2.362 | 0.023** | 0.146 | -3.260 | 0.213 |
| | | | (0.170) | | | (1.052) | | | (2.569) | |
| capital exp. | 78 | 1.000 | 0.353 | 0.331 | 0.142 | -1.571 | 0.007*** | 0.146 | -2.208 | 0.057* |
| | | | (0.170) | | | (0.577) | | | (0.998) | |
| current exp. | 78 | 1.000 | 0.241 | 0.416 | 0.169 | -0.256 | 0.108 | 0.157 | -1.687 | 0.161 |
| | | | (0.162) | | | (0.238) | | | (1.262) | |
| grant & social assistance | 78 | 1.000 | -0.488 | 0.049** | 0.144 | -3.647 | 0.000*** | 0.135 | -3.726 | 0.034** |
| | | | (0.344) | | | (0.699) | | | (1.749) | |
| education exp. | 78 | 1.000 | -0.065 | 0.265 | 0.143 | -0.563 | 0.138 | 0.142 | -2.181 | 0.094* |
| | | | (0.196) | | | (0.412) | | | (1.467) | |
| health exp. | 76 | 1.000 | -0.210 | 0.184 | 0.143 | -3.009 | 0.000*** | 0.127 | -5.458 | 0.056* |
| | | | (0.305) | | | (0.783) | | | (2.897) | |
| social protection | 75 | 1.000 | -0.660 | 0.003*** | 0.129 | -1.469 | 0.000*** | 0.172 | -1.399 | 0.002*** |
| | | | (0.184) | | | (0.301) | | | (0.353) | |
| general and public services | 78 | 1.000 | 0.092 | 0.514 | 0.131 | -2.565 | 0.016** | 0.135 | -3.764 | 0.180 |
| | | | (0.161) | | | (1.117) | | | (2.890) | |
| public order and safety exp. | 78 | 1.000 | 0.204 | 0.248 | 0.143 | -0.711 | 0.054* | 0.156 | -1.301 | 0.256 |
| | | | (0.270) | | | (0.462) | | | (0.735) | |
| economic affair exp. | 77 | 1.000 | 0.060 | 0.544 | 0..134 | -7.364 | 0.026** | 0.136 | -11.508 | 0.186 |
| | | | (0.434) | | | (3.169) | | | (8.465) | |
| housing, public amenities | 77 | 1.000 | -0.238 | 0.040** | 0.152 | -1.019 | 0.001*** | 0.124 | -2.336 | 0.079* |
| | | | (0.102) | | | (0.262) | | | (1.353) | |
| environment exp. | 76 | 1.000 | -0.329 | 0.405 | 0.143 | -1.911 | 0.009*** | 0.127 | -3.853 | 0.147 |
| | | | (0.102) | | | (0.750) | | | (2.755) | |
| recreation and culture | 77 | 1.000 | 0.634 | 0.024** | 0.130 | -1.963 | 0.045** | 0.152 | -2.612 | 0.123 |
| | | | (0.321) | | | (1.103) | | | (1.494) | |

**Note:** Standard errors in parentheses; significance level*** p<0.01, ** p<0.05, * p<0.1
**Source:** Authors' calculation

**Table 6.** Impact of Dynasty Politicians on Local Budget Policy: Non-Incumbent Status on Dynastic Mayor

| Outcome var (log p.c.) | obs. | OLS | | | RDD-Estimation | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | p(1) | | | p(2) | | |
| | | bw(h) | τ | p | bw(h) | τ | p | bw(h) | τ | p |
| total exp. | 130 | 1.000 | -0.136 | 0.661 | 0.135 | -0.536 | 0.002*** | 0.056 | -0.997 | 0.006*** |
| | | | (0.102 | | | (0.167) | | | (0.382) | |
| capital exp. | 130 | 1.000 | -0.296 | 0.335 | 0.044 | 0.536 | 0.062* | 0.062 | 0.824 | 0.176 |
| | | | (0.132) | | | (0.338) | | | (0.558) | |
| Current exp. | 130 | 1.000 | -0.301 | 0.156 | 0.044 | 0.583 | 0.065* | 0.056 | 1.197 | 0.097* |
| | | | (0.161) | | | (0.392) | | | (0.603) | |
| Grant & social assistance | 130 | 1.000 | -0.324 | 0.422 | 0.046 | 1.115 | 0.042** | 0.054 | 0.131 | 0.855 |
| | | | (0.224) | | | (0.582) | | | (0.904) | |
| education exp. | 130 | 1.000 | -0.274 | 0.007*** | 0.045 | -0.300 | 0.477 | 0.065 | -0.110 | 0.886 |
| | | | (0.113) | | | (0.288) | | | (0.566) | |
| Health exp. | 130 | 1.000 | -0.139 | 0.189 | 0.04 | 0.300 | 0.117 | 0.054 | 1.917 | 0.117 |
| | | | (0.222) | | | (0.346) | | | (1.247) | |
| social protection exp. | 125 | 1.000 | -0.112 | 0.383 | 0.047 | -0.055 | 0.702 | 0.067 | 0.115 | 0.963 |
| | | | (0.487) | | | (0.487) | | | (0.757) | |
| General and public services | 130 | 1.000 | -0.168 | 0.240 | 0.043 | -0.859 | 0.001*** | 0.056 | -1.423 | 0.002*** |
| | | | (0.103) | | | (0.261) | | | (0.481) | |
| public order and safety exp. | 129 | 1.000 | 0.273 | 0.562 | 0.046 | -1.448 | 0.003*** | 0.051 | -3.855 | 0.007*** |
| | | | (0.312) | | | (0.524) | | | (1.436) | |
| economic affair exp. | 130 | 1.000 | -0.248 | 0.939 | 0.052 | -0.497 | 0.173 | 0.081 | -0.392 | 0.978 |
| | | | (0.236) | | | (0.447) | | | (0.725) | |
| housing, public amenities | 130 | 1.000 | -0.173 | 0.170 | 0.044 | 0.153 | 0.357 | 0.059 | 0.356 | 0.704 |
| | | | (0.135) | | | (0.327) | | | (0.639) | |
| environment exp. | 128 | 1.000 | -0.151 | 0.869 | 0.052 | 0.151 | 0.598 | 0.048 | -1.086 | 0.001*** |
| | | | (0.133) | | | (0.309) | | | (0.363) | |
| recreation & culture exp. | 127 | 1.000 | 0.134 | 0.982 | 0.039 | -1.438 | 0.001*** | 0.050 | -4.459 | 0.001*** |
| | | | (0.409) | | | (0.456) | | | (1.360) | |

**Note:** Standard errors in parentheses; significance level*** p<0.01, ** p<0.05, * p<0.1
**Source:** Authors' calculation

Meanwhile, for the non-incumbent dynasty observations on the dataset in Table 6 shows no significant result is found consistent from the OLS and the RDD regression. Significant results are found separately in both regression methods.

**Table 7.** Impact of Dynasty Politicians on Local Budget Policy: Non-Incumbent Status on Dynastic Mayor

| Outcome var (log p.c.) | obs. | OLS | | | RDD-Estimation | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | p(1) | | | p(2) | | |
| | | bw(h) | τ | p | bw(h) | τ | p | bw(h) | τ | p |
| total exp. | 130 | 1.000 | -0.136 | 0.661 | 0.135 | -0.536 | 0.002*** | 0.056 | -0.997 | 0.006*** |
| | | | (0.102 | | | (0.167) | | | (0.382) | |
| capital exp. | 130 | 1.000 | -0.296 | 0.335 | 0.044 | 0.536 | 0.062* | 0.062 | 0.824 | 0.176 |
| | | | (0.132) | | | (0.338) | | | (0.558) | |
| Current exp. | 130 | 1.000 | -0.301 | 0.156 | 0.044 | 0.583 | 0.065* | 0.056 | 1.197 | 0.097* |
| | | | (0.161) | | | (0.392) | | | (0.603) | |
| Grant & social assistance | 130 | 1.000 | -0.324 | 0.422 | 0.046 | 1.115 | 0.042** | 0.054 | 0.131 | 0.855 |
| | | | (0.224) | | | (0.582) | | | (0.904) | |
| education exp. | 130 | 1.000 | -0.274 | 0.007*** | 0.045 | -0.300 | 0.477 | 0.065 | -0.110 | 0.886 |
| | | | (0.113) | | | (0.288) | | | (0.566) | |
| Health exp. | 130 | 1.000 | -0.139 | 0.189 | 0.04 | 0.300 | 0.117 | 0.054 | 1.917 | 0.117 |
| | | | (0.222) | | | (0.346) | | | (1.247) | |
| social protection exp. | 125 | 1.000 | -0.112 | 0.383 | 0.047 | -0.055 | 0.702 | 0.067 | 0.115 | 0.963 |
| | | | (0.487) | | | (0.487) | | | (0.757) | |
| General and public services | 130 | 1.000 | -0.168 | 0.240 | 0.043 | -0.859 | 0.001*** | 0.056 | -1.423 | 0.002*** |
| | | | (0.103) | | | (0.261) | | | (0.481) | |
| public order and safety exp. | 129 | 1.000 | 0.273 | 0.562 | 0.046 | -1.448 | 0.003*** | 0.051 | -3.855 | 0.007*** |
| | | | (0.312) | | | (0.524) | | | (1.436) | |
| economic affair exp. | 130 | 1.000 | -0.248 | 0.939 | 0.052 | -0.497 | 0.173 | 0.081 | -0.392 | 0.978 |
| | | | (0.236) | | | (0.447) | | | (0.725) | |
| Housing. public amenities | 130 | 1.000 | -0.173 | 0.170 | 0.044 | 0.153 | 0.357 | 0.059 | 0.356 | 0.704 |
| | | | (0.135) | | | (0.327) | | | (0.639) | |
| environment exp. | 128 | 1.000 | -0.151 | 0.869 | 0.052 | 0.151 | 0.598 | 0.048 | -1.086 | 0.001*** |
| | | | (0.133) | | | (0.309) | | | (0.363) | |
| recreation and culture exp. | 127 | 1.000 | 0.134 | 0.982 | 0.039 | -1.438 | 0.001*** | 0.050 | -4.459 | 0.001*** |
| | | | (0.409) | | | (0.456) | | | (1.360) | |

**Note:** Standard errors in parentheses; significance level*** p<0.01, ** p<0.05, * p<0.1
**Source:** Authors' calculation

The incumbent dynasty mayor has significantly spent less on the grant and social assistance expenditure, the social protection expenditure, and the house and public amenities expenditure than the non-dynasty mayor for the usage of second-year outcome variables on the dataset. This result is partially aligned with the study by Lewis et al. (2020) that found the incumbency status of the mayor in Indonesia is related to less spending on health expenditure. In the case of the political budget cycle, Maličká (2019) found a political budget cycle pattern on housing and public amenities expenditure. The choice to spend higher on these expenditures can be related to the character of these expenditures that are responsive in the short term to make 'visible' outcomes. These variables are easier to be used by mayors to get electoral incentives to preserve their authority. Therefore, the probable reason to describe this low spending result is related to the incumbent dynasty mayors' spending behavior in their second term which is trying to adjust budget allocations back to before the implementation of political budget cycle spending patterns on the previous term as stated on study by Lewis et al. (2020). These results also confirm how the mayor's incumbent status influences regional spending results. This is related to the reason for changing the regulations which give the incumbent dynasty family the right to participate in the upcoming election. They argued that the main problem of the authority abuse that happened lately in local districts is incumbency status that allowed them to do so. About 72.3% of the non-incumbent dynasty mayors on the dataset are identified as descendants of former dynasty politicians. The study from George & Ponattu (2018); and Besley et al. (2010) predicts that the descendants of the dynasty mayor underperformed in the office for public good provisions. It can happen because the non-incumbent dynasty as the descendants inherits political capital (e.g., name reputation and network) from the former mayors that can be used in the office even when

they are underperformed. The non-incumbent dynasty, which has negative significant RD effect on total expenditure, the general and public services, the public order and safety expenditure, economic affairs expenditure, environment expenditure, and the recreation and culture expenditure, shows how they are underperformed in providing public goods for the society. In addition, the non-incumbent dynasty mayor also has a positive significant effect on current expenditure than non-dynasty mayor. Although this result shows positive significance on RDD estimation, it is not definitely show the beneficial effect of dynasty mayor on local spending. The current expenditure on the local budget refers to short-term spending that is fully expensed in the fiscal period in which it is incurred. It is contrasted to capital expenditure which refers to spending on long assets that are capitalized in public good provision (Lewis & Hendrawan, 2019; Cruz et al., 2020).

Due to efficiency, effectiveness, and to avoid social politic conflicts, the mayoral election was held simultaneously since 2015. In contrast, the simultaneous mayoral election is argued to increase the rise of transactional politics events, e.g., money politics, political barter, and higher political cost paid by the candidates, which is later correlated to inefficient local spending in public good provision [18]. We examine separated two sub-datasets to capture the dynasty effect in local spending for the mayoral election held before and after 2015 when the mayoral election is firstly implemented simultaneously. We find no significant effect of the dynasty mayor elected on the direct election before 2015 is consistent from the OLS and the RDD estimation. Significant results are found only in RDD estimation.

**Table 8.** Impact of Political Dynasty on Local Spending: Dynasty Mayor Elected before 2015

| Outcome var (log p.c.) | obs. | OLS | | | RDD-Estimation | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | p(1) | | | p(2) | | |
| | | bw(h) | τ | p | bw(h) | τ | p | bw(h) | τ | p |
| total exp. | 121 | 1.000 | -0.011 | 0.954 | 0.059 | -0.404 | 0.000*** | 0.086 | -0.479 | 0.005*** |
| | | | (0.077) | | | (0.127) | | | (0.188) | |
| capital exp. | 121 | 1.000 | -0.051 | 0.440 | 0.107 | 0.027 | 0.908 | 0.130 | -0.102 | 0.608 |
| | | | (0.077) | | | (0.160) | | | (0.214) | |
| current exp. | 121 | 1.000 | -0.082 | 0.061* | 0.106 | -0.340 | 0.012** | 0.114 | -0.396 | 0.015** |
| | | | (0.051) | | | (0.120) | | | (0.158) | |
| grant & social assistance | 121 | 1.000 | -0.310 | 0.056* | 0.093 | -0.509 | 0.511 | 0.109 | -0.080 | 0.844 |
| | | | (0.185) | | | (0.544) | | | (0.707) | |
| education exp. | 121 | 1.000 | -0.104 | 0.099* | 0.087 | -0.267 | 0.004*** | 0.105 | -0.492 | 0.000*** |
| | | | (0.125) | | | (0.083) | | | (0.118) | |
| health exp. | 119 | 1.000 | -0.115 | 0.192 | 0.113 | -0.685 | 0.100 | 0.127 | -0.181 | 0.933 |
| | | | (0.232) | | | (0.359) | | | (0.459) | |
| social protection exp. | 108 | 1.000 | -0.162 | 0.123 | 0.076 | -0.406 | 0.691 | 0.117 | -0.080 | 0.981 |
| | | | (0.153) | | | (0.275) | | | (0.445) | |
| general and public services | 121 | 1.000 | 0.054 | 0.728 | 0.072 | -0.394 | 0.003*** | 0.097 | -0.624 | 0.002*** |
| | | | (0.073) | | | (0.139) | | | (0.202) | |
| public order and safety exp. | 120 | 1.000 | 0.173 | 0.498 | 0.094 | 0.127 | 0.596 | 0.117 | -0.763 | 0.013** |
| | | | (0.267) | | | (0.223) | | | (0.289) | |
| economic affair exp. | 120 | 1.000 | 0.314 | 0.437 | 0.107 | -0.106 | 0.931 | 0.090 | -2.470 | 0.006*** |
| | | | (0.346) | | | (0.720) | | | (1.042) | |
| Housing, public amenities | 120 | 1.000 | -0.130 | 0.101 | 0.109 | -0.369 | 0.035** | 0.129 | -0.038 | 0.759 |
| | | | (0.127) | | | (0.144) | | | (0.199) | |
| environment exp. | 118 | 1.000 | 0.079 | 0.648 | 0.112 | 0.156 | 0.585 | 0.118 | 0.431 | 0.136 |
| | | | (0.119) | | | (0.205) | | | (0.274) | |
| recreation and culture | 117 | 1.000 | 0.314 | 0.437 | 0.107 | 0.020 | 0.712 | 0.129 | -0.717 | 0.159 |
| | | | (0.346) | | | (0.412) | | | (0.570) | |

**Note:** Standard errors in parentheses; significance level*** p<0.01, ** p<0.05, * p<0.1
**Source:** Authors' calculation

In the other hand, Table 9 shows consistent significant results from OLS and RDD estimation are found in education expenditure dan current expenditure. From the OLS regression on the dataset, dynasty mayors elected on simultaneous mayoral election spend less current expenditure per capita about -0.082 that representing 15.44% (lower relative to the control mean. They also spend less education expenditure per capita for -0.104 that represents 34.20% lower relative to the control mean.

**Table 9.** Impact of Political Dynasty on Local Spending: Dynasty Mayor Elected since 2015

| Outcome var (log p.c) | obs. | OLS | | | RDD-Estimation | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | p(1) | | | p(2) | | |
| | | bw(h) | τ | p | bw(h) | τ | p | bw(h) | τ | p |
| total exp. | 121 | 1.000 | -0.011 | 0.954 | 0.059 | -0.404 | 0.000*** | 0.086 | -0.479 | 0.005*** |
| | | | (0.077) | | | (0.127) | | | (0.188) | |
| capital exp. | 121 | 1.000 | -0.051 | 0.440 | 0.107 | 0.027 | 0.908 | 0.130 | -0.102 | 0.608 |
| | | | (0.077) | | | (0.160) | | | (0.214) | |
| current exp. | 121 | 1.000 | -0.082 | 0.061* | 0.106 | -0.340 | 0.012** | 0.114 | -0.396 | 0.015** |
| | | | (0.051) | | | (0.120) | | | (0.158) | |
| grant and social assistance | 121 | 1.000 | -0.310 | 0.056* | 0.093 | -0.509 | 0.511 | 0.109 | -0.080 | 0.844 |
| | | | (0.185) | | | (0.544) | | | (0.707) | |
| education exp. | 121 | 1.000 | -0.104 | 0.099* | 0.087 | -0.267 | 0.004*** | 0.105 | -0.492 | 0.000*** |
| | | | (0.125) | | | (0.083) | | | (0.118) | |
| health exp. | 119 | 1.000 | -0.115 | 0.192 | 0.113 | -0.685 | 0.100 | 0.127 | -0.181 | 0.933 |
| | | | (0.232) | | | (0.359) | | | (0.459) | |
| social protection exp. | 108 | 1.000 | -0.162 | 0.123 | 0.076 | -0.406 | 0.691 | 0.117 | -0.080 | 0.981 |
| | | | (0.153) | | | (0.275) | | | (0.445) | |
| general and public services | 121 | 1.000 | 0.054 | 0.728 | 0.072 | -0.394 | 0.003*** | 0.097 | -0.624 | 0.002*** |
| | | | (0.073) | | | (0.139) | | | (0.202) | |
| public order and safety exp. | 120 | 1.000 | 0.173 | 0.498 | 0.094 | 0.127 | 0.596 | 0.117 | -0.763 | 0.013** |
| | | | (0.267) | | | (0.223) | | | (0.289) | |
| economic affair exp. | 120 | 1.000 | 0.314 | 0.437 | 0.107 | -0.106 | 0.931 | 0.090 | -2.470 | 0.006*** |
| | | | (0.346) | | | (0.720) | | | (1.042) | |
| housing and public amenities | 120 | 1.000 | -0.130 | 0.101 | 0.109 | -0.369 | 0.035** | 0.129 | -0.038 | 0.759 |
| | | | (0.127) | | | (0.144) | | | (0.199) | |
| environment exp. | 118 | 1.000 | 0.079 | 0.648 | 0.112 | 0.156 | 0.585 | 0.118 | 0.431 | 0.136 |
| | | | (0.119) | | | (0.205) | | | (0.274) | |
| recreation and culture | 117 | 1.000 | 0.314 | 0.437 | 0.107 | 0.020 | 0.712 | 0.129 | -0.717 | 0.159 |
| | | | (0.346) | | | (0.412) | | | (0.570) | |

**Note:** Standard errors in parentheses; significance level*** p<0.01, ** p<0.05, * p<0.1
**Source:** Authors' calculation

From the RDD estimation, dynasty mayors spend less current expenditure per capita about -0.340 representing 100.6% on the polynomial degree-one (p1) estimation, and about -0.396 represents the 251% on polynomial degree-two (p2) estimation lower relative to the control mean; and the education expenditure per capita about -0.267 that representing 10.1% on polynomial degree-one (p1) estimation and about -0.492 that representing 22.1% on polynomial degree-two (p2) estimation lower relative to the control mean.

The observations used in this dataset show that non-incumbent dynasty mayors with less experience in governance have mostly been elected since 2015. Underperformed of the descendants' dynasty mayor in office are predicted by George & Ponattu, (2018) since the inherited political capital (name reputation, and performance) from the former dynasty helped them to easily enter the political competition in the election. The other probable reason for this result is related to a descriptive study by Solihah (2016) that argues that simultaneous mayoral elections escalate the political transaction issue in local democracy. Political barter among the political parties to support candidates of each election causes a higher political cost that needs to be paid by the candidates. Dynasty candidates with higher political capital are expected to have more electoral incentives than non-dynasty candidates to win the election, which later affects their performance in office.

## 4. CONCLUSIONS

The political dynasty which is generated by unfair political competition in the mayoral election leads to negative impacts on local spending performance in Indonesia. Using standard Regression Discontinuity Design (RDD) to capture the impact of the dynasty status of the mayor on local spending in 222 districts, this study shows how the dynasty mayor significantly spends less expenditure than the non-dynasty mayor, particularly on grant and social assistance expenditure, social protection expenditure, housing and public amenities expenditure, education expenditure,

and current expenditure that has a consistent result on the OLS and RDD estimation.

Significant negative effects are found in the grant and social assistance expenditure, social protection expenditure, and housing and public amenities expenditure of the incumbent dynasty local spending. This result is partially confirming the study results from Lewis et al., (2020) of incumbent mayors in Indonesia who spent less expenditure in their second term. The non-incumbent dynasty on the dataset spent more on current expenditure; and spent less on total expenditure, general and public services expenditure, public order and safety expenditure, and recreation and culture expenditure. This finding partially confirms the study from George & Ponattu (2018) about the underperformed of the descendants of the dynasty mayor in the office for public good provisions. This study also finds more negative effects of the dynasty mayor elected in 2015 on the simultaneous mayoral election. This result can be related to the non-incumbent dynasty mayors that were mostly elected after 2015 with the negative dynasty effect and related to a descriptive study from Solihah, (2016) that argues that simultaneous mayoral election escalates the political transaction issue that leads to the negative effect on local spending. Related to the political competition, this study raises the issue of the capability of the dynasty mayor in governance. Since the political dynasty still has great power to be elected, and yet the regulation that aims to restrict the political dynasty is undecided, the rise of the local political dynasty which is related to elite captures and inefficient local spending, the decision to withdraw the prohibition of political dynasty on mayoral election in Law No. 8 of 2015 needs to be reviewed to assure higher political competition in mayoral election. As referred to Wittman's theory which assumes that democracy optimizes public policy, the negative impacts of the political dynasty on local spending can be reduced by increasing the political competition in Indonesia. Therefore, this study gives policy recommendations that are focused on increasing political competition to assure a fair political field that will increase public participation and increase the cost of sacrifice to be paid by the political dynasty to compete in the mayoral election.

The result shows the negative effects of political dynasties on local spending, the recommendations to be considered are: (1) the information disclosure about all candidates, especially for the dynasty politician and their relatives in the government to increase political competition and public awareness in the mayoral election. Along with the public awareness about political competition, all mayors are expected to have good policies and performance in governance; (2) since negative effects of a political dynasty mostly come from the non-incumbent dynasty dataset, minimum years of experience in governance or political party can be required as a minimum competency to assure the capabilities of the mayor in the office; and (3) from the disclosure information about political dynasty candidates in the election, specific monitoring, and audit from an internal government agency (BPKP and BPK), KPK or any other independent committees during the pre-election year to minimize the policy preference, particularly in local spending, for electoral incentives purposes issue.

As a limitation, the result of this study does not reflect the political dynasty effects on local spending in Indonesia since the information about dynastic politicians in Indonesia is quietly hard to identify. The result of the political dynasty effect on this study is limited to second-year after-election values (t+2) as outcome variables used in this study. Future studies are needed to enrich the study of the political dynasty's impact on economic performance in Indonesia. More extended data periods and alternative methods used to examine political dynasty effects in Indonesia may vary the results. The other significant results may be found in other economic variables. Further study is also suggested to explore political budget cycle behavior that may contribute to political dynasty performance in Indonesia.

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## Appendix A

*Political Dynasty Effect on the First Year of Local Spending*

The main outcome variables used in this study are the second year after the election (t+2) value to keep the optimum observation size and get the unbiased outcome from previous term governance on the first year-after-election (t+1) local spending value.

**Table A1.** Dynasty Impact on Local Spending at the First Year after Election with Covariates

| Outcome var (Log p.c) | OLS | | | RDD-Estimation | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | p (1) | | | p (2) | | |
| | bw(h) | τ | p | bw(h) | τ | p | bw(h) | τ | p |
| total expenditure | 1.000 | -0.384 | 0.014** | 0.113 | -0.525 | 0.189 | 0.100 | -0.837 | 0.112 |
| | | (0.117) | | | (0.318) | | | (0.536) | |
| capital expenditure | 1.000 | 0.011 | 0.578 | 0.119 | 0.232 | 0.525 | 0.128 | 0.086 | 0.912 |
| | | (0.088) | | | (0.231) | | | (0.315) | |
| current expenditure | 1.000 | 0.042 | 0.215 | 0.120 | 0.090 | 0.970 | 0.137 | -0.169 | 0.487 |
| | | (0.135) | | | (0.312) | | | (0.414) | |
| grant and social assistance | 1.000 | 0.013 | 0.612 | 0.100 | -0.221 | 0.392 | 0.126 | -0.027 | 0.885 |
| | | (0.146) | | | (0.277) | | | (0.386) | |
| education expenditure | 1.000 | -0.214 | 0.070* | 0.104 | -0.139 | 0.758 | 0.124 | -0.245 | 0.411 |
| | | (0.099) | | | (0.287) | | | (0.394) | |
| health expenditure | 1.000 | -0.035 | 0.301 | 0.092 | 0.353 | 0.508 | 0.132 | 0.400 | 0.578 |
| | | (0.133) | | | (0.461) | | | (0.551) | |
| social protection expenditure | 1.000 | -0.412 | 0.129 | 0.108 | -0.761 | 0.076* | 0.078 | -0.439 | 0.559 |
| | | (0.185) | | | (0.387) | | | (0.511) | |
| general and public services | 1.000 | -0.260 | 0.101 | 0.083 | -0.426 | 0.377 | 0.113 | -0.413 | 0.403 |
| | | (0.120) | | | (0.373) | | | (0.513) | |
| public order and safety expenditure | 1.000 | -0.437 | 0.092* | 0.088 | -0.391 | 0.566 | 0.093 | -0.240 | 0.654 |
| | | (0.154) | | | (0.415) | | | (0.600) | |
| economic affair expenditure | 1.000 | -1.092 | 0.071* | 0.122 | -0.272 | 0.839 | 0.116 | -1.391 | 0.160 |
| | | (0.412) | | | (0.817) | | | (1.203) | |
| housing and public amenities | 1.000 | -0.157 | 0.241 | 0.104 | -0.069 | 0.898 | 0.144 | -0.068 | 0.719 |
| | | (0.126) | | | (0.317) | | | (0.415) | |
| environment expenditure | 1.000 | -0.187 | 0.298 | 0.109 | -0.195 | 0.688 | 0.139 | -0.181 | 0.662 |
| | | (0.136) | | | (0.316) | | | (0.442) | |
| recreation and culture expenditure | 1.000 | -0.449 | 0.103 | 0.109 | -0.634 | 0.419 | 0.119 | -0.406 | 0.651 |
| | | (0.195) | | | (0.503) | | | (0.748) | |

**Note:** Standard errors in parentheses; significance level*** p<0.01, ** p<0.05, * p<0.1
**Source:** Authors' calculation

Table A1. shows the impacts of the dynasty status of the mayor on local spending in the first year after the election using covariates. Dynasty status gives no significant impacts on local spending on the first-year performance. Aligned with base estimation on Table 3.1 no consistent significant results from OLS and RDD estimation are found. Compared to the second-year performance, this table shows the dynasty effect on local spending is low which only found in the OLS Estimation.

## Appendix B

*Randomization Density Plot*

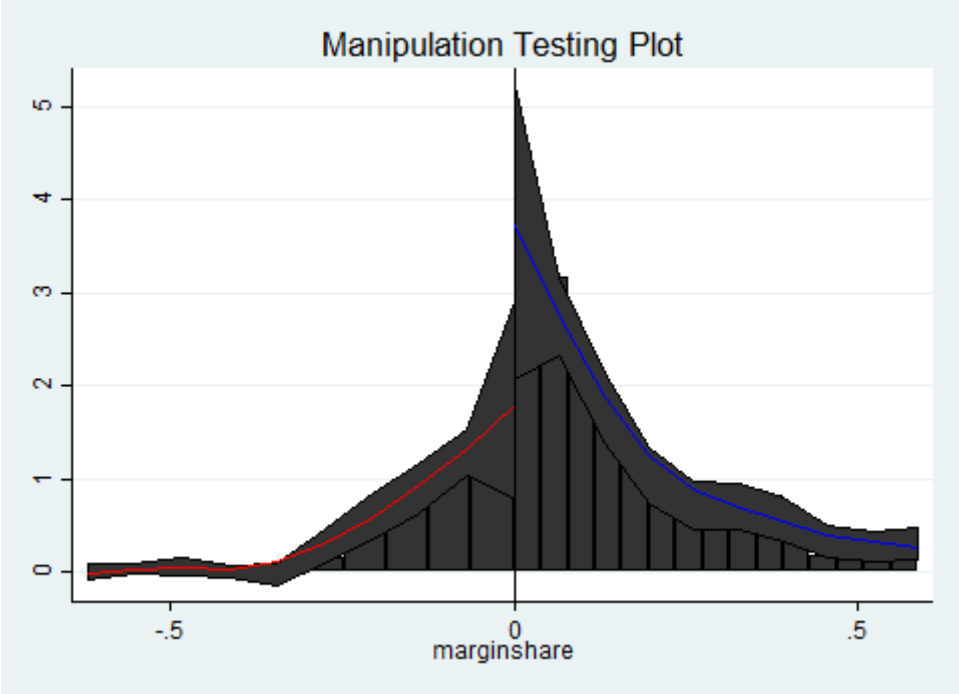


**Figure A.1**. RD-Density Test on RD Sample of Election
**Source:** Data Processed.