Political Dynasties and Human Development Investments: Evidence of Linkage from Rizal Province, Philippines

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This study is a preliminary empirical investigation to test whether dynastic mayors tend to have lower human development investments for their constituents. It inferred from a panel data composed of all 13 municipalities in Rizal, Philippines. Data in years 2001-2017 were drawn from these municipalities, dichotomized into dynastic or non-dynastic. Dynasties in this study are characterized as fat dynasties, consisting of elected public officials occupying political seats simultaneously with their relatives. Based on the results of panel-corrected Prais-Winsten generalized least squares estimation, this research found that Rizal municipal governments led by fat dynastic mayors tend to have significantly lower human development investments compared with non-dynastic counterparts. Specifically, they spent less on human development at the aggregate level (i.e., total municipal expenditure on health, education, and social welfare), at the combined levels of education and health, and at the specific sector of education. These findings support the predatory view of political dynasties, particularly the fat type. Results are robust to various alternative model specifications and econometric estimation procedures.

Keywords: *political dynasties, fat dynasties, human development investments, municipal government, municipal expenditure*

A thriving culture of self-perpetuating political families (Rossi, 2017) that manifest elite persistence (Querubin, 2013), hence, the term "political dynasties," is a hallmark of Philippine politics, particularly at the local level (Teehankee, 2018). Political dynasties in the Philippines are "exceptional in their persistence and scope" (Mendoza, Ong Lopez, & Banaag, 2019, p. 3), so much so that their pervasiveness "is off the chart compared to any other country in the world" (Acemoglu & Robinson, 2013a, para. 3). As it is, nearly 80% of all representatives in the Congress are from political dynasties (Mendoza, Ong Lopez, & Banaag, 2019). At the subnational level, average dynastic share among local government officials stood at 81% for governors and vice-governors, 69% for mayors, and 57% for vice-mayors (Mendoza, 2018).

A political family is considered as a political dynasty if it retains political power by maintaining control in at least one elective position over successive electoral cycles (Albert et al., 2015). Alternatively, an elected politician is labeled as "dynastic" if he/she is related by blood (i.e., consanguinity) or by marriage (i.e., affinity) to other politicians currently or previously holding elective public office (Geys & Smith, 2017).

Article II, Section 26 of the 1987 Philippine Constitution proscribes political dynasties in the country. However, it requires an enabling legislation to be passed by the Congress to define and implement the said dynastic regulation (Collas-Monsod et al., 2004). Since most representatives in the Congress are members of political dynasties (Mendoza, Ong Lopez, & Banaag, 2019), passing an anti-political dynasty bill remains an uphill battle (Tadem & Tadem, 2016).

Literature on political dynasties is predominantly concerned with why and how they arise and persist (e.g., Dal Bo et al., 2009; Querubin, 2013, 2016). Relatively fewer studies analyze their consequences, particularly with respect to governance, socioeconomic outcomes, and development (Daniele & Geys, 2014; Geys, 2017; Geys & Smith, 2017). Contributing to the latter, this research examines the effect of dynastic presence on human development investments. Specifically, the research investigates the effect of fat political dynasties on human development investments at the municipal level, as reflected in the municipal government expenditure on education, health, and social welfare.

In line with the predatory view of political dynasties, this study posits that fat dynastic municipal governments have significantly lower human development investments compared with non-dynastic counterparts, *ceteris paribus* (i.e., everything else held constant/fixed). To empirically test the theoretical conjecture posed, the research employs a case study approach and draws inference from multivariate panel regression analysis of panel data in years 2001-2017 from all 13 municipalities in Rizal province, Philippines.

Based on the results of panel-corrected Prais-Winsten generalized least squares (GLS) estimation, this research finds that Rizal municipal governments led by fat dynastic mayors tend to have significantly lower human development investments for their constituents compared with non-dynastic counterparts. These findings support the predatory view of political dynasties, particularly the fat type: with wider and deeper entrenchment of political power due to monopoly of multiple elective positions over consecutive years, fat political dynasties are inherently prone to be predatory, i.e., inimical to governance, socioeconomic outcomes, and development.

The rest of the article is structured as follows: the remaining part of this section provides background/context of the study. The next section presents

a review of related literature. The article then expounds on the methodology employed in the study. It then discusses the findings of the study and offers various plausible explanations. The article ends with recommendations for further studies.

Human Development Investments

Human development is about expanding the richness of people's lives, rather than merely the richness of the economy in which they live. It concentrates on "improving the lives people lead rather than assuming that economic growth will lead, automatically, to greater wellbeing for all" (United Nations Development Programme [UNDP], n.d., para. 2). As a development paradigm, it endeavors to provide people with greater freedom to live the lives they value (UNDP, n.d.).

Central to the pursuit of human development are human capital accumulation and human capabilities expansion (Sen, 1997). Human capital refers to the stock of skills, knowledge, expertise, and other similar attributes that increase an individual's productivity (Becker, n.d., 1962; Goldin, 2016; Schultz, 1961, 1972). Human capital benefits both the individual and his/her society at large (Abrigo et al., 2017; Schultz, 1961). At the individual level, increased productivity associated with human capital is a source of future earnings, of future satisfaction, or both (Schultz, 1972). At the societal level, a large body of theoretical and empirical literature provides evidence that human capital plays a central role in bolstering economic growth and provides other positive externalities (Abrigo et al., 2017; Goldin, 2016). Nonetheless, the concept of human capital is fundamentally economic in nature (Becker, n.d., 1962; Schultz, 1961, 1972) and relates more to human development as a means to an end. To complement the notion of human capital, Sen (1997) introduces the concept of human capabilities: "the ability of human beings to lead lives they have reason to value and to enhance the substantive choices they have" (p. 1959). This concept, in turn, embraces the end aspect of human development.

Human development requires necessary government investments aimed at enhancing human capital and enlarging human capabilities (UNDP, 1991). In a decentralized representative democracy like the Philippines, local government units (LGUs) are at the forefront of such public investment initiative (Manasan, 1997). It is in this context that the study operationally defines human development investments as local government investments, reflected in the level of local public expenditure, on policy areas that directly reinforce both human capital and human capabilities. This definition does not discount the importance of private investments on human development, as people do invest in themselves in the form of private spending (Schultz, 1961). Instead, it highlights the government's pivotal role in helping citizens help themselves, because not all individuals have the initial endowments to be able to invest in their own human capital and

capabilities. Disparities in income, age, gender, educational background, health status, and social status are just some of many constraints (Beverly & Sherraden, 1997). In essence, government investments on human development are grounded on both efficiency (in relation to economic growth and positive externalities) and social equity (equal opportunity for all) considerations (Abrigo et al., 2017; Goldin, 2016; Beverly & Sherraden, 1997).

The three major pillars of human development are: the ability to (1) live a long, healthy, and creative life; (2) be knowledgeable; and (3) have access to resources necessary for a decent standard of living (UNDP, n.d.). Progress in these fundamental dimensions of human development is measured through a composite index dubbed as the Human Development Index (HDI) (UNDP, 2016). It is unsurprising then that discourse on human development investments is heavily focused on public spending on health and education.

Nonetheless, there is mounting recognition that public expenditure on social welfare should also be treated as human development investment, especially in terms of providing social protection and support for rehabilitation to disadvantaged and marginalized groups (Ahn & Kim, 2014; Morel et al., 2012; Gonzalez, 2017). The argument is that government investments in education and health is for all citizens, regardless of their constraints, while investment on social welfare is particularly focused on helping disadvantaged and marginalized groups enhance their human capital and expand their human capabilities to be able to participate in employment and social life (European Commission, n.d.; Beverly & Sherraden, 1997).

Collectively, public expenditure on education, health, and social welfare embodies an inclusive government strategy for human development investments as they represent "an essential part of what governments do to improve the quality of life of their citizens and the foundations of human capital in their societies" (Huber et al., 2008, p. 420). In relation to political dynasties that dominate local governance in the Philippines, the focus is on the level of local public expenditure in the said policy areas at the municipal level.

At this point, it is worthy to note that while it is more desirable to examine the effects of political dynasties directly on outcomes pertinent to human development (e.g., through the HDI), this study focuses instead on local public spending where they have direct influence. As explained by Solon et al. (2009), using local government outlays instead of development outcomes is justified because expenditures are more directly controlled by local leaders—thereby reflecting their real priorities. Consequently, given its implications on human development, local government expenditure on health, education, and social welfare represents a reasonable measure of good performance of incumbent local officials who may be dynastic or non-dynastic (Solon et al., 2009; Manasan, 1997).

Good Governance and Decentralization

In a bid to bring governance closer to the people, the Philippine national government devolved substantial taxing, spending, and borrowing powers to LGUs through a wide-ranging decentralization process embodied in the Republic Act 7160 or the *Local Government Code of 1991* (Llanto, 2012; Manasan, 2005). The central government institutionalized the transfer of the internal revenue allotment (IRA), a formula-based block grant, to help LGUs finance additional responsibilities (Labonne et al., 2015; National Tax Research Center (NTRC), 2008).

With the LGC in place, responsibility for basic services delivery was transferred to LGUs (i.e., provinces, cities, municipalities, and barangays): social welfare services, primary health care, hospital care, and an array of agricultural and environmental services.[1] A special case is basic education, as the primary responsibility for its provision still lies with the national government. LGUs' role is limited to the construction and maintenance of basic education infrastructure (e.g., school buildings) and funding of sports activities. At the municipal level, main devolved functions for basic services that relate to human development are as follows: (1) education – construction and maintenance of public elementary schools; (2) health – primary health care; and (3) social welfare – programs and projects concerning the welfare of vulnerable population (i.e., children, youth, elderly, and disabled persons) (Labonne et al., 2015; Bautista, 2013; Manasan, 2005). From an economic standpoint, the Philippines' decentralization drive redounds to increased efficiency and effectiveness in public service delivery, given that local chief executives (LCEs) are in a better position to know and respond (given their relative proximity) to the preferences of their constituents compared with national-level officials (Oates, 1972). But from the view of good governance paradigm, decentralization is more than economic welfare gains (Capuno et al., 2012a; Llanto, 2012): it symbolizes the "logical application of the core characteristics of good governance at the subnational and local levels" (UNDP, n.d., as cited in Brillantes & Cuachon, 2002, p. 3).

Governance can be considered "good" at the subnational level when local governments effectively and efficiently allocate and manage public resources to respond to collective problems of their constituents, in general, and, in relation to human development, to help them attain individual satisfaction and prosperity by providing them with key public services in the fields of health, education, and social welfare (UN Department of Economic and Social Affairs [UN DESA], 2007).

Political Dynasties: Predatory vs. Stationary Bandit View

Although decentralization ideally improves local public service delivery and enhances constituents' overall welfare (Solon et al., 2009), it may also reinforce the dominance and propagation of local hegemonies (UN DESA, 2007). In the Philippines, this is evident in the proliferation and perpetuation of political dynasties among LGUs after the LGC was enforced (Querubin, 2013, 2016).

In general, political dynasties may be considered as extractive political institutions (Acemoglu & Robinson, 2013b) that effectively concentrate and maintain political power within their families as relatives take turn occupying elective positions successively or simultaneously (Simbulan, 2012). Moreover, they "inherit an electoral advantage from their political forebears" (Daniele & Geys, 2014, p. 2)—in the form of "brand name recall," wealth, and control of political and economic resources (George & Ponattu, 2017). Aside from these political and financial capital (Ali, 2016), political dynasties benefit from externalities or spillover effects of the so-called incumbency advantage, which claims that incumbent officials running for re-election have electoral advantage and, therefore, are more likely to win (Querubin, 2013). In the Philippines, candidates related to an outgoing incumbent enjoy an electoral advantage over non-dynastic candidates, but such advantage doubles for candidates who run in an election while their relative still sits in office (Querubin, 2016).

Because of these attributes, members of political dynasties have a higher likelihood of winning elections compared with non-dynastic candidates, all things being equal. Hence, political dynasties may: weaken political competition (high-quality non-dynastic candidates are easily defeated in elections); and worsen governance and negate accountability (moral hazard problems: self-assured of continuous re-election due to deep political entrenchment, incumbent dynastic officials may not have incentives to engage in productive vote courting activities and hence, underperform in office; implement self-serving policies; and perpetuate corruption). These outcomes, in turn, may lead to poorer socioeconomic outcomes and development (Bragança et al., 2015; George & Ponattu, 2017; Geys, 2017; Panao, 2016; Tusalem & Pe-Aguirre, 2013).

Essentially, these socially undesirable characteristics of political dynasties embody the more popular perception on them—the so-called "predatory view" of political dynasties (Solon et al., 2009). Consistent with this perspective, political dynasties are usually portrayed as inimical within the political science and sociology literature (Mendoza et al., 2016).

However, an alternative strand in the economics literature sees political dynasties in a positive light. That is, if political dynasties govern like "stationary bandits," they may conceivably lead to positive effects (George & Ponattu,

2017; Mendoza, Jaminola, & Yap, 2019; Solon et al., 2009). This lesser-known perspective on political dynasties takes off from the idea of economist Mancur Olson (1993). According to Olson (1993), a stationary bandit is an autocratic/ monarchic-type of leader who has "encompassing interest in the territory he controls and accordingly provides domestic order and other public goods… at the same time that he extracts the largest possible net surplus for himself" (p. 569). Further, the leader "anticipates and values dynastic succession that further lengthens the planning horizon and is good for his subject" (Olson, 1993, p. 571). Hence, although their interests are purely extractive, political dynasties may have the incentive to govern well and thereby induce positive effects on socioeconomic outcomes and development because of longer political horizon and bequest motives (Besley & Reynal-Querol, 2017; George, 2019; George & Ponattu, 2017; Mendoza, Jaminola, & Yap, 2019; Zheng et al., 2016).

Sequential tenure in office among relatives may reinforce familiarity and continuity, which bodes well with performance and bolsters inter-temporal incentives to pursue long-term government projects and programs (Bragança et al., 2015; Tusalem & Pe-Aguirre, 2013). Meanwhile, legacy/reputation concerns ascribed to bequest motives may mitigate or even trump moral hazard problems associated with political dynasties (Besley & Reynal-Querol, 2017). Concern for their relatives' success in upcoming elections may mitigate the opportunistic behavior of incumbent dynastic officials and may likewise provide incentive to govern well and demonstrate good performance in office (Crowley & Reece, 2013; George & Ponattu, 2017; Zheng et al., 2016).

This study dwells on the nature of political dynasties as extractive political institutions (Acemoglu & Robinson, 2013b) and therefore adopts the predatory view of political dynasties (Solon et al., 2009) as the guiding theory behind the hypothesis being tested empirically.

Political Dynasties: Fat vs. Thin

While political dynasties are typically considered as a monolithic group (Lacroix et al., 2019), there is a growing body of literature that examines whether political dynasties have divergent effects when disaggregated into various categories (e.g., Ali, 2016; George, 2019). The logic is that the perceived effect of political dynasties as a homogenous group is a net effect of its various types— some of which are more inclined to have positive (or negative) effects than the others (George, 2019).

Mendoza and colleagues (i.e., Mendoza et al., 2016; Mendoza, Jaminola, & Yap, 2019; Mendoza, Ong Lopez, & Banaag, 2019) propose a functional typology of political dynasties in the Philippines: thin dynasty—if relatives occupy an elective position sequentially (i.e., family members continuously take turns

serving in the same post); or fat dynasty—if family members occupy multiple political seats simultaneously (i.e., at least two family members occupy different elective positions at the same time over consecutive years).

Mendoza and colleagues argue that fat and thin dynasties may possibly have divergent effects owing to fundamental differences in constraints and incentives. On one hand, fat dynasties tend to result in deleterious effects, whereas thin dynasties may possibly have desirable effects, *ceteris paribus*. Since fat dynasties are the predominant type in the Philippines (Mendoza, Jaminola, & Yap, 2019), the perceived net effect of political dynasties in the country in general (as homogeneous group) is logically assumed as malign.

Monopoly of multiple elective positions over consecutive years results in wider and deeper entrenchment of political power (Mendoza, Jaminola, & Yap, 2019). In addition, fat dynasties, having relatives in several positions, enjoy greater incumbency advantage externalities (Querubin, 2016; 2013), Given these factors, fat dynasties may not have the incentive to signal their competence by performing well in office. Worse, they may be more motivated to pursue self-serving activities to the detriment of their jurisdictions (Ali, 2016; Daniele & Vertier, 2018; George, 2019; George & Ponattu, 2017; Geys, 2017; Tusalem & Pe-Aguirre, 2013).

On the other hand, thin dynasties are constrained with less concentration of power (domination of only one political seat over successive years) (Mendoza, Jaminola, & Yap, 2019) and limited spillover effect of incumbency advantage (applying to one position only) (Querubin, 2016; 2013). Hence, relative to fat dynasties, thin dynasties will more likely turn to bequest motives to ensure re-election (Mendoza, Jaminola, & Yap, 2019)—they have the incentive to uphold their family's legacy or reputation by showing good performance in office, which, in turn, benefits constituents' welfare (Crowley & Reece, 2013; George & Ponattu, 2017; Olson, 1993; Solon et al., 2009; Zheng et al., 2016).

Since fat dynasties have higher tendency to have inimical effects compared with thin dynasties, studies of Mendoza and colleagues (Mendoza et al., 2016; Mendoza, Jaminola, & Yap, 2019; Mendoza, Ong Lopez, & Banaag, 2019) are concentrated on the former, rather than the latter type. This research follows suit by focusing on fat dynasties among municipalities in Rizal province.

The Municipal Mayor

As the LCE in charge of local governance at the municipal level in the Philippines (RA 7160), the mayor serves as the principal decisionmaker in setting priority agenda and implementing policies in line with the said agenda within the municipality (Dulay & Go, 2021). Section 444 of the LGC lists the duties

and functions of the municipal mayor: (1) exercise supervision and control over all municipal government policies, programs, projects, services, and activities (PPPSA); (2) enforce all laws and ordinances and implement all approved PPPSAs within the municipality; (3) initiate and maximize generation of revenues and other resources for the implementation of the municipal development plan and other PPPSAs; and (4) ensure the delivery of basic services for the constituents.

Pursuant to the execution of the municipal development plan and provision of basic services, the mayor is primarily responsible for proposing and disbursing the municipal government's annual fiscal budget (Local Government Academy, 2019). With this power, a mayor can prioritize spending on specific PPPSAs. For instance, a mayor may focus more on expenditure items within the social services sector, including human development investments in health, education, and social welfare of constituents. He/she may seek to spend heavily on general public services, which are perceived as a bountiful source of rents in office owing to its less transparent nature (Capuno et al., 2012b; Diokno-Sicat, 2016). The mayor may likewise utilize discretionary funds to return favors to current supporters and/or win new supporters/allies, subject only to the central government's oversight (Capuno, 2010).

An incumbent mayor in the Philippines is typically supported by the majority of the municipal council. The mayor also gets to freely appoint allies in key appointive positions (Capuno, 2010) and can take advantage of the wide latitude of discretion in fiscal decisionmaking (i.e., revenue generation and expenditures) to be re-elected (Solon et al., 2009). He/she may effectively boost election bids of his/her relatives to the position he/she will vacate and other elective posts via incumbency advantage (Querubin, 2016; 2013; De Dios, 2007).

Indeed, the municipal mayor wields sizable political and administrative powers and, thereby, possesses considerable leeway in the use of discretion (Labonne et al., 2015), particularly with respect to prioritization of municipal government expenditures. Therefore, examining the effect of political dynasties on human development investments with the mayoralty seat as reference position is a worthwhile research endeavor.

Case Study: Municipalities of Rizal Province

Many studies in the Philippines analyze political dynasties at the provincial level (e.g., Collas-Monsod et al., 2004; Virola et al., 2016). However, a number of researches here and abroad examine the effects of political dynasties at a lower local government level, i.e., at the municipal level where governance is closer to the people (e.g., Capuno et al., 2012a, 2012b and Dulay & Go, 2021 for the Philippines; Asako et al., 2015 for Japan; Bragança et al., 2015 for Brazil; Daniele & Vertier, 2016, 2018 for Italy).

This research aims to contribute to this stream in the literature by using the case of municipalities in Rizal province as a preliminary empirical investigation. Composed of 13 municipalities and one component city (i.e., Antipolo City), Rizal province stands as an interesting case for an initial empirical study on political dynasties on two fronts: first, the province itself is considered dynastic, with one family at the helm of gubernatorial position from 1992 to present (Rizal Provincial Government, 2019); second and more important, its municipalities[2] provide a good mix of dynastic and non-dynastic incumbent politicians, as will be shown in the results section of the study.

Review of Related Literature

Viewing political dynasties as a homogeneous group, relevant Philippine literature is dominated by empirical studies pointing to negative effects of political dynasties on governance, socioeconomic outcomes, and development. Pertinent international literature reflects the same trend. While political dynasties are typically considered as a monolithic group (Lacroix et al., 2019), there is a growing body of literature that examines whether political dynasties behave differently when categorized into various types. At this disaggregated level of analysis, results are mixed—both negative and positive associations are prominent. All cited studies utilized econometric analyses.

Philippine Context

Political Dynasties as Homogeneous Group

In the Philippines, Tusalem and Pe-Aguirre (2013) rely on ordinary least squares (OLS) regression to illustrate the pernicious effect of political dynasties on democratic governance in terms of public goods provision. Their results suggest that provinces dominated by political dynasties are less likely to experience good local governance with respect to: (1) health spending, (2) infrastructure development, (3) employment, (4) criminality, and (5) overall quality of government.

Meanwhile, Collas-Monsod et al. (2004) observed that political dynasties seemingly constrain the efficient delivery and quality of public services. Findings of their regression analysis suggest that the presence of political dynasties among provinces is linked to lower primary education completion rates, lower per-capita income, and higher poverty. Similarly, Mendoza et al. (2012) found, based on partial correlations, that provinces with higher concentration of political dynasties are associated with lower human development and higher levels of poverty.

Using a more nuanced approach via beta-binomial maximum likelihood estimation (MLE-BB), Mendoza et al. (2016) showed that the presence of political dynasties is correlated with greater poverty, specifically in non-Luzon provinces. In congruence with Mendoza et al. (2012, 2016), Tusalem (2019) provided evidence that dynastic prevalence among Philippine provinces is linked to higher poverty incidence, as well as lower average family income. Tusalem (2019) employed a panel-corrected standard error (PCSE) estimation.

Political Dynasties as Various Types

While Mendoza and colleagues proposed a dichotomous fat-thin classification of political dynasties, their analyses focused more on consequences of fat dynasties since they represent greater political concentration compared with thin dynasties (Mendoza, Ong Lopez, & Banaag, 2019). In their previous studies, Mendoza and Banaag (2017) showed that "where there are fatter dynasties, there tend to be deeper poverty and underdevelopment" (p. 1). More recently, Mendoza, Ong Lopez, and Banaag (2019) presented a special case of fat dynasties pertaining to provinces where the incumbent governor, mayor, and congressman are relatives. Following the econometric strategy of Mendoza et al. (2016) (i.e., MLE-BB), their results revealed a positive association between dynastic presence and poverty, with a more pronounced correlation in non-Luzon areas.

Dulay and Go (2021) also investigated the effects of fat dynasties, which they preferred to call horizontal dynasties. Banking on a close elections regression discontinuity design (RDD) among municipalities, they found that (1) horizontally dynastic mayors tend to have higher total government spending; (2) a mayor-vice-mayor dynastic linkage is specifically correlated with increased spending in the health and economic services components of total municipal expenditure; but (3) such increased expenditures do not lead to economic growth or lower poverty.

Using fixed effects (FE) specification, Capuno et al. (2012b) found evidence suggesting that dynastic mayors on their last term (i.e., last-termer or term-limited) tend to reduce health insurance coverage to the poor but do not appear to have higher or lower expenditure on other local public services compared with that of other mayors. On the other hand, Diokno-Sicat (2016) adopts a random effects (RE) estimation and finds that last-termer dynastic governors spend more on health, education, labor and employment, and housing and community development, but less on economic services. Meanwhile, results of Solon et al. (2009) based on RE logit estimates reveal that dynastic governors aiming for re-election tend to increase spending on economic development services when faced with competition from other political dynasties.

International Literature

Political Dynasties as Homogeneous Group

Drawing inference from the flooding incidence across Pakistan in 2010, Ali (2016) employs period fixed effects (FE) regression approach and finds that dynastic politicians significantly spend less on development-oriented programs, and that the expenditure is further dampened in the aftermath of floods. The definition of development expenditure in the study includes spending on education and health, among others.

Similarly, Asako et al. (2015) used instrumental variable (IV) estimation and found that Japanese municipalities with dynastic representatives to the Lower House exhibit lower economic performance despite having abundant resources. Meanwhile, Setyaningrum and Saragih (2019) unearthed evidence from Indonesia that political dynasties are negatively correlated with local government performance. Using OLS and quantile regressions, Acemoglu et al. (2007) found that municipalities in Colombia's Cundinamarca region with higher prevalence of dynastic mayors are less developed at the time of their study. They treated the presence of political dynasties as an indicator of political concentration, which, in turn, is viewed as measure of political inequality.

In India, George and Ponattu (2017) provide evidence that dynastic rule worsens both public goods provision—in terms of health, transport, financial services, and social welfare programs—and local economic development. Meanwhile, Bragança et al. (2015) showed that dynastic municipal governments in Brazil spend more resources on the following expenditure items: (1) education and culture, (2) health and sanitation, (3) housing and urban development, and (4) public transportation. Despite the larger expenditures, they find no significant changes in the quality of public services and improvements in economic growth among dynastic municipalities, compared with non-dynastic counterparts. Both George and Ponattu (2017) and Bragança et al. (2015) relied on close elections RDD strategy.

Political Dynasties as Various Types

Extending her analysis on political dynasties in Pakistan, Ali (2016) disaggregated dynasties in terms of their sources of power: land owning, business ownership, and connection to a *biradari* (clan). She found that dynastic representatives whose source of power is landholding (linkage with *biradari*) are more (or less) likely to engage in local development spending.

Among Italian city governments, Daniele and Vertier (2016) observed the following based on their results drawn from various specifications (i.e.,

close elections RDD, FE estimation, and propensity-score matching): (1) among mayors eligible for reelection (on a second term for a two-term limit), dynastic mayors spend relatively much more at the last year of their first term compared with non-dynastic mayors; and (2) among last-termer mayors, dynastic mayors seemingly reduce expenditures at the end of their term, compared with non-dynastic counterparts. In a more recent study using close elections RDD and FE estimation only, Daniele and Vertier (2018) showed that dynastic city mayors who are not yet term-limited are more likely to increase capital expenditure in the year before an election.

On the other hand, George (2019) continued to use RDD strategy and offered a binary classification of political dynasties: founder and descendant. He argued that founders (or descendants) of political dynasties in India have positive (or negative) effects on public goods provision: "greater exposure to founders improves the availability of public goods" (p. 28) along categories such as education, healthcare, and connectivity, whereas descendants worsen public goods provision in terms of education, healthcare, and sanitation.

Meanwhile, Lacroix et al. (2019) categorized political dynasties in France as democratic and non-democratic. Taking on the case of the enabling act giving full powers to Marshal Pétain, a dictator, on 10 July 1940, they found that democratic dynastic parliamentarians were more likely to oppose the act (by 7.6-9.0 percentage points margin) than non-democratic dynastic and non-dynastic parliamentarians. Lacroix et al. (2019) banked on a binary logit regression model.

Synthesis

As it appears, the effect of political dynasties on governance, socioeconomic outcomes, and development is not straightforward. Findings differ depending on (1) whether political dynasties are viewed as homogeneous group or as various types, (2) what the response variables are, and (3) the specific econometric strategy employed. Nevertheless, the predatory view on political dynasties dominates relevant literature.

Of particular interest to the research at hand, which focuses on the effect of dynastic presence on human development investments, are the following studies: Tusalem and Pe-Aguirre (2013) and Dulay and Go (2021) on health spending; Bragança et al. (2015), Diokno-Sicat (2016), and Ali (2016) on health and education spending; George and Ponattu (2017) and George (2019) on public goods provision in terms of education, health, and social welfare programs; and Capuno et al. (2012b) on health insurance coverage for the poor. Discussion of results of the present research draws insight from these studies.

Methodology

Research Design

This work adopts a quantitative case study approach as a research design and employs multivariate panel regression analysis of publicly available government data as a research method to empirically test the hypothesis posed.

Variables and Hypotheses

Main Variable of Interest: Political Dynasties

Akin to how several relevant studies identified family ties among elected public officials, the proxy measure for political dynasties in the study is determined through the "family name identification process" (Bragança et al., 2015; Daniele & Vertier, 2016; Mendoza et al., 2016; Querubin, 2013, 2016). However, the primacy of the mayoralty position as a reference point in identifying political dynasties is accentuated, given its power and discretion on municipal government expenditure consistent with the provisions of the LGC of 1991 (Labonne et al., 2015).

Following this modified approach, the family name of an elected municipal mayor (reference position) in Rizal province in 2001 is matched with the family name of elected (1) mayor (in subsequent elections), vice-mayor, and councilors in the same municipality; (2) mayors, vice-mayors, and councilors in other Rizal municipalities and city (Antipolo); (3) governor, vice-governor, and board members of Rizal; and (4) representatives of Rizal's two (2) legislative districts[3] between election years 2001 and 2016. The levels of matching process are presented in order—from within the municipality up to the legislative districts. If the family names are the same, they are initially considered relatives (whether by consanguinity or affinity). This method is closely related to the strategy of Dulay and Go (2021) and is more expansive compared with other related municipal-level researches that restrict family ties matching to elected officials within the same municipality only (i.e., Bragança et al., 2015; Daniele & Vertier, 2016, 2018). Meanwhile, familial relations are further verified through desk research and informal interviews. Data is culled from local election results for six electoral years between 2001-2017 (i.e., 2001, 2004, 2007, 2010, 2013, and 2016) collected and maintained by the Commission on Elections (Comelec).

This research considers a municipality/municipal government as "dynastic" if it is led by a "dynastic mayor" (homogeneous view) who may be fat dynastic or thin dynastic (disaggregated view), based on the dichotomized classification proposed by Mendoza and colleagues (Mendoza et al., 2016; Mendoza, Jaminola, & Yap, 2019; Mendoza, Ong Lopez, & Banaag, 2019). A municipality/municipal

government is classified as "thin dynastic" if members of the same family holds the mayoralty position continuously from 2001-2017 but do not have kinship ties with other locally elected officials in Rizal in any of the incumbency periods. On the other hand, a municipality/municipal government is categorized as "fat dynastic" if an incumbent mayor and at least one relative who also holds elective office are serving their terms simultaneously for at least two incumbency periods between 2001 and 2017.[4] This is a stricter characterization of fat dynasties compared with that of Mendoza, Ong Lopez, and Banaag (2019), who propose a temporal conditionality of at least one election cycle only. The argument rests on the succession and considerable time facets of the "dynastic" nature of political dynasties. The Merriam-Webster dictionary (n.d.) defines dynasty as "a succession of rulers of the same line of descent" and/or "a powerful group or family that maintains its position for a considerable time." Typical examples are the dynasties that ruled China for hundreds of years. Clearly, relatives who concurrently serve their incumbencies for just one term should not be considered as fat dynasties, or political dynasties at all, unless they demonstrate the staying power characteristic of dynasties by being re-elected for at least another term.

Based on the identification procedure cited above, six Rizal municipalities/ municipal governments are identified as dynastic and all are categorized as fat dynasties: Baras, Binangonan, Cardona, Jala-Jala, San Mateo, and Tanay. The remaining seven municipal governments are considered non-dynastic: Angono, Cainta, Morong, Pililla, Rodriguez, Taytay, and Teresa. Further details are provided in the results section.

Fat dynastic municipalities/municipal governments are coded "1" in the database, while non-dynasts are coded "0." This dummy variable treatment of political dynasties is consistent with how relevant studies operationally define dynasties in their regression analyses (e.g., Bragança et al., 2015; Daniele & Vertier, 2016, 2018; Diokno-Sicat, 2016; Dulay & Go, 2021; Lacroix et al., 2019; Mendoza, Ong Lopez, & Banaag, 2019; Tusalem & Pe-Aguirre, 2013). The author also concurs with the assertion of Mendoza, Ong Lopez, and Banaag (2019) that utilizing a dummy variable as indicator of dynastic presence is a much more nuanced approach compared with earlier indicators that simply relied on the share of political dynasties among all locally elected officials. The political dynasty dummy clearly links the familial ties among key incumbent officials. In this case, between the mayor and (1) vice-mayor and councilors in the same Rizal municipality; (2) the same set of local officials in other municipalities and city within the province; (3) the most powerful LCE in the province (i.e., the governor) and other key provincial government officials (i.e., vice-governor and board members); and (4) representatives of Rizal municipalities in the Lower House.

Outcome Variables: Municipal Expenditure on Human Development

This research examined the effect of dynastic presence on five distinct categories of human development-oriented municipal government expenditures. These categories are clustered into three domains: aggregate, combined, and specific sector levels. First, analysis started at the aggregate level wherein total local public spending on health, education, and social welfare will be collectively called as human development spending/expenditure. This approach is consistent with the study's assertion that the three sectors represent an inclusive government strategy for human development investments. Second, the combined spending on education and health was analyzed since expenditures on the two sectors are considered primary investments for human development. Third is the analysis on specific sector spending among the three expenditure items.

Indicators representing the various categories of LGU expenditure are extracted from the pertinent database compiled and maintained by the Department of Finance-Bureau of Local Government Finance (DOF-BLGF): the Statement of Receipts and Expenditures (SRE) report, which monitors financial performance (income and expenditure) of LGUs (BLGF, n.d.) (Table 1). Missing data, though few and far in between, are addressed through interpolation and extrapolation methods for a balanced panel dataset. Consistent with related researches (e.g., Daniele & Vertier, 2016, 2018; Kelekar & Llanto, 2013, 2015; Manasan, 1997, 1998), this study measures the outcome variables in per capita terms to control for each municipality's population size.

Control Variables

Among various determinants of human development expenditures, four factors are selected as control variables, which are measured at municipal level: (1) total local source revenue, (2) total IRA, (3) proportion of young population, and (4) proportion of elderly population. The first two variables belong to the supply side (ability to provide social services to constituency, which is tied to income that dictates how much a municipality can spend), while the other two variables represent the demand side (demanded social service component varies depending on the age group) of the fundamental equation for human development-oriented basic services provision at the local level (Cantarero & Lago-Peñas, 2012).

In light of the budget constraints theory (Samuelson & Nordhaus, 2010), the ability of an LGU to spend for human development services is largely a function of its total income (Kelekar & Llanto, 2013, 2015), which, in turn, is comprised mainly of IRA and local source revenue in the case of the Philippines (Manasan, 1997, 1998). Following Manasan (1997, 1998), IRA and local source revenue were used as distinct explanatory variables in the study's regression models to capture their individual effects.

Table 1

Outcome Variables: Indicators and their Technical Definitions

Outcome Variable	Indicator*	Technical Definition
Human development expenditure	Total municipal spending on health, education, and social welfare	Sum of municipal government expenditures on education, health, and social welfare
Total education and health expenditure	Not applicable (NA)**	Sum of municipal government expenditures on education and health
Total education expenditure	(Expenditure on) Education, culture & sports/ manpower development	Covers sector expenditures for services in support of schools and education facilities; planning and manpower development; sports; and cultural preservation and enrichment*
Total health expenditure	(Expenditure on) Health, nutrition & population control	Covers sector expenditures for health program including medical, dental and health services; planning and administration of nutrition programs; population and family planning programs; and administration of these programs*
Total social welfare expenditure	(Expenditure on) Social services and social welfare	Covers sector expenditures for the upliftment of disadvantaged families and children; the rehabilitation of the physically and socially handicapped; assistance to distressed and displaced individuals and families; care of the aged and other welfare services and payment of retirement pension and other social security benefits. Also included are expenditures for the provision of services and facilities for recreational, religious and other social activities not elsewhere classified*

* Adopted as is (i.e., verbatim) from the metadata document of SRE (BLGF, n.d.)
** Computed by the author from SRE database

Meanwhile, the respective proportions of young and elderly populations are among the standard set of demographic variables utilized in most empirical studies on LGU expenditure (Köppl Turyna et al., 2015). The rationale for inclusion rests on economic means, or lack of it. Compared with the working age population (ages 15-64) who are likely to be employed and therefore able to spend for their own education, health, and social security needs (private expenditure), young and elderly populations who are not yet working/have already stopped working need and/or demand more publicly funded social services (Kang & Magoncia, 2016).

Both age groups are associated with higher local government expenditures on health and social welfare (Lusky & Weinblatt, 1998, as cited in Žokalj, 2016, p. 404; Nguyen et al., 2009). However, they have a divergent effect on education expenditure owing to substitution effect. Young constituents are direct consumers of publicly provided basic education, while elderly constituents are not, but the latter are high-level consumers of the two other types of basic services, namely, health and social welfare. Hence, the higher the share of young (or elderly) age population, the higher (or lower) the education expenditure at the local level, *ceteris paribus* (Fernandez & Rogerson, 1997; Guziejewska & Majdzińska, 2018). This research adopts relevant revenue data from BLGF's SRE Report and municipal-level population data from the Philippine Statistics Authority (PSA) Census of Population and Housing for years 2000, 2007, 2010, and 2015 as indicators for the four control variables (Table 2). Since the database deals with observations from 2001-2017, population data are interpolated for 2001-2006, 2008-2009, 2011-2014, and extrapolated for 2016-2017.

Table 2
Control Variables, their Indicators and Technical Definitions

Control Variable	Indicator	Technical Definition
Total local source revenue	Total local sources	Sum of the municipality's total tax revenue and non-tax revenue*
Total IRA	IRA	Share of the municipality from national internal revenue taxes collected*
Proportion of young population	NA**	Percentage share of population ages 0-14 to total municipal population***
Proportion of elderly population	NA**	Percentage share of population ages 65-above to total municipal population***

*   Adopted as is from the metadata document of SRE (BLGF, n.d.)
**   Computed by the author from the PSA population data
*** To fit with the PSA (n.d.) definition of working age population (ages 15-64), the author adopts these age limits, which are also used by Guziejewska and Majdzińska (2018) and Kang and Magoncia (2016).

Dataset: Composition

This research relies on a panel dataset comprised of 13 municipal governments in Rizal province observed over a 17-year period (2001-2017). While limited relative to a national scope, the number of observations analyzed in this study is still statistically viable (e.g., N>30). Owing to the cross-sectional and time-series character of panel data (Wooldridge, 2020), a total of 221 observations are generated for the study (i.e., 13 municipalities x 17 years). The dataset contains information on municipal income, expenditure, population, as well as on whether the municipal governments are governed by dynastic mayors or not.

Econometric Model

The dataset compiled is analyzed based on the linear regression model shown below:

$$Y_{it} = \beta_0 + \beta_1 \text{dynasty}_i + \beta_2 \text{control\_var1}_{it} + \ldots + \beta_5 \text{control\_var4}_{it} + \mu_{it}$$

Where:

Y_{it}	Outcome variable representing each of the five (5) categories of human development expenditure; i = municipality and t = year
β_0	Common intercept (constant)
dynasty	Main variable of interest representing dynastic presence; dummy variable coded 1 or 0 if municipality is deemed fat dynastic or non-dynastic
β_1	Coefficient of the main explanatory variable; represents partial effect of dynastic presence on human development investments
control_var1-control_var4	Vector of control variables applicable to all dependent variables
$\beta_2 - \beta_6$	Coefficients of control variables
μ_{it}	Error term

With a total of five outcome variables representing various categories of human development expenditure, the research estimates a total of five related but nonetheless distinct panel regression models where all control variables are kept the same across all specifications.

Data Analysis

Akin with Tusalem (2019), this research employed PCSE estimation to analyze the regression model shown above, using the statistical software Stata 16. Particularly, it banked on a Prais–Winsten generalized least-squares (GLS) estimator with PCSEs. Such estimation strategy was chosen over the usual panel data estimators, namely, OLS, RE, and FE estimators (Torres-Reyna, 2007; Wooldridge, 2020), based on two key considerations: (1) the peculiarity of the study's panel data structure, and (2) the need to account for possible spatial dependence among the analyzed municipalities in Rizal province.

Standard model specification tests were conducted to check for specification error, omitted variable bias, and multicollinearity in the study's regression models. Results of these tests revealed absence of all three. Thus, the study's econometric models were properly and sufficiently specified (UCLA Institute for Digital Research and Education, n.d.). However, supplemental regression diagnostics confirmed the presence of panel heteroskedasticity, autocorrelation, and contemporaneous correlation (HPAC) disturbances (Blackwell, 2005) in the study's models.[5] Disregarding these nuances in the analysis will lead to biased statistical inference (Hoechle, 2007).

Meanwhile, the panels/cross-sections observed over time in this study are municipalities, which are geographical units. Hence, spatial dependence is highly likely (Mendez & Santos-Marquez, 2020). Spatial dependence pertains to "the propensity for nearby locations to influence each other and to possess similar attributes" (Goodchild, 1992, p. 33). In econometrics parlance, spatial dependence is a form of cross-sectional dependence or contemporaneous correlation among observations (Hoechle, 2007). When such aspect is overlooked, results of any panel data analysis is prone to produce "biased, inefficient, and/or inconsistent coefficient estimates" (Tosun & Skidmore, 2004, p. 172).

Utilizing OLS estimation when HPAC disturbances are present is problematic (Beck & Katz, 1995). In the face of such disturbances, OLS regression estimates will likely be "biased, inefficient and/or inconsistent" due to violations of "standard OLS assumptions about the error process" (Podestà, 2002, p. 9). On the other hand, FE & RE models are inefficient alternatives because they can only address autocorrelation and heteroskedasticity, but not contemporaneous correlation (Hoechle, 2007; Stata Corp., 2019). Further, all three panel data estimators cannot address spatial dependence.

Developed by Beck and Katz (1995), the PCSE method is a robust estimator utilized in social science research when panel regression models have HPAC disturbances (Hoechle, 2007; Sarafidis & Wansbeek, 2012). It has also been used in several studies to specifically account for spatial dependence; for instance,

Tosun and Skidmore (2004) for counties in West Virginia, USA, and Díaz-Foncea and Marcuello (2014) for Spanish regions. Within the political dynasty literature, Tusalem (2019) used PCSE estimation to analyze the effect of dynastic prevalence, among other institutional, political, and geographical covariates, on several socioeconomic outcomes in the Philippines. Meanwhile, Martín-Mayoral and Sastre (2017) adopted the PCSE strategy in examining the determinants of aggregate social expenditure, including those for education and health, in Latin America.

If no autocorrelation function is specified, the PCSE strategy only accounts for heteroskedasticity and contemporaneous correlation by relying on OLS regression with PCSEs (Stata Corp., 2019). To address all three HPAC disturbances, the author follows the advice of Beck and Katz (1995) and sets a first-order autocorrelation [AR(1)] common to all panels (i.e., common AR(1) parameter). This approach is embodied in the use of PCSE method's enhanced version, the so-called Prais-Winsten transformation (Plumper et al., 2005), which is dubbed in the study as panel-corrected Prais–Winsten GLS estimator (Stata Corp., 2019).

Results

Political Dynasties among Municipalities in Rizal Province

Using the family name identification approach in the literature and following Mendoza and colleagues' fat-thin dynasty dichotomy, this research identified six dynastic municipal governments in Rizal: Baras, Binangonan, Cardona, Jala-Jala, San Mateo, and Tanay. All these identified dynastic municipalities are categorized as fat dynasties because they satisfy the following conditions: the incumbent mayor serves his/her term concomitantly with at least one relative also holding elective office in Rizal province for at least two incumbency periods between 2001 and 2017 (i.e., six out of 17 years). The other half, or the seven other municipal governments, are considered non-dynastic because they do not fit the criteria set for categorization into either fat or thin dynasties (i.e., Angono, Cainta, Morong, Pililla, Rodriguez, Taytay, and Teresa).

Table 3 presents the fat dynasties in Rizal province and illustrates how they dominate local elective positions in the province. For example, in Binangonan, the notation "M_0-VM_0-G-M_1" for the 2016 column means that members of the political dynasty won four local positions in the 2016 elections and will thus serve their incumbencies simultaneously: Binangonan mayor and vice mayor, Rizal governor, and Antipolo city mayor.

Table 3
Fat Dynasties in Rizal Province

Municipality	2001	2004	2007	2010	2013	2016
Baras	-	M_0	M_0	M_0-C_0	M_0-VM_0-C_0	M_0-VM_0-C_0
Binangonan	M_0-G	M_0-C_0-G	M_0-G	M_0-G	M_0-G-M_1	M_0-VM_0-G-M_1
Cardona	M_0	M_0	M_0-VM_0-C_0-VG-PBM	M_0-C_0-VG-PBM	M_0-C_0-VG-PBM	M_0-VG
Jala-Jala	-	M_0	M_0-C_0	M_0-C_0	VM_0-C_0	M_0-C_0
San Mateo	M_0	M_0-VM_0	M_0	M_0	M_0-VM_0-C_0	M_0-VM_0-C_0
Tanay	M_0	M_0	M_0-PBM	M_0-PBM	M_0-PBM	M_0

Note. M0, VM0, C0 =mayor, vice mayor, and councilor in a reference municipality; M1…n, VM1…n, C1…n =mayor, vice mayor, and councilor in other municipalities/city; G=governor; VG=vice governor; PBM=provincial board member. Author's summary is based on 2001-2016 local election results obtained from COMELEC.

A closer look at Table 3 points to several interesting observations. First, between 2001-2017, the mayoralty position among fat dynastic municipalities in Rizal is entirely monopolized by a single political family—except for Baras and Jala-Jala. Second, the fat dynasties' extent of political control among elective positions in Rizal ranges from a minimum of three terms or nine years to a maximum of six terms or 18 years.

Elections are far from being competitive among fat dynastic municipalities in the province of Rizal. In fact, fat dynasties in these municipalities not only win by large vote margins. Some of them are already presumed winners[6] even before votes are cast because they do not have a single competitor. For instance, one member of a political dynasty ran unopposed as mayor of Binangonan in the last term of his first three consecutive terms between 1998 and 2007 (i.e., in the 2004 elections) (Binangonan Municipal Government, 2017a). Incidentally, it was in the 2004 elections when he and his brother, who ran and won as councilor, started dominating in local elections in Binangonan. Since 1992, the family has had unrelenting clout on the Rizal gubernatorial position, and, since 2013, the Antipolo City mayoralty seat. Meanwhile, in the 2016 elections, members of the political dynasty in Cardona and Jala-jala won as mayors in their respective municipalities without any competition (ABS-CBN Investigative and Research Group, 2016).

The political entrenchment of fat dynasties in Rizal province continues beyond the covered period of this research (i.e., from 2001-2017). In the most recent 2019 elections, one of the members of these dynasties did a repeat of his 2004 electoral dominance and won again unopposed as Binangonan mayor (*Rappler*, 2019). As he was mayor again starting 2016, the mayor is poised to

have a second three-consecutive incumbency come 2022 elections (i.e., from 2016-2025). The same trend applies to his brother, who, after being term-limited as mayor from 2007-2016, ran and won as vice mayor in the 2016 elections and was re-elected in 2019 by an enormous winning margin of 46,002 votes. The vice mayor got 61,329 votes, while his independent opponent got a paltry 15,137 votes (*Rappler*, 2019). Meanwhile, a former San Mateo mayor from 2007-2016 won unopposed as vice mayor in the 2019 elections, while his wife was re-elected mayor via landslide victory over an independent candidate. The winning margin between the mayor's wife and her opponent was a whopping 47,878 votes, with the former garnering a total of 60,571 votes while the latter got only 12,693 votes (*Rappler*, 2019).

Fat Political Dynasties and Human Development Investments

Based on the panel-corrected Prais-Winsten GLS regression estimates shown in Table 4, it appears that fat dynastic municipal governments in Rizal province considerably invest less on their constituents' human development compared with their non-dynastic counterparts, controlling for other relevant variables.

At the aggregate level, Rizal municipalities governed by fat dynastic mayors from 2001-2017 tend to have significantly lower human development expenditures as they spend, on the average, around PHP 35.77 less per capita. With a probability value (p-value) of 0.051, this result is statistically significant at the 90% confidence level and provides moderately strong empirical evidence in support of the study's hypothesis on the effect of dynastic presence on human development investments.[7]

Meanwhile, the disparity in human development investments between dynastic and non-dynastic Rizal municipalities was found to be more pronounced when social welfare spending was excluded and analysis was focused on the combined expenditures for health and education only. Holding other factors fixed, education and health spending among fat dynastic municipal governments in Rizal is around PHP 42.08 lower per capita compared with non-dynastic municipalities. The relevant coefficient of the dynasty variable here has a p-value of 0.001—statistically significant at the most stringent 99-percent confidence interval. This coefficient offered a rather robust evidence in favor of the study's hypothesis.

Table 4

Effect of Dynastic Presence on Human Development Investments

Main Explanatory Variable	Dependent Variables				
	Human Development Spending	Education and Health Spending	Education Spending	Health Spending	Social Welfare Spending
Political Dynasty	-35.77* (18.34)	-42.08*** (12.31)	-34.53*** (8.37)	-5.05 (6.92)	7.42 (10.55)
Covariates:					
Local source revenue	3.59e-07*** (1.07e-07)	3.60e-07*** (8.66e-08)	1.56e-07*** (5.37e-08)	2.30e-07*** (6.87e-08)	8.10e-09 (4.72e-08)
IRA	2.09e-07* (1.08e-07)	1.31e-08 (7.76e-08)	-5.87e-09 (4.92e-08)	-5.66e-09 (4.81e-08)	1.88e-07*** (7.05e-08)
Percentage of ages 0-14 to population	4.69** (1.99)	4.79*** (1.74)	5.14*** (1.14)	-0.40 (1.49)	-0.16 (0.78)
Percentage of ages 65-up to population	66.83*** (10.05)	50.29*** (7.77)	5.28 (5.80)	44.31*** (5.15)	16.49** (6.48)
R-squared	0.29	0.37	0.28	0.37	0.09
Probability > Chi-squared	0.00***	0.00***	0.00***	0.00***	0.00***
Number of observations	221	221	221	221	221

Note. ***, **, *=statistically significant at 1%, 5%, and 10% levels, respectively; PCSEs in parentheses; dependent variables are in PHP per capita terms.

Lastly, Rizal municipalities governed by fat dynastic mayors tend to significantly under-invest specifically in education. Relative to non-dynastic municipalities, dynastic municipal governments in Rizal spend, on the average, about PHP 34.53 less per person. This result is likewise statistically significant at the most stringent 1% level (p-value=0.000), providing a very strong evidence in support of the research hypothesis. As for health and social welfare expenditures, respectively, the study found no statistically significant effect of dynastic presence among Rizal municipalities. These findings are hardly surprising given the plethora of related studies that pointed to the same negative effect of political dynasties on governance, socioeconomic outcomes, and development: Ali (2016) on health and education spending among constituencies in Pakistan; Tusalem and Pe-Aguirre (2013) on health spending among Philippine provinces; Capuno

et al. (2012b) on health insurance coverage for the poor among Philippine municipalities and cities; and George and Ponattu (2017) and George (2019) on public goods provision in education, health, and social welfare programs among Indian villages.

But why did dynastic mayors in Rizal perform poorly in terms of local public spending on human development? Does it not adversely affect their chances of staying in power via re-election? As argued in this study, a plausible explanation is the predatory view of political dynasties: apparently, they did not have the incentive to invest in human capital enhancement and human capabilities expansion of their constituents as a means to endear themselves to voters and ensure their stay in political power. Reliance on their monopoly of political power coupled with inherited political and financial capital, as well as incumbency advantage externalities is apparently enough to secure votes for them and their relatives during elections.

In sum, members of political dynasties have higher likelihood of winning elections compared with non-dynastic candidates, all things equal (Querubin, 2016). This advantage is ascribed to their key attributes: (1) effective concentration and preservation of political power as relatives take turn occupying elective positions (Simbulan, 2012); (2) bequeathal of massive political and financial capital (Ali, 2016) in the form of "brand name recall," wealth, and control of political and economic resources (George & Ponattu, 2017); and (3) benefiting from externalities or spillover effects of incumbency advantage. Such substantial electoral advantage may induce dynastic politicians to feel self-assured of continuous re-election, resulting to several moral hazard problems, including underperformance in office (Zheng et al., 2016). Among other mechanisms, this tendency may manifest in terms of the incumbent dynastic mayor's substantially low human development investments, as shown in the case of municipalities in Rizal province.

Further, fat dynasties enjoy wider and deeper entrenchment of political power (monopoly of multiple elective positions over consecutive years) (Mendoza, Jaminola, & Yap, 2019) and benefit considerably more on incumbency advantage externalities (extends to relatives in several positions) (Querubin, 2013; 2016). These advantages almost ensure continuous re-election for them and their relatives. Following such logic, fat dynastic mayors in Rizal seemingly lack the incentive to signal their competence by performing well in office. Particularly, they appear less motivated to project a caring image to boost their re-election (and/or election of relatives) by spending more on human development-oriented sectors. Inherited and accumulated electoral advantages of fat dynastic mayors in Rizal may so insulate them from the threat of competition from non-dynasts "that they mute performance incentives" (George & Ponattu, 2017, p. 2). Beyond its popularity in the relevant literature, the choice of predatory view of political

dynasties as a guide in elucidating the results of the research is grounded on the political and electoral realities in Rizal province where fat dynasties are deeply entrenched and are not faced with significant electoral/political competition—as discussed in the previous section. This context helps explain why the study's findings run counter to that of Bragança et al. (2015) and Dulay and Go (2021).

Bragança et al. (2015) find that dynastic municipalities in Brazil spend more on health and education, while Dulay and Go (2021) show that horizontally dynastic municipalities in the Philippines have higher health expenditure. Both studies rely on regression discontinuity design (RDD) anchored on close elections, and therefore the results apply mainly on localities with high political competition. As Bragança et al. (2015, p. 13) put it, the estimated effects of their political dynasty variable "represent local estimates of dynastic politicians on economic outcomes for municipalities that are highly competitive" and that "*these effects might be quite different in localities where dynasties win by a large vote margin* [emphasis added]." This argument is in sync with Asako et al. (2015) who assert that political dynasties tend to have higher public expenditures only among jurisdictions with competitive elections. As shown in the previous section, elections are far from being competitive among fat dynastic municipalities in the province of Rizal. In fact, fat dynasties in these municipalities not only win by large vote margins, some of them run—and win—totally unopposed. In this section, the study provides empirical evidence that fat dynastic mayors in Rizal significantly invest less on human development of their constituents. The reminder of Bragança et al. (2015) is seemingly instructive in this case: "political dynasties facing less electoral competition can be less accountable and therefore perform worse than dynasties facing a lot of competition" (p. 14).

Control Variables and Models' Overall Significance

Consistent with findings in the literature, all control variables have their expected signs, denoting direction of association. All are statistically significant predictors of municipal per capita human development investments at various combinations, which justify their inclusion in the study's regression models. The R^2 or coefficient of determination, which represents the "percentage of variation in the dependent variable explained by variation in the independent variables" (Figueiredo Filho et al., 2011, p. 60), among the regression specifications above (i.e., between nine percent and 37%) fall within the range of R^2 values reported by scholars who publish articles on determinants of local government expenditure on health, education, and social welfare (e.g., Araújo et al., 2017; Kelekar & Llanto, 2013, 2015; Manasan, 1998). Moreover, the study's R^2 range of nine percent and 37% is a decent result, given that R^2 values of regression models in the social sciences field are typically low (Wooldridge, 2020), with a value of at least nine percent considered to be respectable (Itaoka, 2012). On the other hand, all five regression models are statistically significant at the 99% confidence level, based

on the Prob>X^2 values—denoting a strong "joint significance" of all explanatory variables in each specified model (Solon et al., 2009; Torres-Reyna, 2007).

Robustness Check: Alternative Estimation Strategies

Results of the study are robust to two alternative estimation strategies that also address HPAC disturbances: (1) feasible generalized least squares (FGLS) estimator and (2) FE estimator with Driscoll-Kraay standard errors (SE). As illustrated in Table 5, coefficients of the dynasty variable stay statistically significant even when estimated using FGLS and Driscoll-Kraay approaches. In fact, the coefficients generated by FGLS are identical to those from the adopted panel-corrected Prais–Winsten GLS strategy, with slight differences in standard errors. Nevertheless, the latter strategy was adopted because it is superior to the former when the focus is on hypothesis testing (Moundigbaye et al., 2018; Reed & Ye, 2011), which is the case for this research. Besides, compared with FGLS, the PCSE approach possesses finite sample advantage and generates more accurate standard errors for small panels[8] like the study's dataset (Beck & Katz, 1995; Hoechle, 2007; Moundigbaye et al., 2018; Stata Corp., 2019; Reed & Ye, 2011). Meanwhile, the Driscoll-Kraay strategy is not used since it is more suitable for panel datasets where cross-sections are larger than the number of time periods (i.e., N>T) (Knight, 2014; Hoechle, 2007). The study's dataset follows the N<T structure (i.e., 13 municipalities<17 years).

Table 5
Alternative Estimation Strategies:
Effect of Dynastic Presence on Human Development Investments

Estimation Strategy	Dependent Variables				
	Human Development Spending	Education and Health Spending	Education Spending	Health Spending	Social Welfare Spending
Adopted:					
Prais-Winsten with PCSEs	**-35.77*** **(18.34)**	**-42.08*** **(12.31)**	**-34.53*** **(8.37)**	-5.05 (6.92)	7.42 (10.55)
Alternatives:					
FGLS	**-35.77*** **(19.74)**	**-42.08*** **(13.61)**	**-34.53*** **(8.13)**	-5.05 (7.78)	7.42 (11.26)
FE with Driscoll-Kraay SE	**-29.56*** **(8.24)**	**-30.78*** **(7.49)**	**-27.45*** **(5.84)**	-3.32 (4.34)	1.21 (4.42)

Note. Coefficients shown are those of the political dynasty variable; ***, **, * = statistically significant at 1%, 5%, and 10% levels, respectively; standard errors in parentheses; dependent variables are in PHP per capita terms.

Robustness Check: Alternative Specifications

Sticking with the PCSE approach, findings are likewise generally robust to three alternative model specifications: (1) adding unit and period dummies to the adopted linear model (i.e., linear model with unit and period dummies); (2) transforming the dependent variable into its natural logarithmic form (i.e., log-linear model); and (3) adding unit and period dummies to the log-transformed specification (i.e., log-linear model with unit and period dummies). Several related studies (e.g., Ali, 2016; Diokno-Sicat, 2016; Dulay & Go, 2021) have employed these alternative specifications to estimate the effect of political dynasties on human development investments. For this research, however, these specifications are found to be saddled with omitted variable bias, specification error, and multicollinearity. These issues are mainly the reason why the study adopted a linear model without unit and period dummies, which is free from the said biases/errors.

Table 6
Alternative Specifications:
Effect of Dynastic Presence on Human Development Investments

Regression Specifications	Dependent Variables				
	Human Development Spending	Education and Health Spending	Education Spending	Health Spending	Social Welfare Spending
Adopted:					
Linear model	**-35.77*** **(18.34)**	**-42.08*** **(12.31)**	**-34.53*** **(8.37)**	-5.05 (6.92)	7.42 (10.55)
Alternatives:					
With unit and period dummies	-84.93 (62.77)	**-153.55*** **(42.78)**	**-104.37*** **(27.12)**	-43.89 (37.05)	8.39 (30.57)
Log-linear model	**-0.189*** **(0.085)**	**-0.232*** **(0.066)**	**-0.450*** **(0.119)**	-0.069 (0.067)	0.086 (0.236)
Log-linear with unit and period dummies	**-0.813*** **(0.158)**	**-0.408*** **(0.173)**	**-1.059*** **(0.366)**	**-0.627*** **(0.217)**	-0.056 (0.303)

Note. Coefficients shown are those of the political dynasty variable; ***, **, *=statistically significant at 1%, 5%, and 10% levels, respectively; PCSEs in parentheses; dependent variables are in PHP per capita terms.

Another motivation behind the choice of the adopted specification is the word of caution given by Plumper et al. (2005). The researchers advised against the inclusion of unit and period dummies when panel data is estimated through

PCSE because unit (or period) dummies disproportionately absorb most of the theoretically interesting cross-sectional (or time-series) variance in the data (Plumper et al., 2005). The use of unit dummies is specifically problematic when a level effect of a time invariant variable (e.g., the study's political dynasty dummy) is being tested, since adding unit dummies suppresses the level effects. Meanwhile, including period dummies not only absorbs large portions of the trend in the outcome variable, but also tends to bias estimates (Plumper et al., 2005). True enough, the study's alternative regression specifications with unit and period dummies generate unacceptably high coefficients—as can be observed from Table 6.

Conclusions

Local government investments on human development, reflected in their level of expenditure on health, education, and social welfare, are necessary public investments geared towards enhancing human capital and enlarging human capabilities of their constituents. Therefore, human development spending represents a reasonable measure of good performance of incumbent local officials who may be dynastic or non-dynastic (Solon et al., 2009; Manasan, 1997).

The study empirically tested whether dynastic mayors tend to have lower human development investments for their constituents. The research inferred from a panel data composed of all 13 municipalities in Rizal, Philippines. Data in years 2001-2017 were drawn from these municipalities, dichotomized into dynastic or non-dynastic. Dynasties in this study are characterized as fat dynasties, wherein an incumbent mayor serves his/her term concomitantly with at least one relative also holding elective office in Rizal province for at least two incumbency periods between 2001 and 2017.

Based on the results of panel-corrected Prais-Winsten GLS estimation, this research found that Rizal municipal governments led by fat dynastic mayors tend to have lower human development investments for their constituents compared with non-dynastic counterparts. Specifically, they spent less on human development (1) at the aggregate level (i.e., total municipal expenditure on health, education, and social welfare), (2) at the combined levels of education and health, and (3) at the specific sector of education. These findings support the predatory view of political dynasties, particularly the fat type: with wider and deeper entrenchment of political power due to monopoly of multiple elective positions over consecutive years, fat political dynasties are inherently prone to be predatory—inimical to governance, socioeconomic outcomes, and development.

While the study's findings are statistically significant, economically meaningful, and robust to various alternative model specifications and econometric

estimation procedures, some caveats need to be pointed out. For one, results of this research only apply to Rizal province. Therefore, the study provides only a snapshot of how fat political dynasties affect local governance in the Philippines. A subsequent research analyzing all municipalities in the country is needed to portray a nationally representative empirical evidence. Meanwhile, the author recognizes that the study's findings may possibly be affected by endogeneity, since the regression modeling employed "cannot control for unobserved characteristics of politicians, parties, or efforts of mobilization" (Bragança et al., 2015, p. 14). A future research intends to build on the econometric model developed in this study to address possible endogeneity concern.

Endnotes

[1] For a full list of devolved functions per LGU, please see Section 17 of the 1991 LGC.

[2] Antipolo City is excluded from the sample for comparability among observations.

[3] Rizal's first district covers Angono, Binangonan, Cainta, and Taytay; the second district encompasses Baras, Cardona, Jala-Jala, Morong, Pililla, Rodriguez, San Mateo, Tanay, and Teresa.

[4] Incumbency periods considered based on the three-year term limit provided for LGU officials (LGC of 1991): 2001-2004; 2004-2007; 2007-2010; 2010-2013; 2013-2016; 2016-2019.

[5] Stata commands and results of these diagnostic tests are available upon request.

[6] Unopposed local election candidates only need to have one vote to be declared as official winners (Tomacruz, 2019).

[7] Interpretation of p-value as evidence against the null hypothesis (i.e., there is no relationship/effect) and in favor of the alternative hypothesis (i.e., there is relationship/effect) is in line with the guidelines recommended by Hartmann et al. (2018): $p \leq 0.01$ as very strong evidence; $0.01 < p \leq 0.05$ as strong evidence; $0.05 < p \leq 0.10$ as moderate evidence; and $p > 0.10$ as weak or no evidence.

[8] Composed of 10-20 cross-sections and 10-40 periods (Stata Corp., 2019).

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