County's Internal Characteristics and Development Impact Fee Policy Implementation

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Abstract

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The main goal of this study is to examine under what conditions local governments more actively implement development impact fee policy. To find empirical answers to this research question, the study selected Colorado counties as the study's units of analysis. Colorado passed its development impact fee law in 2001. Since then, many Colorado counties have implemented the state development impact fee policy to earn revenues necessary for providing their residents with better infrastructures and eco-friendly environments. However, all of the Colorado counties do not evenly implement the same state development impact fee policy. That is to say, uneven local development impact fee policy implementation has been shown across Colorado. To empirically explicate this uneven local development impact fee policy implementation that appears among Colorado counties, this study tested several factors related to county characteristics. Statistical results demonstrate that counties with high population density, wide land area, and many wealthy residents more actively implement the state development impact fee policy.

주 제 어: 지방재정, 개발영향부담금, 제도 분석과 발전의 프레임워크

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I. Introduction

Development impact fees are compulsory fees that are levied on a new comer and a developer to offset the costs necessary for establishing new public facilities and infrastructure (Burge & Ihlanfeldt, 2006; Kolo & Dicker, 1993; Nelson & Moody, 2003). They have played a role of a particular policy to control rapid growth in a particular area

by imposing expenditures needed to maintainor create infrastructure or public facilities and make eco-friendly circumstances to a new comer or developer. Their other function is to increase a local government's revenues as a form of non-tax revenue.

Based on the literature review focusing on development impact fee policy, the author recognized that little research exists regarding what factors lead a local government to more actively implement development impact fee policy. The literature review points out that up until now, most of previous studies related to development impact fees have focused on analyzing the effects of development impact fee policy on housing afford ability or land price (Burge & Ihlanfeldt, 2006: Levine, 1999; Mathur, 2013; Thorsnes & Simons, 1999). As a result, these previous studies fail to account for under what conditions local governments more actively implement development impact fee policy. To make up for this academic lack in the development impact fee study area, this research targets Colorado counties as units of analysis and concentrates on analyzing whether county's internal characteristics influence local governments to more actively implement development impact fee policy.

Colorado is one of the most ideal states for researching the mechanisms of local governments' development impact fee policy processes because Colorado's development impact fee law allows local governments to adopt and implement their own development impact fee tools (Wallis, 2012; White & Dahl, 2001). Thus, the Colorado local governments' autonomous policy action shown in the development impact fee use helps a researcher focus on studying only internal factors that are representative of local government characteristics. By analyzing the final dataset embracing internal characteristics of Colorado counties, this study attempts to investigate the factors that increase the likelihood that Colorado counties more actively implement development impact fee policy. To accomplish this study's goal, the author has made and tested seven hypotheses, which include county's internal characteristics, while using fundamental ideas of the institutional analysis and development (IAD) framework. The following sections draw the history of development impact fees, show an overview of the IAD framework, frame the overall equation model including seven hypotheses, conduct a statistical analysis, and discuss the statistical results.

II. Development Impact Fees across the USA and Colorado

Up to date, 29 states in the USA have enacted development impact fee law. These laws have supported a local government-city or county government-to impose a new comer or developer to development impact fees in several areas (Mullen, 2015). One of their primary functions helps local governments in 29 states offer better public facilities and more eco-friendly circumstances for their residents. Development impact fees are a single payment that local governments levy new comers and developers to approve their development in the local governments' territories (Lawhon, 2007). Development impact fees are utilized in making or maintaining main public facilities and infrastructure.

In the 1970s, the USA encountered the tax and expenditure limitation and experienced taxpayer revolts. This situation led governments to strive to find a financial source in adding and improving their own revenues. Singell and Lillydahl (1990) emphasize that local governments have used development impact fees to overcome their taxpayer revolt issues and fiscal difficulties. In the beginning of the 1970s, the use of development impact fees emerged across the USA to fund public facility improvements, capital infrastructure construction, and environmental conservation. For instance, Florida's local governments began to conduct development impact fees in 1971 (Mathur, 2013)

Development impact fees have been obtaining in use and popularity in Colorado since the Colorado General Assembly had legislated Senate Bill 15, which was called as Section 29-20-104.5 C.R.S., in October, 2001 (White & Dahl, 2001). The Colorado's decision-makers define development impact fees as "any fee, charge, or assessment relating to a capital expenditure which is imposed on land development as a condition of approval of such land development, as a prerequisite to obtaining a permit or service" and state "an impact fee as a one-time charge assessed against new development that attempts to recover the cost incurred by a local government in providing the public facilities required to serve new development" (White & Dahl, 2001). Development impact fees allow local government to regulate growth in their own territories. Its guidelines explicitly point out that Colorado's local governments—cities and counties—can impose development impact fees to a developer or new comer to create and improve public facilities, infrastructure, and environments in their territories. In Colorado, development impact fees are primary funding sources to make jurisdictions that provide residents with more convenient and comfortable lives. Local governments in Colorado generally use development impact fees in 13 areas—affordable housing, roads, transportation, public facilities, fire prevention, parks and recreation, trash, public safety, schools, sewer, storm drainage, wind farms, and water management.

The State of Colorado enacted a law enabling local governments to use development impact fees in 2001. The legislation points out that this law gives local governments the authority in imposing a development impact fee. This means that a local government can impose a development impact fee to fund expenditures on main public facilities needed to serve new development and thus a local government has the authority to conduct growth controls, which lead environmental conservation (Feiock, 2004). In the implementation of Colorado's local development impact fee policy, a main policy actor is not a state government but a local government. This legend is derived from the Colorado Constitution, which usually supports local sovereignty (Ingram et al., 2009).

III. IAD Framework to Local Development Impact Fee Policy Implementation

Feiock (2004) demonstrates that development impact fee policy is affected by various internal characteristics of jurisdictions-states, cities, and counties. The importance of jurisdictions' internal characteristic roles in analyzing the policy process is usually highlighted by scholars finding their studies' logic in the institutional analysis and development (IAD) framework. Ostrom (2007) addresses how important jurisdictions' internal characteristics are in accounting for mechanisms of the policy process through a flowchart of the policy process. As shown in Figure 1, Ostrom's IAD flowchart draws that internal characteristics of policy entities consist of three categories-physical conditions, attributes of community, and rules-in-use.

Based on the IAD framework's academic insight, this study focuses on testing whether several internal characteristics of jurisdictions influence the implementation of Colorado counties' development impact fee policy.



Figure 1. IAD Framework¹⁾

1. County's Physical Conditions

Ostrom (2007) emphasizes that both actors and action situation in the action arena are influenced by physical conditions. Jurisdictions' physical conditions are a fundamental background in structuring the action arena. They include jurisdictions' background factors such as population growth, density, urban, suburban, land area, etc. (Feiock, 2004). These background factors of jurisdictions (communities) account for "what actions are physically possible, what outcomes can be produced, how actions are linked to outcomes, and what is contained in the actors' information sets" (Ostrom, 2007, p.39).

Baldassare and Wilson (1996) have discovered that population factors such as population change, density, and size play a role as a good explanatory factor about why jurisdictions more actively implement development impact fees policy. Regarding population density, Protash and Baldassare (1983) prove that citizens that live in unpleasant life environments of high population density want their local governments to control their jurisdictions' unplanned development. Thus, it is hypothesized that counties with higher population density are more likely to implement development impact fee policy.

Another factor representative of physical conditions of jurisdictions is land area size (Feiock, 2004; Kang & Feiock, 2006). Land area is the size, in square miles, of the land parts of jurisdictions, excluding water area. If land area size in a jurisdiction is wide, residents and decision-makers living in its territory make more policy action opportunities, in which they consider either having development chances such as farming

¹⁾ The author concisely edited the IAD framework proposed by E. Ostrom (2007) to use main concepts necessary for this study.

or building or pursuing environmental conservation (Kang & Feiock, 2006). Therefore, land area size of a jurisdiction is related to development impact fee policy. It is hypothesized that a county with wider land area size are more likely to implement development impact fee policy.

2. Community Attributes

Mazmanian and Sabatier (1980) indicate that diverse public policies chosen and implemented by jurisdictions are best understood when jurisdictions' needs and resources, which are mainly estimated by community attributes including socio-economic factors, are considered. Howell-Moroney (2004) proves that wealthy jurisdictions tend to conserve eco-friendly environments rather than pursue rapid growth. His study explains that residents in wealthy jurisdictions do not want industrial growth that leads them to face noxious pollutants, increase traffic issues, and live with undesirable neighbors. Therefore, it is hypothesized that counties with many wealthy residents are more likely to implement development impact fee policy. On the contrary to this perspective, some scholars (Steel & Lovrich, 2000; Zahariadis & Morgan, 2005) indicate that limiting growth or development leads to a jurisdiction's job loss and economic profit decrease, which may influence their poor residents. Zahariadis and Morgan (2005) emphasize that jurisdictions with many poor residents are inclined to welcome pro-development policies to provide their residents with more jobs and reduce their fiscal stress caused by low tax bases. Therefore, it is hypothesized that counties with many poor residents are less likely to implement development impact fee policy.

On the other hand, it is necessary for researchers to look at ethnic characteristics in analyzing policy process mechanisms. Several studies focus on ethnic-oriented evidences in the mechanisms of development impact fee policy implementation. Generally, the Caucasian population is considered as an entity pursing post-materialism values than their fellow African-American and Hispanic citizens, thus making Caucasians less likely to support growth for both housing and industrial/commercial development or more inclined to preserve environments (Gerber & Phillips, 2003; Lubell et al., 2002). Therefore, jurisdictions with higher percentages of African American population are decreased to increase the possibility to implement development impact fee policy.

This paper regards interest groups as an important policy actor because development impact fee policy is related with either anti-interest groups or pro-interest groups that do not expect to lose their own property values due to new policies. Lubell et al. (2005) explain that interest groups with a self-interested characteristic play a primary role in the policy process. They are organizations asking for a specific policy they prefer to improve or increase their benefits (Cigler & Joslyn, 2002). That is to say, this view highlights that existence of strong interest groups pursuing self-interests is a main factor in analyzing mechanisms of the policy process.

Some public administration and policy scholars (Baumgartner & Leech, 1998; Teske, 1991) highlight investigating roles of interest groups in closely looking at the policy formulation and implementation mechanisms. They point out that a state or local government decides whether policies formulate and implement based on interest groups' opinions. That is why interest groups are main fund source that a decision-maker depends on. Thus, it is natural for many policies to reflect interest groups' intent and opinions in shaping and implementing a specific policy.

Teske (2004) declares that interest groups are well-organized political groups sharing basic and important information to complete their common goals. He explains that policies that interest groups prefer are adopted or implemented through their active lobbies. Interest groups' influence has been getting larger in the USA (Boatright, 2011; Nownes, 2001).

Interest groups strongly pursuing property rights influence mechanisms of development impact fee policy because development impact fees as regulatory policy tools control interest groups' benefit. If development impact fees positively influence the property of interest groups, interest groups more actively lobby local governments to implement development impact fees (Lubell et al. 2009; Ramirez, 2009). That is to say, interest groups increasing their own property values are one of primary factors that let jurisdictions implement development impact fee policy.

Ramirez (2009) regards residents having their own houses as interest groups who want to live in eco-friendly environments and pleasant circumstances. They try to make the quality of their life better and expect to increase their own property values through safe and pleasant dwelling sites. Feiock (2004) indicates that eco-friendly dwelling sites lead new comers to buy houses and buyers to invest in these areas. This economic action helps make residents' property values higher by occurring price competitions. Namely, homeowners expect that implementing development impact fee policy close to an eco-friendly policy provides them with pleasant living environments and increases their properties. Fischel (2001) posits that homeowners are related with greater pro-environment movement, which is against unplanned development in rapid growth. Homeowners are primary policy actors pursuing a tendency of not-in-my-backyard (Feiock, 2004). Therefore, the strong pro-environment interest groups such as homeowners influence decision makers in local governments to lead local governments to carry out pro-environment policy instruments such as development impact fees that increase residents' property values in eco-friendly circumstances (Cox, 1982: Protash & Baldassare, 1983). Based on the interest group view to development impact fee policy, it is hypothesized that jurisdictions with many interest groups preferring pro-environment policy to economy development policy are more likely to implement development impact fee policy.

3. Rules-in-use

Ostrom (2007) defines rules as shared understandings among policy actors. Their primary role is to function as a guideline of the policy process. Rules play a role of statements about what actions are required, permitted, or prohibited to policy actors when policy actors do not followed the rules. Policy actors try to make performance or outcomes consistent with working rules. Working rules influence a policy outcome and thus become a primary explanatory factor in accounting for mechanisms of policy outcomes. In this article, the final policy outcome is the variation of the local development impact fee policy implementation. There are a lot of working rules utilized in structuring an action arena leading to the local development impact fee policy outcome. This article focuses on the form of government as working rules. Many scholars (Benton, 2002; Clingermayer & Feiock, 2001; Feiock, 2004; Feiock & Kim, 2000; Frederickson et al., 2004; Lubell et al., 2005) insist that a local entity's policy outcomes are made through the form of local government. Namely, the form of government influences shaping local governments.

Generally, counties have used three types of government forms: the commission, commission-administrator, and commission-mayor (Feiock, 2004). The commission form is the oldest form of county government. These commissioners are representative of the legislative body of counties (Frederickson et al., 2004). Individual commissioners are responsible for appropriation, ordinances, taxation, etc. This commission form covers

both legislative and executive functions in the same body. The commission-administrator form grants legislative authority to a commission while appointed-managers or administrators usually manage the county's affairs. The commission-mayor form of county government provides elected-mayors with many types of authority related to policy decision-making and public service delivery.

Some scholars (Benton, 2002; Lubell et al., 2005) call the commission form "unreformed government" and name two later forms "reformed government". Their studies indicate that an elected-commission covers executive and legislative authority under the traditional county government, in which a presiding commissioner is elected by members. Commission members usually play the role of departmental head, department overseer, law enforcer, tax assessor, and tax collector. Benton (2002) and Feiock (2004) argue that this traditional commission form of county government have fewer abilities to formulate, implement, or improve management policies than reformed governments (commission-administrator and commission-mayor) do because commission members do not have capacious professional knowledge.

As shown in the above views on the form of government, research generally suggests that two styles of reformed governments have more professional knowledge and political sense to pressure for policy change than does the traditional commission form (Feiock, 2004; Lubell et al., 2005). For example, Feiock and Kim (2000) indicate that elected mayors in the form of commission-mayor government sensitively respond to political pressures from interest groups or residents and that they must consider the socio-economic situation of their own jurisdictions when they make a final policy decision. These are why mayors cannot ignore their reelection. Feiock (2004) supports this explanatory approach to development impact fees by proving that Florida counties with this form of government are less likely to implement development impact fee policy. Thus, counties with elected-mayors are more likely to implement environmental conservation or economic development polices according to the majority of their constituencies' opinions.

According to the form of commission-administrator, Lubell and his colleagues (2005) prove that this form of government sensitively responds to local growth management demands. In this form, managers (administrators) utilize professional knowledge for their executive roles. This situation is possible because appointed-managers (administrators) are free from self-interested demands from interest groups and residents in jurisdictions. In addition, appointed managers (administrators) who know about professional policy

instruments and expertise usually choose the most ideal development or environment policies for their jurisdictions. Thus, the commission-administrator form may have incentives to pursue balanced growth management policies. From this perspective, if counties have the commission-administrator form of government, then that form may have a positive or negative relationship with development impact fee policy implementation. On the basis of the literature review, this article makes and tests a hypothesis: counties with reformed government forms are more likely to influence development impact fee policy implementation than are counties with unreformed government forms.

Based on the aforementioned hypotheses, Figure 2 depicts the mechanisms of development impact fee policy implementation, applying each explanatory factor into three categories such as physical conditions, community attributes, and rules-in-use in the IAD framework.



Figure 2. IAD Framework in Local Development Impact Fee Policy Implementation²⁾

IV. Research Design

1. Overall Equation

To investigate the variation of Colorado county development impact fee policy

²⁾ DIF is the acronym of development impact fee

implementation, this empirical study tests seven hypotheses constructed in the preceding parts. The overall equation below was created by seven hypotheses. The purpose of this study is to analyze whether one dependent variable has a relationship with seven independent variables respectively. The overall hypothesis is as follows: There is an association among the set of seven independent variables (population density, land area size, wealth, poverty, race, interest groups, and form of government) and the dependent variable (the variation in Colorado county development impact fee policy implementation).

The variation in the local development impact fee policy implementation = $a + b_1$ population density + b_2 land area size + b_3 wealth + b_4 poverty + b_5 race + b_6 interest groups + b_7 form of government + e

This article tests this equation model with the dataset obtained from 64 Colorado counties. Table 1 shows the potential directions of each independent variable on the variation of Colorado county development impact fee policy implementation.

Independent Variables	Predicted Direction	
Physical Conditions		
Population density	Positive	
Land area size	Positive	
Community Attributes		
Wealth	Positive	
Poverty	Negative	
Race	Negative	
Interest groups	Positive	
Rules-in-use		
Form of Government	Positive/Negative	

Table 1. Predicted Direction between the Dependent Variable and Independent Variables

2. Dependent Variable

The dependent variable is a continuous variable indicating the variation of Colorado county development policy implementation, which is measured by the number of development impact fee tools each Colorado county has used. The literature review shows that up until now, there are 13 development impact fee tools across Colorado. As described in Table 2, they are affordable housing, roads, transportation, public facilities, fire prevention, parks and recreation, trash, public safety, schools, sewer, storm drainage,

wind farms, and water management. Among them, Colorado counties have mainly utilized development impact fees to pay for the park and recreation, storm drainage, and transportation areas.

Table 2. The Styles of Development Impact Fees Implemented by Colorado counties

Styles of Development Impact Fees	Number of Colorado Counties Using Each Development Impact Fee			
Public Safety	3			
Parks and Recreation	6			
Storm drainage	5			
Water management	2			
Transportation	10			
Affordable Housing	5			
Other Development Impact Fees	8			

Note: Other development impact fees embrace schools, wind farms, trash, sewers, public facilities, roads, and fire prevention

3. Independent Variables

The independent variables working for the analysis for the variation of Colorado county development impact fee policy implementation consist of seven explanatory factors representative of physical conditions, community attributes, and rules-in-use in the IAD framework. Their descriptive statistics of seven independent variables are shown in Table 3. Table 4 states how each independent variable is in reality measured for the statistical technique, which is used to analyze the final dataset.

First, there are the population density and land area size variables included in the physical condition category. The mean of 145.9 for population density explains that there are about 146 people per square mile across Colorado. The average land area size in Colorado counties is approximately 1,619 square miles. Second, there are wealth, poverty, race, and interest groups variables under the community attribute category. The wealth variable is measured by median household income. Its value indicates about \$51,294. The poverty variable is estimated by the percentage of persons in poverty, whose value is nearly 13% across Colorado. The percentage of African Americans of each Colorado county is used by measuring the race variable. Its value is about 1.7. This means that each county in Colorado, on average, has about 1.7% of African Americans. The interest group variable is measured by the number of the housing units in each Colorado county. This value indicates that on average, each Colorado county has about 35,113 housing units.

Finally, the reformed government is used to measure the form of government variable under the rues-in-use category. The value of this form of government variable is 0.63. Namely, nearly 63% of Colorado counties are operated by the reformed government style rather than the unreformed government style.

	Ν	Minimum	Maximum	Mean	Std. Deviation
Population Density	64	0.8	3922.6	145.9	540.95
Land Area Size	64	33.03	4772.67	1619.41	1052.7
Wealth	64	25949	101193	51293.94	14228.05
Poverty	64	3.5	25.7	13.11	5.35
Race	64	0	10.8	1.74	2.34
Interest Groups	63	759	293230	35113.09	67338.03
Form of Government	62	0	1	0.63	0.49

Table 3. Descriptive Statistics of Each Independent Variable

Independent Variables	Real Measurement			
Physical Conditions				
Population density	Population per square mile			
Land area size	Logged land area in square miles			
Community Attributes				
Wealth	Logged Median household income			
Poverty	Residents in poverty (%)			
Race	African American (%)			
Interest groups	Logged Housing Units			
Rules-in-use				
Form of Government	traditional commission=0;commission-mayor & commission-administrator=1			

4. Data Information and Statistical Technique

To test the aforementioned seven hypotheses, the main dataset was completed in December, 2013 by using both 2010 Colorado county land use survey and e-mail survey. The former data was conducted by the Colorado Department of Local Affairs (CDLA). This

³⁾ Based on Gujarati and Porter (2009)'s academic suggestion, the author has three independent variables-land area size, wealth, and interest groups-logged to change the skewed distribution of three independent variables to a more normal distribution.

data include 54 counties' information about using development impact fees. The author conducted an e-mail survey to 10 counties that the CDLA's data does not include. Based on both survey results, this study completed the final dataset including 60 Colorado counties' information about their development impact fees.

The overall equation is constructed to analyze whether one continuous dependent variable respectively has a relationship with seven independent variables-six continuous independent variables and one discontinuous independent variable. Several scholars (Gujarati & Porter, 2009; Remler & Van Ryzin, 2015; Wagner, 2013) propose that the multiple ordinary least squares (OLS) model is the best statistical technique to estimate an equation model consisting of one continuous dependent variable and several mixed independent variables, which have a continuous independent variable and a discontinuous independent variable.

V. Statistical Findings

The multiple OLS regression model was utilized to predict the variation of Colorado county development impact fee policy implementation with seven hypotheses regarding internal characteristics of counties–physical conditions, community attributes, and rules-in-use. Table 5 draws the results of the multiple OLS regression model. Table 5 indicates that 57 counties among 64 Colorado counties are the valid observation. They are observations that do not have any missing cases of either independent variables or dependent variable. The F-statistic (F=3.853, df=7, 50), which is statistically significant at 0.01 level, explains that the variation of Colorado's county development impact fee policy implementation (D.V.) is significantly predicted by the seven independent variables. 0.259 of the adjusted R-squared value shows that approximately 26% of the variation in the dependent variable is interpreted by seven independent variables.

The final statistical results demonstrate that three independent variables are statistically significant while the rest of the independent variables are not statistically significant among seven independent variables. They are the population density, land area size, and wealth independent variables. The population density independent variable is statistically significant at 0.05 level, the land area size independent variable is statistically significant at 0.01 level, and the wealth independent variable is statistically significant at 0.1 level.

First, the unstandardized coefficient value of the population density independent variable is 0.001. This means that the variation of Colorado's county development impact fee policy implementation increases by approximately 0.001 for every population density increase, with other independent variables held constant. Second, the unstandardized coefficient value of the land area size independent variable is 0.449. This means that the variation of the Colorado's county development impact fee policy implementation increases by about 0.00449 for every land area size increase, with other independent variables held constant. Finally, the unstandardized coefficient value of the wealth independent variable is 1.91. This explains that the variation of the Colorado's county development impact fee policy implementation increases by about 0.0191 for every wealth unit increase, with other independent variables held constant.

	Unstandardized Coefficient		Standardized Coefficients	t	Sig.
	В	S.E.	Beta		
Population Density**	0.001	0.000	0.427	2.457	0.018
Land Area Size***	0.449	0.165	0.392	2.722	0.009
Wealth*	1.91	0.958	0.534	1.994	0.052
Poverty	0.035	0.044	0.194	0.802	0.426
Race	-0.069	0.057	-0.17	-1.219	0.229
Interest Groups	0.048	0.103	0.074	0.462	0.646
Form of Government	-0.042	0.236	-0.021	-0.179	0.859
Constant	-24.038	10.662		-2.255	0.029
N 57 F (7, 50)*** 3.853 Adjusted R ² 0.259					

Table 5. Determinants for the Variation of Colorado's County DIF Policy Implementation

Note: *** significant at .01 level; ** significant at .05 level; * significant at .10 level

VI. Conclusions and Implications

Colorado's local governments are an excellent case studying the mechanisms of the local development impact fee policy process because Colorado's development impact fee law supports a voluntary system, not a top-down style, since Colorado enacted the Development Impact Fee Law in 2001 (Wallis, 2012). That is to say, Colorado's local governments are main policy actors in adopting and implementing their development

impact fee policy tools. They are not influenced by State governments in using development impact fees. Compared to other states, this is a unique character of Colorado in explaining the mechanisms of development impact fee policy process. This situation leads a researcher to study pure explanatory factors representative of local governments' characteristics, which are not included in compulsory factors influenced or ordered by state governments.

As indicated in Table 5, not surprisingly, all of the independent variables-population density and land area size-in the physical condition category are statistically significant. This study's result proves that the population density factor plays a good role of explanatory reason about why local governments more actively implement development impact fee policy implementation. This empirical result aligns with Protash and Baldassare's study emphasizing that high population density causes serious traffic jams as well as expensive infrastructure costs, which lead residents to face unpleasant life environments and raise a tax burden.

The study's result concludes that the land area size factor is a main factor leading local governments to more actively implement development impact fee policy. Land area is the area in square miles of land portions of geographic entities. This means that jurisdictions with large land area size have more chances facing either development or environmental conservation. Based on the statistical result of the land area size factor, we can know that the main goal of development impact fee policy is closely related to control unplanned development and make more eco-friendly circumstances.

As expected, the statistical findings demonstrate that the wealth counties more actively implement the development impact fee policy by proving that there is a positive relationship between the wealth variable and the variation of the local development impact fee policy implementation. This empirical finding aligns with the findings of the previous studies, which proved that wealthier jurisdictions trend to control unplanned development and foster eco-friendly environments. Thus, this result supports that the wealth counties more actively adopt and implement a policy fostering a local eco-friendly circumstance rather than local economic development.

To have studies related to the mechanisms of the local development impact fee policy shed more light, the study needs to find newer units of analysis. A future academic endeavor is to analyze cities as the next target areas. More than two decades ago, Marando and Reeves (1991) highlighted that a scholar will get a different answer to the same research question because attributes of both counties and cities are totally different. Therefore, it is meaningful for us to analyze the city case to obtain more diverse and more accurate answers to the mechanisms of Colorado's development impact fee policy implementation.

<References>

- Baldassare, M., & Wilson, G. (1996). Changing sources of suburban support for local growth controls. *Urban Studies, 33(3),* 459-71.
- Baumgartner, F. R., & Leech, B. L. (1998). *Basic interests*. Princeton, NJ: Princeton University Press.
- Benton, J. E. (2002). County service delivery: Does government structure matter? *Public* Administration Review, 62(4), 471-479.
- Boatright, R. G. (2011). *Interest groups and campaign finance reform in the United States and Canada*. Ann Arbor, MI: The University of Michigan Press.
- Burge, G., & Ihlandfeldt, K. (2006). The effects of impact fees on multifamily housing construction. *Journal of Regional Science*, 46(1), 5-23.
- Cigler, A. J., & Joslyn, M. (2002). Groups, social capital, and democratic orientations. In A. J. Cigler, & B. A. Loomis (Eds.), *Interest group politics* (pp.37-53). Washington DC: CQ press.
- Clingermayer, J. C., & Feiock, R. C. (2001). *Institutional constraints and policy choice*. Albany: State University of New York Press.
- Cox, K. (1982). Housing tenure and neighborhood activism. Urban Affairs Quarterly, 18, 107-129.
- Feiock, R. C. (2004). Politics, institutions and local land-use regulation. *Urban Studies, 41 (2),* 363-375.
- Feiock, R. C., & Kim, J.-H. (2000). Form of government, administrative organization, and local economic development policy. *Journal of Public Administration Research and Theory, 11 (1),* 29-49.
- Fischel, W. (2001). *The homevoter hypothesis: How home values influence local government taxation, school finance, and land-use policies.*. Cambridge, MA: Harvard University Press.

- Frederickson, G. H., Johnson, G. A., & Wood, C. H. (2004). The Adapted City: Institutional Dynamics and Structural Change, New York: M. E. Sharpe.
- Gerber, E. R. & Phillips, J. H. (2003). Land use policy, institutional design, and the responsiveness of representative government. 2003 Annual Meeting of the Midwest Political Science Association.

Gujarati, D. N., & Porter, D. C. (2009). Basic econometrics. New York: Mcgraw-Hill Irwin

- Howell-Moroney, M. (2004). What are the determinants of open-space ballot measures? An extension of the research. *Social Science Quarterly, 85(1),* 169-179.
- Ingram, G. K., Carbonell, A., Hong, Y., & Flint, A. (2009). *Smart growth policies: An evaluation of programs and outcomes.* Cambridge, MA: Lincoln Institute of Land Policy.
- Kang, I., & Feiock, R. (2006). Implementation of growth management policy in Florida cities: Zoning approval and regulatory policy enforcement. *International Review of Public Administration*, 11(1), 85-98.
- Kolo, J., & Dicker, T. J. (1993). Practical issues in adopting local impact fees. State and *Local Government Review*, *25*(3), 197-206.
- Lawhon, L. L. (2007). Local government use of development impact fees. ICMA Municipal Year Book, 11-14. ICMA: Washington D.C.
- Levine, N. (1999). The effect of local growth controls on regional housing production and population redistribution in California. *Urban Studies*, *36*(12): 2047–2068.
- Lubell, M., Feiock, R. C., & Ramirez, E. (2005). Political institutions and conservation by local governments. *Urban Affairs Review, 40 (6),* 706–729.
- Lubell, M., Feiock, R. C., & Ramirez, E. (2009). Local institutions and the politics of urban growth. *American Journal of Political Science*, *53*(3), 649-665.
- Lubell, M., Schneider, M., Scholz, J., & Mete, M. (2002). Watershed partnerships and the emergence of collective action institutions. *American Journal of Political Science, 46* (1), 148-163.
- Marando, V. L., & Reeves, M. M. (1991). Counties as local governments: Research issues and questions. *Journal of Urban Affairs, 13 (1),* 45-33.
- Mathur, S. (2013). Do all impact fees affect housing prices the same? *Journal of Planning Education and Research*, *33*(4), 442-455.
- Mazmanian, D. A., & Sabatier, P. A. (1980). A multivariate model of public policy-making. *American Journal of Political Science, 24 (3),* 439-468.
- Mullen, C. (2015). State impact fee enabling acts. Retrieved from http://www.impactfees.

com/>publications%20pdf/state_enabling_acts.pdf

- Nelson, A. C., & Moody, M. (2003). *Paying for prosperity: Impact fees and job growth*, Discussion Paper, The Brookings Institution Center on Urban and Metropolitan Policy.
- Nownes, A. J. (2001). *Pressure and power: Organized interests in American politics*. Boston, MA: Houghton Mifflin.
- Ostrom, E. (2007). Institutional rational choice: An assessment of the institutional analysis and development framework. In P. A. Sabatier (2nd ed.), *Theories of the policy process* (pp. 21-64). Boulder, CO: Westview press.
- Protash, W., & Baldassare, M. (1983). Growth Policies and Community Satisfaction: a test and modification of Logan's Theory. *Urban Affairs Quarterly, 18*, 397-412.
- Ramirez, E. E. (2009). Local political institutions and smart growth: An empirical study of the politics of compact development. *Urban Affairs Review, 45 (2),* 218-246.
- Remler, D. K., & Van Ryzin, G. G. (2015). Research methods in practice: Strategies for description and causation (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.
- Singell, L. D., & Lillydahl, J. H. (1990). An empirical examination of the effects of impact fees on the housing market. *Land Economics*, *66*(1), 82–92.
- Steel, B., & Lovrich, N. (2000). Growth management policy and county government: correlates of policy adoption across the United States. *State and Local Government Review, 32* (1), 7–19.
- Teske, P. (1991). Interests and institutions on state regulation. *American Journal of Political Science*, *35*(1), 139-154.
- Teske, P. (2004). Regulation in the States. Washington, D.C.: Brookings Institution Press.
- Thorsnes, P., & Simons, G. (1999). Letting the market preserve land: The case for a market driven transfer of development rights program. *Contemporary Economic Policy*, *17*(2), 256-266.
- Wagner, W. E. (2013). Using IBM SPSS statistics for research methods and social science statistics (4th ed.). Thousand Oaks, CA: Sage Publications, Inc.
- Wallis, A. (2012). Pathways to managing regional growth: Lessons from Portland, Oregon, and Denver, Colorado. *Borderlands: The Journal of Spatial Planning in Ireland, 2* (January), 9-20.
- White, C., & Dahl, G. P. (2001). *Paying for growth: Impact fees under Senate Bill 15*. Retrieved from http:// www. lovelandpolitics.com/files/impactfees.pdf.

Zahariadis, N., & Morgan, L. (2005). Local government and the implementation of Alabama's economic development policy. *Public Administration Quarterly, 29(1)*, 7-32.

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