Exit, Voice, and Loyalty under Municipal Decline: A Difference-in-Difference Analysis in Japan

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Abstract

Some municipalities grow, while others decline. When municipalities involve disastrous conflicts or degrade service quality, residents might move away, speeding the cycle of decline. Drawing on Albert Hirschman's (1970) Exit, Voice, and Loyalty (EVL) framework, this study is aimed at revealing citizens' response mechanism to municipal decline caused by municipal government failure.

Recent EVL studies on local governance have examined whether citizens in general are more likely to exit or to voice complaints in response to dissatisfaction with municipal goods and services. Few studies, however, have tested EVL under the specific circumstances of municipal decline. Examining the case of the Japanese town of Ohwani under fiscal crisis, the study identifies the effects of fiscal reform, including the impacts of tax increases, service cuts, and political conflicts, on citizens' exit intention, voice activities, and perceptions of municipal management.

The Japanese alert system for local governments in fiscal crisis offers a highly suitable setting to measure the impact of fiscal reconstruction. Under this legislation, the central government sets national criteria for fiscal soundness and mandates that local governments which fall short of these criteria design and implement a fiscal reform plan under the supervision of a central agency.

Given this exogenous fiscal reform mandate, the identification strategy of this study makes central use of this experimental framework that contrasts Ohwani under fiscal reform to a control village not under fiscal reform, Inakadate which shares similar sociodemographic features. In the first phase of study, qualitative interviews of 14 Ohwani residents were conducted to develop quantitative measures of EVL concepts

ii

under the specific circumstance of municipal decline. The estimation approach in the second quantitative phase was a unique difference-in-difference (DID) design with a time difference enabled by a careful retrospective measurement. To evoke personal recall, a survey questionnaire was designed to take two-step process from the present to the past and to use mayoral elections as a benchmark to elicit memories of past municipal management. Data were collected from 600 randomly sampled citizens of Ohwani and Inakadate, with a response rate of 44%. The findings show that the fiscal reconstruction had significant effects on exit but not on voice. In addition, dissatisfaction with service quality did not increase due to service cuts or tax increases under fiscal reform, but distrust in the policy process significantly increased.

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Table of Contents

Abstract ii
Acknowledgementiv
Table of Contentsv
List of Tablesvii
List of Figuresvii
CHAPTER ONE: INTRODUCTION1
1.1 A Study of Municipal Decline1
1.2 Purpose of the Study
1.3 Significance of the Study
1.4 Research Design7
1.5 Definition of Terms
1.6 Outline of the Study11
CHAPTER TWO: LTERATURE REVIEW12
2.1 The Tiebout Hypothesis 12
2.2 Recent Issues in the Tiebout Hypothesis
2.3 Hirschman's Exit, Voice, and Loyalty and Local Governance
2.4 Theoretical and Empirical Development of Exit, Voice, and Loyalty 19
2.5 Theoretical Framework
2.6 Hypotheses
CHAPTER THREE: RESEARCH METHODS
3.1 Methodology
3.2 Research Setting
3.3 First Phase: Qualitative Interview
3.4 Second Phase: Difference-in-Difference Analysis 57
3.5 Ethical Considerations
CHAPTER FOUR: FINDINGS
4.1 Basic Profile of Interviewees
4.2 Qualitative Findings
4.3 Basic Description of Survey Data
4.4 Difference-in-Difference Analyses and Findings
4.5 Summary of Findings

CHAPTER FIVE: IMPLICATIONS AND LIMITATIONS	96
5.1 Summary of the Study	96
5.2 Limitations of the Study	
5.3 Implications	100
5.4 Future Issues	
Bibliography	
Appendix A: Semi-Structured Interview Protocol	113
Appendix B: Survey Questionnaire	114
Appendix C: Pre-Notice of Survey	
Appendix D: Correlation Matrix	123

List of Tables

Table 1: The AFSF Criteria of Fiscal Soundness	43
Table 2: Socio-economic Attributes of Ohwani and Inakadate	47
Table 3: Summary of Fiscal Reform in Ohwani and Spending Cuts in Inakadate	52
Table 4: Qualitative Codebook	56
Table 5: Basic Profile of Interviewees	67
Table 6: Summary of Sample Representation	80
Table 7: Hypotheses and Variables for the Test of EVL under Municipal Decline	81
Table 8: Descriptive Statistics of Outcome Variables	82
Table 9: Descriptive Statistics of Controls	86
Table 10: Difference-in-Difference Estimates without Controls	91
Table 11: Difference-in-Difference Estimates with Controls	91

List of Figures

Figure 1: The Lyons et al EVLN as Response to Dissatisfaction with Local Services	20
Figure 2: Hirschman's Exit and Voice as Response to Decline in Service Quality	21
Figure 3: Hirschman's Exit, Voice, and Loyalty Interaction	22
Figure 4: Location of Ohwani-town	46
Figure 5: Map of Tsugaru-Area in Aomori-Prefecture	48
Figure 6: Percent Change of Population in Ohwani and Inakadate from 2005-14	49
Figure 7: Trends of Income per capita in Ohwani and Inakadate from 2005-12	50
Figure 8: Graph of Treatment Effect on Intention to Exit	90

CHAPTER ONE: INTRODUCTION

1.1 A Study of Municipal Decline

Some municipalities grow, while others decline. When municipalities involve in disastrous conflicts or degrade service quality, residents might move away, speeding the cycle of decline. The aim of this dissertation is to understand this cycle of municipal decline and identify the keys to successful recuperation.

Applying market economics to local governance, Charles Tiebout (1956) hypothesized that citizen-consumers physically move to another locality which offers their preferred local service package. He suggested that citizens' mobility drives municipalities to compete with each other, and the competition makes public services more efficient. Traditionally, as Paul Samuelson (1954) argued, the main critique of public goods and services has been their inefficient provision due to the absence of a market mechanism. Tiebout challenged this traditional view and proposed a quasi-market mechanism among localities. Shedding light on people's right to choose where they live, Tiebout's hypothesis has been called 'voting with one's feet.'

The market mechanism, however, may erase the culture and history of economically vulnerable municipalities in the same way as small private firms go bankrupt. Moreover, unlike democratic elections, the right of voting with feet is not granted equally to citizens. Due to old age, low income, and racial and ethnic segregation, some citizens cannot freely choose their preferred municipal services by moving and might be locked in inefficient municipalities. What is missing in Tiebout's market solution for inefficient local goods and services is social equity (Howell - Moroney, 2008). The concern for equity is not crucial to believers in the principle that the invisible hand of the market directs resources to their most efficient use. In the language of the pillars of public administration, Tiebout's hypothesis privileges efficiency and economy, but as Frederickson (1990) argues quite persuasively, the pillar of equity should not be disregarded due to the former. Accordingly, this dissertation considers the welfare of people under municipal decline.

Much research on local governance has pursued questions concerning development or growth, such as how local governments can develop their regions through the provision of public goods and services. Yet, as Albert Hirschman (1970) stresses in the opening of his seminal book *Exit*, *Voice*, and Loyalty: Response to Decline in Firms, Organizations, and State:

> Under any economic, social, or political system, individuals, business firms, and organizations in general are subject to lapses from efficient, rational, law-abiding, virtuous, or otherwise functional behavior. ... Each society learns to live with a certain amount of such dysfunctional or mis-behavior. (Hirschman, 1970, p. 1)

In this book, Hirschman notes the lack of studies on organizational decline. To develop a recuperation mechanism from decline in organizations, he expands Tiebout's hypothesis. In the theoretical framework entitled Exit, Voice, and Loyalty (EVL), Hirschman hypothesizes that customers/members can either exit or voice when they perceive the deterioration of goods or service quality in any organization, including firms and states. The exit option is derived from Tiebout's hypothesis and refers to escaping from

organizational decline, while voice entails expressing discontent about the deterioration of service quality with the hope of recovery. Explaining the recuperative process, Hirschman identifies the vital role of loyalty, an affective attachment to a declining organization or community which encourages voice for recuperation rather than escape from decline.

All local governments throughout the world are subject to lapses in functional management. While some residents can flee from local decline, others are locked in declining municipalities due to old age, low income, and racial and ethnic attributes. Drawing on Hirschman's EVL framework, the aims of this dissertation are to reveal how citizens respond to municipal decline caused by municipal government failure and to identify the keys to successful recuperation. The next section provides a more detailed description of the motivation for this research. The research methods and overall structure of the dissertation are then introduced.

1.2 Purpose of the Study

Although any local government is subject to management failure, few studies on public administration and policy have empirically examined the role of citizens in recuperative processes. To fill this gap in the literature, this dissertation addresses the research question:

How do citizens respond to municipal management reform under fiscal crisis? Described in terms of a cause-and-effect relationship, the cause is *municipal management reform* aimed at solving a *fiscal crisis* precipitated by the high level of debt accumulated by a municipal government. This study explores the undefined effect of the cause on *citizens*, particularly their exit and voice behavior. The critical challenge of *municipal management reform under fiscal crisis* is a trade-off between population decline against service cuts and tax increases to achieve fiscal health. According to Tiebout's hypothesis, as local service quality deteriorates, citizen-customers move away, tax revenues drop, and the municipality faces further shrinkage.

The purpose of this study is to find an effective tactic to prevent or even reverse this cycle of municipal decline. In this vein, Hirschman's EVL theoretical framework suggests that voice has a more powerful effect than exit. Once users exit a service, the service provider cannot acknowledge which element of the service made users dissatisfied. In contrast, users' complaints voiced against the lower quality of service can provide the service provider with information about the causes of deterioration. Thus, Hirschman identifies voice behavior as the key to recuperation from decline and further suggests the importance of loyal customers/members who express their opinions to support recovery rather than escape from decline. It should be noted, however, that even these loyal customers/members might choose to exit as a last option to alert their organizations if their voices do not lead to any changes in management or policy amid organizational decline. In the context of local governance, exploring the mechanism of citizens' exit and voice behavior under fiscal reform is equivalent to the pursuit of public responsiveness in local management reform.

Within the EVL framework, this dissertation will examine the effects of fiscal reconstruction on citizens' satisfaction with service quality and trust in municipal

governments. Unlike exit behavior, these perceptual reactions in citizens' minds do not immediately damage municipal management but can pose enormous threats to the pursuit of recuperation from decline. Through exploring this research question, the study is expected to demonstrate citizens' essential role in municipal government management.

1.3 Significance of the Study

Nearly a century ago, James Bryce, a British academic and politician, wrote in his classic book *Modern Democracies* (1921): "[T]he best school of democracy, and the best guarantee for its success, is the practice of local self-government" (1921, p. 133). This maxim drawn from his observations of five European countries and the United States remains enlightening for the study of local governance. Bryce (1921) explains several reasons why local governments and their relation to the national government are the foundation of modern democracy. Among them, the following three reasons are central to the focus of this dissertation: citizens' response to municipal management failure. The first reason is historical. Bryce (1921) writes:

In the process of time nations were formed by the expansion of these small communities, or by their fusion, or by their absorption into larger units...They [small communities] suffice to show that popular government is not a new thing in the world, but was in many countries the earliest expression of man's political instincts. (p. 131)

The second reason is economic.

If it is the business of a local authority to mend the roads, to clean out the village well or provide a new pump, ... every villager has an interest in seeing that these things are properly attended to. Laziness and the selfishness [of the local authority]...is the fault which most afflicts democratic communities. (Bryce, 1921, p. 132)

Municipal governments are at the forefront of the provision of public services, so the deterioration of local services causes enormous harm to citizens.

The third reason is political.

In it [the city], ... he can watch ... by what he hears from competent sources whether the mayor and councillors and their officials are doing their work ... and whether the taxpayer is getting full value for what he is required to contribute. So when the election comes he has the means of discovering the candidates with the best record and can cast his vote accordingly. (Bryce, 1921, p. 132)

In modern democracy, municipal government management can be closely monitored by citizens and subjected to their preferences.

As the basis of modern democracy, local governments offer the opportunity to study the economic and political dynamics essential to broadening the understanding of democratic governance. This study investigates the case of a municipality in fiscal crisis and the response of its citizens. Although this is a small case, careful examination of reliable data from citizens provides the foundation for understanding the dynamics of municipal decline and the keys to successful management reform.

1.4 Research Design

Hypothesis

Over the decades, a substantial body of empirical research has tested the generalizability of Tiebout's hypothesis to various regions and countries. The findings are divided as to whether the local service package is generally the main stimulus for citizens' relocation. However, this question is not the main subject of this dissertation. Rather, this study investigates a case of municipal decline in which most residents recognize the deterioration of local services under fiscal crisis. The main hypothesis analyzed in this study is whether the fiscal reconstruction affects citizens' intention to exit, voice activities, and perceptions of municipal government.

Estimation Strategy

Empirically, this dissertation focuses on measuring the impact of fiscal reconstruction on citizens' exit intention, voice activities, and perceptions of municipal management. The identification strategy makes central use of the experimental framework that contrasts a treatment town under fiscal reform and a control town not under fiscal reform which share similar sociodemographic features. This estimation approach is based on a difference-in-difference (DID) design (treatment town vs. control town, before vs. after fiscal reform). The primary advantage of this method is that, if the treatment is randomly assigned to citizens, the observed and unobserved factors that affect citizens' behavior or perception are equally likely to be present in both the

to estimate treatment effects even if they miss some cofounders which affect the outcomes in their models (Gerber & Green, 2012).

Ohwani, a Japanese town under fiscal crisis, provides a highly suitable setting to test this hypothesis. Under the 2009 Act on Assurance of Sound Financial Status of Local Governments (ASFSLG), the Japanese central government established an alert system for local governments in fiscal crises. It obligates local governments to design and implement fiscal reconstruction plans when their financial status fails to meet the ASFSLG's criteria for fiscal soundness. Under this legislation, 21 municipalities, including Ohwani, were required to undertake fiscal reconstruction which involved service cuts and tax increases.

Ohwani has implemented its fiscal reconstruction plan since 2010. Ohwani was chosen as the treatment town due to the availability of a control village not under fiscal reform, Inakadate, which satisfies the rigorous assumptions of DID design. Inakadate belongs to the same county as Ohwani, but they are not geographically adjacent, though they have very similar access conditions to Hirosaki, the largest city in the area. Furthermore, the per-capita income trends in Inakadate parallel those in Ohwani before and after the fiscal reconstruction. These conditions enable isolating the impact of fiscal reconstruction on citizens through this experimental design. The rationale for this site selection is explained in more detail in Chapter 3.

Although Ohwani and Inakadate offer an ideal experiment setting, two methodological challenges still must be overcome for this dissertation. The first challenge is the lack of a specific theory on citizens' responses to municipal decline. Recent EVL studies on local governance have examined whether citizens in general are more likely to exit or voice complaints in response to dissatisfaction with municipal government management. Few studies, however, have tested EVL under the specific circumstance of municipal decline. Therefore, the study relies on a grounded theory approach to a certain degree. Exploratory sequential mixed methods are used, first, to qualitatively explore measures of citizens' response to fiscal reconstruction and, second, to quantitatively examine the response mechanism.

The second challenge is the lack of data on citizens' responses to municipal management quality before Ohwani's fiscal reconstruction beginning in 2010. The study addresses this issue by using a careful retrospective measurement derived from the theory of personal recall in psychology. In sum, qualitative interviews with Ohwani residents were first conducted to develop quantitative measures of EVL concepts under fiscal crisis. The qualitative findings were then applied to design the survey instrument. The theoretical framework for municipal decline constructed through a review of existing literature and qualitative inquiry was tested using a DID design with a time difference enabled by a careful retrospective measurement.

Data Collection

The subjects analyzed in this study are individual residents of Ohwani and Inakadate. Participants had to fulfil a residence criterion for the period of interest: 2009– 2015, before and after the fiscal reconstruction of Ohwani. The 14 Ohwani residents who participated in the qualitative interviews were recruited through snowball sampling, although their age, gender, and occupations were diverse. For the DID analysis, voter registration lists were used to randomly sample residents in both Ohwani and Inakadate. The lists contain voters' full names, age, gender, and addresses, which enabled identifying a highly representative sample. A total of 600 residents from both Owani and Inakadate (300 each) were invited to participate in this study. The survey was formally announced in the public-relations magazines distributed to all residents in both municipalities. After the announcement, the survey questionnaire was mailed to potential participants and then collected during door-to-door visits by the author.

1.5 Definition of Terms

The theory and test in this dissertation were developed based on the concept of municipal decline. While municipal decline takes various forms depending on the causes, including riots, war, and the collapse of a region's main industry, this study of public administration focuses on decline caused by the failure of municipal government management. Due to the ambiguous nature of term "municipal decline," it is necessary to establish a common language concerning the term to better communicate with readers.

In this dissertation, the terms "fiscal reconstruction" and "fiscal reform" refer to municipal management reform which cuts services or increases taxes to relieve financial stress. In the case of this Japanese town in fiscal crisis, these two terms have another dimension: legally mandated action under the national ASFSLG criteria for fiscal soundness. These criteria are explained in detail in Chapter 3. In addition, the term "municipal decline" refers to the cycle of decline in which residents exit a municipality with poor management, tax revenues consequently drop, and the municipality further shrinks. This concept of municipal decline relies on the Tiebout hypothesis and Hirschman's EVL framework.

1.6 Outline of the Study

The remainder of this dissertation consists of the literature review, research method, findings, implications, limitations, and suggestions for future research. Chapter 2 reviews the theoretical and empirical developments of Tiebout's hypothesis and Hirschman's EVL framework and links them to a theoretical framework for citizens' responses to fiscal reform. Chapter 3 describes the research methods, which involve both qualitative and quantitative data collection. The rationales for the case selection, experimental setting, sampling, data collection process, and data analysis strategy are explained. In Chapter 4, the qualitative interview data is subjected to exploratory analysis, and the qualitative findings are reflected upon the quantitative survey design. The findings of the DID analyses of the survey data are presented. In Chapter 5, the implications and limitations of the findings and future directions for research are discussed.

CHAPTER TWO: LITERATURE REVIEW

This chapter explores the theoretical foundation for citizens' response mechanism to the decline of municipal management quality. Tiebout's hypothesis, Hirschman's EVL framework, and their extensions to local governance are reviewed. These theoretical arguments and empirical evidences are extended into an EVL model under municipal decline and its core hypotheses.

2.1 The Teibout Hypothesis

For decades, the influence of neoclassical economic theory has been pervasive in most social sciences, including psychology, sociology, and public administration. The theoretical application of neoclassic economics to these disciplines is known as rational choice theory. Its central belief is that the behavioral assumption of neoclassic economics is universal: self-interest is the primal determinant of human actions in economic exchanges, social interactions, and political activities. From this foundation, it is not far to the notion of the market of public services, in which citizen-consumers shop for the public goods and services they most prefer, and the producers of these services are competitive organizations whose self-interest is correlated with efficient response to consumer demand (Frederickson & Smith, 2012).

Tiebout (1956) developed the rational choice theory in the context of local governance. Traditionally, as Paul Samuelson (1954) argued, the main critique of public goods and services is their inefficient provision due to the lack of a market mechanism. Addressing this traditional view, Tiebout identified a quasi-market mechanism among local governments. The multiplicity of local governments which provide unique mixes of public goods and services allows citizens to show their preferences for a local service package by their choice of municipality, in other words, of where to live. Thus, under a decentralized, heterogeneous system of many localities, the inefficient provision of local goods is at least partially solved because local governments compete to attract citizen-consumers.

2.2 Recent Issues in the Tiebout Hypothesis

Although a substantial body of empirical work has tested whether the Tiebout hypothesis is correct, the results are conflicting. A significant challenge for the Tiebout hypothesis is the perfect information assumption that citizen-consumers have full knowledge of the differences among local service packages and react accordingly. Tiebout is aware of this limitation, stating that "[c]onsumer-voters do not have perfect information" (p. 423), and calls for further empirical studies on citizens' actual motivations for moving. Percy, Hawkins, and Maier (1995) address his concern with a two-stage push-pull model in which the relocation decision consists of two elements: reasons for wanting to leave a location (push factors) and reasons for wanting to move a new one (pull factors). The regression analysis of a postal questionnaire survey conducted in the Milwaukee metropolitan area shows that concerns about local taxes, spending, and schools have a positive, significant effect on moving decisions through both push and pull factors and that these governmental factors are more significant than non-governmental factors, such as job- and family-related issues (Percy et al., 1995).

John, Dowding, and Biggs (1995) provide comparable results from a postal survey of households' moving decisions in four London boroughs. Their findings indicate that job changes and buying a first home are the most influential factors in moving decisions, while tax rates and public service quality are also important factors (John et al., 1995). Focusing on the factor of information, Tesk et al. (1993) investigate non-movers' and movers' knowledge of the tax rates and expenditures in school districts. Based on a survey of Long Island homeowners (non-movers) and recent house-buyers (movers), Tesk et al. (1993) find that movers' information level is high enough to support the Tiebout market mechanism for local goods and services. Lowery et al. (1995) challenge this claim, suggesting that education in Long Island is atypical and that the demonstrated level of information is insufficient for the Tiebout market mechanism. Dowding, John, and Biggs (1994) meta-analysis of the Tiebout empirical literature concludes that these micro-level tests tend to corroborate the Tiebout hypothesis, although the results are mixed. As Lowery et al. (1995) suggest, however, scholars of local governance might be inclined to prove that citizens are aware of local service quality. Thus, these tests should be carefully designed to eliminate such bias.

Another significant challenge to the Tiebout hypothesis is its perfect mobility assumption that consumer-citizens freely decide where to live based on their service preferences. Again, Tiebout recognizes the limitations of this assumption and argues that the higher costs of moving are, the less optimal the allocation of public goods and services achieved through citizens' mobility will be. Later scholars have raised more issues concerning the perfect mobility assumption. Mueller (1974) argues that some municipalities are unwilling to compete for the poor, aged, or disabled. Low-income citizens, for instance, tend to present greater demand for social services and assisted housing, and the undersupply or non-provision of these services could allow local governments to prevent these citizens' entry.

Numerous studies have presented empirical evidence of residential segregation by race, age, and income (e.g., Bishop, 2009; Dawkins, 2005; Hill, 1974; Lyons, Lowery, & DeHoog, 1993; Rhode & Strumpf, 2003). Rhode and Strumpf (2003), for example, find decreasing heterogeneity of local tax and spending variations and resident characteristics, (e.g., race, age, education, religion, party vote shares, income) in a sample of U.S. municipalities from 1870 to 1990 and in all U.S. counties from 1850 to 1990. Given the secular decline of mobility costs over these periods, these findings indicate that local service packages influence residential choices, but sociodemographic factors have greatly limited the Tiebout market mechanism in the long term. This empirical evidence is sufficient to suggest that any test for the Teibout hypothesis should consider sociodemographic factors as the main barriers to citizens' mobility.

In addition to these issues, Tiebout does not consider the effect of public services from other public organizations on municipalities (Howell - Moroney, 2008). In this so-called spillover effect, the effects of public goods or services offered by a municipality spill over into other municipalities. Sewerage treatment provides an easily explained example. High-quality sewerage treatment by an upstream city reduces the need for purification by downstream cities. Additionally, when higher-level governments or special districts provide cross-jurisdictional services or goods, such as road and sewerage, the effect is spread across municipalities (Carruthers & Ulfarsson, 2002; Nelson & Duncan, 1995). Spillover creates efficiency and equity problems. If citizens do not pay the true costs associated with their benefits from local services, price distortion arises. Spillover across local governments and between lower and higher levels of government complicates identifying the effects of municipal service administration on citizens' relocation.

In the language of public administration, the Teibout hypothesis and its extensions have privileged efficiency and economy over social equity (Howell-Moroney, 2008). As Frederickson (1990) argues quite persuasively, however, equity should not be disregarded due to the former. Recent empirical works identify significant challenges to social equity, such as residential segregation and spillover. Future issues concerning the Tiebout hypothesis seem to converge in the core inquiry of public administration: balancing efficiency, economy, and equity.

2.3 Hirschman's Exit, Voice, and Loyalty and Local Governance

While the previously discussed studies identify the factors which prevent the Tiebout market mechanism from being effective in the real world, most do not question the core assumption that a higher degree of consumer mobility increases allocative and productive efficiency of public services. Focusing on organizational decline, Hirschman (1970) challenges this core theory of the Tiebout model, especially regarding the increase in the productive efficiency of services produced by high consumer mobility. Hirschman theorizes that customers/members can either exit the situation or voice complaints when they are dissatisfied with goods or services. The concept of exit is derived from Tiebout's hypothesis and indicates escaping from a situation of declining service quality. Voice refers to either individual or collective actions to express discontent to service providers, including active appeals or protests and attempts to change circumstances rather than escape from the decline. Hirschman's main concern in the exit–voice relationship is that increasing the availability of exit through choice could discourage voice activities in what has become called the exit–voice tradeoff. Hirschman argues that, under organizational decline, voice performs a more powerful function than exit. Once users exit a service, the service provider cannot learn which element of the service made them dissatisfied. In contrast, users' voice against lower-quality services can inform the service provider about the causes of deterioration. In this vein, Hirschman emphasizes the vital role of loyalty, an affective attachment to a declining organization or community, in encouraging voice for recuperation over escaping from decline.

It should be noted that, as an economist, Hirschman does not deny the efficiency function of the market mechanism when given an adequate level of consumer mobility. Rather, his concern is the too-heavy emphasis placed on competition by neo-classic economists, including Tiebout. Hirschman identifies exit as the preferred choice in economics and voice as the preferred means of communicating political demands. Hirschman suggests that the optimal mix of exit and voice is functional in democratic organizations, including firms and states.

Since being published in 1970, Hirschman's EVL framework has been applied to various fields of the social sciences, including social psychology (e.g., Drigotas, Whitney, & Rusbult, 1995; Rusbult, Zembrodt, & Gunn, 1982), management (e.g., Freeman &

Medoff, 1984; Withey & Cooper, 1989), and comparative politics (e.g., Eubank, Gangopadahay, & Weinberg, 1996; M. H. Ross, 1988). In the field of public administration, EVL has been used to examine public involvement in health administration (Haarmann, Klenk, & Weyrauch, 2010) and exit from public workforce (Lee & Whitford, 2008; Whitford & Lee, 2015). Fewer studies have examined the EVL framework in the local governance context, primarily because Hirschman did not mention local governance much in his book but, rather, applied his framework to firms and nations (Dowding, John, Mergoupis, & Vugt, 2000).

Young (1976) argues that Hirschman's exit–voice framework is relevant to issues regarding the structure of local governance (i.e., diversity vs. consolidation) in two dimensions. First, in the spatial dimension, citizen customers can voice dissatisfaction or exit to a different jurisdiction. Exit is used first by mobile, high-income consumers who are more sensitive to quality than cost. These citizens move to more expensive jurisdictions, leaving behind people who are less mobile and less quality conscious. In this dynamic, communities become segregated into those with high-quality, high-cost public programs and the others with low-quality, low-cost programs. Young (1976) suggests that, in small, homogeneous localities, high autonomy supports the voice option rather than the exit option.

Second, the vertical dimension refers to different possible arrangements of public service delivery. These arrangements vary from total consolidation, in which a central public authority produces and delivers public services, to full diversification, in which several types of public, non-profit, and profit organizations compete to provide services. Young and Nelson (1973) and Young (1974) suggest that, under diversification, the exit option is likely to be inefficient when public services have the following characteristics: (i) the quality of the output is difficult to observe; (ii) the consumers of the services are difficult to identify; (iii) there are economies of scale; (iv) the cost of investing in alternatives is high; (v) the cost of switching suppliers is high; and (vi) some citizen-consumers can afford to exit more easily than others. Against the Tiebout hypothesis, Young's work indicates that the exit option becomes dysfunctional under the full diversification of public services along the spatial and vertical dimensions.

2.4 Theoretical and Empirical Developments of Exit, Voice, and Loyalty

The main extension of the EVL framework has emerged in social psychology. Rusbult et al. (1982) revises the EVL framework to explain behavioral reactions to dissatisfaction in romantic situations. Rusbult et al. (1982) identify loyalty as the third response to dissatisfaction, in which people wait for the situation to improve or give their partner support to improve the situation. Rusbult et al. (1982) add the fourth response of neglect, in which people put less effort into improving the situation and develop negative attitudes toward their partners. This framework entitled Exit, Voice, Loyalty, and Neglect (EVLN) has been applied to various fields, including psychotherapy (Derlega, Winstead, Lewis, & Maddux, 1993), business (e.g., Maute & Forrester, 1993; Ping, 1993; Withey & Cooper, 1989), and public administration (Golden, 1992; Rusbult & Lowery, 1985).

Lyons et al. (1993) use the EVLN framework to examine citizens' responses to dissatisfaction with local services in the context of U.S. urban governance. In this

framework, exit is leaving a jurisdiction, considering doing so, or selecting privatized services instead of public services. Voice is contacting officials, taking other collective action, or signing a petition. Loyalty is passively but optimistically waiting for conditions to improve, while neglect is not following public issues, believing that there is no point to complaining (See Figure 1). Lyons et al. (1993) hypothesize that citizens are more likely to exit when prior satisfaction with public services and social investment is low, and there are alternative government jurisdictions. Voice is expected when prior satisfaction, social investment, and alternatives are all high. Social investment refers to social and psychological ties to the area, length of residence, and past participation in community activities. The results of the empirical analysis by Lyons et al. (1993) showed that social investment significantly discouraged exit and neglect and encouraged voice and loyalty. Prior satisfaction also worked as expected but did not significantly affect voice. Lyons et al. (1993) found no effect from alternatives.

	Exit	Voice
	e.g., Leaving or considering leaving jurisdictions; Opting for privatized services.	e.g., Contacting Officials; Collective action; Signing a petition.
Destructive		Constructive
	e.g., Not following public issues; Believing there is no point complaining.	e.g., Trusting officials; Being patient in criticizing the government; Believing the community problem will be solved.
	Neglect	Loyalty

Active

Passive

Figure 1: The Lyons et al EVLN as response to dissatisfaction with local services Source: Simplified from Lyons et al. (1993), p. 54

Dowding and John (2012) view the EVLN framework as a completely independent concept from EVL and argue that EVLN does not empirically test Hirschman's original ideas. As shown in Figure 1, the EVLN framework of Lyons et al. (1993) consists of four possible responses to dissatisfaction with local services based on personal traits (active or passive, destructive or constructive). In contrast, as Figure 2 indicates, Hirschman's EVL framework is two-by-two possible responses (exit or stay, voice or silence):



Figure 2: Hirschman's exit and voice as response to decline in service quality Source: Modified from Dowding et al. (2000), p. 482

Loyalty is a passive, constructive response in the Lyons et al. (1993) EVLN framework. However, loyalty is not a response in Hirschman's EVL. Hirschman's main concern is the exit–voice tradeoff: increasing the availability of the exit option as a market mechanism might reduce voice activities. Hirschman addresses this concern by suggesting that loyalty, as an affective attachment to a declining organization or community, encourages consumers/members to voice recuperation rather than escape from decline. In quantitative modeling, exit and voice responses to decline are outcome variables, and loyalty is a perceptual factor and an explanatory variable which encourages voice and discourages exit, as shown in Figure 3.



Figure 3: Hirschman's exit, voice, and loyalty interaction

Given that EVLN empirical work does not test Hirschman's original ideas, Dowding and John (2008, 2012) empirically review and develop Hirschman's concepts of exit, voice, and loyalty. They view the original EVL as too simple to empirically test Hirschman's proposed exit–voice interaction and identify three types of exit and voice, along with the local service context. The three types of exit are (i) moving location; (ii) moving from a public service provider to a private service provider; and (iii) moving between public service providers. The three types of voice are (i) private voice; (ii) voting; and (iii) collective action. Like Hirschman, Dowding and John (2008, 2012) identify satisfaction with services as a key variable that triggers both exit and voice. However, they point out that satisfaction is not necessarily correlated with any objective indicator of the efficiency of services. Dowding and John (2008, 2012) argue that the level of satisfaction with service varies by social class, educational attainment, and employment status. Employees with higher education and social class tend to be less satisfied with services. Also, independent of the level of satisfaction, better educated and wealthier individuals might be more likely to exit or voice. Given these potential effects of sociodemographic factors, Dowding and John (2008, 2012) test the relationship of three types of exit and voice with satisfaction in an online survey in the UK. They find that dissatisfied people are more likely to complain privately, vote, and engage in collective actions, such as joining pressure groups and signing petitions, but only a weak relationship exists between relocation and dissatisfaction with local services.

Another key variable in Hirschman' exit–voice tradeoff is loyalty. Drawing on Lyons et al. (1993), Dowding and John (2012) define loyalty as a form of social capital. According to Coleman (1988) and Putnam (1993, 1995, 2000), social capital is a social relationship or network which facilitates certain functions, such as volunteering and political participation. In addition, Dowding and John (2012) hypothesize that social investment in communities, such as past collective actions, leads to greater future voice activities. In a four-year panel survey in the UK, Dowding and John (2012) find that citizens who have ties to the community, have lived there a long time, know their neighbors, and have participated in collective actions are more likely to stay in a locality and participate in collective voice activities. Lyons et al. (1993) and Dowding and John (2008, 2012) provide the main empirical basis for applying EVL to the study of modern local governance. In terms of Hirschman's original idea, however, both studies have a limitation: they target the general population in the U.S. and UK but not the population of declining municipalities. In other words, these studies test whether local service quality influences the exit and voice behavior of citizens in general, but Hirschman designed the EVL as a response mechanism to organizational decline for the purpose of identifying the keys to successful recuperation from decline. Therefore, the rigorous application of Hirschman's original intention to local governance requires an EVL model which explains citizens' response mechanism to the decline of municipal government management.

In sum, the literature review reveals that few studies have empirically addressed citizens' exit and voice behavior in the context of municipal decline. To fill this gap in the literature, this dissertation attempts to build an EVL framework for municipal decline based on the specific case of a municipality in fiscal crisis.

2.5 Theoretical Framework

The lack of an EVL model under municipal decline motivates this attempt to address the research question: *How do citizens react to municipal management reform under fiscal crisis?* The study addresses this question by drawing on Dowding and John (2008, 2012) EVL framework for local governance. Their concepts of exit, voice, loyalty, and satisfaction are reviewed and modified based on the pertinent literature and the specific circumstances of municipal decline. Exit

Targeting the general population in the UK, Dowding and John (2008, 2012) propose the three exit-three voice framework. Firstly, Dowding and John (2008, 2012) argue that there are three forms of exit from a public service provider: (i) moving location; (ii) moving from a public service provider to a private service provider; and (iii) moving between public service providers. This framework is designed to be generalizable to any public service provider, including public hospitals, school districts, and cities. This study of municipal decline explores only the first type of exit, particularly citizens' relocation from one municipality to another. This study investigates a Japanese case in which the municipality is the monopoly supplier of local services, including basic education, health, garbage collection, and town roads. In most situations, switching a public service provider means the geographical exit from a municipality, which Dowding and John (2008, 2012) label the "Tiebout exit."

Tiebout (1956) hypothesizes that citizens are more likely to consider exiting when local taxes are increased. He explains this theory with the example of a lifeguard service: suppose that all the lifeguards throughout a country organize and succeed in demanding higher wages, and consequently, taxes in localities with beaches are increased. Residents who are indifferent to the beach consider whether these added taxes are worth the cost of moving to a locality without a beach. Tiebout himself mentions that this is only but important factor among many in citizens' relocation. However, under fiscal reconstruction which cuts services and raises taxes, Tiebout's hypothesis might emerge among residents more strongly than in the example. Focusing on organizational decline, Hirschman (1970) identifies the deterioration of service quality as the main cause of exit in his EVL framework. Dowding et al. (2000), though, question why the EVL model is applied only to quality deterioration in products. In the case of a municipality in fiscal crisis, some residents might positively assess service cuts and tax increases as necessary for fiscal health. Here, it is relevant to note that not only dissatisfaction with service quality but also many other factors, such as political beliefs and community ties, are involved in citizens' decisions to exit amid municipal decline. How the key variables of satisfaction and loyalty stimulate exit and voice under municipal decline is discussed later.

Voice

Although both exit and voice alert service providers to the deterioration of service quality, voice offers clear advantages over exit in recuperation from municipal decline. Exit is a crude, dichotomous response. The exit of a citizen immediately damages municipal management, especially under fiscal crisis. In contrast, voice responses provide municipal officials with qualitative information, such as citizens' desires for municipal management reform and with which elements of the reform they are dissatisfied. While citizens who have exited do not allow the municipal government to respond to their discontent, those who voice their desires or complaints offer the municipal government a certain amount of time to respond. Thus, Hirschman's main concern is that increasing the availability of the choice to exit could decrease voice activities, the so-called the exit–voice tradeoff. Simply put, the lower the cost of exiting, the fewer voice activities there are. Under fiscal reconstruction, the relative benefit of exit over voice becomes higher when holding other factors constant because citizens can escape from service cuts and tax increases. Testing the exit–voice tradeoff under municipal decline requires an experimental study with a set of treatment and control towns which have similar access to rival towns. Another important aspect of the exit– voice relationship is that voice is the only means to express discontent for citizens locked in declining municipalities by low income, old age, or job and family issues. The possible effects of these sociodemographic factors on voice activities are addressed later in this section.

Hirschman (1970) identifies voice as either individual or collective action which expresses discontent with the deterioration of service quality. In the context of local governance, Dowding and John (2008, 2012) further classify voice into three types: (i) private voice to local officials or politicians; (ii) voting; and (iii) collective actions, such as participating in public hearings, campaigning with pressure groups, and signing petitions. Dowding and John (2008, 2012) view the first action as individual voice and the second and third actions as collective voice. The specific circumstances of fiscal crisis in Japanese towns do not restrict any form of voice. Therefore, this modified version of voice for local governance is adopted in this study.

The distinction between individual and collective voices is crucial under municipal decline. Dowding and John (2008, 2012) explain that, in most cases, individual voice is motivated by personal self-interest. For example, citizens might complain to local officials about problems with street lights, potholes, or the garbage collection schedule. Individual voices can be seen as part of daily life. In contrast, collective actions,

27

such as lobbying and demonstrations, are much more costly than individual voice, so it is unusual for many citizens to engage in them. In addition, citizens might be motivated to vote or participate in collective actions to change a municipal management policy or strategy rather than to support their personal self-interests in specific local services. Therefore, under municipal decline, collective voice activity should emerge more strongly, especially among loyal citizens.

In addition to the categories of individual and collective voice, many different forms of voice have been identified. Among them, O'Donnell (1986) distinction between vertical and horizontal voice seems most relevant to this study. Vertical voice means voicing opinions to a service provider, such as a firm or government. Horizontal voice refers to discussing a good or service with family, friends, and neighbors. As Hirschman's original idea does, Dowding and John's three forms of voice focus only on the vertical dimension. However, horizontal voice is germane to Dowding and John's concept of loyalty, which is defined as a form of social capital.

Loyalty as Social Capital

Paraphrasing Graham and Keeley (1992) in the local governance context, Hirschman's concept of loyalty implies a sort of positive affective attachment that binds residents to a local community. As presented in the literature review, recent EVL-related studies link loyalty with social capital (Dowding & John, 2008, 2012; Lyons et al., 1993). Coleman (1988) and Putnam (1993, 1995, 2000) define social capital as social relationships or networks which facilitate certain functions, such as volunteering and political participation. In the context of municipal decline, loyalty refers to the specific
function of social capital which discourages escape from local decline and encourages voice activities for recuperation. Those who are born and grow up in an area with families and friends are less inclined to escape when the area enters decline. To exit from their social group because they are dissatisfied with the quality of municipal management could be a painful, costly process (Dowding et al., 2000). Also, if people strongly identify as part of a community, such mental and social ties to the area might encourage them to engage in collective voice for recuperation. Thus, this study identifies loyalty as a form of social capital which supports voice rather than escape from municipal decline.

Past social investments, such as prior community engagement and collective action, are also measures of loyalty. Dowding et al. (2000) argue that the degree of loyalty depends on the amount one has invested in the object of loyalty. Past community activities, such as participating in a neighborhood crime watch, cleaning local streets and parks, and organizing local festivals, can be seen as investing time and effort in a community. Additionally, once citizens are involved in the political process with their social group, they might perceive an opportunity to change or control the municipal administration (Dowding & John, 2012; Lyons et al., 1993; Putnam, 2000). Past social investments might lead to greater future social investment even during municipal decline. *Satisfaction*

Hirschman (1970) implies that consumer dissatisfaction is the key variable that triggers exit and voice responses to the deterioration of service quality. However, empirical tests of the Tiebout hypothesis and EVL for local governance have indicated that households and individuals rarely exit a local government jurisdiction solely due to dissatisfaction with local services, although it can be an important factor in relocation decisions (Dowding & John, 2008, 2012; John et al., 1995; Percy et al., 1995; Teske et al., 1993). It should be noted that, in the push–pull model developed by Percy et al. (1995), dissatisfaction with local services is a push factor (i.e., a reason for wanting to leave a location), and the EVL model does not consider pull factors (i.e., reasons for moving to a new location).

Under fiscal reconstruction, citizens' dissatisfaction with service cuts and tax increases might increase and have a stronger impact on exit than usual. In contrast, some loyal citizens or those locked in a municipality under fiscal crisis might view such management efforts as necessary to achieve fiscal health. Similarly, whereas some citizens might engage in individual or collective voicing of their dissatisfaction with specific service cuts or tax increases, others might be motivated to participate in voting or other collective actions to lead their declining municipality in the right direction. As Dowding and John (2008, 2012) argue, satisfaction with services is not necessarily connected with any objective indicator of local service quality, such as tax rates or the range of services. Given the strong emergence of the loyalty function under municipal decline, service cuts and tax increases aimed at achieving fiscal health might not produce higher levels of citizen dissatisfaction. Also, the level of satisfaction with services is affected by sociodemographic characteristics, such as social class, educational attainment, and employment status. Employees with higher education and social class tend to be less satisfied with services, likely due to higher expectations (Dowding & John, 2008, 2012).

Although the general expectation is that a higher level of dissatisfaction with services spurs both exit and voice under fiscal reconstruction, it is possible that the reinforced loyalty function under municipal decline or the specific sociodemographic features of a declining municipality might alleviate the increased dissatisfaction caused by service cuts and tax increases. Thus, under municipal decline, dissatisfaction has a complex relationship with both exit and voice. The theoretical basis for addressing this complex issue in the literature on local governance seems insufficient.

Trust in Government

Along with the level of civic engagement, trust in others has been seen as one of the two dimensions of social capital. Citizens who participate in civic activities meet more people and learn interpersonal trust through their interactions (Putnam, 1993, 1995, 2000). In addition, it has long been recognized that citizens' trust in government encourages voting and collective action (e.g., Bélanger & Nadeau, 2005; Dekker & Uslaner, 2003; Hetherington, 1999; Miller, 1974) and so might be a measure of citizens' loyalty. However, the nature of trust in government is changing. In particular, such events as political scandals and terrorisms attack have—often temporary—impacts on the level of trust in government (Bouckaert & Van de Walle, 2003). It seems unclear whether such fluctuating perceptions can be seen as an element of loyalty or affective attachment to a community, especially under municipal decline. This study does not discuss whether citizens' trust in government (CTG) is a part of citizens' loyalty. Rather, it is suggested that some aspects of CTG are similar to citizens' satisfaction with overall government performance and, thus, can be another key variable that stimulates both exit and voice. CTG is a multifaceted, complex concept. This study focuses on its personal and institutional aspects. The personal aspect refers to trust in individual actors whom citizens encounter and observe, such as local officials, municipal council members, and mayors. The institutional aspect refers to the organizational performance of municipal government, which can be further classified into process and output (Christensen & Lægreid, 2005; Easton, 1967). Process concerns how the decision-making process is organized (e.g., who participates, to what extent citizens' voices are reflected, how problems are approached, which rules are followed). Output concerns citizens' actual gains and the quantity and quality of public goods and services. This distinction between process and output in government performance is crucial in the study of public administration. Process is highly representative of the political dimension of government, and outcome primarily represents the administrative side. It is quite important to note that satisfaction with service quality (output) can be seen as a factor in CTG.

While trust is a more general concept than satisfaction (Bouckaert & Van de Walle, 2003), the institutional aspect of CTG is similar to citizens' satisfaction with government performance. This implies that citizens' satisfaction with service quality is an insufficient measure of local government performance because it neglects the policy process in municipal management. Under fiscal reconstruction, municipal governments, especially the legislative branch, are required to discuss politically sensitive issues, such as which services to cut and whether to raise taxes. Thus, this process is likely to involve political conflicts which might divide citizens in a municipality. Some citizens might be motivated to exit or voice by dissatisfaction with an undemocratic decision-making process during fiscal reform, even if they see a certain amount of service cuts or tax increases as

necessary. Thus, satisfaction with service quality is not the only key variable that triggers exit and voice. Citizens' perceptions of the policy process should be considered another key variable in the EVL framework.

Citizens' perceptions of the policy process could be measured as either trust or satisfaction. This study, however, distinguishes between this concept and satisfaction and focuses on how appropriate citizens perceive the process by which the municipal government addresses community issues to be. The rationale for this distinction is that satisfaction with service quality was originally designed as the key variable in Hirschman's EVL, and the aim of this study is to test whether the personal and institutional aspects of CTG can be added to the EVL as new variables.

Locked-in Factors

Citizens' loyalty is not the only factor which discourages exit and encourages voice. U.S. and UK urban studies (e.g., Orbell & Uno, 1972; Vugt, John, Dowding, & Dijk, 2003) have indicated that the exit option is influenced by sociodemographic factors, such as income (mobility increases with wealth), age (younger residents are generally more mobile), family situation (the presence of children and older parents who need care restricts mobility), and current housing (homeowners are less likely to move than renters). If citizens are locked in a declining municipality by these sociodemographic factors, voice is the only option to express their discontent to the municipal government. Given the lack of exit option, these citizens are expected to use voice more frequently to prevent the further decline of their municipality.

2.6 Hypotheses

Given the main purpose of this study to reveal citizens' response mechanism to fiscal reconstruction, this theoretical discussion supports the following hypotheses:

H₁: Given the availability of the exit option, citizens' intention to exit increases under fiscal reconstruction which involves service cuts, tax increases, and political conflicts.

H₂: Greater intention to exit inhibits voice activity under fiscal reconstruction and vice versa.

H₃: In relationship with individual voice, collective voice activity increases under fiscal reconstruction.

H₄: Greater social capital and social investment decreases intention to exit and increases voice activity.

H₅: Citizens' dissatisfaction with service quality increases under fiscal reconstruction.

H₆: Citizens' trust in municipal government decreases under fiscal reconstruction.

H₇: When exit is impossible or expensive due to sociodemographic factors, such as income, age, and job and family issues, voice activity increases.

The theoretical framework presented here relies on past studies on the general population rather than residents of declining municipalities. Although the hypotheses are

central to the research design, the intent of this study is to construct an EVL model grounded on what citizens under municipal decline actually perceive and do.

This chapter has presented a review of the Tiebout hypothesis, Hirschman's EVL, and their extensions for local governance. The review reveals that, although many studies have tested whether local service quality affects citizens' relocation decisions and voice activities in general, few have examined these relationships under the specific circumstance of municipal decline. Thus, a theoretical framework was developed based on the relevant literature to explain citizens' responses to fiscal reconstruction. The next chapter outlines the research methods used to empirically test this framework.

CHAPTER THREE: RESEARCH METHODS

In this chapter, the research methods to test the theoretical framework and core hypotheses presented in Chapter 2 are explained. The overall methodology which integrates qualitative interviews and quantitative survey experiment is introduced, and then, a Japanese case which offers a highly suitable experimental setting for measuring the effects of fiscal reform on citizens' decisions of whether to exit or voice is described. Finally, the sampling, data collection procedure, and data analysis strategy for the first qualitative phase and the second quantitative phase are detailed.

3.1 Methodology

Empirically, this dissertation focuses on measuring the impact of fiscal reconstruction on citizens' intention to exit, voice activities, and perceptions of municipal management. The identification strategy makes central use of the experimental framework that contrasts a treatment town under fiscal reform to a control town not under fiscal reform which share similar sociodemographic features. As presented in the literature review, however, few studies have theoretically or empirically examined EVL under municipal decline. Without a well-established framework, this study must rely on a grounded theory approach to a certain extent. Thus, exploratory sequential mixed methods are used in this study, which first qualitatively explores a phenomenon and then quantitatively examines indicators of the phenomenon constructed from the qualitative research (Creswell, 2013; Creswell & Clark, 2007).

In the first qualitative phase, semi-structured interviews were conducted to explore citizens' response mechanism to municipal management reform under fiscal crisis. The interview protocol was designed to ask questions related to the theoretical framework presented in Chapter 2. The qualitative findings were used to develop quantitative measures of EVL under municipal decline.

The second quantitative phase was based on a DID design (treatment town vs. control town, before vs. after fiscal reform). The primary advantage of this experimental design is that, if the treatment is randomly assigned to citizens, the observed and unobserved factors that affect citizens' behavior and perceptions are equally likely to be present in both the treatment and control towns. Therefore, the experiment setting enabled researchers to estimate treatment effects even if they missed some cofounders which affect the outcomes in their models.

However, it would be quite challenging to collect citizens' perceptions of municipal management in two time dimensions: before and after municipal decline. Thus, a unique DID whose time difference is enabled by a careful retrospective measurement was adopted in this research. Vicente (2010) developed this type of DID to examine the effects of oil discovery on perceived levels of corruption in government services. A natural experiment framework was used to contrast Sao Tome and Principe, where oil was discovered, to the control of Cape Verde, a West African country where oil had not been discovered. Citizens' perceptions of corruption in public services were captured through face-to-face interviews in these two island countries (Vicente, 2010). This retrospective unique survey instrument used personal histories to elicit respondents' memories. The study analyzed changes in perceived corruption across a wide range of public services before and after the announcement of the discovery of oil. This dissertation modifies this method to test EVL under municipal decline.

3.2 Research Setting

Rationale for Case Selection

This inquiry into EVL under municipal decline examines a Japanese case of fiscal reconstruction. U.S. Tiebout studies have revealed that diverse sociodemographic factors and policy effects from multi-level governments make it difficult to identify the effects of municipal administrations on citizens' relocation decisions. In this regard, Japanese cases have clear advantages over U.S. cases. First, Japan is highly homogeneous in terms of race and ethnicity. Second, it is a unitary state in which municipalities are under centralized legislation, including laws governing the tax and education systems.

More importantly, the Japanese central government strictly monitors local governments. National legislation on local finance sets criteria for fiscal soundness and requires local governments which fall short of the criteria to design and implement financial reconstruction plans under the supervision of a central agency. The Japanese legal system allows identifying a clear stating point of a fiscal crisis without any control by the researcher. The mandate for fiscal reconstruction is highly exogenous, so Japanese cases can provide an excellent experimental setting to measure the effects of fiscal reconstruction on citizens' exit intention, voice activities, and perceptions of municipal management.

Case Description

Geographically, Japan is an island nation which has almost the same area as the U.S. state of Montana. Japan, though, has a population of 128 million, while Montana has less than 1 million residents. The Japanese local government system is comprised of two tiers: 47 prefectures and 1,718 municipalities under prefecture-level governments. The size of local governments, in terms of both population and area, varies significantly. With a population of more than 12 million, Tokyo is the largest of all prefectures, whereas Tottori, the least populated prefecture, has only 588,700 people. Moreover, the area of Tokyo is only 2.6% of that of Hokkaido, the largest prefecture. There is an even greater disparity in the sizes of municipalities than prefectures. Municipal populations range from 3.5 million in Yokohama, the biggest city, to 188 in the smallest village, Aogashima in the Izu Islands. The average population of a municipality in Japan is approximately 140,000.

The Local Autonomy Law defines the basic structure and authorities of local governments, so they have almost the same institutional set-up regardless of size or type. While the Japanese national government is based on a parliamentary system, local governments are based on a presidential system. The chief of the local government and the members of the local assembly are directly elected by area residents and serve four-year terms. The executive and the legislative assembly are separate and independent of each other. Unlike in the U.S., however, local governments do not have judicial power. According to the Constitution of Japan, only the national government possesses judicial power. Local governments set their own regulations within the range of authority permitted by national laws. Local assemblies determine budgets and enact regulations, while the executive branch implements the policies enacted by assemblies. Governors and mayors have the right to veto any decision made by the local assembly and demand that the decision be reconsidered. If the governor or mayor cannot reach a compromise with the local assembly, the assembly can declare a vote of no confidence on the governor or mayor. If this is passed, the governor or mayor can dissolve the assembly and call for an election (Aoki, 2008).

Prefectures and municipalities are mutually independent. Prefectures, which have a wider regional perspective, can give guidance and advice to municipalities. Cities with populations of 500,000 or more are named by the national cabinet order as designated cities granted the same authority as prefectures to provide public services under the Local Autonomy Law.

Similarly to the U.S., municipalities provide the most-used public services, including basic education (elementary and middle school), health and welfare services, garbage collection and treatment, environmental protection, agriculture and fisheries support, urban development, municipal-level infrastructure and transportation, public housing, water supply and sewage, fire services, and support for local industry. Prefectures provide high school education, police services, infrastructure, and support for industry, agriculture, fisheries, and forestry (Yagi, 2004). The Local Autonomy Law stipulates the duties of prefecture to (i) provide comprehensive services across municipalities, (ii) liaise and coordinate among municipalities, and (iii) offer services which exceed the capacity of municipalities. Financially, local governments account for the majority of public spending—12% of gross domestic expenditures in 2014, compared to 5% by the central government (Ministry of Internal Affairs and Communication, 2016). Local governments' share of expenditures is three times larger than that of the central government. Despite local governments' large fiscal role, their fiscal administration is strictly monitored by the central government. For instance, under the Local Allocation Tax Law, the central cabinet submits revenue and expenditure estimates for all local governments to the Diet, which assesses whether local governments have sufficient revenue to provide the required public services. If there is an imbalance between local revenue and expenditures, the central government may consider securing additional revenue (e.g., increasing the Local Allocation Tax Carant, a block grant to local governments). Also, the Local Tax Law regulates and sets the standard rates for prefecture and municipal taxes. Although local government may determine specific tax rates (with some exceptions), local governments have rarely taken advantage of this authority and instead adopted standard tax rates.

In the late 2000s, the central government further tightened its monitoring system of local governments' fiscal health. First, Yubari City in the Hokkaido Prefecture went bankrupt in 2006 mainly due to a high level of hidden debt. Before 2005, the Local Finance Law required all municipalities to secure permission to issue local bonds from their central agency and prefecture, but Yubari City issued bonds without permission.¹ This case led the central government to establish an alert system for local governments in

¹ Since April 2016, permission has been required only for local governments which fall short of the Local Finance Law's criteria for fiscal soundness, which are compatible with the ASFS criteria.

fiscal crisis. The Act on the Assurance of the Sound Financial Status of Local Governments (ASFS) was enacted in 2007 and fully implemented in 2009. ASFS sets national criteria for fiscal soundness and requires any local governments which fall short of these criteria to design and implement fiscal reconstruction plans under the supervision of the Ministry of Internal Affairs and Communication. Local governments must implement fiscal reconstruction until they meet the criteria for fiscal soundness.

The ASFS criteria are comprised of the four measures of fiscal status: (i) real deficit ratio; (ii) consolidated real deficit ratio; (iii) real debt ratio; and (iv) future burden ratio.² If a local government exceeds the set values for any one ASFS fiscal measure, it implements a fiscal reconstruction plan. Further, if one measure exceeds the highest level of fiscal bankruptcy despite fiscal reconstruction efforts, the local government will receive a comprehensive bailout program from the central government. Table 1 summarizes the levels of fiscal reconstruction and fiscal bankruptcy for each measure.

(i) Real Deficit Ratio = $\frac{Deficit \text{ in the General Account of a Local Government}}{Fiscal Size of the Local Government}$

(ii) Consolidated Real Deficit Ratio =

Deficit in the General Account of a Local Government +Deficit in the Special Accounts for Local Public Industries Fiscal Size of the Local Government

(iii) Real Debt Ratio (3-Year Average) =

(iv) Future Burden Ratio = $\frac{Expected Redemption for Total Local Bonds}{Fiscal Size of the Local Government}$

² The simplified formula for each fiscal measure is as follows:

Redemption for Local Bonds in the General Account of the Local Government Fiscal Size of the Local Government

	Level of Fiscal Reconstruction	Level of Fiscal Bankruptcy
Real Deficit Ratio	Prefectures: 3.5% Municipalities: 11.25 – 15%*	Prefectures: 5.0% Municipalities: 20%
Consolidated Real Deficit Ratio	Prefectures: 8.75% Municipalities: 16.25 – 20%*	Prefectures: 15% Municipalities: 30%
Real Debt Ratio	Prefectures & Municipalities: 25%	Prefectures & Municipalities: 35%
Future Burden Ratio	Prefectures & Designated Cities: 400% Municipalities: 350%	

Table 1: The AFSF Criteria of Fiscal Soundness

Note: *Depends on the fiscal size of local governments.

Under this new legislation, 21 municipalities were obligated to design fiscal reconstructions plan in the fiscal year 2009.³ These municipalities were geographically diverse from northern to southern Japan, and their population varied from 2,000 to 100,000 (the average municipal population size in Japan is 140,000). In general, relatively small municipalities have been the target of fiscal reconstruction.

Site Selection

Among the 21 municipalities under legally mandated fiscal reconstruction, the town of Ohwani in the Aomori Prefecture was selected as the treatment town. Ohwani's

³ The fiscal year in Japan starts on April 1 and ends on March 31.

future burden rate was more than 350% in 2009. Following the ASFS, a fiscal reconstruction plan for Ohwani was announced in March 2010 and has been implemented since fiscal year 2010. Geographically, Ohwani is on the southern border of Aomori Prefecture on the northern tip of Honshu, the largest of the main four islands of Japan. Figure 4 shows the location of Ohwani.

Historically, the Aomori area remained outside the control of the first Japanese dynasty Yamato until the 8th century, even as the Yamato dynasty ruled most areas of Honshu starting in the 3rd century. The Aomori area was the southern end of the territory of the Ainu tribe, which had a different culture, language, and religion from the Japanese (Wajin) and lived primarily around Hokkaido. The Ainu and Japanese had long lived in this area, but Ainu were assimilated into Japanese society around the 16th century. Culturally and historically, Aomori-Prefecture was divided into the two areas starting in the 17th century: the western Tsugaru and eastern Nanbu. During the Edo era (1603– 1867), different feudal lords ruled these areas, which began to develop their own dialects, respectively, Tsugaru-ben and Nanbu-ben. Ohwani lies in the Tsugaru area, which centers on the city of Hiroaski. With a leading national university and famous cultural figures, Hirosaki has been nationally recognized as an academic city.

The primary reason for this site selection is the availability of an ideal control village not under fiscal reform, Inakadate, which satisfies the rigorous assumptions of DID. First, this experimental design requires that the treatment and control groups be identical to isolate the effects of the treatment. Accordingly, Ohwani and Inakadate provide an excellent field setting. Under various dynasties, the prewar imperial government, and modern democratic government, the two areas have been administered in the same county for at least 700 years and so share similar cultural backgrounds. Residents of Ohwani and Inakadate speak the same dialect, Tsugaru-ben. Moreover, as shown in Table 2, the two municipalities have similar population sizes, per-capita income, and industrial structure. Agriculture and tourism are the two main industries in both Ohwani and Inakadate, but there are some differences. Apples are the main agricultural product of Ohwani, while Inakadate's is rice. In Inakadate, one of the oldest paddy field traces were found in the 1980s and were designated as a national historic site by the central government in 2000. Since then, the Inakadate village government has developed tourism facilities and services around this site. In particular, rice paddy art has become a nationally recognized event in recent years. In 2015, scenes from the famous movies *Gone with Wind* and *Star Wars* drawn on the paddy fields attracted more than 200,000 visitors during the rice-harvesting season.

While Inakadate's tourism industry is relatively new, Ohwani's has quite a long history. Along the mountainous southern border of the Aomoi Prefecture with the Akita Prefecture, Ohwani has volcanoes and has been famous as a hot springs town for more than 800 years. Japan's first ski resort was constructed at Ohwani in 1923 and became hugely popular, especially from the 1960s to 1980s. During this time, this town-managed ski resort was only one in the Tsugaru area which met international competition standards. However, larger ski facilities were constructed nearby in the 1990s, and the Ohwani ski resort lost popularity. Under the accumulated debt of this public industry, Ohwani posted a 392.6% of future burden rate in 2009, exceeding the ASFS criteria for fiscal soundness (350% of the future burden rate). Ohwani's fiscal crisis was caused by the failure of municipal management, not by population decline due to crime, natural disaster, or the bankruptcy of local firms.



Figure 4: Location of Ohwani-town

_	Ohwani	Inakadate
Population	10,530	8,164
Income per capita*	\$17,614	\$17,737
Real Debt Ratio	21.1%	19.6%
Future Burden Rate	313.4%	76.4%
Top 3 Industry:	Agriculture: 22%	Agriculture: 23%
(% of Workforce)	Wholesale: 16%	Manufacture: 15%
	Medical/Welfare: 13%	Wholesale: 14%

 Table 2: Socio-Economic Attributes of Ohwani and Inakadate

Note: *The exchange rate applied to income per capita: 1 USD = 120 JPY

Source: Japanese Census, 2010; Aomori-Prefecture, Statistical Data Land

Beyond these differences in the major industries, Ohwani and Inakadate present an advantageous geographical setting for DID estimation. While they belong to the same county, they are not geographically adjacent, as shown in Figure 5. This condition is necessary to meet one standard assumption of DID: the Stable Unit Treatment Value Assumption (SUTVA) that the treatments are completely represented and that there are no relevant interactions between the treatment and control groups (Lechner, 2011). If a high level of interaction between Ohwani and Inakadate residents affected decisions to exit or voice during the period of fiscal reconstruction, the hypothetical assumption that the control group is free from treatment effects would be violated. The geographical distance between Ohwani and Inakadate secures SUTVA to a certain degree.

In addition to the rigorous assumptions of DID, this study also needs to satisfy Hirschman's theoretical assumption that, given the availability of the exit option, consumers/members can either exit or voice in response to the decline of service quality. Ohwani and Inakadate have similar access conditions to Hirosaki, the central city of the Tsugaru area which has approximately 200,000 residents (see Figure 5). Two train lines connect both Ohwani and Inakadate to Hirosaki, and the road network in this area is quite dense. Many workers and high school and college students in Ohwani and Inakadate commute to Hirosaki by car or train. These geographic and traffic conditions shared by the treatment and control groups enable measuring the effects of fiscal reconstruction on citizens' exit and voice behavior.



Figure 5: Map of Tsugaru Area in Aomori-Prefecture

Third, DID makes the common trend assumption (CT): if the treatment group were not subjected to the treatment, it would experience the same time trends as the control group. Figure 6 presents the percent change in the population in Ohwani and Inakadate from 2005 to 2014. The population decline in Ohwani accelerated during the fiscal reconstruction from 2010 to 2014, while Inakadate's population was relatively stable. According to CT, Ohwani would have the same stable population trends as Inakadate without the fiscal reconstruction. In other words, if there were other possible influences on the population trends in either Ohwani or Inakadate, such as storm damage or the bankruptcy of a factory, then the CT assumption would be violated. The evidence supporting CT is presented in Figure 7. The pre-capita income trends in Inakadate parallel those in Ohwani before and after the fiscal reconstruction in 2010. These trends justify the assumption that there were few economic impacts on the population trends in either Ohwani or Inakadate during the fiscal reconstruction.



Figure 6: Percent Change of Population in Ohwani and Inakadate from 2005-14

Note: Percent Change = (Move in - Move out)/Total Population; The percent change does not consider the natural increase or decrease due to birth or death. The total population in the end of the previous year is used for each year's calculation.

Source: MIC, Basic Resident Register Report 2005-14



Figure 7: Trends of Income per capita in Ohwani and Inakadate from 2005-12 Source: Aomori-Prefecture, *Statistical Data Land*

In sum, Ohwani and Inakadate offer an ideal setting which satisfies Hirshman's theoretical premise, similar availability of the exit option for both the treatment and control groups, and the methodological assumptions of DID.

Fiscal Reconstruction in Ohwani

As described, the main cause of fiscal crisis in Ohwani was the bankruptcy of the town-managed ski resort. According to Ohwani's fiscal reconstruction plan, compensation for the loss of the ski resort ran as high as 30 million USD by 2008. Under the accumulated debt of this public industry, Ohwani posted a 392.6% of future burden rate in 2009, exceeding the ASFS criteria for fiscal soundness (350% of future burden rate). Following the ASFS, Ohwani was obligated to design and announce a fiscal reconstruction plan under the supervision of the Aomori Prefecture and the Ministry of Internal Affairs and Communication by the end of the fiscal year 2009.

In contrast, Inakadate, the control village, implemented spending cuts to reduce its relatively high debt level (see Table 2) on its own from 2004 to 2007. It should be noted that this study investigates citizens' perceptions of municipal management at two time points: before and after the fiscal reconstruction of Ohwani (2008–2009 and 2014–2015). It is assumed that the effects of Inakadate's relatively small spending cuts diminished by 2008. Table 3 summarizes the detailed content of the fiscal reform in Ohwani and the spending cuts in Inakadate.

		Ohwani	Inakadate
Revenue Raise	Tax Increase	Property Tax: 1.4% => 1.6% (2011~)	
	Service Fee Increase	Switch from free garbage collection to paid service	
	Liquidation of Property	Sellout of three childcare facilities and town-managed public housing	
Spending Cut	Personnel Cut	 Salary Cut (2009-10): Mayor 40%; Council Members 10%; Municipal Officials 5-10% Municipal Worker Cuts: 137 => 89 (2006-10) 	 Executive Bonus Cuts (2007): Mayor 50%; Council Members 50%; Senior Municipal Officials 50% Municipal Worker Cuts: 137 => 89 (2006-10)
	Service Cut	 Subsidy cuts for civic organizations; Welfare service cuts Reduction of town-managed bus routes; Budget cuts for ski resort management. 	Subsidy cuts for civic organizations (2004-6)
	Privatization	Privatization of childcare centers	Privatization of childcare centers and welfare & education facilities (2006)

Table 3: Summary of Fiscal Reform in Ohwani and Spending Cuts in Inakadate

Source: Ohwani-town (2010), Zaisei Kenzenka Keikaku [Fiscal Reconstruction Plan]; Inakadate-village (2006), Shuchu Kaikaku Plan [Intensive Reform Plan].

Among Ohwani's fiscal reconstruction efforts, the increase in the municipal tax rate is remarkable. As described, local governments have rarely taken advantage of national tax law which allows flexibility in setting tax rates and have instead adopted the standard tax rates established by law. Most service cuts in Ohwani were implemented gradually after the mayoral election in June 2010.

As discussed in Chapter 2, not only tax increases and service cuts but also the political process of fiscal reconstruction can affect citizens' exit and voice behavior and perceptions of municipal management. Ohwani's mayoral election was conditionally scheduled in June 2010 after the announcement of the fiscal reconstruction plan in March 2010. The major issue in the election obviously was municipal management reform to achieve fiscal health. The election was between the incumbent mayor who had designed the fiscal reconstruction plan and a younger candidate who proposed a more austere fiscal policy. The incumbent mayor claimed to have balanced service cuts and tax increases against future investments, such as tourism development and education. The new candidate criticized this position and promised to review the announced fiscal reconstruction plan and make it more austere. This tight race ended with the two candidates receiving exactly the same number of votes (3,524). Under the Public Office Election Law, a lottery was held to choose the winner, leading to the selection of the new candidate. The new administration reviewed the fiscal reconstruction plan and released a revised version in November 2010. It provided new estimates which showed a higher level of fiscal stress and proposed to extend the fiscal reconstruction from four to 13 years. However, the content, including tax increases and service cuts, underwent no substantial changes. This study considers this political process, which divided Ohwani citizens, as part of the treatment.

In September 2015, Ohwani released its financial statement for fiscal year 2014. According to this report, the town met the ASFS criteria of fiscal soundness in 2014. Ohwani thus achieved its goal within four years instead of 13 through implementing the service cuts and tax increases as firstly planned (see Table 3). The town also announced the successive implementation of the fiscal reconstruction plan to achieve improved fiscal health as of April 2016.⁴

3.3. The First Phase: Qualitative Interview

The main purpose of the qualitative phase of this research was to develop quantitative measures of EVL under municipal decline. Based on the theoretical framework presented in Chapter 2, a semi-structured interview protocol was designed to gain qualitative information about Ohwani residents' awareness of municipal decline, exit intention, voice activities, personal history with local communities, and perceptions of municipal management quality, including satisfaction and trust. The wording of the interview questions drew heavily on the survey questions used by Dowding and John (2008, 2012) and Lyons et al. (1993). The basic structure of the interview protocol is presented in Appendix A.

Sampling and Data Collection

Although non-probability snowball sampling was used to collect qualitative interview data from Ohwani residents, the interviewees were selected to be representative of the gender, age, and occupation of the town's population. These interviews were conducted at participants' homes in June and July 2015. The first two interviewees were recruited through Ohwani town officials and then asked to introduce the researcher to a

⁴ Ohwani-town Website: http://www.town.owani.lg.jp/index.cfm/9,0,49,html

person with a different profile who could fill the missing age cohort of the interview pool. All the interviews were face to face and electronically recorded by a digital voice recorder. In total, 14 interviewees (8 men and 6 women) ranging in age from their 20s to their 70s participated in the qualitative phase of this study.

Qualitative Data Analysis

The data analysis procedure in the first phase of qualitative research followed Creswell (2013) five-step process for qualitative data analysis: (i) organize audio-recorded, qualitative interviews for analysis, including sorting relevant from irrelevant narratives; (ii) review the sorted qualitative data and develop a general picture of citizens' response mechanism to municipal decline; (iii) categorize the qualitative interview data into the predetermined codes derived from the theoretical framework presented in Chapter 2; (iv) use the coding process to identify specific evidence relevant to the EVL concepts; and (v) advance the qualitative evidence to develop the survey questionnaire for the second phase of the research: a quantitative test of the EVL model under municipal decline.

The essential core of any qualitative data analysis is coding. Creswell (2013) identifies three coding methods: (i) develop codes only based on emerging information collected from participants; (ii) use predetermined codes, and fit the data to them; and (iii) use a combination of emerging and predetermined codes. Creswell (2013) suggests that researchers testing a distinct theory use a qualitative codebook which contains a list of predetermined codes. Although some theoretical concepts of EVL remain obscure in the specific context of municipal decline, EVL itself is a well-examined theoretical framework. Therefore, the second coding method was adopted in this study, and a qualitative codebook based on the theoretical framework presented in Chapter 2 was developed. Creswell (2013) further recommends that researchers "permit the codebook to develop and change based on the information learned during the data analysis" (p. 199). The codebook shown Table 4 is the final version formed from data analysis.

Code 1	Code 2	Code 3
Consciousness of Municipal Decline	Public Finance	
	Population	
	Tourism	
	Agriculture	
	Others	
Exit	Geographical Exit	
	Individual Voice	Letter/E-mail/Phone
		Personal Contact
		Others
Voice		Voting
	Collective Voice	Public Meetings
		Civic Organizations
		Others
	Social Capital	Family/Friends
		Local Community
		Ohwani Town
Lovalty		Neighboring Towns
Loyany		Others
	Social Investment	Past Collective Voice
		Past Volunteering
		Others
	Service Quality	Tax
		Education
Satisfaction		Health/Welfare
		Administrative Service
		Others
Trust in Government	Personal	Mayor
		Council Member
		Town Official

 Table 4: Qualitative Codebook

		Political
	Institutional	Administrative
		Both
Locked-in Factor	Income	
	Family	
	Housing	
	Job	
	Others	
Others		

3.4. Second Phase: Difference-in-Difference Analysis

The second quantitative phase focused on measuring the impact of fiscal reconstruction on citizens' exit intention, voice activities, and perceptions of municipal management. The identification strategy makes central use of the experimental setting of the town of Ohwani and the village of Inakadate under the exogenous legal mandate of fiscal reconstruction. The qualitative findings from the first phase were used to develop the quantitative measures of the EVL model under the specific circumstance of the fiscal reconstruction in Ohwani. The estimation approach is a unique DID design (Ohwani vs. Inakadate, before vs. after fiscal reconstruction) whose time difference is enabled by a careful retrospective measurement.

Sampling

Voter registration lists from Ohwani and Inakadate were used to achieve a high level of random sampling in gender, age, and residential districts. The voter registration lists contains voters' full name, gender, age, and address and detail the overall demographic composition of each municipality by gender, age, and residential district.⁵ Based on the Public Office Election Law, voter registration lists can be used only for political research which shows a high potential to serve public interest. Municipalities have the discretion to judge whether the proposed research could serve the public interest and approve such research. The law requires applicants to complete a form summarizing the purpose of the research, research methods, and administration of information gained from the voter registration list. The applications for this research were accepted by both Ohwani and Inakadate in June 2015. The researcher copied the original paper of voter list into a Microsoft Excel file by typing under the close monitoring of municipal officials.

Three hundred subjects from Ohwani and Inakadate each (total 600) were randomly selected using the random function of Excel, which follows the gender and age composition in each residential district. To determine the sample size, a simple power analysis (a two-sample comparison of proportion) was conducted using the 5-year accumulated rate of demographic change in Ohwani and Inakadate (2010–2014) as the population proportions. As shown in Figure 6, the percent change in population for both Ohwani and Inakadate was nearly the same in 2010, the first year of fiscal reconstruction. After this time point, the population decline in Ohwani accelerated, while the population of Inakadate was stable. The power analysis assumed that these population trends would continue through the next 5 years (2015–2019). The results indicated that 278 subjects from each municipality were needed to gain a significant difference between the two

⁵ Ohwani is comprised of 17 administrative districts, and Inakadate of 7 administrative districts.

municipalities at the .05 significance level with 80% power. Given the time and budget constraints in this dissertation project, the sample size was set at 300 for each municipality, although there was a risk that a low response rate would lead to failure to detect a treatment effect on citizens' intention to exit.

Participants were required to be 30–75 years old and had to fulfill a residence criterion for the period of interest: before and after the fiscal reconstruction of Ohwani (2009–2015). These criteria ensured that subjects could participate in voice activities and have knowledge of the municipal management before the fiscal reconstruction in 2010. Residents who moved in or out either municipality between 2009 and 2015 were excluded from the sample.

Survey Instrument Design

The survey instrument was developed to measure the theoretical concepts of EVL under municipal decline for both periods of interest in this study (before and after fiscal reconstruction, 2008–2009 and 2014–15). The survey questions developed in previous EVL studies on local governance (Dowding & John, 2008, 2012; Lyons et al., 1993) were modified based on the qualitative findings from the first phase of this research and the specific circumstance of municipal decline in Ohwani. The process of reflecting on the qualitative findings from the survey and the measurements of key variables for the second DID estimations are explained in detail in Chapter 4. In this section, special attention is paid to the difficulties of measuring citizens' exit intention, voice activities, and perceptions of past municipal management in 2008–2009. Two specific techniques were implemented to improve recall: two-step process and memory elicitor. Psychological theories of personal recall suggest using a two-step process to evoke personal recall (e.g., Pearson, Rosss, & Dawes, 1992; M. Ross & Conway, 1986). First, individuals note their present status for the subject in question. The present serves as a benchmark because it is generally more salient and available than a person's earlier standing on the subject. Construction of the past then largely consists of characterizing it as different from or the same as the present. Therefore, the survey questionnaire was designed to first inquire about respondents' status on exit intention, voice activities, and perceptions of service quality and policy process first in the present and then in the past.

Overall, the survey questionnaire consists of 6 sections and 32 questions. It begins with non-sensitive demographic questions regarding gender, age, and length of residence and then moves to more in-depth questions regarding respondents' local networks, such as their community activities, number of relatives or friends, and attachment to the neighborhood. After the section on local community, the questionnaire starts a two-step process: questions about recent municipal politics and public administration (2014–2015) and those in the past (2008–2009).

To improve recall during the two-step process, another survey technique called the memory elicitor is used in the first questions in the past and present politics and administration sections. Memory elicitor is a well-known psychological technique (Tourangeau, Rips, & Rasinski, 2000) recently developed for a DID analysis of perceived corruption levels in public services by Vicente (2010). Specifically, at the beginning of each section, the questionnaire asks whether respondents voted in the most recent or previous mayoral election (the 2010 and 2014 mayoral elections in Ohwani, the 2008 and

2012 mayoral elections in Inakadate). The survey then elicits their memories of their personal perceptions of municipal management quality and relevant voice activities before and after fiscal reconstruction (2008–2009 and 2013–2014). The qualitative findings show that most interviewees remembered the 2010 mayor election which ended with the selection of winner by lottery as a notable political event. A possible limitation to using mayoral elections as a memory elicitor is that, unlike the case of Ohwani, they might not serve to elicit the memories of Inakadate residents because the 2008 and 2012 mayoral elections there both resulted in the victory of the current mayor over opponents. However, the incumbent mayors ran in the elections in both Ohwani and Inakadate, so the elections provided a shared opportunity for all participants to assess the past administration and select the incumbent mayor or a new candidate.

After the sections on the present and past municipal politics and administrations, the questionnaire includes an independent section for intention to exit, which requires a different recall process. It should be noted that intention to stay or leave is different than Hirschman (1970)'s exit. Hirschman treats exit as a dichotomous variable: stay or exit. Thus, intention to exit does not truly test Hirschman's original hypotheses in EVL. This study is aimed at identifying the effects of fiscal reconstruction on citizens' decisions to stay or leave and relevant sociodemographic factors which limit the exit option. Different degrees of these intentions enable measuring the magnitude of those effects on exit. Also, empirically measuring Hirschman's exit requires researchers to secure a certain number of participants who have left a municipality and currently live in various other areas. Like previous EVL studies (Dowding & John, 2008; Lyons et al., 1993), an ordinal variable of intention from stay to leave is used in this study. This measurement limitation is addressed in the survey results presented in Chapter 5.

In the section on exit, respondents are first asked how likely they are to move within the next five years and then whether their exit intention is higher or lower compared to the two years (2008-9) before the 2010 mayoral election (Ohwani) or after the 2008 mayoral election (Inakadate). All the participants in this survey stayed at Ohwani or Inakadate, so they were viewed as in the process of deciding to stay or leave. Therefore, past intention to exit was measured as the baseline for current exit status. In the final section of the questionnaire, sociodemographic questions captured participants' education and income levels, occupation, home ownership status, and family situation. These are well-known indicators which affect exit in the mobility literature (e.g., Orbell & Uno, 1972; Vugt et al., 2003).

All the subjective assessments, including intention to exit, satisfaction with service quality, and trust in government are measured on a 7-point scale. Frequency of voice behavior is measured in various ways. For instance, the voting question is dichotomous (vote or not). The question for civic organizations lists 14 types of local organizations drawn from the qualitative interviews and an option for "others." Respondents select all the organizations to which they belong in the present or past or may add an organization not represented in the 14 types.

The complete questionnaire is presented in Appendix B. The attached English version of the questionnaire was reviewed and approved by the Rutgers University Institutional Review Board (IRB) and Dissertation Committee. A check of the Japanese version was also ordered from the Doctoral Institute for Evidenced Based Policy, a Japanese policy consulting company which has conducted numerus surveys on public services in Japan and whose consultants have English publications in Social Science Citation Index journals.⁶ Additionally, five participants in the first qualitative research phase were asked to provide feedback on the questionnaire, especially the ease of answering the questions. Through this process, the wording and design of both the English and Japanese versions were revised and modified.

Data Collection Procedure

About two weeks before the survey was administered, pre-notice was distributed to all residents of Ohwani and Inakadate. In Ohwani, it was delivered via the public notice circulation system in late August. In Inakadate, it was published in the monthly public-relations magazine in mid-September. The pre-notice shown in Appendix C was reviewed and approved by the Rutgers IRB.

Data collection was conducted in Ohwani in September 2015 and in Inakadate in October 2015. The survey was mailed to participants and collected during door-to-door visits two weeks after delivery. When participants were not present at the first visit to their residence, notice of the visit was left, including the researcher's contact information and the date and time for a second visit. The notice also suggested that participants to contact the researcher via e-mail or phone to give a date and time if they would not be

⁶ The English profile of this consulting company can be found at http://www.doctoral.co.jp/page/english.html.

available at the scheduled second visit. Second visits were scheduled three to five days after the first visit, primarily on the weekends. If participants were absent at the second visit and did not contact the researcher, no more visits were made.

Survey Data Analysis

The standard DID regression specification was used for analysis of the survey data:

$$O_{ilt} = \beta_0 + \beta_1 t + \beta_2 T_l + \beta_3 (t \times T_l) + \beta_4 X_{il} + \varepsilon_{ilt}$$

where *O* is an outcome variable, such as intention to exit, frequency of voice, satisfaction with service quality, or trust in government; *i*, *l*, and *t* are identifiers for individuals, locations, and time (pre-fiscal reconstruction has the value of 0, and post-fiscal reconstruction has a value of 1); *T* is a binary variable with the value of 1 for the treated location (Ohwani has the value of 1, and Inakadate the value of 0); *X* is a vector of demographic and attitudinal controls, such as gender, age, education, income, and social capital indicators; and β_0 and ε_{ilt} represent the intercept and error term. The coefficient of interest in this specification was the interaction coefficient β_3 . In sum, this equation was designed to identify whether, compared to Inakadate residents, Ohwani residents' exit intention, voice behavior, and perceptions of municipal management were significantly changed after the fiscal reconstruction.
3.5. Ethical Considerations

This research involved human participants and face-to-face contact so IRB approval was obtained (#16-095M). Following the IRB regulations, informed consent forms were delivered or directly presented to all the participants. Participants were informed that no information which could identify them, including their name, address, and date of birth, would be collected. Additionally, this study was voluntary, so no mental or physical pressure was placed on participants to answer interview questions or complete the survey. All research data were stored on a Google Drive provided through Rutgers's scarletmail service and protected by a Rutgers ID and password. All information that matches individual respondents with their answers, including voice files and survey data, will be destroyed after three years.

CHAPTER FOUR: FINDINGS

This chapter reports the findings from the first qualitative phase and the second quantitative phase of this study. First, the basic profile of interviewees is presented, and then how the qualitative interview data are reflected in the survey questionnaire used in the following quantitative research phase is described. The survey data, including the response rate, representativeness of the sample, and descriptive statistics of the key variables for testing the EVL model, are introduced. Using the DID specification, the survey data are examined to test the seven hypotheses presented in Chapter 2. The results of the hypothesis testing and other relevant information regarding citizens' response mechanism to fiscal reconstruction are outlined.

4.1. Basic Profile of Interviewees

The interviews conducted in the qualitative phase relied on non-probability snowball sampling. Although this sampling technique is subject to numerous selection biases, interviewees were selected to represent gender and age. Furthermore, for the purpose of exploring the motivations for citizens' exit and voice behavior under municipal decline, active citizens who had engaged in collective actions were intentionally included. Table 5 summarizes the basic profile of 14 interviewees. The identifying numbers assigned to each interview follow their chronological order. The eighth and tenth interviews included two interviewees to serve their convenience.

The basic profile of interviewees clearly shows selection biases due to non-probability sampling. First, the occupation of most interviewees is either farming or tourism. Although these two are the main industries of Ohwani, a number of company workers also commute to the biggest city in the area, Hirosaki, or other areas by train or car. Thus, the qualitative interviews focus on Ohwani residents with a relatively high attachment to the region. Second, the active citizens selected in the qualitative phase are mostly male. It was quite challenging to find active female citizens in Ohwani. The Aomori Prefecture is well known as a conservative area, and its traditional values derived from Confucianism, which stresses a hierarchical societal structure with men dominant over women and children (Sugihara & Katsurada, 2002), could marginalize women in collective actions. Third, interviewee A, who was a leader of the largest civic organization in Ohwani, had the strongest influence on the selection of the other male participants. Similarly, interviewee J, who had been a high school teacher primarily in the Tsugaru area, was influential in the selection of the other female participants. Consequently, the sample in the qualitative phase has strong community biases.

ID	Interview #	Gender	Age	Occupation	Status in Civic Organization
А	1	Male	50s	The owner of a liquor shop	The vice-chairman of a community renovation group
В	2	Male	50s	Apple farmer	A previous member of the community renovation group
С	3	Male	20s	Apple farmer	-
D	4	Male	40s	Apple and vegetable farmer	The head of a young farmer association
Е	5	Male	50s	Apple farmer	A board member of a major agricultural association
F	6	Male	30s	Apple farmer / The owner of a sweet potato shop at Hirosaki	_

Table 5: Basic Profile of Interviewees

G	7	Male	70s	The owner of a guest house	The chairman of the community renovation group
Н	o	Male	30s	The manager of a hair salon	—
Ι	0	Female	20s	Staff of the hair salon	—
J	9	Female	70s	The owner of a guest house	—
K	10	Female	50s	House wife / Part-time worker at the guest house	-
L	10	Female	50s	House wife / Part-time worker at the guest house	_
М	11	Female	40s	House wife / Part-time worker at a pharmacy	_
N	12	Female	60s	House wife / Part-time worker at a guest house	_

Despite these limitations, these qualitative interviews provided rich information to develop the quantitative measures for testing the EVL concepts in the specific circumstances of Ohwani. The next section summarizes the qualitative findings which are related to the survey questionnaire.

4.2. Qualitative Findings

The interview data were first used to identify whether Ohwani residents were conscious of the municipal decline and its main causes and effects. This information was essential to judge whether the effects of fiscal reconstruction on citizens' behavior and perceptions could be examined in this case. In addition, the interview data were categorized into the predetermined codes presented in the qualitative codebook in Table 4. These codes are compatible with the key variables of EVL model under municipal decline: exit, voice, loyalty, satisfaction, trust, and locked-in factors. The qualitative findings for each code are presented and linked to the development of the survey.

Consciousness of Municipal Decline

All the interviewees recognized the decline of Ohwani and its main cause as the fiscal crisis, and the interviewer did not mention any information regarding Ohwani's fiscal status at the beginning of each interview. However, interviewees' views of the municipal decline due to fiscal stress differed greatly. A young male interviewee described his hometown as "the town of debt (shakkin no machi)." An older female interviewee expressed her concern borrowing a saying from a famous folk story: "Ohwani is a kind of dumping ground for the elderly (uba-sute yama)," implying that young people were moving away, leaving behind the elderly. In contrast, the interviewees who were actively engaged in collective actions tended to view the fiscal reconstruction process as an opportunity to improve municipal management and local industries. A female interviewee said, "Now we are more conscious about what the municipal government is doing. ... It seems positive for the future of Ohwani." A leader of civic organization pointed out, "I hadn't seen the name of my town much on the national newspapers or TV programs before the fiscal crisis. ... We'd like to utilize this opportunity to promote our agricultural products and tourism spots."

Although participants had mixed negative and positive perceptions of the fiscal crisis, these findings reveal that all participants were aware of the fiscal crisis and had their own opinions on it. This finding supported the implementation of the quantitative experiment aimed at identifying the effects of the fiscal reconstruction on citizens' exit and voice behavior and perceptions of municipal management.

The qualitative phase did not yield much information about the effects of fiscal reconstruction on exit. However, two young interviewees stated that they had lived in urban areas, including Tokyo and Sendai (the largest city in northern Honshu), for their education and first jobs five to ten years ago. Their main motivation for returning to their hometown was to take over family businesses. A male interviewee said, "Urban life was tougher than I expected. ... I had no freedom while working in a firm. ... Here, I can find old friends. ... This family business [apple farming] gives me more discretion than the firm did." As discussed in the theoretical framework presented in Chapter 2, EVL does not consider these pull factors which attract people from outside Ohwani or prompt former residents return. Rather, the EVL framework focuses on why current residents leave a location, which is a push factor. These findings reveal a limitation of EVL as a theoretical tool to pursue recuperation from municipal decline.

Voice

In this qualitative research phase, the leaders of civic organizations were purposefully selected to probe the voice mechanism in Ohwani. Most leaders recognized their political role in expressing the voices of their organizations to the municipal government. A leader of civic organization said, "We are taking our community activities very seriously while holding our own jobs. ...I'm backed by many people. ... I cannot just let the mayor or officials do what they want in our field. ... They don't know anything." Although interviewees' ability to contact the government depended on the nature of their civic organizations and personal network, town officials provided as the main point of contact in most cases. In this qualitative phase, town officials introduced the leaders of civic organizations to the researcher. Also, some leaders were actively engaged in the mayoral election campaigns to support the candidates who they believed could best ensure the interests of their organizations. A leader of the largest civic organization said, "We cannot have a close relationship with the current mayor because we supported the former mayor in the election."

While these leaders served in various civic organizations, most belonged to the Young Citizens Association (Seinen Dan) in the past. The interviews revealed that most past and current leaders of civic organizations, including mayors, were part of this youth association. While the leaders of civic organizations were introduced by different people, they knew each other. There is a strong network among civic organizations in Ohwani. Some interviewees had held several leadership positions in various civic organizations.

In contrast, participants who had not engaged much in community activities showed very low interest in voicing. A relatively old female participant said, "I'm frustrated with the current mayor and council members, ... but I haven't thought of saying something to these officials throughout my life here." Another female interviewee stated, "I know volunteering or community engagement is a great thing, but I'm just busy doing my own thing every day." These interviewees knew their leaders in their residential districts and professional fields, but most had no idea about who represented other residential districts or what organizations existed in other professional fields.

It should be noted that these huge gaps in voice activity level between active and non-active citizens are not unique to Ohwani. Nationwide studies of Japanese civic organizations identify the intensive roles of local community leaders and other members' reliance on them (Pekkanen, 2006; Tsujinaka, 2008). This situation can be explained by the well-known collective action problem: if everyone's interest is to protest or complain about the decline in municipal management quality, and if that voice is costly, each person's interest is to leave the voice activity to someone else (Dowding & John, 2012; Olson, 2009). Although Hirschman (1990) viewed this issue as "obviously absurd" (1990, p159), it seems relevant to the voice mechanism in Ohwani based on the qualitative findings.

The findings concerning voice are linked to the survey questions for collective actions. Drawing on the interview data and official documents, such as the public-relations magazines in both Ohwani and Inakadate, 14 basic types of civic organizations were identified, and a multiple-choice question measuring the total number of membership in civic organizations was created. The qualitative interviews identified the significant roles of these civic organizations in collective actions in Ohwani, so the questionnaire further asked whether respondents had engaged in collective actions via the civic organizations to which they belonged.

Loyalty as Social Capital

Most interviewees identified family, relatives, and friends in their neighborhood as their main reason for staying in Ohwani. A female interviewee said, "I'm just happy with friends here. ... I cannot think of my life without them." Female interviewees tended to emphasize their attachment to their neighborhood rather than to the town of Ohwani in general. In addition to gender, older age tended to foster domesticity. An older female interviewee state, "When becoming older, the range of activity naturally shrinks. ... I rarely go outside my residential district these days." Based on these findings, the questionnaire explored the density of respondents' friends and relatives in their neighborhood as factors in loyalty.

Male participants, especially the leaders of civic organizations, tended to link their personal histories not only to their neighborhood but also to the town of Ohwani and Aomori Prefecture. As described in the voice category, those leaders knew colleagues from beyond their residential districts and civic organizations. As a leader of community renovation group stated, "I was the head of Young Citizen Association for the entire Aomori Prefecture. ... Our chairman also held that position before. ... We still interact with those fellows across Aomori Prefecture." These interviewees' past activities through civic organizations and professional associations allowed them to broaden their range of community activities. These findings support the theory of social investment: past investments of time and effort into a community, such as prior voice activities, lead to future investment in the community. This finding implies that the frequency of voice activities before the fiscal reconstruction can be treated as a measure of loyalty which discourages exit option.

Satisfaction with Service Quality

The qualitative findings in this category contradict the general expectation that satisfaction with service quality decreases under fiscal reconstruction which involves service cuts or tax increases. Among the 14 participants, only two knew which taxes had been increased, while more than half were aware of the reduction of town-managed bus routes, and most knew about lane reductions in the town-managed ski resort. Moreover,

73

most did not express their own assessments of specific municipal services, such as taxes, basic education, and welfare, likely due to low interest or knowledge. Another interesting finding is that, when asked about their perceptions of municipal service quality, most participants mentioned the administrative services in which they contact town officials to gain official documents or permissions. A middle-aged male participant said, "Whenever I go to the town hall, officials say, 'Hello' to me in a very small voice. ... I don't have a good impression on them." Some participants found that officials became more responsive after the fiscal reconstruction. A female interviewee said, "Officials definitely became more kind and treat our requests faster after the fiscal crisis. ... Their eyes were dead before" (a popular Japanese metaphor for unmotivated people). However, a female interviewee, who held a bachelor degree from one of the best colleges in northern Japan, pointed out, "For anyone in Ohwani, your career [the interviewer] as a central official and studying public administration in America is overwhelming. ... We might be intimidated to talk something specific in your field." This implies the potential flaw of qualitative data collection that observable academic and professional status of the interviewer might discourage interviewees to express their honest perceptions on the quality of specific municipal services.

Based on these findings, the questionnaire included only one question about satisfaction with overall service quality, instead of several questions measuring levels of satisfaction with various specific services. Additionally, some interviewees did not recognize which taxes or services were provided by municipalities, so some examples of municipal taxes and services were added to the question of satisfaction.

Trust in Municipal Government

Most participants showed higher interest in assessing past and current mayors, council members, and town officials than talking about the quality of municipal services. These assessments were closely linked to interviewees' personal history with these officials. A male interviewee assessed the past mayor, who was a leader in his residential district and lost in the 2010 election by lottery: "It was a big mistake for Ohwani not to elect him. ... Most people don't know how smart he is." A female interviewee said of the current mayor's ability, "I'm skeptical about his management ability because he is not running his shop well." When discussing council members and town officials, most interviewees mentioned one whom they knew personally.

While interviewees' assessments of individual officials varied depending on their personal experiences, most expressed discontent with the policy process of fiscal reconstruction. A male participant stated, "The current mayor just stole the past mayor's fiscal reform plan. ... There is nothing new in the fiscal reform." A middle-aged female interviewee said, "I know young farmers who produce new, delicious bean sprouts. ... They work hard. ... They are the bright future of Ohwani. ... Beyond past political conflict, we [older people] should work together to support such young people." A leader of a civic organization described the current reform process: "Although Ohwani is a small town, quite complicated politics are going on. ... [There are] too many conflicts of interests. ... Some people want to preserve the ski resort. ... Others wish to preserve the hot spring facilities. ... Farmers need to keep their subsidies."

These findings reveal that interviewees used different mechanisms to assess individual officials and the overall process of fiscal reconstruction. Thus, the personal and institutional aspects of trust in municipal government were differentiated and investigated separately in the survey.

Locked-in Factors

During the qualitative interviews, the interviewer intentionally did not ask questions about sociodemographic factors (e.g., job and family situations) which could limit participants' exit option. IRB regulations required the researcher to carefully address such personal information. However, interviews with several farmers revealed that they rarely consider exiting because the nature of their job attaches them to the land. Also, visits with interviewees took place in some residences renovated for interviewees' parents who need care. The questionnaire was designed to identify the occupation of farming and the presence of parents who need care as indicators of locked-in factors, in addition to the sociodemographic factors (e.g., age, income, home ownership) used frequently in past mobility literature.

Summary of Qualitative Findings

In sum, these qualitative interviews made substantial contributions to the implementation of the survey, especially the development of quantitative measures for testing the EVL model. First, the interviews revealed participants' high awareness level of municipal decline and recognition of the fiscal crisis as its main cause. These findings supported the existence of treatment effects on Ohwani citizens. Second, the interview data demonstrated the intensive roles of civic organizations in Ohwani and enabled

creating the multiple-choice question concerning respondents' affiliation to the basic 14 types of civic organizations. Third, although past Tiebout and EVL-related studies have measured citizens' satisfaction with specific services, such as taxes, education, and health, as the main motivation for relocation (e.g., Dowding & John, 2008, 2012; Van Ryzin, Muzzio, Immerwahr, Gulick, & Martinez, 2004), the interviewees indicated a low level of interest in or knowledge of the specific content of fiscal reconstruction, including tax increases and service cuts, and most interviewees did not express discontent about the deterioration of service quality. Therefore, the questionnaire asked about respondents' level of satisfaction with overall service quality rather than with each specific service.

As the basic profile of interviewees show, the interview data are subject to numerous selection biases. A primary concern was whether the findings were applicable to the control village of Inakadate, although this study assumed that Ohwani and Inakadate are almost identical based on the descriptive economic and demographic data. In developing the questionnaire based on these findings, this issue was addressed by working with a director of the Inakadate village government, who intensively checked the types of civic organizations listed on the questionnaire. Thus, this concern was partially solved. Despite these limitations of the qualitative phase, the findings provided rich information which enabled considering the specific circumstances of Ohwani within the EVL framework and quantitatively examining citizens' response mechanism to municipal decline. The quantitative measurements of the EVL concepts are presented in the next section.

4.3. Basic Description of Survey Data

This section reports the survey response rate, sample representativeness, and descriptive statistics, including measures of the EVL concepts: exit, voice, loyalty, satisfaction, trust, and locked-in factors.

Response Rate

As described in Chapter 3, 600 citizens in Ohwani and Inakadate (300 each) were randomly selected based on voter registration lists. The survey questionnaires were mailed to these subjects and then collected during door-to-door visits by the author. Visiting respondents' residences instead of asking them to mail the questionnaire back enabled screening their eligibility to participate in this survey. The main flaw of voter registration lists is that they also include voters who do not actually live in a municipality. These cases were excluded (40: 27 in Ohwani, 13 in Inakadate), along with those of respondents who had disabilities and were not competent to participate in the survey (4:2 in Ohwani, 2 in Inakadate). Respondents also had to fulfill a residence criterion for the period of interest (before and after the fiscal reconstruction of Ohwani, 2009–2015), but voter registration lists do not indicate how long voters have lived in a municipality. Cases which did not meet this criterion were excluded (7: 5 in Ohwani, 2 in Inakadate) by checking the survey question about length of residence. In total, 547 of 600 respondents (266 in Ohwani and 281 in Inakadate) were eligible to participate in the survey. Thus, the eligibility rate of this survey was 91.17% overall (547/600), 88.67% in Ohwani, and 93.67% in Inakadate. It is worth noting that this eligibility rate depends on the administration of voter registration in each municipality. For instance, if municipal

officials updated voter registration whenever residents move away, the accuracy of list would be higher.

The response rate 1 (rr1) and response rate 2 (RR2) of this survey were calculated according to the standard definition of the American Association for Public Opinion Research (2015). RR1, or the minimum response rate, is the number of complete responses divided by the number of responses (complete plus partial) plus the number of non-responses. The total number of complete responses was 232 (111 in Ohwani, 121 in Inakadate). Thus, RR1 is 42.41% overall (232/547), 41.73% in Ohwani, and 43.06% in Inakadate. RR2 includes partial responses. More than 80% of surveys returned in this study were partial responses. The total number of complete and partial responses was 245 (117 in Ohwani, 128 in Inakadate). Thus, RR2 was 44.79% overall (245/547), 43.98% in Ohwani, and 45.55% in Inakadate. The small gap between RR1 (42.4%) and RR2 (44.8%) indicates a high completion rate by respondents. Data collection though door-to-door visits, which involved face-to-face contacts with participants, likely contributed to these relatively high response and completion rates.

Representativeness

The sample drawn from the RR2 was used to examine repetitiveness. Table 6 summarizes the sample representation by gender and age. It should be noted that, as described in Chapter 3, the survey population of 600 residents generally follows the gender and age composition of the populations of Ohwani and Inakadate. In this sample, women are overrepresented from both Ohwani and Inakadate. However, estimating the treatment effect is not difficult because both the treatment and control groups are conditional on women. In other words, each sample has the same gender trends, which fulfills the assumption of experiment that the treatment and control groups are identical.

However, the age composition of the sample differs in Ohwani and Inakadate. In Ohwani, the cohort of those in their 30s is underrepresented, while the cohort of those in their 60s is overrepresented. In Inakadate, the cohort of those in their 70s is underrepresented, and those in their 50s are overrepresented. Although there is a discrepancy in the age composition of Ohwani and Inakadate, the age distribution in both groups is sufficiently diverse to estimate the effects of fiscal reconstruction among different age cohorts.

			Oh	wani		Inakadate					
		Sa	umple	Pop	ulation	Sa	mple	Population			
		Freq.	Percent	Freq.	Percent	Freq.	Percent	Freq.	Percent		
Gender:	Female	68	58.12	3,901	52.79	76	59.38	2,773	51.63		
	Male	49	41.88	3,488	47.21	52	40.62	2,598	48.37		
Age:	30s	11	9.40	953	12.90	25	19.53	915	17.04		
	40s	18	15.38	1,268	17.16	21	16.41	915	17.04		
	50s	26	22.22	1,531	20.72	35	27.34	1,133	21.09		
	60s	37	31.62	1,931	26.13	28	21.88	1,371	25.53		
	70s	25	21.37	1,706	23.09	19	14.84	1,037	19.31		
Total		117	100.00	7,389	100.00	128	100.00	5,371	100.00		

Table 6: Summary of Sample Representation

Measurements and Descriptive Statistics

The measurements of the outcome and control variables were designed to test the seven hypotheses presented in Chapter 2. Table 7 presents the hypotheses and the variables used to test them. Using the DID specification presented in Chapter 3, it is

examined whether these outcomes among Ohwani residents changed significantly after the fiscal reconstruction compared to Inakadate residents. In this specification, the independent variables were two dimensions of the treatment (before vs. after fiscal reconstruction, treatment town of Ohwani vs. control village of Inakadate) and their interaction term (after fiscal reform*Ohwani). The controls were measured only in the present, assuming that they were not different before and after the fiscal reform (excluding the variable of past collective action). In other words, the coefficients of the controls show the effects on outcomes in both Ohwani and Inakadate despite the time dimension.

Hypotheses	Variables
H1: Given the availability of exit option, citizens' intention to exit increases under the fiscal reconstruction which involves service cuts/tax increases and political conflicts.	Outcome: Intention to exit
H2: Greater intention to exit inhibits voice activity under the fiscal reconstruction or vice versa.	Outcome: Intention to exit; Voice
H3: In the relationship with individual voice, collective action increases under fiscal reconstruction.	Outcome: The ratio of "Collective action index" and "Individual voice"
H4: Greater social capital/social investment decreases intention to exit and increases voice activity.	<u>Outcome</u> : Intention to exit; Voice <u>Control</u> : Length of residence; Attachment to area; Friends/Relatives; Collective action before fiscal reform (only for exit).
H5: Citizens' dissatisfaction with service quality increases under fiscal reconstruction.	<u>Outcome:</u> Satisfaction with service quality
H6: Citizens' trust in municipal government decreases under fiscal reconstruction.	<u>Outcome:</u> Trust in Government Index – Policy Process, Mayor, Council Members, and Municipal Officials

Table 7: Hypotheses and Variables for the Test of EVL under Municipal Decline

H7: If exit is impossible or expensive due to	<u>Outcome:</u> Voice
sociodemographic factors such as income, age, and job and family issues, voice activity increases.	<u>Control:</u> Locked-in Index, Age, and Income

Outcome Variable

Table 8 summarizes the descriptive statistics of the outcome variables in the study.

Table 8: Descriptive Statistics of Outcome Variables

V	т.		Ohw	vani			Inaka	date	
variable	Time	Mean	(S.E.)	Range	Obs	Mean	(S.E.)	Range	Obs
Intention to Exit	before	1.93	(0.15)	17	112	2.40	(0.14)	17	122
	after	1.88	(0.15)	1~/	112	1.77	(0.14)	1~/	123
Voice Index:	before	2.54	(0.19)	0~13	115	2.20	(0.16)	0~13	123
(Individual + Voting + Collective)	after	2.87	(0.22)	0~9	110	2.56	(0.20)	0~9	120
Individual Voice	before	0.22	(0.06)	0.2	115	0.10	(0.04)	0.2	104
	after	0.23	(0.06)	0~3	115	0.18	(0.05)	0~3	124
Voting	before	0.89	(0.03)	0.1	117	0.87	(0.03)	0.1	105
-	after	0.93	(0.02)	0,1	11/	0.90	(0.03)	0,1	125
Collective Action Index:	before	1.43	(0.15)	0~7	115	1.23	(0.14)	0~7	100
	after	1.71	(0.19)	0~10	115	1.49	(0.17)	0~10	123
Participation in Meetings	before	0.28	(0.06)	0.2	115	0.18	(0.05)	0.2	100
	after	0.29	(0.06)	0~3	115	0.32	(0.07)	0~3	123
Lobbying & Petition	before	0.11	(0.04)	0.2	115	0.07	(0.03)	0.2	100
	after	0.19	(0.06)	0~3	115	0.15	(0.04)	0~3	123
Membership in	before	1.02	(0.11)	0~5	117	0.97	(0.09)	0~4	126
Civic Organizations	after	1.20	(0.12)	0~5	11/	1.00	(0.09)	0~7	126
Satisfaction with	before	4 00	(0.12)			4 12	(0, 10)		
Service Quality	after	3 97	(0.12) (0.13)	1~7	115	4 14	(0.10)	1~7	124
Service Quanty	unter	5.57	(0.12)				(0.11)		
Trust in Government Index	before	4.19	(0.12)			4.30	(0.10)		104
(alpha = 0.88)	after	4.52	(0.11)	1~7	115	4.47	(0.01)	1~7	124
Policy Process	before	4.78	(0.13)	1 7	115	4.46	(0.12)	1 7	100
-	after	4.18	(0.14)	1~/	115	4.38	(0.96)	1~/	123
Mayor	before	4.70	(0.13)	17	115	4.63	(0.12)	17	124
	after	4.31	(0.13)	1~/	115	4.31	(0.12)	1~/	124
Council Members	before	4.16	(0.13)	17	115	4.21	(0.11)	17	104
	after	4.03	(0.11)	1~/	113	4.11	(0.13)	1~/	124
Town Officials	before	4.43	(0.12)	17	115	4.57	(0.13)	17	124
	after	4.23	(0.12)	1~/	113	4.38	(0.12)	1~/	124

Intention to exit after fiscal reform was measured by responses on a 1–7 scale (1 = *very unlikely*; 4 = *neutral*; 7 = *very likely*) to the question: "Within the next 5 years, how likely are you to move out of [name of municipality]?" Intention to exit before fiscal reform was measured by responses on a 1–7 scale (1 = *much lower*; 4 = *same as before* 2010; 7= *much higher*) to the question: "Compared with the past 2 years before 2010, would you say that your probability of moving out of [name of municipality] has become higher in the past 2 years?" The responses to this question were recoded from 1–7 to -3–3, and then past intention was calculated by subtracting the recoded -3–3 scale responses from the 1–7 scale responses for current intention. All participants in this survey stayed in Ohwani or Inakadate, so current exit status was used as a baseline to measure the past.

Following Dowding and John (2008, 2012) three types of voice for local governance, voice was measured as the sum of individual voice, voting, and collective action. The frequency of individual voice was measured by responses on a 4-point scale (1 = no; 2 = yes, once; 3 = yes, a few times; 4 = yes, more than three times) to questions at the two time points (the past two years and the two years preceding the 2010 mayoral election or after the 2008 mayoral election in Inakadate): "Have you personally telephoned, written, e-mailed, or met the mayor, council members, or officials of [name of local government] regarding the quality of public services or problems of the community?" The variable of voting was measured by dichotomous Yes/No responses to the question: "Did you vote in the election of mayor in [the year of election]?"

Three survey items were used to measure collective action: membership in civic organizations, participation in meetings, and lobbying. The number of civic organizations

to which respondents belonged was measured by a multiple-choice question with choices for 14 civic organization types and "others." The choices include "neighborhood associations," "women's associations," "commerce and industry associations," "circle of sports, arts, and other hobbies," and "local political groups." This question was also asked at the two time points: 2008–2009 and 2013–2014. The frequency of participation in meetings was measured by responses on a 4-point scale (1 = no; 2 = yes, once; 3 = yes, once)a few times; and 4 = yes, more than three times) at the two time points to the question: "Have you attended meetings called to discuss problems in your neighborhood or local community?" Using the same 4-point scale, the frequency of lobbying was measured by the question: "As a member of the organizations listed in Q7 [Q8] or private companies, have you lobbied or pushed [name of local government] to solve problems in your neighborhood or local community?" Q7 and Q8 are the items for membership in civic organizations at the two time points. Based on the qualitative findings, the questions for organization membership were linked to the items for lobbying. The collective action index is the sum of these three survey items, while the overall voice index is the sum of individual voice, voting, and the collective action index.

To test H3, the ratio of the collective action index and individual voice (collective action/individual voice) was created as an outcome variable. Instead of the recoded 0–3 scale, the original 1–4 scale was used in this ratio. This was necessary to measure the change in collective actions over individual voice and to avoid zero denominators.

Satisfaction with service quality was measured by responses on a 1-7 scale ($1 = very \ dissatisfied$; 4 = neutral; $7 = very \ satisfied$) to the question at the two time points:

"How much are [were] you satisfied with the overall quality of public services provided by [name of local government]?" In this question, examples of municipal taxes and services are presented to respondents: "Public services provided by [name of local government] include residential taxes and property taxes, childcare & basic education, medical welfare, town roads & facilities, promotion of agriculture & industry, and tourism development." This question design was based on the qualitative finding that few interviewees knew which taxes and services municipalities provided.

The trust in government index is comprised of several questions measuring the institutional and personal aspects of trust before and after fiscal reconstruction. The institutional aspect was measured by responses to the question regarding policy process using a 1–7 scale ($1 = not \ right \ at \ all$; 4 = neutral; $7 = very \ right$): "How appropriately do [did] you feel that [name of local government] deals with community problems within limited financial resources?" While Inakadate was not in fiscal crisis, its relatively high debt ratio (see Table 2) permitted asking this question for the treatment and control groups by including the words: "within limited financial resources." The personal aspect of trust in government was assessed at the two time points by the question: "How much do [did] you trust the mayor, council members, or officials of [name of local government] to do the right thing about community problems? (1) mayor, (2) council members, and (3) town [village] officials." Respondents answered this question using a 1–7 scale (1 = do [did] not trust at all; 4 = neutral; $7 = strongly \ trust[ed]$).

<u>Control</u>

Table 9 summarizes the descriptive statistics for the controls in this study. Past collective actions, length of residence, and density of friends and relatives in neighborhood were measured as factors in loyalty. Length of residence was measured in years and ranged from 7 to 75 due to the residential criteria and age limit which ensured possession of information before fiscal reconstruction in 2010. Density of friends and relatives in neighborhood was measured, respectively, by the questions: "How many of your friends live in your neighborhood?" "How many of your relatives live in your neighborhood?" "How many of your relatives live in your neighborhood?" The 1–4 scale (1 = none; 2 = a few; 3 = more than half; 4 = almost all) was recoded to 0–3. In addition to these social capital factors, the variable of collective action before the fiscal reform as social investment was added as a factor in loyalty measuring the treatment effect on exit.

Variable		Ohw	ani			Inaka	date	
variable	Mean	(S.E.)	Range	Obs	Mean	(S.E.)	Range	Obs
Length of Residence	46.42	(1.57)	7~75	117	40.20	(1.65)	7~75	125
Friends	1.50	(0.07)	0~3	117	1.26	(0.07)	0~3	126
Relatives	1.50	(0.08)	0~3	117	1.44	(0.08)	0~3	126
Locked-in Index:	1.94	(0.08)	0~4	116	2.07	(0.08)	0~4	123
Home Ownership	0.96	(0.02)	0,1	116	0.97	(0.02)	0,1	124
Child (0~18 years old)	0.28	(0.04)	0,1	116	0.35	(0.04)	0,1	124
Parents who need care	0.51	(0.05)	0,1	116	0.51	(0.05)	0,1	123
Farming	0.19	(0.06)	0,1	118	0.24	(0.04)	0,1	126
Education	2.31	(0.11)	1~6	118	2.61	(0.10)	1~6	126
Personal Income	2.64	(0.11)	1~8	118	2.83	(0.12)	1~8	126
Household Income	3.68	(0.15)	1~8	118	4.08	(0.15)	1~8	126

 Table 9: Descriptive Statistics of Controls

The locked-in index was developed drawing on the dependency index developed by Vugt et al. (2003), who theorize that residents' dependency on a community and its services restricts exit option under the decline of community and encourages the use of voice strategies to address community problems. The dependency index developed by Vugt et al. (2003) is comprised of five dummy variables: (i) 41 years old or younger; (ii) renter or home owner; (iii) single or living with a partner; (iv) having children between the ages of 5 and 18 or not; and (v) paid employment or not. In this study, age is measured in five categories and thus excluded from the locked-in index. The survey did not measure marital status because its link to exit and voice seems unclear. It also might be a sensitive question for single participants older than 30. Additionally, based on the qualitative findings, the presence of parents who need care and the occupation of farming were measured as sociodemographic factors which limit the exit option and promote voice activities. Consequently, the locked-in index consists of four dummy variables: (i) homeowner or not; (ii) having children ages 0–18 or not; (iii) having parents who need care in the town or village or not; and (iv) farmer or not. Accordingly, the score for the locked-in factor index ranged from 0 to 4.

Education was measured in six categories (1 = elementary and middle school; 2 = high school or equivalent; 3 = vocational school; 4 = 2-year college or equivalent; 5 = four-year college or equivalent; and 6 = graduate school or equivalent). Both personal and household incomes were measured on a 1–8 scale (1 = no income; 8 = more than 15 million yen/US\$120,000).

Descriptive Findings

Several results from the descriptive statics were relevant to conducting the DID estimation. First, the variable of voting reached approximately 90% among respondents from both Ohwani and Inakadate. These figures are higher than the actual voting rates (60%–70%). This means that the survey sample is conditional on voting. However, given that these high voting rates are consistent in both the treatment and control groups, it is not a serious issue in estimating the treatment effects. As explained in the section on representativeness, the underrepresentation of the cohort in their 30s in Ohwani sample led to a higher length of residence compared to Inakadate. It might also result in a lower level of education in Ohwani because younger generations tend to have higher education due to increased access to education after World War II. This underrepresentation might also affect the income gap between the Ohwani and Inakadate samples, even though the population data presented in Figure 7 show identical per-capita income trends in the two municipalities over time. Although these differences between Ohwani and Inakadate are threats to estimating the treatment effect, the descriptive statistics of the controls show a high level of similarity overall. Thus, the assumption of the experiment that the treatment and control groups are identical is secured to a certain degree.

4.4. Difference-in-Difference Analysis and Findings

This section explains the procedures of the DID analysis and presents the core findings from a series of analyses aimed at revealing citizens' response mechanism to fiscal reconstruction.

Test Procedure

The DID specification was used to examine four types of outcomes (nine outcome variables): exit intention, voice activities, satisfaction with service quality, and trust in municipal government. These estimations were designed to test the seven hypotheses presented in Table 7. All the analyses were performed using STATA version 12.1. Before the analyses were run, a correlation matrix between the controls was produced (see Appendix D). The highest correlation was .57 (age and length of residence). Other correlations were less than .40. Therefore, an interaction term of the two variables (age*length of residence) was created and added to all the analyses. After adding the interaction term, the variance inflation factor values for all the analyses was less than 1.35. These results suggest that multicollinearity between controls is not an issue in examining these effects on the outcomes.

Survey Findings

Tables 10 and 11 show the results of the DID specification. First, the OLS regressions without controls are displayed (Table 10). Exit intention shows a significant interaction term at the .05 level. Ohwani residents became more likely to consider leaving the town under the fiscal reconstruction than the control group of Inakadate residents. Thus, H1 is supported. Figure 8 presents a graph of this treatment effect on intention to exit. While the level of exit intention in both Ohwani (T=1) and Inakadate (T=0) decreased, the degree of decline before and after 2010 is significantly larger in Inakadate than Ohwani. This gap is identified as the treatment effect in the DID (before vs. after fiscal reconstruction, Ohwani vs. Inakadate) estimation.



Figure 8: Graph of Treatment Effect on Intention to Exit

However, the results show no significant effects from fiscal reconstruction on voice activities. This is a case of Hirschman's exit–voice tradeoff which stipulates that, given the availability of an exit option, citizens are more likely to choose to exit than to voice under municipal decline. Thus, H2 is supported. The ratio of collective action and individual voice indicates the insignificant coefficient of the interaction term. The proportion of collective action in relation to individual voice does not significantly increase among Ohwani residents under fiscal reform compared to Inakadate residents. Thus, H3 is not supported by this survey data.

Table 10: Difference-	in-Difference Est	imates without Controls
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				Collective	Satisfaction					
		Exit	Voice	Action/ Individual Voice	with Service	Trust in Government	Policy Process	Mayor	Council Member	Municipal Official
After Fiscal Reform	Coef.	-0.63***	-0.35	-0.07	-0.01	-0.17	-0.07	-0.31*	-0.10	-0.19
	St. err.	(0.20)	(0.27)	(0.20)	(0.17)	(0.15)	(0.17)	(0.17)	(0.17)	(0.17)
Ohwani	Coef.	-0.42**	0.33	0.21	-0.17	0.04	0.33**	0.08	-0.06	-0.14
	St. err.	(0.20)	(0.27)	(0.20)	(0.17)	(0.15)	(0.17)	(0.17)	(0.17)	(0.17)
After*Ohwani	Coef.	0.57**	0.05	-0.21	0.04	-0.16	-0.53**	-0.08	-0.02	-0.01
	St. err.	(0.28)	(0.39)	(0.28)	(0.23)	(0.21)	(0.24)	(0.25)	(0.24)	(0.25)
Ν		470	476	476	478	478	476	478	478	478
R ²		0.02	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01

Notes: **p* < 0.1, ***p* < 0.05, *** *p*<0.01

		Exit	Voice	Collective Action/ Individual Voice	Satisfaction with Service	Trust in Gov.	Policy Process	Mayor	Council Member	Municipal Official
After Fiscal Reform	Coef.	-0.64***	-0.32	-0.07	0.00	-0.16	-0.07	-0.29*	-0.08	-0.20
	St. err.	(0.19)	(0.24)	(0.19)	(0.16)	(0.14)	(0.16)	(0.17)	(0.16)	(0.17)
Ohwani	Coef.	-0.33*	0.25	0.14	-0.21	-0.08	0.18	-0.06	-0.17	-0.29*
	St. err.	(0.19)	(0.25)	(0.19)	(0.16)	(0.15)	(0.17)	(0.17)	(0.17)	(0.17)
After*Ohwani	Coef.	0.58**	0.02	-0.21	0.01	-0.17	-0.53**	-0.11	-0.04	-0.003
	St. err.	(0.27)	(0.34)	(0.27)	(0.22)	(0.20)	(0.23)	(0.23)	(0.23)	(0.24)

Table 11: Difference-in-Difference Estimates with Controls

		Exit	Voice	Collective Action/ Individual Voice	Satisfaction with Service	Trust in Gov.	Policy Process	Mayor	Council Member	Municipal Official
Control:										
Gender (Female)	Coef.	0.17	-0.87***	-0.52***	-0.13	0.07	-0.03	0.17	0.08	0.05
	St. err.	(0.15)	(0.19)	(0.14)	(0.13)	(0.14)	(0.13)	(0.13)	(0.13)	(0.13)
Age	Coef.	-0.28*	0.54***	0.22	-0.07	0.05	0.09	0.12	0.06	-0.08
	St. err.	(0.15)	(0.19)	(0.15)	(0.13)	(0.15)	(0.13)	(0.13)	(0.13)	(0.13)
Length of Residence	Coef.	0.02	-0.002	0.01	-0.02	-0.003	-0.001	0.01	-0.01	-0.01
	St. err.	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Age*Length	Coef.	-0.002	-0.001	-0.002	-0.004	0.002	0.001	-0.002	0.002	0.01*
	St. err.	(0.003)	(0.004)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Friends	Coef.	-0.07	0.44***	0.14	0.17**	0.12*	0.23***	0.09	-0.01	0.17**
	St. err.	(0.10)	(0.12)	(0.10)	(0.08)	(0.07)	(0.09)	(0.09)	(0.08)	(0.08)
Relatives	Coef.	-0.21**	-0.12	-0.01	-0.02	0.07	-0.02	0.05	0.15*	0.09
	St. err.	(0.09)	(0.12)	(0.09)	(0.08)	(0.07)	(0.08)	(0.09)	(0.08)	(0.08)
Past Collective Action	Coef.	0.03			-0.02	0.10***	0.08**	0.13***	0.11***	0.08**
	St. err.	(0.04)			(0.03)	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)
Locked-in Index	Coef.	-0.05	0.46***	0.32***	-0.08	-0.01	-0.10	0.02	0.01	-0.04
	St. err.	(0.09)	(0.11)	(0.09)	(0.07)	(0.07)	(0.08)	(0.08)	(0.08)	(0.08)
Education	Coef.	0.07	0.54***	0.03	-0.02	-0.09*	-0.06	-0.09	-0.12**	-0.11**
	St. err.	(0.06)	(0.08)	(0.06)	(0.06)	(0.05)	(0.06)	(0.06)	(0.08)	(0.06)
Household Income	Coef.	-0.06	0.01	0.01	0.07	0.01	0.04	0.05	-0.02	0.03
	St. err.	(0.05)	(0.06)	(0.04)	(0.04)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)
N		466	470	470	470	470	470	470	470	470
Adjusted R2		0.09	0.22	0.07	0.02	0.09	0.07	0.08	0.08	0.08

Notes: *p < 0.1, **p < 0.05, *** p < 0.01

Satisfaction with service quality presents almost zero treatment effects even after intensive services cuts and tax increases were implemented under the fiscal reform in Ohwani. This result rejects H5. The estimation also indicates that fiscal reconstruction had no effects on the overall index of trust in government, which is comprised of the four outcomes for trust in the policy process, mayor, council members, and municipal officials. In contrast, the institutional aspect of trust in government, measured as the perceived appropriateness of policy process, has a negative significant coefficient for the interaction term at the .05 level. Citizens' perceived appropriateness significantly decreased throughout the fiscal reconstruction in comparison with the control group. Unlike the institutional aspect of trust, the personal aspect indicates no significant treatment effects. The estimations show that fiscal reconstruction has effects on only the perceived appropriateness of policy process and not on citizens' trust in the mayor, council members, or town officials; therefore, H6 is partially supported.

Table 11 presents the DID estimations with the controls. Among the controls, some social capital factors perform a certain loyalty function. Density of friends in the neighborhood significantly encourages voice activities but does not affect intention to exit. Density of relatives in neighborhood discourages exit but has an insignificant association with voice activities. Length of residence and its interaction term with age have no effect on exit and voice. Frequency of collective action before 2010 shows no significant effect on exit. Given these mixed results for the loyalty functions of the social capital and social investment factors, H4 is partially supported. It is also worth noting that, although the variable of past collective action does not serve as a factor of loyalty, it

shows the significant positive effects on all the indicators of trust in government at more than the .05 significance level.

The locked-in index indicates that this factor has an insignificant association with exit but significantly increases voice activities at the .01 level. Age is a significant demographic factor which discourages exit and increases voice activities at the .05 level. These results support H7. Additionally, unlike past mobility studies in the U.S. and UK, household income does not show any association with exit and voice. In contrast, as previous election and citizen engagement studies have shown, a higher education level significantly increases voice activities at the .01 level. Finally, although the variable of gender is not a main focus in EVL studies, it should be noted that the frequency of voice activities is significantly lower among women than men at the .01 level. These implications are discussed in Chapter 5.

4.5. Summary of Findings

In summary, the qualitative interviews in the first phase of research revealed a high level of consciousness of municipal decline under fiscal crisis among Ohwani residents. This finding supported the implementation of the survey testing the EVL model under municipal decline. The interview data also identified specific characteristics of the voice mechanism, including the intensive roles of civic organizations. In addition, most interviewees did not know which services had been cut or which taxes had been raised in the fiscal reform. Based on these findings, the survey questionnaire was designed with a question linking respondents' membership in civic organizations to their collective actions and a question exploring satisfaction with overall service quality rather than satisfaction with specific services.

In the second quantitative research phase, the survey questionnaire constructed from the literature review and qualitative interviews was mailed to 600 randomly sampled citizens in both Ohwani and Inakadate, and the responses were collected through door-to-door visits by the author. Including both complete and partial responses, the response rate was 44.8%. The descriptive statistics show that the sample is conditional on gender, age, and voting. The conditionality of more women and higher voting rates in the sample is consistent in both Ohwani and Inakadate, but the underrepresentation of younger adults is found only in Ohwani. Thus, this conditionality of age is a threat to estimating the treatment effects because it violates the basic assumption of the experiment that the treatment and control groups are identical.

The DID analyses of the survey data show that the fiscal reconstruction has significant effects on intention to exit but not voice activities. In addition, distrust in the policy process significantly increased among Ohwani citizens under the fiscal reform, while satisfaction with overall service quality shows almost zero treatment effect. Some social capital factors, such as density of friends and relatives in the neighborhood, indicate a certain loyalty function which either discourages exit or increases voice activities. Additionally, the locked-in factors significantly increased voice activities. The implications and limitations of these findings are discussed in Chapter 5.

CHAPTER FIVE: IMPLICATIONS AND LIMITATIONS

In this chapter, the study is first summarized, and then its limitations for the purpose of revealing citizens' response mechanism to fiscal reconstruction are identified. Finally, the implications of the findings are discussed, and directions for future research are suggested.

5.1. Summary of the Study

Given the lack of study on decline in the field of economics, Hirschman (1970) developed the EVL theoretical framework, which explains the response mechanism to decline in firms, organizations, and states. He theorizes that customers/members can either exit or voice when they are dissatisfied with goods or services. Applying EVL to local governance, recent political science and public administration studies have examined whether citizens in general are more likely to exit or voice complaints in response to dissatisfaction with municipal goods or services. Few studies, however, have tested EVL under the specific circumstances of municipal decline.

Following Hirschman's original intention to identify the response mechanism to organizational decline, this study has taken the first steps to theoretically and empirically develop his EVL framework under the specific conditions of municipal decline caused by municipal management failure. Using the case of the Japanese town Ohwani in fiscal crisis, the study was intended to identify the effects of fiscal reform, including the impacts of tax increases, service cuts, and political conflicts on residents' exit intention, voice activities, and perceptions of municipal management. The Japanese alert system for local governments in fiscal crisis offers a highly suitable setting to measure the impact of fiscal reconstruction. Under Japanese legislation, the central government sets the national criteria for fiscal soundness and mandates that local governments which fell short of the criteria design and implement fiscal reform plans under the supervision of a central agency.

Given the exogenous fiscal reform mandate, the identification strategy makes central use of the experimental framework that contrasts Ohwani under fiscal reform to Inakadate, a control village not under fiscal reform which shares similar sociodemographic features. In the first phase of research, qualitative interviews with 14 Ohwani residents were conducted to develop quantitative measures of EVL concepts under the specific circumstances of Ohwani. The interview data reveal a specific voice mechanism in Ohwani and citizens' level of knowledge about fiscal reconstruction. These findings were used to design the survey questions.

In the second quantitative research phase, a DID design whose time difference is enabled by a careful retrospective measurement was adopted. To evoke participants' recall, the survey questionnaire was designed to perform a two-step process from the present to the past and to use mayoral elections as a benchmark to elicit memories of past municipal management. The questionnaire was mailed to 600 randomly sampled citizens in both Ohwani and Inakadate, and responses were collected during door-to-door visits by the author. Including both complete and partial responses, the response rate was 44.8%. The descriptive statistics show that the sample is conditional on gender (female) and voting in both the treatment and control groups. More importantly, the underrepresentation of the cohort of Ohwani residents in their 30s led to discrepancies between the treatment and control groups in education and length of residence.

The DID analyses of the survey data show that fiscal reconstruction has significant effects on intention to exit but not voice activities. In addition, dissatisfaction with service quality did not arise due to service cuts or tax increases under the fiscal reform, but distrust in the policy process significantly increased.

5.2. Limitations of the Study

This study has four clear limitations. First and foremost, the generalizability is limited. The EVL model under municipal decline developed based on the literature review and qualitative interviews was tested only in the case of a Japanese town in fiscal crisis, Ohwani, and a control village not in fiscal crisis. Although these two Japanese municipalities provide an ideal experimental setting to identify the impact of fiscal reconstruction, the findings cannot be generalized to different suburban settings in Japan and other nations. Therefore, the EVL model presented here could be elaborated through further empirical tests with various cases of municipal decline in other regions and countries.

Second, in the DID estimation, the measures for the period before fiscal reconstruction are retrospective. Although these measures were carefully designed based on the theory of personal recall in psychology, they are subject to the inaccuracy of human memories. Given the lack of specific managerial conditions for individual municipalities in international and national-level surveys, it is quite challenging for researchers to predict which events will be of interest and to collect citizens' perceptions of municipal management before events. This study presents a methodological solution for the unavailability of data before treatment.

Third, intention to exit is used as a proxy measure of actual exit behavior in this study based on previous EVL studies on local governance (Dowding & John, 2008, 2012; Lyons et al., 1993). Hirschman (1970)'s exit is behavioral and thus dichotomous (stay or leave). Intention to exit cannot truly test Hirschman's original hypotheses. Moreover, this survey targets participants who stayed during the period of interest (2009–2015), so one can argue that the intention to exit would be lower in this sample than in a sample which included participants who actually exit. In other words, the treatment effects on intention to exit are underestimated by excluding those who actually exit, which leads to a higher probability of Type II error. However, the survey findings do indicate significant treatment effects on intention to exit. Additionally, the demographic trends of Ohwani presented in Figure 6 show that Ohwani has had a higher level of population decline than Inakadate since 2010, the first year of the fiscal reconstruction when the two municipalities recorded the same level of population decline. These actual trends in the target population validate the survey findings.

Fourth, the sample is conditional on women, voting, and age. The conditionality of women and voting is persistent in both Ohwani and Inakadate. Thus, it is not an issue in estimating the treatment effects because it secures the assumption of the experiment that the treatment and control groups are identical. Women are overrepresented in the sample, and more than 90% of respondents participated in the past and recent mayor

99

elections, higher than the actual voting rates in Ohwani and Inakadate (60%–70%). This means that this study estimates the treatment effects among the citizens most likely to vote. However, the underrepresentation of the young adult cohort is found only in the Ohwani sample and results in greater length of residence and lower levels of education in the Ohwani sample than the Inakadate sample. These differences violate the assumption of the experiment that the treatment and control groups are identical and, thus, are threats to estimating the treatment effects.

5.3. Implications

Despite these limitations, this first empirical test of EVL under municipal decline offers insights into and implications for citizens' response mechanism to municipal management reform during fiscal crisis. First, the estimation shows fiscal reconstruction has significant effects on intention to exit but not voice activities. These findings support Hirschman's main concern in EVL, the so-called exit–voice tradeoff. Hirschman theorizes that members/consumers can either exit or voice when they are dissatisfied with declining service quality and that, given the availability of the exit option under decline, exit is preferred over voice. In the Ohwani case, citizens are more likely to consider exit while maintaining their level of voice activities. If some citizens actually exited, voice activities would decrease.

In the relationship with individual voice, the collective actions of Ohwani citizens, including lobbying, participation in meetings, and membership in civic organizations, did not increase after the fiscal reform. It was hypothesized that, in a situation where
increasing numbers of people move away amid an on-going, fragmented reform process, the remaining residents would be more likely to engage in public meetings, lobbying, and community activities to reverse the municipal decline than to voice for personal issues. As the qualitative findings from the voice category show, non-active citizens' high reliance on active citizens might explain the insignificant effects of fiscal reform on overall voice activities and collective actions.

The exit–voice tradeoff situation presented here allowed this study to explore which factors in fiscal reconstruction could lead to higher intention to exit. According to Hirschman's EVL, citizens' dissatisfaction with service quality should increase under fiscal reform which involves tax increases and service cuts. However, the estimation shows almost zero treatment effect on citizens' satisfaction with municipal service quality. As discussed in Chapter 2, some Ohwani residents might view service cuts and tax increases as necessary for fiscal health. In addition, based on the qualitative finding that most interviewees in Ohwani did not know the specific content of service cuts and tax increases, the survey findings might support Dowding and John (2008, 2012) argument that satisfaction with service is not necessarily connected with any objective indicators of local service quality, such as tax rates and the range of services.

The estimation shows the significant, negative impact of fiscal reconstruction on the institutional aspect of trust in government. After the fiscal reform, Ohwani citizens tended to perceive a lower level of appropriateness in the policy process of municipal management compared to Inakadate citizens. However, the personal aspects of trust in the mayor, council members, and municipal officials indicate no treatment effects.

101

According to the qualitative findings, citizens' trust in individual officials is based on personal experiences of these officials rather than objective assessment of officials' performance. Thus, the personal aspect of trust in government might be relatively free of the effects of fiscal reform. Moreover, as described in Chapter 3, the Ohwani case of fiscal reconstruction involved political conflicts which explicitly divided citizens. It culminated in the mayoral election where the incumbent mayor and new candidate gained the exactly same number of votes, and the new candidate was selected by lottery. Given that there was no turnover in Inakadate before or after the Ohwani fiscal reform, this political process could have divided Ohwani citizens' trust in the past and current administrations, resulting in the lack of change in the trust level in this estimation. However, due to the division, citizens on both sides might be frustrated with the overall fragmented process of municipal management reform under fiscal crisis.

Past EVL studies on local governance have examined whether citizens in general are more likely to exit or voice complaints in response to dissatisfaction with municipal goods and services (Dowding & John, 2008; Lyons et al., 1993) but have not considered the specific political situation in each municipality. Also, due to Hirschman (1970)'s intensive focus on firms instead of governments, the original EVL did not identify perceptions of the policy process or trust in specific politicians or officials as key variables which affect exit and voice. The main theoretical contribution of this study to the EVL framework for local governance is to provide evidence that, under fiscal reconstruction which involved service cuts, tax increases, and political conflicts, distrust in the policy process significantly increased, while dissatisfaction with service quality did not. Not only the Ohwani case but also many other municipal management reforms in fiscal crisis involve political conflicts because such reforms require local governments to discuss politically sensitive issues, including which services to cut and whether to raise taxes. Although past EVL studies on local governance and Hirschman's original framework have focused heavily focused on satisfaction with local service quality, citizens' perceptions of policy process should be considered a key variable which affects exit and voice, especially under fiscal reform.

The controls in the DID estimations provide some evidence for the loyalty function of social capital factors and the effects from locked-in situation on voice. Among social capital and social investment factors, density of friends in the neighborhood increases voice activities but does not affect intention to exit. Density of relatives discourages exit but does not affect voice activities. Unlike in past EVL studies on local governance, past collective action and length of residence did not affect either exit or voice. These results question whether social capital and social investment factors can be fully defined as Hirschman's concept of loyalty which discourages exit and encourages voice under municipal decline.

Although the variable of past collective action did not serve as a factor in loyalty, it significantly increased all the indicators of trust in government. These citizens personally come to know the mayor, council members, and town officials through collective actions, which might improve their perceptions of individual officials and the overall performance of government.

The locked-in index causes significant, positive effects on voice activities but has an insignificant association with intention to exit. Citizens who are locked in due to having children, caring for parents, or being in the profession of farming might not change their intention to stay even under municipal decline. Age is also quite a strong factor which significantly discourages exit and encourages voice. These findings support Hirschman's original theory that members/customers are more likely to voice if the exit option is impossible or expensive.

Finally, the variable of gender reveals the underrepresentation of women in voice activities in the two Japanese municipalities studied. The frequency of voice activities was significantly lower among women than men in both Ohwani and Inakadate. Under the strong influence of Confucianism, which stresses a hierarchical societal structure with men dominant over women and children (Sugihara & Katsurada, 2002), women might not be allowed to represent their communities, especially in conservative localities in Japan. The existing EVL framework does not consider whether such marginalized status leads to further disadvantages under organizational decline. Under the third pillar of equity, however, future pubic administration studies on municipal decline should address possible negative effects from fiscal reconstruction on marginalized citizens who have neither exit nor voice option.

5.4. Future Issues

The limitations and implications of this dissertation point to a set of research issues that remain to be explored. Although the study is the first to attempt to theoretically and empirically develop the EVL model under the specific circumstance of municipal decline, the empirical test was conducted only in a Japanese town in fiscal crisis (Ohwani) and the control village (Inakadate) which together have approximately 20,000 residents. The limited generalizability of the findings indicates several issues worth addressing in future research. First, the main cause of fiscal crisis in Ohwani was the bankruptcy of the town-managed ski resort, but municipal management failure takes on various forms, such as corruption, political fragmentation, risky investment of tax revenue, and combinations of these factors. These different causes of municipal decline require unique recuperation strategies for their specific conditions. Although citizens' dissatisfaction with service quality did not increase after the fiscal reform in Ohwani, more intensive service cuts and tax increases in other cases could lead to a high level of dissatisfaction with service among citizens, supporting Hirschman (1970)'s original hypothesis. Testing the EVL model with various forms of municipal decline in other regions and countries could reveal diverse patterns of citizens' responses to decline and make the model more generalizable.

Second, to examine an exit–voice tradeoff situation under municipal decline, the case of Ohwani, from which the population data show that more residents moved away after the fiscal reform than in the control village, was purposefully selected. While the survey findings support the generalizability of Hirschman's exit–voice theory to the case of municipal decline, they do not provide much evidence about the factors in loyalty which discouraged exit and encouraged voice under decline. Other cases of fiscal crisis might show a strong loyalty function that discourages exit and encourages voice. Such cases could allow researchers to identify the significant factors in loyalty and provide rich information on the keys to successful recuperation from municipal decline.

Third, Japan is a highly homogeneous country, so this study lacks a racial or ethnic perspective. Although such homogeneity is advantageous for identifying ideal experimental settings in which treatment and control groups share similar sociodemographic attributes, this scenario is quite rare globally. In this vein, empirical tests of EVL in the U.S. could allow researchers to address whether the underrepresentation of marginalized race or ethnicity in voice activities affects their decisions whether to exit or stay under municipal decline. It would also be worthwhile to examine whether racial or ethnic attributes serve as factors in fostering loyalty which discourages exit and encourages voice under municipal decline.

In conclusion, as Hirschman (1970) stressed in the opening of *Exit, Voice, and Loyalty*, any organization is subject to lapses in functional management. Government is not an exception. Given that municipal governments are at the forefront of public services, local development and decline both need to be addressed in the context of public administration and policy. Drawing on Hirschman's EVL, this study on municipal decline was intended to identify citizens' response mechanism to fiscal reconstruction through the case of a Japanese town in fiscal crisis, Ohwani. Although this is a small case, this empirical research adds new dynamics to the EVL model for local governance. The survey findings suggest that not only service quality but also the perceived appropriateness of the policy process influences the cycle of municipal decline. For instance, citizens disappointed with a fragmented or undemocratic reform process in municipal government might be more likely to consider escape from fiscal crisis. However, whether this dynamic of policy process can be found in other cases of municipal management reform in fiscal crisis remains unclear. This dissertation is the first step to empirically examine citizens' response mechanism to municipal decline caused by municipal management failure. Further investigation of various forms of municipal decline under diverse sociodemographic circumstances could deepen understanding of citizens' roles in the process of recuperation from decline.

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Appendix A: Semi-Structured Interview Protocol

Notes to Interviewees

Thank you for taking your precious time to have this interview with me. The interview aims to explore how Ohwani citizens perceive their local community and municipal government management. Your input will be valuable to pursue an effective municipal management with citizens and local communities.

Confidentiality of responses is guaranteed.

Approximate length of interview: 30 minutes, five major questions.

Interview Questions

1. How long have you been in Ohwani?

2. Would you tell me about your story about how you grew up and interacted with local communities in Ohwani?

3. Do you think that Ohwani is declining? If so, do you think specifically which aspect of the town is declining?

4-a. How is your intention to exit or motivation of voice activities related to family, friends, neighbors, or your current job in Ohwani?

4-b. How do you assess the past and current municipal government management? How does it affect your intention to exit or motivation of voice activities?

4-c. How do you see the past and current activities of municipal officials, council members, and mayor? How does it affect your intention to exit or motivation of voice activities?

5. Do you think that voice activities can affect those municipal policies? If yes, how?

Appendix B: Survey Questionnaire



Years

Q3. How many of your friends live in your neighborhood?

1.	None	3.	More than half		
2.	A few	4.	Almost all		

Q4. How many of your relatives live in your neighborhood?

1.	None	3.	More than half	
2.	A few	4.	Almost all	

Q5. How strong do you recognize yourself as a member of your residential district?



Q6. How strong do you recognize yourself as a citizen of [name of municipality]?



- 1 Neighborhood Association
- 2 Young Citizens Association
- 3 Elderly Citizens Association
- 4 Women's Association
- 5 PTA
- 6 Volunteer Fire Company
- 7 Safety Volunteer Group
- 8 Commerce and Industry Association

- 9 Community Renovation Group
- 10 Care and Welfare Volunteer Group
- 11 Volunteer Group for Local Environment
- 12 Circle of Sports, Arts, or Other Hobbies
- 13 Temple, Shrine, and/or Church
- 14 Local Political Group
- 15 Others (

Q8. From 2008 to 2009, which of the following organizations in local community did you belong to? Please mark all that applies.

- 1 Neighborhood Association
- 2 Young Citizens Association
- 3 Elderly Citizens Association
- 4 Women's Association
- 5 PTA
- 6 Volunteer Fire Company
- 7 Safety Volunteer Group
- 8 Commerce and Industry Association

- 9 Community Renovation Group
- 10 Care and Welfare Volunteer Group
- 11 Volunteer Group for Local Environment
- 12 Circle of Sport, Art, or Other Hobbies
- 13 Temple, Shrine, and/or Church
- 14 Local Political Group
- 15 Others (

I. Recent Politics and Public Administration of the Town

Q9. Did you vote in the mayor election held in 2014: 1. Yes 2. No

Q10. In the recent 2 years, how right do you feel in the way that [name of local government] deals with problems of the community within the limited financial resources?



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Q11. In the recent 2 years, how much do you trust the mayor, council members, or officials of [name of local government] to do the right things about problems of the community?



Q12. In the recent 2 years, how much are you satisfied with the overall quality of public services provided by [name of local government]?

*Public services provided by [name of local government] include: residential taxes & property taxes, childcare & basic education, medical welfare, town roads & facilities, promotion of agriculture & industry, and tourism development.



- Q13. In the recent 2 years, have you personally telephoned, written, e-mailed, or met the mayor, council members, or officials of [name of local government] regarding the quality of public services or problems of the community?
 - 1. No
 3. Yes, a few times

 2. Yes, once
 4. Yes, more than three times

- Q14. In the recent 2 years, have you attended meetings called to discuss problems in your neighborhood or local community?
 - 1. No 3. Yes, a few times
 - 2. Yes, once 4. Yes, more than three times
- Q15. In the recent 2 years, as a member of the organizations listed in Q7 or private companies, have you lobbied or pushed [name of local government] to solve problems in your neighborhood or local community?

1.	No	3.	Yes, a few times
2.	Yes, once	4.	Yes, more than three times

II. Politics and Public Administration of the Town before 2010

Q16. Did you vote in the mayor elections held in 2010: 1. Yes 2. No

Q17. In the past 2 years before the 2010 election, how right did you feel in the way that [name of local government] dealt with problems of the community within the limited financial resources?



Q18. In the past 2 years before the 2010 election, how much did you trust the mayor, council members, or officials of [name of local government] to do the right things about problems of the community?



(3) Town Officials



Q19. In the past 2 years before the 2010 election, how much were you satisfied with the overall quality of public services provided by [name of local government]?

*Public services provided by [name of local government] include: residential tax & property tax, childcare & basic education, medical welfare, town roads & facilities, promotion of agriculture & industry, and tourism development.



Q20. In the past 2 years before the 2010 election, had you personally telephoned, written, e-mailed, or met the mayor, council members, or officials of [name of local government] regarding the quality of public services or problems in your neighborhood or local community?

1.	No	Yes, a few times				
2.	Yes, once	4.	Yes, more than three times			

Q21. In the past 2 years before the 2010 election, have you attended meetings called to discuss problems in your neighborhood or local community?

1.	No		Yes, a few times			
2.	Yes, once	4.	Yes, more than three times			

- Q22. In the past 2 years before the 2010 election, as a member of the organizations listed in Q8 or private companies, had you lobbied or pushed [name of local government] to solve problems in your neighborhood or local community?
 - 1. No
 - 2. Yes, once

- 3. Yes, a few times
- 4. Yes, more than three times

IV. Intention to Exit

Q23. Within the next 5 years, how likely are you to move out of [name of municipality]?



Q24. Compared with the past 2 years before 2010, would you say that your probability of moving out of [name of municipality] becomes higher or lower in the recent 2 years?



Q25. Now imagine that your personal income increases by 3 million yen. Under this situation, how likely are you to move out of [name of municipality] within the next 5 years?



IV. Socio-d	emodrai	blic Bac	karounds
			-g arras

Q26. Do you own the residence you now live in?

1. Yes 2. No

Q27. How many children under 18 do you have?

1. Yes 2. No

Q28. Do you have parents who need your care or will need it soon in [name of municipality]?

> 1. Yes 2. No

Q29. What is the highest level of education you have enrolled?

1	Elementary or Middle School	5	Four-year College
2	High School	6	Graduate School
3	Vocational School	7	Others (
4	Two-year College or Technical College		

Q30. Which of the following status applies to you? Please put the maximum two numbers that describe you in the following boxes.

- 1 Agriculture and Forestry 5 Retiree or Pensioner 2 Employer or Self-employed 6 Housewife **Regular Employee** 7 Student 3
- 4 Non-regular employee (including

part-timer and dispatched worker)

- 8 Unemployed

9 Others (

1st 2nd)

)

[An important part of this research is about people's resources, including financial. We need to ask about your income. We would like to remind you that everything you tell us is completely confidential.]

Q31. In which of the following ranges, does your personal income fall? The personal income is an individuals' total income received from not only your job but also other sources including rents and stocks and <u>before tax</u>.

- 1 Zero
- 2 Less than 1 million yen per year
- 3 More than 1 million yen less than 3 million yen per year
- 4 More than 3 million yen less than 5 million yen per year
- 5 More than 5 million yen less than 7 million yen per year
- 6 More than 7 million yen less than 10 million yen per year
- 7 More than 10 million yen less than 15 million yen per year
- 8 More than 15 million yen per year

Q32. In which of the following ranges, does your household income fall? The household income is the combined money income of all those earners in a household received from all sources and <u>before tax</u>.

- 1 Zero
- 2 Less than 1 million yen per year
- 3 More than 1 million yen less than 3 million yen per year
- 4 More than 3 million yen less than 5 million yen per year
- 5 More than 5 million yen less than 7 million yen per year
- 6 More than 7 million yen less than 10 million yen per year
- 7 More than 10 million yen less than 15 million yen per year
- 8 More than 15 million yen per year

Appendix C: Pre-Notice of Survey

Dear Residents of [name of municipality],

The School of Public Affairs and Administration (SPAA) at Rutgers University – Newark is highly recognized for its knowledge and competence in public administration. Indeed, the U.S. News & World Report ranks Rutgers SPAA at 7th out of nearly 300 schools of public administration in the United States.

In recent years, we have extended our knowledge about public administration in East Asia. This survey titled "Exit, Voice and Social Capital" aims to statistically identify the effect of local government management on citizens' exit and voice behavior in Japan, and further find best solutions for municipal decline based on the empirical evidences.

The respondents will be randomly selected from the voters' registration list. Based on the Public Officers Election Act, we gain the approval of using the list for this survey from [name of local government]. On behalf of Rutgers SPAA, our fellow **Shugo Shinohara** will conduct the survey.

The following survey team will visit the respondents' residences to collect the survey questionnaires from September to October. We highly appreciate for your understanding and cooperation for the safe implementation of this survey in your neighborhood.

Sincerely,

Founding Dean

Board of Governors Distinguished Professor Marc Holzer

Man Hop

[Contact]

篠原 舟吾 Shugo Shinohara

Fellow/PhD Candidate, the School of Public Affairs and Administration at Rutgers University – Newark

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Appendix D: Correlation Matrix

	Ohwani	Gender	Age	Length	Friend	Relative	Past Voice	Locked-in	Education	Income
Ohwani	1.000									
Gender	-0.020	1.000								
Age	0.162	-0.019	1.000							
Length	0.173	-0.232	0.573	1.000						
Friend	0.153	-0.105	0.210	0.383	1.000					
Relative	0.032	-0.172	0.212	0.326	0.368	1.000				
Past Voice	0.054	-0.252	0.151	0.153	0.217	0.074	1.000			
Locked-in	-0.074	-0.148	-0.331	-0.075	0.012	0.001	0.122	1.000		
Education	-0.123	-0.032	-0.215	-0.162	-0.037	-0.056	0.210	0.077	1.000	
Income	-0.114	-0.086	-0.134	-0.072	-0.035	-0.049	0.100	0.167	0.170	1.000