Research Report

Archana Prakash

Tax Work-Off Program:
A Unique Approach to Balance the Social and Financial Needs of Senior Homeowners and Local Governments of Massachusetts

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Abstract

Unlike other property-tax relief programs, the property-tax work-off program is unique in that it provides financial and social benefits to both the senior homeowners and local governments. In spite of these mutual benefits, many communities do not participate in this program.

In this study, we investigated the factors that influence local governments in their decision to offer the tax work-off program, and used these results to propose policy options to increase the adoption of the tax work-off program.

We used both quantitative and qualitative analysis techniques to get a deeper understanding of the predictors of the participation compared to either approach alone. For our quantitative analysis, we built logistic regression models to examine the significant predictors of participation. For our qualitative analysis, we conducted 15 case studies to explore the common themes that affect the local governments’ decision to participate.

The results of both the quantitative and qualitative analyses agree that the financial well-being of a community is an important determinant in a community’s decision to participate in the tax work-off program. In addition, the qualitative analysis also suggests the importance of personal initiative taken by a local official, awareness of the benefits, and demand from senior homeowners.
INTRODUCTION

Appreciation in property values serves as a double-edge sword for senior homeowners. On the one hand, appreciation in property values is beneficial in increasing wealth in the form of home equity, but on the other hand, it is also increasing property-tax liabilities. Increasing tax liabilities impose a financial challenge for senior homeowners, even for those who have their mortgages paid off. The main reasons for this financial challenge are lack of liquidity and fixed income. Due to a fixed retirement income and a general reluctance to dilute their home equity, senior homeowners are spending an increasing proportion of their retirement income in paying the property taxes, and some of these homeowners are financially burdened. As a consequence, some seniors, who have spent many years in a community, are forced to leave their familiar neighborhoods and move to more affordable, but unfamiliar, communities (Conway & Houtenville, 2003). This out migration can be detrimental not only for the senior homeowners, but also for their communities. Over time, residents of a community develop local social networks and become rooted in their communities. Moving from an unfamiliar community is a challenging experience at any age, but it is especially traumatic in post-retirement years.

As a result of the out migration of senior homeowners, communities also experience loss of both financial and social capitals. As younger families with school-age children move in to replace the elderly, the expenses of the town increase dramatically on the same property-tax revenue base. Further, long-term residents provide stability, a historical context, and diversity, which is vital for a healthy society. Communities with high social capital experience less crime and greater civic engagement in local activities when they retain their senior population (Sampson & Groves, 1989).

Changing demographic forces of low mortality and low morbidity are causing an increase in the proportion of healthier elderly population, whose members are able to continue living independently in their homes. As the baby-boomers enter the retirement age, they are fundamentally shifting the characteristics of the senior population from the “rocker chair retirement” to an active and productive lifestyle. Studies on productive aging indicate that the seniors are filling an increasing number of volunteer positions through formal or informal organizations in their retirement years (Fischer & Schaffer, 1993).

Consequently, local governments are often looking for new ways to reduce the out migration of senior homeowners to stop the drainage of this valuable resource by offering senior-friendly services and various forms of property-tax relief program. Among the tax relief programs, the tax work-off program is unique, in that it accommodates the needs of all its stakeholders (senior homeowners and communities). The seniors benefit from the program by receiving property-tax relief and gain an opportunity to be productive in their communities. The communities benefit by receiving services cost-effectively, and retaining long-time residents (Dworak, 1982). Even though the tax work-off program proves to be beneficial to its major stakeholders, many local governments do not offer this program in their communities. As of year 2004, only 37% communities are offering this program in Massachusetts.

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1 “Households with owner costs at 30% or higher are often considered to be financially burdened.” (Bonnette, 2003, p. 5).
There are two main purposes of this research project — first, to investigate the factors that influence local governments’ decision to offer the tax work-off program, and second, to discuss the policy implications of the research.

BACKGROUND

Real Estate in Massachusetts

According to Census 2000, approximately 2.6 million housing units are available in Massachusetts among which 2.4 million units (93%) are occupied (Table H3, Census 2000), and approximately 1.5 million units (62%) are owner occupied (Table H4). Among the owner-occupied units, approximately 618 thousand housing units (41% of all owner-occupied units) are occupied by the 55 years and older population (Table H16).

The Office of Federal Housing Enterprise Oversight (OFHEO) reports that at the national level, house prices appreciated approximately 291% between 1980 and 2003, while in Massachusetts, the housing prices appreciated by more than 573% in the same period (Goodman & Palma, 2004; OFHEO, 2006). An American Community Survey of (ACS) 2003 ranks Massachusetts as third highest in the nation for median housing prices ($309,736) and as fifth in median monthly housing costs ($1,571).²

Research suggests that appreciation in the housing prices in the state can be attributed to the limited supply of housing units, the growing economy of the state, increase in household income, and lower mortgage interest rates (Goodman & Palma, 2004). Under these market conditions, while homeowners enjoy increased home equity, maintaining homeownership is increasingly challenging due to the increasing cost of homeownership (Goodman & Palma, 2004) caused by the state taxation policies and local community financing structure.

Taxation Policies in the Commonwealth of Massachusetts

State legislatures control both the amount and sources of revenue generation for the local governments (Zelio, 2004). The taxation policies in the state of Massachusetts do not allow the local governments to levy an income or sales tax. In addition, the collection of property taxes is subject to several constraints of Proposition 2½, a measure that limits the rate at which municipalities can make annual increases in property taxation rates. As a result, the primary sources of revenue for the local governments are intergovernmental aid, user fees and charges, and property taxes.

Financial Structure of Local Governments

To minimize the effect of its limitations on communities for revenue generation, the state provides financial aid, allows the introduction of new sources of revenues such as user charges and fees, and sometimes takes over the financial responsibility of certain functions (Hanson, 1999; Ladd, 1978; Rafool, 2002a). Nationwide, local governments are behaving like

² Prices are for owner-occupied housing with the mortgage.  
http://www.census.gov/acs/www/Products/Ranking/2003/R08T040.htm  
http://www.census.gov/acs/www/Products/Ranking/2003/R17T040.htm
entrepreneurs and searching for new ways to generate revenue through other sources such as sales and income taxes, interest revenue on idle cash, and various types of user charges and fees (Abrams, 1982; Becker, 1984; Shadbegian, 1999). However, under state laws, communities in Massachusetts are not allowed to impose sales and income taxes, and therefore, to compensate for these restrictions, many communities have either increased the existing charges and fees, or introduced new charges and fees in many areas such as education (school lunch, athletics, and transportation), medical (ambulance), public works (water, sewage, and trash), and parks and recreation (Downing, 1992; McCarney, 1983).

**Local Revenue**

Figure 1 shows that in fiscal year 2003-2004, property taxes represented the largest source of revenue (36%) for local governments, followed by intergovernmental aid (state and federal government aid) (34%), and user charges and fees\(^3\) (17%) (Census, 2003-04). Figure 2 presents the trend of intergovernmental aid to the communities of Massachusetts. The federal aid remained constant at around 5%, but the state aid fluctuated between 27% (FY 1994-95) and 34% (FY 2001-02) (Census, 1992 to 2004). While state aid provides approximately one third of the communities' revenues, its fluctuation makes it difficult for communities to plan their finances (Hirschhorn, 2005; Kelly, 2004). In addition, restrictions on the use of this aid make it harder for the communities to allocate this money according to their local needs (Campbell, 1965).

Relying on property taxes for a major part of the local revenues has its own disadvantages and advantages for the taxpayers and the local governments. For taxpayers, the biggest disadvantages are the regressive nature of property taxes and the perception of the tax being unfair (Mackey, 1995). On the other hand, local governments enjoy freedom to allocate property-tax revenues for the services they judge to be most appropriate for their community (Sokolow, 1998). In addition, due to the non-portable nature of real estate, property taxes are less sensitive to the ups and downs of the economy, although this revenue can still fluctuate with changes in property values (Mackey, 1995; Zelio, 2004). Given its advantages and the limited alternatives, local governments continue to rely heavily on property taxes as a revenue source.

**Property Taxes**

*History of Property Taxes*

The roots of today’s real estate property taxes lie in the colonial times, when it was imposed by England on the US colonies as a general tax on selected properties. Taxation favored the elite section of the population through the choice of taxable properties and taxation rates. When the first 13 United States colonies gained independence, the philosophy for taxation also changed to a uniform tax on all properties (Fisher, 1996; Winters, 1999).

The main aim of the general property tax was to generate revenues for state and local governments. A uniform tax rate was applied to both tangible and intangible properties. From its inception, general property tax suffered from two main problems—conceptual definition of

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\(^3\) According to U.S. Census of Governments, user charges and fees include the revenues from sanitation, sewage, parks, parking, hospital etc., but revenues from utility (water, electric, and gas) are excluded from this.
property, and the administration of taxation. Due to the inclusion of both tangible and intangible properties, definition of taxable property became controversial. Officials were unable to provide a clear definition of “property” to be taxed. Due to the conceptual problem, administration of this tax became very subjective and unsatisfactory among taxpayers, and therefore started to fail at the state level. As a result, the state governments developed other sources of revenue, such as sales and income taxes, and devolved the property taxation authority to the local governments. At the local level, it evolved into a local real property tax (Fisher, 1990, 1999).

During its evolution, general property tax was modified with respect to the tax base and taxation philosophy. Gradually, real estate became the major component of the tax base, and other tangible and intangible personal properties were eliminated. The characteristics of real estate made it an attractive option for local governments. First, visibility, which helps in easy identification of the taxable object, and second, immobility, which helps in stabilizing the revenue.

Another factor that changed the tax base was the classification of properties. All the real estate properties were not taxed at the same tax rate. Proponents of this system argued that all properties are not capable of producing equal revenue for taxpayers, and therefore, they should be taxed at different rates. Certain types of properties, such as religious buildings, hospitals, and charitable and educational institutions, were granted exemption from taxation. Also, the taxation philosophy changed to an In rem from Ad valorem taxation approach (tax is against the property and not against the owner) (Fisher, 1990, 1999).

Current State of Property Taxes in Massachusetts

Today, in Massachusetts, property tax represents a major source of revenue for local governments. The following are the major features of the property tax in the state:

- Tax base covers only the real estate properties of taxpayers.
- Property tax carries an exemption status for certain types of properties. Exemption status and exemption amount depend on the owner’s and property’s characteristics. For example, properties owned by public agencies, religious entities, and educational institutions enjoy tax-exempt status. Similarly, some property-tax relief programs depend on the owners’ characteristics such as age, disability, veteran status, and income (Sexton, 2003). In Massachusetts, non-profit organizations, and educational and religious properties, do not pay property taxes (Sexton, 2003). But in some cities, such as Cambridge, MIT and Harvard are paying some fees in lieu of property taxes (PILOT) (Zelio, 2004).
- The concept of uniform taxation was changed in 1979 when the state’s constitution approved different tax rates for different types of properties (Avault, Ganz, & Holland, 1979; Paquette, 2007). Using different rates for different types of properties (split tax rates) allows the local governments to customize the distribution of tax burden according to the diversity in their tax base. Historical trends show that over time more and more communities are using different

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4 Real property includes land with or without any structure. Real property can be divided into three major categories, residential, commercial, and agricultural (Rafool, 2002a)
tax rates for different property types (Figure 3). Data from division of local services indicate that in fiscal year 2006, there were 110 local governments using split tax rates.

- To limit the growth in local expenditures and increase in the efficiency of local governments, Proposition 2½ (M.G.L. Ch. 59, Sec. 21C) was passed in November of 1980. According to this proposition, property-tax revenues of each community are subject to the following two restrictions:
  1. The total property-tax revenue is capped at 2½% of the assessed value of their tax base, and
  2. The annual increase in the property-tax levy limit cannot exceed 2½%.

To circumvent either of these restrictions, communities must pass an override in their local elections (Shadbegian, 2000). Studies have shown that proposition 2½ was successful in reining in the growth in the local expenditures (Poterba & Rueben, 1995; Preston & Ichniowski, 1991; Shadbegian, 1998; 1999; 2000).

**Components of Property-Tax Calculation in Massachusetts**

The total revenue from property taxes for a community is a function of its tax base and local tax rates. While the tax and assessment rates are legally constrained by state government, the assessment of property values is done at the local level.

Figure 4 shows the percentage of total revenue collected from property taxes during 1992 through 2004.

**Tax Base**

In Massachusetts, the tax base of a community is composed of four major categories—residential, open space, commercial, and industrial. Tax base of communities varies with respect to the distribution of these types of properties and the number of exempted properties in a given community.

**Tax Rate**

Under the state guidelines, calculation of annual tax rates among communities depends on four major factors. First, all real estate properties must be assessed annually by each community; second, each community must balance its local budget; third, any property-tax variations must satisfy the constraints of proposition 2½; and finally, the intergovernmental aid can vary annually.

**Property-Tax Relief Programs in Massachusetts for Senior Homeowners**

A general perception among the tax payers is that benefits from the property taxes are not distributed fairly, since a major part of this revenue goes to support K-12 education (Aaron, 1975; Zelio, 2004). For the fiscal year 2003-2004, the expenses of the communities in Massachusetts by category are shown in Figure 5. According to these data, the single largest category of local expenses is education at 40%. While most of the other services benefit all residents of the community, education only benefits residents with children in schools. Due to the state laws governing the local financial structure, all residents pay property taxes independent...
of whether or not they use particular services. Notably, senior homeowners, who do not tend to have school-age children, pay for education services nevertheless.

Compounding this is the fact that the rate of appreciation in the property values is outpacing the cost of living adjustments (COLA) in their Social Security payments and the growth in their financial assets (Dornfest, 1994). In Massachusetts, among senior householders (65 years and over), approximately 69% of the seniors are homeowners, and 20% of these senior homeowners spent more than 30% of their household income on homeownership-related expenses (Census, 2000). Increasing property values and taxes, and a fixed income can make the senior homeowners asset-rich and cash-poor members of the community.

To reduce some of the financial burden of property taxes and make this tax more affordable and equitable, state and local governments offer various property-tax relief programs. The main goal of various property-tax relief programs is to reduce the regressive nature of property taxes (Dornfest, 1994; Gold, 1981; Ladd, 1978; Mackey, 1995; Quindry & Cook, 1965). The property-tax relief programs can be financed by either the state or the local governments. Generally, programs funded through state government are more effective in reducing the tax burden compared to the locally funded ones, as the locally funded programs shift the tax burden to the non-participating tax payers (Gold, 1981).

There are many programs available for the homeowners in Massachusetts based on different characteristics of homeowners such as age, disability, income, and veteran status. In this section, our focus is limited to the programs that are applicable to senior homeowners. These programs are legislated under the MGL Ch59, §5, clauses 17, 41, (exemptions and deferral), Ch59, §5K (tax work-off), and Ch62, §6(k) (circuit breaker) (Tax Classification Report, DLS, 2004; The State Auditor’s Report, 2005).

**Property-Tax Exemptions (Clauses 17s and 41s)**

Property-tax exemptions are the most common tax relief programs. The original tax exemption program was developed during the depression era to target poor homeowners to provide some tax relief and therefore avoid possible foreclosures. Under this category, the tax relief is generally provided by reducing the assessed valuation of the property with some fixed amount (Aaron, 1975; Sexton, 2003) or a percentage of market value (Tax Classification Report, DLS, 2004; Rafool, 2002b; Sexton, 2003), while in Massachusetts, this relief is in the form of a fixed monetary amount. Clauses 17 and 41 were the original laws in Massachusetts providing property-tax relief. With strong appreciation in house values, these programs got revised with different clauses (17C, 17C½, 17D, 17E, 41B, 41C, and 41D) with more lenient income eligibility criteria.

**Circuit Breaker**

The circuit breaker program financed by the state government, targets middle- to low-income homeowners. This program was started in Wisconsin in 1964 and got widely accepted in 1970s by many states. It sets a limit on the ratio of tax burden and the income (individual or household). If the property-tax burden crosses the threshold of the ratio, then the taxes are either waved, rebated, or get adjusted in the income tax (Rafool, 2002b; Sexton, 2003). In Massachusetts, residents get an income tax credit or a refund if no income taxes are due.
**Tax Deferral**

The tax deferral program, which is mostly available to senior homeowners, allows them to defer their property taxes until they sell the property or until their death. Homeowners have to pay interest on the deferred amount of taxes for the duration of the deferred taxes. Tax deferral amount and accumulated interest are tied with the value of the home. A lien is placed on homes until the recovery of deferred taxes and accumulated interest (Tax Classification Report, DLS, 2004; Rafool, 2002b; Sexton, 2003).

**Tax Work-Off Program**

The foundation of this program was laid in the city of Hartford, Connecticut, in 1976. In this program, seniors and financially strapped homeowners can “enter into a personal service contract with the city” (Dworak, 1982, p. 35) in exchange of relief from real estate property and excise taxes. Even though the program gained popularity among the major stakeholders, it eventually died in 1981 due to budget cuts. During the life of the program, out of 584 applicants, 199 residents entered into personal service contracts and earned approximately $165,000 towards their tax obligations (Dworak, 1982).

In its current form, the tax work-off program was first started in Colorado in early 1980s. The main objective of this program was to provide some property-tax-relief to the struggling senior population in Larimer County in exchange for their services. This program allowed low-income seniors to take $250 off of their property taxes by working for the county for an equivalent number of hours at the state’s minimum wages. In Massachusetts, Chelmsford was the first town to try this program in early 1990s (Kiesel, 2002). Success of this program has led other cities and towns to adopt it, and they have tailored the program according to their needs and funds availability. Financial support for this program comes from city or town budgets. Each participating community earmarks some funds in the beginning of the fiscal year to fund this program.

Since 1999, the tax work-off program has been governed by Massachusetts state laws. While the program is optional for the communities, state law imposes constraints with respect to age, income tax, and wage rate. Originally, under state law, communities could allow eligible seniors to get credit up to $500 in return for their volunteer work. A 2002 amendment allows the communities to raise the benefit amount to $750. This amount is exempt from state income taxes. However, any amount over $750 is not exempt from state taxes. The hourly rate for the work cannot be less than the federal hourly minimum wage, and it cannot exceed the state’s hourly minimum wage (MGL, Ch.59, §5K).

In the year 2004, 37% of the 351 communities in Massachusetts were offering the tax work-off program. Among participating communities, the number of slots ranged from 1 (Brewster) to 116 (Andover). During fiscal year 2004, approximately 2,400 senior volunteers participated in the program and received a total of $1.3 million in tax-relief, which averages approximately $537 per senior participant (The State Auditor’s Report, 2005).

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5 Eligibility criteria vary with communities.
Participation in Tax Work-Off Program

Participation in any program depends on three factors: awareness, ease of application, and perception (Dornfest, 1994). While awareness and ease of application process may have similar effects on the participation rates of all the available property-tax relief programs, the perception of the program has a bigger impact on participation among senior homeowners.

For the senior homeowners, participation in the exemption programs is negatively affected by the complexity in application process and the attached stigma of charity for the received benefits. For the deferral program, interest payment on deferred taxes and a new lien on their houses act as discouraging factors for participation. The tax work-off program not only keeps their properties lien-free and avoids future interest payments; it also avoids the stigma of charity of exemption programs by allowing senior homeowners to earn their tax relief.

For local governments, participation in different programs depends on the administration and financial burdens. For exemption and deferral programs, even though communities get some state funding for the program, they still have to bear the additional costs of optional parts of the programs. While offering the tax work-off program adds to the administrative and financial costs, the benefits received by the communities are generally perceived to be much greater than the additional costs.

Rationale for Participation in Tax Work-Off Program

Tax work-off program can be mutually beneficial to senior homeowners as well as the local governments. For the senior homeowners, the major reason is to age in place productively. For the local governments, the major factors for participating in the tax work-off program are financial, social, and political.

Senior Homeowners

The phrase “aging in place” (AIP) describes the phenomenon of growing old in a familiar environment. The central belief behind AIP is that older people derive significant benefits from aging in an environment where they have invested their resources over time to enrich their surroundings (Rowles, 1993).

To understand AIP, we have to understand the concept of “place.” In the literature, “place” is described as a much richer concept than just a geographical location and is composed of three constructs— “place attachment,” “place dependence,” and “place identity.” AIP takes place in the context of all of these constructs (Fullilove, 1996; Jorgensen & Stedman, 2001; Rowles, 1993). Place attachment is defined as an individual’s emotions toward a place, which create a bond between a person and a place. Place can be either a home, or a community, or a state, or a nation (Brown & Perkins, 1992; Hummon, 1992; Nanzer, 2004; Rowles, 1993; Rubenstein & Parmelee, 1992). For our purposes, we will restrict the concept of place to a home and neighborhood. Place attachment becomes stronger with the duration of residence in a specific location. A stronger place attachment means that people willingly adopt the cultural and social norms of the place and eventually feel “rooted” in that particular place (Nanzer, 2004). Place dependence occurs when people find that a specific place is much more suitable to fulfill their personal goals compared to any other alternative (Moore & Graefe; Stokols & Shumaker studies, as cited in Nanzer, 2004). According to Proshansky’s (1978) place identity consists of “those dimensions of self that define the individual’s personal identity in relation to the physical
environment by means of a complex pattern of conscious and unconscious ideas, beliefs, preference, feelings, values, goals, and behavioral tendencies and skills relevant to this environment” (p. 155). Place identity depends not only on individual’s emotional investment with the place but also the duration of the involvement with the place.

With the help of the above concept of “place,” we theorize the significance of AIP for seniors from psychological, social, and economic perspectives.

**Psychological Perspective**

From the psychological perspective, to understand how AIP affects the individual’s quality of life, we use Maslow’s Hierarchy of Needs Model (MHN) (Maslow, 1954). MHN is generally considered a fundamental psychological model for understanding human needs and their satisfaction that define the quality of life. According to MHN, individual’s needs are organized in a five-level pyramidal structure ranging from the very basic needs of existence to the highest level need for self-fulfillment. Table 1 describes how AIP helps in satisfying the needs of MHN at each level among senior homeowners, and, in turn, affects their quality of life.

**Aging in Place and Quality of Life**

Quality of life is driven by satisfaction of needs at each level of the MHN. Quality of life improves as needs at each successively higher level of the MHN are satisfied.

Aging in an owned home satisfies the need of shelter at the most basic level of the MHN. The aging literature suggests that primary residences play a significant role in the lives of the elderly, and the significance increases with time as they age in their homes. From a physical structure of brick and mortar, these houses become the depositories of their memories (Bowling, 1995; Howell, 1983; Marcus, 1992; Rowles & Ravdal, 2002; Rubenstein & Parmelee, 1992). Wilhelmson, Andersson, Waren, & Allebeck (2005) investigated the factors that affect quality of life of the elderly and found that having their own home was one of the major contributors towards their quality of life.

As the seniors develop familiarity with their environment, and build associations with their neighbors, they satisfy the second-level needs of stability and security. Hummon (1992) described this in terms of rootedness, and particularly what he terms “ideological rootedness.” The author described that ideological rootedness increases with age as well as duration of stay. Elders’ feelings of ideological rootedness create an emotion of stability and attachment with their environment. Disruption in the feelings of place attachment creates anxiety and a feeling of being overwhelmed (Brown & Perkins, 1992). Gabriel & Bowling (2004) studied British elderly and found that a majority of elderly agreed that the security of homes and neighborhood, and access to the local areas and transport, had a positive effect on their quality of life.

AIP generates the feeling of belongingness and attachment with neighbors and their environment, which helps to satisfy the third level needs of MHN. The emotion of belongingness gets stronger with the duration of stay and also with the age of the resident. Over time, daily personal life activities get intertwined with the surrounding environment, which helps in creating trustworthy and friendly relationships. Seniors value and cherish these relationships much more than their younger counterparts. Therefore, for senior residents, to break these familiar ties and move elsewhere in unfamiliar surroundings pose an emotional challenge, which
has a negative impact on their psychological well-being (Brown & Perkins, 1992; Hummon, 1992; Marcus, 1992; Sampson, 1988; Wilhelmson, et al., 2005).

Seniors’ involvement with their communities in the form of volunteer work helps them satisfy the needs of work group, as well as the needs of achievement and responsibility at the next level of esteem (Wheeler, Gorey, & Greenblatt, 1998). Other factors that contribute to this level are the social status through homeownership (Chevan, 1987; Rowles, 1987) and independence (Golant, 1984; Lawler, 2001; Lawton, 1985).

Finally, the need for self-esteem and personal growth gets fulfilled by elders pursuing their hobbies and other activities in a familiar environment. A majority of elderly make a deliberate effort to keep themselves busy to avoid the feeling of worthlessness. Studies show that by pursuing hobbies or spending time in other meaningful activities improves the quality of life of seniors (Gabriel & Bowling, 2004; Herzog & House, 1991). Participation in leisure and volunteer activities represents not simply passing time; it provides meaning at a deeper level and satisfies the individuals’ core values (Kleiber & Ray, 1993).

In summary, we can see that AIP is an important factor in improving the quality of life of senior homeowners by satisfying their needs at all levels of MHN. AIP does not merely signify a place to pass leftover lives; rather, it engenders much deeper feelings of fulfillment, independence, and self-efficacy, which are highly valued by seniors.

**Sociological Perspective**

From the sociological perspective, the process of AIP helps senior homeowners in accumulating and utilizing their social capital.

Social capital is the accumulation of resources associated with a network of mutual acquaintances, and use of these resources is collectively available to the group members only (Bourdieu, 1986; Cannuscio, Block, & Kawachi, 2003). Power of social capital depends on the “number of relationships a person has; the strength of those relationships; and the nature and amount of resources available as a result of those relationships” (Astone, Nathanson, Schoen, & Kim, 1999 p. 10; Bourdieu, 1986).

There are three characteristics of social capital. First, production of social capital happens over a long period of time. Second, social capital is considered “inalienable.” In other words, social capital is limited to the individual who created it by investing his or her resources. It cannot be transferred to other individuals. Finally, social capital has limited “fungibility.” That is, social capital can be used only in a limited number of ways (Astone, et al., 1999; Ben-Porath, 1980; Bourdieu, 1986; Coleman, 1988).

To produce social capital, individuals must make conscious efforts to invest their resources to accumulate this capital over time. Literature shows that human behavior is motivated to a large extent by the desire to acquire and maintain social capital. Individuals will become group members only if the membership is personally profitable and the benefits are equitable to all members (Homans study, as cited in Astone, et al., 1999; Ben-Porath, 1980; Bourdieu, 1986).

Like other types of capital, social capital can be consumed to achieve tangible and intangible goals. Due to the long-term nature of accumulation of social capital, there is an insufficient amount of social capital available during the early stages, and therefore, its use is limited. Unlike
financial capital, social capital is inalienable; therefore, it can be consumed only by the individual who has accumulated it. Similarly, due to its limited fungibility, the consumption of social capital is limited in the number of utilization modes (Astone, et al., 1999; Ben-Porath, 1980; Bourdieu, 1986; Coleman, 1988).

**Aging in Place and Social Capital**

AIP provides the two main raw materials to produce social capital—time and stability of social structure. According to our theoretical framework, one needs time to build and accumulate social capital. Further, a stable social structure is important to develop and maintain social relationships and norms. Homeownership status increases the stability and longevity of the social structure, and therefore promotes the production of social capital.

Social capital is beneficial for senior homeowners for several reasons. First, they have a diminishing ability, and strong desire, to live independently. Second, with a decreasing ability to earn, they have limited resources on which to rely. Third, the demands on their resources are increasing. Social capital helps them reconcile all of these factors effectively. It allows the seniors to maintain independent and productive lives through sharing of resources.

For senior homeowners, social capital plays a significant role in attaining tangible and intangible benefits. With respect to tangible benefits, seniors rely on the social capital to carry out their physical activities of daily life. Within a community, the members of the social network expend their social capital to draw upon the resources of other individuals. For example, an individual who cannot drive can rely on other group members who can to satisfy his or her transportation requirements. Indirectly, this also satisfies the intangible goal of a feeling of self-sufficiency (Rowe & Kahn, 1998). Use of social capital is more fulfilling, and considered by the seniors as more deserving, than a feeling of being a burden on others.

On the flip side, moving to a new community is detrimental to seniors. Since social capital resides in the social network, individuals cannot carry it with them to their new locality. By moving to a different community, they lose their accumulated social capital. Additionally, the established norms and networks of relationships in the new community make it difficult for them to gain membership in the new community. The norms of the new community may not meet the needs of the new entrants and may take a long time to evolve to meet the new mutual needs (Portes, 1998).

In summary, AIP allows senior homeowners to create, accumulate, and consume social capital. Social capital is an important factor that allows seniors to age in their preferred environments, even when they are experiencing diminishing physical abilities and limited financial resources.

**Economic Perspective**

From an economic perspective, the process of AIP helps senior homeowners to maximize their economic utility. The standard economic utility function describes the amount of pleasure that each individual derives from the consumption of a given combination of goods and services. The theory makes two fundamental assumptions about consumer behavior:

1. Each individual tries to consume the combination of goods that will maximize his or her individual utility function for a given income.
2. The marginal utility of any commodity is inversely related to the amount of consumption of that commodity.

Becker (1974) extended this model to include the economic value of social interactions as a component of total income of an individual. His concept of “social income” is “the sum of a person’s own income (his earnings etc.) and the monetary value to him of the relevant characteristics of others, which I call his social environment” (p.1063).

AIP helps senior homeowners to increase their social income and, therefore, they are able to consume more goods and services than with their limited financial income alone.

For senior homeowners, financial income consists of earned income from various sources such as Social Security, pension income from previous employers, personal retirement savings, and financial support from family members; and a potential income from liquidating assets, such as home equity. As they age, their ability to generate additional financial income diminishes; therefore, the financial income remains relatively fixed through their retirement years. However, appreciation of property values increases the property-tax burden, thus reducing the financial income available for other consumption.

The social component of the income is generated as senior homeowners age in place and develop social networks of mutual relationships and interdependence. These relationships allow the participants to draw on each other’s resources for mutual benefits and constitute a significant component of their social income (Becker, 1974). As a result, even though the financial component of their income may not vary, the total income increases as they age in place.

By moving to a different location, senior homeowners lose the social component of the income, reducing the total income. All else being equal, this will reduce the amount of goods and services they can consume, and therefore negatively impact their total utility.

In summary, AIP provides an opportunity where financial and non-financial resources can be combined to maximize the utility of senior homeowners (Myers, Peiser, Schwann, & Pitkin, 1992). The dwelling becomes more than just a shelter, and its overall utility is higher than just the physical structure would provide.

These three perspectives can be combined into a unified model to provide a richer view of the benefits of the process of AIP for senior homeowners (see Figure 6).

By aging in place, individuals develop a place attachment not only with their homes, but also with their environments. Over the years, as they age in place, they not only develop strong familiarity with their surroundings; they also weave a network of relationships of mutual reliance within their communities. These networks of relationships help them generate and accumulate social capital. In addition, many senior homeowners acquire significant economic capital in the form of home equity as they age in place. This accumulation of social income allows senior homeowners to consume additional goods and services that help in satisfying many of their needs at several levels of the MHN model, allowing them to improve significantly their quality of life. An increase in the quality of life indicates an increase in the utility value. The net result is that AIP generates a higher utility value, which in turn creates a strong incentive for the senior homeowners to age in place, making it a closed loop process that feeds itself.
Local Governments

The decision of local governments to participate in the tax work-off program can be described with the help of three theoretical frameworks due to Mohr (1969), Tiebout (1956), and Black (1948) respectively.

Mohr’s Theory of Organizational Innovation

Mohr (1969) developed a theory of innovation in organizations. He defined innovation as “a function of an interaction among the motivation to innovate, the strength of obstacles against innovation, and the availability of resources for overcoming such obstacles” (Mohr, 1969, p. 111). In his study, the innovation was defined “to exclude creativity per se and to include the notion of adopting something non traditional whether it was invented within or outside of the organizations concerned” (p. 113).

Mohr validated his theory in the context of public health departments across the United States and Canada, although the theory has a more general applicability. In his study, the factors measuring motivation to innovate included the characteristics of the leader, as well as the environment of the organization. The leader characteristics included political ideology, creativeness, and educational level. The environmental characteristics included the rate of change in market and labor conditions, technology, and the community’s needs and norms. The obstacles to innovation consisted of the resistance of both the individual and the organization to change. Finally, the resources to overcome these obstacles came from the size of the organization and its financial resources.

Tiebout’s Model of Voter Mobility

According to Tiebout (1956), the decision making of a community is effected by the mobility of the taxpayers or the voters. Each community provides a bundle of services for a given amount of tax. According to Tiebout, different voters value these bundles differently, and the voters who are unsatisfied with the given services will likely move to other communities where they can maximize their benefits for their tax dollars. Local governments have to compete with other neighboring communities in choosing a level of services and tax levy. Thus, the taxpayers who are unhappy with the services and taxation of a given community will move to another more favorable community, and thereby affect the decision making of their community.

Median Voter Model (MVM)

The main premise of the median voter model is that decisions in a group are made based on the preferences of the majority of the voters. This concept was first formalized in a seminal paper by Black (1948). Congleton (2002) applied this model to the decision making process in the local governments. He posited that in a democratic election, candidates will maximize their votes by moving more closely to the preferences of the median voters. The farther candidates move away from the median voter preferences, the fewer votes they get. Therefore, in a majority democracy, the median voters will have a significant influence on the policy decisions by the governments (Turnbull & Chang, 1998).

With the help of these three theoretical frameworks, we can explain the behavior of the senior homeowners and the local governments’ participation in the tax work-off program. With the increasing property-tax burden, many senior homeowners cannot justify the cost of services
provided by their communities. They have the choice either to move to a more suitable community (Tiebout model) or to influence a majority of the voters to allow the community to offer senior-friendly programs (median voter model). In both cases, the communities might decide to participate in the tax work-off program—to prevent the seniors from moving away in the first case, and to satisfy the majority of the voters in the second case. The introduction of the tax work-off program in a community is an innovative act, and therefore, it depends on the motivation of communities’ leadership, obstacles, and resources to overcome these obstacles (Mohr’s model of organizational innovation).

**CONCEPTUAL MODEL**

In this section, we use the Mohr’s model of organizational innovation, Tiebout’s model of voter mobility, and the median voter model, to develop a conceptual model that will help us understand the factors that influence the decision of a community to participate in the tax work-off program.

The introduction of any policy or program depends on the optimization of various financial and political costs and benefits. Given the unique structures of different communities’ tax bases, demographic characteristics, and needs of their taxpayers, local governments use different combinations of their resources to achieve their optimum point (Hettich & Winer, 1988). For the local governments’ decision to offer tax work-off program, these trade-offs can be understood in terms of the interactions among the above three frameworks.

As the property values in a community increase, the senior homeowners on a fixed income are faced with an increasing financial challenge without any increase in the services. According to the Tiebout model, these seniors are likely to move to other communities with more affordable taxes and more suitable services. This migration creates a financial challenge for the local governments by increasing the cost of providing services (educational and public safety). The local governments are therefore always looking for ways to reduce this forced migration by offering a number of tax relief programs. The tax work-off program potentially is one of the more effective such programs.

With the help of Mohr’s framework, we can describe the introduction of the property-tax work-off program among the communities of Massachusetts. For communities, the incentives to introduce the property-tax program are both tangible and intangible. The major tangible factor is a reduction in cost of providing services, and the major intangible factor is the development of a more stable and stronger community with a high social capital by reducing senior migration. The major obstacles to this program are a competition for resources by other programs, unwillingness of the voters to support expenses for the program, and perceived threats by the local labor unions. These obstacles can be overcome by local financial resources and advocacy by senior support groups.

**Motivations**

Under the current legal constraints on revenue generation, balancing the diversified needs of the taxpayers and balancing the financial budget is a challenging task for local governments. Emigration of senior homeowners from a given community generally keeps the financial revenues unchanged but increases the costs of services. The major impact on the costs comes from the increase in demand for education and public safety. Senior homeowners who leave a
community are generally replaced by younger homeowners with school-age children. While the new migrants pay the same property taxes, they impose higher demands on educational services. Even though by offering tax work-off program, local governments increase their administrative burdens and lose a small amount of tax revenue for volunteers’ stipends, on the whole, they derive greater financial benefits (Lyons & Morgan, 1977).

In addition to the financial impact, this emigration also has a significant negative impact on the social capital of the community. Emigration of senior homeowners results in a weakening of social norms and loss of volunteers. Weak social norms can translate to an increase in social disturbances and therefore affect the costs of public safety (Sampson & Gorves, 1989; Shaw & McKay, 1942). Similarly, loss of volunteers can affect other miscellaneous costs.

Due to the loss of social capital and its attendant financial costs for the communities, it is in the best interests of the local governments to minimize this out migration of the senior homeowners, especially when the migration is forced by a financial hardship due to increasing property taxes (Abrams, 1982).

Obstacles

The obstacles faced by the local governments to offering the tax work-off program can be a competition with other programs for limited financial resources, unwillingness of the voters to support expenses for the program, and opposition by local labor unions.

Generally, local governments run on tight financial budgets. They have to balance the needs of the various programs in allocation of resources. Participation in this program takes financial and administrative resources away from other programs, which might be deemed to be more important. The Education Reform Act of 1993 also sets up a floor for education expenditures. This imposes a restriction on the flexibility in the allocation of resources by local governments.

In addition, local governments may face political obstacles, based on the demographics of the community voters. For example, in communities with a significant number, but not a majority, of senior homeowners, there is a need to offer property-tax relief, but this program does not meet the needs of the median voters. According to the median voter model, the local government will not offer the tax work-off program in this case.

Finally, the local labor unions can also oppose this program if the services provided by the senior volunteers under this program are covered by union contracts. The local governments have to make sure that volunteering activities under tax work-off program are not breaking any labor union agreements with respect to wages and employment level.

Resources

The resources to overcome the above obstacles consist of local financial resources and advocacy by senior support groups.

If the community has adequate financial resources, then the competition between different programs is lessened, and the tax work-off program becomes more feasible. These resources can be derived from the revenues of the community itself or from intergovernmental aid. Even when these additional resources may not be available for the tax work-off program, they help by reducing the competition among different programs.
A strong and active senior support group can help to overcome voter and labor union resistance. Voter resistance can be overcome by highlighting the tangible and intangible benefits of the tax work-off program to the community. An effective canvassing by senior advocacy groups can help by shifting the median voter preferences towards the tax work-off program.

Labor union resistance can be overcome by including provisions in the tax work-off program that address their concerns, such as limiting the volunteer activities to non-union jobs and the stipends to minimum wages.

Based on the above discussion, we hypothesize that communities with high capital (both financial and social), whose leadership is sensitive to the seniors’ needs and where a higher percentage of seniors are financially strapped homeowners and community oriented, are more likely to offer the tax work-off program.

ANALYSIS

For this project, we employ both quantitative and qualitative analysis techniques. For our quantitative analysis, we use secondary data drawn from various federal and state government agencies of Massachusetts. Our qualitative analysis is based on primary data gathered by applying the case study approach. Use of both techniques will not only provide much richer findings; it will also compensate for the limitations of either type of data.

Quantitative Analysis

For uni-variate and bi-variate analysis, we measure the central tendency, dispersion, and correlation statistics. These statistics help us in selecting the variables for the multivariate analysis. For multivariate analysis, we use logistic regression.

Logistic Regression

For the logistic regression models, we use data from all the communities in Massachusetts (N = 351). For this analysis, our dependent variable is a dummy variable denoting the participation status of the communities in the tax work-off program. We build a set of regression models to determine the significant predictors of the participation or non-participation in the tax work-off program.

These models are based on the following equation:

\[
\logit(p) = \ln \left( \frac{p}{1-p} \right) = \alpha + \beta_1 X_1 + \ldots + \beta_n X_n
\]

where \( p \) is the probability that a town with characteristics \( (X_1, \ldots, X_n) \) will offer the tax work-off program to its senior homeowners (DeMaris, 1995; Pampel, 2000).

Description of the Data Sources

For the quantitative analysis, the data are drawn from the following sources: Massachusetts Division of Local Mandates, Massachusetts Department of Revenue, and U.S. Census Bureau.
Division of Local Mandates (DLM)

Division of Local Mandates is a state agency responsible for developing policies to help the communities in minimizing the effect of state-imposed revenue limits on local budgets. In 2005, DLM released a report titled “State Auditor’s Report” focusing on the various property-tax relief programs provided to the senior homeowners in the communities of Massachusetts. As of this writing, this report is the only source of information on the tax work-off program in Massachusetts. This report provides detailed information on the participation status of the communities, the number of slots in each community, and the dollar amount awarded by each community during the fiscal year 2004 to participating senior homeowners.

Department of Revenue (DOR)

The Department of Revenue is a state agency that collects and manages the data on municipal finances. The department provides data related to the property taxes, assessed values, and property types for each community annually. Even though the most recent available data is for fiscal year 2006, we use data for the fiscal year 2004, since that is the only year for which we have the details on the tax work-off program.

U.S. Census Bureau

The U.S. Census Bureau is a federal agency that conducts a census count every 10 years. It provides data on various socio-demographic characteristics of the United States’ population. We use the most recent available census data from the year 2000. From this data source, we use several tables from the summary files one (SF1) and three (SF3) to collect the socio-demographic characteristics by community for the residents of Massachusetts.

Data from the above resources are merged together for the quantitative analysis. The unit of analysis for our study is city or town. In our data, the population size ranges from 86 to 600,000 people. Almost 10% of the communities have a population of less than 1,000 people. Variables from communities with smaller populations tend to have greater variance compared to communities with larger populations. By weighting the data by population size, the variance in the variables can be reduced. The weighting process provides a greater importance to cases with less variance. Therefore, for our analysis, we used weights normalized with respect to the population size of the communities. To calculate the weight, we took the following steps:

1. Calculated the square root of the population of each community,
2. Calculated the mean of the square root of the population of all the communities in Massachusetts,
3. Divided the square root of the population of each community by the mean of the square root of the population of all the communities.

Description of Measurements

The following is the detailed description of the variables used in the multivariate analysis. Table 2 presents the definitions, expected sign of the association, and the sources of data for each variable.
Dependent Variable

Participation Status in Tax Work-Off Program in 2004. For logistic regression models, we created a dummy variable to distinguish between the participating and non-participating communities. Information on the participation in the tax work-off program is provided in State Auditor’s Report of 2005. Appendix 2 of the Auditor’s Report provides the total dollar amount offered to the participants of the tax work-off program in fiscal year 2004. This variable is constructed based on the dollar amount awarded under this program by each community. Communities that spent an amount greater than zero are treated as participating and coded with the value of 1 (n = 129), while communities that spent a zero amount are treated as non-participating and coded with the value of 0 (n = 222).

Independent Variables for Regression Models

According to our conceptual model, the participation by a community in the tax work-off program is dependent on three factors—the motivation to participate, the obstacles that prevent participation, and the resources available to overcome these obstacles.

Based on our conceptual model, the following is a detailed description of the operationalization of independent and control variables.

Motivations

The motivation to offer a program depends on the needs of participants and the benefits realized by them. A rising burden of property taxes on fixed income senior homeowners has created a need for property-tax relief. While there are other property-tax relief programs available, the tax work-off program has the additional advantages for both the senior homeowners and the local communities. This program provides the senior homeowners with an opportunity to age in place and a cost effective and reliable source of volunteers to the communities.

The motivation to participate in the tax work-off program by a community is measured by the following five variables.

1. Proportion of Senior Homeowners in 1999. Proportion of senior homeowners in a community provides a measure of not only the need for the program, but also the potential political clout of senior homeowners in the community. A greater proportion of senior homeowners in a community can help senior homeowners to advocate for their interests more effectively and therefore persuade the local governments to offer the tax work-off program.

This variable is calculated as the number of senior homeowners as a percentage of the total number of available owner-occupied housing units in each community. Information to construct this variable is taken from the Census 2000 from the tables H16 and H4 of SF1. Table H16 categorizes the information of tenure status (owner occupied vs. renter occupied) with different age categories and table H4 presents the total number of owner-occupied housing units in each community. Due to pre-classified age categories in the Census tables, we define seniors as individuals with an age of 65 years and over.

2. Proportion of Senior Homeowners below Poverty in 1999. A larger percentage of senior homeowners below poverty level magnifies the need for relief from the property-tax burden.
Communities with higher proportions of senior homeowners below poverty are likely to have a stronger motivation to offer the tax work-off program.

This variable is calculated as the number of senior homeowners below the poverty level as a percentage of the total number of senior homeowners in a community. This variable is constructed based on the Census data. Table HCT24 of SF3 provides the information on poverty status with respect to various age categories and tenure statuses, and table H16 of SF1 provides information on the senior homeowners of each community. The census data limits the categorization of poverty to only two levels: “below poverty level” and “at or above the poverty level.” Therefore, we had to use the status of “below poverty level” rather than the preferred status of “at or below poverty level.”

3. Proportion of Housing-Financially Burdened Senior Homeowners in 1999. The Census Bureau defines financial burden as having to spend 30% or more of the household income on the housing expenses. Communities where a larger proportion of senior homeowners is financially burdened will see a greater need for tax relief, and therefore will be more motivated to participate in the tax work-off program.

This variable is calculated as the number of financially burdened senior homeowners as a percentage of the total number of senior homeowners in a community. Information for this variable is taken from Table H96 of SF3 of census data. Table H96 categorizes the age of householder and selected monthly owner costs as a percentage of household income in 1999 for specified owner-occupied housing units.

4. Proportion of Educational Expenditure in 2004. In communities that spend a higher proportion of their expenses on education, the senior homeowners receive smaller benefits for their tax dollars, as most senior homeowners do not have any children in the school system. Therefore, these communities are more likely to offer the property-tax relief program for the senior homeowners.

This variable is calculated as the educational expenses as a percentage of total expenditures of the community. The information for this variable is taken from the DOR. For this variable, we took the information provided in “School vs. Total General Fund Expenditures” of fiscal year 2004.

5. Proportion of Public Safety Expenditure in 2004. The relationship between public safety expenditures and participation in tax work-off programs is ambiguous. On the one hand, higher public safety expenditures mean fewer financial resources for other programs, but on the other hand, participation in the tax work-off program can reduce the mobility of senior homeowners, making the communities more stable and thus safer, and therefore may reduce the need for public safety expenditures.

This variable is calculated as the total public safety expenditure as a percentage of total expenditure. The public safety expenditure variable is calculated as the sum of police, fire, and other safety expenditures. The information for this variable is obtained from the “General Fund Expenditures” area of the Department of Revenue.
Obstacles

The obstacles faced by local governments in participating in the tax work-off program can be political or financial. Due to limited availability of secondary data, we limit ourselves to financial obstacles in this research. The financial obstacles are measured by the following three variables.

1. Proportion of Tax-Exempt Tax Base in 2004. Tax-exempt properties shrink the tax base of a community and do not generate tax revenues. Therefore, communities with a higher proportion of tax-exempt assessed values have fewer financial resources and therefore face greater obstacles in participating in any tax relief program, including the tax work-off program.

The proportion of tax-exempt base is calculated as the total assessed value of all tax-exempt status real estate as a percentage of the total assessed value of all the communities' properties. This variable is based on the information drawn from two different tables from the DOR. Information on tax-exempt properties is taken from the “Property values, taxable and tax-exempt” section, and information on the total assessed values of all types of properties (residential, open space, commercial, industrial, and personal) is taken from the “property-tax information” section.

2. Property-Tax Exemption Amount to Each Senior Homeowner in 2004. Participation in other tax relief programs poses an obstacle to the communities to offer the tax work-off program, because adding another program not only increases the administration burden; doing so may also reduce the financial support for other property-tax relief programs. Therefore, communities that are participating in other tax relief programs are less likely to offer the tax work-off program.

This variable is constructed as the financial tax relief received per senior homeowner (from various tax relief programs, excluding tax work-off program) in fiscal year 2004. The data for this variable are based on the information drawn from Census 2000 and Appendix 2 of State Auditor’s Report 2005. Table H16 of SF1 of Census 2000 provides the number of senior homeowners in the community in 1999, and the State Auditor’s Report provides the information on the total property-tax relief provided under various tax relief programs for fiscal year 2004.

3. Per Capita Expenditure per Thousand in 2004. Communities with higher per capita expenditures have fewer financial resources available for other programs, and therefore, these communities face greater obstacles to offering the tax work-off program.

This variable is the ratio of total expenditures per thousand to the population of the community. Information for this variable is based on the information from DOR and Census 2000. DOR provides the information on general fund expenditures of 2004 under the section of “municipal actual revenues and expenditures” and Table P1 of SF1 of Census 2000 provides the information of population of each community for 1999.

Resources

The resources available to the communities to participate in tax work-off programs will be measured by the following three variables.

1. Proportion of Commercial & Industrial Assessed Value to Total Taxable Assessed Value in 2004. Differential property-tax rates provide the communities the ability to distribute the tax
burden differently on different types of properties. Generally, in communities that employ differential rates, the tax rates for commercial and industrial properties tend to be higher compared to the tax rates for residential properties. Communities with a larger proportion of commercial and industrial tax base have the option to generate more revenues by imposing higher tax rates on commercial and industrial properties. These additional revenues can be used to offset the cost of offering the tax work-off program, and therefore, these communities are more likely to participate in this program.

This variable is constructed based on the information from DOR under the section of “assessed values by class.” We added the commercial and industrial assessed values and divided by the total taxable assessed values. Total taxable assessed value includes the total tax-exempt base of the community.

2. Town vs. City. We include this variable to capture the kind of local government in a community. In township government structures, residents have greater opportunity to participate in local governance compared to city government structures (Bloom & Ladd, 1982). Better local participation can help in increasing the awareness of the needs of the citizens. Therefore, the communities with township government structure are more likely to offer the tax work-off program.

Information for this variable is taken from the DOR. This variable is coded as a dummy variable with a value of 1 to town and 0 for city.

3. Proportion of State Aid in 2004. As stated above, to offer the tax work-off program, communities must use their own resources. However, state aid can free up some local government funds from other programs, which can then be used to participate in the tax work-off program. Therefore, communities that received a greater state aid are more likely to offer the tax work-off program.

The information for this variable is taken from the DOR from the “Municipal budgeted revenues” section. This variable is calculated as the state aid as a percentage of total revenue of the community.

Control Variables

We include the following four variables in our regression models to control for the variations in the communities’ characteristics.

1. Homeownership Rate in 1999. The tax work-off program is applicable only to homeowners. In communities that have a larger proportion of renters, the tax work-off program may not be a priority. On the other hand, communities that have a larger proportion of homeowners may find a greater justification for offering the tax work-off program.

This variable is calculated as the total number of owner-occupied housing units as the percentage of total number of housing units available in the community. Information for this variable is taken from the Census data. Table H1 and Table H3 of SF1 provides the information on total number of housing units in 1999 and the information on occupied and vacant housing units, respectively.
2. Community Population in 1999. The relationship of this variable to the participation in tax work-off program is uncertain. On the one hand, larger communities may benefit from economies of scale and may have more administrative capacity to participate in this program. On the other hand, these communities also have greater demands on these resources.

Information of this variable is taken from the Census. Table P1 of SF1 provides the population of the communities.

3. Proportion of Democratic Registered Voters to All Registered Voters in 2004. Generally, Democratic voters have greater tendency to support social programs than Republican voters. Therefore, we expect that predominantly Democratic communities are more likely to participate in the tax work-off.

This variable is calculated as the number of registered Democratic voters as a percentage of all registered voters of a community. Information for this variable is available from DOR under the section of “Socioeconomic” characteristics of the community. This section has information on the number of registered voters by party affiliation by communities.

4. Differential in Tax Rates of 2004. In general, for property-tax purposes, the different types of properties are divided into two groups. Residential properties and open spaces are taxed at the same rate, and commercial, industrial, and personal property are taxed at the same rate.

This variable is calculated as the residential tax rate as a percentage of the commercial tax rate. This variable is constructed based on the DOR data. DOR provided data on different tax rates for different classes of properties.

**Descriptive Statistics**

We present the descriptive statistics for the variables used in the logistic regression model in Table 3. In 2004, 39% of the communities in Massachusetts were participating in the tax work-off program. Among the 129 participating communities, on average, $500 per million dollars in property-tax revenue were awarded by each community to their participating senior homeowners. The total award amount ranged approximately between $20 and $3,000 per million in property-tax revenue per community.

In the state of Massachusetts, the average population of a community was approximately 40,000 people, with a minimum population of 86 people and a maximum of 589,000 people. On the other hand, the average population among participating communities was much lower. They had an average population of about 17,000 people and ranged between 1,000 and 83,000 people.

Approximately three fourths of the communities in the state as a whole had a town-based government structure, while 93% of the participating communities had a town-based government structure. Among the registered voters, Democrats ranged between 9% and 60% in the all communities, and between 16% and 56% among participating communities.

The overall homeownership rate in the state ranged between 8% and 96%, while in the participating communities, it ranged between 26% and 60%. In contrast, the senior homeownership rates in both the state and the participating communities were quite similar. For the state it ranged between 8% and 51%, while for participating communities, it ranged between 10% and 48%. The highest poverty rates of the senior homeowners of the state overall and the
participating communities were 40% and 36%, respectively, while the lowest poverty rate was 0% in both cases. With respect to financial burden of homeownership, data suggested that in some communities, no senior homeowners experienced a financial burden, while in some communities, all senior homeowners did. On the other hand, in the participating communities, the proportion of financially burdened senior homeowners ranged between 3% and 41%.

With respect to the property-tax base, the communities exhibited a great variation in their tax-exempt properties, types of properties, and the differences in the tax rates. The tax-exempt properties constituted approximately 1% to 42% of the total properties in all communities, compared to 2% to 25% in the participating communities only. While the commercial and industrial properties ranged from 0% to 73% for the entire state, for the participating communities, it ranged between 1% and 30%. Data showed that residential tax rate varied from 25% to 107% of the commercial tax rate within the state, but for the participating communities, it varied from about 33% to 100% of the commercial tax rate.

In the year 2004, in the communities of Massachusetts, the per capita expenditures, allotment for educational programs, public safety programs, and property-tax relief programs varied over a large range. The average per capita expenditure among the all communities was approximately $2,300, and ranged between $881 and $10,000. On the other hand, average per capita expenditure (about $2,500) was a little higher in the participating communities and ranged approximately between $1,200 and $6,000. Expenditures on educational programs accounted for as little as 14%, and as high as 79%, of the total expenditures of the communities in the state. But among the participating communities, the dispersion in education budget is smaller (21% to 72%). Similarly, the communities devoted anywhere from a low of 1% to a high of 24% of their expenditures to public safety programs, compared to 3% to 22% among participating communities. Amount spent on various tax relief programs (except tax work-off program) ranged from $0 to $360, with an average of $120 per senior homeowner among all communities. Among the participating communities, average property-tax relief amount ($140) was a little higher, although the range was the same.

**Multivariate Analysis**

According to our conceptual model, participation in tax work-off program is dependent on three major factors—motivation, obstacles, and resources. In addition, certain unique characteristics of the communities can also influence the participation in the program. Therefore, we estimated four logit models. In the first model, we examined the effect of motivational factors on the odds of participation. In the second model, we examined the effect of obstacles faced by the local governments. In the third model, we focused on the resources available to the local communities. Finally, a fully specified model was estimated with all the three factors, along with a set of control variables representing the unique characteristics of the communities, chosen to minimize confounding effects. Table 4 presents the results of logistic model. The pseudo R-squared statistic showed some variations among the four estimated models, (model 1 = 0.05, model 2 = 0.09, model 3 = 0.04, and model 4 = 0.12), with the full model having the best fit.

**Model 1: Motivational Factors**

Motivational factors were conceptualized with a set of five variables: proportion of senior homeowners, proportion of senior homeowners below poverty, proportion of senior homeowners...
financially burdened, proportion of educational expenses, and proportional of public safety expenditures.

Results of model 1 showed a significant relationship only between the proportion of senior homeowners below poverty and the odds of participation of a community in the tax work-off program. Contrary to our expectation, the results show a negative relationship between these two variables. In other words, an increase in the proportion of senior homeowners below poverty decreases the odds of participation in the tax work-off program. The expected odds of participation in the program decrease by 14% for each additional percent increase in the proportion of senior homeowners below poverty. Our reasoning for hypothesizing a positive relationship was based on the hypothesis that an increase in the proportion of senior homeowners below poverty level will increase the need for this program.

Model 2: Obstacles

Obstacles faced by the local governments were conceptualized with the help of three variables—proportion of tax-exempt tax base, property-tax exemptions given under other property-tax relief programs, and per capita expenditures. We hypothesized that with an increase in either of these variables will decrease the odds of the participation in the tax work-off program.

The results of model 2 showed that all three variables measuring the obstacle factor were significant predictors in the communities’ decision to participate in the tax work-off program. However, our hypothesis was confirmed with respect to the tax-exempt base only. The expected odds of participation decrease by approximately 9% for each additional percent increase in the value of tax-exempt base.

Our hypothesis with respect to property-tax exemption amount and per capita expenditure was not supported by the model results. Contrary to our expectation, results showed that any increase in these two measures increases the odds of participation. We found that the average odds of participation of a community increase by more than two times with each $100 increase in the amount given in other property-tax exemption programs. Similarly, an increment of $1,000 in per capita expenditures increases the likelihood of the participation by 46%.

Model 3: Resources

Resources to offer the tax work-off program were conceptualized with three variables—proportion of commercial & industrial tax base, proportion of state aid, and government structure (town vs. city). We hypothesized that communities with a greater proportion of commercial & industrial tax base, receiving more state aid, and having a town government structure will be more likely to participate in the tax work-off program.

Results of model 3 exhibited a significant association with the type of government structure of a community and the proportion of state aid received by the community. But the direction of the association is inconsistent with our hypothesis. Communities with town government structure are 59% less likely to participate in the program than similar communities with a city government structure. Similarly, the expected odds of participation decrease by 2% for each percentage increase in the proportion of state aid.
Model 4: Fully Specified with Control Variables

In the fully specified model, in addition to the variables for motivation, obstacles, and resources, we also included four control variables—communities’ homeownership rate, communities’ population, the proportion of registered Democratic voters, and the differential in residential tax rate with commercial tax rate. Among these control variables, we hypothesized that a higher homeownership rate and a higher proportion of Democratic registered voters will lead to a higher likelihood of participation, while a larger population and a bigger differential between the residential and commercial rates will lead to a decrease in the likelihood of the participation in the tax work-off program.

The results of the full model suggest that an increase in the proportion of senior homeowners below poverty by 1% decreases the likelihood of participation (OR = 0.92). On the other hand, an increase in the amount given in other property-tax relief programs by $100, or an increase in the per capita expenditure by $1000, increases the likelihood of participation in the tax work-off program (OR = 1.58 and 1.83, respectively) for otherwise similar communities.

Summary of the Results

Comparing the results of the three partial models with the full model, we found that several variables lost their significance, but the variables that remained significant did not change their direction of association. Under the motivation factor, the proportion of senior homeowners below poverty remained significant, but with a lower level of significance (10% compared to 0.01%). In the obstacle group, significance of the tax-exempt tax base was lost, but the other two variables (property-tax exemption given under other tax-relief programs, and per capita expenditure) remained significant. The variables representing the resource factor became insignificant in the full model. Overall, the results of these models supported some of the hypotheses, rejected some, and provided inconclusive support for the others.

Qualitative Analysis

There were two main goals of our qualitative analysis—first, to investigate the reasons for participation and non-participation among the communities of Massachusetts, and second, to get the administrative details of the program from the participating communities. To achieve these goals, we collected primary data by conducting in-depth interviews of local officials of a few selected communities in Massachusetts.

For the data collection, we used a collective case study approach. This approach is appropriate in evaluation of the program administration and public policy (Herriott & Firestone, 1983; Parlett, & Hamilton, 1976). In addition, this approach provides the opportunity to collect more data and help in triangulation of theory, based on the findings of the multiple cases (Stake, 2000).

The sampling frame for the study included all 351 communities in the state of Massachusetts. For the sample selection, we employed both non-probability and probability sampling approaches. For non-probability sampling, we used the purposive sampling approach, and for probability sampling, we used the stratified random sampling approach.

Under purposive sampling approach, our selection was based on selected unique characteristics of the community in the context of the tax work-off program. Under this approach, we chose three communities—Andover as having the biggest program both in the number of slots and
dollars granted, Boston as the newest participating community in the program, and Chelmsford as the first participating community in Massachusetts.

Under the stratified sampling approach, the main stratification criterion was the membership in the same Area Agency on Aging (AAA). Within each AAA, we selected both participating and non-participating communities. Selection based on the membership in same AAA allowed us to control for the confounding effects of administrative differences. In addition, we also used a score factor to match the socio-demographic characteristics of both participating and non-participating communities within each AAA. The score factor is a combination of the proportion of senior homeowners who are financially burdened for housing expenses, total population, and the expense ratio of the community. We decided to divide the population by 100 to minimize the influence of population in communities with very large populations. Expense ratio is a ratio of per capita expenditure and per capita revenue of fiscal year 2004.

Score factor = Proportion of financially burdened (housing) senior homeowners + (total population of the community/100) – expense ratio.

To limit the scope of the project, we decided to select no more than 20 communities and tried to get an equal number of participating and non-participating communities from the 23 AAAs of Massachusetts. We excluded fourteen AAAs from the final sample selection. The main reasons for exclusion were either change of status of non-participating communities, or inability to match comparable participating and non-participating communities, or non-response. The final sample of 20 communities was drawn from the remaining nine AAAs.

To start the data collection, we contacted the directors of Councils on Aging (COA) of the selected 20 communities to get contact information for the local officials responsible for the tax work-off program. After multiple attempts, we were unable to get the information for five of these communities. Therefore, our final sample consisted of 15 communities, among which eight were participating and seven were non-participating. Table 5 presents a list of communities with their AAAs and participation status. Based on the suggestions of directors of COAs, we mailed the introductory package to the suggested local officials of final 15 communities.

Table 6 shows the list of the titles of the local officials who participated in the case study interviews. Documents shown in Figure 7, Figure 8, and Figure 9 were enclosed in the mailing. A week after the mailing, we contacted these local officials by telephone to set up a time for telephone interviews. Among these 15 communities, while a majority of the communities chose to participate in telephone interviews (12), a few communities chose to respond by e-mails (2) and FAX (1). Among the participating communities, the average duration of the phone interviews was approximately 40 minutes each and ranged between 30 to 90 minutes. Among the non-participating communities, the average time was approximately 25 minutes each and ranged between 24 to 29 minutes.

Telephone interviews were conducted in the months of February and March of the year 2008. The questions for the survey instrument were derived from the conceptual model and the results of the quantitative analysis. The questionnaire consisted of both open and closed questions. For participating communities, the questions were asked about the motivations for participation, administration details, and obstacles in administering the program. For non-participating communities, questions were asked about the obstacles faced by local governments in offering
the program in their communities. The following analysis was based on 15 communities, among which eight were participating and seven were non-participating communities.

**Descriptions of Participating Communities**

The policies governing the tax work-off program for the communities are based on the communities’ unique individual demographics and needs. The differences in the communities’ demographics and their needs were reflected in the variations in the eligibility criteria, administration philosophy, motivation factors, obstacles, and benefits of the program. The following are the descriptive findings from our sample of eight participating communities.

**Participation History**

Participation in the program in Massachusetts began in the early 1990s. Chelmsford was the first town in Massachusetts to offer this program. The city most recently adopting the program is Boston, which started in 2007. Within our sample of participating communities, three communities started offering the program in 1990s, while five communities started offering the program in 2000s. Since the initial participation in the program, seven communities were able to continue offering the program, but due to financial constraints, one community discontinued the program participation for a few years before starting participation again.

**Eligibility Criteria for the Program Participants**

The main eligibility criteria for the applicants of this program were age, income, and ownership of the primary residence. The sample findings showed that all the communities required senior homeowners to own the property for which they wanted property-tax relief. Age eligibility was 60 years and over in all the communities, except one community that also allowed the younger and disabled residents. With respect to income eligibility criteria, there was a great variation among the communities. While three communities did not have any income restrictions, one community did not impose any income restriction for the first eligible participant but for the second applicant from the same household had income restrictions. Communities with income restrictions showed a range from as low as $30,000 to as high as $53,000, based on the individuals and household status.

**Administration of the Program**

In seven of the communities, the COAs were actively involved in the administration of the program. In four of these communities, the tax work-off program was administered solely by the COA. In the remaining three communities, administration of the program was shared between the COAs and multiple local agencies such as assessors’ office, tax office, human resource department, and treasury. In one community, the program was being administered only by the town clerk’s office.

Administration of any program requires both financial and human resources. The tax work-off program requires financial resources to pay the stipends for the participants of this program and to foot the administrative costs. The funds for the stipends were received through either general funds or from an overlay account. Five communities financed the participants’ stipends from an
Tax Work-Off Program

overlay account,\(^6\) while the other three communities financed them from general funds. In our interviews, we found that indirect costs for administration of this program ranged from nothing to $50,000 dollars annually. A couple of communities were unable to provide the information on these costs either due to the recency of their participation in the program or inability to calculate the costs.

With respect to human resources, administrative effort to run this program ranged from “not a lot” to “a lot.” While one community reported “not a lot” of effort required to administer the program, four communities reported that there is a lot of administrative burden involved in offering this program. Among these four communities, one community had to create a part-time position to administer this program, while in the other three communities, the work was distributed among the employees of various town departments. Two communities reported that, while initially it took some time to set up the program, only a minimal effort was required to maintain it. One community administered the program through the volunteers of this program; therefore, there was no extra burden on permanent employees.

The extent of the participation in the program was measured by the number of slots and the stipend per slot. Survey findings suggested that over the years of participation in the program the number of slots increased in some communities due to increased demand and increased awareness of the program. In the other communities, the number of slots remained the same either due to lack of additional demand, lack of financial resources for expansion, frailty of the applicants, or difficulty in finding additional appropriate positions in various town departments.

In our sample, we found that six communities offered fixed numbers of slots ranging from 10 to 55, and two communities chose to keep the number of slots open. Communities that fixed the number of slots experienced both a much higher as well as a lower demand for these slots. To accommodate the higher demand for the limited number of slots, different communities used different strategies. For example, one community chose to have a lottery system, another community chose to give preference to the new applicants, and yet another community chose to limit the applicants’ participation to alternate years.

Two communities in the sample chose to keep the number of slots open. One of these communities offered a fixed number of hours that were determined by the needs of different hiring departments of the community. These predetermined hours were distributed among all the qualified applicants. By this method, the community tried to accommodate a maximum number of applicants, even though only few participants were able to get the full hours for a slot. The other community chose to find an appropriate position for all of its applicants. For year 2008, this community received 190 applications, and the interviewee reported that the town will try its best to place all the applicants, but at some point it may become necessary to fix the number of slots.

The stipend amount awarded also varied among different communities. Some communities increased the stipend amount from $500 to $750 over time, while some chose to keep the same

\(^6\) Definition from municipal finance glossary: Overlay Reserve or Allowance for Abatements and Exemptions - An account established annually to fund anticipated property tax abatements, exemptions and uncollected taxes in that year. The overlay reserve need not be funded by the normal appropriation process, but rather is raised on the tax rate recapitulation sheet.
amount of $500. In addition to the stipend amount, the sample showed a variation in the number of hours available per person to work. The variations in the number of hours were mainly dependent on the different stipend amounts awarded in different communities and the changes in the state’s minimum wage. In all the communities, the number of hours is calculated as the ratio of stipend amount and the minimum wage rate. For example, if a community is awarding $500, then with the state’s minimum wage rate of $8 (for 2008), a participant is required to work for 62.5 hours.

In most of the communities, the initial placement of applicants was based on finding a match between the skills of the applicants and the needs of town departments. Once the participants were placed in town departments, the responsible departments did the initial training or orientation for the participants. These jobs included clerical work, reception work, writing for the newspaper, data entry, custodial services, nursing in schools, mentoring children in middle and high school, reading for children in elementary schools, recycling, gardening, painting, driving for “meals on wheels” program, driving for doctors’ appointments, building engineering, and carpentry.

**Motivations for Offering the Tax Work-Off Program**

In our interviews, we found that in all eight participating communities, the major motivating force came from local government, but in three of these communities, an additional push also came from the senior homeowners’ inquiries and their demand for the program. In four communities, COA took the initial step to start the formal process to offer the program. In other communities, in addition to the COA, other officials such as town manager, mayor, and town clerk also played significant roles in launching this program.

According to our interviews, the major motivating factors in offering this program were either to provide financial relief, retain the senior homeowners in their communities, provide some relief to town departments, or just follow the lead of other communities. All eight communities indicated a need to provide some tax relief to senior homeowners from the increasing property-tax burden. In addition to providing financial relief, one community followed other communities’ leads into participation in the program; another community wanted to fill temporary needs of different town departments during vacation time taken by their permanent employees.

**Obstacles in Administering the Tax Work-Off Program**

Among the eight sampled participating communities, the major obstacle was finding the appropriate employment opportunities. Other obstacles included financing for the program, competition from other tax relief programs, advertising for the program, and increased administrative burden.

Five communities reported on their difficulties in creating the positions and placing the applicants of the program. The main barriers in finding appropriate jobs were the frailty of the applicants, lack of transportation for the applicants to the job site, and lack of willingness of town departments to hire senior applicants. In one of the communities, the town departments did not value the skills of applicants— they perceived the senior applicants primarily as an administrative burden, and they were reluctant to accept them.

Only one community reported facing a direct financing burden during a few years of financial hardship. Another community reported that, while financing the program did not create any
direct financial problems, it created some resentment among the town departments due to a widespread misperception that budget cuts for their departments were caused by financing of the tax work-off program. One community reported that other tax relief programs, in particular, the “circuit breaker” program, reduced the demand for the tax work-off program. Another community had difficulty in getting the word out to the qualified senior homeowners to encourage participation. Two of the communities stated that even though the tax work-off program had increased the burden on the employees of the administering departments, a majority of these workers were committed to the success of the program and were not bothered by the increased workload.

**Benefits of Offering the Tax Work-Off Program**

Representatives of all eight communities interviewed for this research stated that the program was mutually beneficial to the communities and to the participants. Both the participants and the communities derived financial and social benefits from their participation in the program.

With respect to financial benefits, five communities agreed that there is at least $3 to $4 per hour cost differential between the state’s minimum wages paid to the participants for a task and the cost of hiring external help to do the same task. In addition to the cost differential, almost all communities suggested that the participants of the program tended to work many more hours than required by the program. Therefore, the real financial gains to the communities could be much larger than indicated by the cost differential factor only. The other three communities were unable to estimate the benefit amount either due to their recent participation in the program or due to the small size of the program.

The social benefits of this program were almost identical in all the surveyed communities for the participants and the communities. For the communities, the major theme was a more positive perception of the local governments by the participants. Participation helped the participants to gain a better understanding of local administration and to appreciate and respect their efforts. For participants in the program, the social benefits were significant. Volunteering in the program provided various opportunities for socialization and professional engagement.

In summary, based on a rudimentary cost-benefit analysis of the program, all communities expressed their strong interest in continuing the program, as long as they had financial and political support.

**Descriptions of Non-Participating Communities**

We interviewed seven non-participating communities. Due to lack of knowledge about the program in one community, we were unable to complete the interview. Therefore, most of the analysis is based on the six non-participating communities. The questions were designed to investigate the communities’ efforts to introduce the program, the major supporters and opponents, the major obstacles to starting the program, and the effect of the experiences of other participating communities.

While one community did not consider the program at all, six communities reported efforts ranging from a very brief discussion about the program to bringing the program to the town meeting for a vote. Five of these communities reported that there was a brief discussion about the program, but the program was never formally considered in the town meeting and therefore
never was voted on. In the sixth community, the program made it to the town meeting but was voted down due to financial constraints.

The main supporters for the program were the Council on Aging, the finance committee, and senior homeowners. The directors of COAs of two communities were the main advocates for this program. In one community, in addition to the COA’s efforts, senior homeowners also took an active interest in introducing the program. In one community, the finance committee took personal interest in starting the legal process, and the other remaining community was unable to recall the main advocates of the program.

Among the surveyed communities, the major obstacles to start the program were opposition from local government, lack of awareness of the program, and competition from other property-tax relief programs.

Four communities attributed the reluctance of local government to participate to administrative and/or financial burden(s). The administrative burdens included the hassle of dealing with the unions as well as adding extra work on already burdened town employees to administer the program. With respect to the financial burden, local governments stated that because the stipend money awarded through this program was not refunded from the state, financially struggling communities did not want to take on the extra responsibility associated with this program. In one community, in addition to the administrative and financial concerns, local government had an additional concern based upon a perceived mismatch between the demographics of the town and the features of the tax work-off program. This town has a large population who reside in mobile homes and therefore the eligibility criteria of primary residence of the tax work-off program would exclude the residents of the mobile homes. In addition, people who most needed the tax-relief were too frail to work in town departments.

Three communities stated that either lack of awareness and/or lack of initiative among senior homeowners was also responsible for non-participation. Two communities reported that the use of other property-tax relief programs, such as 41 C, “Community Fund,” and the tax deferral program diminished the demand for the tax work-off program.

The success stories of the property-tax work-off program influenced three communities. One community was in the process of bringing the program to its town meeting for a voting, one community suggested that in near future the town might start the program, and one community would like to start the process of seeking approval for the program.

Data collected from the 15 sampled communities were analyzed to discover any possible associations between pairs of variables. In the seven non-participating sampled communities, we did not find significant variations in their responses; therefore, we do not report any associations. In the eight participating communities, we did not find much variation in the responses in the motivation and benefits categories, but we did find some variations in the eligibility criteria and the administration styles. Based on these differences, we made a few conjectures and tested them against the data. The following are the few interesting bivariate relationships we found between the responses in the categories of eligibility criteria and administrative details.

All communities had very similar eligibility criteria except for income. Four communities imposed some income restrictions on the applicants, while the other four did not. We conjectured that communities with no income restrictions will have a higher demand for the program. By
eliminating the income restrictions, communities would be increasing the number of eligible applicants.

To investigate the relationship between no income restrictions and utilization, we created a new variable to measure the utilization of the program based on the number of slots and the number of applicants in a given community. Communities with a higher number of applicants than the available slots were classified as having high demand, and communities with fewer applicants than the available slots were classified as having low demand. As shown in the table below, the data suggested that a majority of communities with no income restrictions indeed had a higher demand for the program, while the communities with income restrictions showed no consistent pattern.

**Relationship between Income Restrictions and Demand**

<table>
<thead>
<tr>
<th>Community No./ Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income Restrictions</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Demand for the program</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
</tr>
</tbody>
</table>

Another set of variables that had a variation were the administrative effort and the size of the program. We conjectured that communities with a larger program will have a higher administrative burden. Administrative effort was measured by two factors—the number of administrating agencies and the financial costs of administering the program. The size of the program was measured by the number of slots. We classified communities with less than or equal to 60 slots as a small program, and with greater than 60 slots as a large program. Similarly, we classified communities with one administrating agency or with administration cost of less than or equal to $10,000 as having a small administrative effort, and communities with more than one administrating agency or with greater than $10,000 administrative costs as having a big administrative effort. The tables below show the results of our analysis. The data supported our hypothesis that size of the program had association with the administrative effort by both measures of administrative effort.

**Distribution of Number of Slots and Number of Administrative Agencies**

<table>
<thead>
<tr>
<th>Slots/No. of Agencies</th>
<th>1</th>
<th>More than 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than equal to 60 slots</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Greater than equal to 60 slots</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Variable number of slots</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

**Distribution of Number of Slots and Administrative Costs**

<table>
<thead>
<tr>
<th>Slots/Administrative Cost</th>
<th>Less than equal to $10,000</th>
<th>Greater than equal to $10,000</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than equal to 60 slots</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Greater than equal to 60 slots</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Variable number of slots</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
We also tried to determine if there was any association between the recency of participation in the program and administrative burden. We hypothesized that the communities will become more efficient at administering the program over time. However, we only found weak support for this hypothesis, as shown in the table below. Communities that introduced the program more recently had more agencies administering the program, but communities with a longer history with the program showed a variation in the administrative burden.

### Distribution of Program Age and Administrative Agencies

<table>
<thead>
<tr>
<th>Program Age/Administrative Agencies</th>
<th>1</th>
<th>Greater than 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 Year</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Between 1 and 5 years</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Greater than 5 Years</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

The preceding bivariate analysis showed some interesting associations among a few sets of variables. To gain a more comprehensive understanding and to consider the confounding effect of other variables, we pooled all the data from the 15 sampled communities to analyze the differences between the participating and non-participating communities.

Data collected from the interviews with both participating and non-participating communities suggested that the most apparent motivational factors for current participation or for future participation were either to:

- Provide the financial relief to the senior homeowners, or
- Retain the character of the community by keeping the senior homeowners, or
- Minimize the growth in educational expenses, or
- Provide some relief to the over-burdened town departments, or
- Odder some combinations of these factors.

While all of our sampled communities shared similar motivational factors, we found that these communities fell in three categories of participation status. Eight communities were successful in starting this program during the last two decades. A couple of communities were working on initiating the program. The remaining communities were either indifferent or uninterested in the program. These three groups of communities were differentiated based on the following major factors—awareness, initiative, resources, and benefits of the program. The following analysis describes the effect of these factors on the participation status of a community.

### Awareness

In our sampled communities, no communities were unaware of the program. But the level of awareness was quite different among the non-participating communities. Awareness ranged from “Yes, we heard about it” to “We would like to propose the program because many seniors are inquiring about the program, and my neighboring town is offering the program.” Data suggested that communities where both stakeholders, local government and senior homeowners, were aware of the program were found to be more effective in initiating the program. Communities that reported lack of awareness by either stakeholder were found to be more tentative in their decision to participate in the program.
The following excerpts from the interviews support the significance of awareness and its effect on the participation status.

"..other towns are doing it, it seems like a good idea to start the program in my town."

"...nobody is inquiring about the program. It may be that seniors are not aware of the program."

"If seniors demand for it, we will take to the town meeting at least and let the town decide on it."

"...success stories of other communities make it easy for us to sell the program in our town meeting."

"In my opinion this program is a success story. Experiences of participating communities will encourage us to initiate the program in my community."

"We read the article about the program in Chelmsford which encouraged us to start the program in my town."

**Initiative**

In our interviews, we found that in each participating community, there was at least one local official or group of officials who took a personal interest in initiating the process that resulted in starting the program. In non-participating communities, we found that some of these communities would be able to initiate the process of starting the program, if someone would take the initiative. The reasons for lack of initiatives were either overburdened workers or financial constraints.

Quotes taken from the interviews illustrate that communities in which a town official(s) took a strong initiative were able to start the program, while the communities without a dedicated champion were not.

"...town just needs a political savvy person who can push the agenda for this program."

"We have a very active senior center and the director is very interested in the program too. But knowing the financial condition of the town, I do not feel that any initiative will work."

"In my town we don’t have a senior center. I administer all the public welfare programs from my home. I work part-time for town. I want to put a proposal together for the program but I just cannot get to it."

"Mayor’s commitment to help seniors and seniors’ demand made this program happened in town."

"Town called a special meeting to start the program."

**Resources**

Political and financial resources were equally important in determining the participation status in our interviews. Data showed that communities that lacked either type of resource were unable to launch the program. In some communities, the local government wanted to offer the tax work-off program but the lack of financial resources hindered their efforts. In other communities, financial
resources were not the factor, but the lack of political support impeded their efforts to participate in the program. The major reported reasons for lack of political support were resistance of local officials against new ideas, perceived administrative burden of the program, and lack of value for the volunteers’ skill sets.

“... I have worked in this community for last twenty plus years and I know the real financial condition of my town. In this environment bringing this program to town meeting will not work.”

“If my town gets a windfall from state, we will start the program tomorrow.”

“The town considered the program for 30 seconds and immediately dismissed the idea. We are running almost a million dollar budget deficit. The town is cutting the budget for essential services. Local leadership would not object for the program, if they had the financial resources to administer the program.”

“...It can bring extra burden on town employees.

“... town departments don’t like to hire the seniors. They think seniors are good enough only for envelope filling and do not value the skills of the seniors.

“In my conversations with the members of other participating communities, I never heard any difficulties in administering the program.”

“In my community, mayor proposed the program and we will continue it till we have his support.”

“I (director) am very committed to the program. I don’t mind working extra hours. My department is also very interested in seeing this program succeed. It is not a big deal if we have to work a few extra hours to administer the program.”

Benefits

Communities that valued both the financial and social benefits of the program, not only for the senior homeowners but for the local governments as well, were more likely to participate in the program compared to the communities that valued only the financial benefits.

The following table categorizes the responses of sampled communities for the social and financial benefits of the program. All the participating communities, and some non-participating communities, agreed that the program provides significant social benefits. At the same time, some non-participating communities were not aware of the social benefits of the program. With respect to financial benefits, the sampled communities were divided in their opinions.

<table>
<thead>
<tr>
<th>Perceived Benefits of Tax Work-Off Program</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social Benefits</strong></td>
</tr>
<tr>
<td>Participating</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Don’t Know</td>
</tr>
</tbody>
</table>
The following excerpts from the interviews of both participating and non-participating communities describe how the realization of the social and financial benefits affects the participation status of the communities.

"...hearing stories of other communities, my impression is that program would be beneficial to us and seniors of my town."

"We may use the program. Some of the offices are short-handed and they can use the help."

"...program provides opportunities for socialization and which makes seniors feel that they are a part of a group. It is a great way to [encourage] volunteerism. This program is helping seniors to realize the government’s effort for them. Seniors are becoming more involved in town’s activities. I think it is win win-win situation."

"For seniors, the financial incentive is an initial hook but once they start to work, they work way beyond their regular hours; 85% of the participants keep working after they complete their required hours. It is easy to calculate the tangible benefits of the program, but it is hard for me to explain the intangible value of seniors to the town. Social connections are built either through work or having kids in the school. In old age, people lose these venues to make new connections, and this program provides the opportunity to make new connections. Seniors feel appreciated and useful. But working in the program provides much more to them and the town—self-value, appreciation for local government, and developing intergenerational relationships."

"...we call them ‘townies,’ and we would like to keep them in town as long as we can. These seniors are born in town and would like to retire in town. Seniors are grateful for these work opportunities and town departments are grateful to the seniors. These people are dedicated and love to work beyond their hours. Town departments rely on them to cover the vacation time of their employees. The town saves a lot of money by employing these people instead of hiring temp workers."

"Seniors work in this program to earn the award. They think getting relief in other ways is charity. Participants are not picky about what to do. They are eager to work and happy to interact with other people. It allows them to get out of the bed and keep them busy. At the same time, town departments get help in tasks. It is win-win-win situation all the way around."

"Seniors have a lot of wisdom. In their youth, they helped town to grow and therefore they should be able to stay in their communities. They are very active in voting and volunteering in the community. For many of them, this gives a reason to get up. This enhances their quality of life. This makes them as a part of the community. Town departments get very loyal and committed volunteers. I will call it win-win-win situation all around."

"In my opinion, it is two full programs in one. On the one hand volunteers in this program help the town in any way they can. These people are very talented, reliable and have high ethical standard for their work. Many town departments request for the same volunteers to fill the positions. For seniors, this program provides them some financial relief, independence, and opportunities to be productive. It is a win-win situation."
Summary

From the analysis of interview data, four major themes emerged to differentiate between the participating and non-participating communities—awareness of the program, initiative by the local government and senior homeowners, financial and political resources, and the perceived social and financial benefits of the program. The awareness of the program among the senior homeowners and local governments provided the impetus to start the program; conversely, lack of awareness prevented the community from participating. We also found that personal initiative taken by local official(s) and demand from senior homeowners were critical in launching and continuing the program. Communities that lacked either financial or political resources to support the program were unable to participate in the program. Among non-participating communities, the realization of social and financial benefits of the tax work-off program motivated them to consider participation.

DISCUSSION

Unlike other property-tax relief programs, the property-tax work-off program is unique in that it provides financial and social benefits to both senior homeowners and local communities. While the financial benefit under this program may be enough for some senior homeowners to maintain their houses in their communities, the social benefits are much more significant. This program provides various volunteering opportunities to the senior homeowners, which allow them to remain productive and socially engaged in their retirement years, and to age in place with dignity and pride. The financial benefits for local governments are realized both in direct and indirect forms. Direct financial benefits are realized through a pool of skilled, loyal, and dedicated group of volunteers, who work for minimum wages. These benefits are often even greater since the volunteers work well beyond their paid hours. Indirect financial benefits are realized by lowering the costs of two major budget items—education and public safety. The single largest budget item in most communities is K-12 education, and since the senior homeowners do not have school-age children, they help reduce the strain on the education system. Further, most of the senior homeowners are long-time residents of their communities and have strong attachments. They provide stability in the neighborhood structure, which helps reduce the crime rates, and consequently, lowers the public safety expenses (DiPasquale, & Glaeser, 1999; Rossi, & Weber, 1996; Sampson & Gorves, 1989; Shaw & McKay, 1942). In spite of the fact that this program has both valuable tangible and intangible benefits for both stakeholders, many communities still do not participate in the tax work-off program.

In this study, we wanted to investigate the factors that influence the local governments' decision to offer the tax work-off program in their communities, and to use these results to propose policy options to increase the adoption of the tax work-off program by local governments. We used both quantitative and qualitative analysis techniques for our research. Findings of both quantitative and qualitative analyses provided a deeper understanding of the predictors of the participation than either approach alone.

Results of the quantitative analysis showed a significant relationship of a community's decision to participate in this program with three factors—proportion of senior homeowners below poverty, per capita expenditures, and amount given in all other property-tax relief programs excluding the tax work-off program. However, the direction of the association for all three significant variables was opposite to the direction predicted by our hypotheses.
With respect to the proportion of senior homeowners below poverty, we hypothesized that a larger proportion of this population would create a higher demand for the program, and therefore the local governments would have a higher motivation to offer the program. But our results suggested that communities with a higher proportion of senior homeowners below poverty were less likely to participate in the program. To explain this association, we speculate that the senior homeowners below poverty may be eligible for other state and federally funded programs, and therefore the local governments may not see the need for this locally funded program. The communities with a larger proportion of senior homeowners below poverty are also likely to have lower median home prices, and therefore may be less able to afford to participate in the program.

In reference to per capita expenditure, our hypothesis was that communities with higher per capita expenditures were less likely to participate in the program. The rationale behind this association was that communities with high per capita expenditures have less freedom to allocate the financial resources for the tax work-off program. However, our analysis showed that communities with a higher per capita expenditure were more likely to participate in the program. To explain the discrepancy, we speculate that either these communities have higher property-tax burdens, and therefore a greater need for the program, or have greater propensities to spend for property-tax relief programs in general.

Similarly, for the amount given in all other property-tax relief program excluding the tax work-off program, we hypothesized that communities providing financial benefits in other programs may have fewer financial resources to participate in another program. Our results showed that communities that spent a higher amount in other property-tax relief programs were more likely to participate in the tax work-off program. To explain the discrepancy between our hypothesis and the results, our best conjecture is that these communities may have a greater demand for property-tax relief, and therefore offer more programs to provide such relief. It may also be possible that the communities that are more amenable to providing property-tax relief to older residents also tend to adopt more means of providing relief.

The results of our quantitative analysis are only suggestive due to a few limitations with the data. For this analysis, we used secondary data drawn from various state and federal agencies. First and the most common limitation is the lack of availability of all the relevant measures and the necessity of using proxy variables, which may not accurately capture the desired effects. Second, data for this project were drawn from various state and federal agencies, which limited us to use only the variables that had common definitions and only the categories available that were predefined in the data sources. Third, in our analysis, we had to use data from different time frames, which may affect the reliability of our results. This was necessitated by the fact that the data on our dependent variable were available only for 2004, while the Census data is only available every decade, and local government financial data is available annually. To minimize the effects of this temporal discrepancy, we used the data from each source that was closest in time to our dependent variable.

To overcome these limitations and to augment the results of our research, we collected primary data by interviewing the local officials of eight participating and seven non-participating communities, and conducted a qualitative analysis. This primary data allowed us to incorporate the perspectives of local government officials who were directly involved in the decision to participate in the program.
Results of our qualitative analysis showed a much stronger support for our conceptual model. Data from both the participating and non-participating communities reported very similar factors for motivations, obstacles, and resources. The most significant motivating reason was to provide some financial relief to the senior homeowners and the local governments. The most commonly reported obstacle was lack of awareness of the benefits of the program. The most frequently mentioned resources were personal initiative by a dedicated local official, demand from senior homeowners, and availability of financial resources. While all communities in our sample were concerned about the high property-tax burden on the senior homeowners and wanted to keep them in the community, participation in the tax work-off program was influenced by their unique combination of obstacles and resources.

Results suggested that communities where the local government officials were aware of the benefits of the program had more interest in participation. Local governments in participating communities were convinced of both financial and social benefits of the program, but non-participating communities were not. For example, one interviewee in a non-participating community perceived this program only as an administrative and financial burden, and did not realize the social benefits. During the interview, when the social benefits were pointed out, the interviewee became interested in considering participation in the program.

With respect to initiative, results suggested that communities where a local government official championed the program had a greater success in participating. The demand from senior homeowners also positively influenced the decision to participate.

Lack of financial resources had a negative impact on the participation in the program in both participating and non-participating communities. For example, in our sampled communities, we found that one participating community had to interrupt its participation in the program for a few years due to lack of financial resources. The non-participating communities that lacked financial resources were not even considering starting the process of participation.

The results of both the quantitative and qualitative analyses agree that the financial well being of a community is an important determinant in a community's decision to participate in the tax work-off program. In addition, the qualitative analysis also suggests the importance of personal initiative taken by a local official, awareness of the benefits, and demand from senior homeowners.

Based on these findings, we infer that the non-participating communities are concerned about the perceived administrative burden and financial costs of the program and think that the program is not cost-effective for them. On the other had, our interviews with representatives of the participating communities indicated that the benefits of the program far outweigh the costs of administration and stipends.

To assuage their apprehension and to encourage their participation, we believe that the most important measure that should be taken is increasing the awareness of the administrative responsibilities and the benefits of the program. A better understanding of how participating communities are successful in administering the program with minimum administrative burden will help the non-participating communities to learn how to set up and efficiently administer the program. Knowledge of the experiences of the participating communities will also help them understand the financial and social benefits compared to the low costs of the stipends paid under the program. Once the decision makers are convinced of the advantages of the program,
allocating the small amount of funds needed to cover expenses of the program in the town budget could be easily justified.

On an encouraging note, we found that the number of participating communities increased between 2004 and 2008. During the selection process of our case studies, we found that many communities that were non-participating in 2004 are now either participating in the program, plan to launch the program in year 2008, or have initiated the process to start participation in the near future. Our speculation is that the increase in participation is in part due to an increased awareness of the program through informal channels, both in the local governments and the senior homeowners. Unfortunately, we also found that many communities that will benefit from the program are not aware of the low costs and high returns from the tax work-off program.

In addition to the informal communication about the program, we also believe that both the anecdotal evidence of benefits from the participating communities and the findings of our study can together be more effective in overcoming the obstacles to the adoption of the program. One of the most effective means of disseminating this information is to utilize web-based technologies that are already being used by many of the communities. The web sites of the participating communities could be used as a medium for describing the impact of the program and its administrative details within that community. This channel can be a very effective resource to help the non-participating communities to learn about the program and its administrative details.

Another approach to a broader dissemination of the key findings of this research is collaboration with local and national advocacy agencies. We believe that publicizing the information through various advocacy agencies can reach a much larger audience and build political momentum in support of this program.

The Massachusetts Council on Aging (M COA) and the Massachusetts Municipal Association (M MA) are the two important local agencies that deal with the issues related to the senior population and local governments, respectively. Both of these agencies have well established websites that provide a vast amount of information to state residents. Since these are state agencies, advocacy agencies from other states are more likely to visit these sites than individual community sites. These websites can therefore be used to increase the awareness of the benefits of this program beyond the geographical boundaries of the state.

At the national level, advocacy agencies such as American Association of Retired People (AARP) and the National Council on Aging (NCOA) are the two most significant advocacy agencies that are successful in bringing positive changes in the seniors’ lives. These agencies have both financial and political resources. The cooperation from these agencies can help to promote the program further in communities where local leadership is apprehensive in taking this challenge.

In addition, these agencies can also serve to increase awareness about the program and build support for legislative changes that can further enhance the appeal of the program to the senior homeowners and communities. For example, presently, the stipend earned from this program is considered as income by the federal government. Findings of our survey suggest that by participating in the program, many low-income senior homeowners will lose their eligibility for other welfare programs due to the extra income, and many will have to file federal income tax returns due to the extra income from the stipend under this program. This taxation policy also
adds to the paperwork burden on the participating communities. It therefore discourages both the senior homeowners and the communities from participating in the program. A legislative change to the federal income tax code that would stop treating the stipend under this program as income will therefore make this program more attractive to both the communities and senior homeowners. Given its grass-roots origins, the tax work-off program needs strong political support to make any legislative changes both in participating or non-participating states. The advocacy agencies can help to build support for such legislation.

Most public welfare programs provide benefits to some of the stakeholders at the expense of others, creating a conflict between the winners and losers. The tax work-off program is unique in that it is beneficial not only to all the direct stakeholders, but also to the society at large. We hope that in the future, more studies with better data will generate greater support for the program and help in developing more efficient administrative processes for the program. An approach combining scientific research findings with the efforts of the various advocacy agencies can have a much greater success in promoting the tax work-off program in Massachusetts and beyond.
Appendix

Figure 1. Proportion of Different Revenue Sources with Total Revenue in 2003-2004

Source: State and Local Government Finances by Level of Government and by State: 2003-04
Figure 2. Trends in Federal and State Aid as a % of Massachusetts’ Local Government Total Revenue

Figure 3. Trend of Split Taxation in Communities in Massachusetts

Source: Massachusetts Department of Revenue, Division of Local Services, Municipal Databank/Local Aid Section-Fiscal Years 1992-2006.
Figure 4. Ratio of Property Taxes to the Total Revenue of Communities in Massachusetts

Figure 5. Expense Categories of Local Communities in Massachusetts in 2003-2004

- Education, 40%
- Miscellaneous, 12%
- Utility Expenditure, 13%
- Governmental Administration, 5%
- Environment & Housing, 9%
- Public Safety, 9%
- Social Services & Income Maintenance, 3%
- Transportation, 2%
- Insurance Trust Expenditure, 5%

Source: State and Local Government Finances by Level of Government and by State: 2003-04
Figure 6. Aging in Place: A Unified Conceptual Model

Aging in Place

Place

Social Income
- Social Capital
- Economic Capital

Maslow’s Hierarchy of Needs

Quality of Life

Utility
Figure 7. Introductory Letters to the Selected Communities

Dear,

My name is Archana Prakash. I am a doctoral student in Gerontology department at the University of Massachusetts, Boston. I am working on my doctoral dissertation project under the guidance of Dr. Francis G. Caro. The focus of my dissertation is to understand the reasons for participation and non-participation in the “Tax Work-Off” program by a community in Massachusetts.

To collect information for my research project, I have selected ten participating and ten non-participating communities by pairing them based on population size, Area Agency on Aging, and proportion of financially burdened senior homeowners.

“Name of the community” is one of the selected “participating/ or non-participating” communities. As per our telephone conversation, I am sending you an information package to set up a convenient time to conduct the interview. To minimize the time for the interview, I am enclosing the survey instrument to give you an idea of the topics to be covered in the interview. I realize that you have many compelling demands on your time, but I hope that you will make some time to participate in the interview.

Once again, thank you for your participation in my research project. Please let me know if you have any questions about this interview. You can contact me at 617-527-9348 or 617-395-8391.

Sincerely,

Archana Prakash,

cc: Dr. Francis G. Caro, Advisor
Figure 8. Survey Instrument for Participating Communities

- Name of the town:
- Designation of the person for Interview
  
  Phone No:
  
  Email Address:

1. In which year did this town start offering the property-tax work-off program?
2. Did town ever stop offering this program?
3. What were the main motivation factors to start offering the tax work-off program?
4. Who is responsible for administering the tax work-off program in this community?
   a. Towns’ Human Resource Department
   b. Council on Aging Agency
   c. Others, please specify
5. How is this program funded?
6. Has there been controversy about the cost of the program to the municipality?
7. Currently, how many slots are being offered?
8. Over the life of the program, did the number of slots:
   a. Increase
   b. Decrease
   c. Remain same
9. What obstacles are there in increasing the number of slots?
10. What are the eligibility criteria to apply for the tax work-off program?
    a. Age
    b. Income
       i. Individual
       ii. Household
    c. Marital Status
    d. Any preference for new applicants
    e. Other (please specify)
11. What kinds of tasks are performed by the participants under this program?
12. Does town provide any training for the given tasks or are tasks matched with the applicants’ qualifications?
13. How many hours are the participants required to work?
14. What is the maximum amount of stipend available to the participants?
15. How much effort is required for the municipality in administering the program?
16. Is administration a significant burden on any municipal personnel?
17. What is the approximate annual financial cost of administering this program (excluding the stipend paid to the participants)?

18. What is the approximate cost (dollar value) of the tasks performed under this program in the open labor market?

19. Weighing both the costs and the benefits of this program, will you continue to offer this program?

20. What were/are the obstacles in offering this program?
   a. Administrative burden
   b. Financial constraints
   c. Lack of demand
   d. No perceived benefits
   e. Insurance liabilities
   f. Union conflicts
   g. Others (please specify)

21. In your opinion, do you think any change in tax policies (at state or federal level) will increase the appeal for the program?
Figure 9. Survey Instrument for Non-Participating Communities

- Name of the town:
- Designation of the person for Interview
  - Phone No:
  - Email Address:

1. Did town ever consider participating in the tax work-off program?
2. If yes, who advocated for participation? Who opposed?
3. What are the main reasons for not participating in the property-tax work-off program?
4. Do experiences of other participating communities encourage or discourage participation in this program in your town?
5. In your opinion, do you think any change in tax policies (at state or federal level) will increase the appeal for the program in your town?
### Table 1. Maslow’s Hierarchy of Needs Model in the Context of AIP for Senior Homeowners

<table>
<thead>
<tr>
<th>MHN Level</th>
<th>Needs</th>
<th>Satisfaction of needs by AIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Biological &amp; Physiological</td>
<td>• Primary residences</td>
</tr>
<tr>
<td></td>
<td>• Shelter</td>
<td></td>
</tr>
<tr>
<td>Level 2</td>
<td>Safety</td>
<td>• Familiarity with neighborhoods and with their houses</td>
</tr>
<tr>
<td></td>
<td>• Security</td>
<td>• Associations with the neighbors</td>
</tr>
<tr>
<td></td>
<td>• Stability</td>
<td>• Routine habits</td>
</tr>
<tr>
<td>Level 3</td>
<td>Belongingness and Love</td>
<td>• Social support from neighbors, and communities.</td>
</tr>
<tr>
<td></td>
<td>• Family</td>
<td>• Affection and support from family members</td>
</tr>
<tr>
<td></td>
<td>• Affection</td>
<td>• Volunteering or other work group arrangements</td>
</tr>
<tr>
<td></td>
<td>• Relationship</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Work group</td>
<td></td>
</tr>
<tr>
<td>Level 4</td>
<td>Esteem</td>
<td>• Self-efficacy of independent living</td>
</tr>
<tr>
<td></td>
<td>• Achievement</td>
<td>• Status related with homeownership</td>
</tr>
<tr>
<td></td>
<td>• Status</td>
<td>• Ability to bequeath assets to children</td>
</tr>
<tr>
<td></td>
<td>• Responsibility</td>
<td>• Reputation earned in the communities</td>
</tr>
<tr>
<td></td>
<td>• Reputation</td>
<td>• Volunteer work in the community</td>
</tr>
<tr>
<td>Level 5</td>
<td>Self-Actualization</td>
<td>• Continuation of activities which are fulfilling individual goals</td>
</tr>
<tr>
<td></td>
<td>• Personal growth and fulfillment</td>
<td></td>
</tr>
</tbody>
</table>
### Table 2. Data Dictionary for Regression Models

<table>
<thead>
<tr>
<th>Variables</th>
<th>Definition</th>
<th>Coding Algorithm</th>
<th>Expected Sign</th>
<th>Sources For Data</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variable</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation Status in Tax Work-Off Program (For Logistic Regression Models)</td>
<td></td>
<td>1=Y es 0=N o</td>
<td></td>
<td>Division of Local Mandates; State Auditor’s Report 2005</td>
</tr>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Motivation Factors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of Senior Homeowners in 1999</td>
<td>Number of senior homeowners as a percentage of the total number of available owner-occupied housing units in each community</td>
<td>Continuous</td>
<td>+</td>
<td>Census 2000; SF1: Tables -H16 &amp; H4</td>
</tr>
<tr>
<td>Proportion of Senior Homeowners Below Poverty in 1999</td>
<td>Number of senior homeowners below the poverty level as a percentage of the total number of senior homeowners in a community</td>
<td>Continuous</td>
<td>+</td>
<td>Census 2000; SF3: Table -HCT24 SF1: Table - H16</td>
</tr>
<tr>
<td>Proportion of Housing-Financially Burdened Senior Homeowners in 1999</td>
<td>Number of financially burdened senior homeowners as a percentage of the total number of senior homeowners in a community</td>
<td>Continuous</td>
<td>+</td>
<td>Census 2000; SF3: Table -H96</td>
</tr>
<tr>
<td>Proportion of Educational Expenditure of 2004</td>
<td>Educational expenses as a percentage of total expenditures of the community</td>
<td>Continuous</td>
<td>?</td>
<td>DOR 2004</td>
</tr>
<tr>
<td>Proportion of Public Safety Expenditure per thousand of 2004</td>
<td>Total public safety expenditure as a percentage of total expenditures of the community</td>
<td>Continuous</td>
<td>?</td>
<td>DOR 2004</td>
</tr>
<tr>
<td><strong>Obstacles</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of Tax-Exempt Tax Base in 2004</td>
<td>Total assessed value of all tax-exempt status real estate as a percentage of the total assessed value of all the communities’ properties</td>
<td>Continuous</td>
<td>-</td>
<td>DOR 2004</td>
</tr>
<tr>
<td>Property Tax Exemption Amount to Each Senior Homeowner in 2004</td>
<td>Financial tax-relief received per senior homeowner (from various tax relief programs, excluding tax work-off program) in fiscal year 2004</td>
<td>Continuous</td>
<td>-</td>
<td>State Auditor’s Report 2005: Census 2000; SF1: Table - H16</td>
</tr>
<tr>
<td>Per Capita Expenditure (‘000s) of 2004</td>
<td>Ratio of total expenditures to the population of the community</td>
<td>Continuous</td>
<td>-</td>
<td>DOR 2004; Census 2000; SF1: Table - P1</td>
</tr>
<tr>
<td>Variables</td>
<td>Definition</td>
<td>Coding Algorithm</td>
<td>Expected Sign</td>
<td>Sources For Data</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------</td>
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<tr>
<td><strong>Resources</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of Commercial &amp; Industrial Assessed Value to Total Taxable Assessed Value in 2004</td>
<td>Sum of commercial and industrial assessed values, which is divided by the total taxable assessed values</td>
<td>Continuous</td>
<td>+</td>
<td>DOR 2004</td>
</tr>
<tr>
<td>Town vs. city</td>
<td>Town or city</td>
<td>1=Town; 0=City</td>
<td>+</td>
<td>DOR 2004</td>
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<tr>
<td>Proportion of State Aid in 2004</td>
<td>State aid as a percentage of total revenue of the community</td>
<td>Continuous</td>
<td>+</td>
<td>DOR 2004</td>
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<tr>
<td><strong>Control Variables</strong></td>
<td></td>
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<tr>
<td>Homeownership Rate in 1999</td>
<td>Total number of owner-occupied housing units as the percentage of total number of housing units available in the community</td>
<td>Continuous</td>
<td>+</td>
<td>Census 2000; SF1:Tables - H1 &amp; H3</td>
</tr>
<tr>
<td>Community Population in 1999</td>
<td>Community Population</td>
<td>Continuous</td>
<td>?</td>
<td>Census 2000; SF1: Table - P1</td>
</tr>
<tr>
<td>Proportion of Democratic Registered Voters to All Registered Voters in 2004</td>
<td>Number of registered Democratic voters as a percentage of all registered voters of a community</td>
<td>Continuous</td>
<td>+</td>
<td>DOR 2004</td>
</tr>
<tr>
<td>Differential in Tax Rates of 2004</td>
<td>Residential tax rate as a percentage of the commercial tax rate</td>
<td>Continuous</td>
<td>-</td>
<td>DOR 2004</td>
</tr>
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Table 3. Descriptive Statistics of the Variables for Logistic Regression: Weighted Data (N = 351)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean (S. D.)</th>
<th>Range</th>
<th>Median</th>
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</thead>
<tbody>
<tr>
<td><strong>Dependent Variable</strong></td>
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<td></td>
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<tr>
<td>Participation Status in Tax Work-Off Program</td>
<td>0.39 (0.49)</td>
<td>0-1</td>
<td>0.00</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>1=Yes 0=No</td>
</tr>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Motivation Factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of Senior Homeowners in 1999</td>
<td>24.09 (6.77)</td>
<td>8.13-51.39</td>
<td>24.23</td>
</tr>
<tr>
<td>Proportion of Senior Homeowners below Poverty in 1999</td>
<td>5.82 (3.27)</td>
<td>0-40</td>
<td>5.45</td>
</tr>
<tr>
<td>Proportion of Housing Financially Burdened Senior Homeowners in 1999</td>
<td>25.29 (6.30)</td>
<td>0-100</td>
<td>24.94</td>
</tr>
<tr>
<td>Proportion of Educational Expenditure of 2004</td>
<td>50.11 (8.92)</td>
<td>13.73-79.02</td>
<td>50.29</td>
</tr>
<tr>
<td>Proportion of Public Safety Expenditure of 2004</td>
<td>12.31 (3.85)</td>
<td>1.33-23.52</td>
<td>12.23</td>
</tr>
<tr>
<td><strong>Obstacles</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of Tax-Exempt Tax Base in 2004</td>
<td>10.17 (5.79)</td>
<td>1.33-42.21</td>
<td>8.49</td>
</tr>
<tr>
<td>Property Tax Exemption Amount (‘00s) (From various tax relief programs for senior homeowners, excluding tax work-off) to Each Senior Homeowner in 2004</td>
<td>1.21 (0.59)</td>
<td>0-3.60</td>
<td>1.13</td>
</tr>
<tr>
<td>Per Capita Expenditure (‘000s) in 2004</td>
<td>2.29 (0.68)</td>
<td>0.88-10.13</td>
<td>2.22</td>
</tr>
<tr>
<td><strong>Resources</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of Commercial &amp; Industrial Assessed Value to Total Taxable Assessed Value in 2004</td>
<td>11.63 (7.06)</td>
<td>0.40-72.81</td>
<td>10.75</td>
</tr>
<tr>
<td>Town vs. city</td>
<td>0.75 (0.43)</td>
<td>0-1</td>
<td>1.00</td>
</tr>
<tr>
<td>Proportion of State Aid in 2004</td>
<td>20.98 (15.01)</td>
<td>0.11-66.12</td>
<td>16.54</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homeownership Rate in 1999</td>
<td>65.57 (17.12)</td>
<td>7.91-95.67</td>
<td>69.77</td>
</tr>
<tr>
<td>Community Population in 1999 (‘000s)</td>
<td>39.84 (83.76)</td>
<td>0.09-589.14</td>
<td>18.22</td>
</tr>
<tr>
<td>Proportion of Democratic Registered Voters to All Registered Voters in 2004</td>
<td>33.09 (10.35)</td>
<td>8.82-59.64</td>
<td>31.11</td>
</tr>
<tr>
<td>Differential in Tax Rates of 2004</td>
<td>78.89 (24.96)</td>
<td>25-107</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 4. Logistic Model Empirical Results: Weighted Data (N=351)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Participation in Tax Work-Off Program</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1 Motivation</td>
</tr>
<tr>
<td>Proportion of Senior Homeowners in 1999</td>
<td>0.973</td>
</tr>
<tr>
<td>Proportion of Senior Homeowners Below Poverty in 1999</td>
<td>0.86***</td>
</tr>
<tr>
<td>Proportion of Housing Financially Burdened Senior Homeowners in 1999</td>
<td>1.03</td>
</tr>
<tr>
<td>Proportion of Educational Expenditure of 2004</td>
<td>1.01</td>
</tr>
<tr>
<td>Proportion of Public Safety Expenditure of 2004</td>
<td>0.98</td>
</tr>
<tr>
<td>Proportion of Tax-Exempt Tax Base in 2004</td>
<td>0.91***</td>
</tr>
<tr>
<td>Property Tax Exemption Amount ('00s)(From various tax relief programs for senior homeowners, excluding tax work-off) to Each Senior Homeowner in 2004</td>
<td>2.09***</td>
</tr>
<tr>
<td>Per Capita Expenditure ('00s) of 2004</td>
<td>1.46**</td>
</tr>
<tr>
<td>Proportion of Commercial &amp; Industrial Assessed Value to Total Taxable Assessed Value in 2004</td>
<td>1.003</td>
</tr>
<tr>
<td>Town vs. City</td>
<td>0.41**</td>
</tr>
<tr>
<td>Proportion of State Aid in 2004</td>
<td>0.98*</td>
</tr>
<tr>
<td>Homeownership Rate in 1999</td>
<td></td>
</tr>
<tr>
<td>Community Population in 1999 ('000s)</td>
<td></td>
</tr>
<tr>
<td>Proportion of Democratic Registered Voters in 2004</td>
<td></td>
</tr>
<tr>
<td>Differential in Tax Rates of 2004</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.20</td>
</tr>
<tr>
<td>( \cdot 2 )</td>
<td>23.78</td>
</tr>
<tr>
<td>df</td>
<td>5</td>
</tr>
<tr>
<td>Psuedo R Square</td>
<td>0.05</td>
</tr>
</tbody>
</table>

*p< 0.1, **p< 0.05, ***p< 0.001.
Table 5. List of Communities Included in the Case Study with their AAA and Participation Status in 2008

<table>
<thead>
<tr>
<th>Name of the Community</th>
<th>Area Agencies on Aging</th>
<th>Participation Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norton</td>
<td>Bristol Elder Services</td>
<td>Yes</td>
</tr>
<tr>
<td>Somerset</td>
<td>Bristol Elder Services</td>
<td>No</td>
</tr>
<tr>
<td>Marion</td>
<td>Coastline Elder Services</td>
<td>No</td>
</tr>
<tr>
<td>Mattapoisett</td>
<td>Coastline Elder Services</td>
<td>Yes</td>
</tr>
<tr>
<td>Tisbury</td>
<td>Elder Services of Cape Code</td>
<td>No</td>
</tr>
<tr>
<td>Andover</td>
<td>Elder Services of Merrimac</td>
<td>Yes</td>
</tr>
<tr>
<td>Chelmsford</td>
<td>Elder Services of Merrimac</td>
<td>Yes</td>
</tr>
<tr>
<td>Plainville</td>
<td>Health and Social Services Consortium</td>
<td>No</td>
</tr>
<tr>
<td>Pembroke</td>
<td>Old Colony Planning Council</td>
<td>Yes</td>
</tr>
<tr>
<td>Rockland</td>
<td>Old Colony Planning Council</td>
<td>No</td>
</tr>
<tr>
<td>Boston</td>
<td>Commission on Affairs of the Elderly</td>
<td>Yes</td>
</tr>
<tr>
<td>Wakefield</td>
<td>Mystic Valley Elder Services</td>
<td>No</td>
</tr>
<tr>
<td>Melrose</td>
<td>Mystic Valley Elder Services</td>
<td>Yes</td>
</tr>
<tr>
<td>Newton</td>
<td>Springwell</td>
<td>Yes</td>
</tr>
<tr>
<td>Brookline</td>
<td>Springwell</td>
<td>No</td>
</tr>
</tbody>
</table>

Table 6. Titles of Local Officials Who Participated in the Case Studies

<table>
<thead>
<tr>
<th>No. of Participants</th>
<th>Title of Interviewee</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Director of Council on Aging</td>
</tr>
<tr>
<td>1</td>
<td>Director of Tax Work-Off Program</td>
</tr>
<tr>
<td>1</td>
<td>Director of Human &amp; Volunteer Services</td>
</tr>
<tr>
<td>1</td>
<td>Finance Director</td>
</tr>
<tr>
<td>1</td>
<td>Town Administrator</td>
</tr>
<tr>
<td>1</td>
<td>Tax Assessor</td>
</tr>
<tr>
<td>1</td>
<td>Town Clerk</td>
</tr>
</tbody>
</table>
BIBLIOGRAPHY


Kelly, J. M. (2004). The perils of property tax: Many legislatures cut or capped property taxes during the boom years of the 1990s, promising to make up local losses through sales and income taxes. But then the economy went bad, and they didn’t do it. State Legislatures, 30(19), pp: 24-27.


The State Auditor’s Report on the Local Financial Impact of Property Tax Exemptions for Senior Citizens. (September, 2005). The Commonwealth of Massachusetts, Auditor of the Commonwealth, Division of Local Mandates, 10 West Street, 6th Floor, Boston, 02111.


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