To Pay or Not to Pay?:
An Investigation of the Direct and Moderating Effects of Community Context on Citizen Willingness to Fund the Police

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ABSTRACT AND ARTICLE INFORMATION

This study builds on the literature examining the relationship between community context and the police to determine how measures associated with social disorganization are related to taxpayer willingness to fund policing services. With a sample of 770 survey respondents residing in Pennsylvania, multinomial logistic regression models were utilized to assess the impact of community contextual variables representing social disorganization theory on willingness to pay (or not pay) for police services. The dependent variable measures if residents are willing to pay increased funds for the police, and also if they would prefer to reduce police services or receive combined police services. The results indicate that community contextual measures are not directly associated with willingness to pay for the police, but serve to moderate the relationship between satisfaction with the police and willingness to pay for police services.

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Although the National Bureau of Economic Development declared the economic recession in the United States to have officially ended in 2009 (Pear, 2011), municipal spending continues to face increased scrutiny from politicians and taxpayers alike. Budgets for public safety have been among the municipal-level expenditures hardest hit, with layoffs, decreased funding, and renewed interest in the consolidation of services now a reality for many local police departments. This is especially true of Pennsylvania municipalities and the 1,012 municipal police departments that operated within the state in 2011 (State of Pennsylvania, 2012). The current fiscal stress has resulted in an increased number of

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municipalities in Pennsylvania that receive police services from the Pennsylvania State Police. The Pennsylvania State Police is a statewide law enforcement agency with more than 4,600 sworn officers from which 1,257 municipalities received police in 2011. The current fiscal stress has additionally caused a consolidation of police departments that provide law enforcement services for multiple municipalities (nearly 300 municipalities in 2011). In response to strict municipal budget constraints, many additional cities within the United States have been forced to debate the merits of alternative types of police coverage in order to most efficiently spend their dwindling funds (Biedka, 2012).

While unpopular amongst taxpayers, one simple method of avoiding reductions in public safety services is to simply raise taxes. This is perhaps the most effective method by which to address budget gaps, but politicians are keenly aware of the unfavorable reactions that are likely to emanate from their constituents during difficult economic times. This dilemma raises important questions: What factors influence both the willingness of citizens to pay increased taxes in order to maintain current levels of public safety services, and conversely, do the same factors influence citizen decisions to support cutting police services? A clearer understanding of the correlates of citizen willingness to fund the police is important for a number of reasons. Due to the current budget crises in many states, the loss of police officers has already become a reality for many municipalities. Although there are limited data on the full impact of police levels on crime rates, research has identified a link between fewer officers and more crime (Chalfin & McCravy, 2011; Worrall & Kovandzic, 2010). This finding has been anecdotally supported by examinations of the results of massive police layoffs in cities within New Jersey due to budgetary concerns, with Camden and Newark experiencing increased crime and fewer arrests after the loss of officers (Queally, 2012). Further, reluctance by citizens to fund public safety services can also result in stagnant or reduced salaries for police officers, which has been found to negatively impact job performance (Mas, 2006), lower morale and increase stress (French, 1975), and hurt recruiting efforts and the retention of current police officers (Poole & Pogrebin, 1988).

Researchers have investigated the correlates of willingness to pay for numerous other municipal expenditures, including parks and recreation (Collins & Kim, 2009; Glaser & Hildreth, 1996), public education (Glaser, Aristigueta, & Miller, 2003; Silverman, 2011), and increased municipal-level taxes (Alozie & McNamara, 2008, 2009, 2010; Beck, Rainey, Nichols, & Trout, 1987; Glaser & Hildreth, 1999). The correlates of willingness to pay for the police, however, have received relatively scant attention. Only Donahue and Miller (2005, 2006) have investigated this issue to determine that increased citizen satisfaction with the police increases financial support for police services, but much about this relationship remains unanswered. To understand more about this important issue in a post-recession society, the current study builds upon prior analyses that have identified a link between community context and satisfaction with the police (Falco, Wells, & Weisheit, 2002; Weisheit, Falco, & Wells, 2006) by asking whether municipal-level measures associated with social disorganization theory are significant predictors of willingness to fund or not fund the police. In addition, we will also determine if those same community contextual predictors moderate the previously identified relationship between satisfaction with the police and willingness to pay (Donahue & Miller, 2005; 2006), as numerous prior studies have found that community context conditions the relationships between many factors and crime-related outcomes (Berg & Loeb, 2011; Berg, Slocum, & Loeb, 2013; Schuck, Rosenbaum, & Hawkins, 2008).

**Literature Review**

**Social Disorganization and Perceptions of the Police**

We call upon measures associated with social disorganization theory to explain how and why community context will be linked with citizen willingness to pay for the police. While researchers have given the greatest attention to urban areas, tests of social disorganization in rural (Barnett & Mencken, 2002; Bouffard & Muftic, 2006; Osgood & Chambers, 2000) and suburban (Roh & Choo, 2008) locations have similarly supported the effects of community context to influence rates of offending, although recent studies in rural areas have cast doubt on this relationship (Kaylen & Pridemore, 2013a, 2013b). However, most of the variation in studies of social disorganization is due to the exploration of the relationship of community context with a wide range of deviant behaviors at varying levels of spatial aggregation. As measures of disorganization increase, studies have identified accompanying increases in adult offending (Sampson, Raudenbush, & Earls, 1997; Sun, Triplett, & Gainey, 2004) and delinquency (Elliott et al., 1996; Liberman, 2007). Research has also identified associations between neighborhood contextual factors and...
perceptions of procedural justice, police legitimacy (Gau, Corsaro, Stewart, & Brunson, 2012; Sun et al., 2004), satisfaction with the police (Dunham & Alpert, 1988; Reisig & Parks, 2000; Smith, 1986; Wu, Sun, & Triplett, 2009), estrangement with the police (Sampson & Bartusch, 1998), and reliance on police services (Schaible & Hughes, 2012). Delving further into these relationships, residents from neighborhoods characterized by high levels of disorder and/or crime generally indicate lower levels of satisfaction with the police (Cao, Frank, & Cullen, 1996; Cingranelli, 1983). This is most likely due to greater police presence, the use of more proactive policing strategies (Brunson, 2007), and disproportionately high levels of police misconduct (Kane, 2002) found in these neighborhoods. Furthermore, when crime is perceived to be high, citizens might question the ability of law enforcement to control crime, thus resulting in lower levels of satisfaction with the police (Weitzer & Tuch, 2004). In addition to high crime, concentrated disadvantage has been found to be a strong predictor of police satisfaction; residents in neighborhoods with a high proportion of renters, nonwhites, one-parent households, and people below the poverty line report significantly less satisfaction with the police (Dai & Johnson, 2009).

Finally, community context has been shown to exert indirect effects on resident perceptions of crime, safety, and the police by moderating the relationships between many factors on those outcomes. Specifically, studies have concluded that concentrated disadvantage conditions the effects of race on satisfaction with the police (Dai & Johnson, 2009; Reisig & Parks, 2000; Wu et al., 2009) and attitudes toward the police (Schuck et al., 2008), the effects of individual-level characteristics on fear of crime (Brunton-Smith & Sturgis, 2011; Roman & Chalfin, 2008), and the relationship between offending and the likelihood of reporting violent victimization (Berg et al., 2013). Researchers have consistently determined that measures often found predictive of social disorganization, in the form of concentrated disadvantage, matter when considering how resident perceptions of crime and the police are formed.

**Willingness to Pay for Municipal Services**

In attempting to identify the predictors of citizens’ willingness to pay for police services, it is clear that scant academic attention has been paid to this issue. To explore this question, researchers must instead call upon the literature that identifies predictors of support for analogous government services. A series of studies by Alozie and McNamara (2008, 2009, 2010) identified Latinos, minorities, young people, males, and the poor as more willing to pay for public services in a large American city. Tests of citizen satisfaction in the form of continuity of school board members (Ehrenberg, Ehrenberg, Smith, & Zhang, 2004) and confidence in school administrators and local officials (Priest & Fox, 2005) have been shown to increase the likelihood of citizens supporting school budgets. Regarding parks and recreation, the predominant factor of willingness to pay for such services appears to be satisfaction, as work by Collins and Kim (2009) concluded that perceptions of service quantity is a more important determinant of willingness to pay for such services than are perceptions of service quality.

Overall, citizen satisfaction with public services is the most commonly identified factor of willingness to pay for public services. Researchers have found this to be true in municipalities across the nation and for a plethora of indicators representing citizen satisfaction, including government responsiveness, trust in government (Glaser & Hildreth, 1999), satisfaction with the community and services (Beck et al., 1987; Simonsen & Robbins, 2003), and economic interest (Beck, Rainey, & Traut, 1990). Compared to measures of citizen satisfaction, demographics were shown to have little or no effects on willingness to pay for services (Beck et al., 1987; Simonsen & Robbins, 2003). These findings further highlight the importance of citizen perceptions of government toward understanding the determinants of willingness to pay for public services. On the opposite end of the spectrum, research examining correlates of support for tax cuts have found that dissatisfaction, in the form of government waste and political cynicism is strongly associated with support for tax cuts and decreased state government spending (Steel & Lovrich, 1998).

The bulk of studies examining correlates of willingness to pay for local public services have focused on municipal taxes and services in general. The results are generally supportive of the aforementioned findings of specific types of services in that demographics and satisfaction with services have been repeatedly found to exert a significant influence on citizens’ willingness to support increased taxes. Research that has examined correlates of willingness to pay for public safety services is much less common, with only two known studies addressing this topic (Donahue & Miller, 2005, 2006). Both found that satisfaction with public safety services is the primary factor of willingness to pay for the police. Donahue and Miller (2005) first concluded that demographics such as age, education, race, political affiliation, marital status, the media, and police preferences influence willingness to pay
for the police. In their subsequent work, they supported their earlier results by finding that direct experience with police and fire services and media exposure indirectly influence willingness to pay for public safety services, while attitudes about police and fire services are direct predictors. They conclude that “the more a person trusts service providers, the more positive his or her views of the character of public safety personnel are, and the more important he or she perceives the services to be, the more money he or she is willing to pay in additional taxes to support the service” (Donahue & Miller, 2006, p. 311).

The Current Study

The proposed analysis seeks to build upon the existing literature exploring willingness to pay for municipal services, and specifically for the police, by addressing several gaps that exist in that literature, including 1) identifying the factors of not only willingness to pay additional taxes for the police, but also on willingness to support cuts in police funding, 2) examining whether community contextual factors based on social disorganization theory can explain municipal-level variations in support for both tax increases and cuts for the police, and 3) determining whether those factors also moderate the relationships between satisfaction with the police and citizen police funding preferences.

Based on the literature, we hypothesize that all three measures found to be commonly associated with social disorganization within municipalities will be negatively associated with willingness to pay, but positively correlated with support for cutting police services. The limited work examining correlates of citizen support for tax cuts justifies this expectation (Rudolph, 2009). Although Donahue and Miller (2005, 2006) did not find location type (rural vs. suburban/urban) to be predictive of willingness to pay for police and fire services, numerous studies (Cao et al., 1996; Dunham & Alpert, 1988; Sampson & Bartusch, 1998; Weitzer & Tuch, 2004; Wu et al., 2009) suggest that community context influences the ways in which citizens perceive the police, which indicates that similar processes might also predict support for tax increases intended for the police. We additionally hypothesize, based on the empirical evidence that has identified the moderating effects of community context on satisfaction with the police (Dai & Johnson, 2009; Reisig & Parks, 2000; Wu et al., 2009), that the measures associated with social disorganization will also moderate the relationship between satisfaction with the police and citizen preferences regarding tax changes for police services.

Methodology

Data

The majority of data used in this analysis originated from the Temple University Municipal Governance Survey (TUMGS). Created and administered by the Institute for Survey Research at Temple University, the TUMGS collected data from residents of Pennsylvania and New Jersey through phone interviews conducted between July 9th and 20th of 2010. The TUMGS asked respondents to describe their views of many dimensions of municipal governance, including taxes, crime, and public services. The current study utilized data from the 1,446 respondents who resided in Pennsylvania.

In an effort to obtain a representative sample of residents across Pennsylvania, the TUMGS respondents were divided into three regions: Southeastern PA, Allegheny County, and the Rest of PA. The Southeastern Pennsylvania region includes five counties (Bucks, Chester, Delaware, Montgomery, and Philadelphia counties) that possessed approximately four million residents in 2010. Of the 473 TUMGS respondents from the Southeastern PA region, 178 lived in the city of Philadelphia. Situated in the southwestern portion of the state, Allegheny County is composed of nearly 750 square miles and included more than 1.2 million residents in 2010. In addition to the city of Pittsburgh, 129 surrounding municipalities comprise Allegheny County. One hundred fifty-one of the TUMGS respondents reside in Allegheny County, with eighty living in Pittsburgh. The Rest of PA region, largely suburban and rural territory, includes the remaining 61 counties and approximately 7.5 million residents of Pennsylvania, 836 of which responded to the survey. Based on these regional designations, a weighting process was created so that the full sample of respondents would mirror the distribution of all Pennsylvania residents from the three regions across the state. Residents within the Allegheny County and Southwest PA regions were oversampled in order to mirror the distribution of residents across these three regions. To ensure that each of the subsamples across the three regions has similar margins of error, the weighting process considered the demographic characteristics of respondents in order to ensure a generalizable sample across the three regions and state as a whole.

As part of the TUMGS data collection process, respondents were asked to describe the type of police services that they currently received with one of three responses: provided solely by their municipality (770 respondents, or 55.7% of the weighted sample of 1,383 respondents from whom this information was
inappropriate to include survey respondents who budget concerns. We felt that it would be Police to presumably mi tigate law enforcement utilization of police services provided by a that they receive, or if they would support the taxes and therefore reduce the level of police services would prefer to pay increased taxes, would prefer cut pay increased taxes in order to support the police, police services. In fact, 69% of those receiving form of a consolidate police force, rather than to variable, could simply be that they prefer to utilize a services in this analysis b ecause their response to the currently receive consolidated or State Police. The dependent variable in this analysis, to be more carefully described in the following pages, represents whether citizens, if faced with a request to pay increased taxes in order to support the police, would prefer to pay increased taxes, would prefer cut taxes and therefore reduce the level of police services that they receive, or if they would support the utilization of police services provided by a consolidated police force or the Pennsylvania State Police to presumably mitigate law enforcement budget concerns. We felt that it would be inappropriate to include survey respondents who currently receive consolidated or State Police services in this analysis because their response to the funding question, which serves as the dependent variable, could simply be that they prefer to utilize a form of a consolidate police force, rather than to increase or decrease their financial contributions for police services. In fact, 69% of those receiving consolidate or State Police services responded that they would prefer to utilize such services if they faced a potential tax increase to maintain their current level of police services. As a result, the weighted sample to be analyzed in this study was reduced from 1,384 by 614 survey respondents to include only the 770 Pennsylvania residents who received law enforcement services from a local police department. Accordingly, the findings stemming from this analysis can only be generalized to the majority of residents of Pennsylvania who are protected by local police departments. An additional concern could exist if citizens are unaware of the type of police coverage that they receive, but no research currently exists to explain the degree to which citizens are aware of the type of police coverage they receive.

This analysis also considers macro-level data for each survey respondent at the city level. Data describing the municipality of residence for each survey respondent were gathered from the U.S. Census American Community Survey (ACS) Five-Year Summary File for 2007-2011, which measures many social and demographic indicators over that period of time. The 770 respondents analyzed in this study reside in 276 unique municipalities.

Dependent Variables

The dependent variables examined in this analysis originated from one survey item from the TUMGS that asked respondents, “If the police who serve your community didn’t have enough money to maintain its current service, which of these choices would you support?” Answer choices included, “increasing taxes to maintain police services,” “cutting police services,” “combining your department’s resources with the resources of the department in another city or town,” and “county taking over the service.” For this analysis, the responses representing support for combined services were collapsed into a single response so that the dependent variable has three categories: “increasing taxes to maintain police services,” which is used to represent willingness to pay for the police, “cutting police services,” and “combined services,” which represents a citizen’s preference to neither pay more nor less for policing services by utilizing the State Police or a consolidated police department for law enforcement services.

Independent Variables

Data from the 2007-2011 ACS Five-Year Summary File were used to operationalize three items that represent the antecedents of social disorganization within each respondent’s municipality of residence. The first item is an index of concentrated disadvantage that combines four ACS items: the proportion of individuals within each municipality who are unemployed and who live below the poverty line, and the proportion of households that receive public assistance and that are headed by single females with children under the age of 18. The construction of this index is consistent with the literature on concentrated disadvantage (Baumer, 2002; Reisig & Parks, 2000; Socia & Stamatel, 2012, among many others) and exhibits a high level of internal reliability (Cronbach’s $\alpha = 0.86$). The second item represents Shaw and McKay’s (1942) concept of ethnic heterogeneity by calculating a Blau Index (Blau, 1977) for each municipality. The formula for this index is $1 - \sum p_i^2$, where “$p$” represents the proportion of residents within each municipality of ethnic group “$i$,” which considers individuals who identify themselves as White, Black, Asian, or Other. Values for the Blau Index range from 0.0 to 1.0; a value of 0.0 indicates that a municipality is populated by residents of a single ethnic group, while values close to 1.0 indicate that a municipality is ethnically diverse. The third item operationalizes residential mobility by calculating the proportion of residents within each municipality who have resided in their current home for less than one year. Satisfaction with the police is based on responses to a survey item that asked respondents to rank their satisfaction with the police, where 10 indicated “very satisfied” and 0 represented “very dissatisfied.”
To appropriately estimate the direct and indirect effects of variables associated with social disorganization on citizen willingness to pay for the police, numerous additional items were included in this analysis to account for the many demographic, political, and socioeconomic factors that have been shown to influence citizen perceptions of public services and the police. Regarding demographics and personal characteristics, two dummy variables represent gender and race (nonwhite), with two additional dummy variables accounting for the political affiliation of the respondents (Republican and Democrat; Independent affiliation is the reference category). A continuous item controls for the age of the respondent, and a dummy variable controls for educational status (earned a college degree). To control for perceptions of taxes generally, an additional item represents whether residents feel that the current level of municipal taxes is high (residents were to remark on whether taxes are high on a scale of 1 - 5; this item represents those who responded with a 4 or 5).

This analysis also controls for perceptions of neighborhood crime, which is operationalized with two dummy variables based on a survey item which asked residents to describe the amount of crime in their neighborhood during the preceding two years as having increased, decreased, or stayed the same (crime stayed the same is the reference category).6

Finally, municipal population and a measure of community type, both originating from ACS data, are used to describe additional aspects of each municipality. Community type is operationalized by a dummy variable that represents urban. The definition of an urban community is culled from the Metro Status Code (MSC) for each municipality, developed by the U.S. Census, which classifies Metropolitan Statistical Areas (MSA) and Micropolitan Statistical Areas (MCSA) into five categories: 1) in the central city(s) of an MSA, 2) outside the central city(s) of an MSA, but inside the county containing the central city(s), 3) inside the suburban county of an MSA, 4) in an MSA that has no central city, and 5) not in an MSA. For this analysis, municipalities coded as “in the central city(s) of an MSA” are considered urban. All other municipalities are defined as non-urban and represent the reference category.

Table 1: Descriptive Statistics*

<table>
<thead>
<tr>
<th>Item</th>
<th>Metric</th>
<th>n</th>
<th>Mean</th>
<th>Min</th>
<th>Max</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variable</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut Services</td>
<td>0=no, 1=yes</td>
<td>722</td>
<td>0.05</td>
<td>0.00</td>
<td>1.00</td>
<td>0.22</td>
</tr>
<tr>
<td>Increase Taxes</td>
<td>0=no, 1=yes</td>
<td>722</td>
<td>0.27</td>
<td>0.00</td>
<td>1.00</td>
<td>0.43</td>
</tr>
<tr>
<td>Other Services</td>
<td>0=no, 1=yes</td>
<td>722</td>
<td>0.68</td>
<td>0.00</td>
<td>1.00</td>
<td>0.47</td>
</tr>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Police Satisfaction</td>
<td>1 – 10</td>
<td>767</td>
<td>7.73</td>
<td>0.00</td>
<td>10.00</td>
<td>2.53</td>
</tr>
<tr>
<td>Crime Increased</td>
<td>0=no, 1=yes</td>
<td>756</td>
<td>0.28</td>
<td>0.00</td>
<td>1.00</td>
<td>0.45</td>
</tr>
<tr>
<td>Crime Decreased</td>
<td>0=no, 1=yes</td>
<td>756</td>
<td>0.10</td>
<td>0.00</td>
<td>1.00</td>
<td>0.30</td>
</tr>
<tr>
<td>Urban</td>
<td>0=no, 1=yes</td>
<td>770</td>
<td>0.40</td>
<td>0.00</td>
<td>1.00</td>
<td>0.49</td>
</tr>
<tr>
<td>Female</td>
<td>0=no, 1=yes</td>
<td>768</td>
<td>0.52</td>
<td>0.00</td>
<td>1.00</td>
<td>0.50</td>
</tr>
<tr>
<td>Non-White</td>
<td>0=no, 1=yes</td>
<td>745</td>
<td>0.18</td>
<td>0.00</td>
<td>1.00</td>
<td>0.38</td>
</tr>
<tr>
<td>Age</td>
<td>continuous</td>
<td>748</td>
<td>51.3</td>
<td>18.00</td>
<td>93.00</td>
<td>17.27</td>
</tr>
<tr>
<td>Republican</td>
<td>0=no, 1=yes</td>
<td>737</td>
<td>0.27</td>
<td>0.00</td>
<td>1.00</td>
<td>0.45</td>
</tr>
<tr>
<td>Democrat</td>
<td>0=no, 1=yes</td>
<td>737</td>
<td>0.41</td>
<td>0.00</td>
<td>1.00</td>
<td>0.49</td>
</tr>
<tr>
<td>College Education</td>
<td>0=no, 1=yes</td>
<td>759</td>
<td>0.29</td>
<td>0.00</td>
<td>1.00</td>
<td>0.45</td>
</tr>
<tr>
<td>Taxes High</td>
<td>1 – 5</td>
<td>752</td>
<td>3.60</td>
<td>1.00</td>
<td>5.00</td>
<td>0.79</td>
</tr>
<tr>
<td>Population</td>
<td>continuous</td>
<td>770</td>
<td>305,262</td>
<td>104</td>
<td>1,531,112</td>
<td>578,225</td>
</tr>
<tr>
<td>Disadvantage</td>
<td>index</td>
<td>770</td>
<td>0.09</td>
<td>0.01</td>
<td>0.23</td>
<td>0.05</td>
</tr>
<tr>
<td>Residential Mobility</td>
<td>proportion</td>
<td>770</td>
<td>0.13</td>
<td>0.02</td>
<td>0.53</td>
<td>0.06</td>
</tr>
</tbody>
</table>

* Based on weighted data; see note 3 for weighting details
Analytic Plan

This study begins with univariate and bivariate analyses to describe the data and identify potential issues of multicollinearity between predictors. Descriptive statistics (weighted) for all items included in the analysis are shown in Table 1. It is observed that, if faced with financial difficulty to maintain police services in their communities, approximately 68% of respondents support combined services, 27% support an increase in taxes to maintain police services, while only 5% support cutting police services if increased funding was requested. Of the independent variables, the mean response on the citizen satisfaction item is 7.73 (on a scale of 1-10), and 40% of respondents reside in urban municipalities. Table 1 also shows that the majority of survey respondents are white (82%), female (52%), and not college educated (71%).

Bivariate analyses indicate that the item representing ethnic heterogeneity is highly correlated with multiple items, including disadvantage, urban residence, and municipal population. As a result, we do not include ethnic heterogeneity in the subsequent multinomial logistic regression models. Therefore, we estimate only six models; the models that would have included the joint effects of satisfaction with the police and ethnic heterogeneity were not included. No other issues of multicollinearity between variables were identified by the bivariate correlation analysis. From there, multinomial logistic regression analysis was used in order to estimate the association between concentrated disadvantage and willingness to pay for the police. This technique permits us to isolate the potential moderating effects of concentrated disadvantage on the influence of satisfaction with the police on citizen financial support for the police. Multinomial logistic regression is appropriate for this analysis due to the categorical structure of the dependent variable (Long & Freese, 2006). In such models, estimates of the effects of each item are calculated separately for each of the responses in the dependent variable, compared against one of the responses (the reference category). Logistic regression models were also an option for this analysis, which would have required that support for both decreased funding and combined police coverage be collapsed into a single category (compared with willingness to pay increased taxes), but this was deemed inappropriate because we feel those two citizen responses are distinct perceptions and should be analyzed separately. Therefore, we proceeded with the use of multinomial logistic regression models.

To summarize, four sets of models were run that provide estimates of the effects of the predictors on both those who favor cutting police services and then those who favor combined services, compared to those who support tax increases to address law enforcement budget gaps. The first set of two models examine the direct effects of the predictors, with the two subsequent sets of models each introducing interaction terms that represent the joint effects of satisfaction with the police with either concentrated disadvantage or residential mobility.

Results

Community Contextual Effects

The results of the multinomial logistic regression analyses are reported in Table 2. To facilitate an intuitive understanding of the effects of the predictors, odds ratios for each item are reported with 95% confidence intervals expressed in parentheses. An odds ratio greater than 1.0 indicates that an increase in that predictor (or, in the case of the many dichotomous predictors, the presence of) increases the likelihood of the outcome. Specifically, an odds ratio of 2.0 for a dichotomous predictor indicates that the odds for the outcome measure in question are doubled relative to an individual with a value of 1.0 for that predictor. In contrast, an odds ratio less than 1.0 denotes a negative relationship; an increase in that variable results in a decreased likelihood of that outcome.

Beginning with the results of Models 1 and 2 that report the effects of the direct effects of each predictor, Model 1 shows that none of the factors included are significantly related to decreased support for cutting police services, compared to those who support increased taxes for the police. Model 2 reports the effects of the same predictors on survey respondents who favor combining services, compared to those who favor tax increases. The results of Model 2 show that age (0.64, p < 0.001), satisfaction with the police (0.70, p < 0.01), municipal population (0.76, p < 0.05), and being a Republican (0.55, p < 0.05) predict decreased support for combined services, and that only the perception that taxes are too high (2.01, p < 0.001) is associated with increased support for combined services, relative to paying more for the police.

Model 3 is identical to Model 1 with the exception that it includes an interaction term representing the combined effects of concentrated disadvantage and police satisfaction and reports that those joint effects significantly predict support for cutting police services, compared to those supporting tax increases (1.63, p < 0.05). In order to interpret this relationship, we depict this significant finding in a graphical format. Figure 1 includes two lines that
### Table 2: Multinomial Logistic Regression Models Predicting Support for Cutting Police Services and Combined Services, Relative to Those Who Support Increasing Taxes for the Police

<table>
<thead>
<tr>
<th>Model</th>
<th>Cutting Services</th>
<th>Combined Services</th>
<th>Cutting Services</th>
<th>Combined Services</th>
<th>Cutting Services</th>
<th>Combined Services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Non-White</td>
<td>Age</td>
<td>Republican</td>
<td>Democrat</td>
<td>College Education</td>
</tr>
<tr>
<td>Model 1</td>
<td>0.72 (0.32, 1.61)</td>
<td>1.27 (0.87, 1.85)</td>
<td>0.75 (0.34, 1.69)</td>
<td>1.26 (0.86, 1.85)</td>
<td>0.74 (0.33, 1.66)</td>
<td>1.25 (0.85, 1.83)</td>
</tr>
<tr>
<td>Model 2</td>
<td>1.15 (0.60, 2.20)</td>
<td>1.68 (0.50, 5.67)</td>
<td>1.14 (0.59, 2.19)</td>
<td>1.53 (0.46, 5.15)</td>
<td>1.17 (0.61, 2.27)</td>
<td>1.27 (0.87, 1.85)</td>
</tr>
<tr>
<td>Model 3</td>
<td>1.10 (0.77, 1.56)</td>
<td>1.10 (0.77, 1.56)</td>
<td>0.81 (0.30, 2.21)</td>
<td>1.10 (0.77, 1.58)</td>
<td>0.78 (0.28, 2.16)</td>
<td>1.63 (0.80, 3.32)</td>
</tr>
<tr>
<td>Model 4</td>
<td>0.70 (0.32, 1.53)</td>
<td>1.04 (0.80, 1.36)</td>
<td>0.67 (0.31, 1.44)</td>
<td>1.05 (0.80, 1.37)</td>
<td>0.66 (0.31, 1.38)</td>
<td>1.04 (0.80, 1.36)</td>
</tr>
<tr>
<td>Model 5</td>
<td>0.67 (0.32, 1.53)</td>
<td>1.04 (0.80, 1.36)</td>
<td>0.67 (0.31, 1.44)</td>
<td>1.05 (0.80, 1.37)</td>
<td>0.66 (0.31, 1.38)</td>
<td>1.04 (0.80, 1.36)</td>
</tr>
<tr>
<td>Model 6</td>
<td>1.10 (0.77, 1.56)</td>
<td>1.10 (0.77, 1.56)</td>
<td>0.81 (0.30, 2.21)</td>
<td>1.10 (0.77, 1.58)</td>
<td>0.78 (0.28, 2.16)</td>
<td>1.63 (0.80, 3.32)</td>
</tr>
</tbody>
</table>

**Model Fit**

- $-2LL = 911.13$; $\chi^2_{(df = 28)} = 100.98, p < 0.001$
- $-2LL = 903.658$; $\chi^2_{(df = 30)} = 108.53, p < 0.001$
- $-2LL = 902.27$; $\chi^2_{(df = 44)} = 109.84, p < 0.001$

*** p < .001, ** p < .01, * p < .05
Figure 1: Moderating Effects of Disadvantage on the Relationship Between Police Satisfaction and Support for Cutting Police Services, Compared to Those Who Support Tax Increases

represent the moderating effects of concentrated disadvantage on the relationship between satisfaction with the police and the likelihood that respondents support cutting police services, compared to those who support tax increases for the police. The x-axis of this plot measures satisfaction with the police, while the y-axis represents the likelihood of support for cutting services. The solid line represents the likelihood that residents within municipalities characterized by low levels of concentrated disadvantage support cutting police services. This clearly shows that concentrated disadvantage conditions the relationship between satisfaction with the police and support for cutting police services. Specifically, residents of areas with low levels of concentrated disadvantage and who are less satisfied with the police are more likely to support cutting police services, but individuals in the same municipalities who are more satisfied with the police are less likely to support cutting police services. In contrast, the dotted line represents survey respondents who live in municipalities characterized by high levels of concentrated disadvantage and illustrates an opposite effect: individuals living in these municipalities are more likely to support decreased financial support for the police as their satisfaction with the police increases. This particular finding might initially seem counterintuitive. However, it may simply be that residents in disadvantaged communities, who are more likely to be financially distressed, may be more likely to support cuts in financial support for the police if they believe that their satisfactory police services can withstand a tax cut. Unsurprisingly, the effects of the other predictors are substantively the same as those shown in Model 1, with the exception that a perception that taxes are too high (2.27, p < 0.05) is shown to increase support for cutting services, relative to paying more for the police. Model 4 includes the same items as Model 3, but compares those who support the use of combined police services relative to paying increased taxes for the police and shows that the interaction term that combines concentrated disadvantage and police satisfaction does not predict support for combining police services.

Models 5 and 6 are similar to Models 3 and 4, but they replace the item that combines concentrated disadvantage and police satisfaction with an item that represents the joint effects of residential mobility and police satisfaction. The results displayed in Models 5 and 6 indicate that the combined effects of residential mobility and police satisfaction are significantly associated with support for the use of combined police services (0.75, p < 0.05), relative to those who support tax increases to assuage law enforcement.
budget shortfalls, but not support for cutting services. Figure 2 illustrates the moderating effects of residential mobility on the relationship between satisfaction with the police and support for combined police services. The solid line represents those living in areas characterized by low levels of residential mobility, and the dotted line represents those in municipalities with high levels of residential mobility. The horizontal solid line shows that satisfaction with the police is not associated with support for combined police services. However, the dotted line representing residents of municipalities with high levels of residential mobility is sloped to indicate that support for combined police services decreases as satisfaction with the police increases.

**Figure 2: Moderating Effects of Residential Mobility on the Relationship Between Police Satisfaction and Support for Combined Services, Compared to Those Who Support Tax Increases**

### Additional Factors

Regarding the main effects estimated in Models 5 and 6, only the belief that taxes are too high is shown to predict support for cutting services (2.27, \( p < 0.05 \)), relative to paying more for the police. Model 6, similar to the results depicted in Models 2 and 4, indicates that age (0.64, \( p < 0.001 \)), Republican political affiliation (0.54, \( p < 0.01 \)), the belief that taxes are high (1.99, \( p < 0.001 \)), and police satisfaction (0.71, \( p < 0.01 \)) are significantly associated with support for the use of combined police services, relative to paying more for the police.

### Discussion

Based on the results, both residential mobility and concentrated disadvantage at the municipal level were found to moderate the relationship between satisfaction with the police and willingness (or unwillingness) to financially support police services. Specifically, the results of the multinomial logistic regression analyses show that residing in municipalities with higher levels of residential mobility and disadvantage conditions the association between satisfaction with the police and preferences to fund the police, but those municipal-level factors have no direct relationships with police funding preferences.

We expected to find that measures related to social disorganization would be related to willingness to pay for the police, but we did not expect to find that those variables would only have indirect impacts on willingness to pay for the police. Nearly all of the literature examining the relationship between variables associated with social disorganization on perceptions of the police has shown that disorganized communities garner negative perceptions of the
police in the form of satisfaction (Reisig & Parks, 2000; Wu et al., 2009), legitimacy (Gau et al., 2012; Sun et al., 2004), and estrangement (Sampson & Bartusch, 1998). However, the same body of literature has concluded that concentrated disadvantage conditions the effects of various factors on similar outcomes that include satisfaction with the police (Dai & Johnson, 2009; Reisig & Parks, 2000; Wu et al., 2009), attitudes toward the police (Schuck et al., 2008), fear of crime (Brunton-Smith & Sturgis, 2011; Roman & Chalfin, 2008), and the likelihood of reporting violent victimization (Berg et al., 2013), so our findings are consistent with earlier research.

Regarding the lack of direct effects of community contextual factors on willingness to fund the police, while neighborhood stability has long been considered a positive force that resists crime and disorder, there is a contrasting perspective that recognizes that some long-time residents of disadvantaged neighborhoods can feel forced to remain there (Warner & Pierce, 1993; Wilson, 1996). Ross, Reynolds, and Geis (2000) describe the isolation perspective by asserting that “residents of poor, stable neighborhoods may feel stuck in a bad situation – powerless to leave a dangerous environment” (p.582). Additional studies have similarly shown that individuals can feel frustrated and isolated if they perceive themselves as trapped in an impoverished and dangerous community (Anderson, 1992, 1999; Jargowsky, 1997). With this in mind, the lack of significant direct effects of community context on willingness to pay more for the police no longer seems surprising, especially when considering that stable, but typically poor, neighborhoods must rely on their stability to resist crime because they enjoy relatively low levels of formal police services (Anderson, 1992). Such individuals may even be more willing to pay for the police if they see law enforcement as a way of protecting them within the neighborhood that they cannot escape. In essence, these competing processes may serve to nullify the effects of community context in our analysis.

The most counterintuitive aspect of our findings initially appears to stem from the nature of the moderating effects of the measures of social disorganization. For example, why would individuals who live in municipalities characterized by high levels of disadvantage be more likely to support a cut in police services as their satisfaction with the police increases? As mentioned above, the social isolation perspective asserts that increased stability within neighborhoods results in increased resident perceptions of isolation (Ross et al., 2000) that subsequently fails to prevent intra-community crime (Pattillo, 1998) and can lead to feelings of distress (Unger, Wandersman, & Hallman, 1992). This perspective appears to be supported by the current study, as we have shown that residing within municipalities with high levels of concentrated disadvantage increases the likelihood of supporting cuts in police services as residents become more satisfied with the police. It may simply be that residents of disadvantaged communities who are more satisfied with the police believe that their police forces can withstand tax cuts more so than residents of similar communities who are not satisfied with their police services. The effects of residential mobility to moderate the relationship between satisfaction with the police and police funding preference are more intuitive. Those who live in areas with more resident transition would be expected to exhibit a higher degree of financial support for the police, as our analysis indicates.

Beyond the moderating effects of residential mobility and concentrated disadvantage described above, several other factors have been shown to be directly associated with willingness, or unwillingness to fund the police in Models 1 and 2. As expected, perceptions of taxes are extremely important when estimating how individuals will feel about paying for the police. The results indicated that the perception that municipal taxes are high is significantly related with increased support for the use of combined police services, relative to increasing funding for the police. In contrast to the work of Alozie and McNamara (2008, 2009, 2010), the effects of gender and race were not significantly related to willingness to pay for police services. Regarding age, this analysis shows that older individuals are significantly less likely to support the use of combined services, relative to supporting increased funding for the police, or in other words, that younger individuals are willing to pay for the police when faced with budgetary issues. Finally, those who are more satisfied with the police are more willing to pay for the police, relative to support for combined services, which is consistent with the very few analyses of this nature (Donahue & Miller, 2005; 2006).

From a practical view, the findings stemming from this analysis have implications for police departments, city managers, and policymakers that are concerned about stagnant salaries, the consolidation of services, and even layoffs related to tax and funding decisions. Increased satisfaction with the police is shown to increase financial support to maintain police services in municipalities. This raises an important question: what, if anything, can be done to improve citizen satisfaction with police? Of course, a broad range of reasons explain the public’s satisfaction with the police, but research has consistently demonstrated that an individual’s
satisfaction with the police can be influenced by the actions of the police officers. Specifically, Sunshine and Tyler (2003) determined that “the police can enhance their image in the eyes of the public” (p. 535) when the public feels that the actions of the police have been made through a fair process. This is particularly important to a police department because, unlike many of the other static predictors of willingness to financially support the police, the police can focus on improving citizen relations through specific training (Sunshine & Tyler, 2003). This is not to suggest that the police are generally biased or uncivil in their dealings with the public, but police officers might be especially receptive to additional training devoted to citizen interactions if the issue is framed as relating to their salary or job security.

Additionally, policymakers can consider these findings before attempting changes to local tax practices. For example, the knowledge that residents of disadvantaged communities who are satisfied with the police seem to be more amenable to tax cuts, compared to residents of disadvantaged communities who are less satisfied with the police, can be considered by policymakers when appropriating resources to garner political support for or against tax cuts. Similarly, the finding that residents of areas with higher levels of residential mobility become less supportive of combined police services as their satisfaction with the police increases may also prove to be valuable to policymakers. Considering the current fiscal climate, the recent proliferation of consolidated police coverage, and the finding that type of police coverage is related to satisfaction with the police (Lockwood & Wyant, in press), policymakers and politicians could utilize this information to target particular constituents when campaigning for or against the use of consolidated police services or tax changes.

The current study is not without limitations. Although social disorganization theory is highlighted, ultimately there are no measures of the actual social ties and informal control within neighborhoods; rather we have only examined the common antecedents of socially disorganized communities. Future researchers should consider the use of surveys and interviews to capture data that directly correspond to the processes that have been directly linked to levels of social disorganization and collective efficacy within neighborhoods (Sampson et al., 1997). On a similar note, researchers have cautioned against measuring community context at large levels of aggregation (Oberwittler & Wikstrom, 2009). Although countless studies have tested social disorganization at the municipal-level, subsequent analyses should strive to replicate the current findings with smaller levels of spatial aggregation. It may be that the usage of large spatial units of analysis in the form of municipalities have acted to mask the direct effects of the measures of social disorganization that might otherwise have been detected with smaller units of analysis, such as neighborhoods or block groups. Furthermore, the models estimated in this analysis, did not include two factors that have been shown to influence perceptions of the police. Media exposure, for example, has been shown to impact willingness to pay for public safety services as an indirect correlate that first influences police satisfaction (Donahue & Miller, 2005, 2006). A larger body of literature has also identified contact with the police as an integral factor towards determining citizen perceptions of the police (Decker, 1981; Skogan, 2006; Tyler & Fagan, 2008). Researchers should consider the inclusion of measures of media exposure and likelihood of contact with police to alleviate potential issues of spuriousness in subsequent investigations of the effects of community type and perceptions of the police and safety on willingness to pay for the police.

References


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**Endnotes**

1 The TUMGS was created by Dr. Joseph P. McLaughlin and Dr. Michael G. Hagen of Temple University, with support from Richard A. Stafford, MS, of the Heinz College of Public Policy and Management of Carnegie Mellon University, Dr. Gregory J. Crowley of the Coro Center for Civic Leadership in Pittsburgh, Dr. David Y. Miller of the Graduate School of Public and International Affairs at the University of Pittsburgh, and Dr. David Elesh of Temple University. Dr. Heidi E. Grunwald of Temple University’s Institute for Survey Research directed the data collection process.

2 The current analysis analyzes data only from the respondents residing in Pennsylvania and omits data from New Jersey residents for two reasons: 1) state-based differences between Pennsylvania and New Jersey (including the current political climate, the structure of police departments, and perceptions of municipal taxation) might act as spurious factors in this analysis and 2) the relatively low number of New Jersey residents in the sample (n = 163).
To avoid the over- or underestimation of residents of particular demographic characteristics within regions that could have occurred during the data collection process, survey weights were created. Using data from the 2006-2008 American Community Survey, measures representing age, race, gender, educational attainment, and household ownership were incorporated into the calculations of weights for each of the three regions so that the sample from within each region represents the total regional population. Additional information about the TUMGS, including detailed descriptions of the survey methodology and weighting procedure, see McLaughlin, 2010, is available at: http://www.cla.temple.edu/ipa/files/2012/12/TempleMunicipalGovernanceSurveyfinalreport.pdf

Of the 1459 weighted survey respondents, 76 did not provide information regarding how they would address budget gaps intended for the police. To ensure that those who did not provide information are not significantly different from those who did answer the question, we ran several chi square tests that compared those who did and did not answer this survey question with demographics, including gender, race (White vs non-White), and political affiliation (Republican vs non-Republican). All three tests showed that there is no significant difference between those who did and did not provide tax-paying preference information on gender, race, or political affiliation. As a result, we do not feel that the exclusion of survey respondents from the subsequent multivariate analyses will bias the analysis.

Additional models including all 1,384 survey respondents were estimated and illustrated substantively similar results compared to the results of the models that will be reported in this analysis.

We also considered multiple UCR crime rates (based on total index crime, property index crime, and violent index crime) at the municipal-level from the FBI, but those measures were highly correlated with multiple predictors, so they were omitted from our final models.

We also estimated, but did not report, models that included the direct effects of ethnic heterogeneity and the joint effects of ethnic heterogeneity and satisfaction with the police and after removing the items which were significantly correlated with ethnic heterogeneity. The results showed that neither the direct nor combined effects of ethnic heterogeneity exerted a significant influence on citizen preferences for funding the police.

We initially considered the use of hierarchical linear models (HLM) with which to analyze the data, but concerns regarding the relatively sparse number of level-one data (survey respondents) nested within several hundred level-two units of analysis (municipalities) suggested that we not utilize a multi-level modeling technique (for more regarding this issue, see Clarke, 2008).

For the purpose of this figure, we defined low and high levels of residential mobility and concentrated disadvantage as being one standard deviation below and above the mean.