Factors in IT-enabled collaboration in the public sector: the neighbor effect

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Factors in IT-enabled collaboration in the public sector: the neighbor effect

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ABSTRACT

This study examines the rational choice and institutional factors influencing the spread of information technology enabled public safety network collaborations in the United States. Consistent with past neighbor effect research, this study tests economic, geographic, and demographic factors predictive of PSN proliferation at the state level. Results suggest a “follow the money” pattern, with internal and external resources, along with neighbor-state spending, being predictive of PSN proliferation. The “neighbor effect” here reflects a state level mimetic isomorphic influence that provides context to the more rational and resource-based factors associated with network proliferation. Examining isomorphic forces in public safety is particularly warranted since resource allocation decisions in this domain carry grave consequences. This study extends neighbor-effect research into the domain of public safety, identifies unexpected findings regarding violent crime rates and federal funding, and explores possibly ill-fit decision criteria by specifying a measure for mimetic isomorphism in public safety spending.

Keywords: Public safety networks, interorganizational systems, neighbor effect, institutional theory, rational choice, regression analysis

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1 A work-in-progress version of this study was published in the proceedings of the International Conference on Information Systems(Dias 2010).
INTRODUCTION

Government agencies face complex problems in dealing with crime, terror, and natural disasters (Perrow 2007) that at times require durable multidisciplinary collaborations to efficiently marshal resources and effectively implement solutions. The purpose of this study is to examine the factors associated with the proliferation of IT-enabled interagency collaborations by examining the influence of in-state conditions and cross-state homophily in a single framework. In public administration and network organization literature homophily is the propensity of an entity to make decisions based upon the decisions or actions of similar entities (McPherson et al. 2001). State level public administration research has referred to homophily as the “neighbor effect” (Case et al. 1993; Boarnet and Glazer 2002; Baicker 2005). The neighbor effect represents the propensity of one state to mirror decisions (e.g., adoption of new interagency collaboration practice) of other states viewed as similarly situated. This current study examines the role of the neighbor effect in predicting the proliferation of interorganizational public sector collaboration called public safety networks (PSNs).

Accordingly, this study addresses the research question “What is the nature of state-level isomorphic influence that is exhibited by peers regarding public safety collaboration proliferation?” This study is motivated by the level of security-related expenditures in the U.S. (Perry 2008), as well as calls for research regarding both strategies to encourage interagency information exchange (Sweden, 2011) and theory extension for interorganizational systems (IOS) diffusion that encompasses social contagion effects (Robey et al. 2008). Examining isomorphic pressures in the public sector is particularly warranted as some research has found that public sector organizations are more susceptible to institutional factors than private sector businesses (Frumkin and Gelaskiewicz 2004). By exploring for mimetic isomorphism in public safety spending this study could inform state officials regarding ill-fit criteria used in resource allocation decisions.

This study additionally contributes to knowledge by extending neighbor effect, or homophily, research into the domain of public safety. Past examinations of state neighbors has focused on general spending, welfare spending, and education spending. Lastly this study highlights unexpected findings regarding violent crime rates and federal funding. As federal agencies allocate public safety funds to states, better understanding possible outcomes of those allocations is valuable in future expenditure planning - for example, when increased funding is associated with decreased network proliferation.

The paper begins with perspectives on interorganizational collaboration and IOS adoption to provide background on research relating to the type of organization and systems associated with PSNs. Public administration neighbor effect research is discussed next to provide background on the conceptual framework for this study. Then public safety networks and their proliferation are described to provide details on the outcome under investigation. Next details on data collection and analysis are described. The discussion section follows with consideration for both rational choice and institutional theory insights. The paper ends with concluding thoughts about future research.

PERSPECTIVES OF INTERORGANIZATIONAL SYSTEMS DIFFUSION

The study of IOS at the interorganizational level has enjoyed multiple decades of research (Barrett and Konsynski 1982; Robey et al. 2008). Rational choice theories have been used to examine IOS adoption and use. Subramani (2004) employed transaction cost economics and resource-based view concepts in studying supply chain management value creation for both suppliers and customers when deliberate relationship strategies were executed. Wade and Hulland (2004) provide a review of resource-based view IS research (including cross-organizational investigations) and find support for the notion that treating IT as one component of organizational resources (including the expertise to exploit IT capabilities) is beneficial to firm performance.

Institutional concepts have been used to examine IOS like Electronic Data Interchange (EDI) adoption - with researchers finding that isomorphic pressures do influence an organization’s intention to adopt EDI at both the senior manager (Chwelos et al. 2001) and chief executive (Teo et al. 2003) levels. E-marketplace adoption research in the public sector has shown some evidence that past conforming to isomorphic pressures can evolve into non-conforming (Standing et al. 2009). In healthcare research looking at the local government unit of analysis, Noir & Walsham (2007) identified critical cases of IOS not producing performance benefits due to non-compliance with standards set at the organizational field level. Robey et al (2008) highlight the importance of factors of social economics in explaining IOS diffusion. Social economics examinations of IOS-enabled collaborations have found that societal (Hsiao 2003) and institutional dynamics (Kumar and van Dissel 1996; Pavlou 2002) complement rational, economic variables. More recently, Son and Benbasat (2007) found that institutional factors significantly affected organizations’ intent to adopt an IOS, but it was the rational choice-oriented factors that exhibited significant influence on participation levels and use.
NEIGHBOR EFFECT OF STATE GOVERNMENT SPENDING

In institutional theory the concept of connectedness represents interactions that increase the strength of ties between entities (DiMaggio and Powell 1983). In public economics research the connectedness between government entities has been represented in various concepts including homophily, yardstick competition, homogeneity, and inter-jurisdictional spillover (see Table 1 for details). Researchers using these concepts argue that nodes within a network tend to connect or coordinate their actions based upon some socio-demographic dimension of similarity (McPherson et al. 1992; Sorensen et al. 2006).

A similar concept in this stream of research is the neighbor effect. Neighbor effect research has identified specific measures of similarity that can be used as predictors of how much influence one organization’s spending decisions have on another organization’s spending decisions. In other words, the neighbor effect measures mimetic isomorphic pressure. For example, in their study of U.S. state level spending, Case et al (1993) identified that demographic factors best measured the influence of similarly situated states on each other – and of the multiple demographic indicators tested, percent Black of the population was the most significant predictor of state spending patterns. Baicker (2005) performed a similar examination and found demographics again to be the best predictor for neighbor effects, but with interstate mobility as the most precise neighbor effect measure. Other researchers have found similar results regarding an interstate effect on spending (Figlio 1999; Boarnet and Glazer 2002; Feiock 2007).

PUBLIC SAFETY NETWORKS PROLIFERATION

Public Safety Networks (PSNs) are interagency collaborations enabled by IT in support of the information sharing and interoperability needs of police and associated public safety organizations (Fedorowicz et al. 2007; Dias 2010). These collaborations form across levels of government (local, state, regional) and perform diverse functions – from police dispatch, to terror suspect monitoring, to emergency management response. PSN proliferation represents the spread of the practice of public safety interagency collaboration at the state level. PSN proliferation is a measure of how frequent the practice of public safety collaboration formation occurs. PSNs represent hubs of public safety activity through which participating organizations can share information and other resources. PSN proliferation reflects a relative measure to assist state leaders in better understanding the frequency of interagency collaborations apart from the influence of state size. However, larger states will have a greater opportunity to form these collaborations – given that they have more potential participant organizations. All PSNs involve one or more policing agency, and given that PSNs can cross local geographic boundaries (i.e., city, county), examining state level proliferation seems appropriate. Unlike temporary arrangements, PSNs represent a durable entity in that they exist even after their initial objectives have been met – unlike a taskforce or committee. Therefore, PSN proliferation reflects a commitment to share information, personnel, equipment, or other resources.

Drawing on rational and institutional factors described in Table 1, we anticipate that states exhibiting high per capita public safety spending and violent crime, being a U.S. border state, receiving high DHS funding, and having “neighbors” with high public safety spending would exhibit higher PSN proliferation (see Figure 1). Accordingly we anticipate that states with low or null values for these factors would exhibit low PSN proliferation. Past neighbor effect research identified many of the factors listed in Table 1, but the public safety-related factors like violent crime rate and DHS funding were added for this study in consideration of the domain of the phenomenon.
Public agencies are motivated to collaborate based upon dual external pressures to improve performance and gain legitimacy (Oliver 1991, Dacin et al 2007). Decisions regarding encouraging collaboration are also driven by homophily or similarity influences (Volkoff et al. 1999). The mimetic factor represented by the neighbor effect is the focus of this current research. The neighbor effect represents specific measures of similarity that can then be used to identify how much influence one entity’s decision-making has on another entity’s decision making. In examining the neighbor effect, this study helps to answer the question “What is the nature of isomorphic influence that is exhibited by public sector peers (as opposed to leaders or authorizing entities) in the public safety domain?”

### Table 1 - PSN proliferation Framework Factors

<table>
<thead>
<tr>
<th>Perspective</th>
<th>Factor</th>
<th>Variable</th>
<th>Prior research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rational Choice</td>
<td>Economic (external)</td>
<td>DHS State Homeland Security Program (SHSP) funding</td>
<td>DHS funding allocated based upon risk factors and not partisan politics (Gilliard-Matthews and Schneider 2010)</td>
</tr>
<tr>
<td>Rational Choice</td>
<td>Demographic</td>
<td>Violent Crime Rate</td>
<td>Violent crime rate associated with higher PSN count (Williams et al 2009).</td>
</tr>
<tr>
<td>Institutional</td>
<td>Neighbor effect (mimetic)</td>
<td>Economic similarity: Per capita income</td>
<td>Per capita income-based homophily predictive of state spending by Case et al (1993), Baicker (2005), and Feiock (2007). Also referred to as yardstick competition and the spillover effect.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Geographic similarity: States bordering focal state</td>
<td>Proximity-based homophily predictive of state spending by Case et al (1993), Baornet &amp; Glazer (2002), Baicker (2005), and Feiock (2007)</td>
</tr>
</tbody>
</table>
Since the study’s focus is mimetic isomorphic influence an institutional measure is included in the predictive analysis also. Again following prior neighbor effect research, the analysis is conducted at the state level. Two elements differentiate this study from past neighbor effect research – the inclusion of violent crime rate as a potential neighbor effect measure, and the use of police and corrections spending in computing the composite neighbor. Past neighbor effect research included other types of spending (e.g., education spending, welfare spending, or overall state expenditures).

**METHOD**

Primary data collection was performed to identify the number of PSNs in each state – for use in the outcome variable. The team identified PSNs through web searches seeking individual PSN websites, through organizations focusing on interagency collaboration and information sharing (e.g. SEARCH), news articles, trade publications (e.g., GOVTECH magazine), research centers (e.g., Center for Technology in Government, University of Albany), and through key informants in the public safety domain (snowballing). For an observed network to be classified as a PSN (for the purpose of this research) at least one of the collaborating organizations in the PSN had to be a police agency, the collaboration had to support information sharing via IT, and evidence of an interagency relationship had to be observable. Secondary data were gathered from publicly available sources – including the Census Bureau, the Bureau of Economic Analysis, and the Bureau of Justice Statistics.

**Operationalizing PSN proliferation**

PSN proliferation is a measure of how frequent the practice of public safety collaboration formation occurs. Operationalizing PSN proliferation involves two problems – bias and scale. To avoid biasing results toward states with greater numbers of collaboration opportunities, the PSN frequency count needs to be normalized in some manner. In public administration research, normalizing the dependent variable has been accomplished by selecting some common variable by which to divide the outcome (Mohr 1969). Since the total possible candidate organizations that could be involved in PSN-type networks is unclear, the number of law enforcement agencies in the state is used.

PSNs (as defined in this study) must have at least one police agency involved and police agency are organizational entities (as opposed to individual level counts like population). PSNs can have a range of member organizations so some sensitivity to scale differences across PSNs is required in this study.

The scale of the number of law enforcement agencies in a state then presents a challenge. A data transformation was required due to the order of magnitude difference in the scale of the number of PSNs in a state compared to the number of law enforcement agencies in a state. The range of law enforcement agencies was 49 to 1,775 (versus the PSN count range of 1 to 20) and its order of magnitude difference overwhelmed the variance of the PSNs. Without scaling the resulting quotient exhibits very limited variance. Public administration researchers have faced this scale challenge and dealt with it through data transformation (Smith and Meier 1995). Therefore the number of law enforcement agencies was normalized to fit a range from 1 to 36 by dividing the number of law enforcement agencies by a constant (49 representing the state of Delaware). The goal for any data transformation is that nothing material about the nature of the relationships between the dependent and independent variables be changed. Therefore sensitivity analysis was performed to provide assurance that the untransformed relationships were maintained.

**Operationalizing the neighbor effect**

The focus of this study involves identifying the possibility of mimetic isomorphic pressure exhibited along a dimension of a priori similarity or homophily in PSN formation decisions. Conforming with past neighbor effect research, this study tests three possible types of similarity (homophily) dimensions – economic, geographic, and demographic. To assess the neighbor effect a composite neighbor value is computed for each state and later that composite neighbor value is used in correlation and regression model analyses to assess its predictive value. The variance associated with the composite neighbor values represents mimetic isomorphic pressure. The equations for computing the composite neighbor were obtained from past neighbor effect research, and these equations differ based upon whether the similarity value is binary, difference, or one-way.

Following past neighbor effect research (Case et al. 1993; Figlio 1999; Baicker 2005) a series of steps resulted in a “composite neighbor” value for each metric – for the demographic similarity factors (violent crime rate, interstate mobility), for the geographic similarity factor (bordering states), and for the economic similarity factor (per capita income). To produce a composite neighbor for bordering states, a matrix (0, 1 values) was produced based upon whether a state bordered another (binary similarity). For the state borders the public safety spending values were used (i.e., multiplied by ‘1’ in a second matrix). The spending values are summed together and divided by the number of border states (resulting in the average spending for the bordering states) to produce a composite neighbor for each state/variable combination.
To produce this matrix for variables where differences can be calculated (i.e., per capita income and violent crime rate), values are first computed based upon between-state differences (difference similarity). Those differences are then used to determine the proportional similarity between states in second and third matrices. More similar states thus get higher weights, less similar states get lower weights, and some states get zero weight. The similarity proportion is then multiplied by each state’s public safety spending and a weighted subtotal is produced for each state in a fourth matrix. The subtotals are added together to produce a composite neighbor for each state/variable combination.

To produce a composite neighbor for interstate mobility one-way migration inflows were used to create the first matrix (one-way similarity). The proportion of inflows from each state was then used to produce the second matrix. The proportion of inflows was then multiplied by each state’s public safety spending and a weighted subtotal is produced for each state in a third matrix. The subtotals are added together to produce a composite neighbor for each state/variable combination.

**Correlation relationships among rational and institutional variables**

Factors are displayed in Table 2 based upon past research, their connection to the public safety domain, their correlation with PSN Proliferation, or their correlations with its component parts (PSNs, law enforcement agencies). As examples, per capita income was identified by past neighbor effect research, violent crime rate was associated with public safety issues, per capita police and corrections was correlated with PSN proliferation, and per capita DHS funding was negatively correlated with both PSNs and law enforcement agencies.

Factors were excluded from regression analysis based upon a combination of correlation analysis and theoretical argument. For example, 2003 values for the various factors were retained in the analysis versus more recent figures (2008). This was done based upon the need to account for some type of lag effect between possible antecedents and the outcome; based upon DHS funding being first available in 2002 and having peaked in 2003; and in accordance with the fact that the 2003 and 2008 values are almost all highly correlated (above .9 correlation) as seen in Table 2.
Table 2 - Correlation Matrix

<table>
<thead>
<tr>
<th></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>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSNs in the State</td>
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<tr>
<td>Law Enforcement Agencies (2004)</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>PSN_Proliferation</td>
<td>0.398**</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per capita Income</td>
<td></td>
<td>-0.019</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Violent Crime Rate</td>
<td>0.4636**</td>
<td>0.206</td>
<td>0.325*</td>
<td>0.053</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violent Crime Rate (2008)</td>
<td>0.3987**</td>
<td>0.197</td>
<td>0.256</td>
<td>0.076</td>
<td>0.9712**</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per capita Police &amp; Corrections</td>
<td>0.121</td>
<td>-0.114</td>
<td>0.6034**</td>
<td>0.125</td>
<td>0.255*</td>
<td>0.200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per capita DHS funding</td>
<td>-0.483**</td>
<td>-0.533**</td>
<td>0.236</td>
<td>-0.001</td>
<td>-0.443**</td>
<td>-0.413**</td>
<td>0.133</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighbor Effect based on Interstate mobility similarity</td>
<td>-0.010</td>
<td>-0.170</td>
<td>0.432**</td>
<td>0.043</td>
<td>0.111</td>
<td>0.055</td>
<td>0.4**</td>
<td>0.394**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighbor Effect based on Violent Crime rate similarity</td>
<td>0.110</td>
<td>-0.135</td>
<td>0.137</td>
<td>0.202</td>
<td>0.367*</td>
<td>0.379**</td>
<td>-0.313*</td>
<td>-0.283</td>
<td>-0.168</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighbor Effect based on Per capita income similarity</td>
<td>0.143</td>
<td>-0.131</td>
<td>0.149</td>
<td>-0.082</td>
<td>-0.052</td>
<td>-0.101</td>
<td>0.157</td>
<td>0.248</td>
<td>0.013</td>
<td>0.157</td>
<td></td>
</tr>
<tr>
<td>Neighbor Effect based on Bordering State similarity</td>
<td>-0.057</td>
<td>-0.001</td>
<td>0.287*</td>
<td>0.167</td>
<td>0.149</td>
<td>0.092</td>
<td>0.469**</td>
<td>0.417**</td>
<td>-0.043</td>
<td>0.71**</td>
<td>-0.200</td>
</tr>
</tbody>
</table>

** Correlation is significant at the p < 0.01 level (2-tailed)
* Correlation is significant at the p < 0.05 level (2-tailed)

Note: values are for 2003 unless otherwise indicated.

Note 2003 versus 2008 correlations:
- Per Capita DHS Funding between '03 and '08 = .952 (total DHS funding correlation is weaker).
- Per Capita Police & Corrections spending '03 and '08 = .941
- Violent Crime Rate '03 and '08 = .971
- Per Capita income '03 and '08 = .129
The findings for correlation analysis are summarized in Table 4.

**Rational choice and institutional factors predicting PSN proliferation**

Summary results of the regression analysis are shown in Table 3. The regression equation selected represents the set of variables that maximized the Adjusted R-Square value, while maintaining statistical significance for the overall model and a suitable variance inflation factor (VIF). The VIF test assesses the independence of the independent variables and considering the rational choice factors are both economic in nature, attending to the independence of factors is important. Various researchers have used different cutoffs for testing the independence of the independent variables but four has been recognized as an appropriate threshold to avoid multicollinearity (Hair et al. 2009). The Adjusted R-Square value was .393, implying that just under 40% of the variance in PSN proliferation was explained by the suggested model.

| Model Summary: |  |
| PSN_Prolif = -3.848 + (0.009*PCPolCorr) + (0.19*PCDHS) + (0.018*NeighborPCPolCorr_IntrStMob) |

<table>
<thead>
<tr>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>ANOVA F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>.432</td>
<td>.393</td>
<td>.66402</td>
<td>11.144</td>
<td>.000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta Coefficient (unstandardized)</th>
<th>Beta Coefficient (standardized)</th>
<th>t-test</th>
<th>Sig.</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>-3.848</td>
<td>-2.408</td>
<td>.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Capita Police &amp; Corrections</td>
<td>0.009</td>
<td>.491</td>
<td>3.932</td>
<td>.000</td>
<td>1.209</td>
</tr>
<tr>
<td>Neighbor Effect based on Interstate Mobility similarity</td>
<td>0.018</td>
<td>.227</td>
<td>1.828</td>
<td>.074</td>
<td>1.191</td>
</tr>
<tr>
<td>Per Capita DHS funding</td>
<td>0.19</td>
<td>.158</td>
<td>1.381</td>
<td>.174</td>
<td>1.018</td>
</tr>
</tbody>
</table>

Per Capita Police and Corrections spending predicted PSN proliferation in both correlation and regression analysis and provides an intuitive means for law enforcement agencies to encourage increased interagency collaboration. Based upon its standardized beta coefficient value, Per Capita Police and Corrections spending had the greatest influence on the prediction of the outcome variable compared to the remaining variables in the regression model. This variable represents the resources that are internal to a state, and arguably the source of funds most under the control of state officials (of the sources examined for this study).

Based upon the correlation analysis and past neighbor effect research, the interstate mobility measure was used in the regression model. Based upon correlations analysis and rational choice expectations of increased resources predicting increased network proliferation, per capita DHS funding was included in the regression model. Although not statistically significant per t-test values, both variables improved the Adjusted R-square statistic while maintaining a relatively low VIF value.
Table 4 Summary of major findings

<table>
<thead>
<tr>
<th>#</th>
<th>Variable</th>
<th>Finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>PSN Proliferation</td>
<td>About one third of states reached the expected value for PSN proliferation. Where expected value is measured by the average PSN proliferation across 48 states.</td>
</tr>
<tr>
<td>2.</td>
<td>Law enforcement agencies</td>
<td>As groups, those states in the first and fourth quartiles of PSN proliferation have fewer than the average number of law enforcement agencies.</td>
</tr>
<tr>
<td>3.</td>
<td>PSNs</td>
<td>As groups, the states in the top quartile of PSN proliferation have greater than the average number of PSNs, while the states in the bottom quartile have fewer.</td>
</tr>
<tr>
<td>4.</td>
<td>Total DHS Funding</td>
<td>Of all the states receiving above average DHS funding only three are also above the average in PSN proliferation – WA, CA and FL. NY is well below the average PSN proliferation value despite receiving well-above average total DHS funding.</td>
</tr>
<tr>
<td>5.</td>
<td>Per capita income</td>
<td>Not significantly correlated with either PSN Proliferation or its component parts</td>
</tr>
<tr>
<td>6.</td>
<td>Per capita police and corrections spending</td>
<td>Per capita spending figures positively correlated with PSN proliferation, but not significantly correlated with totals of component parts (PSNs, agencies). Top quartile states in PSN proliferation spend an average of $210 per citizen on police and corrections (vs. $170 U.S. average)</td>
</tr>
<tr>
<td>7.</td>
<td>Per capita DHS funding</td>
<td>Per capita spending figure not correlated with PSN proliferation, but is negatively correlated with component parts (PSNs, agencies). Top quartile has above average per capita DHS funding ($13.65), lowest quartile has below average per capita DHS funding ($8.83).</td>
</tr>
<tr>
<td>8.</td>
<td>Violent crime rates</td>
<td>Correlated with PSN Proliferation and PSNs. Not correlated with the number of law enforcement agencies.</td>
</tr>
<tr>
<td>9.</td>
<td>Bordering states</td>
<td>Number of bordering states a focal state had (i.e., number of states on its perimeter) was negatively correlated with PSN proliferation.</td>
</tr>
<tr>
<td>10.</td>
<td>Neighbor effect - Interstate Mobility</td>
<td>Correlated with PSN proliferation and Law enforcement agencies</td>
</tr>
<tr>
<td>11.</td>
<td>Neighbor effect - Bordering states</td>
<td>Correlated with PSN proliferation but not its component parts.</td>
</tr>
<tr>
<td>12.</td>
<td>Neighbor effect - Per Capita Income</td>
<td>Not significantly correlated with either PSN Proliferation or its component parts</td>
</tr>
<tr>
<td>13.</td>
<td>Neighbor effect - Violent Crime Rate</td>
<td>Neighbor effect based upon violent crime similarity was not correlated with PSN proliferation or its component parts</td>
</tr>
<tr>
<td>14.</td>
<td>Per capita police and corrections spending</td>
<td>As an internal economic factor, provides statistically significant predictive value for PSN proliferation.</td>
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<tr>
<td>15.</td>
<td>Neighbor effect - Interstate Mobility</td>
<td>As an external (socially adaptive) factor, provides statistically significant predictive value for PSN proliferation. T-test for inclusion in equation was insignificant, but including neighbor effect based upon interstate mobility improved the adjusted R square without undermining OLS validity.</td>
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<tr>
<td>16.</td>
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DISCUSSION

What is the nature of isomorphic influence that is exhibited by public sector peers associated with interagency collaboration? The answer appears to align with a “follow the money” argument, but besides the economic indicators, the demographic and geographic indicators provide context to the explanation.

Study findings suggest that PSN proliferation does not seem to be driven by the number of police agencies in a state. It is possible that law enforcement agencies that have participated in PSN collaborations have found them ineffective or inefficient in dealing with public safety challenges. Another rational choice reason for limited proliferation could be that states have
elected to centralize interagency collaboration in such a way that the number of separate PSNs is constrained. In other words, state and local officials might be encouraging law enforcement agencies to join state-wide hub PSNs and not to create their own regional or local PSNs. If proliferation is driven at the state level then state-level neighbor effects are important, and part of the state-level decision making could also be whether to have a central, large-scale hub PSNs or decentralize public safety interagency collaboration by encouraging smaller networks. This study leaves the centralization decision for future research.

Per capita police and corrections spending provides an “internal” rational choice element to the PSN proliferation picture. That public safety spending is positively correlated with, and partially predicts, PSN proliferation is consistent with rational choice expectations. Unexpectedly, per capita DHS funding exhibits a negative correlation with PSNs - counter to rational choice expectations. This relationship needs further investigation outside this study and DHS granting officials would likely be surprised if the negative correlation is upheld in future research. The correlation performed measured linear relationships. It is possible that per capita DHS funding and PSNs maintain a relationship of a different order or the relationship is in some way mediated or moderator by other factors. Another possible explanation is that DHS funding actually discourages interagency collaboration in some ways based upon agencies using the funds to operate in stove pipe fashion and go it alone.

The institutional factor, neighbor effect based upon interstate mobility, provided the other external element to the PSN proliferation picture. In past neighbor effect research, demographic factors outperformed economic and geographic homophily measures (Case et al. 1993; Baicker 2005). In this study, demographic variables again outperformed economic and geographic measures of similarity. This current study found that when a state’s neighbors spent more on public safety, then that state tended to have a higher degree of PSN proliferation. This study further found that the most predictive measure for which states were classified as neighbors was interstate migration inflows. One explanation for this finding is that state officials look to their neighbor states for guidance regarding a number of practices – including public safety collaborations. The reasoning for interstate mobility being used as a metric for neighbor similarity can be observed in population migration research. Interstate migration occurs more frequently in the segment of the population that is younger, more highly educated, and seeking employment opportunities (Rosenbloom and Sundstrom 2004; Hernández-Murillo et al. 2011). Along with higher education and the desire for higher income, this constituency also brings with it demands for increased quality of life – including public safety quality. To retain this constituency states might attempt to match or even exceed the level of public safety services provided by neighbor states. This consistency of this current study with past neighbor effect findings also signals the value of employing population mobility as a variable in studying social phenomena – with possible benefits toward generalizability.

While this study provides some evidence for the significant influence of demographic factors in state decision making, economic factors still seem to prevail in telling the general story of PSN proliferation. Since the neighbor effect is a weighted average of per capita spending on police and correction in “neighbor” states there is still an obvious economic element to it.

CONCLUSION

This study examined the predictive value of neighbor-state actions for PSN proliferation at the state level. In general this study found evidence for a “follow the money” pattern of PSN proliferation. Since economic factors prevailed over “needs” based factors like violent crime rate and being a U.S. border state, it seems reasonable to surmise that even something as vital as public safety interagency collaboration is (like other governmental responses to societal problems) driven mainly by the availability of resources. For the institutional factors, interstate mobility prevailed over other potential neighbor effect measures – even the “need” based measures like bordering states and violent crime rate similarity.

In this study, institutional and rational choice perspectives complement one another as joint lenses to examine multi-criteria decisions made by organizations facing the dual pressures to fit in and to perform. The findings in this study suggest that neighbor influence based upon interstate mobility is predictive of PSN proliferation at the state level, but this study does not provide information regarding detailed decision-making mechanisms. For instance, states facing similar issues might simply be attempting to keep up with their similarly situated peers on a number of issues – public safety spending included. On the contrary, state officials might not even know with which states they share migrating citizens and therefore are not in a position to make public safety spending decisions similar to those states. Conducting further process-oriented and longitudinal analysis would help to clarify ambiguous findings from this study, as well as get a deeper sense of the criteria used by state officials and other leaders to encourage public safety collaboration like PSNs.

Given the level of expenditures allocated to maintaining public safety, and given the obvious need to address criminal, terror, and natural disaster threats, improving interagency collaboration is valuable work. Research in this area should assist government officials in making informed decisions about when and where to form PSNs – and helping officials to be more aware of cautions to take regarding decision-making criteria.
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